Brachytherapy May Be Effective Tx for Young Men With Low-Risk Prostate Cancer

Median 5 Year Follow-Up of 125Iodine Brachytherapy as Monotherapy in Men Aged ≤ 55 Years With Favorable Prostate Cancer.

Piña AG-I, Crook J, et al:

Urology 2009; December 29 (): epub ahead of print

Young men (aged ≤55 years) with low-risk prostate cancer treated by brachytherapy had excellent cancer control and low toxicity.

Objective: To examine biochemical recurrence rates and toxicity in young men with low-risk prostate cancer treated with brachytherapy alone.

Design/Participants: Retrospective cohort study of 96 men aged ≤55 years treated with brachytherapy alone for prostate cancer. All but 2 had low-risk prostate cancer.

Methods: No patient had androgen ablation therapy or external beam radiation therapy. Minimum follow-up was 30 months, with a median follow-up of 63 months. Biochemical failure was defined using the "nadir + 2 ng/mL" rule. Toxicity was assessed both acutely and with long-term follow-up.

Results: Estimated 7-year biochemical disease-free survival was 98.9%. Median nadir PSA was 0.05 and was reached at 48 months. Acute and late grade 2 genitourinary (GU) toxicity rates were 10% and 11%, while grade 3 was seen in 3 patients, all of whom responded to intervention. Patients returned to median baseline urinary function based on International Prostate Symptom Score (IPSS) at a median of 20 months post-treatment. Grade 2 gastrointestinal (GI) toxicity was 2%, with no grade 3 toxicity. Erectile function was generally well preserved, with 45% using phosphodiesterase inhibitors.

Conclusions: Men aged ≤55 years with low-risk prostate cancer can be offered brachytherapy as monotherapy.

Reviewer's Comments: One of the most enduring controversies in prostate cancer is how to manage low-risk disease. Options include surgery, brachytherapy, cryotherapy, external beam radiotherapy, and active surveillance. In young men, there has been a strong bias toward treating these men with surgery and not offering other forms of therapy. This study sought to examine if there is evidence to support use of brachytherapy in this context. The data presented here would suggest that brachytherapy alone can offer a high degree of cancer control with acceptably low rates of toxicity. Although this study is relatively small and the follow-up remains in the intermediate term at a median of 5 years, it nevertheless is provocative. Careful patient selection clearly is important, as all but 2 of these patients were at low risk for recurrence or disease progression. Similarly, low GU toxicity rates may be due in part to small prostate volumes (mean, 32 cc) and baseline IPSS scores (median, 6) in this cohort. Attention to detail and performing a quality implant is critical, as evidenced by the post-implant dosimetrics presented in the paper. The majority of patients were not assessed by a validated instrument regarding their sexual function, so any interpretation of erectile function based on this cohort must be viewed with a skeptical eye. Nevertheless, the results presented here are intriguing and reinforce the need for full informed consent in men being counseled on management of low-risk prostate cancer. (Reviewer-Peter E. Clark, MD).

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Keywords: Prostate Cancer, Brachytherapy, Young Men

Print Tag: Refer to original journal article
Men aged >75 years with low initial PSA values (<3.0 for Caucasian men and <6.0 for African American men) are at low risk for high-risk prostate cancer or prostate cancer death.

**Objective:** To evaluate the relationship in elderly men between initial PSA and race with subsequent prostate cancer risk, high-risk disease, and disease-specific death.

**Design/Participants:** Retrospective cohort study of 408 African American (AA) and 1720 Caucasian (CA) men whose first screening PSA occurred when they were aged 75 to 80 years.

**Methods:** The risk of prostate cancer detection, high-risk prostate cancer, and prostate cancer-specific death were compared across different initial PSA ranges and by race.

**Results:** Mean follow-up for the group was 3.0 to 3.3 years. In CA men, those whose initial screening PSA was <3.0 had significantly lower risks of prostate cancer detection, presence of high-risk disease, and prostate cancer-specific death compared to those groups with a PSA of ≥3.0. In AA men, the equivalent cutoff point was an initial PSA of <6.0.

**Conclusions:** In men aged 75 to 80 years, CA men with an initial PSA <3.0 and AA men with an initial PSA <6.0 are at lower risk of prostate cancer detection, high-risk disease, and death due to prostate cancer and may not require further screening.

**Reviewer's Comments:** PSA screening for prostate cancer has been a controversial topic almost since PSA was introduced 20 years ago. Even with the publication of 2 prospective randomized screening trials, the controversy, if anything, has seemed to escalate. Added to the complex decision of when and if to start screening is the question of when to stop. This study sought to clarify this in a cohort of elderly men aged >75 years and looked for initial PSA values in men of CA or AA race that indicated a low risk of disease and death. While the goal is laudable, the execution unfortunately falls short, and this study cannot stand on its own in recommending an appropriate stopping point. The 2 main issues are as follows: (1) Follow-up in this cohort is exceedingly short. Although the maximum follow-up is almost 20.0 years, the median follow-up is 0.7 years. This means that more than half the cohort has <1 year of follow-up. Given the long natural history of prostate cancer, this is too short to say anything substantive regarding prostate cancer mortality. (2) The survival analysis for prostate cancer death was not a time to event analysis, such as Kaplan-Meier curves that are typically seen in much of our literature. Instead, the authors depend on a more straightforward yes/no analysis that does not time take into consideration. Given these deficiencies, therefore, although the authors pose a very important question, this study is not in a position to answer it for us. (Reviewer-Peter E. Clark, MD).
Objectives: To identify risk factors for prolonged urine leak after percutaneous nephrolithotomy (PCNL).

Design: Retrospective chart review.

Methods: 1407 PCNL cases over a 6-year period were studied. Excluded cases included patients who had recognized urinary extravasation at the time of PCNL (6%). Complex stone burden was defined as partial or complete staghorns, pelvic stones with calyceal extension, or multiple calyceal stones. PCNL was performed through a 30F nephrostomy sheath, and an antegrade nephrostogram was performed at the end of the procedure. A 14F nephrostomy tube, open-ended ureteral catheter, and indwelling urethral catheter were left in place postoperatively. The open-ended ureteral catheter and urethral catheter were removed on day 1, while an antegrade nephrostogram was obtained on day 2 prior to removal of the nephrostomy tube. Patients with persistent urinary leak from the nephrostomy site after 24 hours underwent CT scan imaging and placement of a ureteral stent.

Results: The risk of needing a ureteral stent as a secondary procedure for prolonged urine leak after PCNL was 4%. Risk factors predictive of needing a ureteral stent included residual stone fragments, larger stone size, and complex stone burden. The stone-free rate was 75% in those not requiring a stent versus 54% in those who had persistent leak leading to placement of a stent. A ureteral stone as the cause for persistent leak was identified by CT in 18% of patients, and it was treated with ureteroscopy. Patients requiring ureteral stenting stayed 1 extra day in the hospital.

Conclusions: Need for a ureteral stent as a secondary procedure decreases with increasing stone-free rates.

Reviewer's Comments: Despite a thorough evaluation of the drainage of the kidney with an antegrade nephrostogram at the end of the procedure, and a second antegrade nephrostogram 2 days postoperatively, the authors still encountered persistent obstruction and urine leak in 4% of patients. It is feasible that conservative observation may have been successful in the 80% of patients in whom residual ureteral stones were not identified by CT, as their obstruction was most likely related to edema or clot colic. Adapting a tubeless PCNL approach with an indwelling ureteral stent may eliminate the risk of flank leak and may decrease postoperative discomfort. (Reviewer-Manoj Monga, MD).

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Keywords: Percutaneous Nephrolithotomy, Extravasation, Double-J Placement

Print Tag: Refer to original journal article
Second-look nephroscopy appears warranted for those patients with larger (≥4 mm) residual fragments after percutaneous nephrolithotomy.

**Objective:** To conduct a cost-comparison analysis of immediate second-look flexible nephroscopy (SLFN) versus expectant management for residual fragments (RFs) after percutaneous nephrolithotomy (PCNL).

**Participants:** 42 patients with RF on CT after PCNL over an 8-year period (8% of all PCNLs performed).

**Methods:** Decision analysis modeling of outcomes and costs were based on the authors’ experience and published shockwave lithotripsy (SWL) literature for RFs.

**Results:** For patients with an RF ≤4 mm, only 40% experienced a stone event, and only 23% required an intervention. Observation was more cost-effective in this group ($1700 vs $4700).

**Conclusions:** Indiscriminate use of SFLN is not cost-effective, but it should be used for RFs >4 mm. In addition, clinical benefit may be seen for SFLN for RFs 3 to 4 mm in size.

**Reviewer’s Comments:** The authors have conducted a critical appraisal of their protocol for CT scan imaging on postoperative day 1 followed by second-look nephroscopy. The current study confirms that SLFN is not warranted for RFs <2 mm, but it is a good approach for fragments ≥4 mm. A "gray zone" exists for stones 3 to 4 mm in size, although cost of observation versus SLFN is equivalent in this group: 75% of those observed will experience a stone-related event and, as such, these patients may benefit clinically from an SLFN. The authors were limited in their ability to build a decision model based on data from patients undergoing PCNL due to the scarcity of studies reporting long-term outcomes with RFs in this setting. Use of SWL literature to build the decision model may be limited by the difference in initial stone burden between the 2 patient groups. Patients with a smaller stone burden (SWL) may be more likely to undergo less invasive secondary procedures for residual fragments. Indeed, the distribution of secondary procedures used in the metanalysis strongly favored SWL (77%); one would anticipate a higher use of endoscopic procedures post-PCNL. The decision to select SLFN versus ureteroscopy or SWL is often determined by the quality of the initial percutaneous renal access and location of the RF in relation to the access. With stone size criteria established, one must now re-evaluate the need for postoperative CT scan imaging. Indeed, intraoperative fluoroscopy with magnification in conjunction with endoscopic evaluation may be sufficient to identify those fragments that really matter. (Reviewer-Manoj Monga, MD).

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Keywords: Percutaneous Nephrolithotomy, Calculus, Residual Fragments

Print Tag: Refer to original journal article
Children with daytime wetting, uninhibited bladder contractions, and detrusor sphincter dyssynergia are more likely to have persistence of their symptoms after failed conservative management.

Objective: To identify factors that might predict success or failure in the management of voiding dysfunction, with special focus on presenting symptoms and video urodynamic results.

Design/Participants: Retrospective chart review identifying children with recalcitrant voiding dysfunction with normal imaging studies.

Methods: Clinical outcome assessment used the Dysfunctional Voiding Symptom Score. The different treatment modalities were not assessed individually or in combination.

Results: 50 children (35 girls, 15 boys) met criteria and were included in the study. Mean age was 9.4 years (range, 3.8 to 17.3 years). Mean follow-up from initial urodynamics was 4 years (range, 1 to 11 years). Thirty-three children (64%) remained symptomatic, and 17 (33%) normalized. Of 50 children, 31 had uninhibited bladder contractions (UBCs) with daytime wetting, of which 24 (77%) failed to normalize. All 9 with the combination of UBC and detrusor sphincter dyssynergia (DSD) failed to normalize. More boys normalized than did girls, but this did not reach statistical significance.

Conclusions: The majority of children with refractory voiding dysfunction failed to resolve their symptoms. Children with daytime wetting, UBC, and DSD were most likely to have persistence of their symptoms.

Reviewer's Comments: Children with no evidence of neurological abnormality yet fail conservative management of voiding dysfunction present a formidable challenge in management. Children with UBC and DSD have an especially high risk of failure, and early consideration of alternative treatment (nerve stimulator, botulinum injection, spinal cord filum sectioning) may be warranted. These treatments are certainly more controversial, but identifying these patients early can guide patient/family counseling and possibly mitigate some of the frustration associated with unrealistic expectations. (Reviewer-John Gatti, MD).

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Keywords: Intractable Voiding Dysfunction, Normal Spinal Imaging, Children

Print Tag: Refer to original journal article
Obesity is associated with incontinence, but adolescents may be reluctant to seek help.

**Objective:** To evaluate the prevalence, severity, and impact of urinary incontinence in obese versus non-obese adolescent girls.

**Participants/Methods:** Girls aged 12 to 17 years were administered a 29-item questionnaire regarding urinary symptoms and their impact or bother. Involuntary urine leakage at least twice per week was defined as "clinically significant urinary incontinence."

**Results:** 40 obese girls and 20 non-obese girls were enrolled in the study. Of obese girls, 5 (12.5%, 95% CI, 4% to 28%) reported incontinence, with 2 of these leaking daily. None of the non-obese girls met criteria for clinically significant incontinence. Incontinence severity score (leakage frequency score x leakage volume score) correlated with symptom impact (bother) and was significantly higher in the obese group compared to the non-obese group (1.3 vs 0.3). Low-volume urine leakage was reported by 45% in each group. No leakage was reported in 55% of non-obese girls and in 43% of obese girls.

**Conclusions:** Urinary incontinence affects >12% of obese adolescent girls. This is much higher than that seen in the non-obese control group. The frequency and volume of incontinence correlate with bother.

**Reviewer's Comments:** Add incontinence to the growing list of comorbidity associated with the pediatric obesity epidemic, such as diabetes, hypertension, sleep apnea, orthopedic disorders, and psychological stress. Although there may be some selection bias in this study, the control group of non-obese patients adds to the merit of this article. A sideline of the report was that obese girls were reluctant to seek medical attention for incontinence, thus the astute clinician should be sure to screen for this problem in the obese population. (Reviewer-John Gatti, MD).

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Keywords: Obesity, Incontinence, Children, Girls

Print Tag: Refer to original journal article
Use of soft proline mesh for correction of apical vaginal defects proves beneficial for both subjective and objective results.

**Objective:** To assess the use of mesh in sacrocolpopexy for overall results as pertaining to (1) pelvic floor anatomy, (2) symptoms related to prolapse, (3) the patient's quality of life, and (4) subjective functional symptoms including urinary, rectal, and sexual function.

**Design:** Case series retrospectively analyzed using symptom scores as well as objective criteria including anatomic outcome.

**Participants/Methods:** Over a 6-year period, 21 patients with stage II to IV vaginal vault prolapse underwent mesh sacrocolpopexy and were followed at baseline and postoperatively with the Cleveland Clinic Short Form-20 Pelvic Floor Distress Inventory (PFDI) questionnaire, the Urinary Distress Inventory (UDI), the Pelvic Organ Prolapse Distress Inventory (POPDI), and the Colorectal-Anal Distress Inventory (CRADI) to assess overall sexual, urinary, and rectal outcomes as well as overall satisfaction with the procedure. All patients underwent an abdominal approach with mesh sacrocolpopexy with a follow-up range of 21 to 99 months. Total PFDI scores were markedly improved after mesh sacrocolpopexy. Subscales showed significant symptom improvements in the POPDI. The CRADI, however, did not show significant change. There were changes in the UDI, but these were not statistically significant over baseline. Stability and improvement score differences were stable over time, post follow-up. Of patients undergoing the procedure, 90% experienced improvement in sexual function and excellent long-term outcome after mesh sacrocolpopexy. One patient developed an incisional hernia 11 months after surgery, and 2 developed significant cystoceles requiring surgical correction. No patient had mesh extrusion. Mesh sacrocolpopexy was performed in the standard Y-shaped graft fashion to the apex of the vagina and anterior sacral promontory.

**Conclusions:** The authors note that mesh sacrocolpopexy is a surgical option for treating vaginal vault prolapse, with improvement across several symptom categories; however, some have persistent symptomatology, especially from the colorectal standpoint.

**Reviewer's Comments:** This is an interesting case series assessment of individuals undergoing sacrocolpopexy. Of most interest is that some symptoms are persistent despite improvement of pelvic prolapse symptomatology, mainly the colorectal symptomatology, which is an important consideration in discussing reasonable expected outcomes with the individual undergoing the procedure. (Reviewer-Roger R. Dmochowski, MD).

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Keywords: Sacrocolpopexy, Vaginal Vault Prolapse, Long-Term Outcome, Patient Satisfaction

Print Tag: Refer to original journal article
BOO May Be Significant Underlying Problem in PBS

Bladder Outlet Obstruction in Painful Bladder Syndrome/Interstitial Cystitis.

Cameron AP, Gajewski JB:

Neurourol Urodynam 2009; 28 (November): 944-948

In a large cadre of patients assessed for voiding dysfunction, regardless of stage of painful bladder syndrome/interstitial cystitis, pressure flow criteria is consistent with the potential for bladder outlet obstruction.

**Objective:** To assess the presence of measurable bladder outlet obstruction (BOO) related to dysfunctional voiding in patients with painful bladder syndrome/interstitial cystitis (PBS/IC). The hypothesis of this study was that there is a higher potential of BOO in these patients.

**Design/Participants:** Retrospective chart analysis of patients fulfilling National Institutes of Health criteria for PBS/IC who underwent pressure flow urodynamics.

**Methods:** Patients with PBS/IC were assessed for clinical symptom severity, presence or absence of ulcers on cystoscopy, and pressure flow urodynamics. Cutoff values for purposes of diagnosis of obstruction were ≤12 cc/second flow and ≥25 cm of H2O bladder pressure at time of flow.

**Results:** 231 women were assessed, 193 of whom had a non-ulcer variant of PBS/IC. There was a significant trend for higher bladder capacity in patients with non-ulcer PBS (n=269) versus those with ulcer (n=200). Of the total group, 48% of patients met criteria for diagnosis of BOO (according to this paper). Maximum flow in patients with non-ulcer PBS was 11.0 cc/second and in ulcer PBS, 8.9; detrusor pressure in non-ulcer PBS was 33.3 and in ulcer PBS, 37.4. Symptoms correlated with urodynamic findings and bladder function.

**Conclusions:** The authors found that a high percentage of patients had BOO compatible with pelvic floor dysfunction secondary to pain with voiding in this population of patients.

**Reviewer’s Comments:** This is an interesting retrospective analysis with criteria set for BOO that are not universally accepted but, nonetheless, consistent with a relatively high-pressure, relatively low-volume state. It is interesting that there was a trend in patients with non-ulcer IC to have more significant urodynamic findings than those with obstruction and decreased capacity, as compared to those with the non-ulcer variant. The authors rightly conclude that this population has pelvic floor dysfunction. It is to be noted in this study that it is extremely desirable to do pressure flow urodynamics, especially in ulcer patients due to the degree of pelvic pain with the urethral manipulation. (Reviewer-Roger R. Dmochowski, MD).

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Keywords: Female Urinary Bladder Neck Obstruction, Urodynamics

Print Tag: Refer to original journal article
Placebo capsules demonstrate clinical effects, improving erectile function, and the quality of erection.

**Background:** Placebo can be defined as an intervention that is believed to lack specific effect on the condition in question. No study has evaluated management of erectile dysfunction (ED) with placebo only.

**Objective:** To determine the role of the therapeutic illusion of oral treatment for ED.

**Design:** Prospective, randomized, controlled, single-blind 3-arm study, designed with a 2-week run-in baseline period where each group received different information blinded to the investigator about treatment.

**Methods:** Group 1 received a letter explaining that they were allocated to receive a substance for ED treatment. Group 2 was told they may or may not receive an active drug for ED. Group 3 was properly written and informed they would be using no effective form for ED treatment.

**Results:** All groups had significant improvement in function. At 4 weeks, ED severity improved in all groups: group 1, 29.3%; group 2, 29.0%, and group 3, 34.2%. At 8 weeks, 31.7% of group 1, 36.8% of group 2, and 36.8% of group 3 showed improvement. There was no difference among groups, however. Intercourse satisfaction domain improved in all groups at the study end point. Regarding overall satisfaction, only group 1 showed no improvement during this study.

**Conclusions:** The belief is that placebos are inert preparations that may have a therapeutic effect based solely on the power of suggestion. This, however, is not supported by this study. The letter-induced therapeutic illusion was not more effective than the no-treatment suggestion. Patients who thought they had taken an active drug, patients in doubt, and patients who knew they did not use an active drug for erectile improvement noted improved erectile function and quality of erections, and there was no difference among groups. It was hypothesized that the placebo effect was due to other experiences in the setting or interactions between the patient and the investigator. High expectations for treatment could influence outcomes; although there was a tendency for improvement in group 1, the authors observed that patients who were thought to use an active treatment and who were probably expecting great results did not significantly improve in the overall satisfaction domain and the quality of erection enough to correspond to their expectations.

**Reviewer's Comments:** To my knowledge, this is the first clinical study to evaluate the placebo effect in therapy. Therapeutic illusion in written form for patients with ED had no major influence on outcomes. However, treatment of ED with oral placebo capsules demonstrates clinical effects, improving erectile function and the quality of erection. (Reviewer-Kevin T. McVary, MD).

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**Keywords:** Erectile Dysfunction, Clinical Trials, Oral Therapy

**Print Tag:** Refer to original journal article
ED Prevalence Among Racial, Ethnic Groups Likely Result of Complex Phenomena

Racial Disparities in Erectile Dysfunction Among Participants in the California Men's Health Study.

Smith JF, Caan BJ, et al:

J Sex Med 2009; 6 (December): 3433-3439

Asian and black men are less likely to have severe erectile dysfunction relative to white men.

**Background:** Erectile dysfunction (ED) is estimated to affect 18 million men in the United States. There are well-known racial and ethnic disparities in cardiovascular disease, diabetes, obesity, and smoking, and it is thought these may impact the etiology of ED. The effect of race and ethnicity on ED risk remains unclear.

**Objective:** To identify racial and ethnic disparities in ED, and to determine if these disparities can be explained by known or suspected risk factors.

**Methods:** Using the California Men's Health Study (CMHS), a cohort of >84,000 men participated (aged 45 to 69 years) and completed a self-administered questionnaire regarding their health status, lifestyle, etc.

**Results:** Moderate-severe ED was found in 28.2% of whites, 31.5% of Hispanics, 33.2% of blacks, and 26.8% of Asians. The pattern of severe ED was different: 9.0% whites, 9.2% Hispanics, 7.7% blacks, and 6.4% Asians. After including comorbidities, a number of risk factors changed. The odds of moderate-severe ED among Hispanics relative to whites was lower compared to the age-only model. For blacks relative to whites, the odds ratio went from being positively associated with age-only adjustment to being inverse. The pattern for severe ED was similar for Asian men.

**Conclusions:** In this cohort of men with ED, 30% were found to have moderate-severe ED and 9% suffered from severe ED. The prevalence of moderate-severe ED was highest among blacks and Hispanics and was lowest among Asians and whites. The prevalence of moderate-severe ED among Hispanics was explained by their higher prevalence of comorbidities. The odds of severe ED was lower among Asians and blacks, and the decrease in odds for severe ED among blacks was independent of age, medical comorbidities, socioeconomic status, smoking, obesity, physical activity, and diet. The reason accounting for this observation in blacks is not known. Factors such as cultural perceptions of ED, quality and type of relationships, and concepts of masculinity may influence a self-reported history of ED.

**Reviewer's Comments:** There are several limitations with this study. First, the assessment of ED was a single 4-level question, which may not capture the complexity of this condition. Second, this was a cross-sectional study, and it is not possible to know a temporal relationship between covariates that were adjusted and ED. These data demonstrate the prevalence of ED among different racial and ethnic groups is likely the result of complex phenomena and depends on the interplay of various demographic, medical, cultural, and lifestyle characteristics. However, after accounting for such factors, the data suggest that Asians and blacks are less likely to have severe ED relative to whites. (Reviewer-Kevin T. McVary, MD).

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Keywords: Erectile Dysfunction, Racial Disparities

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A Low-Salt Diet Can Reduce Calcium Urinary Excretion

Effects of a Low-Salt Diet on Idiopathic Hypercalciuria in Calcium-Oxalate Stone Formers: A 3-Mo Randomized Controlled Trial.

Nouvenne A, Meschi T, et al:

Am J Clin Nutr 2009; December 30 (): epub ahead of print

Previous stone formers need to be told to reduce their intake of sodium to 1 teaspoon (2300 mg) per day.

**Background:** It is now known that there is an association between dietary sodium ingested and calcium excreted. However, there is a lack of randomized trials to determine the impact of low sodium intake by itself on idiopathic hypercalciuria, one of the primary risk factors for calcium-oxalate kidney stone formation.

**Objective:** To test the impact of reducing dietary sodium intake in patients with a history of idiopathic calcium nephrolithiasis.

**Design/Methods:** Randomized 3-month pilot trial. **Participants/Methods:** 210 participants impacted by hypercalciuria (>250 mg calcium/day in women and >300 mg calcium/day in men) were assigned to the low sodium diet (n=108) or water therapy only (n=102) along with their current lifestyle and diet. A 24-hour urine sample was taken at baseline and another after 3 months.

**Results:** 13 withdrawals took place (11 on the low-sodium diet). Patients on the low-sodium diet had significantly lower urinary sodium ($P < 0.001$), calcium ($P < 0.001$), and oxalate ($P = 0.001$), and a lower body mass index ($P = 0.05$). Urinary calcium was in the normal range in 62% of those on sodium restriction compared to 34% in the control group ($P < 0.001$).

**Conclusions:** A low-sodium diet can significantly reduce the amount of calcium excreted in the urine and in hypercalciuric stone formers.

**Reviewer’s Comments:** These Italian researchers are the kings and queens of dietary change research to reduce stone risk, which goes hand in hand with the Mediterranean diet that does not really use that much sodium. First this group published a 5-year randomized trial in the *New England Journal of Medicine* in 2002 demonstrating that simple dietary changes (low animal protein, low sodium, normal calcium intake, and greater fluid intake) can dramatically lower the risk of kidney stone (calcium oxalate) recurrence in men and women. Now, they show us that an individual component of that diet or just sodium restriction can by itself have a dramatic impact on clinical risk markers. The most interesting feature of this dietary change was that it was not specific, but participants were just given mostly general advice on reducing sodium intake by using various herbs and spices, for example, in place of sodium. Also, they were told to eliminate foods high in sodium and they even lost weight. In other words, the best thing about this study is that the participants were not told to count every milligram of salt in their food but to make realistic, practical, and simple general changes. Man, I love these guys and gals--they are my everything in moderation heroes! Viva Italy! Viva dietary sodium to reduce stone risk! (Reviewer-Mark A. Moyad, MD, MPH).

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**Keywords:** Low Sodium Intake, Hypercalciuria, Kidney Stone Formation

**Print Tag:** Refer to original journal article
Saturated Fat May Not Increase Risk of CVD

Meta-Analysis of Prospective Cohort Studies Evaluating the Association of Saturated Fat With Cardiovascular Disease. 
Siri-Tarino PW, Sun Q, et al:

Am J Clin Nutr 2010; January 13 (): epub ahead of print

Replacing large amounts of saturated fat with other healthy fats (instead of carbohydrates and extra calories) may be the best advice if you want to reduce your saturated fat intake.

**Background:** Reducing dietary saturated fat has been advocated as a way to reduce the risk of cardiovascular disease (CVD). However, a prospectively based meta-analysis over the past 20 years has been needed to refute or support this apparently heart-healthy recommendation.  
**Objective:** To summarize the evidence on dietary saturated fat and cardiovascular risk, including heart disease and stroke.  
**Methods:** Data were included from 21 prospective epidemiologic studies, with 16 that included estimates for heart disease; 8 studies included stroke as an end point. Data were taken from 347,747 participants and 11,006 developed CVD.  
**Results:** The follow-up period in this meta-analysis was from 5 to 23 years. The ingestion of saturated fat was not correlated with an increased risk of CVD (heart disease or stroke). The pooled risks, when for the more extreme end of intake compared to the low end of intake, were 1.07 ($P=0.22$) for heart disease, 0.81 for stroke ($P=0.11$), and 1.00 for overall CVD ($P=0.95$). A further analysis on the impact of saturated fat according to age, sex, or the study quality did not change these results.  
**Conclusions:** A meta-analysis of prospective epidemiologic studies demonstrates that there is no significant evidence for concluding that dietary saturated fat is associated with an increased risk of cardiovascular disease.

**Reviewer's Comments:** Look out! Here comes the food police again and they have been telling you for 20 years that saturated fat is evil! Really?! I heard them say the same thing for years in the prostate cancer world, which was saturated fat increases your risk of aggressive disease! Really?! The problem with many of these older studies is that they did not correct for overall caloric intake. In other words, did you ever notice (I sound like Andy Rooney from 60 minutes--anyhow I digress) that many things in the American diet that have higher amounts of saturated fat also have the highest amount of calories. This is true for most items at fast food restaurants (burgers, fries, even plain milk). So, is it the saturated fat, the calories, or both that you should avoid? It seems that the calories and obesity should be the first concern and the second concern should be only reducing saturated fat by getting more healthy mono- (olive oil, nuts, seeds) and polysaturated fats (omega-3, for example) and keeping caloric intake the same or less. Saturated fat is perfectly fine in small amounts and that is probably why it is found in salmon, nuts, and plant oils. Gotta run! That last statement is going to have the food police looking for me for the next 25 years! Quick, grab some almonds and pistachios (1 to 2 grams of saturated fat per serving) and run for your lives! (Reviewer-Mark A. Moyad, MD, MPH).

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Keywords: Dietary Saturated Fat, Cardiovascular Risk

Print Tag: Refer to original journal article
Using existing guidelines accurately predicts the need for staging bone scan at the time of prostate cancer diagnosis.

**Objective:** To externally validate existing guidelines on the need for a staging bone scan in newly diagnosed prostate cancer patients in a contemporary cohort and to propose a new risk-stratification tool.

**Design/Participants:** Retrospective cohort study of 853 consecutive newly diagnosed prostate cancer patients between 2003 and 2008.

**Methods:** All patients underwent bone scan with confirmatory studies done as needed. Performance characteristics for predicting bone metastases at diagnosis were calculated for existing clinical guidelines, including those from the European Association of Urology (EAU), American Urological Association (AUA), and the National Comprehensive Cancer Network (NCCN). In addition, a novel risk-stratification tool was generated, which included PSA, biopsy Gleason score, and clinical stage, and its performance relative to the existing guidelines was compared.

**Results:** All the existing guidelines for obtaining staging bone scan performed well in this contemporary cohort of patients. The area under the curve (AUC, a measure of accuracy and test performance) ranged between 80% and 83%. Depending on the guideline, between 82% and 87% of newly diagnosed prostate cancer patients were characterized as low risk and did not require a bone scan. The incidence of radiographic bone metastases in this group ranged between 0.7 to 0.9%. The novel risk-stratification tool indicated a bone scan only for patients with Gleason score >7 or those who have both clinically palpable disease (cT2 to cT3) and PSA >10. This gave an AUC of 88%, higher than any of the guidelines.

**Conclusions:** All existing guidelines were externally validated in this study and performed well in a contemporary cohort of patients. The new risk-stratification scheme performed better than any existing guideline in this study, but requires external validation.

**Reviewer’s Comments:** Twenty years ago, virtually everyone with newly diagnosed prostate cancer underwent a staging bone scan. Over time and with the growing use of PSA screening, especially in the United States, it has been recognized that not everyone requires a bone scan at diagnosis--only those with the highest risk. Several guidelines have been put forth from organizations such as the AUA, EAU, and NCCN that support restricting scans to only high-risk patients. This study is important in that it externally validates these guidelines, all of which performed well in this analysis. This is particularly important since this is a contemporary cohort of patients diagnosed since 2003 and it demonstrates that the guidelines are still relevant, even in the face of the known stage and Gleason score migration that has occurred over the last 20 years. Although this study puts forward its own "guideline" for obtaining bone scans, it's very important to remember that this tool cannot be considered for routine use until it is externally validated on a separate cohort of patients. (Reviewer-Peter E. Clark, MD).

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Keywords: Bone Scan, Prostate Cancer, PSA, Gleason Score

Print Tag: Refer to original journal article
Intravesical BCG with maintenance has better results regarding recurrence, metastases, and survival but not progression compared to epirubicin.

**Objective:** To compare long-term results of intravesical bacillus Calmette-Guérin (BCG) and epirubicin in the management of intermediate and high-risk non-muscle invasive bladder cancer (NMIBC).

**Design/Methods:** This was a prospective randomized multicenter trial of patients with intermediate or high-risk NMIBC. In total, 837 patients were randomized and eligible to receive intravesical epirubicin or intravesical BCG (with or without isoniazid). All patients went onto a maintenance regimen of either epirubicin or BCG for 3 years. Median follow-up was 9.2 years.

**Results:** Patients randomized to receive BCG had better long-term recurrence-free survival than patients who received epirubicin. The BCG arm also had a lower risk of developing metastatic disease, dying of any cause, and dying of bladder cancer. There was not, however, a significant difference in the risk of progression. In an exploratory subgroup analysis, this was true with regard to recurrence, metastases, and death due to bladder cancer when analyzed by whether patients were classified as intermediate risk NMIBC.

**Conclusions:** Patients with high- or intermediate risk NMIBC fare better long-term with regard to recurrence, risk of metastasis, survival, and disease-specific survival when treated with intravesical BCG with a maintenance regimen when compared to epirubicin. This appears to be true even for those at intermediate risk of recurrence.

**Reviewer's Comments:** Intermediate or high-risk non-muscle invasive bladder cancer remains a therapeutic challenge for the practicing urologist. These patients are at substantial risk of disease recurrence and even progression to muscle invasive disease and death. The optimal treatment for these patients continues to be explored, including in this trial by Sylvester and colleagues. Some important points to take away from this trial include: BCG can offer a substantial benefit with regard not only to recurrence but also to overall, disease-specific, and metastasis-free survival when given along with a maintenance regimen. Epirubicin is not available in the U.S. and the relative efficacy of epirubicin versus the more commonly used agent in the U.S., mitomycin C, is unknown. Nevertheless, this trial adds support to the general practice in the U.S. to use BCG preferentially over intravesical chemotherapy. Consideration should be given to using BCG in patients with intermediate risk features, not just those with high-grade T1 disease. Keep in mind that some of the results of this trial could have been affected by 2 changes in general practice since the trial was initiated: the recommendation to re-resect patients with high-grade T1 disease was not done here, and the 2004 WHO grading system was not in effect yet. Both of these could have affected the risk-stratification of the patients in this trial; however, the fundamental finding of BCG's superiority in the overall group remains unchanged. (Reviewer-Peter E. Clark, MD).

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Keywords: Bacillus Calmette-Guérin, Epirubicin, Intravesical Therapy, Non-Muscle Invasive Bladder Cancer

Print Tag: Refer to original journal article
Multiple- vs Single-Tract Access Does Not Lead to More Severe Decrease in Function

Renal Functional Effects of Multiple-Tract Percutaneous Access.
Handa RK, Evan AP, et al:

J Endourol 2009; 23 (December): 1951-1956

Contralateral kidney function decreases greater if multiple tracts are used; use nephrotoxic medications with caution in this situation.

Background: Single-tract access percutaneous nephrolithotomy (PCNL) has a transient effect on ipsilateral and contralateral renal function.

Objective: To determine whether multiple percutaneous tracts cause more severe reductions in renal function than single-tract access.

Design: Animal study and retrospective clinical study.

Methods: Porcine model (70-kg pigs) and 23 patients undergoing 1- or 2-tract PCNL were evaluated. For the porcine study, single-tract lower pole access or multiple tract (1 upper, 1 middle, 1 lower) access was obtained and glomerular filtration rate (GFR) and effective renal plasma flow (RPF) were determined at baseline, 1.5 hours, and 4.5 hours. The human study evaluated changes in serum creatinine (Cr) levels preoperatively and 1 and 2 days postoperatively.

Results: In the porcine study, no significant differences in GFR and RPF in the ipsilateral kidney were noted with 1 or 3 tracts. Strong trends were noted for worse contralateral (untreated) kidney GFR and RPF ($P=0.07$) if multiple tracts were used. In the human study, no significant differences were noted in the changes in serum Cr.

Conclusions: Multiple-tract access does not lead to more severe reduction than single-tract access.

Reviewer's Comments: The human study is limited as there were significant differences in baseline renal function between the 2 groups analyzed. Creatinine clearance calculations based on spot serum levels are a relatively crude measure of renal function, and could also be impacted by anemia, hydration, and medications in the perioperative period. In the porcine study, though changes in ipsilateral kidney function were marked (>60% decrease GFR and RPF), no difference was noted whether 1 or 3 tracts were created. In contrast, multiple tract access appeared to have a greater impact on the contralateral untreated kidney, with greater decreases in GFR and RPF (>45% vs <20%). Though this did not reach statistical significance, it does warrant concern, suggesting that greater caution is warranted at least in the perioperative period if multiple-tract access is utilized with regard to using medications that rely on renal clearance or have the potential for nephrotoxicity. Long-term prospective studies evaluating the relative impact of multiple-versus single-tract access with more liberal use of flexible nephroscopy and/or ureteroscopy as an adjunct are warranted. (Reviewer-Manoj Monga, MD).

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Keywords: Nephrolithotomy, Renal Function

Print Tag: Refer to original journal article
Ureteral stent design may help decrease the morbidity associated with ureteral stenting.

**Background:** Ureteral stents cause pain in 70% of patients.

**Objective:** To evaluate the impact of a ureteral stent with an anti-reflux valve on stent pain.

**Design:** Prospective randomized single-blinded study.

**Participants:** 105 patients undergoing ureteral stenting for stones (half of patients), tumor (one fourth of patients), or stricture (one fourth of patients).

**Methods:** The study stent had a diaphragm valve on the bladder coil that collapses with increasing bladder pressure. Stents were placed cystoscopically. Four weeks after stent placement, patients were asked about the presence of flank pain, pain with voiding, and overall tolerability of the stent in comparison to previous stents. An ultrasound was obtained at 1 month.

**Results:** Patients with an anti-reflux valve on their ureteral stent reported less bladder pain, less flank pain, and had lower rates of dilation on ultrasonography.

**Conclusions:** An anti-reflux valve mechanism on ureteral stents improves patient comfort.

**Reviewer's Comments:** Though this study suggests that an anti-reflux mechanism may eliminate flank pain with stents, prior designs aimed at minimizing reflux (example, Boston Scientific Tail stent, Boston Scientific Loop stent) have not confirmed such findings. The authors studied a heterogeneous group of patients (stones, strictures, extrinsic compression) who had indwelling times of the stents ranging from 2 to 188 days. The authors’ philosophy for stenting (mean duration, 2 months) for ureteral stones is not explained. Why are the stones and obstruction not treated in a more expeditious manner? Were the ureteral strictures treated with incision at the time of stent placement? This could interject pain unrelated to stent as a confounding variable. Similarly, including patients with bilateral ureteral stents confounds the ability to measure bladder discomfort and attribute it to one side or the other. The authors do not provide any details with regard to construct of the diaphragm valve nor do they provide any in vitro data with regard to flow characteristics. No supportive data to confirm the anti-reflux mechanism (example, animal studies or cystograms in patients) are provided in the manuscript. Though the authors acknowledged the importance of validated questionnaires for ureteral stent studies, they chose not to use one for this study, and though they stated that no difficulty was seen in placement of the anti-reflux valve ureteral stent, no details were provided as to how this stent was loaded and deployed through a cystoscope. The dilation noted on ultrasonography was typically characterized as "mild" and, as such, of questionable clinical significance. It appears that the stents studied had no side holes, though simulations have demonstrated the importance of these holes for optimal urine flow (J Biomech Eng 2007; 129:187-192.) (Reviewer-Manoj Monga, MD).

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**Keywords:** Ureteral Stents, Discomfort, Reflux

**Print Tag:** Refer to original journal article
Large asymmetry with high peak retrograde flow may predict a low rate of catch-up growth.

**Background:** Testicular asymmetry is often a feature associated with adolescent varicocele. Depending on the degree of asymmetry, surgeons will often recommend surgical repair versus observation.

**Objective:** To evaluate the outcomes of patients with varicocele and asymmetric testicular size initially managed expectantly.

**Design/Methods:** A retrospective review was performed identifying patients with varicoceles followed serially with testicular volume assessment (ultrasound or ring orchidometer) with at least 6 months of follow-up. Percent of asymmetry was defined as (right volume – left volume)/right volume.

**Results:** 181 patients met criteria. Volume measurements were performed at approximately 12-month intervals. Mean % asymmetry did not change with time. For those with <20% asymmetry, 35% had >20% on follow-up. Of those with >20% asymmetry initially, 53% remained in that range. Of 22 patients with >20% asymmetry and a retrograde venous flow of ≥38 cm per second, only 1 (5%) had catch-up growth with follow-up.

**Conclusions:** Asymmetry can be transient, but testes with >20% asymmetry and retrograde flow of ≥38 cm per second have a low likelihood of spontaneous catch-up growth.

**Reviewer’s Comments:** Management of adolescent varicoceles remains controversial. Variations in the measuring technique also confound comparison between studies. It is apparent that a persistent deficit between the testes should persist over time to warrant surgery, as some testes do catch up spontaneously. The addition of venous flow criteria may help to predict which testes have a low likelihood of catch-up growth so that a futile delay in repair does not occur. Whether this delay is of any physiological consequence has yet to be proven. (Reviewer-John Gatti, MD).

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Keywords: Varicocele, Adolescent, Testicular Asymmetry

Print Tag: Refer to original journal article
Got a Hernia? Email a Photo!

Inguinal Hernias Can Be Accurately Diagnosed Using the Parent's Digital Photographs When the Physical Examination Is Nondiagnostic.

Kawaguchi AL, Shaul DB:


A photo may make the diagnosis of inguinal hernia when the history is right but the exam is lacking.

Objective: To study the utility of home digital photography to aid in the diagnosis of inguinal hernia when the history suggests the diagnosis but it is not evident at the time of physical exam.

Methods: Over a 30-month period, children with a history of an inguinal bulge were examined. If the examination did not reveal an inguinal bulge, parents were given the option of sending a digital photograph to the surgeon if it recurred. Surgery was undertaken if the history and photo supported the diagnosis of hernia.

Results: 25 children were evaluated over the 30-month period with a history suggesting inguinal hernia but no hernia on physical examination. Twenty-three of these children submitted images supporting the diagnosis and underwent surgery. All 23 had operatively confirmed hernias. The 2 remaining patients had not developed hernias with continued observation.

Conclusions: Photographic images are reliable in the diagnosis of inguinal hernia and avoid repeat office visits, saving time and expense.

Reviewer’s Comments: This is an interesting use of modern technology. Most physicians have had patients email photos for various problems, but its systematic use is novel. The concept is sound, given that it is an adjunct to a hands-on approach. I find it unusual that the authors were unable to detect a hernia in such a large number of patients, but this likely reflects their requirement of identifying a bulge rather than some of the more subtle indicators of a patent processus vaginalis. If the diagnosis cannot be confirmed in the office, this is certainly an attractive alternative to scheduled visits when the child is asymptomatic. (Reviewer-John Gatti, MD).

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Keywords: Hernia Diagnosis, Home Digital Photography

Print Tag: Refer to original journal article
Few Patients With Urologic Conditions Remain on Pharmacotherapy

Drug Treatment of Urological Symptoms: Estimating the Magnitude of Unmet Need in a Community-Based Sample.

Hall SA, Link CL, et al:

BJU Int 2009; 104 (December): 1680-1688

Only a small proportion of community-dwelling men and women with urological symptoms are receiving recommended effective drug treatments for urological conditions.

**Objective:** To assess the use of medications in a cross-sectional analysis of patients with a variety of urologic conditions (symptoms), including lower urinary tract symptoms/benign prostatic hyperplasia (LUTS/BPH), overactive bladder, erectile dysfunction, urinary incontinence, and painful bladder syndrome. The authors also sought to determine whether there was an impact of demographics or social strata on medication use and whether symptom severity, access to care, and other factors played a role.

**Design:** Cross-sectional analysis of a community-based group of men and women.

**Participants:** 5503 participants (both genders) in the Boston Area Community Health (BACH) survey study.

**Methods:** All patients underwent an in-person survey of urologic symptoms that was carried out using validated symptom scales specific to each condition (e.g., responded positively to an appraisal of symptoms pertinent to that condition). Medication use was assessed by ingestion of medication with a prior 30-day time frame by analysis of inventory of drugs as well as patient self-reporting.

**Results:** The use of medications for highly prevalent urologic conditions was low in both genders. Highest use of medications was noted in men with moderate-to-severe LUTS/BPH, with a rate of drug use approaching 10% (9.6%). No effect on drug use was noted by race or socioeconomic strata. However, symptom severity did appear to have a positive effect on drug use. Those individuals who were more commonly evaluated and seen for other medical conditions also were more commonly noted to be on medications. Other conditions using medications included 8% of men with moderate-to-severe erectile dysfunction. In women with moderate-to-severe overactive bladder or painful bladder syndrome only, approximately 6% and 7% of women, respectively, were using medications in that time frame. Presence of hypertension and heart disease positively affected drug use.

**Conclusions:** Drug treatment was used by only a small proportion of this community-dwelling sample of patients. These results seem to indicate that there was a substantial untreated cadre of patients with prevalent urologic conditions.

**Reviewer’s Comments:** This is a well-done prospective analysis of a community-based survey assessing urologic conditions, and these conditions appear to be relatively untreated in terms of current drug use. The reasons for this were not explicable either by assessing variables such as race and socioeconomic strata, but symptom severity did appear to have some effect on overall drug use. (Reviewer-Roger R. Dmochowski, MD).

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Keywords: Urological Diseases, Health Care Disparities, Prescription Drugs, Clinical Practice Guideline

Print Tag: Refer to original journal article
Objective: To retrospectively analyze use of human acellular dermal tissue for purposes of anterior colporrhaphy as compared to standard procedures.

Design: Retrospective analysis of clinical series.

Participants/Methods: 102 patients with stage II or anterior compartment prolapse underwent anterior colporrhaphy using acellular dermal graft anchored to the arcus tendineus pelvis using 5- x 10-cm dermal graft cut into a trapezoid configuration and affixed to the arcus tendineus pelvis bilaterally in 3 places—proximal, mid-arcus, and distal using 2.0 Gore Tex monofilament sutures. Minimal tension was placed on grafts. This population was compared to a group of 89 women undergoing standard anterior colporrhaphy using plication method. Overall outcomes and results indicated that the groups were comparable in terms of demographics, as well as age, parity, and body mass index at the time of the procedure. Concomitant surgeries performed were similar except for greater prevalence of hysterectomy in the arcus-anchored group. Overall, 19% (14 patients) had recurrence as defined by grade II or greater cystocele in the dermal graft group versus 43% (26 patients) in the anterior colporrhaphy group at follow-up, which was nine months or greater. Outcomes in terms of subjective stress incontinence, estimated blood loss, and hospital stay were not different between the groups. In addition, voiding primers were not different.

Conclusions: Acellular matrix dermis provides a benefit over standard anterior colporrhaphy.

Reviewer’s Comments: This is an interesting retrospective paper assessing 2 groups of individuals, a colporrhaphy group versus one undergoing acellular dermal matrix reinforcement. Additionally, subjective outcomes such as pain, pressure, and other symptomatology that are now becoming standard in the process are not found in this paper. Therefore, the overall interpretation possible from this data is somewhat limited. Augmented repairs appear to continue to be investigated for purposes of improving outcomes with pelvic prolapse repair. (Reviewer-Roger R. Dmochowski, MD).

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Keywords: Cystocele Repair, Anterior Colporrhaphy, Graft Materials, Prolapse Repair, Acellular Dermal Graft

Print Tag: Refer to original journal article
Background: Most men with spinal cord injury (SCI) can have some type of erection, but these are often not sufficiently predictable, rigid, or long-lasting to enable sexual intercourse. Previous studies have shown that patients with complete lesions above the T6 level were able to use PDE5 inhibitors without autonomic dysreflexia, and overall sexual satisfaction improves with PDE5 inhibitor use in this population.

Objective: To evaluate the long-term effect and safety of sildenafil in the treatment of erectile dysfunction (ED) in SCI patients.

Participants/Methods: Patients with a documented history of a SCI for >6 months, neurologically stable, and who attributed their ED to SCI were recruited. The efficacy measure was the International Index of Erectile Function (IIEF), and the study consisted of a Phase I treatment, initially a 50-mg dose of sildenafil for a period of 4 weeks, followed by a second titration to 100 mg of sildenafil. After the up titration to 100 mg, the patients were seen every 6 months for the ensuing 10 years and re-evaluated with IIEF questionnaires.

Results: 117 patients (mean, 39 years) were selected, and 113 entered the study. The average time from injury was 39 months, and injury was located above T12 in 65.4%. After Phase I (titration of 50 mg to 100 mg of sildenafil), 30.9% of patients dropped out because of non-responsiveness despite increased doses. The 75 remaining patients entered the Phase II study, and of those, 56 had lesions above T12. Significant predictable factors of success were noted to be those with lesions up to the T11 level, presence of reflexive erections, and the incompleteness of lesions. During the Phase II follow-up period, 41 of 75 patients (54.6%) dropped out of the study. Of the 34 patients who completed the study, 27 had lesions above the T12 level. There were no changes in ejaculatory function during this treatment period.

Conclusions: This study is the only one that has reported the experience of PDE5 inhibitors with a follow-up of 10 years in SCI with ED. This study shows that sildenafil is sufficient and well-tolerated in a select group in the long-term treatment of ED. Lesions above T12, a higher score of residual reflexive erections, and incomplete lesions represented more favorable conditions for successful therapy. Chronic use of this particular PDE5 inhibitor shows that efficacy is maintained.

Reviewer’s Comments: Sildenafil represents an effective and safe option for ED in SCI. Although there is a potential for great selection bias, this information can be useful to your patients. (Reviewer-Kevin T. McVary, MD).

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Keywords: Erectile Dysfunction, Spinal Cord Injury, Sildenafil

Print Tag: Refer to original journal article
ED Is Highly Prevalent in Patients With Suspected OSA

Sleep Apnea Is an Independent Correlate of Erectile and Sexual Dysfunction.

Budweiser S, Enderlein S, et al:
J Sex Med 2009; 6 (November): 3147-3157

This prospective study demonstrated that erectile dysfunction (ED) occurred in two thirds of patients with obstructive sleep apnea, and the severity was linked to ED.

**Background:** Obstructive sleep apnea (OSA) is highly prevalent but largely underdiagnosed. Evidence from epidemiologic surveys suggest an association with erectile dysfunction (ED) and OSA, and there have been a number of mechanisms proposed, including reduced nitric oxide (NO) production and elevated levels of endothelin inducing a basal constriction and impaired penile tumescence. Also, ED and endothelial NO release may improve after the initiation of a continuous positive airway pressure therapy.

**Objective:** To assess whether the presence and severity of OSA relates to the degree of ED, even in the presence of other major risk factors for ED in a large sample of sleep clinic patients.

**Results:** 420 patients were recruited, and OSA was diagnosed in 369 (92.0%) patients. ED was noted in 66.1% of men (265 patients). Participants with and without ED differed with respect to age, International Index of Erectile Function score, number of apnea episodes, duration of longest apnea, desaturation index, and the lowest $\text{SaO}_2$. Patients with ED also showed higher frequency of hypertension, diabetes, and coronary artery disease. The prevalence of ED was associated with the presence and severity of OSA and $\text{SaO}_2$. Using ED as the dependant variable, regression analysis was performed looking at known risk factors, as well as the OSA indices. This analysis revealed age, hypertension, peripheral vascular disease, nocturnal $\text{SaO}_2$, and prostate intervention to be independently associated with ED.

**Conclusions:** This prospective study demonstrated that ED occurred in two thirds of patients with OSA, and the severity was linked to ED. Nocturnal $\text{SaO}_2$ was independently associated with ED and overall sexual dysfunction. The mechanism underlying the development of ED and the relative contribution of sleep apnea is not fully understood, but may involve hormonal, neural, psychological, and vascular abnormalities. The fact that only age and nocturnal $\text{SaO}_2$ remained as independent predictors for ED, even in the presence of other strong risk factors such as atherosclerosis, diabetes, hypertension, and lipid disorders, suggests the sensitivity of ED to nocturnal hypoxemia.

**Reviewer's Comments:** This analysis did not involve a representative sample of the general population, but instead a sleep study cohort. There was no control group without sleep apnea, and this cross-sectional study does not establish cause and effect relationships. This reviewer also wonders if objective measures of ED other than questionnaire-based could have been used. ED is highly prevalent in an unselected group of patients with suspected obstructive sleep apnea. The presence and severity of obstructive sleep apnea and hypoxemia were linked to ED, and $\text{SaO}_2$ was a statistically robust correlate of ED and overall sexual function, suggesting a major pathophysiologic role of intermittent hypoxemia in the development of ED. (Reviewer-Kevin T. McVary, MD).

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Keywords: Sleep Apnea, Erectile Dysfunction

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