PELVIC FLOOR DIGEST 2003 09 - SINTESI

1 – THE PELVIC FLOOR

The effect of saddle design on stresses in the perineum during cycling.
Spears IR, Cummins NK, Brenchley Z, Donohue C, Turnbull C, Burton S, Macho GA.

Med Sci Sports Exerc 2003;35:1620-5.
PURPOSE: Repetitive internal stress in the perineum has been associated with soft-tissue trauma in bicyclists. Using an engineering approach, the purpose of this study was to quantify the amount of compression exerted in the perineum for a range of saddle widths and orientations. METHODS: Computer tomography was used to create a three-dimensional voxel-based finite element model of the right side of the male perineum-pelvis. For the creation of the saddle model, a commercially available saddle was digitized and the surface manipulated to represent a variety of saddle widths and orientations. The two models were merged, and a static downward load of 189 N was applied to the model at the region representing the sacroiliac joint. For validation purposes, external stresses along the perineum-saddle interface were compared with the results of pressure sensitive film. Good agreement was found for these external stresses. The saddles were then stretched and rotated, and the magnitude and location of maximum stresses within the perineum were both recorded. In all cases, the model of the pelvis-perineum was held in an upright position. RESULTS: Stresses within the perineum were reduced when the saddle was sufficiently wide to support both ischial tuberosities. This supporting mechanism was best achieved when the saddle was at least two times wider than the bi-ischial width of the cyclist. Stresses in the anterior of the perineum were reduced when the saddle was tilted downward, whereas stresses in the posterior were reduced when the saddle was tilted upward. CONCLUSIONS: Recommendations that saddles should be sufficiently wide to support the ischial tuberosities appear to be well founded. Recommendations that saddles be tilted downward (i.e., nose down) are supported by the model, but with caution, given the limitations of the model.

An Italian survey of traumatic spinal cord injury.
The Gruppo Italiano Studio Epidemiologico Mielolesioni study.
Pagliacci MC, Celani MG, Zampolini M, Spizzichino L, Franceschini M, Baratta S, Finali G, Gatta G, Perdon L.
Arch Phys Med Rehabil 2003;84:1266-75.
OBJECTIVE: To describe the etiology, clinical presentation, complications, outcome indicators, and links between emergency and acute intervention and rehabilitation of patients with traumatic spinal cord injury (SCI). DESIGN: Multicenter prospective study involving patients with SCI discharged, after rehabilitative care, between February 1, 1997, and January 31, 1999. SETTING: Thirty-two Italian hospitals involved in SCI rehabilitation. PARTICIPANTS: Six hundred eighty-four patients with traumatic SCI on their first admission to a rehabilitation center. INTERVENTIONS: Not applicable. Main Outcome Measures: Neurologic improvement (NI), bladder autonomy, feelings of dependency, and destination were evaluated on discharge. Pressure ulcers on admission, time from injury to admission, and length of stay (LOS) were considered as indirect measures of the effectiveness of the health system. RESULTS: Traumatic etiology had a male-to-female ratio of 4:1 (548:136). Collision on the road was the main cause of traumatic injury (53.8%). Mean time from injury to admission was 36.8 days; 126 patients (18%) were admitted within the first week after injury. Mean LOS was 135.5 days. In 184 patients (26.9%), a pressure ulcer was present on admission. On discharge, NI was recorded in 179 patients (26.2%), whereas 446 (65%) and 418 (61%) had bladder and bowel autonomy, respectively, and 560 (81.9%) returned home. In the multivariate analysis, independent variables predicting poor outcome (NI, feelings of dependency, sphincter autonomy, discharge to home, LOS) were related both to the lesion (completeness, cervical involvement) and to the indicators of health service organization (time from injury to admission, complications on admission and during stay). CONCLUSIONS: Our focus on the etiology of traumatic SCI showed that efforts should be made to prevent collisions on the road. Our study also highlights problems in the comprehensive management of patients with SCI in Italy. Better organization could help reduce the time from injury to admission, the number of complications on admission, and LOS, and it could help improve rehabilitation outcome.

Electrical stimulation in the treatment of pelvic pain due to levator ani spasm.
Fitzwater JB, Kuehl TJ, Schrier JJ.
J Reprod Med 2003;48:573-7.
OBJECTIVE: To evaluate experience with intravaginal electrical stimulation for the relief of pain when used as adjunctive therapy in women with chronic pelvic pain and levator ani spasm. STUDY DESIGN: A

retrospective cohort of consecutively treated patients from 1999 and 2000 was identified using billing records. Systematic chart review was completed using standardized data collection forms for all patients receiving electrical stimulation for pain from levator ani spasm. Data collected were objective for major variables and subjective for outcomes. Demographic data were reported as means and standard deviations. Stimulation characteristics were compared using ANOVA. Survival analysis was performed using life table methods. RESULTS: Medical records from 66 consecutive patients treated during an 18-month interval were reviewed. Demographic characteristics included mean age of 38.7 years, 13 years of education and parity of 2. Married women composed 75% of the study group, with 81% white, 10% Hispanic and 9% black. Of the 66 patients studied, 50 had follow-up documentation with an average duration of 14.5 weeks. Overall, 34 patients (52%) demonstrated improvement in pelvic pain following vaginal electrical stimulation. Using survival analysis, 51% of patients had persistent improvement 30 weeks after treatment. There were no differences in age, race, education or parity between patients reporting a sustained benefit of stimulation and those not reporting a benefit. CONCLUSION: Vaginal electrical stimulation may help a selected population of women with pelvic pain due to levator ani spasm.

2 – FUNCTIONAL ANATOMY

Musculoskeletal Response to Exercise Is Greatest in Women with Low Initial Values.
Winters-Stone KM, Snow CM.
Med Sci Sports Exerc 2003;35:1691-1696.SUMMARY: WINTERS-STONE, K. M., and C. M. SNOW. Musculoskeletal Response to Exercise Is Greatest in Women with Low Initial Values. Med. Sci. Sports Exerc., Vol. 35, No. 10, pp. 1691-1696, 2003.
INTRODUCTION The "initial values" principle of exercise training states those with the lowest initial values of a physiologic system have the greatest capacity for improvement in response to training. We sought to determine whether initial values predicted the musculoskeletal response to training in premenopausal women (N = 31) who participated in a 1-yr program of resistance and jump training designed to improve physical indices of fracture risk. Significant improvements in trochanteric bone mineral density (BMD), hip abductor strength, power, and postural stability occurred in response to training.METHODS To determine the predictive power of initial values, we performed separate stepwise regression analyses for each variable including the following dependent variables: age, initial value, highest weight lifted during training, and total number of exercise sessions attended.RESULTS In each case, the initial value was the most significant predictor of percent change in response to training. Initial values explained 15-29% of the variance in the magnitude of the training response. For each unit lower BMD of the greater trochanter (0.01 g.cm-2), the training response was 12% greater. For each unit decrease in initial strength (1 Nm), power (1 W), and stability (1 SI unit), the training response was 1.0%, 0.2%, and 8.0% greater, respectively. When categorized by quartile of initial values, women in the lowest quartile h ad two- to fivefold greater improvements in musculoskeletal measures than those in the upper quartile. CONCLUSION: Women who began training with the lowest initial values had the greatest improvements in hip BMD, hip abductor strength, leg power, and postural stability. These results support the training principle of initial values and suggest that this training program may be most successful in premenopausal women with lower values of musculoskeletal indices of fracture risk.

The impact of prenatal androgens on vaginal and urogenital sinus development in the female mouse.
Yucel S, Cavalcanti AG, Wang Z, Baskin LS.J Urol 2003;170:1432-6.
PURPOSE: In females abnormal urogenital virilization can occur secondary to prenatal exposure to exogenous or endogenous androgens. We studied the effects of different doses of prenatal androgens on urogenital sinus development and the location of the vaginal confluence in a mouse model. MATERIALS AND METHODS: Timed pregnant C57/6 mice were exposed to 2, 5 and 10 mg testosterone propionate on gestational days 14 through 18. On gestational day 19 the genital tubercles and internal genitalia were examined grossly and histologically for the presence of virilization. Three-dimensional computer reconstruction was done and plastic cast injection molds of the urogenital sinus were made in select specimens. RESULTS: Microscopic analysis confirmed the spectrum of virilization, which occurred in 98% of testosterone propionate treated female fetuses. Plastic cast injection showed that affected females had a longer urogenital sinus, more proximal confluence and shorter vagina in a dose dependent manner. Histological sections and 3-dimensional reconstruction revealed that the bladder neck moved proximal under the pubic bone, also in a dose dependent manner. CONCLUSIONS: Prenatal exposure to increasing levels of androgen causes urogenital sinus elongation in a female mouse fetus. In the mouse model the confluence area moves proximally together with the bladder neck in a dose dependent manner.

Effect of hypothyroidism on hormone profiles in virgin, pregnant and lactating rats, and on lactation.

Hapon MB, Simoncini M, Via G, Jahn GA.
Reproduction 2003;126:371-82.
Thyroid dysfunctions can produce reproductive problems. Untreated maternal hypothyroidism has serious consequences on development of offspring, resulting in stunted growth and mental retardation. The effects of propylthiouracyl-induced hypothyroidism (0.1 g l(-1) in drinking water starting 8 days before mating, or given to virgin rats for 30 or 50 days) on the serum profiles of hormones related to reproduction and mammary function (prolactin, growth hormone (GH), progesterone, corticosterone, oestradiol, insulin-like growth factor I (IGF-I), thyroid-stimulating hormone (TSH), triiodothyronine and tetraiodothyronine), and on mammary function in virgin, pregnant and lactating rats, were investigated. Propylthiouracyl treatment severely decreased circulating triiodothyronine and tetraiodothyronine concentrations, and increased serum TSH concentrations. Virgin rats showed prolonged periods of vaginal dioestrus, increased circulating progesterone concentrations and afternoon peaks of prolactin concentration, which are indicative of prolactin-induced pseudopregnancy. Propylthiouracyl-treated virgin rats had mammary development comparable to that of midpregnancy, and half of these rats had increased mammary casein and lactose concentrations. Serum prolactin concentrations were decreased on the afternoon of day 5 of pregnancy, increased during late pregnancy (days 15-21) and were normal during lactation. Circulating GH concentrations decreased on days 15-21 of pregnancy, whereas progesterone concentrations increased during late pregnancy and early lactation. Circulating oestradiol (measured in late pregnancy and in virgin rats), IGF-I and corticosterone concentrations were decreased. Although assessment of mammary histology showed no differences in extent of development, casein content was increased in propylthiouracyl-treated rats on day 21 of pregnancy; litter growth was severely reduced and at day 20 of age the pups were hypothyroid, with decreased GH serum concentrations. An acute suckling experiment was performed on days 10-12 of lactation to determine whether some impairment in mammary function or the suckling reflex might account for these differences. After an 8 h separation of mothers from their litters and 30 min of suckling, circulating prolactin values were not affected by propylthiouracyl treatment, but serum oxytocin concentration and milk excretion were reduced. In conclusion, hypothyroidism induces various alterations in the hormone profiles of virgin and pregnant rats, and induces pseudopregnancies and mammary development in virgin rats. These alterations do not appear to have an overt impact on the outcome of pregnancy and on mammary function during lactation, with the exception of the milk ejection reflex, which may account at least partially for the reduced litter growth.

Effect of perineal compression on the rectal tone: a study of the mechanism of action.
Shafik A, Ahmed I, El-Sibai O.
Dis Colon Rectum 2003;46:1366-70.
SUMMARY: PURPOSE Digital pressure on the perineum was reported to result in an increase of the rectal tone. This effect has been related to a reflex action named perineorectal reflex but was not verified. The mechanism of action of perineal pressure on the rectal tone was studied.METHODS Eighteen healthy volunteers (mean age +/- standard deviation, 39.7 +/- 11.8 years; 10 males) were studied. The barostat system used consisted of a polyethylene balloon connected to a strain gauge and a computer-controlled, air-injection system. The balloon was introduced into the rectum, and the rectal tone was assessed by recording the balloon volume variations in response to digital pressure on the perineum. The test was repeated after individual anesthetization of perineum and rectum. It was performed again using normal saline instead of Xylocaine. RESULTS: During perineal pressure, all the volunteers exhibited rectal tone increase with a mean decrease in the balloon volume of 72.3 +/- 14.7 percent. There was no significant difference ($P > 0.05$) in the rectal tone response between females and males nor between young and elderly patients. The mean latency was 17.3 +/- 1.8 ms. Perineal pressure 20 minutes after individual anesthetization of perineum and rectum effected no significant rectal tone changes. The response returned after the anesthetic effect had waned. The rectal tone response after saline administration was similar to that before administration. CONCLUSION: The study has shown that rectal tone increase during digital perineal pressure represents most probably a reflex action. This was evidenced by absence of rectal tone response on individual anesthetization of the assumed two arms of the reflex arc: perineum and rectum. The perineorectal reflex may be of diagnostic significance in rectal motor disorders and has the potential to be used as an investigative tool, provided further studies are performed to prove these points.Deficient motor innervation of the sphincter mechanism in fetal rats with anorectal malformation: A quantitative study by fluorogold retrograde tracing.Yuan Zw Z, Lui Vc V, Tam Pk P.J Pediatr Surg 2003;38:1383-8.Background/purpose: Deficiency of motoneuron innervation to the sphincter mechanism has been described in patients with anorectal malformation. Whether this event is primary or secondary remains unclear. Methods: The authors quantified the motoneuron innervation of the sphincter mechanism by Fluorogold (FG) retrograde tracing experiment in fetal rats with anorectal malformation. Anorectal malformation was induced in rat fetuses by ethylenethiourea (ETU). Serial longitudinal sections encompassing the whole width of lumbosacral spinal cord were examined. The number of FG-labelled motoneurons were scored and compared between male fetuses with or without malformation in the ETU-fed group and normal controls. Results: The number of FG-

labelled motoneurons in the fetuses without defect, with imperforate anus (IA), with neural tube anomalies (NTA), with combined IA and NTA, and normal controls were determined to be (m ean +/- SEM) 109.13 +/- 37.88, 55.05 +/- 25.85, 48.20 +/- 30.34, 54.43 +/- 28.55, and 135.22 +/- 28.78, respectively. FG-labelled motoneurons in the fetuses with IA, NTA, and combined IA and NTA are significantly fewer than that in fetuses without defects (P <.05) and in normal controls (P <.005). CONCLUSIONS: These findings suggest that defective motoneuron innervation to the sphincter mechanism is a primary anomaly that coexists with the alimentary tract anomaly in anorectal malformation during fetal development. The intrinsic neural deficiency is an important factor likely to contribute to poor postoperative anorectal function despite surgical correction of anorectal malformation.Evidence that the notochord may be pivotal in the development of sacral and anorectal malformations.Qi BQ, Beasley SW, Frizelle FA.J Pediatr Surg 2003;38:1310-6.Background/Purpose: The notochord is known to organize normal development of central axial structures, such as the spinal cord, vertebral column, and anorectum, but its role in abnormal development of these organs has not been well documented. The current study has used Ethylenethiourea to induce anorectal malformations in fetal rats, allowing investigation of abnormalities of the notochord and their relationship to the axial structural abnormalities that occur. Methods: Timed-mated pregnant rats were fed Ethylenethiourea by gavage on gestational day 10. Their embryos were harvested on gestational days 13 to 16 and sectioned in either the transverse or sagittal plane. Sections were stained with H & E and examined serially. Results: Anorectal malformations were identified in 29 of 34 embryos and neural tube defects in 24, ranging from an accessory neural tube to lumbo-sacral rachischisis. There was no tail or only a rudimentary tail in the majority of embryos. Abnormalities of the notochord in the lumbo-sacral area included ventro-dorsal branching, ventral deviation, and ectopic notochordal tissue. Most abnormal notochord branches and ectopic notochordal tissue were abnormally close to or in contact with the wall of the cloaca or neural tube. Conclusions: Given the known role of the notochord in controlling normal development, this study would suggest that abnormal notochord development may be pivotal in producing neural tube defects and anorectal malformations, possibly by altering sonic hedgehog signalling.

The absence of lateral fusion in cloacal partition.
Penington Ec E, Hutson Jm J.
J Pediatr Surg 2003;38:1287-95.
Background/purpose: The mechanism by which the cloaca becomes partitioned into a dorsal rectal part and a ventral genitourinary sinus has been the subject of speculation for more than a century. Despite repeated suggestions that partitioning of the cloaca by fusion of lateral folds does not occur, the concept continues to hold sway in many student and surgical texts. The authors reviewed the histologic and 3-dimensional appearance of the urorectal septum in human and rat embryos to see if there was any evidence of lateral fusion in its formation. Methods: Sprague-Dawley rat embryos (n = 143) were examined between 11 and 21 days' gestation and compared with human embryo sections (57 embryos) held in historical collections in Europe. Rat embryos were examined by microscopy, dissection, and serial histologic section. In addition, some specimens were sectioned in wax until the lumen of the cloaca was reached, after which they were dewaxed and the internal cavities imaged with scanning electronmicroscopy (n = 18 of 143). Results: Cloacal "partitioning" resulted from a combination of growth of the mesenchyme of the hindgut and genitourinary sinus, an alteration in the position of the cloaca in relation to surrounding structures secondary to growth in the ventral, infraumbilical abdominal wall and changes in the curvature of the developing spine, and apoptosis in the dorsal wall of the cloaca with shortening of the dorsal cloacal wall. There was no septum, as it is usually defined, between the developing bladder and hindgut. There was no evidence on either histologic section or scanning electronmicroscopy of any process of fusion occurring between the 2 lateral folds within the lumen of the cloaca. Conclusions: Lateral fusion of the side walls of the cloaca does not play a role in cloacal "partition." Development of the bladder and hindgut occurs by a process that involves growth, differentiation, and remodeling.Study of intestinal flow by combined video-fluoroscopy, manometry, and Multiple Intraluminal Impedance.Imam H, Sanmiguel C, Larive B, Bhat Y, Soffer E.Am J Physiol Gastrointest Liver Physiol 2003;None:None.Assessment of patterns of flow in the small bowel is difficult. Multiple intraluminal impedance has been recently used for study of flow dynamics in the esophagus. Aims: 1) To validate multiple intraluminal impedance by correlating impedance events with intestinal flow as detected by fluoroscopy. 2) To determine intestinal flow patterns in the fasting and postprandial period, and their correspondence with manometry. Methods: First, 6 healthy subjects underwent simultaneous videofluoroscopic, manometric and impedance recording from the duodenum. Videofluoroscopy was used to validate impedance patterns corresponding with barium flow in the fasting and postprandial periods. Next, 16 healthy subjects underwent prolonged simultaneous recording of impedance and manometry in both periods. Results: Most flow events were short, 10cm or less with antegrade flow being the most common. Correspondence between impedance and videofluoroscopy increased with increasing length of barium flow. impedance corresponded better with flow, at any distance, than manometry. However, impedance and manometric events, when analyzed separately as index events, always corresponded with fluoroscopic flow. The fasting and postprandial periods showed comparable

patterns of flow, with frequent, highly propulsive manometric and impedance sequences. Motility index was positively and significantly associated with length of impedance events. Phase III of the MMC could be easily recognized by impedance. Conclusions: Multiple intraluminal impedance can detect intestinal flow events and corresponds better with fluoroscopic flow than manometry.Cerebral cortical representation of external anal sphincter contraction: effect of effort.Kern MK, Arndorfer RC, Hyde JS, Shaker R.Am J Physiol Gastrointest Liver Physiol 2003;None:None.The external anal sphincter (EAS) plays a critical role in maintaining fecal continence, however, cerebral cortical control of voluntary EAS contraction is not completely understood. AIMS: 1) To determine the cortical areas associated with voluntary EAS contraction. 2) To determine the effect of two levels of sphincter contraction effort on brain activity. METHODS: Seventeen asymptomatic adults (age 21-48, 9 male) were studied using functional magnetic resonance imaging (fMRI) to detect brain activity. Studies were done in two stages. In stage one (10 subjects, 5 male), anal sphincter pressure was monitored from a catheter-affixed bag. Subjects performed maximal and sub-maximal EAS contractions during two fMRI scanning sessions consisting of alternating 10-second intervals of sustained contraction and rest. In stage two studies, seven subjects (4 male) performed only maximum effort sphincter contractions without a catheter. RESULTS: EAS contraction was associated with multifocal fMRI activity in sensory/motor, anterior cingulate, pre-frontal, parietal, occipital and insular regions. Total cortical activity volume was significantly larger ($p<0.05$) for maximal (5175+/-720 micro L) compared to sub-maximal effort contractions (2558+/-306 micro L). Similarly, percent fMRI signal change was significantly higher ($p<0.05$) for maximal (4.8+/-0.1%) compared to sub-maximal effort contractions (2.2+/-0.1%). Cortical region-of-interest analysis showed the incidence of insular activation to be more common in woman compared to men. Other cortical regions showed no such gender differences. FMRI activity detected in stage 2 showed similar regions of cortical activation to those of the stage 1 study. CONCLUSIONS: Willful contraction of the EAS is associated with multifocal cerebral cortical activity. The volume and intensity of cerebral cortical activation is commensurate with the level of contractile effort.

3 – DIAGNOSTICS

Computed tomography evaluation of pelvic organ prolapse. Techniques and applications.
Pannu HK, Genadry R, Kaufman HS, Fishman EK.
J Comput Assist Tomogr 2003;27:779-85.
OBJECTIVES: Pelvic organ prolapse is a common debilitating condition affecting women. Cross-sectional imaging with magnetic resonance imaging (MRI) depicts pelvic floor anatomy as well as organ prolapse and can complement or replace fluoroscopy. Occasionally, patients cannot tolerate MRI, but multiplanar visualization of pelvic floor soft tissue anatomy and organ prolapse is clinically desired. The objective of this study was to determine if computed tomography (CT) is a potential diagnostic technique in these specific situations for demonstrating organ prolapse and the pelvic floor. METHODS: Seven women (mean age: 63.5 years) with clinical pelvic organ prolapse were referred for CT of the pelvis from the gynecologic and surgical clinics from November 1998 to September 2001. The CT technique included the following: insufflation of rectal air, positive oral contrast, supine position with knees flexed, and imaging at rest and straining with a single-detector scan in 5 cases (slice thickness of 3 mm, table speed of 5 mm/s, 2-mm reconstruction interval) and a multidetector scan in 1 case (detector collimation of 1 mm, slice thickness of 1.25 mm, 1-mm reconstruction interval). Axial and 3-dimensional images were interpreted. RESULTS: Computed tomography demonstrated prolapse in 5 of 7 patients. At CT, cystocele was present in 2 of 7 patients, vault or cervical prolapse was present in 4 of 7, enterocele was present in 3 of 7, rectocele was present in 2 of 7, and levator abnormalities were present in 4 of 7. Surgery was performed in 3 of the 5 patients with positive CT findings, and prolapse was confirmed. Surgery was also performed in 1 patient with negative CT findings, and global prolapse was detected. CONCLUSIONS: Demonstration of pelvic organ prolapse and muscular pelvic floor abnormalities is feasible with CT if the patient strains adequately. In patients who cannot tolerate MRI, CT may be useful as an alternative diagnostic tool.

Pelvic floor magnetic resonance imaging after neonatal single stage reconstruction in male patients with classic bladder exstrophy.
Halachmi S, Farhat W, Konen O, Khan A, Hodapp J, Bagli DJ, McLorie GA, Khoury AE.
J Urol 2003;170:1505-9.
PURPOSE: We evaluate a magnetic resonance imaging (MRI) protocol used to study the pelvic floor anatomy in male patients following neonatal single stage complete bladder exstrophy and epispadias repair with osteotomies. MATERIALS AND METHODS: From 1996 to 2002, 9 males underwent surgical correction of bladder exstrophy and epispadias with osteotomies within 1 to 12 days of birth. Pelvic floor MRI was conducted comparing this group to 5 aged matched male patients with no pelvic anatomical abnormality who underwent MRI for other illness. We compared various measurement of pelvic musculature by unpaired Wilcoxon test. RESULTS: Median followup was 3 years (range 0.5 to 5.3). All surgical procedures

succeeded in closure of abdominal wall and genitalia defects. MRI data showed that in the exstrophy group symphyseal distance was significantly wider than that in controls (median 3.8 vs 1.1 cm). In addition, the levator ani fibers diverted more laterally (42 vs 22 degrees), the pelvic floor in coronal view was more flat (103 vs 80 degrees) and the anus was more anteriorly displaced (2.8 vs 4.4 cm). We also documented shorter anterior corporeal bodies in the exstrophy group (1 vs 2 cm). No statistical difference between the 2 groups was found in the dimensions of the levator and obturator muscles, sagittal angle of the pelvic floor, and the dimensions and angle of the posterior corporal bodies. Two patients achieved some degree of continence around the age of 4 years. They had the shortest symphyseal distance and sharpest angle of levator ani fiber divergence, and the bladder neck was more deeply located in the pelvic. CONCLUSIONS: We applied novel MRI parameters to the pelvic floor anatomy providing a new quantifiable approach. Our protocol is feasible and reproducible, allowing for future comparison of the impact of different surgical modalities, and correlation between anatomical findings and continence.

Adopt a wait-and-see attitude for patent processus vaginalis in neonates.
Toki A, Watanabe Y, Sasaki K, Tani M, Ogura K, Wang ZQ.
J Pediatr Surg 2003;38:1371-3.
Purpose: The purpose of this paper is to describe the ultrasonographic findings of the patent processus vaginalis (PPV) in neonates. Methods: The patency of the processus vaginalis was examined by ultrasonography in 117 neonates. The ultrasonographic findings, with increment and decrement of the intraabdominal pressure, were categorized into 6 types as follows: type I, the intraabdominal organ is observed; type II, cystic PPV; type III, the PPV is widened with abdominal pressure increment, the length is >/=20 mm; type IV, the PPV contains moving fluid without PPV widening; type V, the PPV is widened with abdominal pressure increment, the length is less than 20 mm; type VI, others. The authors we regarded types I to IV as PPV with inguinal hernia. Results: Twenty-two of 40 neonates with a birth weight under 2,500 g had PPV, including 8 with type I. Twenty of 37 premature neonates 22 to 37 gestational weeks had PPV, including 8 with type I. Eighty-one percent (13 of 16) of PPV in low-birth-weight neonates and 91% (10 of 11) in premature neonates closed spontaneously. The median ages at the time of spontaneous regression of PPV were 242 days in low birth weight neonates and 262 days in premature neonates. Conclusions: Most premature or low-birth-weight neonates with PPV regress spontaneously. The inguinal hernia in neonates (especially in premature or low-birth-weight neonates) should be observed until at least 9 months of age without attempting hernia repair.

How to investigate neurovesical dysfunction in children with anorectal malformations.
Mosiello G, Capitanucci ML, Gatti C, Adorisio O, Lucchetti MC, Silveri M, Schingo PS, De Gennaro M.
J Urol 2003;170:1610-3.
PURPOSE: Neurovesical dysfunction (NVD) is common in children with anorectal malformation (ARM). NVD is mainly related to tethered cord or iatrogenic injury but how to investigate it is still debated. We evaluate the usefulness of routine magnetic resonance imaging (MRI) and urodynamics (UDS) for ARM. MATERIALS AND METHODS: A total of 89 children were screened for sacral, spinal or urological anomalies using sacrum x-ray, MRI, renal and spinal ultrasound, uroflowmetry and/or 4-hour voiding observation. UDS was performed in 60 patients with suspected NVD. M ean +/- SD followup was 9.8 +/- 5.2 years. RESULTS: Of the 89 patients 29 presented with urinary tract anomalies. The prevalence of sacral (53 cases) and spinal cord (54) anomalies was no different between patients with low, intermediate and high ARM. Spinal cord tethering was present in 13 patients with a normal sacrum x-ray. NVD was found in 31 of the 89 patients (hyperreflexia 21 and hypo-areflexia 10), and was associated with sacral and spinal anomalies in 23, occult spinal dysraphism without bone lesion in 3 and sacral anomalies in 5. The incidence of NVD was 40% of cases with low and 51% with high ARM. CONCLUSIONS: Because tethered cord occurs in children without sacral anomalies as well as in those with low ARM, we recommend evaluation of all patients using MRI. When MRI is positive UDS should be performed. We agree with a previous suggestion to evaluate all males with rectourethral fistula and females with cloaca malformations. Finally we recommend a noninvasive evaluation for all other children and UDS when neurogenic dysfunction is suspected.

Laparoscopic colon resection with intraoperative polyp localisation with high resolution ultrasonography coupled with colour power Doppler.
Panaro F, Casaccia M, Cavaliere D, Torelli P.
Postgrad Med J 2003;79:533-4.
A 40 year old woman with a 3 cm sigmoid polyp lesion who underwent a laparoscopic colon resection after intraoperative localisation of the lesion using laparoscopic ultrasonography coupled with colour power Doppler is described. She has successful intraoperative detection of the polyp followed by radical laparoscopic removal of the lesion. The advantage of using laparoscopic high resolution ultrasonography coupled with colour power Doppler to locate colonic polyp lesions during a laparoscopic colon resection is that intraoperative colonoscopy can be avoided. Intraoperative ultrasonography of the colon can accurately

localise colonic polyp lesions that are not detectable during laparoscopy and represents a quick and effective alternative to other imaging techniques.By-patient performance characteristics of CT colonography: importance of polyp size threshold data.Pickhardt PJ.Radiology 2003;229:291-3.

Multi-detector row CT colonography: effect of collimation, pitch, and orientation on polyp detection in a human colectomy specimen.
Taylor SA, Halligan S, Bartram CI, Morgan PR, Talbot IC, Fry N, Saunders BP, Khosraviani K, Atkin W.
Radiology 2003;229:109-18.
PURPOSE: To investigate the effects of orientation, collimation, pitch, and tube current setting on polyp detection at multi-detector row computed tomographic (CT) colonography and to determine the optimal combination of scanning parameters for screening. MATERIALS AND METHODS: A colectomy specimen containing 117 polyps of different sizes was insufflated and imaged with a multi-detector row CT scanner at various collimation (1.25 and 2.5 mm), pitch (3 and 6), and tube current (50, 100, and 150 mA) settings. Two-dimensional multiplanar reformatted images and three-dimensional endoluminal surface renderings from the 12 resultant data sets were examined by one observer for the presence and conspicuity of polyps. The results were analyzed with Poisson regression and logistic regression to determine the effects of scanning parameters and of specimen orientation on polyp detection. RESULTS: The percentage of polyps that were detected significantly increased when collimation (P =.008) and table feed (P =.03) were decreased. Increased tube current resulted in improved detection only of polyps with a diameter of less than 5 mm. Polyps of less than 5 mm were optimally depicted with a collimation of 1.25 mm, a pitch of 3, and a tube current setting of 150 mA; polyps with a diameter greater than 5 mm were adequately depicted with 1.25-mm collimation and with either pitch setting and any of the three tube current settings. Small polyps in the transverse segment (positioned at a 90 degrees angle to the z axis of scanning) were significantly less visible than those in parallel or oblique orientations (P <.001). The effective radiation dose, calculated with a Monte Carlo simulation, was 1.4-10.0 mSv. CONCLUSION: Detection of small polyps (<5 mm) with multi-detector row CT is highly dependent on collimation, pitch, and, to a lesser extent, tube current. Collimation of 1.25 mm, combined with pitch of 6 and tube current of 50 mA, provides for reliable detection of polyps 5 mm or larger while limiting the effective radiation dose. Polyps smaller than 5 mm, however, may be poorly depicted with use of these settings in the transverse colon.What multi-detector row CT parameters are best for detection of colon polyps?Brink JA.Radiology 2003;229:1-2.Safety of sodium phosphate for colonoscopy.Hookey LC, Depew WT, Vanner S.Gastrointest Endosc 2003;58:471-2.

Safety of sodium phosphate for colonoscopy.
Kastenberg D, Choudhary C, Katz LC.Gastrointest Endosc 2003;58:471.

Perforation during colonoscopy in endoscopic ambulatory surgical centers.
Korman LY, Overholt BF, Box T, Winker CK.
Gastrointest Endosc 2003;58:554-7.
BACKGROUND: Perforation as a complication of colonoscopy is estimated to occur in 0.01% to 0.3% of procedures, but the frequency in ambulatory settings is unknown. This study determined the number of perforations occurring within a network of endoscopic ambulatory surgery centers. METHODS: A total of 116,000 colonoscopies were performed within one network of 45 endoscopic ambulatory surgery centers in the United States during 1999. All identified perforations were reported to the network clinical director and reviewed by a panel of 3 gastroenterologists. RESULTS: There were 37 (0.03%) perforations; 27 in women and 10 in men. Median patient age was 75 years (range 39-87 years); 18 patients (49%) had diverticular disease and 20 (54%) had a history of pelvic or colonic surgery. Twenty-four (65%) procedures were diagnostic, and 13 (35%) were therapeutic. The most common site of perforation was the sigmoid colon (62%); followed by the ascending colon (16%); cecum, transverse colon, and splenic flexure (11%); and rectum, anastomotic, or unknown (11%). The time to diagnosis ranged from immediate to 72 hours (29 <1 hour, 8 >1 hour). All patients were hospitalized; 35 (95%) underwent exploratory laparotomy, and 2 (5%) were treated conservatively. No patient died. CONCLUSIONS: Reported perforations for procedures performed in endoscopic ambulatory surgery centers occurred most frequently during diagnostic colonoscopy in older woman with a history of surgery or diverticular disease. Reported perforations in endoscopic ambulatory surgery centers were uncommon.

Manometric techniques for the evaluation of colonic motor activity: current status.
Scott SM.
Neurogastroenterol Motil 2003;15:483-513.
Colonic motility disorders are common conditions. However, our understanding of normal, and, consequently, pathological motor function of the colon remains limited, mainly due to the relative inaccessibility of this organ for study. Investigation of colonic motility may encompass one or more of the

four separate components (myoelectric activity, phasic and tonic contractile activity and movement of intraluminal content) using electrophysiological, manometric or transit studies. Although transit studies provide the best 'functional' appreciation of colonic motor activity, and are the only techniques used in contemporary clinical practice, manometric methods are becoming increasingly popular, as they allow a direct study of colonic contractile activity over prolonged periods. To date, the majority of studies have been limited to the pelvic colon by a retrograde (per rectal) approach; however, recent technological advances have facilitated 'pan-colonic' investigation. This review concentrates on manometry of the human colon proximal to the sigmoid, and includes evaluation of both phasic and tonic motor activity, by utilization of perfused-tube and solid-state manometric catheters, and also the electronic barostat. Methodological techniques, experimental protocols and the analysis and interpretation of recorded data are critically explored, and a contemporary classification of colonic contractile activities is presented

Wide angle colonoscopy with a prototype instrument: impact on miss rates and efficiency as determined by back-to-back colonoscopies.
Rex DK, Chadalawada V, Helper DJ.
Am J Gastroenterol 2003;98:2000-5.
Polyps are missed during conventional colonoscopy, even with meticulous technique. The aim of this study was to investigate whether a prototype wide angle colonoscope is associated with a reduced miss rate for polyps.Two studies were performed. In study 1, a total of 50 patients underwent back-to-back, same-day colonoscopy by a single examiner with the prototype wide angle colonoscope and with a standard colonoscope, with the order of scopes randomized. In study 1, an attempt was made to keep examination time with the two colonoscopes equal. In study 2, a total of 20 patients were examined, 10 by the same colonoscopist who performed study 1 and 10 by a second colonoscopist. In study 2, examiners tried to perform the examinations as quickly as accuracy would allow.In study 1, the miss rate for all polyps was lower with the wide angle colonoscope (20% vs 31%; p = 0.046), although the mean examination time with the wide angle instrument was shorter (6.75 min vs 7.64 min; p = 0.0005). There was no significant difference in detection of adenomas. Polyps, including adenomas, were missed in the peripheral endoscopic field more frequently with the standard colonoscope. In study 2, wide angle colonoscopy was associated with reductions in examination time of 25% and 30% for the two examiners, respectively. Miss rates were the same for one colonoscopist but were higher for the other colonoscopist when the wide angle instrument was used.A prototype wide angle colonoscope did not eliminate polyp miss rates. Wide angle colonoscopy has the potential to reduce examination time and improve visualization of the periphery of the endoscopic field of view, but improvements in resolution are needed.

Magnetic resonance imaging for primary fistula in ano (Br J Surg 2003; 90: 877-881).
Guy R.
Br J Surg 2003;90:1307.

Is early colonoscopy after admission for acute diverticular bleeding needed?
Smoot RL, Gostout CJ, Rajan E, Pardi DS, Schleck CD, Harmsen WS, Zinsmeister AR, Nolte T, Melton LJ.
Am J Gastroenterol 2003;98:1996-9.

Prospective comparison of hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and endoanal magnetic resonance imaging of perianal fistulas.
West RL, Zimmerman DD, Dwarkasing S, Hussain SM, Hop WC, Schouten WR, Kuipers EJ, Felt-Bersma RJ.
Dis Colon Rectum 2003;46:1407-15.
SUMMARY: PURPOSE This study was conducted to determine agreement between hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and endoanal magnetic resonance imaging in the preoperative assessment of perianal fistulas and to compare these results with the surgical findings.METHODS Twenty-one patients (aged 26-71 years) with clinical symptoms of a cryptoglandular perianal fistula and a visible external opening underwent preoperative hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography, endoanal magnetic resonance imaging, and surgical exploration. The results were assessed separately by experienced observers blinded as to each other's findings. Each fistula was described with notice of the following characteristics: classification of the primary fistula tract according to Parks (intersphincteric, transsphincteric, extrasphincteric, or suprasphincteric), horseshoe, or not classified; presence of secondary tracts (circular or linear); and location of an internal opening.RESULTS The median time between hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and endoanal magnetic resonance imaging was 66 (interquartile range, 21-160) days; the median time between the last study (hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography or endoanal magnetic resonance imaging) and surgery was 154 (interquartile range, 95-189) days. Agreement for the classification of the primary fistula tract was 81 percent for hydrogen peroxide-enhanced three-dimensional

endoanal ultrasonography and surgery, 90 percent for endoanal magnetic resonance imaging and surgery, and 90 percent for hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and endoanal magnetic resonance imaging. For secondary tracts, agreement was 67 percent for hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and surgery, 57 percent for endoanal magnetic resonance imaging and surgery, and 71 percent for hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and endoanal magnetic resonance imaging in case of circular tracts and 76 percent, 81 percent, and 71 percent, respectively, in case of linear tracts. Agreement for the location of an internal opening was 86 percent for hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and surgery, 86 percent for endoanal magnetic resonance imaging and surgery, and 90 percent for hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and endoanal magnetic resonance imaging.CONCLUSIONS For evaluation of perianal fistulas, hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and endoanal magnetic resonance imaging have good agreement, especially for classification of the primary fistula tract and the location of an internal opening. These results also show good agreement compared with surgical findings. Therefore, hydrogen peroxide-enhanced three-dimensional endoanal ultrasonography and endoanal magnetic resonance imaging can both be used as reliable methods for preoperative evaluation of perianal fistulas.Improved quality of anorectal endoluminal ultrasonography using emulsion of dimethicone.De La Portilla F, Ynfante I, Fernandez A, Bejarano D, Carranza G.Dis Colon Rectum 2003;46:1436-7.SUMMARY: PURPOSE This study was designed to show the benefits of filling echography probes with water mixed with dimethicone to preclude artifacts caused by bubbles.METHODS One hundred consecutive healthy volunteers (42 males; mean age, 46 years; range, 17-72 years) were blindly randomized to undergo rectal ultrasonography using conventional degassed water or degassed aqueous solution made of 40 ml of water and 10 ml of dimethicone emulsion (1 ml/100 mg). All examinations performed by the same surgeon-unaware of nature of filler liquid-for ten minutes, and number of rectal ultrasonographies with artifacts attributable to air bubbles was recorded.RESULTS Endoluminal ultrasonography performed with conventional degassed water presented artifacts attributed to presence of air bubbles in 30 of 50 examinations (60 percent). When degassed aqueous solution was used, only 5 of 50 examinations showed artifacts caused by presence of air bubbles (10 percent). This difference was statistically significant ($P < 0.0005$). The use of conventional fluid was associated with artifacts secondary to the presence of air bubbles, adjusted odds ratio 13.5 (95 percent confidence interval, 4.56-39.88). During this experience, the solution did not damage ultrasound scanner.CONCLUSIONS We found that use of a dimethicone-degassed water mixture is simple, not expensive, safe, effective, and may reduce frequency of sonographic distortion in presence of air bubbles.

4 – PROLAPSES

Biomechanical and biochemical assessments for pelvic organ prolapse.
Goh JT.
Curr Opin Obstet Gynecol 2003;15:391-394.
SUMMARY: PURPOSE OF REVIEW It is generally believed that pelvic organ prolapse is multifactorial in etiology. It is still an enigma that some women develop prolapse while others with similar risk factors do not. Assessment of supports of the pelvic organs biomechanically and biochemically may provide the clinician with further insight into the etiology of this complex condition. Furthermore, biomechanical and biochemical studies may prove to be vital in the development of prostheses utilized in the augmentation of surgery for pelvic organ prolapse.RECENT FINDINGS When compared with clinical studies on pelvic organ prolapse, there is a paucity of recently published literature on biomechanical and biochemical studies of pelvic organ supports. The results on collagen content of vaginal/pelvic tissues in women with prolapse are variable. The amount of smooth muscle in vaginal tissue appears to be lowered in women with prolapse regardless of age compared with controls. Biomechanical analysis of prolapsed tissue in pre and postmenopausal women demonstrates only age-related differences.SUMMARY Further research is required to ascertain the role of connective tissue components, including smooth muscle, in the support of pelvic organs. Knowledge of biomechanical properties of normal vaginal connective tissue may enhance the development of prostheses designed for use during vaginal prolapse surgery.

Correlation of symptoms with degree of pelvic organ support in a general population of women: what is pelvic organ prolapse?
Swift SE, Tate SB, Nicholas J.
Am J Obstet Gynecol 2003;189:372-7.
OBJECTIVE: The purpose of this study was to evaluate the correlation between the symptoms of pelvic organ prolapse and the stage of support as determined by the pelvic organ prolapse quantification system. STUDY DESIGN: Four hundred ninety-seven women who were seen for annual gynecologic examinations were recruited. Subjects underwent a pelvic examination and their degree of pelvic support was described

according to the pelvic organ prolapse quantification system. They also completed a seven-question questionnaire regarding common symptoms of pelvic organ prolapse. Trend analysis was accomplished with linear regression. RESULTS: Only 477 subjects correctly responded to the questionnaire. They were aged 18 to 82 years (mean age, 44 years). Forty-seven percent were white, 52% were African American, and 1% were of another racial group. The number of subjects with the various pelvic organ prolapse quantification stages were stage 0 (18 subjects), stage I (214 subjects), stage II (231 subjects), and stage III (14 subjects). No subject had stage IV prolapse. The average number of positive responses per subject for the symptoms was 0.27 for stage 0, 0.55 for stage I, 0.77 for stage II, and 2.1 for stage III. This trend did not attain statistical significance. The correlation of symptoms with the leading edge of the prolapse revealed that the average number of symptoms that were reported per subject increased from <1 to >1 when the leading edge of the prolapse extended beyond the hymenal remnants. This trend was statistically significant. CONCLUSION: Women with pelvic organ prolapse with the leading edge of the prolapse beyond the hymenal remnants (some stage II and all stage III) have increased symptoms, which may help define symptomatic pelvic organ prolapse.

Vaginectomy with pelvic herniorrhaphy for prolapse.
Hoffman MS, Cardosi RJ, Lockhart J, Hall DC, Murphy SJ.
Am J Obstet Gynecol 2003;189:364-70.
OBJECTIVE: The study was undertaken to report our experience with vaginectomy and pelvic herniorrhaphy for vaginal prolapse. STUDY DESIGN: This was an observational study of patients undergoing vaginectomy (n=41) or hysterovaginectomy (n=13) for stage III/IV vaginal prolapse. Morbidity was compared with cohorts who had undergone transvaginal repair of prolapse, by using the Mann-Whitney U test. RESULTS: Morbidity did not differ significantly (estimated blood loss) between the vaginectomy and hysterovaginectomy groups. There were no recurrent hernias (6-56 months). Operative time, estimated blood loss, and day of discharge were significantly greater for the posthysterectomy prolapse group compared with the vaginectomy group. Operative time was significantly greater for the uterovaginal prolapse group versus the hysterovaginectomy group. CONCLUSIONS: Vaginectomy with or without hysterectomy with pelvic herniorrhaphy is associated with a low rate of morbidity in a high-risk patient population. Hysterovaginectomy is not associated with a clinically significant difference in morbidity over vaginectomy alone. Vaginectomy with or without hysterectomy should be offered as a surgical option to selected patients with severe genital prolapse.

Multiple vesical calculi and complete vaginal vault prolapse.
Wai CY, Margulis V, Baugh BR, Schaffer JI.
Am J Obstet Gynecol 2003;189:884-5.
Multiple-vessel calculi in the setting of pelvic organ prolapse is rare. Long-standing prolapse and bladder outlet obstruction, coupled with chronic infection are suspected to be the inciting factors in this case. To remove the calculi, an open cystolithotomy was performed at the time of an abdominal anti-incontinence procedure.

Vaginal surgical approach to vaginal vault prolapse: considerations of anatomic correction and safety.
Lovatsis D, P Drutz H.
Curr Opin Obstet Gynecol 2003;15:435-7.
SUMMARY: PURPOSE OF REVIEW Pelvic organ prolapse is a common problem in women and often requires surgical management. Vaginal vault prolapse requires significant expertise. The pelvic reconstructive surgeon should be familiar with various methods of repair, including the vaginal approach, in order to provide appropriate individualized patient care. The safety of procedures should be balanced against the need for anatomic correction.RECENT FINDINGS Vaginal surgical approaches such as sacrospinous suspension, although shown in the past to have slightly less success than abdominal approaches such as sacral colpopexy, continue to have good safety and efficacy profiles, and may be used in appropriately selected patients. Randomized clinical trials are still required to compare different vaginal procedures such as sacrospinous and uterosacral ligament suspension. A new minimally invasive transperineal approach, posterior intravaginal slingplasty, requires further evaluation before being used in routine clinical practice.SUMMARY Posthysterectomy prolapse of the apical vaginal compartment frequently requires a surgical solution. This may be approached via the abdominal, vaginal or combined route. A vaginal approach, being less invasive, may be the safer option if carefully performed. The gynecologic surgeon must balance the advantages of anatomic correction (e.g. with sacrospinous vault suspension) against the advantages of a potentially safer yet less anatomically correct procedure (e.g. colpocleisis). The surgical approach must be individualized for every patient.

Stapled hemorrhoidectomy: initial experience of a Latin American group.

Habr-Gama A, e Sousa AH, Rovelo JM, Souza JV, Beni;cio F, Regadas FS, Wainstein C, da Cunha TM, Marques CF, Bonardi R, Ramos JR, Pandini LC, Kiss D.
J Gastrointest Surg 2003;7:809-813.
The purpose of the present study was to determine the value of circular hemorrhoidectomy (procedure for prolapse and hemorrhoids [PPH]) on the basis of data collected prospectively during the initial experience of a group of Latin American surgeons. Between 2000 and 2001, PPH was performed using a circular stapler in 177 patients who had third- and fourth-degree hemorrhoidal disease. The average age of the patients was 47.7 years (range 26 to 85 years). Anal bleeding was the most common preoperative complaint (93.2%) followed by anal pain (60.2%), anal itching (43%), and constipation (41%). Hemorrhoids were classified as third degree in 132 patients (74%) and fourth degree in 45 patients (25.4%). Skin tags were detected in 86 patients (48.8%) and rectocele in 14 patients (7.9%). Data collected included patient demographics, type of anesthesia, and specific details of the surgery such as duration of the operation, distance from the staple line to the dentate line, need for complementary hemostasis, and any unexpected occurrences. Postoperative data collected included the degree of pain, which was evaluated on the basis of the type and dosage of analgesics required, laxative consumption, and the presence of bleeding, fever, urinary retention, or hematomas. Each patient completed a written questionnaire addressing these events. Patients returned for follow-up visits on days 7, 15, 30, and 90. Responses to pain, bleeding, fever, anal continence, recurrence of hemorrhoids, and level of satisfaction were compiled. The duration of the procedure ranged from 6 minutes to 2 hours (average 23 minutes), and most operations lasted no more than 20 minutes, with the exception of one that lasted 2 hours because of intraoperative bleeding. Intraoperative problems were minor. An additional one or a few sutures were required in 58.7% of patients to achieve perfect hemostasis. In 128 patients (72.3%) the hospital stay was less than 24 hours. Same-day surgery was chosen for 37 patients (20.9%). Pain was controlled with analgesia only using one to six doses of oral dipirona in 126 patients. Five patients were readmitted to the hospital: four for control of bleeding and one for conventional hemorrhoidectomy due to an acute episode of external hemorrhoidal thrombosis. At day 30, patients rated the efficacy of the procedure in alleviating preoperative symptoms as follows: 77.5% excellent; 16% good; 5.3% average, and 1.2% poor. At 3 months postoperatively no patient had had a recurrence of hemorrhoidal prolapse, and there were no instances of stenosis or anal incontinence. Surgeons also rated the efficacy of the procedure as excellent in 75%, good in 19.8%, average in 4.7%, and poor in 0.6%. With proper selection of patients and adequate stapling technique, stapled hemorrhoidectomy may be considered safe; it is easily learned, has a satisfactory degree of pain, and is well accepted by both patients and surgeons.

Mucosal plication (gant-miwa procedure) with anal encircling for rectal prolapse-a review of the Japanese experience.
Yamana T, Iwadare J.
Dis Colon Rectum 2003;46:S94-9.
SUMMARY: Although mucosal plication for rectal prolapse, known as the Gant-Miwa procedure, is described in some English textbooks, it has been infrequently performed in the West. However, this procedure has been used and developed in conjunction with anal encircling in Japan since the 1960s and is still considered to play a major role in the treatment of rectal prolapse. Certain technical details have been found necessary to ensure the success of the procedure, especially in the technique of anal encircling. For example, the use of Teflon(R) tape and routing relatively deeply and outside the external anal sphincter are necessary. Clinical results show a recurrence rate of 0 to 31 percent with no mortality and almost never any serious complications such as significant bleeding or severe sepsis, which are occasionally encountered in other perineal procedures. Most patients report improved continence after this procedure, and worsening of evacuation is rarely encountered based on our experience. Some physiologic studies have shown improved resting pressure and rectal sensation, which can have a positive influence on the defecatory function. We believe that the Gant-Miwa procedure with anal encircling should be considered as a treatment of choice among perineal procedures for rectal prolapse.

Delorme's procedure for rectal prolapse: clinical and physiological analysis.
Tsunoda A, Yasuda N, Yokoyama N, Kamiyama G, Kusano M.
Dis Colon Rectum 2003;46:1260-5.
PURPOSE: Clinical and physiological results of Delorme's procedure were assessed retrospectively in patients undergoing this procedure for rectal prolapse. METHODS: A consecutive series of 31 patients (7 males, 24 females; age, 14-93, mean 70 years) with full-thickness, rectal prolapse were treated by Delorme's procedure between 1994 and 2002. Median follow-up was 39 (range, 6-96) months. RESULTS: Good results were achieved in 27 patients (87 percent), prolapse recurrence was observed in 4 (13 percent), and mean recurrence time was 14 (range, 3-25) months. There were no postoperative deaths. Minor complications occurred in four patients. The median changes in preoperative and postoperative physiologic patterns in 16 patients were as follows: resting pressure from 21.0 (range, 5-48) to 23.5 (range,

12-76) cm H2O (P = 0.030), squeeze pressure from 64.0 (range, 27-248) to 108.0 (range, 32-264) cm H2O (P = 0.041), volume at first sensation from 100 (range, 70-180) to 70 (range, 40-130) ml (P = 0.002), maximum tolerated volume from 260 (range, 120-400) to 160 (range, 70-400) ml (P = 0.001). Incontinence improved in 63 percent. No patient became constipated, and 38 percent of those constipated preoperatively improved. The preoperative incontinence score improved from 11.5 (range, 1-20) to 6.0 (range, 0-20) after operation (P < 0.0001). CONCLUSION: Delorme's procedure had a low morbidity, did not lead to constipation, improved anal continence, and had a reasonably low recurrence rate. Improved anal sphincter and rectal sensation were associated with a reduced incidence of defecatory problems after Delorme's procedure.

5 – RETENTIONS

Transanal endorectal pull-through for Hirschsprung's disease: Experience with 68 patients.
Hadidi A.
J Pediatr Surg 2003;38:1337-40.
Background/purpose: The aim of this study was to evaluate the indications, results, and complications of transanal endorectal pull-through (TEPT) in the management of recto-sigmoid Hirschsprung's disease (HD). Methods: Between November 1998 and March 2002, 68 TEPT procedures were performed in infants and children. The patients' ages ranged from 6 days to 13 years. The primary diagnosis in all 68 patients was Hirschsprung's disease confined to the recto-sigmoid region. All children had their operations done without construction of preoperative colostomy except for one. Follow-up period ranged from 3 to 39 months (mean, 21 months). Results: The mean operating time was 90 minutes, and average length of bowel resected was 25 cm. Sixty-two patients had satisfactory results without complications. Blood transfusion was needed in only 11 patients. Recovery was very fast, and patients often were hungry within 24 hours. Feeding was resumed within 48 hours. One patient required laparotomy during the procedure owing to injury to the urethra. Two patients required colostomy 3 and 5 days after surgery respectively, because of delayed leakage. Three patients suffered from attacks of enterocolitis 6 to 9 months postoperatively. There was increased frequency of defecation (5 to 15 times daily) for 4 to 6 weeks after surgery in all the patients. There was no constipation, no incontinence, no cuff abscess, and no mortality in any of the patients. Average frequency of defecation was 1 to 3 times daily after 3 months. The cost of the TEPT technique was almost half that of the open surgery. Conclusions: TEPT takes less time, has less bleeding, shorter hospital stay, less morbidity, and earlier recovery than similar open pull-through procedures. The hazards and morbidities associated with laparotomy and colostomy may be avoided with a one-stage technique in Hirschsprung's disease confined to the recto-sigmoid region. Careful long-term follow-up is required to assess continence and sexual function.

11-year outcome analysis of endourethral prosthesis for the treatment of recurrent bulbar urethral stricture.
Shah DK, Paul EM, Badlani GH.
J Urol 2003;170:1255-8.
PURPOSE: In a North American multicenter trial of endourethral prosthesis for the treatment of recurrent bulbar urethral stricture we reported 2-year followup results for patients treated with the UroLume endoprosthesis (American Medical Systems, Inc., Minnetonka, Minnesota) between 1989 and 1996. From that same study we report long-term effectiveness and safety results on 24 of 179 patients, all of whom have completed 11 years of followup. MATERIALS AND METHODS: The North American Study Group enrolled 179 patients with recurrent bulbar urethral stricture between March 1989 and April 1996. Eleven-year post-implantation followup was obtained for 24 of these original patients in a post-approval study. Evaluation included uroflowmetry before versus after insertion, urinary symptom score, local tissue changes and percentage of stent covered by epithelium. RESULTS: At 11 years mean flow rates before and after stenting were 9.5 and 20.8 ml per second, respectively, and mean urinary symptom scores were 11.3 before and 3.04 after stent. No demonstrable tissue changes were visualized at the site of the stent in 31.8%, while 40.9% had mild, 22.7% had moderate and 4.6% had marked changes. There were 8 patients who underwent 9 re-treatment procedures within the stented area during followup. CONCLUSIONS: When used appropriately the UroLume Endoprosthesis is an effective treatment for recurrent bulbar urethral stricture. It has low morbidity, re-treatment and explantation rates, and local tissue change was mild or nonexistent in the majority of patients.

The enigma of urinary retention in posttraumatic minimally responsive state: A case report: Karen S. Chua
Arch Phys Med Rehabil 2003;84:E7.
SETTING: Tertiary inpatient rehabilitation hospital. Patient: 43-year-old Asian woman with posttraumatic

minimally responsive state and tetraparesis. Case Description: 4 months into her inpatient rehabilitation program after severe traumatic brain injury (TBI), the patient developed acute urinary retention (UR) with high postvoid urine volumes and urodynamic evidence of detrusor acontractility. Subsequent management involved 4 hourly intermittent catheterizations. Spinal cord injury, fecal impaction, diabetes mellitus, and bladder paralytic drugs were absent. Possible etiologies for her bladder paralysis included treatments instituted for severe spasticity of all 4 limbs: 300mg/d of oral dantrolene sodium, 500U of intramuscular botulinum toxin type A (Dysport) to both upper limbs, and partial alcohol neurolysis of the right sciatic nerve for severe knee flexor spasticity. Baclofen was not used. Assessment/Results: Spontaneous voiding returned with reduction of dantrolene sodium to 150mg/d, with eventual attainment of catheter-free status within 1 week. Urodynamic studies documented return of detrusor activity. Discussion: This is the first reported case to my knowledge of urinary retention after spasticity treatment involving therapeutic doses of dantrolene sodium. Patients in a minimally responsive state after TBI may already be at increased risk of UR due to severe immobility, motor weakness, profound cognitive-linguistic impairment which may confound the diagnosis of UR, and pontine and/or brainstem injury. Conclusion: Patients in a minimally responsive state receiving high doses of dantrolene sodium to treat spasticity may benefit from routine monitoring of voiding status and postvoid residual urine volumes.

Relation of postvoid residual to urinary tract infection during stroke rehabilitation.
Dromerick AW, Edwards DF.
Arch Phys Med Rehabil 2003;84:1369-72.
OBJECTIVES: To examine (1) risk factors for urinary tract infection (UTI) during stroke rehabilitation and (2) the relation of postvoid residual (PVR) to the frequency of UTI. DESIGN: Prospective case series. SETTING: Academic specialty stroke rehabilitation service. PARTICIPANTS: One hundred one consecutive admissions for stroke rehabilitation. INTERVENTIONS: Not applicable.Main outcome measure Presence or absence of UTI. RESULTS: Previously undiagnosed UTI was found in 28 of 101 subjects. Two or more PVR determinations of 150mL or more were an independent risk factor for UTI. In multivariate analysis, factors associated with increased risk of UTI included only use of beta-blockers and 2 peak PVR determinations of 150mL or more. Single determinations were not significant. CONCLUSION: The optimal PVR for initiating bladder catheterization during stroke rehabilitation remains unknown, but the risk of UTI increases only when 2 or more ultrasound PVR readings are more than 150mL.

An experimental model for stricture studies in the anterior urethra of the male rabbit.
Andersen HL, Duch BU, Nielsen JB, Joergensen B, Ledet T.
Urol Res 2003;None:None.
In this study, an animal model was developed for the examination of urethral strictures (US). Through a resectoscope, a resection was made in the urethras of 15 male rabbits. After 30 days, the rabbits were evaluated with urethrography, impedance planimetry and either histology or the determination of collagen content. Fifteen rabbits serving as controls were evaluated in the same way. Three rabbits in the resection group and one in the control group died before evaluation. Urethrography demonstrated a stricture in the remaining 12 animals in the resection group. The urethras of the control animals were all normal. Impedance planimetry confirmed that the luminal cross sectional area (CSA) of the strictures was significantly smaller than the CSA of the corresponding part of the urethra in the control group. No difference in CSA was found 1 cm proximal to the stricture. The strictures consisted of densely woven collagen which sent tongues into the adjacent normal parts of the urethra. No difference in collagen content was found between the two groups either at the stricture site or 1 cm proximally. The described method of producing US in the rabbit model was very consistent with all operated animals developing a stricture. The model might prove valuable in evaluating new methods for the treatment of US.

Alpha blocker therapy for children with dysfunctional voiding and urinary retention.
Cain MP, Wu SD, Austin PF, Herndon CD, Rink RC.
J Urol 2003;170:1514-5.
PURPOSE: Alpha blocker therapy has been successfully used to decrease residual urine in children with complex neuropathic and nonneuropathic voiding dysfunction. We evaluated the safety and efficacy of using selective alpha blocker therapy for children with uncomplicated voiding dysfunction and underlying poor bladder emptying. MATERIALS AND METHODS: A total of 55 patients with a mean age of 7.9 years presented with symptoms of urinary incontinence, urgency and urinary tract infection. All patients had increased post-void residual (PVR) on bladder ultrasound, with a mean residual volume of 65 ml (22% of age expected capacity). All patients were treated with doxazosin, a selective alpha-1 adrenergic antagonist, at dosages of 0.5 mg to 2.0 mg daily. Of the patients 38 were treated at presentation with a regimen of anticholinergics, timed voiding and antibiotic prophylaxis before initiating alpha blocker therapy. Patients were reevaluated with post-void ultrasound of the bladder 6 weeks after initiating alpha blocker therapy. RESULTS: After starting doxazosin average PVR decreased to 8 ml ($p < 0.0001$), representing an 88%

reduction in residual urine (or reduction to only 2.7% of age expected bladder capacity). Medication was discontinued in 2 patients due to minor side effects. CONCLUSIONS: Selective alpha blocker therapy appears to be effective for improving bladder emptying in children with an overactive bladder, wetting, recurrent infection and increased PVR urine. This therapy may be used as either a replacement or in addition to biofeedback in patients with urinary retention. Further investigation, including a prospective randomized trial of alpha blocker therapy in children with urinary tract dysfunction, is warranted based on the findings of our study.

Can bladder outflow obstruction be diagnosed from pressure flow analysis of voiding initiated by involuntary detrusor overactivity?
Dorkin TJ, Leonard AS, Pickard RS.
J Urol 2003;170:1234-6.
PURPOSE: We investigated whether a diagnosis of bladder outflow obstruction could be established from pressure flow analysis of a void initiated by involuntary detrusor overactivity. MATERIALS AND METHODS: A total of 79 men with lower urinary tract symptoms were identified prospectively. In each subject 2 sequential pressure flow studies were performed during the same session. Pressure flow data were recorded during a voluntary void and voiding initiated by involuntary detrusor overactivity. Pressure flow parameters were compared using the paired t test and differences in classification according to the International Continence Society nomogram were analyzed using the chi-square test. RESULTS: The maximum flow rate showed no significant difference between voluntary voiding and voiding initiated by involuntary detrusor overactivity. Detrusor pressure at maximum flow showed a slight, statistically significant but not clinically significant increase during voiding initiated by involuntary detrusor overactivity. However, the diagnostic classification remained unchanged in 64 of 79 men (80%). In no case was the diagnosis altered from bladder outflow obstruction to nonobstruction or vice versa when comparing the 2 pressure flow studies. There were significant increases in maximum detrusor pressure and detrusor pressure at the initiation of voiding during voiding initiated by involuntary detrusor overactivity. CONCLUSIONS: This study demonstrates that increased detrusor pressure observed during voiding subsequent to detrusor overactivity does not change the diagnostic classification in 80% of men. The results provide evidence that bladder outflow obstruction can be reliably diagnosed based on pressure flow parameters recorded during voiding initiated by involuntary detrusor overactivity.

Biofeedback treatment of constipation: a critical review.
Heymen S, Jones KR, Scarlett Y, Whitehead WE.
Dis Colon Rectum 2003;46:1208-17.
PURPOSE: This review was designed to 1) critically examine the research design used in investigations of biofeedback for pelvic floor dyssynergia, 2) compare the various biofeedback treatment protocols for pelvic floor dyssynergia-type constipation used in this research, 3) identify factors that influence treatment outcome, and 4) identify goals for future biofeedback research for pelvic floor dyssynergia. METHODS: A comprehensive review of both the pediatric and adult research from 1970 to 2002 on "biofeedback for constipation" was conducted using a Medline search in all languages. Only prospective studies including five or more subjects that described the treatment protocol were included. In addition, a meta-analysis of these studies was performed to compare the outcome of different biofeedback protocols for treating constipation. RESULTS: Thirty-eight studies were reviewed, and sample size, treatment protocol, outcome rates, number of sessions, and etiology are shown in a table. Ten studies using a parallel treatment design were reviewed in detail, including seven that randomized subjects to treatment groups. A meta-analysis (weighted by subjects) was performed to compare the results of two treatment protocols prevalent in the literature. The mean success rate of studies using pressure biofeedback (78 percent) was superior ($P = 0.018$) to the mean success rate for studies using electromyography biofeedback (70 percent). However, the mean success rates comparing studies using intra-anal electromyography sensors to studies using perianal electromyography sensors were 69 and 72 percent, respectively, indicating no advantages for one type of electromyography protocol over the other ($P = 0.428$). In addition to the varied protocols and instrumentation used, there also are inconsistencies in the literature regarding the severity and etiology of symptoms, patient selection criteria, and the definition of a successful outcome. Finally, no anatomic, physiologic, or demographic variables were identified that would assist in predicting successful outcome. Having significant psychological symptoms was identified as a factor that may influence treatment outcome, but this requires further study. CONCLUSION: Although most studies report positive results using biofeedback to treat constipation, quality research is lacking. Specific recommendations are made for future investigations to 1) improve experimental design, 2) clearly define outcome measures, 3) identify the etiology and severity of symptoms, 4) determine which treatment protocol and which component of treatment is most effective for different types of subjects, 5) systematically explore the role of psychopathology in this population, 6) use an adequate sample size that allows for meaningful analysis, and 7) include long-term follow-up data.

Constipation as a presenting symptom.
Lawthom C, Durdey P, Hughes T.
Lancet 2003;362:958.

Botulinum Toxin for Spastic GI Disorders.
Brisinda G, Maria G.
Gastrointest Endosc 2003;58:472-3.

Chronic constipation.
Lembo A, Camilleri M.
N Engl J Med 2003;349:1360-8.

Polyethylene glycol 3350 for constipation in children with dysfunctional elimination.
Erickson BA, Austin JC, Cooper CS, Boyt MA.
J Urol 2003;170:1518-20.
PURPOSE: Children with daytime wetting often have constipation, and treatment of constipation helps children become dry. Polyethylene glycol 3350 (Miralax, Braintree Laboratories, Braintree, Massachusetts) is a nonaddictive, tasteless powder that can be mixed with any liquid for treatment of constipation. MATERIALS AND METHODS: We review our use of polyethylene glycol 3350 in 35 girls and 11 boys with dysfunctional elimination. Noninvasive urodynamic studies and post-void residual measurement were performed before and during treatment. RESULTS: A significant increase in frequency of bowel movements occurred while taking polyethylene glycol 3350 ($p = 0.0001$). Average final dose was 0.63 gm/kg. The only reported adverse effect was diarrhea (9 patients). Of the children 18 became dry, 26 had decreased wetting and 2 had no improvement. Voided volume increased (146 vs 210 ml, $p < 0.0001$) and post-void residual decreased significantly (92 vs 48 ml, $p < 0.0001$) while on polyethylene glycol 3350. Ten children were still considered constipated including both patients who experienced no change in wetting. Average final dose in this group (0.69 gm/kg) did not differ significantly from those in whom constipation resolved (0.61 gm/kg). Patients in whom constipation resolved had a significantly lower post-void residual than those who remained constipated (11.8% vs 30.6%, $p < 0.01$) and were significantly more likely to become dry or improved ($p = 0.045$). CONCLUSIONS: The efficacy, compliance and lack of significant side effects make polyethylene glycol 3350 an ideal substance for treatment of constipation in children with dysfunctional elimination. Persistent constipation was associated with decreased resolution of voiding symptoms and significantly increased post-void residuals.

Colonic motor activity in slow-transit idiopathic constipation as identified by 24-h pancolonic ambulatory manometry.
Hagger R, Kumar D, Benson M, Grundy A.
Neurogastroenterol Motil 2003;15:515-22.
Colorectal motor activity in slow-transit idiopathic constipation has not been fully evaluated under physiological conditions. The aim of this study was to evaluate colorectal motor activity in chronic idiopathic constipation using 24-h ambulant pancolonic manometry. Ten healthy volunteers (six females) 19-31 years of age, and eight females 25-46 years of age with slow-transit idiopathic constipation were studied. Motor activity was measured using two custom-made silicone-coated catheters, each with five solid-state pressure transducers. Bowel preparation or sedation was not used. Frequency of high-amplitude propagated contractions was reduced in chronic idiopathic constipation, median 1.9/24 h vs 6/24 h ($P = 0.01$). Contractile frequency of low-amplitude complexes was reduced throughout the colon in slow-transit idiopathic constipation ($P < 0.0001$). The interval between contractile complexes was reduced in the transverse colon and splenic flexure ($P < 0.0001$). This study demonstrates that colonic motor activity is abnormal in slow-transit idiopathic constipation; decreased motor activity leads to a reduction in propulsion of intraluminal contents.

Internal anal sphincter achalasia in children: clinical characteristics and treatment with Clostridium botulinum toxin.
Ciamarra P, Nurko S, Barksdale E, Fishman S, Di Lorenzo C.
J Pediatr Gastroenterol Nutr 2003;37:315-9.

6 – INCONTINENCES

Patterns of abnormal pudendal nerve function that are associated with postpartum fecal incontinence.

Fitzpatrick M, O'brien C, O'connell PR, O'herlihy C.
Am J Obstet Gynecol 2003;189:730-5.
OBJECTIVE: The purpose of this study was to assess patterns of abnormal pudendal nerve function in women who complain of postpartum fecal incontinence.Study design During a 12-month period, a cohort of 83 women underwent neurophysiologic assessment as part of an evaluation of fecal incontinence after vaginal delivery. Pudendal nerve assessment consisted of the measurement of the clitoral-anal reflex and quantitative electromyography of the external anal sphincter. Endoanal ultrasound examination and anal manometry were also performed in each patient. RESULTS: Thirty of 83 women (38%) with fecal incontinence were found to have abnormal neurophysiologic condition, among whom four identifiable patterns of abnormality emerged. Five women (17%) had evidence of pudendal nerve demylenation with a prolonged sensory threshold of the clitoral-anal reflex (>5.2 mA), although electromyography studies were normal. Eight women (27%) had abnormal electromyography results that were consistent with axonal neuropathy with or without reinervation, in whom the clitoral-anal reflex was normal. Thirteen women (43%) demonstrated a mixed demyelinating and axonal pudendal neuropathy, with evidence of reinervation. Four women (13%) had abnormal patterns of neurophysiologic condition that was not attributable directly to past obstetric trauma but to coincident medical problems. CONCLUSION: Four abnormal patterns of pudendal nerve function may be identified, three of which (demyelinating, axonal, and mixed demyelinating/axonal) can be attributed to specific past obstetric events, although a fourth radicular pattern is due to coincident medical or orthopedic problems. Assessment of pudendal nerve function is important in women with postpartum fecal incontinence because particular patterns of abnormality correlate with different symptoms and can influence treatment options.

Permanent sacral nerve modulation for fecal incontinence and associated urinary disturbances.
Altomare DF, Rinaldi M, Petrolino M, Monitillo V, Sallustio P, Veglia A, De Fazio M, Guglielmi A, Memeo V.
Int J Colorectal Dis 2003;None:None.
BACKGROUND AND AIMS. Sacral nerve modulation (SNM) using an implantable pulse generator is gaining increasing acceptance in the treatment of several functional disturbances of the urinary and intestinal tract. This new therapeutic approach offers new possibilities in the treatment of fecal incontinence (FI) by means of its possible effects on anorectal physiology. PATIENTS AND METHODS. Fourteen patients with FI, six of whom had associated urinary disturbances, underwent permanent SNM after successful peripheral nerve evaluation tests. All had a clinical evaluation including FI grading systems (American Medical systems, AMS; Continence Grading System, CGS) and quality of life questionnaires (Fecal Incontinence Quality of Life, FIQL), and anorectal physiology tests performed before and during electrostimulation. Two patients had a lead displacement which was repositioned. Median follow-up was 14 months (range 6-48 months). RESULTS. AMS scores decreased significantly from 101 to 67 after 24 months CGS scores from 15 to 2 after 2 months. The median number of episodes of major incontinence per 2 weeks decreased from 14 to 1 after 24 months. FIQL scores improved significantly in the nine patients tested from an overall score of 1.59 to 3.3, with improvement in all areas of the FIQL. Four of the six patients with associated urinary disturbances had a significant improvement in their symptoms. Anal resting and squeezing tone did not change significantly, nor did rectal volumetry, compliance, rectoanal inhibitory reflex, or length of the anal high-pressure zone, while 24-h rectal manometry showed inhibition of the spontaneous rectal motility complexes after meal and on awakening in the only two patients undergoing this investigation. CONCLUSION. Although the mechanism of action of SMN is still unclear and requires further investigations, clinical results are very encouraging, confirming the role of this new and safe procedure in the treatment of FI and associated urinary disturbances.

Double incontinence in urogynecologic practice: a new insight.
Soligo M, Salvatore S, Milani R, Lalia M, Malberti S, Digesu GA, Mariani S.
Am J Obstet Gynecol 2003;189:438-43.
OBJECTIVES: This study was undertaken to evaluate the prevalence of anal incontinence in an urogynecologic setting and to investigate the relationship between lower urinary tract dysfunction and anal incontinence. STUDY DESIGN: The study included 504 women referred to our urogynecologic outpatient clinic who were prospectively investigated and asked specific questions on anal incontinence. Clinical and instrumental data were compared between women with urinary incontinence and with double incontinence, with further analysis for subgroups in the anal incontinent group of women (passive/urge). For continuous variables, the Wilcoxon rank sum test was used, and the Fisher exact test was applied to dicotomic variables. Logistic regression was used for categorical data. A level of $P<.005$ was considered significant. RESULTS: Of the investigated women, 20.2% were also anally incontinent. Women with double incontinence showed higher scores for urinary urgency ($P=.010$), which reached the established level of significance only in the subgroup with urge anal incontinence ($P=.003$). In this group, a higher prevalence of detrusor overactivity was observed. CONCLUSION: Anal incontinence is highly prevalent among women with lower urinary tract disorders. The existence of subgroups of patients having different kinds of anal and

urinary disorders should be taken into consideration both for research purposes and for new treatment perspectives.

Vaginal sacrospinous colpopexy and perineorrhaphy for faecal incontinence: preliminary report.
Hefni M, El-Toukhy T, Bhaumik J.
Eur J Obstet Gynecol Reprod Biol 2003;110:211-4.
OBJECTIVE: To review our experience with vaginal sacrospinous colpopexy combined with perineorraphy performed for patients with genital prolapse who concomitantly suffered from faecal incontinence (FI). SETTING: Gynaecology Department, Benenden Hospital, Benenden, Kent, UK. SUBJECTS AND METHODS: Between January 1997 and December 2001, 16 patients presented with symptoms of genital prolapse and faecal incontinence. Eleven out of the 16 patients (69%) had anorectal physiological tests and endoanal ultrasound performed before surgery. All patients had sacrospinous colpopexy and perineorraphy. Simultaneous vaginal hysterectomy was performed in two patients and anterior colporrhaphy in six patients. RESULTS: The mean age was 60 years and median parity was 2. The mean operative time was 62min (range 35-100) and the mean blood loss was 60ml (range 30-160). The mean follow-up period was 37 months (6-65). Thirteen patients (81%) reported no faecal incontinence after surgery, and two patients (12.5%) reported improvement. One patient (6.5%) had no improvement in her symptom of faecal incontinence after surgery. None of the patients had recurrence of genital prolapse during follow up. CONCLUSION: Sacrospinous colpopexy combined with perineorraphy can help to cure symptoms of faecal incontinence associated with genital prolapse. The possible mechanisms for such a favourable result are discussed.

Early evaluation of bowel symptoms after primary repair of obstetric perineal rupture is misleading: an observational cohort study.
Nazir M, Stien R, Carlsen E, Jacobsen AF, Nesheim BI.
Dis Colon Rectum 2003;46:1245-50.
PURPOSE: This study was conducted to investigate the long-term development of anal and urinary incontinence and to investigate the clinical value of electromyography and pudendal nerve terminal motor latency after obstetric anal sphincter rupture. METHODS: One hundred females with obstetric anal sphincter rupture were evaluated by an anal incontinence questionnaire at 5 and 18 months postpartum and by a urine incontinence questionnaire at 18 months postpartum. Pudendal nerve terminal motor latency and electromyography examinations were performed on 68 and 67 females, respectively, at 10 months postpartum. RESULTS: Fecal incontinence increased from 7 to 17 percent between 5 and 18 months ($P = 0.04$). At 18 months, the incidence of anal incontinence in females working outside the home (42/70 (60 percent)) was greater than that for females still at home with their child (12/30 (40 percent); $P = 0.05$). Anal incontinence at 18 months was significantly higher ($P = 0.01$) in subjects with pathologic electromyographic findings (76 percent) than in those with normal electromyography (45 percent; observed differences, 31 percent (95 percent confidence interval, 9 to 54 percent)). Thirty percent of the subjects had urinary stress incontinence. The risk of fecal urgency was greater in females with urinary urgency (difference, 44 percent; 95 percent confidence interval, 18 to 69 percent) and urinary stress incontinence (difference, 24 percent; 95 percent confidence interval, 3 to 44 percent) than in those without. CONCLUSION: Fecal incontinence symptoms worsen with increased follow-up time, and the change in working status is the most likely explanation; therefore, early evaluation of bowel symptoms is misleading. Denervation injury of the anal sphincter is an independent risk factor for anal incontinence but has no association with urinary incontinence. Urinary urgency and stress incontinence symptoms are strongly associated with fecal urgency.

Experimental model of continent colostomy using rectus abdominis neosphincteroplasty.
Hetzer FH, Schwizer W, Kuenzi W, Demartines N.
Br J Surg 2003;90:1273-9.
BACKGROUND: Use of dynamic myoplasty to create a continent stoma has produced promising results, but long-term stoma continence has not been achieved. The aim of the study was to establish and test a new model. METHODS: Three types of dynamic rectus abdominis sphincteroplasty around a colostomy and two conditioning protocols were tested in ten domestic pigs. Continence was assessed by means of conventional defaecography and neosphincter manometry after 8 and 12 weeks. The neosphincter muscle was studied histologically to assess the transformation of muscle type. RESULTS: Use of a distal rectus muscle sling surrounding the stoma by 270 degrees with a low-frequency conditioning protocol achieved a continent colostomy for more than 12 h on each of 5 consecutive days. The neosphincter had a 40-mm high-pressure segment with mean pressure of 74 (range 67-82) mmHg. The proportion of type I muscle fibres increased from 38 (range 32-42) to 74 (range 66-78) per cent after 12 weeks of conditioning. CONCLUSION: This pilot study demonstrated the feasibility of a continent stoma in an animal model with a dynamic rectus neosphincter. Long-term results should be confirmed in a larger series before use in humans can be considered.

Combined fecal and urinary incontinence: an update.
Lacima G, Pera M.
Curr Opin Obstet Gynecol 2003;15:405-410.
SUMMARY: PURPOSE OF REVIEW To review last year's literature on combined fecal and urinary incontinence, highlighting the most recent contributions on prevalence, physiopathology, evaluation, and treatment.RECENT FINDINGS Prevalence studies of double incontinence are rare but both conditions are frequently associated with pelvic organ prolapse. Vaginal delivery and chronic straining are risk factors for double incontinence, and pudendal neuropathy may be responsible for deterioration of continence. Electrophysiological studies in patients with combined fecal and urinary incontinence are necessary to confirm this hypothesis. Patients with double incontinence should be evaluated by a multidisciplinary group of specialists. A complete evaluation including urodynamics, anal manometry, anal ultrasound and electrophysiologic tests is recommended in most cases. Conservative therapy including pelvic floor exercises combined with bladder training and biofeedback has been demonstrated to be effective. Surgery is indicated in very few selected patients and may be performed simultaneously for both fecal and urinary incontinence. New studies are necessary that focus on identification of other risk factors and preventive strategies before deterioration of continence occurs.SUMMARY Combined fecal and urinary incontinence is not uncommon and its pathophysiology involves multiple factors. These patients should be evaluated by a multidisciplinary group of specialists and offered appropriate measures to improve their quality of life.

Prevention of urinary and anal incontinence: role of elective cesarean delivery.
Lal M.
Curr Opin Obstet Gynecol 2003;15:439-48.
SUMMARY: PURPOSE OF REVIEW Currently, prophylachic elective cesarean to prevent incontinence is being promoted without robust evidence supporting it, this has created confusion among health personnel. Past research centered on defining the damaging effect of vaginal birth on continence whilst the limited research on elective cesarean considered it protective. Cesarean delivery has economic, obstetric, gynecological and psychosocial consequences, but incontinence is not uncommon with a persistent morbidity. There is confusion among health personnel about advocating elective cesarean delivery to prevent incontinence. Reviewing current research would facilitate obstetric thinking.RECENT FINDINGS Multiplanar endosonography and three-dimensional magnetic resonance imaging scanning are reportedly better in delineating structural alterations in the continence mechanism following vaginal birth and could be applied to postcesarean incontinence. Incontinence can follow vaginal or elective cesarean delivery and the severity following either mode is comparable. Urinary incontinence can resolve, persist or start de novo and the primiparous prevalence is similar following cesarean or vaginal birth. Transient anal incontinence can manifest during pregnancy. Paradoxically, pelvic floor strengthening exercises are beneficial for pregnancy-related incontinence, yet urinary incontinence occurs in nulliparas notwithstanding a strong pelvic floor.SUMMARY Improved imaging techniques should promote a better understanding of postcesarean incontinence. Since severe incontinence can occur after elective cesarean, its reportedly preventative role deserves more scrutiny. When incontinence occurs without labor, it is transient or shows exercise-related improvement; the role of elective cesarean delivery seems tenuous and needs careful evaluation. Current evidence does not support the routine use of elective cesarean to prevent incontinence so the delivery mode should continue to be dictated by obstetric considerations.

Treatment of neuropathic urinary and fecal incontinence: L. Skobojko-Wlodaraka.
Eur J Pediatr Surg 12:318-321, (October), 2002.
J Pediatr Surg 2003;38:1420B.
The author presents 14 children after myelomeningocal repair with focal and urinary incontinence, aged 6 to 17 years, who have undergone the MACE (Malone Antegrade Continence Enema) procedure. MACE with synchronous Mitrancff continent stoma creation was performed in one child with severe stenosis of the urethra. MACE with simultaneous bladder augmentation was performed in 10 patients, 5 of whom underwent colocystoplasty, 3 ileocystoplasty, and 2 ureterocystoplasty. Of these 10 children, 3 had additionally undergone the Mitranoff procedure. Patients' follow-up ranged from 6 months to 2 years. Three children had trouble with the MACE stoma because of stenosis, one of whom required stoma revision. All patients became dry and clean. This operation improved not only their quality of life, but also their independence.-Thomas A. Angerpointner

Effects of tramadol on rat detrusor overactivity induced by experimental cerebral infarction.
Pehrson R, Stenman E, Andersson KE.
Eur Urol 2003;44:495-9.
OBJECTIVE: Cerebrovascular disease, such as stroke, frequently results in incontinence by reducing suprapontine micturition control. Intraluminal occlusion of the middle cerebral artery (MCA), which produces

detrusor overactivity, has been introduced as a useful model of stroke-induced lower urinary tract dysfunction. Recently, the effective analgesic tramadol, was found to possess inhibitory actions on normal rat micturition. The current study aimed to examine the potential effect of tramadol on rat detrusor overactivity due to cerebral infarction.METHODS: In female Sprague-Dawley rats, cerebral ischemia was induced by occlusion of the MCA and the urinary bladder was catheterised. Three days later, continuous cystometry was performed in awake animals and the effects of tramadol given intravenously were studied.RESULTS: In cerebral infarcted rats, bladder capacity was lower (48+/-9%) and micturition pressure higher (76+/-21%) than in control rats. Tramadol 5mgkg(-1) given i.v., increased bladder capacity (59+/-29%) and threshold pressure (47+/-32%) to values similar to those in control rats. However, micturition pressure was not significantly altered. Tramadol induced diuresis in some, but not all, cerebral infarcted rats.CONCLUSION: Tramadol normalised detrusor overactivity in MCA-occluded rats. The drug might have a treatment potential in patients with detrusor overactivity after stroke.

Use of botulinum toxin type B for the treatment of detrusor hyperreflexia in a patient with multiple sclerosis: a case report.
Dykstra DD, Pryor J, Goldish G.
Arch Phys Med Rehabil 2003;84:1399-400.
We describe a patient with multiple sclerosis (MS) who had detrusor hyperreflexia that was not responsive to oral medications or clean intermittent catheterization. This patient was successfully treated with 2 separate injections of botulinum toxin type B into the bladder. The results of the treatment lasted 4 months and there were no side effects. A cystometrogram (CMG) done before the botulinum toxin type B injections showed significant detrusor instability. A repeat CMG months later showed no detrusor instability. To our knowledge, this is the first reported successful use of botulinum toxin type B in a patient with detrusor hyperreflexia from MS.

Maximal bladder capacity as the predictor of response to desmopressin on nocturnal enuresis in patients with spinal cord injuries.
Kim YR, Kim HJ.
Arch Phys Med Rehabil 2003;84:E2-E3.
OBJECTIVES: To evaluate the efficacy of intranasal desmopressin inhalation on nocturnal enuresis in patients with spinal cord injury (SCI) and to investigate the validity of maximal bladder capacity as the predictor of response to intranasal desmopressin inhalation. Design: Before and after interventional trial. Setting: University-affiliated hospital. Participants: 22 adults SCI with nocturnal enuresis were divided into 2 groups: the large bladder capacity group (bladder capacity, >250mL; n=11) and the small bladder capacity group (bladder capacity, <250mL; n=11). Intervention: All participants were treated with intranasal desmopressin, 10microg daily at bedtime for 4 weeks. Main Outcome Measures: Total volume of daily nocturnal incontinence and serum electrolytes. Maximal bladder capacities were measured by urodynamic evaluation. Results: After intranasal desmopressin inhalation, mean volume of nocturnal incontinence decreased significantly in the large bladder capacity group (P<.05), but not in the small bladder capacity group (P>.05). The mean maximal bladder capacity of responders was larger than that of nonresponders (P<.05). Neither hyponatremia nor serum electrolytes abnormalities occurred. Conclusions: Intranasal desmopressin inhalation is safe and effective in symptomatic management of neurogenic bladder dysfunction in selected patients with SCI. Maximal bladder capacity is a valuable predictor of response to desmopressin.

Overactive bladder: magnetic versus electrical stimulation.
Takahashi S, Kitamura T.
Curr Opin Obstet Gynecol 2003;15:429-33.
SUMMARY: PURPOSE OF REVIEW To review recent literature on the electrical and magnetic stimulation of the sacral nerve roots and pelvic floor for the treatment of overactive bladder.RECENT FINDINGS Overactive bladder is a common condition affecting millions of women worldwide, with a significant effect on quality of life. Electrical stimulation and neuromodulation of the sacral nerve roots have provided a useful alternative for these patients with satisfactory outcomes. The use of the procedures has been limited, however, mainly due to local discomfort/pain or invasiveness of the surgical procedure. Magnetic stimulation can activate deep neural structures by induced electric currents noninvasively. Recent investigations demonstrated that magnetic stimulation of the sacral roots suppressed detrusor overactivity more effectively compared with electrical stimulation. Clinical trials including randomized placebo-controlled studies demonstrated the excellent short-term effect of magnetic stimulation in the treatment of overactive bladder.SUMMARY Magnetic stimulation appears to induce inhibitory effects on detrusor overactivity in a similar manner to electrical stimulation, with significant clinical advantages. Although further studies are needed to establish long-term efficacy, magnetic stimulation of the sacral nerve roots may be a promising alternative treatment for overactive bladder.

Urinary incontinence: newer pharmacotherapeutic trends.
Huggins ME, Bhatia NN, Ostergard DR.
Curr Opin Obstet Gynecol 2003;15:419-427.
SUMMARY: PURPOSE OF REVIEW Urinary incontinence is an under-reported epidemic with profound effects on quality of life. With recent pharmacologic advances, the belief that incontinence is an inevitable part of aging should be abandoned. Because many patients are unaware of curative options, they fail to report their symptoms and increase their risk of developing associated comorbid disease. Failure to diagnose and treat this disease in a timely manner increases society's economic burden associated with incontinence.RECENT FINDINGS Pharmacologic treatment of urge incontinence previously had limited treatment success because efficacious drugs were poorly tolerated, resulting in low patient compliance. Tolerance continues to be improved due to innovative new drugs and alternative delivery systems. While previous pharmacologic management of mild stress incontinence consisted of off-label agents with limited effectiveness, newly introduced drug therapy adds a viable, nonsurgical option for women with stress incontinence.SUMMARY The goal of this review is to update the clinician on the efficacy and tolerability of established and investigational pharmacologic modalities of therapy.

Intrinsic urethral sphincteric deficiency: critical analysis of various diagnostic modalities.
Betson LH, Siddiqui G, Bhatia NN.
Curr Opin Obstet Gynecol 2003;15:411-7.
SUMMARY: PURPOSE OF REVIEW The proper diagnosis of intrinsic urethral sphincteric deficiency among women with urinary incontinence carries important implications for determining the most effective medical or surgical therapy. Numerous diagnostic tests have been described attempting to make an accurate and comprehensive assessment of urethral function, but all suffer from a lack of standardization or inconsistently quoted reference values. This paper will review the literature on the positive aspects and limitations of commonly employed procedures to diagnose intrinsic urethral sphincteric deficiency.RECENT FINDINGS Specific urodynamic studies, including the 'active' valsalva leak-point pressure and the 'static' urethral pressure profile are commonly used to determine urethral competence. However, these tests measure specific aspects of the continence mechanism under different clinical conditions, which limits the direct comparison between them. More complex techniques such as Doppler ultrasound, video-urodynamics and both static and dynamic magnetic resonance imaging are attempting to validate the urodynamic findings for urethral function. This approach may encourage the standardization of these procedures and parameters for diagnosing intrinsic urethral sphincteric deficiency.SUMMARY A single definitive test for the diagnosis of intrinsic urethral sphincteric deficiency does not exist. Instead, multiple tests should be employed to reach a consensus for the diagnosis. This should include a complete voiding history, simple office examinations, and advanced studies such as urethrocystoscopy, urodynamics and possibly radiological evaluations. Understanding the limitations and variabilities of their equipment and the specific studies utilized should enable practitioners to standardize the approach for determining the extent of urethral dysfunction.

Management of urinary incontinence and nocturnal enuresis in attention-deficit hyperactivity disorder.
Crimmins CR, Rathbun SR, Husmann DA.
J Urol 2003;170:1347-50.
PURPOSE: We sought to determine whether attention-deficit hyperactivity disorder (ADHD) influences the resolution of urinary incontinence (UI, or diurnal and nocturnal wetness) and monosymptomatic nocturnal enuresis (NE). MATERIALS AND METHODS: We performed a retrospective review of patients with ADHD, UI and NE. Individuals with UI were treated with timed voiding, and anticholinergics were added only after timed voiding failed. Patients with NE were treated with either an enuretic alarm, desmopressin or imipramine. Statistical comparisons used a control population matched for age, sex, IQ, and urinary and gastrointestinal symptoms. RESULTS: The presence of ADHD had a negative effect on the resolution of incontinence, with 68% of the patients with ADHD becoming continent compared to 91% of controls ($p < 0.01$). Two factors impact the resolution of wetness in patients with ADHD-treatment noncompliance and IQ. Treatment noncompliance was found in 48% of the patients with ADHD compared to 14% of controls ($p < 0.01$). The IQ of patients with ADHD affected success, with 32% of children with an IQ of less than 84 achieving continence compared to 80% of those with an IQ of 84 or greater ($p < 0.01$). Patients with ADHD and NE responded similarly to controls when using desmopressin and imipramine. However, they were less likely to exhibit a durable response following management with an enuretic alarm (19% vs 66%, $p < 0.01$). CONCLUSIONS: Treatment of urinary incontinence in children with ADHD is impaired compared to those without ADHD, and is directly affected by compliance and IQ.

A single-center long-term outcome analysis of artificial urinary sphincter placement in children : A.T. Hafez, G. McLorie, D. Bagli, et al. Br J Urol Int 89:82-85, (January), 2002.

None.
J Pediatr Surg 2003;38:1422D.
A total of 89 children had an artificial urinary sphincter (AUS) placed between 1977 and 1994. Complete data were obtained for 79 (63 boys, 16 girls). The indications for placement were urinary incontinence caused by sphincteric deficiency with a stable bladder. Before and after surgery all patients had ultrasonography, cysto-urethrography, and urodynamics. Mean age at surgery was 11.7 years, and the cause of incontinence was neuropathic bladder in 74 and exstrophy in 5. After a mean of 12.5 (5 to 22) years, 63 (80%) still had an intact AUS. The AUS had been removed in 16 because of erosion between 1 and 11 years after placement. Of 5 patients with bladder extrophy, 4 were removed because of erosion. There were 28 revisions for mechanical dysfunction in 18 (22%). There were 0.035 revisions per patient year. Of the 63 with an intact AUS still in place, 57 (90%) are completely dry, and 36 are using intermittent catheterization. Thirteen (20%) had bladder instability during follow-up managed by anticholinergics in 8, spinal cord detethering in 3, and enterocystoplasty in 2. Hydronephrosis occurred in 12 of 126 renal units (10%) that improved after anticholinergics or enterocystoplasty. Overall 10-year survival rate of the AUS was 79%, and this was not affected by age, sex, model, previous bladder neck surgery, augmentation, or intermittent catheterization. The authors conclude that the AUS is a viable alternative for the treatment of sphincter deficiency, excluding those with bladder extrophy.-M.N. de la Hunt

Bladder neck cinch for pediatric neurogenic outlet deficiency.
Bugg CE Jr, Joseph DB.
J Urol 2003;170:1501-3.
PURPOSE: The fascial bladder neck sling achieves continence in 50% to 90% of children with neurogenic outlet deficiency. Most slings apply only partial pressure around the bladder neck. We evaluated the effectiveness of a rectus fascia bladder neck cinch which applies circumferential pressure around the bladder neck and elevation as a means of increasing outlet resistance. MATERIALS AND METHODS: Fifteen children with spina bifida underwent a fascial bladder neck cinch procedure at the time of augmentation cystoplasty. A 1 to 1.5 cm width of variable length rectus fascia was harvested and a vertical slit was made in 1 end. The fascia was "cinched" tightly around the bladder neck and secured to the symphysis or rectus fascia. RESULTS: The 14 girls and 1 boy ranged in age range from 4 to 17 years. All children had neurogenic intrinsic sphincter deficiency and a poorly compliant and/or small capacity bladder. Followup ranged from 10 to 36 months (followup in 12 greater than 1 year). Postoperatively, all children perform clean intermittent catheterization. At the last followup 8 girls and the boy (60%) were dry (no leak and no pads at 4 hours from the last catheterization and dry throughout the night). CONCLUSIONS: Rectus fascia used as a bladder neck cinch is effective but no better than other bladder neck slings for decreasing urinary incontinence. The bladder neck cinch appears to be an acceptable addition to the technique of fascial slings. However, we have subsequently changed our technique because these results did not meet our expectations.

Duloxetine versus placebo for the treatment of North American women with stress urinary incontinence.
Dmochowski RR, Miklos JR, Norton PA, Zinner NR, Yalcin I, Bump RC.
J Urol 2003;170:1259-63.
PURPOSE: Duloxetine, a selective serotonin and norepinephrine reuptake inhibitor, increases rhabdosphincter contractility via the stimulation of pudendal motor neuron alpha-1 adrenergic and 5-hydroxytryptamine-2 receptors. In this first phase 3 study we assessed the efficacy and safety of duloxetine in women with stress urinary incontinence (SUI). MATERIALS AND METHODS: A total of 683 North American women 22 to 84 years old were enrolled in this double-blind, placebo controlled study. The case definition included a predominant symptom of SUI with a weekly incontinence episode frequency (IEF) of 7 or greater, the absence of predominant symptoms of urge incontinence, normal diurnal and nocturnal frequency, a bladder capacity of 400 ml or greater, and a positive cough stress test and stress pad test. After a 2-week placebo lead-in period subjects were randomly assigned to receive placebo (339) or 80 mg duloxetine daily (344) as 40 mg twice daily for 12 weeks. Primary outcome variables included IEF and an incontinence quality of life questionnaire. Van Elteren's test was used to analyze percent changes in IEF with a stratification variable of weekly baseline IEF (less than 14 and 14 or greater). ANCOVA was used to analyze incontinence quality of life scores. RESULTS: Mean baseline IEF was 18 weekly and 436 subjects (64%) had a baseline IEF of 14 or greater. There was a significant decrease in IEF with duloxetine compared with placebo (50% vs 27%, $p < 0.001$) with comparably significant improvements in quality of life (11.0 vs 6.8, $p < 0.001$). Of subjects on duloxetine 51% had a 50% to 100% decrease in IEF compared with 34% of those on placebo ($p < 0.001$). These improvements with duloxetine were associated with a significant increases in the voiding interval compared with placebo (20 vs 2 minutes, $p < 0.001$) and they were observed across the spectrum of incontinence severity. The discontinuation rate for adverse events was 4% for placebo and 24% for duloxetine ($p < 0.001$) with nausea the most common reason for discontinuation (6.4%).

Nausea, which was also the most common side effect, tended to be mild to moderate and transient, usually resolving after 1 week to 1 month. Of the 78 women who experienced treatment emergent nausea while taking duloxetine 58 (74%) completed the trial. CONCLUSIONS: These phase 3 data are consistent with phase 2 data and they provide further evidence for the safety and efficacy of duloxetine as a pharmacological agent for the treatment of women with SUI.

Complication of bowel perforation during insertion of tension-free vaginal tape.
Leboeuf L, Tellez CA, Ead D, Gousse AE.
J Urol 2003;170:1310.

Giant urethral diverticulum in an adult male: a complication of the artificial urinary sphincter.
Laungani RG, Angermeier KW, Montague DK.
J Urol 2003;170:1307-8.

Effect of sacral nerve stimulation on autonomic nerve function.
Kenefick NJ, Emmanuel A, Nicholls RJ, Kamm MA.
Br J Surg 2003;90:1256-60.
BACKGROUND:: Sacral nerve stimulation has been used successfully to treat motility disorders of the bladder and bowel. The mechanism of action remains unknown. This study examined the effect of stimulation on rectal blood flow as a measure of autonomic nerve function. METHODS:: Sixteen patients (15 women) of median age 59 (range 38-71) years were studied. All had undergone permanent electrode implantation for faecal incontinence, a median of 27 (range 2-62) months previously, with clinical benefit. Rectal laser Doppler flowmetry was performed at the level of chronic stimulation, without stimulation, and then at 0.1-V stepwise increments between zero and 1.0 V, and at 1-V increments to 5 V. RESULTS:: There was a significant difference in the median flux between no stimulation and chronic stimulation: 545 (range 355-887) versus 869 (range 507-989) flux units ($P = 0.001$). Stepwise increments of 0.1 V, between zero and 1.0 V, caused a significant immediate rise in flux ($P < 0.001$). Further increments did not result in any further significant increase. CONCLUSION:: Chronic sacral nerve stimulation has a significant effect on rectal blood flow and the autonomic innervation of the distal bowel. The response is rapidly reversible and varies in a dose-dependent manner up to a level of stimulation of 1.0 V.

Customized biofeedback therapy improves results in fecal incontinence.
Martinez-Puente Mf M, Pascual-Montero JA, Garcia-Olmo D.
Int J Colorectal Dis 2003;
BACKGROUND AND AIMS. Biofeedback therapy has been extensively used and accepted in fecal incontinence, but reports of its efficiency vary. We evaluated feedback therapy efficiency when (a) selecting the patient's subject of the therapy, and (b) customizing the therapy protocol used for each patient. PATIENTS AND METHODS. Fifty-three patients with fecal incontinence were selected for biofeedback training. The treatment program was customized for each patient depending on the underlying dysfunction, the patient's cooperative and learning attitude, and the patient's progress. Biofeedback efficiency was measured using clinical scores, subjective satisfaction of the patient, and manometry. RESULTS. Incontinent scores showed improvement in 66% of patients and good improvement in 11% and 15%, respectively, indicating an overall excellent effect of the therapy. Subjective satisfaction was strongly correlated with the previous incontinent scores. Comparison of manometry parameters before and after biofeedback therapy, including maximum anal resting, maximum anal squeeze pressure, and maximum duration of the squeeze, all showed significant differences. In addition, the sensory threshold significantly decreased after biofeedback therapy. Clinical improvements were maintained during the following 12 months. CONCLUSION. Biofeedback improves objective and subjective parameters of anorectal function. Selection of patients and customization of the therapy program increased biofeedback efficiency for the treatment of fecal incontinence.

Predictors of response to biofeedback treatment in anal incontinence.
Fernandez-Fraga X, Azpiroz F, Aparici A, Casaus M, Malagelada JR.
Dis Colon Rectum 2003;46:1218-25.
PURPOSE: Biofeedback is considered an effective treatment for anal incontinence, but a substantial proportion of patients fails to improve. The purpose of this study was to identify the key predictors of outcome. METHODS: We retrospectively analyzed the clinical and physiologic data of 145 patients consecutively treated in our unit for anal incontinence by biofeedback. Clinical evaluation was performed by means of a structured questionnaire that included previous history, symptoms of incontinence, and bowel habit. Anorectal evaluation measured anal pressure profiles, neural reflexes, defecatory dynamics, rectal compliance, and rectal sensitivity. Biofeedback treatment was performed by a manometric technique with reinforcement sessions scheduled every three months and daily exercising at home. Six months after the

onset of biofeedback treatment the clinical response was evaluated as good (improvement of incontinence) or poor (no improvement or worsening). RESULTS: Of 126 patients (104 female; age range, 17-82 years) with at least six-month follow-up, 84 percent had a good response to treatment. By univariate analysis, several factors, such as age, history of constipation, abnormal defecatory maneuver, and rectal compliance, were significantly related to treatment response, but by multivariate logistic regression only age and defecatory maneuver were independent predictors of the response. The association of both factors provided the best sensitivity and specificity; 48 percent of patients younger than age 55 years and with abnormal defecatory maneuver had negative response to treatment, whereas 96 percent of patients age 55 years or older with normal defecatory maneuver had a positive response. CONCLUSION: In patients with anal incontinence scheduled for biofeedback treatment, potential alterations of defecation should be first searched for and corrected, particularly in younger patients.

Results of biofeedback therapy for fecal incontinence in children with encopresis and following surgery for anorectal malformations.
Hibi M, Iwai N, Kimura O, Sasaki Y, Tsuda T.
Dis Colon Rectum 2003;46:S54-8.
SUMMARY: INTRODUCTION Some children with fecal incontinence respond to biofeedback therapy. However, whether they can achieve fecal continence posttherapeutically has not been clarified. We studied the serial results of biofeedback therapy and discuss the necessity of providing repeated biofeedback therapy at home.METHODS Nineteen children with encopresis underwent one session of biofeedback therapy. Seven of 15 children with fecal incontinence that developed after surgery for anorectal malformations underwent three to eight sessions of biofeedback therapy; the remaining 8 underwent one (mean, 2.9) session only. The patients were hospitalized for one session of biofeedback therapy. To monitor the clinical outcome of intervention, we used serial score assessments from three months to two years posttherapeutically.RESULTS Seventeen of 19 (90 percent) patients with encopresis showed clinical improvement after one session of therapy ($P < 0.0001$). Six months after treatment, however, six of ten (60 percent) patients with encopresis reported recurrent fecal incontinence after one therapeutic session. Clinical improvement was noted in 5 of 15 (33 percent) patients who had fecal incontinence after surgery for anorectal malformations. All five patients showed clinical improvement from six months to two years after several sessions of biofeedback therapy ($P < 0.05$).CONCLUSIONS Biofeedback therapy is effective in most children with encopresis and in some children with anorectal malformations. However, some patients need repeated sessions of biofeedback therapy to achieve fecal continence. Therefore, a new portable biofeedback apparatus for the treatment of fecal incontinence at home may be helpful.

7 PAIN

Pharmacokinetics of an implanted osmotic pump delivering sufentanil for the treatment of chronic pain.
Fisher DM, Kellett N, Lenhardt R.
Anesthesiology 2003;99:929-37.
BACKGROUND: A matchstick-sized implanted osmotic pump (Chronogesic) that delivers sufentanil subcutaneously for more than 90 days is being developed to treat chronic pain. This study evaluates pharmacokinetic characteristics related to the absorption of sufentanil using a prototype 60-day system. METHODS: Twelve opioid-naive volunteers were given naltrexone to prevent opioid effects. Sufentanil, 60 microg, was infused intravenously over 6 h, then 48 h later, the pump was implanted subcutaneously in the upper arm under local anesthesia. Pumps were removed 9 days later. In six volunteers, fever (1.6-3.3 degrees C) was induced with interleukin-2. Plasma was sampled and population pharmacokinetic modeling was performed to estimate in vivo release rate and absorption half-life. Bioavailability was calculated by comparing in vivo to in vitro release rates. The impact of perturbations in release rate on sufentanil plasma concentration (Cp) was simulated. RESULTS: Fever had no systematic effect on Cp. Release rate estimated in vivo was similar to that measured in vitro; bioavailability did not differ from 100%. Absorption half-life was 16.2 h. Simulation demonstrated that supplemental release of sufentanil from the implant (as might occur with local heating) increases Cp an average of 2.5-2.8% per hours supplemental dose. CONCLUSIONS: An implantable osmotic pump delivered sufentanil in vivo at the rate predicted from in vitro experiments. The rate at which sufentanil was absorbed from the subcutaneous space (half-life > 16 h) was markedly slower than reported with subcutaneous or intramuscular administration of large volumes of dilute opioids; this slow absorption dampens potential changes in Cp if release rate is perturbed.

Computerized infrared imaging as a tool in monitoring the clinical response to acupuncture treatment in a patient with chronic abdominal pain: A case report. Jeffrey M. Cohen; Sam S. Wu; Sandra Yuhn, Mathew H. Lee

Arch Phys Med Rehabil 2003;84:E26.
SETTING: Tertiary care hospital. Patient: A 21-year-old woman with poorly controlled type 1 diabetes mellitus and chronic abdominal pain and who was dependent on opioids. Case Description: The patient presented with a 3-month history of abdominal pain. She also complained of weight loss and constant fatigue. Magnetic resonance imaging of her abdomen revealed hepatomegaly and a 4.5cm mass in the right lobe of her liver. Ultrasound of her abdomen revealed an echogenic liver with a solid mass in the right lobe and borderline splenomegaly. Computed tomography-guided liver biopsy revealed a benign tumor. The patient had become dependent on opioids for chronic abdominal pain. She received supportive psychotherapy for management of her pain and depression. She was also referred for acupuncture as an adjunct to her pain management program. Computerized infrared imaging (CII) was performed both before and after acupuncture treatment as a means of objectively assessing her response to acupuncture. Assessment/Results: Initial data from the CII revealed significant asymmetry (>1.0 degrees C), with the right lower quadrant of the abdomen being significantly warmer than the corresponding area on the contralateral side. The patient subsequently underwent acupuncture treatment, which she reported improved the abdominal pain. Follow-up CII of her abdomen revealed no significant asymmetry. Discussion: Acupuncture treatment afforded pain relief for this patient with a benign hepatic tumor and chronic abdominal pain. CII, a simple, noninvasive test that detects cutaneous temperature patterns due to inflammation or sympathetic nervous system activity, objectively documented the patient's response to acupuncture treatment. Conclusion: CII may be a useful tool in objectively monitoring the clinical response to acupuncture treatment in patients with chronic abdominal pain.

Use of computerized infrared imaging to confirm clinically suspected complex regional pain syndrome in patients with chronic pain: A case series.
Sam S. Wu; Edwin F. Richter, MD; Sandra Yuhn, BA; Mathew H. Lee
Arch Phys Med Rehabil 2003;84:E26.
OBJECTIVE: To evaluate the usefulness of computerized infrared imaging (CII) in the diagnosis of complex regional pain syndrome (CRPS) in chronic pain patients with a clinical suspicion of CRPS. Design: Case series. Setting: Tertiary care center. Participants: 4 patients with complaints of pain of >3 months in duration who were clinically suspected of having CRPS. Intervention: Each patient underwent CII, which is a sensitive and noninvasive test that objectively documents cutaneous temperature patterns as a reflection of the underlying physiologic state of the sympathetic nervous system. Pain fibers are closely associated with the sympathetic nervous system. Main Outcome Measures: Analysis of CII to assess the degree of asymmetry in cutaneous temperature by comparing 1 area of the body to its corresponding location on the contralateral body area. Significant asymmetry was considered to be greater than a 1.0 degrees C. Results: In each patient, CII demonstrated significant asymmetry in cutaneous temperature of at least 1.64 degrees C in a minimum of 1 symptomatic area. The referring physicians were able to use these results to make a definitive diagnosis of CRPS in these patients. Conclusions: These cases demonstrated that CII could be a valuable and objective tool in confirming the diagnosis of CRPS in patients with chronic pain who were clinically suspected of having CRPS.

Efficacy of physical medicine modalities in the treatment of neuromusculoskeletal pain: A review of literature.
Susan K. Mihans; Jay P. Shah, MD; Jill Gleason, PT; Jerome V. Danoff
Arch Phys Med Rehabil 2003;84:E25.
OBJECTIVE: To review the current literature on efficacy of physical medicine modalities on neuromusculoskeletal pain. Data Sources: PubMed, CINAHL, and Web of Science were searched from January 1997 to June 2002 for articles in English reporting the efficacy of physical medicine modalities (eg, acupuncture, manipulation) for neuromusculoskeletal pain. Data Extraction: Articles were categorized by type of evidence from I to V according to Sackett's rules of evidence. Strength of evidence was graded on agreement among articles for a particular modality. 9 specific criteria to assess research design quality (eg, randomized, controlled, blinded) and an 11-item subject profile (eg, physical exam, imaging studies, structural diagnosis) were developed. Documentation of these criteria and items is critical for evaluating research methodology, determining subject characteristics, and comparing studies of modality efficacy by applying the subject profile and specific criteria. These were assessed only in types II, III, and IV studies (50 articles) because only these articles had an experimental design and a subject population. Data Synthesis: There was little interarticle agreement among the 83 articles reviewed on the efficacy of treatment for each modality. For research design quality; type II studies averaged 78%; type III studies, 44%; and type IV studies, 22%. For subject profile; type II, type III, and type IV studies contained less than half of the 11 critical items. Conclusions: Analysis of data collected failed to support strong interarticle agreement. Studies reviewed were inconsistent in methodology and design necessary to establish efficacy or association. Future studies should include more stringent research methods and better description of subject characteristics.

Percutaneous neuromodulation therapy for the treatment of spinal (lumbar and cervical) pain patients with radiating pain: Joanne Borg-Stein, Richard Seroussi

Arch Phys Med Rehabil 2003;84:E22.

OBJECTIVE: To evaluate, within a clinical research setting, the proposed percutaneous neuromodulation therapy (PNT) mechanism of action hypothesizing that patients with centrally facilitated pain benefit more from PNT than do other patients. Design: Analysis of pooled data collected during 3 prospective clinical trials. Setting: Outpatient pain treatment centers. Participants: 119 patients enrolled in clinical trials of PNT for subacute and chronic spinal pain (lumbar or cervical) with radiating pain. Patients were clinically grouped as having probable primary: (1) nociceptive pain due to a recurrent structural source such as disk protrusion, (2) centrally facilitated pain in absence of a defined structural problem such as fibromyalgia or myofascial pain, or (3) pain from a combination of both categories (recurrent structural plus centrally facilitated). Interventions: Patients received >/=4 PNT treatments and were followed approximately 1 week after completion of the last treatment. Main Outcome Measures: Pain ratings on a 10-cm visual analog scale (VAS). Results: A multivariate analysis of variance suggested that decrease in VAS scores was dependent on pain categorization (P=.008). Patients with centrally facilitated pain had the greatest VAS decrease and patients with recurrent structural pain had the least. Similar baseline VAS scores were noted between the groups (centrally facilitated, 5.9+/-1.9; recurrent structural, 6.0+/-1.7; recurrent structural + centrally facilitated, 6.2+/-1.4). Compared with recurrent structural patients, centrally facilitated patients reported lower VAS ratings (P=.05) after their last treatment (centrally facilitated, 3.2+/-2.1; recurrent structural, 4.5+/-2.5; recurrent structural + centrally facilitated, 4.1+/-2.4), and marginally significant greater decrease in VAS (baseline to last treatment; P=.08). Conclusions: Patients with centrally mediated pain had the greatest drop in VAS scores. In contrast to patients with nociceptive pain due to a recurrent structural source, PNT potentially reversed the pain centralization process, resulting in activation of pain-signaling pathways only in the presence of noxious stimulation.

Meta-analysis of percutaneous neuromodulation therapy for treating patients with spinal pain: Stratification by diagnosis: Jeffrey Balzer

Arch Phys Med Rehabil 2003;84:E22.

OBJECTIVE: To test the hypothesis that, by directly activating large-diameter deep somatic afferents, percutaneous neuromodulation therapy (PNT) can be particularly effective in treating pain resulting from central sensitization. Design: Meta-analysis of prospective multicenter open-label clinical trials. Patients from 4 prospective multicenter studies were pooled and segregated according to indicated diagnoses, and then analyzed to assess therapeutic effectiveness of PNT relative to the degree of central sensitization associated with these diagnoses. Setting: 11 outpatient pain treatment centers. Participants: 150 patients with subacute or chronic spinal pain (lumbar or cervical) and radiating pain. Interventions: Patients received >/=4 PNT treatments and were followed approximately 1 week after completion of the last treatment. Main Outcome Measures: 10-cm visual analog scale (VAS) for pain and percentage of patients with clinically significant (>/=30%) pain reduction. Results: 71% (n=31) of patients diagnosed with myofascial pain syndrome reported a clinically significant reduction in radiating pain after completing all treatments, which was significantly greater (P=.02) than the 43% (n=37) of patients with degenerative disk disease (DDD). Mean overall improvements in VAS sco

Evaluation of the visual analog scale as an outcome measure in patients with chronic pain: Maryjo Gavin, Nandita S. Keole; Navnit Bhatia; Maury R. Ellenberg, Robin Hanks

Arch Phys Med Rehabil 2003;84:E22.

OBJECTIVE: To assess the reliability of the visual analog scale (VAS) as an outcome measure in patients with chronic pain. Design: Retrospective chart review of patients in a functional restoration program (Functional Recovery Program [FRP]). Setting: Community-based FRP. Participants: 16 patients enrolled in the FRP. Interventions: Not applicable. Main Outcome Measures: The Oswestry Disability Questionnaire (ODQ) for low back pain, Illness Effects Questionnaire (IEQ), and VAS were compared with each other and with 2 functional measures; the 65-foot dash and time on the treadmill. A Pearson 2-tailed correlation analysis was used for the analysis. The correlation coefficients and P values were calculated for the ODQ compared with the VAS, the IEQ compared with the VAS, and each measure compared with the functional activity gains. The difference in scores on admission and at the end of treatment were used for the VAS, ODQ, and IEQ to evaluate change in level of pain and disability perception while the time difference required for completion of the 65-foot dash and aerobic exercise time were used to assess change in functional status. Results: Significant correlation was present between the VAS and IEQ (coefficient=.836, P<.0001), the VAS and ODQ (coefficient=0.6, P<.01), and between the ODQ and IEQ (coefficient=0.6, P<.01). There was no correlation among the 3 scales and the functional measures of aerobic activity time and time required for the 65-foot dash. Conclusions: The VAS correlated well with other subjective disability-related scales. However, it did not correlate with actual measured improvement in functional ability. This brings into question the value of the VAS in chronic pain populations as it relates to treatment outcomes. Clearly,

patients can functionally perform well despite self-reported pain complaints and some continued perception of disability.

An investigation into the analgesic effects of different frequencies of the amplitude-modulated wave of interferential current therapy on cold-induced pain in normal subjects.
Johnson MI, Tabasam G.
Arch Phys Med Rehabil 2003;84:1387-94.
OBJECTIVE: To investigate the analgesic effects of different amplitude-modulated frequencies of interferential current therapy (IFT) on cold-induced pain in healthy subjects. DESIGN: Single-blind parallel group methodology was used. Subjects completed 6 cycles of the cold-induced pain test (2 pretreatment, 2 during treatment, 2 posttreatment). During each cycle, subjects plunged their hand into iced water and the time taken to reach pain threshold was recorded. The hand remained immersed in the iced water for a further 30 seconds, after which the self-reports of pain intensity and pain unpleasantness were recorded. SETTING: Laboratory in the United Kingdom. PARTICIPANTS: Sixty unpaid, pain-free volunteers without a known pathology that could cause pain. INTERVENTIONS: IFT delivered on the nondominant arm at a "strong but comfortable" intensity without visible muscle twitches, using a quadripolar application technique at 1 of 6 possible amplitude modulated "beat" frequencies (20, 60, 100, 140, 180, 220Hz). Main Outcome Measures: The percentage change in pain threshold, pain intensity, and pain unpleasantness from the pretreatment baseline. RESULTS: Two-way repeated-measures analyses of variance found no effects for groups for pain threshold (P=.11) or pain ratings (P>.05). There were no effects for cycle for any of the outcome measures. Effects for group by cycle interaction were noted for pain intensity and unpleasantness ratings (P<.05), although post hoc analysis failed to determine the nature of this interaction. CONCLUSIONS: Experimentally induced cold pain was not influenced by IFT frequencies.

Cauda Equina syndrome after spinal anesthesia with bupivacaine: A case report.
Robert Mehrberg, Bruce E. Porter.
Arch Phys Med Rehabil 2003;84:E35-E36.
SETTING: Tertiary care hospital. Patient: A 83-year-old man. Case Description: The patient was admitted for orchiectomy. He received spinal anesthesia with 15mg of bupivacaine at the L5-S1 level. Approximately 24 hours later he developed severe pain, weakness, and sensory deficits in his lower extremities. Lower-extremity arterial and venous studies were unremarkable. The patient was diagnosed with probable cauda equina syndrome secondary to bupivacaine neurotoxicity. Assessment/Results: The patient was treated with steroids with little improvement. Subsequently, he was admitted to inpatient rehabilitation. Exam revealed hypersensitivity in the lower extremities. He had 3/5 lower-extremity strength bilaterally and was nonambulatory. Sensory exam and range of motion were limited by severe hyperesthesia. A catheter was required for urinary retention. The patient was started on a fentanyl patch, gabapentin (Neurontin), and physical and occupational therapy. By discharge, his pain, strength, and function had improved. He was ambulating 100ft with a walker, transferring with stand by assist, and was continent of bowel and bladder. He did, however, have persistent mild lower-extremity weakness and sensory deficits. Discussion: Spinal anesthesia with local anesthetics has been associated with cauda equina syndrome. Increased risk occurs with continuous spinal anesthesia, high doses, and use of lidocaine. Patients with underlying neurologic conditions may also have a higher susceptibility. The risk of cauda equina injury after bupivacaine spinal anesthesia is 1 in 10,000. The mechanism of neurotoxicity is unknown. Treatment is supportive and narcotic analgesics are typically required to control pain. Conclusion: Cauda equina syndrome is a rare complication of spinal anesthesia. It can cause significant pain and impairment.

Septic arthritis of the pubic symphysis: review of 100 cases.
Ross JJ, Hu LT.
Medicine (Baltimore) 2003;82:340-5.
SUMMARY: We report a novel case of septic arthritis of the symphysis pubis due to Streptococcus pneumoniae and review 99 previously reported cases of infection of this joint. Typical features of pubic symphysis infection included fever (74%), pubic pain (68%), painful or waddling gait (59%), pain with hip motion (45%), and groin pain (41%). Risk factors included female incontinence surgery (24%); sports, especially soccer (19%); pelvic malignancy (17%); and intravenous drug use (15%). Septic arthritis of the pubic symphysis is often misdiagnosed as osteitis pubis, a sterile inflammatory condition. Causative organisms differed according to risk factors. Staphylococcus aureus was the major cause among athletes, Pseudomonas aeruginosa among intravenous drug users, and infections among patients with pelvic malignancies were usually polymicrobial, involving fecal flora. Patients with recent urinary incontinence surgery usually had monomicrobial infection, with no predominant pathogen. Since osteomyelitis is present in 97% of patients, we recommend antibiotic courses of 6 weeks' duration. Surgical debridement is required in 55% of patients.

Chronic pelvic pain: an integrated approach to diagnosis and treatment.
Gunter J.
Obstet Gynecol Surv 2003;58:615-23.
Chronic pelvic pain affects upward of 15% of women and is a frustrating condition for both patients and physicians. Chronic pelvic pain is not a disease, but a syndrome that results from a complex interaction between neurologic, musculoskeletal, and endocrine systems that is further influenced by behavioral and psychologic factors. Traditional approaches to this disorder have been surgical, although long-term success rates have been disappointing. Placebo response to surgery is common, and many conditions that contribute to the pain cannot be identified or treated with a surgical approach. Many patients will require a combination of both pharmacologic and nonpharmacologic treatments in addition to various types of invasive procedures. It is now recognized that many disorders contribute to the chronic pelvic pain symptom complex; thus, an integrated multidisciplinary approach to diagnosis and treatment is essential to achieve the greatest success. TARGET AUDIENCE: Obstetricians & Gynecologists, Family Physicians. LEARNING OBJECTIVES: After completion of this article, the reader will be able to describe the pathophysiology of chronic pelvic pain, to outline the evaluation of a patient with chronic pelvic pain, and to explain the treatment options for patients with chronic pelvic pain.

A pilot study examining topical amitriptyline, ketamine, and a combination of both in the treatment of neuropathic pain.
Lynch ME, Clark AJ, Sawynok J.
Clin J Pain 2003;19:323-8.
OBJECTIVE: The involvement of ongoing peripheral activity in the generation of nociceptive input in neuropathic pain suggests that topical drug delivery may be useful as a treatment strategy. This is a pilot study providing initial information regarding the use of novel topical preparations containing amitriptyline (AMI), ketamine (KET), and a combination of both in the treatment of neuropathic pain. METHODS: The study design included a 2 day randomized, double blind, placebo controlled, 4 way cross-over trial of all treatments, followed by an open label treatment phase using the combination cream for 7 days. Twenty volunteers with chronic neuropathic pain were randomly assigned to treatment order and applied 5 mls of each topical treatment (1% AMI, 0.5% KET, combination AMI 1%/KET 0.5%, and placebo) for 2 days. Measures of pain at the end of each block included the short form McGill Pain Questionnaire (MPQ) and visual analog scales (VAS) for present pain intensity and pain relief. Eleven subjects who judged subjective improvement from any treatment in the initial trial entered the open-label trial and used the combination cream for 7 days. Pain levels were recorded daily using the same measures. Blood levels for amitriptyline and ketamine were performed at 7 days to determine whether systemic absorption had occurred. RESULTS: There was no statistically significant difference from placebo after 2 days for any treatment during the double blind component of the trial. In the 11 subjects who used the combination cream, there was a statistically significant effect, with subjects reporting significantly greater analgesia by days 3 to 7 according to measures of pain and pain relief. Blood levels revealed that there was no significant systemic absorption of amitriptyline or ketamine. Only 2 subjects experienced side effects; these were minor and did not lead to discontinuation of the cream. CONCLUSION: This pilot study demonstrated a lack of effect for all treatments in the 2 day double blind placebo controlled trial, followed by analgesia in an open label trial in a subgroup of subjects who chose to use the combination cream for 7 days. Blood analysis revealed no significant systemic absorption of either agent after 7 days of treatment, and creams were well tolerated. A larger scale randomized trial over a longer interval is warranted to examine further effects observed in the open label trial.

Development of a neuropathic pain questionnaire.
Krause SJ, Backonja MM.
Clin J Pain 2003;19:306-14.
Ongoing efforts to develop mechanisms-based assessment and treatment of chronic pain have been hindered by the lack of assessment tools differentially sensitive to various phenomena underlying different mechanisms of pain. This study describes the development of an assessment instrument intended to measure neuropathic pain based on qualities of pain as they are inferred from pain descriptors. Subjects were 528 chronic pain patients from several clinics. Of these, 149 had strictly neuropathic pain, while 233 had non-neuropathic pain. Subjects completed a 32 item preliminary questionnaire, which asked them to rate their usual pain on multiple descriptors, as well as the degree to which their pain differed in response to various internal and external factors. This preliminary questionnaire was submitted to factor analysis, and this yielded 6 factors. Representatives of each of these factors were combined with additional items that demonstrated significant differences between neuropathic and non-neuropathic pain groups, to yield a 12 item Neuropathic Pain Questionnaire (NPQ). These items were able to differentiate neuropathic pain patients from non-neuropathic pain patients in a holdout sample with 66.6% sensitivity and 74.4% specificity. The newly developed instrument, NPQ, may be used for the initial screening of neuropathic pain patients. It

also has the ability to provide a quantitative measure for the descriptors important in the diagnosis and assessment of neuropathic pain. Consequently, it can be used for monitoring of neuropathic pain treatments and as an outcome measure.

What is a meaningful pain reduction in patients with complex regional pain syndrome type 1?
Forouzanfar T, Weber WE, Kemler M, van Kleef M.
Clin J Pain 2003;19:281-5.
OBJECTIVE: To investigate the degree of pain reduction in patients with complex regional pain syndrome type 1 (CRPS 1) that can be defined as "successful." DESIGN: All patients rated their pain on a visual analog scale (VAS; 0-10) before treatment and on three occasions after treatment, at 6 months, 1 year, and 2 years. Patients also rated a Global Perceived Effect (GPE) for their pain relief at the same time periods. The GPE items were classified as "successful" or "unsuccessful." The mean absolute and relative pain reduction (using the VAS) was calculated for both "successful" and "unsuccessful" GPE classifications for each time period. Sensitivity and specificity analyses were performed. PATIENTS: Sixty-one patients with CRPS 1. RESULTS: The patients defined a relative pain reduction of 58% (SD, 23.4) or more as "successful," whereas in "successful" and "unsuccessful" patient groups the pain was reduced significantly on the VAS. Furthermore, sensitivity and specificity analyses showed that a cut-off point of 50% relative pain reduction and a 3-cm absolute pain reduction on the VAS have the highest likelihood that patients will report their treatment "successful" on the GPE. CONCLUSIONS: Relative pain reduction of 50% or more and an absolute pain reduction of at least 3 cm on the VAS are accurate in predicting a successful pain reduction after a given treatment.

Pruritus.
Moses S.
Am Fam Physician 2003;68:1135-42.
Pruritus is a common manifestation of dermatologic diseases, including xerotic eczema, atopic dermatitis, and allergic contact dermatitis. Effective treatment of pruritus can prevent scratch-induced complications such as lichen simplex chronicus and impetigo. Patients, particularly elderly adults, with severe pruritus that does not respond to conservative therapy should be evaluated for an underlying systemic disease. Causes of systemic pruritus include uremia, cholestasis, polycythemia vera, Hodgkin's lymphoma, hyperthyroidism, and human immunodeficiency virus (HIV) infection. Skin scraping, biopsy, or culture may be indicated if skin lesions are present. Diagnostic testing is directed by the clinical evaluation and may include a complete blood count and measurement of thyroid-stimulating hormone, serum bilirubin, alkaline phosphatase, serum creatinine, and blood urea nitrogen levels. Chest radiography and testing for HIV infection may be indicated in some patients. Management of nonspecific pruritus is directed mostly at preventing xerosis. Management of disease-specific pruritus has been established for certain systemic conditions, including uremia and cholestasis.

Chronic pelvic pain: Reply.
Howard FM.
Obstet Gynecol 2003;102:645-6.

Chronic pelvic pain.
Weyand JG.
Obstet Gynecol 2003;102:644.

Telemetric animal model to evaluate visceral pain in the freely moving rat.
Nijsen MJ, Ongenae NG, Coulie B, Meulemans AL.
Pain 2003;105:115-23.
Several research groups have measured the visceromotor response to visceral distension by electromyography (EMG) in the conscious restraint, wrapped or lightly anaesthetized rat. Our aim was to develop a more physiological and stress-free technique that enables the simultaneous measurement of duodenal distension-induced visceromotor and cardiovascular responses in the conscious, freely moving rat. A telemetry transmitter, consisting of a bipolar electrode pair and arterial catheter, was chronically implanted into the rat to measure abdominal EMG, mean arterial pressure (MAP) and heart rate (HR). Furthermore, a balloon catheter was chronically implanted in the duodenum to deliver volume-fixed staircase (0.1-0.6 ml) or phasic (0.1, 0.3, 0.5 ml) distensions. The area under the curve (AUC; mVs) and maximal amplitude (EMG(max); mV) during distension were analyzed. The model was validated by pre-treatment with morphine (0.3, 1.5 and 3 mg/kg, intraperitoneally). Staircase and phasic distension produced a volume-dependent increase in AUC and EMG(max), HR and MAP. Pre-treatment with morphine inhibited the distension-induced visceromotor response, i.e. abdominal contractions, increase in AUC and EMG(max). These findings indicate that telemetry is an adequate tool to measure visceromotor and cardiovascular responses

to averse, noxious duodenal distension continuously and simultaneously in the rats home cage, without additional handling-related or restraint-induced stress. The presented animal visceral model is intended for studying acute and chronic analgesic properties of new pharmaceutical compounds.

Selective attention to pain-related information in chronic musculoskeletal pain patients.
Dehghani M, Sharpe L, Nicholas MK.
Pain 2003;105:37-46.
Cognitive-behavioural models of chronic pain contend that appraisals of harm affect the individual's response to pain. It has been suggested that fear of pain and/or anxiety sensitivity predispose individuals to chronicity. According to this view, pain is maintained through hypervigilance towards painful sensations and subsequent avoidance. The present study investigates the nature of cognitive biases in chronic pain patients. A sample of 169 consecutive patients referred to a specialist pain management centre participated in the study. Questionnaires measuring different aspects of pain and a computerised version of the Dot-Probe Task were administered. Four types of words related to different dimensions of pain and matched, neutral words were used as stimuli. Reaction times in response to the stimuli were recorded. A factorial design 3x4x2x2 and ANOVAs were employed to analyse the data. Chronic pain patients showed a cognitive bias to sensory pain words relative to affective, disability, and threat-related words. However, contrary to expectations, those high in fear of pain responded more slowly to stimuli than those less fearful of pain. These results suggest that patients with chronic pain problems selectively attend to sensory aspects of pain. However, selective attention appears to depend upon the nature of pain stimuli. For those who are highly fearful of pain they may not only selectively attend to pain-related information but have difficulty disengaging from that stimuli. Theoretical and clinical implications of the data are discussed.

Ratings of experimental pain and pain-related negative affect predict clinical pain in patients with fibromyalgia syndrome.
Staud R, Robinson ME, Vierck CJ, Cannon RC, Mauderli AP, Price DD.
Pain 2003;105:215-22.
Patients with fibromyalgia syndrome (FMS) report chronic pain related to abnormal sensitivity of muscles that is reflected by so-called tender points (TP). TP represent areas of abnormal mechanical pain thresholds that have only shown a minor correlation with clinical pain of FMS patients and seem to be better suited for predicting distress. Pain-related negative affect (PRNA), abnormal temporal summation of second pain (termed wind-up or WU), and abnormal WU decay are frequently present in FMS patients. WU and WU decay can provide measures of central sensitization, which may contribute to clinical FMS pain. We therefore investigated the role of WU, WU decay, TP count, and PRNA as predictors of clinical pain in FMS subjects.Fifty-five FMS subjects rated their clinical pain at entry into the study using a visual analogue scale (VAS). After a TP evaluation, all subjects received two trials of thermal WU and WU decay testing. Hierarchical regression analysis demonstrated that the combination of PRNA ratings, TP count, and WU decay ratings predicted 49.7% of the variance of clinical pain in FMS. This model demonstrates independent relationships of biological and psychological factors to clinical pain and underscores the important role of abnormal peripheral and central pain mechanisms for FMS. Therefore, the combination of PRNA, TP count, and WU decay may provide an excellent measure for future clinical studies of FMS patients.

Coping or acceptance: what to do about chronic pain?
McCracken LM, Eccleston C.
Pain 2003;105:197-204.
Research and treatment of chronic pain over the past 20 or more years have tended to focus on patient coping as the primary behavioral contribution to adjustment. The purpose of the present study was to compare a coping approach to chronic pain with a different behavioral approach referred to as acceptance of chronic pain. These approaches were compared in terms of their ability to predict distress and disability in a sample of patients seeking treatment for chronic pain. Subjects were 230 adults assessed at a university pain management center. All patients completed the coping strategies questionnaire and the chronic pain acceptance questionnaire among other standard measures. Results showed that coping variables were relatively weakly related to acceptance of pain and relatively unreliably related to pain adjustment variables. On the other hand, acceptance of chronic pain was associated with less pain, disability, depression and pain-related anxiety, higher daily uptime, and better work status. Regression analyses examined the independent contributions of coping and acceptance to key adjustment indicators in relation to chronic pain. Results from these analyses demonstrated that acceptance of pain repeatedly accounted for more variance than coping variables.

What decline in pain intensity is meaningful to patients with acute pain?
Cepeda MS, Africano JM, Polo R, Alcala R, Carr DB.
Pain 2003;105:151-7.

Despite widespread use of the 0-10 numeric rating scale (NRS) of pain intensity, relatively little is known about the meaning of decreases in pain intensity assessed by means of this scale to patients. We aimed to establish the meaning to patients of declines in pain intensity and percent pain reduction. Upon arrival to the postanesthesia care unit, postsurgical patients rated their baseline pain intensity on both a 0-10 NRS and on a 4-point verbal scale. Patients whose NRS was higher than 4/10 received intravenous opioids until their pain intensity declined to 4/10 or lower. During opioid titration, patients were asked every 10 min to rate pain intensity on a NRS and to indicate the degree of pain improvement on a 5-point Likert scale from 'no improvement' to 'complete pain relief'. Seven hundred adult patients were enrolled. For patients with moderate pain, a decrease of 1.3 units (20% reduction) corresponded to 'minimal' improvement, a decrease of 2.4 (35% reduction) to 'much' improvement, a decrease of 3.5 units (45% reduction) corresponded to 'very much' improvement. For patients with severe pain, the decrease in NRS pain score and the percentage of pain relief had to be larger to obtain similar degrees of pain relief. The change in pain intensity that is meaningful to patients increases as the severity of their baseline pain increases. The present findings are applicable in the clinical setting and research arena to assess treatment efficacy.

Preoperative prediction of severe postoperative pain.
Kalkman CJ, Visser K, Moen J, Bonsel GJ, Grobbee DE, Moons KG.
Pain 2003;105:415-23.
We developed and validated a prediction rule for the occurrence of early postoperative severe pain in surgical inpatients, using predictors that can be easily documented in a preoperative setting. A cohort of surgical inpatients (n=1416) undergoing various procedures except cardiac surgery and intracranial neurosurgery in a University Hospital were studied. Preoperatively the following predictors were collected: age, gender, type of scheduled surgery, expected incision size, blood pressure, heart rate, Quetelet index, the presence and severity of preoperative pain, health-related quality of life the (SF-36), Spielberger's State-Trait Anxiety Inventory (STAI) and the Amsterdam Preoperative Anxiety and Information Scale (APAIS). The outcome was the presence of severe postoperative pain (defined as Numeric Rating Scale >/=8) within the first hour postoperatively. Multivariate logistic regression in combination with bootstrapping techniques (as a method for internal validation) was used to derive a stable prediction model. Independent predictors of severe postoperative pain were younger age, female gender, level of preoperative pain, incision size and type of surgery. The area under the receiver operator characteristic (ROC) curve was 0.71 (95% CI: 0.68-0.74). Adding APAIS scores (measures of preoperative anxiety and need for information), but not STAI, provided a slightly better model (ROC area 0.73). The reliability of this extended model was good (Hosmer and Lemeshow test p-value 0.78). We have demonstrated that severe postoperative pain early after awakening from general anesthesia can be predicted with a scoring rule, using a small set of variables that can be easily obtained from all patients at the preoperative visit. Before this internally validated preoperative prediction rule can be applied in clinical practice to support anticipatory pain management, external validation in other clinical settings is necessary.

Increased pain sensitivity in fibromyalgia: effects of stimulus type and mode of presentation.
Petzke F, Clauw DJ, Ambrose K, Khine A, Gracely RH.
Pain 2003;105:403-13.
Fibromyalgia (FM) is defined in part by sensitivity to blunt pressure. Pressure pain sensitivity in FM is evaluated typically by the use of 'ascending' testing methods such as tender point counts or dolorimetry, which can be influenced by response bias of both the subject and examiner. Methods that present stimuli in a random, unpredictable fashion might minimize the influence of these factors. In this study, we compared the results of ascending and random assessments of both pressure and thermal pain sensitivities in 43 FM patients and 28 age- and gender-matched controls. Even though FM is defined on the basis of pressure sensitivity, this group was also more sensitive to heat stimuli, presented in either ascending or random paradigms. In both the patient and control groups, the pain ratings to painful sensations evoked by both thermal and pressure stimuli were significantly greater in the random, compared with the ascending method. The number of subjects classified as 'expectant' because they rated pain higher in ascending than random paradigms was similar for FM and control groups. Both patients and controls exhibited a similar degree of sensitization to pressure and thermal stimuli. The increased sensitivity to both pressure and thermal stimuli for threshold and suprathreshold stimuli in FM patients is consistent with central augmentation of pain processing.

Role loss and emotional adjustment in chronic pain.
Harris S, Morley S, Barton SB.
Pain 2003;105:363-70.
Chronic pain interrupts behaviour, interferes with functioning, and may affect a person's identity: their sense of self. We tested whether loss of role and personal attributes and current and past self-concept differentiation, predicted adjustment as indexed by measures of depression. Chronic pain patients (n=80)

completed measures of pain (MPQ), disability (PDI), depression and anxiety (BDI, HADS). Measures of role and attribute loss and self-concept differentiation were derived from a Role-Attribute Test in which participants identified four social roles in four domains (friendship, occupation, leisure, family) and nominated two personal attributes in each role prior to pain onset and current. Participants reported mean losses of 3.38 roles, and 6.97 attributes. Greater losses were observed in friendship, occupation and leisure domains compared with the family domain. Multiple regression analyses revealed that after controlling for demographic and clinical differences, role and attribute loss predicted depression scores. There was no evidence that depression was associated with past self-concept differentiation. The results are discussed with reference to the methodology used and the relevance of self-identity to understand adjustment to chronic pain.

Is all chronic pain the same? A 25-year follow-up study.
Croft P, Lewis M, Hannaford P.
Pain 2003;105:309-17.
Many apparently distinctive clinical syndromes of pain and dysfunction show considerable overlap in both population and clinical settings. If the explanation is that they all share a common underlying mechanism, then we hypothesize that any one syndrome will be unlikely to retain its distinctiveness over time. Consultation data from general practice records for 10,073 women, collected between 1968 and 1978, was linked with information on pain complaints obtained from a subsequent postal survey carried out in 1994. Illness episodes were identified from the general practice records and grouped into diagnostic subcategories. Associations between these and future pain complaints were explored, adjusting for age, smoking, body mass index and social class in a series of nested case-control analyses. Overall, the strongest independent associations of current pain were with episodes of musculoskeletal illness and mental disorders recorded 15-25 years earlier; these associations were more marked for widespread pain (odds ratios 1.8 and 1.7, respectively) than for non-widespread pain (ORs 1.3 and 1.2, respectively). In analyses of specific illness subcategories, the strongest links for head and neck pain were with earlier migraine. Back pain was most strongly associated with earlier back complaints, and abdominal pain with earlier intestinal-related problems. By contrast, chest pain was most strongly linked with earlier psychological illness. Earlier soft tissue illness episodes showed no distinctive patterns of associations over time with subsequent regional pain complaints. This analysis provides some support for shared mechanisms of chronicity across regional pain complaints, particularly in relation to the earlier occurrence of mental illness and the development of widespread pain. However, there is strong evidence that regional pain complaints also track distinctively over time. This argues against chronic functional and pain syndromes all being the same problem with a common mechanism of persistence, and in favor of unique regional influences on chronicity as well.

Chronic pelvic pain of bladder origin: a focus on interstitial cystitis.
Dell JR.
Int J Fertil Womens Med 2003;48:154-62.
Chronic pelvic pain afflicts some 9,000,000 women in the United States. Of these, perhaps 10%-although the true number of those affected is actually much greater-are found to have interstitial cystitis (IC), that is, pain of bladder origin. The etiology is multifactorial, but a fairly good marker is dysfunction of the glycosaminoglycan/mucus/mucin layer of the bladder as detected by a potassium (KCl) sensitivity test. A cascade starting with Substance P seems to be involved in generating inflammation, and even ulceration, which is the focus of pain. This article describes means of diagnosis, including the KCl test and cystoscopy, and both U.S. FDA-approved and extended-use medical treatment options which are always to be attempted before the final step of surgery.

Estrogen receptor expression in vulvar vestibulitis syndrome.
Eva LJ, MacLean AB, Reid WM, Rolfe KJ, Perrett CW.
Am J Obstet Gynecol 2003;189:458-61.
OBJECTIVE: A pilot study was performed to investigate the relationship between vulvar vestibulitis syndrome and estrogen receptor expression. STUDY DESIGN: Women with a diagnosis of vulvar vestibulitis syndrome had tissue samples taken for vulvar estrogen receptor-alpha expression and this was compared with a control group. RESULTS: The study group showed a significant decrease in estrogen receptor expression, and 50% of the samples did not exhibit any receptor expression. CONCLUSION: There appears to be a subgroup of women with vulvar vestibulitis syndrome who exhibit abnormal estrogen receptor-alpha expression. This may be helpful in explaining why some women are resistant to medical treatment and may allow treatment to be prescribed more effectively.

Depressive symptoms among women with vulvar dysesthesia.
Aikens JE, Reed BD, Gorenflo DW, Haefner HK.

Am J Obstet Gynecol 2003;189:462-6.
OBJECTIVE: The purpose of this study was to determine whether vulvar dysesthesia is associated with elevated depressive symptoms. STUDY DESIGN: This was a cross-sectional case-control study of women who underwent treatment of vulvar dysesthesia (n=32) or who were seen for a routine gynecologic examination (n=32). Subjects completed measures of depressive symptoms and pain and a sexual and medical history. Multivariate and univariate analyses were conducted. RESULTS: Analyses that were adjusted for age, education, and medical conditions indicated that vulvar dysesthesia was associated positively with depressive symptoms (P=.002). However, this was attributable to the somatic (P=.002) rather than cognitive-affective symptoms (P=.16) of depression, partially related to the endorsement of sexual disinterest, and mediated by pain reports. CONCLUSION: Vulvar dysesthesia is associated with elevated depressive symptom severity, although not to the extent that indicates probable depressive disorder. In this condition, depressive symptoms are likely to be a measurement artifact, rather than a depressive process. Certain depressive symptoms (eg, sexual disinterest) directly inflate depression estimates in this patient group.

New concepts in vulvodynia.
Edwards L.
Am J Obstet Gynecol 2003;189:S24-30.
Vulvodynia is chronic vulvar burning/pain without clear medical findings. The etiology of vulvodynia is unknown and health care professionals should thoroughly rule out specific, treatable causes or factors such as dermatoses or group B Streptococcus infections. Vulvodynia is divided into 2 classes: vulvar vestibulitis syndrome is vestibule-restricted burning/pain and is elicited by touch; dysesthetic vulvodynia is burning/pain not limited to the vestibule and may occur without touch/pressure. After diagnosis, critical factors in successful patient management include education and psychological support/counseling. Unfortunately, clinical trials on potential vulvodynia therapies have been few. Standard therapy includes treating neuropathic pain (eg, tricyclic medications, gabapentin) thought to play a role. Additional therapies may be considered: pelvic floor rehabilitation combined with surface electromyography, interferon alfa, estrogen creams, and surgery. Importantly, any therapy should be accompanied by patient education and psychological support. Because definitive data on effective therapies are lacking, further clinical investigations of treatment options are warranted.

Mutagen sensitivity as a susceptibility marker for endometriosis.
Lin J, Zhang X, Chen Y.
Hum Reprod 2003;18:2052-7.
BACKGROUND: The mutagen sensitivity assay has been well established and widely used as a good independent risk predictor for developing cancers. Although endometriosis is considered a benign disorder, it exhibits several features similar to malignancy. The objectives of this study were to evaluate whether mutagen sensitivity can predict the risk of endometriosis development. METHODS: The subjects were women undergoing different surgical procedures due to different stages of endometriosis. Bleomycin was used as a mutagen, and the mutagen sensitivity of peripheral lymphocytes from women with and without endometriosis was determined by measuring chromatid breaks induced by bleomycin in short-term culture using cytogenetic analysis. RESULTS: The m ean +/- SD (range) number of chromatid breaks per cell in women with and without endometriosis was 0.68 +/- 0.12 (0.50-0.94) and 0.52 +/- 0.10 (0.35-0.68), respectively. There was a significant difference with regard to mean chromatid breaks per cell between women with and without endometriosis ($P < 0.001$). On logistic regression analysis, the odds ratio (95% confidence interval) of chromatid breaks per cell was 5.80 (2.19-15.37, $P < 0.001$) for cases compared with controls. Yet, variables of interest including age, dysmenorrhoea, previous induced abortion and smoking in the home and workplace were not statistically correlated with chromatid breaks per cell. CONCLUSIONS: These preliminary data suggest that sensitivity to bleomycin-induced chromatid breaks in lymphocytes is associated with the risk of endometriosis development.

Results of linearly polarized near-infrared irradiation therapy in patients with intractable anorectal pain.
Mibu R, Hotokezaka M, Mihara S, Tanaka M.
Dis Colon Rectum 2003;46:S50-3.
SUMMARY: PURPOSE Electrogalvanic stimulation and biofeedback therapy for the treatment of intractable anorectal pain have been reported. However, these therapeutic modalities have some disadvantages and insufficient effectiveness. We noticed that digital examination revealed the strongly tender point in both lateral sides of the rectum and introduced linearly polarized near-infrared irradiation therapy to the strongly tender point. The purpose of this study was to review the outcomes and estimate its usefulness.METHODS A total of 35 consecutive patients complained of vague and deep pain in the anorectum. Fourteen patients had a history of lower abdominal surgery. Eighteen patients had disordered defecation. The linearly

polarized near-infrared light was irradiated to the strongly tender point on or a few centimeters apart from the skin for ten minutes. The effect of the therapy was assessed as excellent, good, no change, or worse by the patients themselves.RESULTS Ten patients had the strongly tender point in the left side, 8 in the right posterior, and 17 in both. Five patients estimated as excellent, 28 as good, and 2 as no change. Mean total number of irradiation was 18.8 (range, 1-235), and mean number of irradiation for relief from pain was 2.5 (range, 1-9). Anorectal pain recurred in four patients, who received the same therapy and improved. Four patients felt hot during the irradiation, and a patient had frequent micturition after the irradiation. These mild complications easily disappeared.CONCLUSION The linearly polarized near-infrared irradiation therapy is a simple, safe, and effective modality for relief from intractable anorectal pain and recommended for primary therapy.

Reversal of visceral and cutaneous hyperalgesia by local rectal anesthesia in irritable bowel syndrome (IBS) patients.
Verne GN, Robinson ME, Vase L, Price DD.
Pain 2003;105:223-30.
Irritable bowel syndrome (IBS) is one of the most common gastrointestinal illnesses and is characterized by altered visceral perception. The aim of the study was to determine if local anesthetic blockade of peripheral visceral nociceptive input reduces both visceral and cutaneous secondary hyperalgesia in IBS patients. Ten women with IBS (mean age 30+/-10 years) and ten control subjects (all women) (mean age 29+/-7 years) rated pain intensity and unpleasantness to distension of the rectum (35 mmHg) and thermal stimulation (47 degrees C) of the foot before and after rectal administration of either lidocaine jelly or saline jelly in a double blind crossover design. Intrarectal lidocaine (300 mg) reduced reported rectal and cutaneous pain in all of the IBS patients. The effects were statistically much greater than those of placebo and most of the effects were present within 5-15 min after the onset of the treatment. In the control subjects, rectal lidocaine did not decrease pain report from visceral and cutaneous stimuli. The results of this study support the hypothesis that local anesthetic blockade of peripheral impulse input from the rectum/colon reduces both visceral and cutaneous secondary hyperalgesia in IBS patients. The results provide further evidence that visceral hyperalgesia and secondary cutaneous hyperalgesia in IBS reflects central sensitization mechanisms that are dynamically maintained by tonic impulse input from the rectum/colon. Rectal administration of lidocaine jelly may also be a safe and effective means of reducing pain symptoms in IBS patients.

The contributions of suggestion, desire, and expectation to placebo effects in irritable bowel syndrome patients. An empirical investigation.
Vase L, Robinson ME, Verne GN, Price DD.
Pain 2003;105:17-25.
In order to investigate external factors that may influence the magnitude of placebo analgesia as well as psychological factors that mediate placebo analgesia, 13 irritable bowl syndrome (IBS) patients rated evoked rectal distension and cutaneous heat pain under the conditions of natural history (NH), rectal placebo (RP), rectal nocebo (RN), rectal lidocaine (RL) and oral lidocaine (OL). Patients were given verbal suggestions for pain relief and rated expected pain levels and desire for pain relief for both evoked visceral and cutaneous pain, respectively. Large reductions in pain intensity and pain unpleasantness ratings were found in the RP, RL and OL condition as compared to the natural history condition, whereas no significant difference in pain reduction between the three treatment conditions was found. Ratings during RN and NH were not statistically different. Compared to a previous study, which shows that rectal lidocaine reverses visceral and cutaneous hyperalgesia, these results suggest that adding a verbal suggestion for pain relief can increase the magnitude of placebo analgesia to that of an active agent. Since IBS patients rate these stimuli as much higher than do normal control subjects and since placebo effects were very large, they probably reflect anti-hyperalgesic mechanisms to a major extent. Expected pain levels and desire for pain relief accounted for large amounts of the variance in visceral pain intensity in the RP, RL, and OL condition (up to 81%), and for lower amounts of the variance in cutaneous pain intensity. Hence, the combination of expected pain levels and desire for pain relief may offer an alternative means of assessing the contribution of placebo factors during analgesia.

Phantom rectum pain: An intractable pain syndrome: A case report. Leonard B. Kamen
Arch Phys Med Rehabil 2003;84:E24.
SETTING: Outpatient physical medicine clinic. Patient: A 74-year-old woman with ulcerative colitis. Case Description: The patient underwent a total colectomy with an ileostomy 6 years before presentation. 4 years later, after initiating a stationary bicycle exercise program, she developed intractable pain in the sacrococcygeal, perianal surgical area. Imaging studies of the rectal area failed to identify an anatomic derangement or source of pain. Failed trials of multiple analgesic medications included nonsteroidals, antidepressants (3), muscle relaxants (3), opioids (5), and antiepileptic drugs (4). Anesthetic interventions, including perianal lidocaine with steroid injections, lumbar epidural steroid injections, and phenol to the

sacral nerves, provided no relief. Intrathecal morphine pump and implanted spinal stimulation trials failed to provide any benefit and were discontinued. Assessment/Results: Intractable sacrococcygeal perianal pain in the absence of a rectum with no response to intense medical and peripheral treatment supported a central or phantom pain syndrome mandating a different conceptual pain rehabilitation approach. Discussion: On referral to our rehabilitation clinic, coordinated physical and psychologic therapy combined with use of high-dose opioids (300microg of transdermal fentanyl; 80mg of methadone), adjunctive medications, and botulinum toxin type A injections to pubococcygeus and pelvic floor muscle pain generators offered a modicum of pain relief. Conclusions: Phantom pain presenting in unusual nonlimb areas has been reported in descriptions of anatomic loss. Phantom rectum pain syndrome was defined by the location, character of pain, and nonresponse to peripheral treatment. Conceptual categorization of intractable nonlimb pain as phantom pain allows for an enhanced biopsychosocial approach to pain resource utilization.

Coccygeal pain relief after transsacrococcygeal block of the ganglion impar under fluoroscopy: A case report.
Mahesh R. Kuthuru; Abdallah I. Kabbara, Parke F. Oldenburg, Mark V. Boswell, ; Samuel K. Rosenberg.
Arch Phys Med Rehabil 2003;84:E24.
SETTING: Tertiary care university hospital. Patient: A 48-year-old man with coccydynia. Case Description: The patient, who had multiple sclerosis, presented to our clinic with a 3-year history of coccygeal pain. Pain varied from 5 to 10 on a scale of 10 and was described as a sharp, knife-like, burning, stabbing, and achy pain. Walking, sitting, standing, and bending exacerbated pain. Alleviating factors included using topical capsaicin. The patient tried multiple medications without relief. Poor sleep parameters were noted. Strength was 2/5 on the left and 3/5 in the right lower extremity. Upper-extremity strength was normal. Assessment/Results: The patient was diagnosed with coccydynia. Fluoroscopically guided ganglion impar blocks were performed on February 4 and Feburary 8, 2002; the blocks resulted in 50% to 60% pain relief. A caudal epidural steroid injection, performed on March 4, 2002, under fluoroscopy, did not provide any relief. Pulsed radiofrequency denervation of the ganglion impar was performed under fluoroscopy on June 20, 2002, with good pain control noted. Discussion: Ganglion impar, also known as the ganglion of Walther, supplies some innervation for the pelvic and perineal regions, and it was initially blocked by Plancarte in 1990. To our knowledge, its effectiveness for coccydynia has not been published. We present 1 patient who experienced dramatic improvement in his coccygeal pain after blocking the ganglion impar under fluoroscopy. Successful pain control aids rehabilitation. The ganglion impar is the most caudal of the sympathetic prevertebral ganglion and supplies sympathetic fibers to the perineum. It is located anterior to the sacroccygeal junction. Blocking the ganglion impar has demonstrated considerable relief of intractable perineal and pelvic pain. Due to its location, bowel and bladder dysfunction are potential risks. Penetration of the rectum is a potential complication. Conclusions: Fluoroscopically guided ganglion impar block may offer a safe and effective way of improving coccygeal pain.

Fracture of coccyx during childbirth: A case report of an unusual cause of coccygodynia: Grant Cooper, Mike S. Lee, MD; Gregory E. Lutz
Arch Phys Med Rehabil 2003;84:E15.
SETTING: Academic outpatient physiatric spine practice. Patient: A 32-year-old woman. Case Description: The patient was referred for evaluation of coccygeal pain. Her pain began 3 months prior during a spontaneous vacuum-assisted vaginal delivery of a healthy 8lb boy. The fetus was not in breech, however, his head was turned to the side, making passage difficult. After 2(1/2)h in the active stage, a vacuum was used to assist with the delivery. The patient felt and heard a "snap" in her coccyx. Assessment/Results: She reported the pain was sharp and rated its intensity as 10 out of 10. Magnetic resonance imaging (MRI) revealed an edematous pattern surrounding her coccyx. Her pain was most pronounced when sitting and was alleviated with standing. She underwent trials of physical therapy and internal mobilization, which aggravated her pain. She was prescribed a nonsteroidal anti-inflammatory drug and nasal calcitonin, but was unable to tolerate these medications due to side effects. Her physical examination was unremarkable except for a pulling sensation in the sacral region on flexion. A repeat MRI confirmed a fractured coccyx with persistent edematous pattern. There was no associated soft tissue injury or mass lesion in the area. We diagnosed her with coccygodynia secondary to coccygeal fracture and prescribed 6 weeks of conservative management. Her pain progressively improved and she did not require further treatment. Discussion: Postpartum coccygodynia is most commonly seen secondary to hormonal changes, which occur during the third trimester of pregnancy. These changes induce a softening of the synchrondrosis between the sacrum and coccyx, increasing mobility of the ligaments and surrounding muscles, causing inflammation. However, this is only the second reported case of a coccygeal fracture causing postpartum coccygodynia. Conclusion: Childbirth may result in a coccygeal fracture. This etiology should be included in the differential diagnosis of postpartum coccygodynia.

Does bacterial gastroenteritis predispose people to functional gastrointestinal disorders? A

prospective, community-based, case-control study.
Parry SD, Stansfield R, Jelley D, Gregory W, Phillips E, Barton JR, Welfare MR.
Am J Gastroenterol 2003;98:1970-5.
Irritable bowel syndrome (IBS) might develop after gastroenteritis. Most previous studies of this relationship have been uncontrolled, and little is known regarding other functional gastrointestinal disorders (FGIDs) after gastroenteritis. The primary aim of this study was to determine the frequency of IBS, functional dyspepsia, or functional diarrhea 6 months after bacterial gastroenteritis.This was a prospective, community-based, case-control study. Cases had proven bacterial gastroenteritis, and controls were community-based. FGIDs were diagnosed with the use of self-completed Rome II modular questionnaires administered at baseline, 3, and 6 months. Subjects with prior FGIDs were excluded. The primary endpoint was the presence of one of the three specific FGIDs at 6 months.A total of 500 cases and 705 controls were identified. Of the 500 cases, 265 (53%) consented, but only 128 cases and 219 community controls who consented were eligible. At 6 months, 108 cases and 206 controls returned the questionnaire. FGIDs were diagnosed in significantly more cases (n = 27, 25%) than controls (n = 6, 2.9%) (OR = 11.11, 95% CI = 4.42-27.92). IBS was diagnosed in 18 cases (16.7%) and four controls (1.9%) (OR = 10.1, 95% CI = 3.32-30.69); functional diarrhea in six cases (5.6%) and no controls. Functional dyspepsia was uncommon in both cases and controls. Similar findings were found at 3 months, with 29% of cases and 2.9% of controls having an FGID.Symptoms consistent with IBS and functional diarrhea occur more frequently in people after bacterial gastroenteritis compared with controls, even after careful exclusion of people with pre-existing FGIDs. The frequency is similar at 3 and 6 months. Our findings support the existence of postinfectious IBS and give an accurate estimate of its frequency.

8 – FISTULAE

30 years of experience with York-Mason repair of recto-urinary fistulas.
Renschler TD, Middleton RG.
J Urol 2003;170:1222-5.
PURPOSE: Recto-urinary fistula formation is a rare occurrence, usually following surgery or another intervention for prostatic disease. Spontaneous closure is rarely successful and reconstructive procedures are usually performed. We report our experience in the last 30 years with modified York-Mason repair. To our knowledge our series of 24 patients is the largest reported using this approach. MATERIALS AND METHODS: We retrospectively reviewed the medical records of all patients who underwent acquired rectourethral or rectovesical fistula repair at our institution. A total of 24 patients underwent York-Mason recto-urinary fistula repair, 18 fistulas occurred secondary to prostatic surgery and 11 patients underwent 1-stage repair without preoperative urinary or fecal diversion. RESULTS: Overall 22 of the 24 fistulas were repaired successfully using the York-Mason approach. One patient required a repeat York-Mason procedure and another required a perineal incision to correct recurrence. All except 1 fistula were eventually surgically corrected. No fecal incontinence or anal stenosis developed. The fistula involved the bladder and urethra in 11 and 13 cases, respectively. Procedure time was less than 2 hours. Blood loss was 50 to 400 cc. No transfusions were required. CONCLUSIONS: York-Mason repair of recto-urinary fistula is an excellent approach to a rare and often confounding surgical complication. It provides nice exposure through unscarred planes and allows adequate closure. The success rate is excellent compared with that of other reported techniques. Postoperative recovery is rapid with minimal morbidity.

Outcome analysis of tunica vaginalis flap for the correction of recurrent urethrocutaneous fistula in children.
Landau EH, Gofrit ON, Meretyk S, Katz G, Golijanin D, Shenfeld OZ, Pode D.
J Urol 2003;170:1596-9.
PURPOSE: Urethrocutaneous fistula is the most common (2% to 10%) complication of hypospadias surgery. The correction of such fistula is associated with a 10% to 40% failure rate. The key measure to ensure a successful repair is separation of the suture lines in the urethra and skin, using well vascularized elastic tissue. If the dartos fascia is unavailable and local penile skin is fibrotic as a result of previous operations, a tunica vaginalis flap may be considered. We report our experience with tunica vaginalis flap as an adjunct to fistula repair. MATERIALS AND METHODS: We used tunica vaginalis flap for the repair of recurrent urethrocutaneous fistulas in 14 children with a mean age of 7.6 years (range 3 to 15). All patients had undergone previous hypospadias repairs and previous attempts to close the fistula had failed. The mean number of fistulas per patient was 1.6 (range 1 to 4), and the locations were perineal (1), penoscrotal (3), midshaft (10), and subcoronal (8). The mean number of failed previous closures with local penile skin flaps was 2.4 (range 1 to 5). Surgery was initiated by injecting povidone solution via the urethral meatus to identify all fistulas. Calibration or cystoscopy excluded distal urethral strictures. Surgery was performed

using a microscope and fistulas were closed primarily in 12 patients and with an onlay island flap in 2. The urethral suture line was covered with a flap of tunica vaginalis, which was harvested through a small scrotal incision and mobilized via a subcutaneous tunnel into the penis. The testis was then fixed to the scrotum. A urethral stent with or without suprapubic catheter drainage provided urinary diversion for 2 to 7 days. RESULTS: The repair was successful in all patients. During a mean followup of 44 months (range 8 to 60) there was no evidence of recurrent fistulas or urethral strictures. Penile cosmesis was excellent, and all parents reported a straight penis when erected. No postoperative complications were encountered in the testicles. CONCLUSIONS: Repair of recurrent urethrocutaneous fistulas with a tunica vaginalis flap is highly effective regardless of fistula location. This flap is easy to mobilize and provides excellent coverage of the urethral suture line. It is a simple procedure with no complications to the testicles.

Outcome analysis of simple and complex urethrocutaneous fistula closure using a de-epithelialized or full thickness skin advancement flap for coverage.
Santangelo K, Rushton HG, Belman AB.
J Urol 2003;170:1589-92.
PURPOSE: We review our experience repairing simple and complex urethrocutaneous fistulas using a de-epithelialized or full thickness skin advancement flap for 2-layer coverage over the fistula. MATERIALS AND METHODS: We reviewed the records of 1,092 hypospadias repairs performed at our institution. Urethrocutaneous fistula developed in 66 of those patients and 33 additional patients with fistula were referred from elsewhere. These 99 patients underwent a total of 94 fistula repairs. For simple repairs a de-epithelialized flap or a skin advancement flap was used. For complex repairs a variety of techniques were performed, all with a de-epithelialized skin flap for coverage. Stents were not left postoperatively in simple cases and repairs were routinely performed as outpatient procedures. RESULTS: Overall there were 6 (6.4%) failures. In 69 cases (73%) simple fistula closure was covered by a de-epithelialized flap or skin advancement flap, which failed in 3 (4.3%). Of 25 patients who required more complex repairs 18 underwent a tubularized or onlay urethroplasty incorporating the fistula, which failed in 2 (11.1%). Two patients underwent meatoplasty in conjunction with the distal fistula repair, which failed in 1. Two patients underwent urethroplasty in conjunction with separate repair of a urethrocutaneous fistula, and there were no failures. No fistula developed in 3 cases of re-do hypospadias repairs. CONCLUSIONS: Excellent results can be achieved for simple and complex urethrocutaneous fistula closure using a de-epithelialized or full thickness advancement flap. Moreover, almost all repairs can be performed in an outpatient setting. Simple closures do not require stenting postoperatively.

Imperforate anus with rectopenile fistula.
Shah AA, Shah AV.
Pediatr Surg Int 2003;19:559-61.
We report a 9-month-old child with anorectal anomaly which was surgically treated in the neonatal period for a colostomy and was referred to us for a definitive procedure. The child had features suggestive of low anorectal abnormality; however, investigations indicated that he had a supralevator type of imperforate anus associated with a rectopenile subcutaneous fistula. The surgical treatment of this infant is discussed.

Cholecystoenteric fistula: A rare complication of necrotizing enterocolitis.
Saleem MM.
J Pediatr Surg 2003;38:1409-10.
An infant treated with necrotizing enterocolitis, had a cholecystoenteric fistula, which was found incidentally on routine contrast study of his intestinal tract before closure of his ileostomy. To the best of the author's knowledge this complication has not been reported before.

Successful resection of a duodenal fistula complicated with recurrent Crohn's disease at the site of previous ileocolonic anastomosis: report of a case.
Nakagoe T, Sawai T, Tsuji T, Nanashima A, Shibasaki S, Yamaguchi H, Yasutake T.
Surg Today 2003;33:537-41.
A duodenal fistula complicated with Crohn's disease may present a difficult management problem. We herein report the case of a 22-year-old woman who developed a colo-ileo-duodenocutaneous fistula with recurrent disease at the ileotransverse anastomosis. The patient had previously undergone an ileoascending colectomy for Crohn's disease. Preoperative colonoscopy did not reveal any evidence of intrinsic duodenal Crohn's disease. Symptomatology was obstructive and a consequence of associated ileocolic lesions. The patient underwent a resection of the diseased bowel including the duodenal component of the fistula. Surgery included a simple closure of the duodenal defect with both omental pedicle graft wrapping and decompression of the duodenum via a gastrostomy tube. The patient had an uneventful postoperative course. The duodenal fistula was successfully cured. Our experience demonstrates that duodenal fistulas may be successfully treated when the duodenum is not involved with intrinsic Crohn's

disease. Such treatment consists of a resection of the diseased bowel segment and a primary simple closure of the duodenal defect.

The use of autologous fibrin glue for the treatment of postoperative fecal fistula following an appendectomy: report of a case.
Okamoto K, Watanabe Y, Nakachi T, Kasuga T, Motohashi G, Chikazawa G, Tasaki T, Watanabe M, Katano M, Goto Y, Ubukata H, Nakada I, Sato S, Tabuchi T.
Surg Today 2003;33:550-2.
We herein report a case of postoperative fecal fistula following an appendectomy which was successfully treated by the use of autologous fibrin glue. An 82-year-old man had acute appendicitis and underwent an appendectomy. Later, a fecal fistula developed and he underwent drainage treatment twice. After 4 weeks of drainage and during the third recurrence, the remaining fistula was successfully treated using autologous fibrin glue, instead of surgery, due to potential complications and the risks of associated with advanced age. No recurrence has been observed for 5 months. In conclusion, autologous fibrin gluing for fecal fistula was found to be a safe, economical, and effective treatment. A search of Medline from 1980 until 2002 revealed no other report of this treatment for postoperative fecal fistula following an appendectomy.

Anorectal malformation with recto-perineal fistula: Case report and clues to diagnosis.
Kumaran N, Kirby Cp C, Cusick E.
J Pediatr Surg 2003;38:E4-5.
Rectoperineal fistula is an unusual form of anorectal malformation in a boy. The authors report on a patient with this anomaly and the implications in terms of difficulty in diagnosis and neonatal management.

Potential clinical implications of direction of a trans-sphincteric anal fistula track.
Buchanan GN, Williams AB, Bartram CI, Halligan S, Nicholls RJ, Cohen CR.
Br J Surg 2003;90:1250-5.
BACKGROUND: The longitudinal direction of a trans-sphincteric anal fistula track through the anal sphincter complex may have implications regarding fistulotomy. METHODS: The angle of the track of trans-sphincteric fistulas relative to the longitudinal axis of the anal canal was measured before operation by means of magnetic resonance imaging (MRI) in 46 patients. This was compared with the findings at operation. RESULTS: The track passed cranially as well as laterally at an acute angle (less than 90 degrees) in 23 patients while it passed either transversely or caudally at an obtuse angle (90 degrees or more) in the remaining 23. The internal opening was significantly higher in relation to the dentate line (above in eight patients, at the dentate line in 14 and below in one patient) when the track was acute than when it was obtuse (above in one, at the dentate line in 17 and below in five patients) ($P = 0.004$). The fistula track crossed the sphincter at a median angle of 35 degrees, 95 degrees and 132 degrees from internal openings sited above, at and below dentate line level respectively ($P = 0.002$). CONCLUSION: Fistula tracks passed cranially and laterally through the sphincter complex in half of these patients, and were most acutely angled on MRI when internal openings were situated above the dentate line. Preoperative MRI might alert surgeons to the potential hazard of fistulotomy being more extensive than anticipated from simple palpation of the level of the internal opening.

Sacrococcygeal local anaesthesia versus general anaesthesia for pilonidal sinus surgery: a prospective randomised trial.
Naja MZ, Ziade MF, El Rajab M.
Anaesthesia 2003;58:1007-12.
Sixty patients scheduled for pilonidal sinus surgery were prospectively randomly assigned to receive general anaesthesia or sacrococcygeal local anaesthesia with a newly-described technique. Patients in the general anaesthesia group spent more time in the operating theatre and recovery room than did those in the local anaesthesia group ($p < 0.05$). Two thirds (67%) of the patients in the local anaesthesia group left hospital on the day of surgery compared to only 17% of patients in the general anaesthesia group ($p < 0.05$). Visual analogue scale pain scores performed during the 3-day follow-up period favoured the local anaesthetic technique ($p < 0.05$). Postoperative analgesia requirements were greater in the general anaesthesia group than in the local anaesthesia group ($p < 0.05$). The majority of patients and surgeons expressed satisfaction with local anaesthesia. Sacrococcygeal local anaesthesia appears to be a successful alternative to general anaesthesia for pilonidal sinus surgery.

Efficacy of fibrin sealant in the management of complex anal fistula: a prospective trial.
Buchanan GN, Bartram CI, Phillips RK, Gould SW, Halligan S, Rockall TA, Sibbons P, Cohen RG.
Dis Colon Rectum 2003;46:1167-74.
PURPOSE: A prospective trial was conducted to establish long-term healing of complex idiopathic anorectal fistula, without extension, after fibrin glue treatment, with clinical assessment and magnetic resonance

imaging to determine tract healing. METHODS: Twenty-two patients undergoing glue instillation after fistula curettage and irrigation were followed up for a median of 14 months. Clinical assessment, short tau inversion recovery sequence magnetic resonance imaging, and combined short tau inversion recovery and dynamic contrast-enhanced magnetic resonance imaging were performed at a median of three months postoperatively, and their ability to predict outcome in the presence of early skin healing was determined. RESULTS: Of 22 patients, 19 (86.5 percent) had transsphincteric fistulas, 1 (4.5 percent) had a suprasphincteric fistula, 1 (4.5 percent) had an extrasphincteric fistula, and 1 (4.5 percent) had a rectovaginal fistula. None had clinical or radiologic evidence of secondary extension. Despite skin healing in 17 (77 percent) of 22 patients at a median of 14 days after treatment, only 3 (14 percent) remained healed at 16 months. Magnetic resonance imaging with short tau inversion recovery sequences in combination with dynamic contrast-enhanced magnetic resonance imaging predicted outcome in all 10 assessments (100 percent), compared with short tau inversion recovery sequence alone in 16 (94 percent) of 17 assessments or clinical examination in 12 (71 percent) of 17 (P = 0.02). CONCLUSIONS: The success rate of fibrin glue application for complex anorectal fistulas without extension is 14 percent. Magnetic resonance imaging predicts outcome at an earlier stage than clinical examination.

9 – BEHAVIOUR, PSYCHOLOGY, SEXOLOGY

The function of sildenafil on female sexual pathways: a double-blind, cross-over, placebo-controlled study.

Caruso S, Intelisano G, Farina M, Di Mari L, Agnello C.

Eur J Obstet Gynecol Reprod Biol 2003;110:201-206.

OBJECTIVES: To determine the changes, if any, on female sexual pathways using sildenafil (primary outcome), and to verify the safety of this drug (second outcome). STUDY DESIGN: Following previous research on symptomatic women, we wanted to study the effects of sildenafil on asymptomatic women. We would like to make it clear from the outset that this study is part of an ongoing line of research and this drug, and others of its type, should be used under strict medical supervision only on symptomatic patients. A randomized double-blind cross-over, placebo-controlled study was conducted at the Family Planning Centre of the Group for Sexological Research, Department of Microbiological and Gynecological Science, School of Medicine, University of Catania, Italy. Sixty-eight healthy volunteer women aged 19-38 years, asymptomatic for sexual disorders, were enrolled. The study consisted of 4 weeks sildenafil, 2 weeks washout, and 4 weeks placebo, by two possible sequences: sildenafil 50mg, washout, placebo; or placebo, washout, sildenafil 50mg. Efficacy of sildenafil was assessed by the Personal Experiences Questionnaire (PEQ) based on the 5-point Likert scale. The questionnaire quantified subjective sexual aspects at baseline, during washout, after treatments, and at the follow-ups. Statistical analysis was done with the Wilcoxon's rank-sum test and Student's t-test. RESULTS: 50/68 women completed the study at the first follow-up, and 38 women reached the second follow-up. Six women withdrew because of adverse events. Sildenafil improved arousal ($P<0.001$), orgasm ($P<0.05$), and enjoyment ($P<0.001$) with respect to placebo. Significant differences were noted during sildenafil usage with respect to the baseline for arousal ($P<0.01$), orgasm ($P<0.001$), and sexual enjoyment ($P<0.001$). The adverse events were transient and mild or moderate. CONCLUSIONS: Our study suggests that sildenafil acts on the different sexual pathways in healthy women, improving their sexual experience. This study could help to understand the physiologic and pathophysiologic aspects of female sexuality. In comparison with current psychosexual therapies, which are long-term, compliance would be improved with use of this drug. Additional studies are required to define the use of sildenafil in a clinical setting.

Depression assessment in rehabilitation patients with communication difficulties: The Cornell depression scale.

Peter A. Lim, A. De Silva, Yee Sien Ng

Arch Phys Med Rehabil 2003;84:E33.

OBJECTIVE: To use the Cornell Depression Scale (CDS) to diagnose major depression in rehabilitation inpatients with communication difficulties, using the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV), as standard assessment tool. Design: Prospective clinical trial. Setting: Rehabilitation medicine unit in a tertiary teaching hospital. Participants: Consecutive general rehabilitation patients (61.8% strokes, others being head injuries, spinal cord injuries, deconditioning) admitted between May and August 2002. Patients who did not complete their rehabilitation program for various reasons (including medical instability) were excluded from analysis. Interventions: All 78 patients admitted were screened by the same investigator for depressive signs and symptoms using DSM-IV criteria on admission, and then on a weekly basis until discharge. Of the 68 patients who completed rehabilitation, 14 (20.6%) had communication difficulties (defined as a score of <5 for comprehension and/or expression on the initial FIM trade mark instrument score) and were also assessed using the CDS. Main Outcome Measure: Presence or absence of

major depression, as determined by the CDS and/or DSM-IV criteria. Results: 13 (19.1%) of the 68 patients were diagnosed with major depression using the DSM IV. Of these, 4 patients had communication difficulty; they also fulfilled the criteria for major depression on the CDS. Importantly, the remaining 10 patients with communication difficulty did not have depression as assessed by the DSM-IV and the CDS. There was hence a 100% correlation between the 2 tools. Conclusions: Diagnosis of major depression in the presence of communication difficulties can be challenging. The CDS, a nonverbal assessment tool focusing on observers' ratings and originally constructed for patients with dementia, showed accurate correlation with the well-established DSM-IV and may hence be useful in rehabilitation patients with communication difficulties. A larger study, to ensure accuracy and statistical significance of this correlation, is necessary.

Hysterectomy and sexual wellbeing: prospective observational study of vaginal hysterectomy, subtotal abdominal hysterectomy, and total abdominal hysterectomy.
Roovers JP, van der Bom JG, van der Vaart CH, Heintz AP.
BMJ 2003;327:774-8.
OBJECTIVES: To compare the effects of vaginal hysterectomy, subtotal abdominal hysterectomy, and total abdominal hysterectomy on sexual wellbeing. DESIGN: Prospective observational study over six months. SETTING: 13 teaching and non-teaching hospitals in the Netherlands. PARTICIPANTS: 413 women who underwent hysterectomy for benign disease other than symptomatic prolapse of the uterus and endometriosis. MAIN OUTCOME MEASURES: Reported sexual pleasure, sexual activity, and bothersome sexual problems. RESULTS: Sexual pleasure significantly improved in all patients, independent of the type of hysterectomy. The prevalence of one or more bothersome sexual problems six months after vaginal hysterectomy, subtotal abdominal hysterectomy, and total abdominal hysterectomy was 43% (38/89), 41% (31/76), and 39% (57/145), respectively (chi2 test, P = 0.88). CONCLUSION: Sexual pleasure improves after vaginal hysterectomy, subtotal abdominal hysterectomy, and total abdominal hysterectomy. The persistence and development of bothersome problems during sexual activity were similar for all three techniques.

Physical activity and social status in adolescence as predictors of physical inactivity in adulthood.
Tammelin T, Nayha S, Laitinen J, Rintamaki H, Jarvelin MR.
Prev Med 2003;37:375-81.
Physical inactivity is related to an increased risk of certain chronic diseases. The aim here was to evaluate how physical activity and social status in adolescence are associated with physical inactivity in adulthood.The sample comprised 3664 males and 4130 females who answered questions on physical activity and social status at 14 and 31 years of age in follow-up surveys of the Northern Finland birth cohort of 1966. Associations between explanatory factors and physical inactivity in adulthood were analyzed using multivariable logistic regression.Infrequent participation in sports after school hours at 14 years of age and, in males, additionally a low grade in school sports, was associated with physical inactivity at the age of 31 years, independent of social circumstances in adulthood. Low social class of the childhood family was associated with physical inactivity in adolescence but not with inactivity at 31 years of age. Poor school achievement in adolescence was associated with adult inactivity independent of adolescent physical activity.Infrequent participation in sports, a low grade in school sports, and poor school achievements in adolescence were associated with physical inactivity in adulthood. Participation in sports is to be strongly supported among all adolescents because of its long-term beneficial effects on adult health through its tendency to reduce the probability of adult inactivity.

Physical violence, intimate partner violence, and emotional abuse among adult American Indian men and women in Montana.
Harwell TS, Moore KR, Spence MR.
Prev Med 2003;37:297-303.
Little is known about the experience of American Indian communities relative to physical violence (PV), intimate partner violence (IPV), and emotional abuse.A random sample of adult American Indians living on or near the seven Montana reservations were interviewed through an adapted Behavioral Risk Factor Surveillance System telephone survey in 2001 (N = 1,006). Victimization from physical violence was defined as PV or sexual assault committed by any person. Respondents who reported experiencing PV and who reported that the perpetrator was a current or former spouse, boyfriend, girlfriend, or date were categorized as experiencing IPV. Emotional abuse was defined as fear for one's safety or being controlled by another individual.Nine, one, and twelve percent of men reported experiencing PV, IPV, and emotional abuse in the past year, respectively. Five percent of women reported PV in the past year, 3% reported IPV, and 18% reported emotional abuse. Men who reported PV in the past year were more likely to be younger and report more days of physical and mental health problems in the past month. Women reporting PV in the past year were more likely to be younger and have more days with mental health problems in the past month. Few men (7%) or women (12%) reported ever being assessed for PV or safety.Recent PV, IPV, and emotional

abuse are prevalent for both American Indian men and women. Strategies to increase screening for PV and effective interventions for violence are needed.

Does depression influence symptom severity in irritable bowel syndrome? Case study of a patient with irritable bowel syndrome and bipolar disorder.
Crane C, Martin M, Johnston D, Goodwin GM.
Psychosom Med 2003;65:919-23.
OBJECTIVE: Irritable bowel syndrome (IBS) is frequently associated with mood disorder. However, it is typically difficult to distinguish between disturbed mood as a causal agent and disturbed mood as a consequence of the experience of IBS. This report considers the association between mood and symptom severity in a patient with diarrhea-predominant IBS and stable, rapid cycling bipolar disorder with a predominantly depressive course. Such a case provides an important opportunity to determine the direction of the relationship between mood and IBS symptom severity because the fluctuations of mood in bipolar disorder are assumed to be driven largely by biological, rather than psychosocial, processes. METHODS: The study was carried out prospectively, with ratings of mood and IBS symptom severity made daily by the patient for a period of almost 12 months. RESULTS: The patient experienced regular and substantial changes in mood as well as fluctuations in the level of IBS symptoms during the study period. Contrary to expectation, the correlation between mood and IBS symptom severity on the same day suggested that the patient experienced less severe IBS symptoms during periods of more severe depression. However, time series analysis revealed no significant association between these two processes when serial dependence within each series was controlled for. CONCLUSIONS: The unusual co-occurrence of IBS with bipolar disorder provides direct evidence to indicate that depression does not necessarily lead to an increase in the reported severity of IBS, at least in the context of bipolar disorder, and may under certain circumstances actually be associated with a reduction in the severity of IBS symptoms. Factors that might moderate the relationship between depression and symptom severity are discussed.

Alexithymia as predictor of treatment outcome in patients with functional gastrointestinal disorders.
Porcelli P, Bagby RM, Taylor GJ, De Carne M, Leandro G, Todarello O.
Psychosom Med 2003;65:911-8.
OBJECTIVE: A previous study found a strong association between alexithymia and functional gastrointestinal disorders (FGID). The objective of this study was to investigate whether alexithymia might be a predictor of treatment outcome in patients with FGID. METHODS: A group of FGID outpatients classified by the 'Rome I' criteria was divided into improved (N= 68) and unimproved (N= 44) groups on the basis of pre-established criteria after 6 months of treatment. Patients were administered the 20-item Toronto Alexithymia Scale, the Hospital Anxiety and Depression Scale, and the Gastrointestinal Symptom Rating Scale both before and after 6 months of treatment. RESULTS: At the base-line assessment, compared with the improved patients, the unimproved patients had significantly higher levels of anxiety, depression, alexithymia, and gastrointestinal symptoms. Stability of alexithymia was demonstrated by significant correlations between base-line and follow-up TAS-20 scores in the entire sample. Moreover, hierarchical regression analyses showed that the stability of TAS-20 scores over the 6-month treatment period could not be accounted for by their associations with anxiety and depression scores. In logistic regression analyses, base-line alexithymia and depression emerged as significant predictors of treatment outcome. Relative to depression, however, alexithymia was the stronger predictor. CONCLUSIONS: Alexithymia is a reliable and stable predictor of treatment outcome in FGID patients. Although further studies are needed, clinicians might improve treatment outcome by identifying patients with high alexithymia, and attempting to improve these patients' skills for coping with emotionally stressful situations.

Miscarriage Effects on Couples' Interpersonal and Sexual Relationships During the First Year After Loss: Women's Perceptions.
Swanson KM, Karmali ZA, Powell SH, Pulvermakher F.
Psychosom Med 2003;65:902-10.
OBJECTIVES: To describe inductively women's perceptions of the effects of miscarriage on their interpersonal and sexual couple relationships (IR and SR); and, guided by the Lazarus Emotions and Adaptation Model, to compare IR and SR patterns 1 year after loss for differences in backgrounds, contexts, appraisals, reappraisals, and emotions. METHODS: This was a secondary analysis of data gathered at 1, 6, 16, and 52 weeks postmiscarriage from 185 women. Text data were content-analyzed. Relationship differences were examined using MANCOVA with Bonferroni adjusted pairwise comparisons. RESULTS: There were three relationship patterns: closer, as it was, and more distant. At 1 year, women whose IR (44%) was as it was (vs. closer [23%] or more distant [32%]) or whose SR (55%) was as it was (vs. more distant [39%]) coped less passively and appraised less miscarriage impact. Women whose IR or SR was as it was (vs. closer) were more likely to have children and (vs. more distant), miscarried at an earlier gestation, conceived again, and experienced fewer negative events. Those whose IR was closer or as it was and

whose SR was as it was (vs. IR or SR more distant) had less disturbed emotions, more emotional strength, and partners who performed more caring acts. Women whose IR was closer and whose SR was as it was (vs. more distant) had partners who engaged in more mutual sharing. CONCLUSIONS: Women differed in perceptions of how miscarriage affected their IR and SR. The Lazarus Model helped explain those differences.

Monkeys reject unequal pay.
Brosnan SF, De Waal FB.
Nature 2003;425:297-9.
During the evolution of cooperation it may have become critical for individuals to compare their own efforts and pay-offs with those of others. Negative reactions may occur when expectations are violated. One theory proposes that aversion to inequity can explain human cooperation within the bounds of the rational choice model, and may in fact be more inclusive than previous explanations. Although there exists substantial cultural variation in its particulars, this 'sense of fairness' is probably a human universal that has been shown to prevail in a wide variety of circumstances. However, we are not the only cooperative animals, hence inequity aversion may not be uniquely human. Many highly cooperative nonhuman species seem guided by a set of expectations about the outcome of cooperation and the division of resources. Here we demonstrate that a nonhuman primate, the brown capuchin monkey (Cebus apella), responds negatively to unequal reward distribution in exchanges with a human experimenter. Monkeys refused to participate if they witnessed a conspecific obtain a more attractive reward for equal effort, an effect amplified if the partner received such a reward without any effort at all. These reactions support an early evolutionary origin of inequity aversion.

Patterns of predation in a diverse predator-prey system.
Sinclair AR, Mduma S, Brashares JS.
Nature 2003;425:288-90.
There are many cases where animal populations are affected by predators and resources in terrestrial ecosystems, but the factors that determine when one or the other predominates remain poorly understood. Here we show, using 40 years of data from the highly diverse mammal community of the Serengeti ecosystem, East Africa, that the primary cause of mortality for adults of a particular species is determined by two factors--the species diversity of both the predators and prey and the body size of that prey species relative to other prey and predators. Small ungulates in Serengeti are exposed to more predators, owing to opportunistic predation, than are larger ungulates; they also suffer greater predation rates, and experience strong predation pressure. A threshold occurs at prey body sizes of approximately 150 kg, above which ungulate species have few natural predators and exhibit food limitation. Thus, biodiversity allows both predation (top-down) and resource limitation (bottom-up) to act simultaneously to affect herbivore populations. This result may apply generally in systems where there is a diversity of predators and prey.

Lessons from experimental disruption of estrous cycles and behaviors.
Wade GN, Jones JE.
Med Sci Sports Exerc 2003;35:1573-80.
In female mammals reproduction is highly sensitive to the food supply. During lean times, females suspend reproductive attempts in favor of maintaining processes necessary for survival; fertility is restored once the food supply is again abundant. Nearly all aspects of reproduction are affected, including puberty, adult ovulatory cycles, and reproductive behaviors. Work with experimental animals reveals that caloric restriction inhibits release of luteinizing hormone (LH) and female sexual behavior via similar, although separate, processes. The primary metabolic event affecting LH release as well as female sexual behavior is the short-term (minute-to-minute, hour-to-hour) availability of oxidizable metabolic fuels, rather than any aspect of body size or composition (e.g., body fat content). Metabolic fuel availability is detected in the hindbrain and perhaps in peripheral tissues. Metabolic information is then transmitted synaptically from the visceral hindbrain to the forebrain effector circuits. In the forebrain, signaling via corticotropin-releasing hormone receptors appears to be crucial for inhibition of both LH secretion and female sexual behavior.

Lessons from experimental disruptions of the menstrual cycle in humans and monkeys.
Williams NI.
Med Sci Sports Exerc 2003;35:1564-72.
Prospective studies in humans and monkeys have informed our understanding of the mechanism of exercise-associated menstrual disorders (EAMD). These studies have provided convincing evidence that a key causal factor in the development of EAMD is an imbalance between energy intake and energy expenditure. This imbalance is created by the increased energy cost of exercise in the face of inadequate supplementation of caloric intake. Although one prospective study in humans documents the impact of weight loss, studies in nonhuman primates (Macaca fasicularis) reveal that EAMD can occur with

unobtrusive compensatory mechanisms indicative of energy conservation. The onset of EAMD is variable between individuals, but is abrupt, and with little forewarning with respect to recognizable symptoms. Future studies aimed at mechanisms should build upon the finding that key metabolic signals such as T3 are correlated with both the onset and reversal of EAMD, perhaps by focusing on concomitant metabolic changes that directly influence GnRH neurons. Translational studies examining the energetics of the reversal of EAMD by manipulating food intake and or exercise should build on the findings in the monkey model. Lastly, because EAMD is often associated with disordered eating, future prospective studies in humans should incorporate the potential interaction of disordered eating and psychosocial stress on EAMD.

Menstrual disturbances in athletes: a focus on luteal phase defects.
De Souza MJ.
Med Sci Sports Exerc 2003;35:1553-63.
Subtle menstrual disturbances that affect the largest proportion of physically active women and athletes include luteal phase defects (LPD). Disorders of the luteal phase, characterized by poor endometrial maturation as a result of inadequate progesterone (P4) production and short luteal phases, are associated with infertility and habitual spontaneous abortions. In recreational athletes, the 3-month sample prevalence and incidence rate of LPD and anovulatory menstrual cycles is 48% and 79%, respectively. A high proportion of active women present with LPD cycles in an intermittent and inconsistent manner. These LPD cycles are characterized by reduced follicle-stimulating hormone (FSH) during the luteal-follicular transition, a somewhat blunted luteinizing hormone surge, decreased early follicular phase estradiol excretion, and decreased luteal phase P4 excretion both with and without a shortened luteal phase. LPD cycles in active women are associated with a metabolic hormone profile indicative of a hypometabolic state that is similar to that observed in amenorrheic athletes but not as comprehensive or severe. These metabolic alterations include decreased serum total triiodothyronine (T3), leptin, and insulin levels. Bone mineral density in these women is apparently not reduced, provided an adequate estradiol environment is maintained despite decreased P4. The high prevalence of LPD warrants further investigation to assess health risks and preventive strategies.

Introduction to menstrual disturbances in athletes.
Loucks AB.
Med Sci Sports Exerc 2003;35:1551-2.
The first symposium on this topic at an annual meeting of ACSM was presented 22 yr ago when the high prevalence of menstrual disorders in athletes was becoming increasingly apparent. The clinical consequences and need for treatment for menstrual disturbances in athletes have been recognized by ACSM through the publication of its 1997 Position Stand on the Female Athlete Triad. This mini-symposium presents an update on recent scientific advances on this topic. The first review in this symposium concentrates on a menstrual disturbance in which the length of the luteal phase is abbreviated and luteal function is suppressed. Such luteal suppression occurs in a large proportion of even the most regularly menstruating athletes. The next two papers summarize what has been learned about the mechanism of these disturbances from prospective experiments that have employed diet, exercise, cold exposure, and pharmacological blockers of metabolic pathways to disrupt menstrual cycles in monkeys and humans as well as estrous cycles and reproductive behavior in hamsters.

The epidemiology of walking for physical activity in the United States.
Eyler AA, Brownson RC, Bacak SJ, Housemann RA.
Med Sci Sports Exerc 2003;35:1529-36.
PURPOSE: The purpose of this paper was to describe the epidemiology of walking for physical activity among respondents to the U.S. Physical Activity Study. Correlates of walking among people who never walk for physical activity, those who walk regularly, and people who walk occasionally were compared. METHODS: Data on walking, personal and environmental correlates, and sociodemographics were collected via telephone using a modified random-digit-dialing technique on a national sample. Three categories were analyzed: Regular walkers were those who met public health recommendations by walking (5x wk-1 and 30 min at a time), occasional walkers were those who walked for physical activity but did not meet this recommendation, and never walkers were those who never walked for physical activity. Multiple logistic regression resulting in odds ratios (OR) and 95% confidence intervals were calculated. RESULTS: Thirty-four percent of this population were regular walkers, 45.6% occasional walkers, and 20.7% never walkers. Walkers reported using neighborhood streets, shopping malls, and parks for walking. Regular walkers had more self-confidence and more social support than occasional or never walkers. Occasional and never walkers reported time as a barrier more than regular walkers (OR 1.91 and 2.36). Never walkers were more likely (OR 3.25) to report feeling unhealthy and more likely (OR 4.43) to report lacking energy to exercise. CONCLUSION: Our results identify important information that can be used to help guide future interventions that promote walking as a form of physical activity. An ecological approach that combines

individual (e.g., self-confidence), interpersonal (e.g., social support), and community aspects (e.g., improve streets for walking) may be the most beneficial.

New options in contraception for teenagers.
Zite NB, Shulman LP.
Curr Opin Obstet Gynecol 2003;15:385-9.
SUMMARY: PURPOSE OF REVIEW Unintended pregnancy continues to exact a considerable economic, social and personal cost in industrialized nations despite the ready availability of safe, reliable and highly effective methods of contraception. Adolescents still demonstrate some of the highest rates of unintended pregnancy and thus may benefit from considering new contraceptive options that provide unique side effect profiles or delivery systems that could facilitate and improve compliance of contraceptive methods.RECENT FINDINGS The recent launch of several new combination oral contraceptive pills with novel side effect profiles has expanded the choices for teenagers who choose to use a daily oral contraceptive. Of potentially greater interest is the recent availability of several nondaily contraceptives, as compliance remains a critical issue with successful contraceptive use in adolescents.SUMMARY New contraceptive methods bring unique side effect profiles and delivery systems that may improve overall contraceptive compliance, especially among teenagers who are more prone to misuse from a wide array of side effect and compliance issues. Even the most accepted method, however, will not provide effective contraception if the process by which contraception is provided fails to address the unique concerns and lifestyle issues of each individual adolescent.

Concordant restoration of ovarian function and mood in perimenopausal depression.
Daly RC, Danaceau MA, Rubinow DR, Schmidt PJ.
Am J Psychiatry 2003;160:1842-6.
OBJECTIVE: Despite reports of estradiol's therapeutic efficacy in perimenopausal depression, the relationship between ovarian function and mood in perimenopausal depression remains unclear. The purpose of this study was to examine changes in mood and pituitary-ovarian axis function in women exhibiting perimenopausal depression. METHOD: Depression ratings (from the Center for Epidemiologic Studies-Depression Scale [CES-D Scale]) and follicle-stimulating hormone (FSH) plasma levels of depressed perimenopausal women (N=110) attending a menopause clinic were obtained at baseline and after a 6-week screening period. RESULTS: Eighteen women experienced an improvement in depression (50% decline in CES-D Scale scores) at week 6, which was associated with a significant decrease in FSH plasma levels (baseline: mean=73.3 IU/liter [SD=42.0]; week 6: mean=42.2 IU/liter [SD=28.6]). Similarly, those subjects experiencing a 50% drop in FSH plasma levels had significant decreases in CES-D Scale scores (baseline: mean=23.3 [SD=6.8]; week 6: mean=18.1 [SD=10.9]). However, between women with CES-D Scale scores >/==" BORDER="0">15 and those with CES-D Scale scores <15, no significant differences in FSH levels were observed either at baseline (mean=65.5 IU/liter [SD=35.7] and 60.9 IU/liter [SD=34.9], respectively) or at week 6 (mean=56.2 IU/liter [SD=36.6] and 51.5 IU/liter [SD=34.2]). CONCLUSIONS: Mood variability in women with perimenopausal depression may reflect episodic alterations in ovarian function that are best detected by longitudinal study designs.

Is naturopathy as effective as conventional therapy for treatment of menopausal symptoms?
Cramer EH, Jones P, Keenan NL, Thompson BL.
J Altern Complement Med 2003;9:529-38.
BACKGROUND: Although the use of alternative medicine in the United States is increasing, no published studies have documented the effectiveness of naturopathy for treatment of menopausal symptoms compared to women receiving conventional therapy in the clinical setting. OBJECTIVE: To compare naturopathic therapy with conventional medical therapy for treatment of selected menopausal symptoms. DESIGN: A retrospective cohort study, using abstracted data from medical charts. SETTING: One natural medicine and six conventional medical clinics at Community Health Centers of King County, Washington, from November 1, 1996, through July 31, 1998. PATIENTS: Women aged 40 years of age or more with a diagnosis of menopausal symptoms documented by a naturopathic or conventional physician. MAIN OUTCOME MEASURES: Improvement in selected menopausal symptoms. RESULTS: In univariate analyses, patients treated with naturopathy for menopausal symptoms reported higher monthly incomes ($1848.00 versus $853.60), were less likely to be smokers (11.4% versus 41.9%), exercised more frequently, and reported higher frequencies of decreased energy (41.8% versus 24.4%), insomnia (57.0% versus 33.1%), and hot flashes (69.6% versus 55.6%) at baseline than those who received conventional treatment. In multivariate analyses, patients treated with naturopathy were approximately seven times more likely than conventionally treated patients to report improvement for insomnia (odds ratio [OR], 6.77; 95% confidence interval [CI], 1.71, 26.63) and decreased energy (OR, 6.55; 95% CI, 0.96, 44.74). Naturopathy patients reported improvement for anxiety (OR, 1.27; 95% CI, 0.63, 2.56), hot flashes (OR, 1.40; 95% CI, 0.68, 2.88), menstrual changes (OR, 0.98; 95% CI, 0.43, 2.24), and vaginal dryness (OR, 0.91; 95% CI,

0.21, 3.96) about as frequently as patients who were treated conventionally. CONCLUSIONS: Naturopathy appears to be an effective alternative for relief of specific menopausal symptoms compared to conventional therapy.

An alternative way to individualized medicine: psychological and physical traits of Sasang typology.
Chae H, Lyoo IK, Lee SJ, Cho S, Bae H, Hong M, Shin M.
J Altern Complement Med 2003;9:519-28.
BACKGROUND: Disease susceptibility and drug response of individuals are presumed to be different depending on their personality traits. The Sasang typology, a traditional Korean medical typology, explains the individual differences of vulnerability to pathology and proposes guidelines for the safe and effective use of medical herbs depending on individual traits. OBJECTIVE: The purpose of the present study was to evaluate psychologic and physical characteristics of Sasang types from the perspective of personality theory. DESIGN: After determining the Sasang type of 79 college students based on the Questionnaire for the Sasang Constitution Classification, the psychologic and physical traits of each type were analyzed by the Meyers-Briggs Type Indicator (MBTI) and Bioelectrical Impedance Analysis, respectively. RESULTS: Each of the Sasang types showed significantly different profiles based on the MBTI scores (generalized estimation equation, coefficient = 11.88, z = 2.13, p = 0.033) and could be distinctively classified based on their MBTI scores (discriminant analysis Wilks' lambda = 0.611, df = 8, chi(2) = 36.7, p < 0.001). Subjects with the So-Eum type (Introversion and Judging) and the So-Yang type (Extroversion and Perceiving) showed contrasting psychologic features. However, they had similar anthropometric characteristics. Subjects with Tae-Eum type had relatively higher body fat mass. CONCLUSION: Current results demonstrated distinctive personality traits associated with Sasang types using reproducible psychometric and anthropometric instruments. With further study, the Sasang typology could serve as a scientific tool for individualized and integrative medicine.

Headache associated with sexual activity: Demography, clinical features, and comorbidity.
Frese A, Eikermann A, Frese K, Schwaag S, Husstedt IW, Evers S.
Neurology 2003;61:796-800.
OBJECTIVE:S: To provide data on the demography, clinical features, and comorbidity of headache associated with sexual activity (HSA). METHODS: Between 1996 and 2001, 51 patients with the diagnosis of HSA were questioned using a structured interview. RESULTS: The mean age at onset was 39.2 (+/-11.1) years. There was a clear male preponderance (2.9:1). The age at onset had two peaks, with a first peak between the 20th and 24th (n = 13) years of life and a second peak between the 35th and 44th (n = 20) years of life. Eleven patients had HSA type 1 (dull subtype), which gradually increased with increasing sexual excitement. The remaining (n = 40) had HSA type 2 (explosive subtype). The pain was predominantly bilateral (67%), and diffuse or occipital (76%). The quality was nearly equally distributed among dull, throbbing, and stabbing. HSA was not dependent on specific sexual habits and most often occurred during sexual activity with the usual partner (94%) and during masturbation (35%). There was a high comorbidity with migraine (25%), benign exertional headache (29%), and tension-type headache (45%). HSA types 1 and 2 did not significantly differ in demography, clinical features, or comorbidity, except for a higher probability of stopping the attack by breaking off sexual activity in HSA type 1. There were no cases with HSA type 3 (postural subtype). CONCLUSION: Mean age at onset, a male preponderance, a predominantly bilateral and occipital pain, and a high comorbidity with other primary headaches are in concordance with case reports in the literature. The authors found two peaks for the age at onset, however. There was no clinical evidence proving subtypes 1 and 2 to be distinct disorders. HSA types 1 and 2 may be different manifestations of the same disease rather than distinct entities.

Is there an inhibitory role of cortisol in the mechanism of male sexual arousal and penile erection?
Uckert S, Fuhlenriede MH, Becker AJ, Stief CG, Scheller F, Knapp WH, Jonas U.
Urol Res 2003;
Background. It has been speculated for more than 2 decades whether there is a significance of adrenal corticosteroids, such as cortisol, in the process of normal male sexual function, especially in the control of sexual arousal and the penile erectile tissue. However, only few in vivo studies have been carried out up until now on the effects of cortisol on human male sexual performance and penile erection. In order to evaluate further the role of cortisol in male sexual activity, the present study was conducted to detect serum levels of cortisol in the systemic and cavernous blood taken during different penile conditions from healthy males. Material and Methods. The effects of cortisol derivative prednisolone, catecholamine norepinephrine (NE) and the peptide endothelin-1 (ET-1) on isolated human corpus cavernosum (HCC) were investigated using the organ bath technique. Fifty-four healthy adult male subjects were exposed to erotic stimuli in order to elicit penile tumescence and rigidity. Whole blood was simultaneously aspirated from the corpus cavernosum and the cubital vein during different penile conditions. Serum levels of cortisol (microg/dl) were determined by means of a radioimmunoassay (ELISA). Results. In the healthy volunteers, cortisol serum

levels significantly decreased in the systemic circulation and the cavernous blood with increasing sexual arousal, when the flaccid penis became rigid. During detumescence, the mean cortisol level remained unaltered in the systemic circulation, whereas in the cavernous compartment, it was found to decrease further. Under all penile conditions, no significant differences were registered between cortisol levels in the systemic circulation and in the cavernous blood. Cumulative addition of NE and ET-1 (0.001-10 microM) induced contraction of isolated HCC strips, whereas the contractile response to prednisolone was negligible. Conclusion. Our results strongly suggest an inhibitory role for cortisol in the mechanism of male sexual response and behaviour. These properties are mediated rather via an effect on central structures than on the penile erectile tissue. Future studies to include patients suffering from erectile dysfunction may reveal whether or not there are differences in the cortisol serum profiles of healthy subjects and patients under different stages of sexual arousal.

Sense of coherence and quality of life in women with and without irritable bowel syndrome.
Motzer SA, Hertig V, Jarrett M, Heitkemper MM.
Nurs Res 2003;52:329-37.
BACKGROUND: Despite ongoing physical and psychological distress, little is known about sense of coherence (SOC) and holistic quality of life (QOL) in women with irritable bowel syndrome (IBS). OBJECTIVES: The purposes of this study were to (a) describe and compare SOC and holistic QOL of women with and without IBS, and (b) examine the relationships among SOC, holistic QOL, and gastrointestinal (GI) and psychological distress symptoms. METHOD: A two-group comparison design was used to test the study hypotheses that women with IBS would have lower SOC and holistic QOL than control women without IBS, and that SOC and holistic QOL would be inversely related to GI and psychological distress. A total of 324 women were studied (n= 235 with IBS, n= 89 controls). Measures included the 13-item SOC Questionnaire, Modified Flanagan QOL Scale, Bowel Disease Questionnaire, and Symptom-Checklist-90-R. RESULTS: Both SOC and holistic QOL were lower in women with IBS ($p < .001$). Correlations between SOC and global distress, depression, anxiety, and somatization without GI symptoms were moderately and inversely related ($r = -.64, -.64, -.53$, and $-.31$, respectively; $p < .001$) in the total sample. Relationships between holistic QOL and psychological distress indicators were universally of lower magnitude ($r = -.56$ to $-.27$, $p < .001$). The only GI symptom indicator significantly related to SOC and holistic QOL was alternating constipation and diarrhea (tau= -.21 and -.17, respectively; $p < .001$). DISCUSSION: Women with IBS have a reduced SOC and holistic QOL when compared to women without IBS. It remains to be determined whether interventions targeted at enhancing SOC and holistic QOL can impact the psychological distress associated with IBS.

Patients' memory for medical information.
Shankar J.
J R Soc Med 2003;96:520.

Erectile dysfunction after radical prostatectomy and its treatment.
Hauri D.
Urol Int 2003;71:235-41.

Phosphorylated Endothelial Nitric Oxide Synthase Mediates Vascular Endothelial Growth Factor-Induced Penile Erection.
Musicki B, Palese MA, Crone JK, Burnett AL.
Biol Reprod 2003;
The objective of this study was to evaluate whether vascular endothelial growth factor (VEGF)-induced penile erection is mediated by activation of endothelial nitric oxide synthase (eNOS) through its phosphorylation. We assessed the role of constitutively activated eNOS in VEGF-induced penile erection using wild type (WT) and eNOS-deficient (eNOS(-/-)) mice with and without vasculogenic erectile dysfunction. Adult WT and eNOS(-/-) mice were subjected to sham operation or bilateral castration to induce vasculogenic erectile dysfunction. At the time of surgery, animals were injected intracavernosally with a replication-deficient adenovirus expressing human VEGF145 (10(9) particle units), or with empty virus (Ad.Null). After seven days, erectile function was assessed in response to cavernous nerve electrical stimulation. Total and phosphorylated protein kinase B (Akt) and total and phosphorylated eNOS were quantitatively assessed in mice penes using Western immunoblot and immunohistochemistry. VEGF145 significantly increased erectile responses in intact WT mice and completely recovered penile erection in WT mice after castration. However, VEGF145 failed to increase erectile responses in intact eNOS(-/-) mice and only partially recovered erectile function in castrated eNOS(-/-) mice. In addition, VEGF significantly increased phosphorylation of eNOS at Serine 1177 about two-fold in penes of both intact and castrated WT mice. The data provide a molecular explanation for VEGF stimulatory effect on penile erection, which involves phosphorylated eNOS (Serine 1177) mediation.

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The place of surgery for vascular impotence in the third millennium.
Wespes E, Wildschutz T, Roumeguere T, Schulman CC.
J Urol 2003;170:1284-6.
PURPOSE: With the arrival of new oral therapies the question arises about the role of surgery in patients with vascular impotence. We compared the sexual satisfaction rate in patients with arterial and/or venous impotence treated with 4 surgical techniques with long-term followup. MATERIALS AND METHODS: Surgery was performed in 130 patients with vascular erectile dysfunction by 1 surgeon. Two young patients (2%) with traumatic arterial lesions underwent penile revascularization (group 1), while 128 with arterial and/or venous impotence were also treated with surgery, including 11 of 130 (8%) with deep dorsal penile vein resection (group 2), 39 (30%) with arterialization of the deep dorsal penile vein (group 3) and 78 (60%) with penile implants (group 4). Sexual satisfaction, defined as the possibility of satisfactory sexual intercourse without any additional treatment or pain, was evaluated by patient interview. RESULTS: Of the 130 patients 111 (85%) participated in the sexual life events interview, including 2 of 2 (100%) in group 1, 7 of 11 (63.6%) in group 2, 33 of 39 (85%) in group 3 and 69 of 78 (88%) in group 4. Mean followup was 50, 48, 46 and 54 months for groups 1 to 4, respectively. The sexual satisfaction rate was 2 of 2 (100%) for penile revascularization, 1 of 7 (14%) for venous resection, 4 of 33 (12%) for arterialization and 64 of 69 (93%) for penile implantation. Complications occurred in 9.5%, 12.5% and 20.5% of the patients in groups 2 to 4, respectively. CONCLUSIONS: Except for young patients with traumatic arterial lesions this study demonstrated the poor sexual satisfaction rate in impotent patients treated with the vasculogenic approach and the high rate of satisfaction in those treated with penile implants. Better selection criteria must be applied for vascular surgical treatment for impotence.

Safety and efficacy of vardenafil for the treatment of men with erectile dysfunction after radical retropubic prostatectomy.
Brock G, Nehra A, Lipshultz LI, Karlin GS, Gleave M, Seger M, Padma-Nathan H.
J Urol 2003;170:1278-83.
PURPOSE: More than one-third of men may experience erectile dysfunction (ED) after nerve sparing radical retropubic prostatectomy. The efficacy and safety of vardenafil, a potent, selective, phosphodiesterase 5 inhibitor, was assessed for the treatment of ED after radical prostatectomy. MATERIALS AND METHODS: In this double-blind study 440 men with ED after nerve sparing radical prostatectomy were randomized to take placebo, or 10 or 20 mg vardenafil. Efficacy was measured after 12 weeks using the erectile function domain of the International Index of Erectile Function, diary questions measuring vaginal penetration and intercourse success rates, and a global assessment question (GAQ) on erection. RESULTS: Of the intent to treat population 70% had severe ED (erectile function less than 11) at baseline. After 12 weeks both vardenafil doses were significantly superior to placebo ($p < 0.0001$) for all efficacy variables. Improved erections (based on GAQ) were reported by 65.2% and 59.4% of patients on 20 and 10 mg vardenafil, respectively, and by only 12.5% of patients on placebo ($p < 0.0001$). Among men with bilateral neurovascular bundle sparing, positive GAQ responses were reported by 71.1% and 59.7% of patients on 20 and 10 mg vardenafil, respectively, versus 11.5% of those on placebo ($p < 0.0001$). The average intercourse success rate per patient receiving 20 mg vardenafil was 74% in men with mild to moderate ED and 28% in men with

severe ED, compared to 49% and 4% for placebo, respectively. Few adverse events were observed. They were generally mild to moderate headache, flushing and rhinitis. CONCLUSIONS: In men with severe ED after nerve sparing radical retropubic prostatectomy, vardenafil significantly improved key indices of erectile function.

Variation in continence and potency by definition.
Krupski TL, Saigal CS, Litwin MS.
J Urol 2003;170:1291-4.
PURPOSE: The reporting of quality of life outcomes after prostate cancer treatment has improved with the use of validated instruments and third party data collection, and yet widely disparate continence and potency rates persist among providers. We assessed how well various definitions of these outcomes correspond with each other in the same patients. MATERIALS AND METHODS: A longitudinal cohort of 269 men undergoing radical prostatectomy for early stage prostate cancer completed quality of life questionnaires, including the University of California-Los Angeles Prostate Cancer Index. Six definitions of urinary continence and 6 definitions of potency represented by individual or aggregated items in the survey were analyzed. Using 2,506 questionnaires patients meeting the criteria for continence or potency by each definition were compared. RESULTS: Correspondence among continence definitions varied widely. Of the men who reported using no pads only 42% leaked urine not at all. Other definitions had higher rates of concordance with 98% of patients who reported total control also claiming no pads. Correspondence among potency definitions was even more disparate. Only 5% of men with erections firm enough for intercourse reported having morning erection very often, while 61% rated their ability to function sexually as good or very good. CONCLUSIONS: Variations in outcomes from items intended to measure the same domain reflect the idiosyncrasy of patient definitions of urinary and erectile function. Disease targeted, health related quality of life outcomes vary greatly depending on the specific definition used.

American Urological Association guideline on the management of priapism.
Montague DK, Jarow J, Broderick GA, Dmochowski RR, Heaton JP, Lue TF, Nehra A, Sharlip ID.
J Urol 2003;170:1318-24.

Improvement of sexual and reproductive health requires focusing on adolescents.
Bayley O.
Lancet 2003;362:830-1.

The protective effect of aminoguanidine on erectile function in streptozotocin diabetic rats.
Usta MF, Bivalacqua TJ, Yang DY, Ramanitharan A, Sell DR, Viswanathan A, Monnier VM, Hellstrom WJ.
J Urol 2003;170:1437-42.
PURPOSE: Erectile dysfunction (ED) is frequently associated with diabetes mellitus. We determined if advanced glycation end products (AGEs) are involved in ED and investigated if the selective AGE and inducible nitric oxide synthase (iNOS) inhibitor aminoguanidine (AG) could protect against the development of ED in a diabetic rat model. MATERIALS AND METHODS: Harlan Sprague-Dawley rats were divided into 3 groups. The 9 nondiabetic rats in group 1 served as age matched controls. Diabetes was induced in the 9 rats in groups 2 and 3, respectively, by intraperitoneal injection of streptozocin (60 mg/kg). While group 2 was given free access to water and a standard diet, group 3 was treated with AG added to drinking water (1 gm/l daily). Two months after diabetes induction in vivo intracavernous pressure measurements were determined. Penile tissue glycation (furosine on high performance liquid chromatography), AGEs (pentosidine on high performance liquid chromatography and immunohistochemistry), AGE receptor (galectin-3 on immunohistochemistry and Western blot) and iNOS (Western blot) levels were measured in control and diabetic penises. RESULTS: Cavernous tissue furosine, pentosidine, galectin-3 and iNOS protein levels were significantly elevated in the diabetic group compared with controls ($p < 0.05$). On the other hand, cavernous tissue furosine, pentosidine, galectin-3 and iNOS expression were lower in diabetic rats treated with AG despite an unchanged glycemia level. Diabetic rats had a significant decrease in erectile function compared with control rats ($p < 0.05$), while AG treated diabetic rats showed erectile function similar to that in control animals. CONCLUSIONS: Glycation, AGEs, galectin-3 and iNOS levels are elevated in diabetic rat penile tissue and significantly decreased by AG treatment. Furthermore, erectile function was preserved in AG treated animals. The observation that AG improved glycation despite no effect on glycemia suggests that AG may improve penile collagen turnover.

A patient-centred approach to sexuality in the face of life-limiting illness.
Hordern AJ, Currow DC.
Med J Aust 2003;179:S8-S11.
Sexuality is intrinsic to a person's sense of self and can be an intimate form of communication that helps relieve suffering and lessens the threat to personhood in the face of life-limiting illness. Health professionals

struggle to accept that people with life-limiting illness, especially older people, continue to be sexual beings. People facing life-limiting illness may appreciate the opportunity to discuss issues of sexuality and intimacy with a trusted health professional. Practical strategies to assist health professionals to communicate effectively about sexuality and intimacy include creating a conducive atmosphere, initiating the topic, using open-ended questions and a non-judgemental approach, and avoiding medical jargon.

10 – MISCELLANEOUS

Pelvic ring disruptions in emergency radiology.
Stambaugh LE, Blackmore CC.
Eur J Radiol 2003;48:71-87.
Pelvic ring disruptions are a result of high-energy trauma and are a significant cause of morbidity and mortality in major trauma patients. The initial pelvic radiograph, in combination with computed tomographic imaging in selected patients, provides a quick and accurate method of diagnosing pelvic fractures. Pelvic fracture classification schemes have evolved over the past few decades, and include description of the mechanism of injury and assessment of pelvic stability. Understanding these classifications is important in developing an approach to interpretation of pelvic imaging and prediction of associated injuries. Armed with these tools, the emergency radiologist can detect pelvic fractures early and guide subsequent imaging and therapy.

Clinical and economic choices in anaesthesia for day surgery.
Lake AP, Khater M.
Anaesthesia 2003;58:1031-2.

Consent and anaesthetic risk.
Jenkins K, Baker AB.
Anaesthesia 2003;58:962-84.
The incidences of mortality and morbidity associated with anaesthesia were reviewed. Most of the published incidences for common complications of anaesthesia vary considerably. Where possible, a realistic estimate of the incidence of each morbidity has been made, based on the best available data. Perception of risk and communication of anaesthetic risk to patients are discussed. The incidences of anaesthetic complications are compared with the relative risks of everyday events, using a community cluster logarithmic scale, in order to place the risks in perspective when compared with other complications and with the inherent risks of surgery. Documentation of these risks and discussion with patients should allow them to be better informed of the relative risks of anaesthetic complications. Depending on specific comorbidities and the severity of operation, these risks associated with anaesthesia may increase for any one individual.

Tragic History of the VII International Congress of Genetics.
Soyfer VN.
Genetics 2003;165:1-9.

Antioxidant effects of tea: evidence from human clinical trials.
Rietveld A, Wiseman S.
J Nutr 2003;133:3285S-92S.
Tea remains the most consumed drink in the world after water, well ahead of coffee, beer, wine and carbonated soft drinks. An accumulated number of population studies suggests that consumption of green and black tea beverages may bring positive health effects (1). One hypothesis explaining such effects is that the high levels of flavonoids in tea can protect cells and tissues from oxidative damage by scavenging oxygen-free radicals. Chemically, the flavonoids found in green and black tea are very effective radical scavengers. The tea flavonoids may therefore be active as antioxidants in the digestive tract or in other tissues after uptake. A substantial number of human intervention studies with green and black tea demonstrates a significant increase in plasma antioxidant capacity in humans approximately 1 h after consumption of moderate amounts of tea (1-6 cups/d). There are initial indications that the enhanced blood antioxidant potential leads to reduced oxidative damage to macromolecules such as DNA and lipids. However, the measurement of oxidative damage through biomarkers needs to be further established. In conclusion, tea flavonoids are potent antioxidants that are absorbed from the gut after consumption. Tea consumption consistently leads to a significant increase in the antioxidant capacity of the blood. Beneficial effects of increased antioxidant capacity in the body may be the reduction of oxidative damage to important biomolecules. The scientific support is strongest for the protection of DNA from oxidative damage after black or green tea consumption. However, the quality of the studies now available is insufficient to draw firm conclusions. Therefore, further evidence from human intervention studies is required.

Three-dimensional hyaluronic acid grafts promote healing and reduce scar formation in skin incision wounds.
Hu M, Sabelman EE, Cao Y, Chang J, Hentz VR.
J Biomed Mater Res 2003;67B:586-92.
Hyaluronic acid (HA) has been found to play important roles in tissue regeneration and wound-healing processes. Fetal tissue with a high concentration of HA heals rapidly without scarring. The present study employed HA formed into three-dimensional strands with or without keratinocytes to treat full-thickness skin incision wounds in rats. Wound closure rates of HA strand grafts both with and without keratinocytes were substantially enhanced. The closure times of both HA grafts were less than 1 day (average 16 h), about 1/7 that of the contralateral control incisions (114 h, $p < .01$). Average wound areas after 10 days were HA-only graft: 0.151 mm 2 +/- 0.035; HA + cell grafts: 0.143 mm2 +/- 0.036 and controls: 14.434 mm2 +/- 1.175, experimental areas were 1% of the controls ($p < 0.01$). Transforming growth factor (TGF) beta1 measured by immunostaining was remarkably reduced in HA-treated wounds compared to the controls. In conclusion, HA grafts appeared to produce a fetal-like environment with reduced TGF-beta1, which is known to be elevated in incipient scars. The HA strands with or without cultured cells may potentially improve clinical wound healing as well as reduce scar formation.

A centrifugation cell adhesion assay for high-throughput screening of biomaterial surfaces.
Reyes CD, Garcia AJ.
J Biomed Mater Res 2003;67A:328-33.
A quantitative analysis of cell adhesion is essential in understanding physiological phenomena and designing biomaterials, implant surfaces, and tissue-engineering scaffolds. The most common cell adhesion assays used to evaluate biomaterial surfaces lack sensitivity and reproducibility and/or require specialized equipment and skill-intensive operation. We describe a modified centrifugation cell adhesion assay that uses simple and convenient techniques with standard laboratory equipment and provides reliable, quantitative measurements of cell adhesion. This centrifugation assay applies controlled and uniform detachment forces to a large population of adherent cells, providing robust statistics for quantifying cell adhesion. The applicability of this system to the design and characterization of biomaterial surfaces is shown by evaluating cell adhesion on substrates using different coating proteins, cell types, seeding times, and relative centrifugal forces (RCF). Results verify that this centrifugation cell adhesion assay represents a simple, convenient, and standard method for high-throughput characterization of a variety of biomaterial surfaces and conditions.

Patterning hydroxyapatite biocoating by electrophoretic deposition.
Wang R, Hu YX.
J Biomed Mater Res 2003;67A:270-5.
Patterned bioceramic coatings may find potential applications in orthopedic implants and biosensors. In this study, various hydroxyapatite (HA) patterns were created on silicon and titanium substrates. Electrophoretic deposition technique was used together with surface patterning of the cathode specimen. When gold/palladium patterns (hexagons, spherical dots, etc.) were created on the cathode surface, HA colloidal particles in ethanol would preferentially deposit on the gold-coated area and form patterns. When silicon, instead of gold, was evaporated onto a conducting cathode surface, HA mainly deposited on the exposed area of the substrate. Detailed mechanisms for forming HA patterns may involve local concentration of the electric field when a second metal is patterned on the cathode. The difference in electric field across the two metals on the cathode also enhances HA patterning through an electrohydrodynamic process. This study demonstrated the possibility and flexibility of electrophoretic deposition in patterning charged particles onto a substrate.

Val-ala-pro-gly, an elastin-derived non-integrin ligand: Smooth muscle cell adhesion and specificity.
Gobin AS, West JL.
J Biomed Mater Res 2003;67A:255-9.
The elastin-derived peptide val-ala-pro-gly (VAPG) may be useful as a biospecific cell adhesion ligand for smooth muscle cells. By grafting the peptide sequence into a hydrogel material, we were able to assess its effects on smooth muscle cell adhesion and spreading. These materials are photopolymerizable hydrogels based on acrylate-terminated derivatives of polyethylene glycol (PEG). Because of their high PEG content, these materials are highly resistant to protein adsorption and cell adhesion. However, PEG diacrylate derivatives can be mixed with adhesive peptide-modified PEG monoacrylate derivatives to facilitate cell adhesion. Following photopolymerization, PEG monoacrylate derivatives are grafted into the hydrogel network formed by the PEG diacrylate. This results in covalent immobilization of adhesive peptides to the hydrogel via a flexible linker chain. The resistance of PEG to protein adsorption makes it an ideal material for this model system since cell-material interactions are limited to biomolecules that are covalently incorporated into the material. In this case we were able to demonstrate that VAPG is specific for adhesion

of smooth muscle cells. It also was shown that fibroblasts, endothelial cells, and platelets cannot adhere to VAPG. In addition, not only was smooth muscle cell adhesion dependent on ligand concentration, but also cell spreading increased with increasing ligand concentration.

Characterization of implant materials in fetal bovine serum and sodium sulfate by electrochemical impedance spectroscopy. II. Coarsely sandblasted samples.
Contu F, Elsener B, Bohni H.
J Biomed Mater Res 2003;67A:246-54.
Electrochemical impedance spectroscopy is used to investigate the corrosion resistance of coarsely sandblasted implant alloys, commercially pure titanium, Ti6Al4V, Ti6Al7Nb, and CoCrMo in 0.1M sodium sulfate and fetal bovine serum. Coarsely sandblasted samples have a heterogeneous surface constituted by a large number of protrusions and recessions. Impedance spectra collected in sodium sulfate present two time constants (maxima in the phase-angle of the bode plot) associated with the total surface and with the tips, respectively. In bovine serum, the two maxima in the impedance spectra cannot be distinguished because of the formation of an adsorption layer of organic molecules, which causes a decrease in the values of both the total and tips' capacitances as well as an increase in the polarization resistance. Ti6Al4V and Ti6Al7Nb show the highest corrosion rate both in serum and in sodium sulfate. Based on the capacitance values obtained in sodium sulfate, the real surface area of the coarsely sandblasted electrodes has been estimated relative to mechanically polished surfaces. The values of the effective electrode area correlate with the mechanical properties of the samples: in fact, the softest electrode (commercially pure titanium) shows the largest effective electrode area, whereas the hardest material (CoCrMo alloy) shows the smallest surface area.

Experimental realization of a one-atom laser in the regime of strong coupling.
McKeever J, Boca A, Boozer AD, Buck JR, Kimble HJ.
Nature 2003;425:268-71.
Conventional lasers (from table-top systems to microscopic devices) typically operate in the so-called weak-coupling regime, involving large numbers of atoms and photons; individual quanta have a negligible impact on the system dynamics. However, this is no longer the case when the system approaches the regime of strong coupling for which the number of atoms and photons can become quite small. Indeed, the lasing properties of a single atom in a resonant cavity have been extensively investigated theoretically. Here we report the experimental realization of a one-atom laser operated in the regime of strong coupling. We exploit recent advances in cavity quantum electrodynamics that allow one atom to be isolated in an optical cavity in a regime for which one photon is sufficient to saturate the atomic transition. The observed characteristics of the atom-cavity system are qualitatively different from those of the familiar many-atom case. Specifically, our measurements of the intracavity photon number versus pump intensity indicate that there is no threshold for lasing, and we infer that the output flux from the cavity mode exceeds that from atomic fluorescence by more than tenfold. Observations of the second-order intensity correlation function demonstrate that our one-atom laser generates manifestly quantum (nonclassical) light, typified by photon anti-bunching and sub-poissonian photon statistics.

Tyrphostin AG126 Inhibits the Development of Postoperative Ileus Induced by Surgical Manipulation of the Murine Colon.
Moore BA, Turler A, Pezzone MA, Dyer K, Grandis J, Bauer AJ.
Am J Physiol Gastrointest Liver Physiol 2003;None:None.
Background: Manipulation of the bowel during abdominal surgery leads to a period of ileus, which is most severely manifested after procedures that directly involve the colon. Ileus is associated with the increased expression of pro-inflammatory cytokines and chemokines, a leukocytic infiltration into the muscularis, and the release of mediators from resident and infiltrating leukocytes that directly inhibit intestinal smooth muscle contractility. The phosphorylation of tyrosine residues on regulatory proteins by protein tyrosine kinases (PTK's) occurs at multiple steps in the signaling cascades that regulate the expression of proinflammatory genes. Aim: To determine whether inhibition of PTK activity will attenuate the inflammatory response associated with colonic ileus, leading to improved function. Methods & Results: Using a rodent model of colonic postoperative ileus, we demonstrate that a single bolus injection of the PTK inhibitor tyrphostin AG-126 (15 mg/kg s.c.) prior to surgery significantly attenuates the surgically induced impairment of colonic contractility both in vivo and in vitro. The improvement in function was associated with a reduction in the magnitude of the inflammatory cell infiltrate and with a decrease in the transcription of the genes encoding the pro-inflammatory mediators interleukin (IL)-1beta monocyte chemo attractant protein (MCP)-1, inducible nitric oxide synthase (iNOS) and cyclooxygenase (COX)-2. Furthermore, Tyrphostin AG-126 pretreatment significantly inhibited the activation of the multifactorial transcription factor NF-kappaB, which could form the basis for the reduction in pro-inflammatory mediator expression. Conclusions: These data demonstrate for the first time that inhibition of protein tyrosine kinase activity may represent a novel approach for the

management of ileus in the clinical setting.

Intra-abdominal Complications after Surgical Repair of Small Bowel Injuries: An International Review.
Kirkpatrick AW, Baxter KA, Simons RK, Germann E, Lucas CE, Ledgerwood AM.
J Trauma 2003;55:399-406.
SUMMARY: BACKGROUND The ideal method of repairing serious small bowel injuries remains unknown. Prior reports suggest a higher rate of enteric anastomotic-related complications (EACs) with stapled posttraumatic bowel anastomosis but did not specifically focus on the small bowel or clarify fully the actual anastomotic construction.METHODS This was a retrospective review of patients requiring surgical repair of small bowel perforations at a Level I urban American center (Detroit Receiving Hospital [DRH]) and a Canadian provincial trauma center (Vancouver Hospital and Health Sciences Center [VHHSC]). All patients requiring a primary repair and/or resection were included. Anastomoses were hand-sewn, stapled, or combined stapling and sewing with mucosal inversion. Leaks, anastomotic fistulae, and intra-abdominal abscesses were considered specific EACs. A sample size of 53 per group was obtained to detect a 17% difference at alpha = 0.05 (one-sided) and beta = 0.2.RESULTS Full-thickness small bowel injuries were repaired in 232 patients (DRH, 165; VHHSC, 67). Injuries were penetrating at DRH (91.5%) and blunt at VHHSC (65.7%). Anastomotic repairs in 127 patients (158 anastomotic repairs [DRH, 113; VHHSC, 55]) were 64 (40.5%) stapled, 38 (24.1%) hand-sewn, and 56 (35.4%) combined. Also, 105 patients had 349 primary closures of an injury. Overall, there were 24 EACs. After anastomosis, there were 11 intra-abdominal abscesses: 6 after stapling, 3 after being sewn, and 2 after a combined construction. There were four small bowel anastomotic fistulae: three after stapled-only anastomosis and one after hand-sewing. After enteroenterostomy, the EAC rate was 10.2% per patient, or 8.4% per anastomosis. After primary repairs, one patient had an anastomotic fistula, which closed spontaneously, and 11 had intra-abdominal abscesses, yielding an EAC rate of 10.6% per patient or 3.4% per repair. A primary repair was significantly less likely to be associated with an EAC than any anastomosis (p = 0.035). No method of anastomosis was statistically safer in relation to EACs, whether analyzed by patient, by anastomosis, or by considering primarily either the use of a linear stapler or the principle of inverting the mucosal approximation. Only damage control procedures and associated pancreaticoduodenal injuries were identified as statistically significant predictors using multiple logistic regression analysis.CONCLUSION Anastomotic complications after enteroenterostomy or primary repair for trauma are uncommon regardless of the technique, but surgeons must be especially cautious during or after damage control. Primary repairs are desirable, but when anastomosis is unavoidable, the method of repair should reflect that with which the surgeon is the most comfortable.

Compliance with home exercise programs: A preliminary report.
Marika G. Lazo, Sunshine G. Filipinas, Jesus R. Valdez Jr
Arch Phys Med Rehabil 2003;84:E29.
OBJECTIVES: To determine compliance in patients given home exercise programs (HEPs) and to identify factors contributing to compliance. Design: Cross-sectional survey. Setting: A community hospital in the Philippines. Participants: Current and discharged rehabilitation patients given HEPs. Interventions: Not applicable. Main Outcome Measures: Responses to a 19-item questionnaire were used to determine (1) the percentage of subjects who did their HEPs fully, partially, or not at all and (2) the factors that contributed to compliance. Results: 66 of 91 patients responded (17 current, 49 discharged). Among the current patients, 100% were doing their HEPs, and 47% (8/17) were fully compliant. Among the discharged patients, 65% (32/49) were doing their HEPs, and 50% (16/32) were fully compliant. For those patients no longer doing their HEPs, 94% (16/17) did their HEPs at some point in time, and 37% were fully compliant. "Lack of time" or "too busy" were the reasons f or non or partial complicance with the HEPs in 80% of subjects, while “symptomrelief” or “feel better” were the reasons for continuing the exercises in 75%.

Survival of the quality of life concept.
Koller M, Lorenz W.
Br J Surg 2003;90:1175-1177.

Evidence for risk of bias in cluster randomised trials: review of recent trials published in three general medical journals.
Puffer S, Torgerson D, Watson J.
BMJ 2003;327:785-9.
OBJECTIVE: To examine the prevalence of a risk of bias associated with the design and conduct of cluster randomised controlled trials among a sample of recently published studies. DESIGN: Retrospective review of cluster randomised trials published in the BMJ, Lancet, and New England Journal of Medicine from January 1997 to October 2002. MAIN OUTCOME MEASURES: Prevalence of secure randomisation of

clusters, identification of participants before randomisation (to avoid foreknowledge of allocation), differential recruitment between treatment arms, differential application of inclusion and exclusion criteria, and differential attrition. RESULTS: Of the 36 trials identified, 24 were published in the BMJ,11 in the Lancet, and a single trial in the New England Journal of Medicine. At the cluster level, 15 (42%) trials provided evidence for secure allocation and 25 (69%) used stratified allocation. Few trials showed evidence of imbalance at the cluster level. However, some evidence of susceptibility to risk of bias at the individual level existed in 14 (39%) studies. CONCLUSIONS: Some recently published cluster randomised trials may not have taken adequate precautions to guard against threats to the internal validity of their design.

Updated protocol for the examination of specimens from patients with carcinoma of the urinary bladder, ureter, and renal pelvis.
Amin MB, Srigley JR, Grignon DJ, Reuter VE, Humphrey PA, Cohen MB, Hammond ME.
Arch Pathol Lab Med 2003;127:1263-79.

The efficacy of bilateral varicocelectomy in patients with palpable bilateral varicoceles: comparative study with unilateral varicocele.
Fujisawa M, Ishikawa T, Takenaka A.
Urol Res 2003;None:None.
To determine whether the beneficial effect of bilateral varicocelectomy for bilateral varicoceles is similar to that of unilateral varicocelectomy for unilateral varicoceles, we compared the effect of varicocelectomy in men with unilateral and bilateral palpable varicoceles. Seventy-five men with unilateral varicocele and 34 with bilateral varicoceles were included in this study. Serum concentrations of follicle-stimulating hormone (FSH), luteinizing hormone (LH), testosterone, prolactin, and estradiol were measured in morning blood specimens. Unilateral varicocelectomy was performed for unilateral and bilateral varicocelectomy for bilateral varicoceles using a microsurgical technique. The seminogram was determined every 3 months for up to 18 months. There were no significant differences in the change in the sperm concentration between the unilateral and bilateral groups. Sperm concentration before surgery in unilateral and bilateral group was 8.0+/-5.0x10(6)/ml and 8.1+/-4.9x10(6)/ml, respectively. Eighteen months after surgery, the sperm concentration significantly increased to 23.4+/-15.8x10(6)/ml and 26.9+/-24.6x10(6)/ml in unilateral and bilateral group, respectively. Preoperative motility in the unilateral and bilateral group was 38.9+/-15.2% and 39.6+/-15.7%, respectively. Eighteen months after operation, sperm motility had increased and was similar in the two groups, 43.1+/-19.2% and 45.4+/-17.6%. Sperm morphology was unaffected by surgery in either group. Improvement in the seminogram of patients following bilateral varicocelectomy was comparable to that in patients with unilateral varicocelectomy. Bilateral repair for bilateral varicocelectomies is justified for patients who desire improved spermatogenesis.

Perineal groove with penoscrotal hypospadias.
Chatterjee SK, Chatterjee US, Chatterjee U.
Pediatr Surg Int 2003;19:554-6.
We describe a boy who presented with penoscrotal hypospadias with bifid scrotum as well as a perineal groove. The operative procedures carried out have been delineated and the reasons for our reporting this case are explained.

Pharmacological Effects of KRP-197 on the Human Isolated Urinary Bladder.
Murakami S, Yoshida M, Iwashita H, Otani M, Miyamae K, Masunaga K, Miyamoto Y, Inadome A, Ueda S.
Urol Int 2003;71:290-8.
KRP-197, 4-(2-methylimidazol-l-yl)-2,2-diphenylbutyramide, is a newly synthesized antimuscarinic drug, developed for the treatment for overactive bladder. For evaluation of pharmacological characteristics of KRP-197, we investigated whether it influenced both prejunctional and postjunctional muscarinic receptors on the isolated human detrusor smooth muscles as compared with the effects of atropine, oxybutynin, and propiverine. Using the muscle bath technique, we investigated the effects of various antimuscarinic drugs on the contractions induced by carbachol, KCl, CaCl(2), and electrical field stimulation. Furthermore, using high-performance liquid chromatography with a microdialysis technique, we measured the acetylcholine release from the muscle strips during electrical field stimulation. The effects of various antimuscarinic drugs on acetylcholine releases were also evaluated. Pretreatment with various antimuscarinic drugs caused parallel shifts to the right in carbachol-induced concentration-response curves. The rank order of pA(2) values was KRP-197 >/= atropine > oxybutynin > propiverine. Atropine and KRP-197 did not cause significant inhibition

Relationship between Febrile Urinary Tract Infection and Urodynamics in Myelodysplastic Children with Vesicoureteral Reflux.
Seki N, Masuda K, Tanaka M, Kinukawa N, Senoh K, Naito S.

Urol Int 2003;71:280-4.
OBJECTIVE: We conducted a retrospective study in order to identify factors that may predict the incidence of febrile urinary tract infection (UTI) in myelodysplastic children with vesicoureteral reflux (VUR). METHODS: A total of 23 myelodysplastic children with persistent VUR who were managed by clean intermittent catheterization (CIC) were eligible for this study. Any factors, including urodynamic parameters and urinary tract abnormalities, that may have been associated with the incidence of febrile UTI were evaluated using both univariate analysis and multiple logistic regression analysis. RESULTS: Of 23 patients, 10 (43%) had had one or more episodes of febrile UTI. Both univariate and multivariate analyses showed a statistically significant relationship between low bladder compliance (<10 ml/cm H(2)O) and episodes of febrile UTI. CONCLUSION: These results demonstrated that the urodynamics linked to bladder function disorder in the filling phase appear to be correlated with the incidence of febrile UTI in myelodysplastic children with VUR who are managed by CIC.

Eosinophilic cystitis. A rare inflammatory pathology mimicking bladder neoplasms.
Kilic S, Erguvan R, Ipek D, Gokce H, Gunes A, Aydin NE, Baydinc C.
Urol Int 2003;71:285-9.
PURPOSE: We present a large series of eosinophilic cystitis including 8 cases; 3 of them had tumor-like lesions. MATERIALS AND METHODS: The archives of pathology clinic of Inonu University Medical Faculty were reviewed from 1988 to 2002. The characteristics of patients and their diseases were recorded. Data obtained from 180 cases (172 from the literature and 8 from the present series) was assessed. RESULTS: Seven cases had symptoms such as dysuria, frequency, hematuria, suprapubic pain, and difficulty in voiding. One asymptomatic case with history of bladder carcinoma was diagnosed during routine cystoscopy. The findings were microhematuria in 6 cases, macrohematuria in 2, pyuria in 3, urinary infection in 1, eosinophilia in 1, hyperazotemia in 1, and bladder masses in 3. Cystoscopies detected edematous and erythematous areas in 5 cases and lesions mimicking bladder carcinoma in 3. One case did not take further treatment after cystoscopy and biopsy and completely recovered. Four cases underwent medical therapy with nonsteroidal anti-inflammatory drugs and antihistaminics. They became asymptomatic and control cystoscopies showed no abnormal finding. Two of three patients with mass lesions recovered after steroid therapy following transurethral resection. The lesion in the third recurred and he improved after a second course of steroid therapy. CONCLUSIONS: Eosinophilic cystitis is a rare pathology. Sometimes, it may simulate bladder malignancies. Biopsy is mandatory at diagnosis. Usually, it has a benign course and may be treated with fulguration, analgesics, antihistaminics and steroids, although recurrence is possible.

Penoscrotal extramammary Paget's disease: a review of 33 cases in a 20-year experience.
Lai YL, Yang WG, Tsay PK, Swei H, Chuang SS, Wen CJ.
Plast Reconstr Surg 2003;112:1017-23.
xtramammary Paget's disease in men most frequently involves the penoscrotal area. The uncertainty of the outcome and of the relationship to the underlying adnexal carcinoma and associated internal malignancy still exists. From 1982 to 2001, 33 patients with penoscrotal extramammary Paget's disease were treated and followed up. Therapeutic modalities included carbon dioxide laser ablation (two patients) and local wide excision (31 patients). Split-thickness skin graft (22 patients), local scrotal flap (six patients), and primary closure (three patients) were utilized to reconstruct the penoscrotal defects after local wide excision. An underlying adnexal carcinoma occurred in seven of 33 patients (21.2 percent). The incidence of associated internal malignancy was 9.1 percent (three of 33 patients), including one concurrently and two nonconcurrently associated malignancies. Eight of 33 patients had local recurrence, representing an incidence of 24.2 percent. Three patients (9.1 percent) had distant metastasis and ultimately died of metastatic carcinoma. Of these patients, 31 were grouped according to the degrees of involvement: limited to the epidermis (group 1, n = 14), involvement of the adnexal gland and/or hair follicle (group 2, n = 10), and the presence of an underlying adnexal carcinoma (group 3, n = 7). Local wide excision with subsequent reconstruction by split-thickness skin graft was favored in this series. Patients with an underlying adnexal carcinoma or pathological invasion of the dermis (group 2 or 3) had a worse prognosis than patients without. From this study, it is difficult to address the particular relationship between the outcome and the associated internal malignancy.

A modification of the pyramid procedure: the correction of subcoronal hypospadias with complete prepuce.
Terzioglu A, Gokrem S, Aslan G.
Plast Reconstr Surg 2003;112:922-3.

A new technique for distal hypospadias repair: advancement of a distally deepithelialized urethrocutaneous flap.
Sensoz O, Ortak T, Baran CN, Unlu RE.

Plast Reconstr Surg 2003;112:840-3.

The management of old urethral injury in young girls: Analysis of 44 cases.
Huang CR, Sun N, Wei-Ping, Xie HW, Hwang AH, Hardy BE.
J Pediatr Surg 2003;38:1329-32.
Background/purpose: Traumatic urethral injury in girls is rare, and there is no consensus on its management. The authors report their 22-year experience. Methods: Forty girls presented with urethrovaginal fistula. Twenty-six girls presented with cystostomy tube in place, whereas 17 girls presented with complete urinary incontinence. Incision and dilatation of the obliterated urethra was carried out in 7 patients. Vaginal repair of urethrovaginal fistula was performed in 4 patients. Transpubic reconstruction of the urethra using a modified Young-Dees-Leadbetter procedure with simultaneous repair of the urethrovaginal fistula was performed in 35 patients (once in 27, twice in 5, and 3 times in 3 patients). Results: Follow-up in 40 girls averaged 3.5 years. Twenty-nine patients have regained normal urinary control, and 11 patients have mild stress urinary incontinence. Four patients were lost to follow-up. Conclusions: Simple dilation of the obliterated urethra can reestablish satisfactory urethral patency if the obliterated segment is short. The vaginal approach to urethrovaginal fistula may be successful in patients without concomitant urethral stricture or in those with stricture amenable to simple dilation. The transpubic approach remains the method of choice for repairing complete urethral disruption and severe urethral stricture, especially when associated with urethrovaginal fistula.

Continent catheterizable urinary conduit constructed from defunctionalized colon.
Stuart A, Radhakrishnan J.
J Pediatr Surg 2003;38:E15-6.
The authors describe a technique for construction of a continent catheterizable stoma from distal defunctionalized colon in a patient with imperforate anus, urethral atresia, and sacral agenesis.

Urethral reconstruction in spinal cord injury patients.
Secrest CL, Madjar S, Sharma AK, Covington-Nichols C.
J Urol 2003;170:1217-21.
PURPOSE: Bladder management programs for patients with spinal cord injury and neurological disease (SCIND) include intermittent catheterization and sphincterotomy with external catheter drainage. These programs depend on maintaining a patent urethra. Once urethral stricture, erosion, diverticulum or urethrocutaneous fistula occurs, the only treatments available are urethral reconstruction and urinary diversion. We evaluate the role of urethral reconstruction in this subset of patients. MATERIALS AND METHODS: The charts of 18 patients with SCIND (spinal cord injury 16, cerebral palsy 1, meningomyelocele 1) were retrospectively analyzed. Different surgical procedures had been performed according to the presenting pathology and tissue availability. RESULTS: Urethral reconstruction was performed in 17 patients with a mean age of 42.2 years (range 27 to 60). Of the patients 13 are paraplegic and 4 are quadriplegic. Urethral defects included urethral stricture in 6 cases, urethral erosion in 4, urethrocutaneous fistula in 3, urethral diverticula in 1 and combined defects in 3. Mean followup is 3.7 years (range 1 to 13) and the mean number of reoperations was 1.4 (range 0 to 4). Of the 17 patients 11 (64.7%) who underwent urethral reconstruction eventually required urinary diversion for end stage urethral pathology (incontinent ileovesicostomy 5, right colon pouches 2, other procedures 4). The mean time from first urethral reconstruction to eventual urinary diversion was 3.3 years (range 0.7 to 7). Four patients maintain a patent urethra while 1 patient was lost to followup. CONCLUSIONS: Patients with SCIND in whom urethral reconstruction is considered should be advised that urethral surgery carries a high risk of reoperation and eventual need for urinary diversion. Clearly, many patients with neurological disease and severe urethral pathology are best treated with urinary diversion.

A survey of voiding dysfunction in children with attention deficit-hyperactivity disorder.
Duel BP, Steinberg-Epstein R, Hill M, Lerner M.
J Urol 2003;170:1521-3.
PURPOSE: Physicians treating attention deficit-hyperactivity disorder (ADHD) have long had the clinical impression that these children suffer disproportionately from voiding dysfunction and incontinence. However, no data exist to confirm this suspicion. In an attempt to investigate this clinical finding, we administered a survey asking about any functional bladder symptoms to a group of children with ADHD and a control group without ADHD. MATERIALS AND METHODS: The Dysfunctional Voiding Symptom Survey (DVSS) was administered to a group of children being treated for rigorously diagnosed ADHD and a control group without ADHD. The DVSS consists of 10 questions that assess daytime incontinence, nocturnal enuresis, constipation, urgency, voiding frequency and dysuria, each scored from 0 to 4 (0-never, 1-almost never, 2-less than half the time, 3-about half the time, 4-almost every time) for a maximum total score of 40 (severest symptoms). Scores for patients and controls were compared for each question and in aggregate. Boys and

girls underwent separate statistical analysis. An additional eleventh question assesses recent stressful events within the family. RESULTS: The patient group included 23 boys and 5 girls, and the control group 10 boys and 12 girls. Children with ADHD of both sexes had statistically significant higher overall DVSS scores. Boys had significant differences on several questions. Due to the small number of girls, there were no statistically significant differences on individual questions. CONCLUSIONS: Children with ADHD have significantly higher rates of incontinence, constipation, urgency, infrequent voiding, nocturnal enuresis and dysuria than those without ADHD. Further study is needed to discern the cause of this difference and develop appropriate treatment strategies.

Ureteral injuries from external violence: the 25-year experience at San Francisco General Hospital.
Elliott SP, McAninch JW.
J Urol 2003;170:1213-6.
PURPOSE: We review our 25-year experience with traumatic ureteral injury, for which the approach to management differs from the far more common iatrogenic injury. MATERIALS AND METHODS: Review of our trauma data base disclosed 36 patients with 38 ureteral injuries (33 penetrating [24 gunshot, 9 stab wounds] and 5 blunt) from 1977 to 2003, a period during which we treated approximately 4,000 traumatic genitourinary injuries. RESULTS: The site of injury was the upper ureter in 70%, mid in 8% and distal in 22%. Major intra-abdominal injuries were often associated, but hematuria and hypotension were not consistent findings (75% and 50%, respectively). Excretory urograms performed in 24 patients was diagnostic in only 40%. Computerized tomography and retrograde pyelogram were diagnostic in 4 of 4 and 1 of 1 injuries, respectively (100%). Overall, diagnosis was by radiographic findings in 13 of the 36 injuries (36%) and by laparotomy in 23 (64%). Management was with stenting in 2 patients, primary closure in 12, ureteroureterostomy in 12, ureteroneocystostomy in 5, transureteroureterostomy in 1, Boari flap in 1 and nephrectomy in 1. The complication rate was 18%. CONCLUSIONS: Although traumatic ureteral injury is rare these patients are often critically ill and delay in diagnosis will increase the risk of complications. Contrast enhanced imaging in patients who are not undergoing laparotomy for associated injury should not be limited to those with hematuria and hypotension since these are not entirely sensitive. Most injuries are short segment loss in the upper ureter and can be repaired with debridement and tension-free anastamosis.

Clinical studies on inverted papilloma of the urinary tract: report of 48 cases and review of the literature.
Asano K, Miki J, Maeda S, Naruoka T, Takahashi H, Oishi Y.
J Urol 2003;170:1209-12.
PURPOSE: We report on 48 clinicopathologic cases of inverted papilloma and present the clinical significance attributed to these lesions in terms of the current literature. MATERIALS AND METHODS: From 1976 to 2002 we had experience with 48 cases of inverted papilloma in urinary tract. We present the clinical features of these cases and report the results of prognosis research. RESULTS: Patient age ranged from 24 to 82 years (mean 56). Coexistence of transitional cell carcinoma occurred in a different location in the bladder in 3 cases and within a single neoplasm in the ureter in 2. Followup data were available in 42 of the 48 cases. Followup ranged from 8 months to 23 years 6 months (mean 8 years 1 month). Of the 42 cases 3 (7%) had a recurrence and range from initial resection at 5 months, 1 year 4 months and 2 years 6 months, respectively. CONCLUSIONS: Our study suggests that there are 2 types of urinary inverted papilloma. The lesions in 1 type behave in a benign fashion and in another they have malignant potential. At this time we have no strategy with which to distinguish the 2 types of urinary inverted papilloma. Our results indicate that we must follow all cases for at least more than 2 years after initial treatment.

Laparoscopic reconstructive urology.
Kaouk JH, Gill IS.
J Urol 2003;170:1070-8.
PURPOSE: Although laparoscopy has emerged as a feasible and effective alternative for a majority of open ablative abdominopelvic urological procedures, minimally invasive reconstruction has come to the forefront only recently. We present the current state of the art of laparoscopic reconstructive urology. MATERIALS AND METHODS: We conducted an extensive MEDLINE search of purely laparoscopic surgery from 1976 through 2002. Based on the results, we divide clinical reconstructive laparoscopic procedures into 2 broad categories-established and evolving. Each category is further classified according to the organ involved-adrenal and kidney, ureter (evolving only), bladder and prostate, and miscellaneous. Clinical procedures were considered established if our literature review revealed any report of more than 100 patients, or reports from at least 5 different centers greater than 20 patients each. If these criteria were not met, the procedure was considered clinically evolving. RESULTS: Laparoscopic reconstructive procedures such as pyeloplasty, radical prostatectomy and orchiopexy have achieved clinically established status. Laparoscopic bladder neck suspension, although reported in a significant number of cases, remains controversial because of its contradictory reported long-term success rates. Multiple additional laparoscopic reconstructive procedures

have been performed in fewer numbers clinically with promising results. CONCLUSIONS: Until recently, urological laparoscopic surgery primarily focused on ablative procedures, with success. Building on this initial experience, advanced and sophisticated reconstructive procedures of considerable technical complexity are increasingly being performed purely laparoscopically. It is anticipated that in the future laparoscopic surgery could increasingly evolve into a preferred approach for advanced and sophisticated urological reconstruction.

20-year experience with iatrogenic penile injury.
Amukele SA, Lee GW, Stock JA, Hanna MK.
J Urol 2003;170:1691-4.
PURPOSE: We review our experience with the management of iatrogenic penile injuries. Apart from circumcision, serious damage to the penis can occur following hypospadias repair, surgery for priapism or total loss of the penis following surgical repair of bladder exstrophy. MATERIALS AND METHODS: A retrospective analysis of patients with iatrogenic penile amputation referred to us between 1980 and 2000 was undertaken. Causes of injury and choice of management were reviewed. RESULTS: Of the 13 cases treated during the 20-year period mechanism of primary injury was circumcision in 4, hypospadias repair in 6, priapism in 1, bladder exstrophy repair in 1 and penile carcinoma in 1. A variety of techniques were used for phallic reconstruction. Penile degloving, division of suspensory ligament and rotational skin flaps achieved penile augmentation and enhancement. Reasonable cosmesis and penile length were achieved in all cases. In indicated cases microsurgical phalloplasty was technically feasible. However long-term followup showed various complications including erosions from the use of a penile stiffener. CONCLUSIONS: The ultimate goal of reconstructive surgery is to have a penis with normal function and appearance. The management of penile injury requires a wide variety of surgical techniques that are tailored to the individual patient. Expedient penile reconstruction is successful and therapeutic delay is associated with complications.

Reduced perception of urgency in treatment of overactive bladder with extended-release tolterodine.
Freeman R, Hill S, Millard R, Slack M, Sutherst J.
Obstet Gynecol 2003;102:605-11.
OBJECTIVE: To evaluate the effect of once-daily, extended-release tolterodine on urinary urgency in patients with overactive bladder. METHODS: Patients with urinary frequency (eight or more micturitions per 24 hours) and urge incontinence (five or more episodes per week) were randomized to oral treatment with tolterodine extended release 4 mg once daily (n=398) or placebo (n=374) for 12 weeks. Efficacy was assessed by use of patient perception evaluations. RESULTS: The results presented are a secondary analysis of this double-blind, placebo-controlled study. Of patients treated with tolterodine extended release, 44% reported improved urgency symptoms (compared with 32% for placebo), and 62% reported improved bladder symptoms (placebo, 48%) (both P<.001 compared with placebo). The odds of reducing urgency and improving bladder symptoms were 1.68 and 1.78 times greater, respectively, for patients in the tolterodine extended release group than for patients receiving placebo. In response to urgency, there was a more than six-fold increase in the proportion of patients able to finish a task before voiding in the tolterodine extended release group. The proportion of patients unable to hold urine upon experiencing urgency was also decreased by 58% with tolterodine, compared with 32% with placebo (P<.001). The proportion of patients reporting "much benefit" from treatment was greater for tolterodine extended release than for placebo (43% versus 24%; P<.001). The only adverse events with an incidence of greater than 5% were dry mouth, headache, and constipation, with only dry mouth markedly more frequent with tolterodine than with placebo. CONCLUSION: Tolterodine extended release has demonstrable efficacy in reducing the severity of urinary urgency and is associated with improvements in overactive bladder symptoms that are meaningful to patients.

Unexplained infertility, endometriosis, and fibroids.
Hart R.
BMJ 2003;327:721-4.

Obstetric management of the patient with spinal cord injury.
Pereira L.
Obstet Gynecol Surv 2003;58:678-87.
SUMMARY: Pregnancies in spinal cord-injured patients present unique clinical challenges to obstetric providers. Spinal cord injury (SCI) alters the function of multiple organ systems, and chronic medical conditions are extremely common in this patient population. Autonomic dysreflexia (ADR) is a potentially life-threatening complication of SCI, usually involving patients with spinal cord lesions at or above the T6 level. Intrapartum care of women with SCI is particularly complicated, and labor is the period during which ADR is most likely to arise. A multidisciplinary team in a unit capable of invasive hemodynamic monitoring should

deliver these patients. Epidural anesthesia should be administered early in labor to prevent ADR. If proper precautions are taken, most patients with SCI will have successful vaginal deliveries at term.Target Audience: Obstetricians & Gynecologists, Family PhysiciansLearning Objectives: After completion of this article, the reader should be able to describe how spinal cord injury alters the function of individual organ systems, to list the medical complications associated with spinal cord injury, and to outline the signs and symptoms of autonomic dysreflexia.

The prevention and management of treatment related morbidity in vulval cancer.
Barton DP.
Best Pract Res Clin Obstet Gynaecol 2003;17:683-701.
The traditional and the most common management of primary vulval cancer is radical surgery of the vulva and radical groin lymphadenectomy (unilateral or bilateral). Adjuvant radiotherapy is used in poor prognosis cases. Rare vulval cancers, locally advanced cancers and recurrent vulval cancers often are treated with a combination of surgery, radiation therapy and chemotherapy. The treatments, while often curative, are associated with considerable morbidity, which, until recently, has not been well publicized or quantified. Increasingly, younger patients are presenting with extensive and often multi-focal pre-invasive disease and with vulval cancer. Long-term post-treatment physical, sexual and psychological morbidity is of major concern. There is more onus on clinicians to provide less radical but equally curative treatment, while also reducing morbidity. There is also the need to provide treatment and treatment modification based on supporting evidence. For a rare disease such as vulval cancer it is more difficult to generate data and to conduct trials on treatment modifications. Although surgical modifications have been made, the morbidity of radical surgery for vulval cancer is considerable. The prevention and management of treatment-related morbidity will continue to challenge the gynaecological oncology team.

Local and regional recurrence of vulval cancer: management dilemmas.
Coulter J, Gleeson N.
Best Pract Res Clin Obstet Gynaecol 2003;17:663-81.
Vulval cancer has an incidence of 1-2/100000. Approximately one-third of patients develop recurrent disease usually within the first 2 years following primary treatment. Isolated vulval recurrences account for up to 50% of all cases and these recurrences are often amenable to curative surgery with radical wide local excision. Reconstruction and skin closure for larger surgical defects necessitate skin flaps. Radical exenterative procedures are considered when the recurrence involves the urethra, bladder, vagina and/or the anorectal canal. Chemoradiation therapy may be used pre-operatively or to palliate the disease. Disease recurrence in the groin is difficult to treat and is associated with very poor survival rates. Surgical effort to debulk large-volume groin disease is often unsuccessful and chemoradiation therapy is the cornerstone of treatment. The management of retroperitoneal and distant disease recurrence is generally based on symptom control as radiation therapy and chemotherapy have limited success. Palliative medicine should be integrated early in the management plan both in patients with incurable recurrent disease and in those undergoing potentially curative treatments.

Bartholin's gland carcinoma, malignant melanoma and other rare tumours of the vulva.
Finan MA, Barre G.
Best Pract Res Clin Obstet Gynaecol 2003;17:609-33.
Non-squamous cancers of the vulva encompass an exciting and broad group of tumours, including Bartholin's gland carcinoma, malignant melanoma, Paget's disease, sarcomas and lymphoma. These tumours range from innocuous lesions treatable with simple local excision, such as basal-cell carcinoma, to cancers with very poor prognosis, such as Merkel-cell tumours. All of these tumours are thoroughly reviewed, with emphasis on presenting symptoms, pathological diagnosis and optimal management approaches. The literature supporting these recommendations is reviewed. Of the utmost importance in the management of these tumours is a thorough review of the pathological diagnosis by a specialist pathologist and a gynaecological oncologist. Establishing the correct diagnosis is essential to reaching appropriate treatment decisions. Frequently this will necessitate a second opinion by a referral centre.

The clinical nurse specialist in gynaecological oncology-the role in vulval cancer.
Allen J.
Best Pract Res Clin Obstet Gynaecol 2003;17:591-607.
Gynaecological malignancy has an immense impact on the well-being of women. In order for these women clearly to understand their disease, investigations, treatment options and prognosis, it is essential that high-quality information be delivered in an appropriate environment. Effective communication is the essence of good relationships between the health professional and the patient. Patients' psychological, social and sexual rehabilitation following treatment for gynaecological cancer demand a holistic, pro-active approach by professionals who are skilled in the provision of this care. Within a multidisciplinary team (MDT), the clinical

nurse specialist (CNS) is in a key position to be able to address these often complex and sensitive issues. This chapter explores the unique role of the CNS in the care of gynaecological cancer patients, and the care of vulval cancer patients in particular. The successful development of medical/nursing partnerships enables women with gynaecological cancer to gain proper access to essential expert knowledge and information and thereby to make informed decisions.

Groin surgery and the sentinel lymph node.
de Hullu JA, van der Zee AG.
Best Pract Res Clin Obstet Gynaecol 2003;17:571-89.
Vulvar cancer is a rare disease. Squamous-cell carcinomas account for 90% of vulvar cancers. The main mode of spread is lymphogenic to the inguinofemoral lymph nodes. Therefore, electi

The assessment and surgical management of early-stage vulvar cancer.
Gotlieb WH.
Best Pract Res Clin Obstet Gynaecol 2003;17:557-69.
The treatment of early vulvar cancer has undergone a major paradigm shift from a radical surgical approach to tissue-sparing surgery and preservation of sexual function. Stage I and II tumours represent two-thirds of the cases, and 5-year survival rates reach 80-90%. These tumours, with clinically negative nodes, do not require metastatic work-up, and the patients are submitted to surgery. Stage IA tumours, with a depth of stromal invasion of less than 1 mm, have a very low risk of lymph node (LN) involvement (<1%) and are treated by radical (wide) local excision without the need for lymphadenectomy. The remaining patients with stage I or II disease undergo radical (wide) local excision of the vulvar lesion, accompanied by some sort of inguinal lymphadenectomy. Evaluation of the lymph nodes using sentinel node mapping appears promising and is extensively reviewed. It should probably include serial sectioning and immunohistochemistry to detect micrometastases, although their true clinical importance remains to be determined. Molecular detection methods that reveal cancer cells in sites not detectable by routine histology have been introduced to evaluate sentinel lymph nodes and may eventually become part of the routine metastatic work-up.

Imaging in vulval cancer.
Sohaib SA, Moskovic EC.
Best Pract Res Clin Obstet Gynaecol 2003;17:543-56.
Cancer of the vulva spreads locally and, almost without exception, to the regional nodes in the groin to the superficial then deep inguinal groups and the pelvic nodes in a step-wise fashion. Because the single most important prognostic factor is the presence or absence of nodal disease, accurate diagnosis of nodal involvement is paramount. In the past, the status of inguinal nodes in vulval cancer has been ascertained only following groin node dissection, except in those cases with clinically obviously groin nodes. However, as up to 70% of patients at all stages of disease have negative nodes histologically, and as up to 70% of patients have groin or lower-limb problems after radical groin surgery, this approach incurs 'unnecessary' surgery for the majority of patients with the attendant morbidity. Using new diagnostic imaging methods, detection and assessment of groin lymph nodes has been developing over the past few years with the ultimate intention of reducing groin node surgery in node-negative patients. In this chapter we review the role of imaging in patients with vulval cancer in which there is a greater role in the assessment of nodal disease rather than in the assessment of the cancer on the vulva.

Changes in the management of vulval cancer.
Dhar KK, Woolas RP.
Best Pract Res Clin Obstet Gynaecol 2003;17:529-42.
Vulval carcinoma is relatively rare. The disease spreads from the vulva through embolization to the locoregional lymphatic station, the inguinofemoral nodes. Prior to this event cure can be achieved, but rarely predicted with certainty. This chapter reviews current therapeutic knowledge and recognizes the increasing importance of individualization of a treatment plan. The adoption of these principles will hopefully evolve a pattern of care that leads to a decrease in morbidity for those women with early tumours and less morbid but more effective strategies for those with advanced disease.

Erosive lichen planus of the vulva and vagina: Reply.
Lotery HE, Galask RP.
Obstet Gynecol 2003;102:647.

Erosive lichen planus of the vulva and vagina.
Amstey MS.
Obstet Gynecol 2003;102:645.

Delayed, massive bleeding as an unusual complication of laser conization. A case report.
Kurata H, Aoki Y, Tanaka K.
J Reprod Med 2003;48:659-60.
Unretrieved, None.
BACKGROUND: Although delayed bleeding following cervical conization is a common complication of this surgical procedure, the amount of blood loss is usually not life threatening. CASE: A 27-year-old woman underwent conization with a KTP laser for the treatment of microinvasive cervical adenocarcinoma. Eight days later the patient experienced sudden, massive genital bleeding at her workplace. The source of the bleeding was identified as a descending branch of the left uterine artery exposed to the wound surface. Hemostasis was achieved completely with direct surgical ligature of the exposed blood vessel. The patient's blood loss during the course of the events was estimated to be 3.2 L, for which she received 1.4 L of packed red blood cells. She had an uneventful postoperative recovery. There was no bleeding or recurrence of the disease during 4 years of follow-up. CONCLUSION: Clinicians should be alert to the possibility of massive bleeding as a delayed surgical complication of cervical conization.

Vestibulectomy for vulvar vestibulitis.
Gaunt G, Good A, Stanhope CR.
J Reprod Med 2003;48:591-5.
OBJECTIVE: To determine if surgery is an effective therapy for vulvar vestibulitis. STUDY DESIGN: A retrospective chart review of all patients having vestibulectomy at the Mayo Clinic, Rochester, Minnesota, from 1992 to 2001 was performed. A scoring system measuring objective and subjective findings was used both preoperatively and postoperatively to assess the effects of surgery. A paired t test was used to analyze the difference between preoperative and postoperative symptom scores. The Wilcoxon signed-rank test evaluated changes in symptom scores. RESULTS: Thirty-eight of 42 patients (90%) with "pure" vulvar vestibulitis, as determined by physical findings and pathologic confirmation, had a significant improvement ($P < .01$) in their symptoms. The remaining 4 patients had confounding factors that may explain their lack of improvement. CONCLUSION: Vestibulectomy is a simple and very effective treatment for vulvar vestibulitis.

Role of Capsaicin-Sensitive Nerve Fibers in Uterine Contractility in the Rat.
Klukovits A, Gaspar R, Santha P, Jancso G, Falkay G.
Biol Reprod 2003;None:None.
The possible participation of capsaicin-sensitive sensory nerves in the modulation of neurogenic contractions was studied in non-pregnant and term pregnant rat uteri. Neurogenic contractions were elicited by electric field stimulation (40 V, 1-70 Hz, 0.6 ms) in intact uteri and in uteri which were previously exposed to capsaicin in vitro. In capsaicin pretreated preparations obtained both from non-pregnant and term pregnant rats, a dose-dependent increase in the amplitude of uterine contractions was detected. Prior systemic treatment of the rats with capsaicin (130 mg/kg, s.c.) abolished the effect of in vitro capsaicin administration on the amplitude of neurogenic contractions. Use of a specific antagonist of calcitonin gene-related peptide revealed that depletion of this peptide, which normally elicits uterine smooth muscle relaxation, may be responsible for the increased responsiveness of the uterus to low frequency stimulation. Experiments on the localization of calcitonin gene-related peptide in uterine tissue specimens exposed to capsaicin revealed dose-dependent depletion of CGRP-immunoreactive nerves innervating blood vessels and the myometrium. The findings indicate that capsaicin-sensitive afferent nerves, by the release of sensory neuropeptides, significantly contribute to the modulation of uterine contractility both in nonpregnant and term pregnant rats. It is suggested that uterine sensory nerve activation may be part of a trigger mechanism leading to preterm contractions evoked by, e.g. inflammation.

Long-term gynecological outcome of patients with persistent cloaca.
Warne SA, Wilcox DT, Creighton S, Ransley PG.
J Urol 2003;170:1493-6.
PURPOSE: Persistent cloaca is a complex malformation that remains a difficult reconstructive challenge, and data on long-term outcome are scarce. Gynecological abnormalities are common with cloaca but may remain asymptomatic until puberty or adult life. We evaluate long-term gynecological sequelae in these patients with persistent cloaca. MATERIALS AND METHODS: The records and radiographs of postpubertal patients (mean age 16.8 years, range 10 to 32) treated for cloacal malformation at 1 institution from 1970 to 2001 were retrospectively reviewed. Outcome data at puberty were available in 41 patients. Of the patients 24 are currently older than 16 years and outcome data for sexual activity were available in 21 with 3 lost to followup. RESULTS: All 41 patients were evaluated at puberty, and 28 (68%) had uterine function, 13 (32%) were menstruating normally and 15 (36%) presented with hematometra/hematocolpos. All 15 girls with an obstructed uterus required surgery, which included hysterectomy in 2, partial hysterectomy with vaginoplasty in 3 and vaginoplasty in 9. There was 1 complex case of fistula. Etiology of the obstructed uterus was vaginal stenosis after reconstruction in 3 cases, stenosis of persistent urogenital sinus (no previous

reconstruction) in 11 and cervical stenosis in 1. Ten patients experienced primary amenorrhoea, which was confirmed in 8 (20%) while 2 (5%) continue to be followed for possible cryptic obstruction. In 10 girls the diagnosis of absent/vestigial uterus was made at early laparotomy but this was erroneous in 6 in whom uterine function developed at puberty. Of the 21 older girls (age at review 17 to 32 years, mean 24) 12 are or have been sexually active and 6 have been examined by a gynecologist and have an adequate vagina but are not sexually active. To date 4 patients have required revision vaginal surgery in adulthood to facilitate intercourse (re-do vaginoplasty in 3, introitoplasty in 1). One woman has postponed vaginal reconstructive procedures and 2 others are currently being followed. There have been no pregnancies in this series to date. CONCLUSIONS: Patients born with persistent cloaca have a high incidence of gynecological problems at the onset of menses and in early adult life. Therefore, it is necessary to reassess these girls at early puberty by ultrasound/magnetic resonance imaging and vaginoscopy. Additional surgery may then be necessary to create a vagina for menstruation and sexual intercourse.

Turner syndrome (45x) with clitoromegaly.
Haddad NG, Vance GH, Eugster EA, Davis MM, Kaefer M.
J Urol 2003;170:1355-6.

Argon beam coagulation facilitates management of placenta percreta with bladder invasion.
Karam AK, Bristow RE, Bienstock J, Montz FJ.
Obstet Gynecol 2003;102:555-6.
BACKGROUND: Placenta percreta with bladder invasion is a rare but potentially lethal complication of pregnancy. CASE: A multigravida, with a history of two prior cesarean deliveries, presented with complaints of heavy vaginal bleeding near term. She had been previously diagnosed with an anterior placenta previa. A placenta percreta with bladder invasion was confirmed on cystoscopy. The patient underwent a successful cesarean hysterectomy using the argon beam coagulator. CONCLUSION: Argon beam coagulation may successfully help manage placenta percreta with bladder invasion while minimizing blood loss.

Small bowel obstruction associated with post-hysterectomy vaginal vault prolapse.
Carley ME, Gonzalez Bosquet J, Stanhope CR.
Obstet Gynecol 2003;102:524-6.
BACKGROUND: Patients may present with post-hysterectomy vaginal vault prolapse in conjunction with small bowel obstruction. Prior pelvic surgery, malignancy, and radiation therapy may be associated with this presentation. CASE: An 83-year-old multiparous woman with a history of poorly differentiated endometrial adenocarcinoma was treated with radiation therapy, total abdominal hysterectomy, and salpingo-oophorectomy. Anterior exenteration was performed for a recurrence. Seventeen years after her last pelvic operation, she had small bowel obstruction that coincided with a worsening post-hysterectomy vaginal vault prolapse. Surgical management included a side-to-side ileoileostomy and excision with closure of the vaginal apex. CONCLUSION: Although pelvic organ prolapse primarily affects quality of life, clinicians should be alert for bowel obstruction occurring with post-hysterectomy vaginal vault prolapse.

Postmenopausal uterine inversion associated with endometrial polyps.
Rocconi R, Huh WK, Chiang S.
Obstet Gynecol 2003;102:521-3.
BACKGROUND: Postmenopausal uterine inversion is an extremely rare gynecologic complication. We report a case of uterine inversion associated with endometrial polyps alone. CASE: A postmenopausal nullipara with a history of recurrent postmenopausal bleeding was evaluated for persistent vaginal bleeding. Benign endometrial polyps were found, and the patient's symptoms improved after a therapeutic dilation and curettage. She had acute onset of profuse vaginal bleeding 3 months later and a mass protruded from the cervix. A laparotomy revealed an inverted uterus that was resolved by the Haultain technique and was followed by total abdominal hysterectomy. CONCLUSION: Nonpuerperal uterine inversion associated with endometrial polyps was successfully treated surgically.

Management of iatrogenic vaginal constriction.
Vassallo BJ, Karram MM.
Obstet Gynecol 2003;102:512-20.
OBJECTIVE: To prospectively assess the outcomes of four approaches to the surgical management of iatrogenic vaginal constriction. METHODS: A prospective study was initiated to evaluate all women who presented to our practice with the complaint of apareunia or dyspareunia secondary to postoperative vaginal constriction. All participants were initially offered and failed a trial of manual dilation. Between 1997 and 2002, 20 women underwent one of four surgical procedures: Z-plasty, vaginal incision of constriction ring, vaginal advancement, or placement of free skin graft. All 20 participants have been followed postoperatively, including assessment of dyspareunia and postoperative vaginal length and caliber. RESULTS: Three

patients underwent Z-plasty, eight had incision of vaginal ring or ridge, eight had vaginal advancement, and one underwent placement of a free skin graft. Mean follow-up was 17 months (range, 3-32 months). Subjective cure was defined as resumption of pain-free vaginal intercourse. Objective cure was defined by findings on physical examination. The overall subjective and objective cure rates were 75% and 85%, respectively. CONCLUSION: The appropriate surgical procedure depends on the site and extent of the vaginal constriction, the state of the surrounding tissue, and the overall length and caliber of the vagina.

A population-based longitudinal study of cognitive functioning in the menopausal transition.
Meyer PM, Powell LH, Wilson RS, Everson-Rose SA, Kravitz HM, Luborsky JL, Madden T, Pandey D, Evans DA.
Neurology 2003;61:801-806.
BACKGROUND: No longitudinal studies have tracked cognitive performance through the menopausal transition and thus the impact of the transition on cognition, independent of aging, is not known. The authors hypothesized that a decline in cognitive functioning occurs as women progress through the menopausal transition, independent of age, educational level, family income, ethnicity, and baseline self-perceived health. METHOD: The authors began a population-based, longitudinal study in January 1996 with yearly follow-up interviews. This report includes follow-up through November 2001. The authors randomly selected African American and white women from a census of two contiguous Chicago communities. After screening for eligibility (age 42 to 52 years, premenopausal or early perimenopausal, no exogenous hormone use in the past 3 months, and no hysterectomy), 868 agreed to participate. Women who became pregnant, had a hysterectomy, or began using hormones were censored from that time onward. This study reports on 803 women for whom cognitive assessments were available. The authors assessed working memory (Digit Span Backward) and perceptual speed (Symbol Digit Modalities Test). RESULTS: Contrary to the hypothesis, the authors found small but significant increases over time during the premenopausal and perimenopausal phases. This trend was not accounted for by chronological age, education, family income, ethnicity, or baseline self-perceived health. CONCLUSIONS: Transition through menopause is not accompanied by a decline in working memory and perceptual speed.

Protective fibrin-sealed plication of the small bowel in recurrent laparotomy.
Holland-Cunz S, Boelter AV, Waag KL.
Pediatr Surg Int 2003;19:540-3.
PURPOSE. Adhesions after recurrent abdominal operations remain extremely common and are sources of severe morbidity. Fibrin-glued plication of the small gut in a meander-like formation is supposed to guarantee a decreased risk of intestinal obstruction postoperatively. This retrospective study analyses the clinical outcome after recurrent laparotomy in children treated with bowel plication by fibrin sealant. METHODS. The surgical technique of performing the fibrin-glued plication is rather simple and quick: after taking off all adhesions two to four loops of the small gut are positioned so that they lie side by side. Beginning proximal fibrin [Tissucol fibrin sealant (Baxter)] is applied between the loops; approximately 20-30 s are needed to keep the loops in position until the fibrin dries. This manoeuvre is continued until all of the small gut is fixed in one block. The gut is brought back into the abdominal cavity without loosening the loops. This fixed formation by sero-serosal adhesions or mesenterial plications is supposed to guarantee postoperative free passage. The charts of 60 children who had undergone a fibrin plication of the small bowel between 1991 and 1999 were evaluated. Additionally, questionnaires were sent to all patients, and they were invited for an examination. RESULTS. Sixty patients (38 boys and 22 girls) received a fibrin sealant plication because of recurrent laparotomies with heavily serosal defects or recurrent ileus because of adhesions. The youngest baby was 10 days. Since 23 patients were premature the oldest patient was 11 years old. There were no intraoperative complications attributed to the method. In the postoperative period 7/60 (12%) patients had a recurrent ileus or subileus, leading in three (5%) patients to an early relaparotomy. CONCLUSION. The fibrin-glued plication of the small bowel decreases the risk of recurrent ileus or subileus considering the high figures in the literature concerning this issue. The time-saving method is very simple and easily feasible. No side effects after the treatment with fibrin glue were observed.

Appropriate operation for elderly colorectal cancer patients based upon an assessment of preoperative risk factors.
Miyakura Y, Togashi K, Konishi F, Horie H, Shitoh K, Kojima M, Ono M, Okada M, Nagai H.
Surg Today 2003;33:498-503.
PURPOSE: The correlation between age and the outcome following an operation for colorectal cancer (CRC) has not yet been determined. We studied the appropriate operation for elderly CRC patients based upon the assessment of preoperative risk factors. METHODS: Seventy patients with Dukes' stages B or C CRC (more than 80 years old: aged group) and 66 stage-matched patients (50-69 years old: control group) were studied. The preoperative condition, the grade of surgical intervention, the perioperative activities of daily life (ADL), and the survival rate were compared between the two groups. RESULTS: The preoperative

conditions were significantly worse and the frequencies of patients with a deterioration in ADL during the perioperative period were significantly higher in the aged group. In the aged group, the peripheral lymphocyte count was significantly lower in patients with major postoperative complications, and the 1.0% forced expiratory volume (FEV1.0%) was significantly lower in patients with a deterioration in ADL. The low grade of surgical intervention tended to be related to a poor prognosis in rectal cancer of the aged group. CONCLUSION: The indications for operation in elderly CRC patients should be determined based upon an appropriate assessment of preoperative conditions, such as the lymphocyte count and FEV1.0%.

The CUSCORE test and the q-interval in cluster analyses of colon cancer and of lymphoma among asbestos workers.
Chen R, Froom P.
Stat Med 2003;22:3101-9.
Exposure to a carcinogen is likely to be reflected by temporal clustering of cancer cases among the community members. Detection of such clustering is a complicated task in general and more so in a small workplace community with low turnover rate. In this study we applied the CUSCORE test and the q-interval statistic to lymphoma and colon cancer death data among 2200 asbestos workers. The CUSCORE test was applied in order to identify clusters, and the q-interval was used to provide clues related to the cause of the cluster. We also evaluated and tested the data according to the standardized mortality ratio (SMR). Significant increases in both colon cancer and lymphoma among asbestos workers in Israel (1987-1997) were demonstrated by the CUSCORE test but not so by the SMR. The fact that an apparent clustering was observed from the pattern of the q-intervals leads to the conclusion that the detected clusters are real.

Carcinosarcoma of the rectosigmoid colon: report of a case.
Ishida H, Ohsawa T, Nakada H, Hashimoto D, Ohkubo T, Adachi A, Itoyama S.
Surg Today 2003;33:545-9.
We report an unusual case of carcinosarcoma of the colon. An 80-year-old woman was admitted to our hospital with lower abdominal pain. Computed tomography showed a large pelvic mass, 18cm in maximal diameter, and barium enema and colonoscopy both showed a type-2 tumor in the sigmoid colon. We performed Hartmann's procedure with resection of the ileocolic segment. Immunohistochemical stains of the resected specimen revealed that most of the tumor consisted of spindle cell sarcoma with neural and muscle differentiation, while only the superficial area of an ulcerated lesion contained adenocarcinoma positive for carcinoembryonic antigen. The patient died of a fast-growing recurrent pelvic tumor 6 months postoperatively. Our experience of this case and our review of eight other cases in the English literature indicate that wide resection provides the best chance of cure, but careful postoperative follow-up is essential.

Epstein-Barr virus infection in colorectal neoplasms associated with inflammatory bowel disease: detection of the virus in lymphomas but not in adenocarcinomas.
Wong N, Herbst H, Herrmann K, Kirchner T, Krajewski A, Moorghen M, Niedobitek F, Rooney N, Shepherd N, Niedobitek G.
J Pathol 2003;201:312-318.
Epstein-Barr virus (EBV) is associated with several lymphoid and epithelial human malignancies. The latter include gastric adenocarcinomas, while sporadic colorectal adenocarcinomas (CRCs) have been reported to be EBV-negative. Recently, increased numbers of EBV-infected B lymphocytes have been detected in intestinal mucosal samples affected by ulcerative colitis (UC) and, to a lesser extent, Crohn's disease (CD). Both CRC and colorectal non-Hodgkin's lymphoma (NHL) are recognized complications of inflammatory bowel disease (IBD), but it is unclear to what extent EBV contributes to the development of these neoplasms. Seventeen cases of IBD-associated CRC and nine cases of IBD-associated colorectal NHL were therefore studied for the presence of EBV by in situ hybridization. EBV-positive cases were further studied for the expression of the EBV-encoded nuclear antigen (EBNA) 2 and the latent membrane protein (LMP) 1 of EBV by immunohistochemistry. Four out of seven cases of colorectal NHL associated with UC were shown to be EBV-positive. In addition, two of two colorectal NHLs developing in patients with CD were EBV-positive. Of the EBV-positive lymphomas, three displayed a pattern of EBV latent gene expression consistent with type I latency (EBNA2(-)/LMP1(-)), two a type II pattern (EBNA2(-)/LMP1(+)), and one a type III pattern (EBNA2(+)/LMP1(+)). These findings suggest that EBV infection is involved in the pathogenesis of a proportion of colorectal NHLs developing in IBD. Iatrogenic immunosuppression may contribute to the development of these lymphomas. By contrast, all 17 IBD-associated CRCs were EBV-negative, including a case of CRC occurring synchronously with an EBV-positive NHL. In conjunction with previous reports on sporadic CRCs, this suggests that EBV is not involved in the pathogenesis of CRC.

Giant peritoneal loose body in the pelvic cavity: report of a case.

Nomura H, Hata F, Yasoshima T, Kuwahara S, Naohara T, Nishimori H, Nakajima F, Yanai Y, Ono K, Hirata K.
Surg Today 2003;33:791-3.
This report describes a giant peritoneal loose body in the pelvic cavity. A 63-year-old man who was asymptomatic underwent a routine medical examination, which revealed a tumor in the pelvic space. Computed tomography and magnetic resonance imaging showed a smooth-surfaced mass with two marked calcifications in the central position. Preoperatively, we suspected a calcified leiomyoma originating from the wall of the sigmoid colon; however, at laparoscopic surgery we extracted a hard, egg-shaped mass 5 cm in diameter, with detached appendices epiploicae. Histological examination revealed that this peritoneal loose body was made up of thick layers of fibrous tissue with a few cellular components, and necrotic fat tissue in the central position. Small peritoneal loose bodies are occasionally found during laparotomy or autopsy, but such a large one is very unusual.

Surgical management of adult sigmoid colon intussusception caused by a malignant tumor: report of a case.
Matsuda K, Suda K, Tamura K, Deguchi T, Yamazaki E, Yago H, Inaba T, Takeshima T, Adachi M, Okinaga K.
Surg Today 2003;33:768-71.
A 67-year-old man was admitted for investigation of bloody stools. The sigmoid colon was found to be intussuscepted into the rectum very close to the anus, making reduction difficult. After dividing the peritoneum, the surgeon inserted his hands below the peritoneal reflection along the rectum and pushed the intussusceptum back from the distal to the proximal rectum using a milking action. The rectum was divided 5 cm from the peritoneal reflection, and the sigmoid colon was divided 10 cm proximally from the intussusception. The proximal end of the sigmoid colon was brought out as a colostomy. The residual rectum and the descending colon were anastomosed 5 months after the first operation. We present a case of adult intussusception of the sigmoid colon caused by a well-differentiated adenocarcinoma, which was successfully treated by manually reducing the intussusception, whereby abdominoperineal resection was avoided.

Correlation between vascular endothelial growth factor C expression and lymph node metastasis in t1 carcinoma of the colon and rectum.
Maeda K, Yashiro M, Nishihara T, Nishiguchi Y, Sawai M, Uchima K, Onoda N, Ohira M, Ishikawa T, Hirakawa K.
Surg Today 2003;33:736-9.
Purpose. Vascular endothelial growth factor C (VEGF-C) is known to be associated with the development of the lymphatic vessel system. Recently, VEGF-C is thought to be correlated with lymph node metastasis in some malignant tumors. In this study, we investigated the correlation between VEGF-C expression and lymph node metastasis in early carcinoma of the colon and rectum. Methods. Two hundred and twenty-one endoscopically biopsied specimens from patients with T1 colorectal carcinoma prior to operation were investigated by an immunohistochemical study. Results. VEGF-C expression was more frequently observed in the tumors with nodal metastasis than in those without metastasis. Moreover, a multivariate analysis indicated that VEGF-C expression is an independent predictor of lymph node metastasis. Conclusion. VEGF-C staining using endoscopically biopsied specimens prior to operation could be of use in the prediction of lymph node metastasis and in preoperative selection of treatment in patients with T1 colorectal carcinoma.

Sacrococcygeal teratoma showing organoid differentiation: report of a case.
Aslan A, Karaguzel G, Gelen T, Melikoglu M.
Surg Today 2003;33:560-3.
We present the case of a neonate with a sacrococcygeal teratoma showing organoid differentiation. A 5-day-old baby girl was transferred to our hospital with a large sacrococcygeal mass. Ultrasonography revealed a few well-limited fluid-filled lesions, indicating that the teratoma had cystic components. During surgery, a sac containing 30cm of small bowel loops was found in the tumor. The bowel segment was supplied by a mesentery-like structure originating from teratoid tissue. Histopathological examination verified a benign mature teratoma with fully developed small bowel loops. The tumor was defined as a sacrococcygeal fetiform teratoma. The terminological, structural, and clinical aspects of this unusual tumor are discussed, with a review of the English literature.

A novel immunohistochemical method to estimate cell-cycle phase distribution in archival tissue: implications for the prediction of outcome in colorectal cancer.
Scott IS, Morris LS, Bird K, Davies RJ, Vowler SL, Rushbrook SM, Marshall AE, Laskey RA, Miller R, Arends MJ, Coleman N.

J Pathol 2003;201:187-97.
An immunohistochemical method for assessing cell-cycle phase distribution in colorectal resection specimens would enable phase data to be incorporated into diagnostic algorithms for the estimation of prognosis and response to adjuvant chemotherapy in colorectal cancer. In contrast to flow cytometry, an immunohistochemical method would also allow the phase distribution to be examined within morphologically heterogeneous regions of neoplasms. Paraffin sections of normal colon (n = 25), colonic adenoma (n = 15), and colonic adenocarcinoma (n = 30) were analysed by immunohistochemistry using antibodies against markers of cell-cycle entry, Mcm-2 and Ki67, and putative markers of the cell-cycle phase, cyclins D1 and E (putative markers of G1 phase), cyclin A (S phase), cytoplasmic cyclin B1 (G2 phase), and phosphohistone H3 (M phase). The phase specificity of each marker was assessed by examining the degree of co-expression of adjacent phase markers using double-antibody fluorescence confocal microscopy and by comparison with flow cytometric analysis performed on adjacent tissue sections. The S-phase specificity of detectable cyclin A was also assessed in combination with in situ DNA replication using fluorescence confocal microscopy. All cells expressing phase markers co-expressed Mcm-2. Adjacent phase markers were not significantly co-expressed, confirming the relative specificity of these markers in tissue sections of colon. Cell-cycle phase distribution, calculated by immunohistochemistry, compared well with phase analyses obtained by flow cytometry. No cells expressed cyclin A in the absence of active DNA replication. The S-phase labelling index, as defined by detectable cyclin A expression, showed a positive correlation with the Mcm-2 labelling index and increased in the progression from normal colon to adenocarcinoma. In conclusion, a combination of these cell-cycle phase markers can be used to calculate the distribution of cells throughout each phase of the cell cycle in colorectal tissue sections. Detectable cyclin A can be used as a surrogate marker of S phase and may be of value in predicting prognosis and response to adjuvant therapy.

Detecting people at higher risk for colorectal neoplasia in a community-based screening program.
Scott RG, Edwards JT, Mendelson RM, Forbes GM.
Med J Aust 2003;179:325.

Revision anorectoplasty in the management of anorectal anomalies: Z. Hrabovszky, P.A. Dewan.
Pediatr Surg Int 18:269-272, (May), 2002.
None.
J Pediatr Surg 2003;38:1420A.
Some patients continue to have functional problems after correction of an anorectal malformation (ARM), so that revision PSARP may be indicated. The authors worked up retrospectively the course of 12 patients with a secondary PSARP. The children were on laxatives or enemas before, and used nappies, pads or continence devices. Seven children showed a sacral abnormality with less than 3 sacral segments missing. First surgery was PSARP in 11 (1 following cutback), abdomino-perineal pull-through in 1. The indications for resurgery were incontinence, poor cosmetic appearance, constipation, rectal prolapse, malposition, and stenosis combined with megarectum and a poor anorectal angle (ARA). Age at revision was 11 months to 15 years; follow-up ranged from 12 weeks to 3.5 years, Eleven were managed without colostomy. Imbrication (50%) and tapering (42%) were necessary. Six of 10 toilet-trained patients reported voluntary bowel movements (VBM) afterwards, 5 showed still constipation, 3 had diarrhea. Urinary incontinence in 5 children was not changed by the revision. Only 4 families were not restricted in social life by accidental fecal loss but 7 reported marked and 5 some improvement by the revision surgery. The authors comment that patients with a huge megarectum, a poor ARA, and good muscles benefit from revision surgery to break the circle of overflow incontinence. The maximal improvement is found 3 to 6 months after operation. They state that re-PSARP is recommended even in patients with slight sacral anomalies if conservative treatment (medications, bowel management program) fails.-Peter Schmittenbecher

The value of serologic markers in indeterminate colitis: A prospective follow-up study: S. Joossens, W. Reinisch, S. Vermeire, et al. Gastroenterology 122:1242-1247 (May), 2002.
None.
J Pediatr Surg 2003;38:1420.
In this predominantly adult study, the authors followed 97 patients from 3 centers with a diagnosis of indeterminate colitis to determine the value of serologic markers in helping to arrive at the final diagnosis in these patients. Crohn's disease was diagnosed if there was characteristic small bowel involvement, fistulization, or when granulomas were found at biopsy. Ulcerative colitis was diagnosed based on surgical specimens if there was diffuse involvement, starting distally, with a lack of transmural inflammation. Indeterminate colitis was diagnosed in patients with clinical features of chronic inflammatory bowel disease, without small bowel involvement, in whom endoscopy was nonconclusive and microscopy indicated active and patchy transmucosal chronic inflammation with minimal or moderate architectural distortion and an absence of diagnostic features for either ulcerative colitis or Crohn's disease. Ninety-seven patients were followed up, of whom, 32% have evolved to a point that a definitive diagnosis has been made after a mean

disease duration of 6 years (range, 1 month to 26 years). Thus far, ASCA+

Irritable pouch syndrome: A new category of diagnosis for symptomatic patients with ileal pouch-anal anastomosis: B. Shen, J-P. Achkar, B.A. Lashner, et al. Am J Gastroenterol 97:972-977 (Apr), 2002.

None.

J Pediatr Surg 2003;38:1419B.

Total proctocolectomy with ileal pouch-anal anastomosis is the surgical treatment of choice for refractory ulcerative colitis and familial adenomatous polyposis. Pouchitis is the most common long-term complication of this procedure, with a 10-year cumulative incidence of between 24% and 46%. The most common clinical symptoms of pouchitis are increased stool frequency, fecal urgency, abdominal cramping, and rectal bleeding. Patients may also have malaise, fever, pelvic discomfort, and extraintestinal manifestations. The authors have previously reported that patients with these symptoms could have normal pouch endoscopy and histology. They, therefore, suggested that endosocpic and histologic evaluations together with symptom assessment are required for the accurate diagnosis of pouchitis. In this adult study, 61 symptomatic patients with ulcerative colitis after ileal pouch-anal anastomosis were categorized according to symptomatology, endoscopic findings, and histology. Of these patients, only 50.8% met the diagnostic criteria for pouchitis, whereas 42.6% had no histologic evidence of inflammation of the pouch and therefore were classified as having "irritable pouch syndrome." The other 6.5% of patients had inflammation of the rectal cuff ('cuffitis'). Patients with true pouchitis were treated with a 2-week course of antibiotics. Patients with irritable pouch syndrome were treated much as patients with irritable bowel syndrome would be treated with antidiarrheal or anticholinergic medications, dietary modifications, dietary fiber supplements, or antidepressants. Patients with cuffitis were treated with a 2-week course of topical mesalamine or hydrocortisone. Based on this study, an evaluation that includes assessment of symptoms, endoscopy, and histology is required to reliably make the diagnosis of pouchitis and to direct appropriate therapy. Patients presenting with pouchitis who have normal pouches endoscopically and histologically ('irritable pouch syndrome') are treated differently than those with confirmed pouchitis.-Richard R. Ricketts

Inflammatory bowel disease in children 5 years of age and younger: P. Mamula, G.W. Telega, J.E. Markowitz, et al. Am J Gastroenterol 97:2005-2010 (Aug), 2002.

None.

J Pediatr Surg 2003;38:1419A.

A retrospective review of a database of all inflammatory bowel disease patients between 1977 and 2000 in a single institution found 82 patients who had onset of inflammatory bowel disease at 5 years of age or younger. Initially, 44% had with ulcerative colitis, 33% Crohn's disease, and 23% indeterminate colitis diagnosed. Only one of the patients below the age of 2 years with early-onset inflammatory bowel disease had ulcerative colitis diagnosed. Failure to thrive, perianal disease, and chronic fever were the distinguishing features for Crohn's disease, whereas blood in the stool was the distinguishing feature for ulcerative colitis. In 15% of patients, the diagnosis was changed during the course of the illness. Four of 36 children with ulcerative colitis and 4 of 19 children with indeterminate colitis eventually had Crohn's disease diagnosed. The anatomic distribution of Crohn's disease in this group of patients is different from that previously reported in older children and adolescents. Isolated small bowel disease was seen in only 11% of patients, isolated large bowel disease was seen in 30% of patients, and small and large bowel disease was seen in 59% of patients, resulting in a total of 89% of patients with large bowel involvement with Crohn's. This is the largest study of children aged 5 years and younger who have had early onset inflammatory bowel disease diagnosed. A high proportion of patients with Crohn's disease had linear growth failure and large bowel disease in comparison with reports in older patients.-Richard R. Ricketts

Hirschprung's disease and imperforate anus in pallister-hall syndrome: A new association.

Haynes JH, Bagwell CE.

J Pediatr Surg 2003;38:1411-2.

Hirschprung's disease and imperforate anus are described concurrently in a newborn with Pallister-Hall syndrome as well as the difficulties in making this diagnosis. Awareness of this new association should prompt the exclusion of Hirschprung's disease before repair of imperforate anus in infants with Pallister-Hall syndrome. The known genetic parallels between these conditions is discussed briefly in terms of etiology.

Efficacy of cold gel for soft tissue injuries: a prospective randomized double-blinded trial.

Airaksinen OV, Kyrklund N, Latvala K, Kouri JP, Gronblad M, Kolari P.

Am J Sports Med 2003;31:680-4.

BACKGROUND: The use of cold treatment to limit edema, decrease pain, and induce effective muscle relaxation in soft tissue injuries is widespread. PURPOSE: To compare the efficacy of a novel cold gel with that of a placebo gel in patients with a soft tissue injury. STUDY DESIGN: Prospective randomized double-

blinded controlled study. METHODS: Seventy-four patients with sports-related soft tissue injury were randomly assigned to active cold gel (Ice Power) or placebo gel groups. The gel was applied four times daily on the skin for 14 days. Clinical assessment was made after 7, 14, and 28 days with use of visual analog scale ratings. RESULTS: Pain scores decreased from 59 to 30 during the first week, to 14 by the second, and to 7 by the end of study in the cold gel group. In the placebo group, pain scores decreased from 58 to 45, 26, and 13, respectively (significant difference). Patient satisfaction with treatment was 71 in the cold gel group and 44 in the placebo group (significant difference). Disability decreased significantly more rapidly in the cold gel group. CONCLUSIONS: Cold gel therapy provided an effective and safe treatment for sports-related soft tissue injuries.

Probiotics and colon cancer.
Rafter J.
Best Pract Res Clin Gastroenterol 2003;17:849-59.
Although a myriad of health-promoting effects have been attributed to the probiotic lactic acid bacteria, perhaps the most interesting and controversial is that of anticancer activity, the vast majority of studies in this area dealing with protective effects against colon cancer.There is no direct experimental evidence for cancer suppression in humans as a result of the consumption of probiotic cultures in fermented or unfermented dairy products, but there is a wealth of indirect evidence, based largely on laboratory studies. Reports in the literature regarding the anticancer effects of lactic acid bacteria fall into the categories of in vitro studies, animal studies, epidemiological studies and human dietary intervention studies. Examples of these reports will be given in the current paper. The mechanisms by which probiotic bacteria may inhibit colon cancer are still poorly understood, but, several potential mechanisms are being discussed in the literature, and these will also be addressed in this review.

Probiotics for the treatment of postoperative complications following intestinal surgery.
Gionchetti P, Amadini C, Rizzello F, Venturi A, Poggioli G, Campieri M.
Best Pract Res Clin Gastroenterol 2003;17:821-31.
Probiotics are living micro-organisms that belong to the normal enteric flora and exert a beneficial effect on health and well-being. The rationale for the therapeutic use of probiotics in pouchitis (the most frequent long-term complication following pouch surgery for ulcerative colitis) and postoperative recurrence in Crohn's disease is based on convincing evidence suggesting a crucial role for the endogenous intestinal microflora in the pathogenesis of these conditions. Positive results have been obtained with the administration of highly concentrated probiotic preparations in preventing the onset and relapses of pouchitis. Further controlled studies are needed to establish the efficacy of probiotics in the prophylaxis of postoperative recurrences of Crohn's disease and in the treatment of mild pouchitis.

Probiotics in inflammatory bowel disease: a critical review.
Tamboli CP, Caucheteux C, Cortot A, Colombel JF, Desreumaux P.
Best Pract Res Clin Gastroenterol 2003;17:805-20.
Intestinal bacteria play a key role in inflammatory bowel disease. Probiotics attempt to modify disease by favourably altering bacterial composition, immune status, and inflammation. Until recently, probiotic therapy was considered 'folk' medicine, but there now is emerging interest on the part of the general public and scientific communities in the use of probiotics in human disease. This practical, evidence-based review examines probiotics as therapy for inflammatory bowel disease in humans. There are very few such published randomized clinical trials, but some data exist that possibly show an efficacy of probiotics as maintenance therapy in chronic relapsing pouchitis. Obstacles to providing probiotic therapy include selection of appropriate strains, poorly regulated probiotic quality standardization, processing and human biologic factors which impair probiotic viability, difficulty in maintaining new bacterial populations in the gut, and local product unavailability. Studies have focused on specific inflammatory bowel disease subgroups, limiting general applicability for the practitioner. Basic research highlights the importance of bacteria in these conditions, and the possibility that probiotics will modify physiological parameters. Well-designed, randomized clinical studies are still required to define the role of probiotics as therapeutic agents in inflammatory bowel disease.

Role of bacteria in experimental colitis.
Guarner F, Malagelada JR.
Best Pract Res Clin Gastroenterol 2003;17:793-804.
Epidemiology suggests some relationship between the establishment of the gut flora and the risk of developing inflammatory bowel disease. Unrestrained activation of the immune system against commensal bacteria appears to be responsible for the chronicity of these diseases. In animal models, broad-spectrum antibiotics reduce the bacterial load and militate against intestinal inflammation. Several bacterial species found in of the common microflora, including anaerobes, are able to invade the colonic wall when there is

dysfunction of the colonic mucosal barrier. Most aerobes provoke focal areas of acute inflammation, but some anaerobes in the predominant flora induce diffuse a fibrogenic transmural response. Current research aims to identify the probiotics that might act against these bacteria. Colonization with specific probiotic strains, including a bacterium genetically engineered to secrete interleukin-10, prevents spontaneous colitis in susceptible mice. Certain lactobacilli exhibit anti-inflammatory properties naturally, i.e. without previous genetic manipulation. Prebiotics may increase colonization by lactobacilli and can prevent mucosal inflammation. Modulation of the gut flora with probiotics may prove useful in the prevention and control of inflammatory bowel diseases.

Probiotics, antibiotic-associated diarrhoea and Clostridium difficile diarrhoea in humans.
Surawicz CM.
Best Pract Res Clin Gastroenterol 2003;17:775-83.
Probiotics are living organisms which, when ingested, have a beneficial therapeutic effect. Examples are bacteria, especially Lactobacillus rhamnosus GG, and the yeast Saccharomyces boulardii. Controlled trials indicate a benefit of both of these in the prevention of antibiotic-associated diarrhoea. Other less effective probiotics are Lactinex, Enterococcus faecium and bifidobacteria. In the difficult clinical problem of recurrent Clostridium difficile disease, S. boulardii as an adjunct to antibiotics has shown benefit in controlled trials. There is, however, less convincing evidence for the efficacy of Lactobacillus GG in this disease. Additional controlled trials and safety studies are needed before there can be a widespread endorsement of probiotics for these two conditions.

Probiotics to enhance anti-infective defences in the gastrointestinal tract.
Gill HS.
Best Pract Res Clin Gastroenterol 2003;17:755-73.
Several clinical studies have demonstrated the therapeutic and/or prophylactic efficacy of specific probiotics against acute viral gastroenteritis and antibiotic-associated diarrhoea (including Clostridium difficile infection). Emerging evidence also suggests beneficial effects against Helicobacter pylori infection. The evidence of efficacy against traveller's diarrhoea remains, however, inconclusive. The precise mechanisms by which probiotics potentiate host gastrointestinal defences and mediate protection are not fully known. There is evidence to suggest, however, that probiotics might contribute to host defence by reinforcing non-immunological defences and stimulating both specific and non-specific host immune responses. Little is known about the relative importance of the probiotic-stimulated mechanisms in host protection. This review summarises the evidence for the anti-infective effects of probiotics and discusses the effect of orally delivered probiotics on non-immunological and immunological defence mechanisms in the host, especially in the gastrointestinal tract.

Probiotics: what are they? What are their effects on gut physiology?
Fioramonti J, Theodorou V, Bueno L.
Best Pract Res Clin Gastroenterol 2003;17:711-24.
Probiotics can be defined as microbial cells that have a beneficial effect on the health and well-being of the host. Since the gastrointestinal mucosa is the surface of contact with probiotics, it seems evident that the first effects of probiotics relate to digestive function. A brief review of the literature indicates that probiotics have very few effects on the main physiological functions of the gastrointestinal tract, which are digestion, absorption and propulsion. The main action of probiotics can be summarised as a reinforcement of the intestinal mucosal barrier against deleterious agents. Experimental data indicate that some probiotics reduce pathological alterations in paracellular permeability to large molecules or bacteria, stimulate mucosal immunity, display a trophic action on the mucosa, reduce mucus degradation and interact with mediators of inflammation. Yoghurt may help lactose digestion, and some data needing confirmation indicate a stimulation of water absorption and an acceleration of intestinal transit by some bacteria.

Management of rectal carcinoid tumors.
Yokomine K, Tada S, Uehara M, Suko H, Kamio T, Matsumoto T.
Gastrointest Endosc 2003;58:641-2.

Does an ileoanal pouch offer a better quality of life than a permanent ileostomy for patients with ulcerative colitis?
Camilleri-Brennan J, Munro A, Steele RJ.
J Gastrointest Surg 2003;7:814-9.
Although an ileoanal pouch is frequently offered to patients with ulcerative colitis, it is still not clear to what extent this operation offers advantages over a permanent ileostomy. The aim of this study was to determine whether patients with a pouch have less morbidity and a better quality of life than a matched group of patients with a Brooke ileostomy. Nineteen patients (12 males and 7 females, median age 41 years) who

had undergone total colectomy and ileoanal pouch formation for ulcerative colitis were individually matched with patients who had had a panproctocolectomy and ileostomy; patients were matched for disease process, sex, age, socioeconomic status, and time since surgery. Quality of life was assessed using the Short-Form 36 version 2 questionnaire, the inflammatory bowel disease questionnaire, and a few additional questions on perception of body image. The scores were compared using the nonparametric Wilcoxon signed-rank test for paired samples. The number and type of postoperative complications, as well as the number of operative stages, were recorded prospectively. Restorative proctocolectomy was associated with a significantly better perception of body image than a permanent stoma, although quality of life in general was similar in both groups. Patients with a pouch had more long-term complications than patients with an ileostomy within the same period of time (52.6% vs. 26.3%). The median number of stages for pouch construction was two, compared to a median of one stage for an ileostomy (P<0.0001). Because of the high long-term complication rate and the relatively small quality-of-life advantage associated with restorative proctocolectomy, patients need to be counseled thoroughly before agreeing to this operation.

CARD15 Genotype and Phenotype Analysis in 55 Pediatric Patients With Crohn Disease From Saxony, Germany.
Sun L, Roesler J, Rosen-Wolff A, Winkler U, Koch R, Thurigen A, Henker J.
J Pediatr Gastroenterol Nutr 2003;37:492-7.
SUMMARY: OBJECTIVES Crohn disease is a chronic inflammatory bowel disorder that is caused by environmental and genetic factors. Mutations in the CARD15 gene have been recently identified to be associated with the disease. Until now no genetic study has focused directly on a pediatric population.METHODS The authors sequenced all 12 exons of the CARD15 gene in 55 pediatric patients with Crohn disease from Saxony. Their average age at onset was 11.2 years (1-17.5 years). The authors also evaluated the genotype-phenotype relationship in the patients.RESULTS Fourteen different polymorphic and/or disease-related nucleotide alterations have been identified in the patients. Sixty-five percent of their genomic DNA samples harbored at least one of six mutations within the CARD15 gene, which previously has been identified as being associated with Crohn disease. The authors found that the cytosine insertion mutation 3020insC was significantly more common in their pediatric population than in patients with Crohn disease (26% versus 11% of the alleles) whose results were reported in the literature. The genotype-phenotype analysis showed that the authors' patients with at least one of the six CARD15 disease-associated mutations had a high risk of inflammation located in the terminal ileum and ascending colon. In 10 of 19 patients with two mutations, intestinal resection surgery was necessary because of stricturing.CONCLUSIONS In the authors' pediatric patients, the genetic influence on Crohn disease was more pronounced than that reported in any other study, and it strongly affected the clinical phenotype.

Cytokines, chemokine receptors, and homing molecule distribution in the rectum and stomach of pediatric patients with ulcerative colitis.
Berrebi D, Languepin J, Ferkdadji L, Foussat A, De Lagausie P, Paris R, Emilie D, Mougenot JF, Cezard JP, Navarro J, Peuchmaur M.
J Pediatr Gastroenterol Nutr 2003;37:300-8.

Mechanisms of cancer prevention by tea constituents.
Lambert JD, Yang CS.
J Nutr 2003;133:3262S-7S.
Consumption of tea (Camellia sinensis) has been suggested to prevent cancer, heart disease and other diseases. Animal studies have shown that tea and tea constituents inhibit carcinogenesis of the skin, lung, oral cavity, esophagus, stomach, liver, prostate and other organs. In some studies, the inhibition correlated with an increase in tumor cell apoptosis and a decrease in cell proliferation. Studies with human cancer cell lines have demonstrated that epigallocatechin-3-gallate (EGCG), a major tea polyphenol, inhibits mitogen-activated protein kinases, cyclin-dependent kinases, growth factor-related cell signaling, activation of activator protein 1 (AP-1) and nuclear factor kappaB (NFkappaB), topoisomerase I and matrix metalloproteinases as well as other potential targets. Although some studies report effects of EGCG at submicromolar levels, most experiments require concentrations of >10 or 20 micro mol/L to demonstrate the effect. In humans, tea polyphenols undergo glucuronidation, sulfation, methylation, and ring fission. The peak plasma concentration of EGCG is approximately 1 micro mol/L. The possible relevance of each of the proposed mechanisms to human cancer prevention is discussed in light of current bioavailability data for tea polyphenols and the potential limitations of animal models of carcinogenesis. Such discussion, it is hoped, will clarify some misunderstandings of cancer prevention by tea and stimulate new research efforts.

Metabolism of tea flavonoids in the gastrointestinal tract.
Spencer JP.
J Nutr 2003;133:3255S-61S.

There is considerable interest in the bioavailability of flavan-3-ols such as tea catechins and their bioactivity in vivo. Although flavanols such as catechin and epicatechin have long been characterized as powerful antioxidants in vitro, evidence suggests that these compounds undergo significant metabolism and conjugation during absorption in the small intestine and in the colon. In the small intestine these modifications lead primarily to the formation of glucuronide conjugates that are more polar than the parent flavanol and are marked for renal excretion. Other phase II processes lead to the production of O-methylated forms that have reduced antioxidant potential via the methylation of the B-ring catechol. Significant modification of flavanols also occurs in the colon where the resident microflora degrade them to smaller phenolic acids, some of which may be absorbed. Cell, animal and human studies have confirmed such metabolism by the detection of flavanol metabolites in the circulation and tissues. This review will highlight the major sites of flavanol metabolism in the gastrointestinal tract and the processes that give rise to potential bioactive forms of flavan-3-ols in vivo.

Overview of dietary flavonoids: nomenclature, occurrence and intake.
Beecher GR.
J Nutr 2003;133:3248S-54S.
Flavonoids and their polymers constitute a large class of food constituents, many of which alter metabolic processes and have a positive impact on health. Flavonoids are a subclass of polyphenols. They generally consist of two aromatic rings, each containing at least one hydroxyl, which are connected through a three-carbon "bridge" and become part of a six-member heterocyclic ring. The flavonoids are further divided into subclasses based on the connection of an aromatic ring to the heterocyclic ring, as well as the oxidation state and functional groups of the heterocyclic ring. Within each subclass, individual compounds are characterized by specific hydroxylation and conjugation patterns. Many flavonoids in foods also occur as large molecules (tannins). These include condensed tannins (proanthocyanidins), derived tannins and hydrolysable tannins. For proanthocyanidins, three subclasses (15 characterized) have been identified in foods. Monomers are connected through specific carbon-carbon and ether linkages to form polymers. Derived tannins are formed during food handling and processing, and found primarily in black and oolong teas. Flavonoids are widely distributed in nature, albeit not uniformly. As a result, specific groups of foods are often rich sources of one or more subclasses of these polyphenols. The polyphenolic structure of flavonoids and tannins renders them quite sensitive to oxidative enzymes and cooking conditions. Scientists in several countries have estimated intakes of a few subclasses of flavonoids from limited food composition databases. These observations suggest large differences in consumption, due in part to cultural and food preferences among populations of each country.

Fecal acetate is inversely related to acetate absorption from the human rectum and distal colon.
Vogt JA, Wolever TM.
J Nutr 2003;133:3145-8.
In humans, colonic bacteria ferment unabsorbed carbohydrates, producing the SCFA acetic, propionic and n-butyric acids. To test for interactions among the SCFA that may affect their absorption, healthy subjects (n = 10) were given 300-mL rectal infusions containing acetate (60 mmol/L), propionate (20 mmol/L) and butyrate (20 mmol/L), alone or in combinations of two or three. The solutions were retained for 30 min, and then subjects voided a sample for SCFA measurement. To examine the relationship between absorption and fecal SCFA concentrations, a fecal sample was collected at the end of the study. The mean percentage of butyrate absorption (30.2 +/- 4.6%) exceeded that of acetate (24.1 +/- 3.7%) ($P < 0.05$). Absorption tended to be less ($P = 0.12$) when a SCFA was infused alone (26.7 +/- 4.0%) than when all three were infused (32.0 +/- 5.7%). Bicarbonate concentration was higher after butyrate-containing infusions than after saline. The fecal molar acetate percentage was inversely correlated with the percentage of acetate absorption from the infusion of three SCFA ($r = -0.834$, $P < 0.005$). We conclude that there was no combination effect on SCFA absorption, and the chain-length effect suggests passive diffusion as a likely mechanism of absorption. Furthermore, fecal acetate may reflect absorption, rather than production of colonic acetate.

Glutamine prevents cytokine-induced apoptosis in human colonic epithelial cells.
Evans ME, Jones DP, Ziegler TR.
J Nutr 2003;133:3065-71.
Epithelial cell apoptosis is an important regulator of normal gut mucosal turnover; however, excessive apoptosis may inhibit mucosal restitution during pathophysiologic states. Apoptosis is induced by oxidative stress and cytokines, but regulation by specific nutrients has been infrequently studied under these conditions. Glutamine (Gln) is an important metabolic fuel for intestinal epithelial cells and a precursor to the antioxidant glutathione (GSH), which has antiapoptotic effects. In cultured intestinal epithelial cells, Gln depletion increases oxidant-induced apoptosis. This study examined whether Gln protects against apoptosis induced by the cytokine tumor necrosis factor-alpha-related apoptosis-inducing ligand (TRAIL) in the human

colon carcinoma cell line, HT-29. TRAIL-induced apoptosis in HT-29 cells was characterized by an increase in the percentage of cells in the sub-G(1) fraction by flow cytometry, nuclear condensation and the activation of caspase-8 and caspase-3. TRAIL-induced apoptosis was completely prevented by Gln, but not inhibited by other amino acids, including the GSH constituents, glutamate, cysteine and glycine. Similar antiapoptotic effects of Gln occurred when apoptosis was induced by a combination of tumor necrosis factor-alpha and interferon-gamma. Cellular GSH was oxidized during TRAIL-induced apoptosis. This effect was completely blocked by Gln, however, inhibition of GSH synthesis with buthionine sulfoximine did not alter Gln antiapoptotic effects. Furthermore, glutamate prevented GSH oxidation in response to TRAIL but did not protect against TRAIL-induced apoptosis. These results show that Gln specifically protects intestinal epithelial cells against cytokine-induced apoptosis, and that this occurs by a mechanism that is distinct from the protection against oxidative stress mediated by cellular GSH.

Re: Brandt et al. An evidence-based approach to the management of irritable bowel syndrome in North America(1).
Avigan M, Justice R, Mackey AC, Nair N.
Am J Gastroenterol 2003;98:2105-6.

Treatment of pyoderma gangrenosum associated with Crohn's disease.
Ohmori T, Yamagiwa A, Nakamura I, Nishikawa K, Saniabadi AR.
Am J Gastroenterol 2003;98:2101-2.

Predictors of colorectal cancer screening participation in the United States.
Ioannou GN, Chapko MK, Dominitz JA.
Am J Gastroenterol 2003;98:2082-91.
Our aim was to identify predictors of colorectal cancer screening in the United States and subgroups with particularly low rates of screening.The responses to a telephone-administered questionnaire of a nationally representative sample of 61,068 persons aged >/=50 yr were analyzed. Current screening was defined as either sigmoidoscopy/colonoscopy in the preceding 5 years or fecal occult blood testing (FOBT) in the preceding year, or both.Overall, current colorectal cancer screening was reported by 43.4% (sigmoidoscopy/colonoscopy by 22.8%, FOBT by 9.9%, and both by 10.7%). The lowest rates of screening were reported by the following subgroups: those aged 50-54 yr (31.2%), Hispanics (31.2%), Asian/Pacific Islanders (34.8%), those with education less than the ninth grade (34.4%), no health care coverage (20.4%), or coverage by Medicaid (29.2%), those who had no routine doctor's visit in the last year (20.3%), and every-day smokers (32.1%). The most important modifiable predictors of current colorectal cancer screening were health care coverage (OR = 1.7, 95% CI = 1.5-1.9) and a routine doctor's visit in the last year (OR = 3.5, 95% CI = 3.2-3.8). FOBT was more common in women than in men (OR = 1.8, 95% CI = 1.6-2.0); sigmoidoscopy/colonoscopy was more common in Hispanics (OR = 1.4, 95% CI = 1.1-1.7) and Asian/Pacific Islanders (OR = 2.4, 95% = CI 1.5-3.9) relative to whites, in persons without routine doctor's visits in the preceding year (OR = 3.3, 95% CI = 2.8-4), and in persons with poor self-reported health (OR = 1.3, 95% CI = 1.2-1.5).Interventions should be developed to improve screening for the subgroups who reported the lowest screening rates. Such interventions may incorporate individual screening strategy preferences.

Trichuris suis seems to be safe and possibly effective in the treatment of inflammatory bowel disease.
Summers RW, Elliott DE, Qadir K, Urban JF, Thompson R, Weinstock JV.
Am J Gastroenterol 2003;98:2034-41.
Inflammatory bowel disease (IBD), especially Crohn's disease (CD), probably results from failure to downregulate a chronic Th1 intestinal inflammatory process. Induction of a Th2 immune response by intestinal helminths diminishes Th1 responsiveness. This study evaluates the safety and effectiveness of helminthic ova in the treatment of active IBD.We studied four patients with active CD and three with ulcerative colitis (UC). In an initial treatment and observation period, a single dose of 2500 live Trichuris suis eggs was given orally, and patients were followed every 2 wk for 12 wk. Baseline medications were continued at the same dose throughout the study. Safety was monitored by following the patients' clinical status and laboratory studies at regular intervals. Patients also were monitored regularly using the Crohn's Disease Activity Index, Simple Clinical Colitis Activity Index (SCCAI), and the Inflammatory Bowel Disease Quality of Life Index (IBDQ). To assess safety and efficacy with repetitive doses, two patients with CD and two with UC were given 2500 ova at 3-wk intervals as maintenance treatment using the same evaluation parameters.During the treatment and observation period, all patients improved clinically without any adverse clinical events or laboratory abnormalities. Three of the four patients with CD entered remission according to the Crohn's Disease Activity Index; the fourth patient experienced a clinical response (reduction of 151) but did not achieve remission. Patients with UC experienced a reduction of the Clinical Colitis Activity Index to 57% of baseline. According to the IBD Quality of Life Index, six of seven patients (86%) achieved remission.

The benefit derived from the initial dose was temporary. In the maintenance period, multiple doses again caused no adverse effects and sustained clinical improvement in all patients treated every 3 wk for >28 wk.This open trial demonstrates that it is safe to administer eggs from the porcine whipworm, Trichuris suis, to patients with CD and UC. It also demonstrates improvement in the common clinical indices used to describe disease activity. The benefit was temporary in some patients with a single dose, but it could be prolonged with maintenance therapy every 3 wk. The study suggests that it is possible to downregulate aberrant intestinal inflammation in humans with helminths.

The colon single-stripe sign and its relationship to ischemic colitis.
Zuckerman GR, Prakash C, Merriman RB, Sawhney MS, DeSchryver-Kecskemeti K, Clouse RE.
Am J Gastroenterol 2003;98:2018-22.
Endoscopic findings may assist in the clinical diagnosis of ischemic colitis but have not been systematically characterized. We noted that a single linear colonic ulcer could on occasion be found endoscopically after hypotension and proceeded to investigate its relationship to ischemic colitis.Twenty-six patients (19 female and seven male, mean age 71 yr) with endoscopic evidence of a single linear ulcer running along the longitudinal axis of the colon (colon single-stripe sign (CSSS) were retrospectively studied. Colitis etiologies were determined in the CSSS patients and in 58 consecutive patients without a stripe forming a colitis comparison group; clinical course and outcome in CSSS patients subsequently were compared with those in 22 patients with circumferentially involved ischemic colitis.The CSSS was >/=5 cm in length in all instances and isolated to a segment of the left colon in 89%. Evidence of a preceding ischemic event was noted significantly more often in the CSSS (62%) patients than in the colitis comparison group (7%) ($p < 0.0001$). On blinded histopathological examination, 75% of CSSS cases had microscopic evidence of ischemic injury compared with 13% in the colitis comparison group ($p < 0.0001$). None of the CSSS patients required surgical intervention, whereas six (27%) patients from the circumferential ischemic colitis group underwent exploration ($p < 0.05$). Nine patients (41%) in the circumferential ischemic colitis group died, whereas there was one death in the CSSS group (4%) ($p < 0.05$).Ischemia can manifest endoscopically as the CSSS. This sign seems to characterize milder disease in the clinical spectrum of ischemic colitis.

Risk of congenital abnormalities in children born to women with ulcerative colitis: a population-based, case-control study.
Norgard B, Puho E, Pedersen L, Czeizel AE, Sorensen HT.
Am J Gastroenterol 2003;98:2006-10.
It has recently been suggested that maternal ulcerative colitis is associated with an almost 4-fold increased risk of congenital abnormalities in offspring. We therefore examined the risk of congenital abnormalities in children born to women with ulcerative colitis.This was a case-control study within the Hungarian Case Control Surveillance of Congenital Abnormalities, 1980-1996, based on 22,843 newborn children or fetuses with congenital abnormalities and 38,151 children without any detected congenital abnormalities (the control group).Seventy-one pregnant women (0.3%) had ulcerative colitis in the case group and 95 (0.2%) in the control group. The adjusted overall risk for having a child with congenital abnormalities in women with ulcerative colitis was OR = 1.3 (95% CI = 0.9-1.8). The risk of limb deficiencies, obstructive urinary congenital abnormalities, and multiple congenital abnormalities was OR = 6.2 (95% CI = 2.9-13.1), OR = 3.3 (95% CI = 1.1-9.5), and OR = 2.6 (95% CI = 1.3-5.4), respectively. No association was found for cleft lip with or without cleft palate or cardiovascular defects.We found no significantly increased overall risk of congenital abnormalities in children born to women with ulcerative colitis. However, our results indicate an increased risk of some selected congenital abnormalities (limb deficiencies, obstructive urinary congenital abnormalities, and multiple congenital abnormalities). More data are needed to determine whether the association between maternal ulcerative colitis and an increased risk of certain congenital abnormalities is causal or is influenced by bias.

Pseudomembranous collagenous colitis.
Yuan S, Reyes V, Bronner MP.
Am J Surg Pathol 2003;27:1375-9.
SUMMARY: The classic clinical and histologic features of collagenous colitis are well characterized; however, the acute or neutrophilic inflammatory changes that may accompany this entity are less well established. In this report of 10 patients, we describe the first series of pseudomembranous collagenous colitis. Because superimposed Clostridium difficile infection was only demonstrated in one patient and no other causes of pseudomembranous colitis were evident in the remaining nine patients, we conclude that pseudomembranes are part of the spectrum of collagenous colitis itself. This case series illustrates the importance of searching for collagenous colitis in the evaluation of pseudomembranous colitis. At the same time, superimposed infectious or ischemic etiologies need to be excluded clinically in any patient with superimposed pseudomembranes. The existence of pseudomembranes in collagenous colitis also lends support to the hypothesis that toxin- and/or ischemia-mediated injury may be involved in the pathogenesis of

collagenous colitis.

Gynecologic screening in hereditary nonpolyposis colorectal cancer.
Rijcken FE, Mourits MJ, Kleibeuker JH, Hollema H, van der Zee AG.
Gynecol Oncol 2003;91:74-80.
In hereditary nonpolyposis colorectal cancer (HNPCC), women with a mismatch repair (MMR) gene mutation have a cumulative lifetime risk of 25-50% for endometrial cancer and 8-12% for ovarian cancer. Therefore, female members of HNPCC families are offered an annual gynecologic and transvaginal ultrasound (TVU) examination and serum level CA 125 analysis. The aim of the present study was to evaluate our 10-year experience with this screening program.Women who are MMR gene mutation carriers or who fulfil the Amsterdam criteria were identified from our HNPCC database. Information concerning the screening program was retrospectively collected from patient files.Forty-one women, 35 premenopausal and 6 postmenopausal, were enrolled in the program with a median follow-up of 5 years (range 5 months-11 years). In 197 patient years at risk, 17 of 179 TVUs gave reason for endometrial sampling. Three premalignant lesions, with complex atypical hyperplasia, were discovered. One interval endometrial cancer was detected as a result of clinical symptoms. No abnormal CA 125 levels were measured and no ovarian cancers were detected.These results demonstrate that gynecologic screening allows the detection of premalignant lesions of the endometrium but also illustrate that recognition and reporting of clinical symptoms by the women themselves is of utmost importance.

Common genetic evolutionary pathways in familial adenomatous polyposis tumors.
Tarafa G, Prat E, Risques RA, Gonzalez S, Camps J, Grau M, Guino E, Moreno V, Esteller M, Herman JG, Germa JR, Miro R, Peinado MA, Capella G.
Cancer Res 2003;63:5731-7.
Cancer cells progress through the accumulation of genetic alterations. Familial adenomatous polyposis (FAP) tumors provide an excellent model to unravel the molecular steps underlying malignant transformation. Global genomic damage was assessed in 56 adenomas and 3 carcinomas from six FAP patients and compared with that of sporadic adenomas and carcinomas. Evolutive trees were traced after application of maximum likelihood clustering and split decomposition methods to the analysis of comprehensive genetic profiles generated by diverse molecular approaches: arbitrarily primed PCR, comparative genomic hybridization, and flow cytometry. Overall, genomic damage as assessed by arbitrarily primed PCR was lower in familial adenomas than in sporadic adenomas and carcinomas. Comparative genomic hybridization data also show a low number of alterations in the majority of FAP adenomas. Tumors of the same patient were likely to share specific genetic alterations and may be grouped into one or two clusters. Putative common pathways were also identified, which included tumors of up to three different patients. According to our data, FAP tumors accumulate specific genetic alterations and in a preferred order that is characteristic of each individual. Moreover, the particular genetic background and environmental conditions of a FAP patient restrain the molecular evolution portrait of synchronous tumors.

Microsatellite Instability Is a Predictive Factor of the Tumor Response to Irinotecan in Patients with Advanced Colorectal Cancer.
Fallik D, Borrini F, Boige V, Viguier J, Jacob S, Miquel C, Sabourin JC, Ducreux M, Praz F.
Cancer Res 2003;63:5738-5744.
The aim of our study was to assess the relationship between colorectal tumor responsiveness to irinotecan and microsatellite instability (MSI), a feature of colorectal tumors with DNA mismatch repair defect. Seventy-two patients with metastatic colorectal cancer were included in our retrospective study. A complete response to irinotecan was observed in 1 patient and a partial response in 10 patients, whereas 61 patients did not respond to this treatment. We analyzed the protein expression of hMLH1, hMSH2, and BAX by immunohistochemistry, determined the MSI phenotype, and looked for mutations in the coding repeats located in the transforming growth factor beta-RII, BAX, hMSH3, and hMSH6 genes. All 44 tumors analyzed expressed detectable levels of hMLH1; 1 tumor lacked hMSH2 staining, whereas 4 tumors showed a marked decrease in BAX expression. A better response to irinotecan was observed in the patients whose tumors have lost BAX expression ($P < 0.001$). Among the 7 tumors that displayed a MSI-H phenotype, 4 responded to irinotecan, whereas only 7 of the 65 MSI-L/ microsatellite stable tumors did ($P = 0.009$). Seven of the 72 tumors had inactivating mutations in the coding repeats of the target genes. Three tumors displayed a mutation in the poly-A10 tract of the transforming growth factor beta-RII gene, associated with a 1-bp deletion in the poly-A8 tract of hMSH3 in one tumor and with a 1-bp deletion in the poly-G8 tract of BAX in another. Four tumors displayed mutations in the poly-G8 repeat of BAX, whereas 2 mutations in hMSH6 and hMSH3 were characterized. Among the 7 tumors with mutations in these target genes, 5 responded to irinotecan, whereas only 6 of the other 65 tumors did ($P < 0.001$), indicating that MSI-driven inactivation of target genes modifies tumor chemosensitivity. Our observations allowed us to define the first useful predictive criteria for irinotecan response in patients with colorectal cancer.

High-resolution methylation analysis of the hMLH1 promoter in sporadic endometrial and colorectal carcinomas.

Strazzullo M, Cossu A, Baldinu P, Colombino M, Satta MP, Tanda F, De Bonis ML, Cerase A, D'Urso M, D'Esposito M, Palmieri G.

Cancer 2003;98:1540-6.

BACKGROUND: Microsatellite instability (MSI) has been reported in endometrial carcinoma (EC) and in colorectal carcinoma (CRC), primarily as a result of defective DNA mismatch repair (MMR). The MMR gene hMLH1 commonly is inactivated in both EC and CRC. In the current study, epigenetic mechanisms involved in hMLH1 inactivation have been investigated to further elucidate the role of these mechanisms in the pathogenesis of EC and CRC. METHODS: Polymerase chain reaction (PCR)-based microsatellite analysis performed on paraffin-embedded tissues was used to select 42 sporadic carcinomas (21 ECs and 21 CRCs) with MSI. Immunohistochemistry (IHC), using the anti-hMLH1 antibody, and mutation analysis, using denaturing high-performance liquid chromatography and automated sequencing, were performed on unstable carcinoma samples. Methylation analysis, using modified protocols for bisulfite treatment and methylation-specific PCR (MSP), was performed on DNA from archival tissue samples. RESULTS: No MSI-positive tumor samples with normal hMLH1 immunostaining (n = 7) exhibited hMLH1 promoter methylation, whereas 8 of 35 unstable cases with loss of hMLH1 expression (23%) exhibited MSP amplification. Among analyzed cases, germ-line mutations of hMLH1 were found in 4 of 20 unmethylated samples (20%) and in 0 of 8 methylated samples. Bisulfite sequencing of amplification products from methylated samples demonstrated that almost all CpG dinucleotides within the hMLH1 promoter elements underwent methylation. CONCLUSIONS: Although an MMR gene other than hMLH1 may be responsible for genetic instability in MSI-positive/IHC-positive tumors, the presence of MSP amplification and allelic deletions within the hMLH1 locus in subsets of MSI-positive/IHC-negative cases strongly suggests that hMLH1 promoter methylation may contribute to the inactivation of both hMLH1 alleles. Bisulfite analysis suggests that the mechanisms of hMLH1 silencing may depend on CpG density rather than site-specific [95% CI], 1.0-2.1; OR, 1.4; 95% CI, 1.1-1.8; and OR, 1.6; 95% CI, 1.2-2.1, respectively), the absence of any trend in the size of excess risk with increasing duration or with current versus former use of these agents argues for a cautious interpretation.

Journals reviewed for this issue:
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Stem Cells
Trends Biotechnol
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Am J Psychiatry 1
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