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Vulvodynia

A systematic review of drug treatment of vulvodynia: evidence of a strong placebo effect.
Miranda Varella Pereira G, Soriano Marcolino M, Silveira Nogueira Reis Z, Vale de Castro Monteiro M.
BJOG. 2018 Sep;125(10):1216-1224. doi: 10.1111/1471-0528.15223. Epub 2018 Apr 15.
https://www.ncbi.nlm.nih.gov/pubmed/29569822

BACKGROUND: Vulvodynia is the most common type of chronic pelvic pain and dyspareunia in premenopausal women. The effect of drugs for the treatment of vulvodynia remains poorly discussed. **OBJECTIVES:** To conduct a systematic review of randomised controlled studies which assess medications used to treat vulvar pain in vulvodynia. **SEARCH STRATEGY:** Web of Science, Cochrane Library, EBSCO Academic, LILACS and MEDLINE were searched from 1985 to September 2016. **SELECTION CRITERIA:** Randomised controlled trials comparing any kind of medication for vulvodynia treatment with placebo or with another medication in adult patients were included. **DATA COLLECTION AND ANALYSIS:** The two investigators independently conducted data extraction. The synthesis was provided by the pain reduction index. Study quality assessment was performed using the Cochrane Handbook for Systematic Reviews of Intervention and analysis of publication bias was conducted. **MAIN RESULTS:** Five studies were included in qualitative synthesis. Number of participants varied from 30 to 133 participants among the eligible studies, resulting in a total of 297 patients. The pain reduction rates of patients with vulvodynia assessed by Q-tipped cotton test and visual analogue scale varied between studies. Placebo was shown to be as effective as any medication. **CONCLUSIONS:** There is a need for further studies evaluating topical monotherapy for the treatment of vulvodynia, as they are the main drugs used in clinical practice. **TWEETABLE ABSTRACT:** No medication has shown impact on vulvar pain in vulvodynia. There is evidence of a placebo effect.

Exploring Hygienic Behaviors and Vulvodynia.
Klann AM, Rosenberg J, Wang T, Parker SE, Harlow BL.
J Low Genit Tract Dis. 2019 Jul;23(3):220-225. doi: 10.1097/LGT.0000000000000477.
https://www.ncbi.nlm.nih.gov/pubmed/30973443

OBJECTIVES: Vulvodynia is common and characterized by vulvar discomfort and pain. However, few studies have assessed hygienic practices in relation to onset. We investigated whether hygienic behaviors were associated with the onset of vulvodynia. **MATERIALS AND METHODS:** We assessed a self-reported history of personal hygienic behaviors, including wearing tight-fitting clothing, vulva care and genital washing, pubic hair removal, douching, and powdering, a year before first reported onset of vulvar pain among 213 clinically confirmed cases and a similar time period among 221 general population controls. **RESULTS:** Compared with women who reported never wearing tight-fitting jeans or pants, women wearing tight-fitting jeans or pants 4 or more times per week had twice the odds of vulvodynia (95% CI = 1.14-3.95). Relative to controls, women with vulvodynia were substantially less likely to report use of soaps and gels to cleanse the vulva (95% CI = 0.17-0.63). Among women who chose to remove pubic hair, those who removed pubic hair from the mons pubis compared with bikini-area only hair removal, were 74% more likely to have vulvodynia (95% CI = 1.05-2.89). Finally, compared with women who reported bikini-area only hair removal less than monthly, those who removed hair from the mons pubis weekly or more were nearly 2 times more likely to be vulvodynia cases (95% CI = 0.83-3.49). **CONCLUSIONS:** Wearing tight-fitting jeans or pants and removing hair from the mons pubis area were associated with increased odds of vulvodynia. Research on how hygienic practices could influence vulvar pain in larger and more temporally addressed populations is warranted.

Vulvodynia, "A Really Great Torturer": A Mixed Methods Pilot Study Examining Pain Experiences and Drug/Non-drug Pain Relief Strategies.

Schlaeger JM, Pauls HA, Powell-Roach KL, Thornton PD, Hartmann D, Suarez ML, Kobak WH, Hughes TL, Steffen AD, Patil CL.

J Sex Med. 2019 Jun 13. pii: S1743-6095(19)31175-0. doi: 10.1016/j.jsxm.2019.05.004.
https://www.ncbi.nlm.nih.gov/pubmed/31204266

BACKGROUND: Women with vulvodynia, a chronic pain condition, experience vulvar pain and dyspareunia. Few studies examine the range and combination of treatment strategies that women are actually using to reduce vulvodynia. **AIM:** To describe pain experiences and pain relief strategies of women with vulvodynia. **METHODS:** Convenience sample, 60 women with vulvodynia (median age 32.5 [interquartile range {IQR} 8.5] years; 50 white, 10 racial/ethnic minorities) completed PAINReportIt and reported use of drugs and alcohol and responded to open-ended questions. Univariate descriptive statistics and bivariate inferential tests were used to describe average pain intensity scores, alcohol use, smoking, number of pain relief strategies, and their associations. Women's open-ended responses about their pain experiences and drug and non-drug pain relief strategies (NDPRS) were analyzed for patterns. **OUTCOMES:** Our mixed methods analysis connected data from pain measures, prescribed treatments and self-reported behaviors with women's free responses. This enabled nuanced insights into women's vulvodynia pain experiences. **RESULTS:** Women's descriptions of their pain and suffering aligned with their reported severe pain and attempts to control their pain, with a median pain intensity of 6.7 (IQR 2.0) despite use of adjuvant drugs (median 2.0 [IQR 2.0]), and opioids (median 1.0 [IQR 2.0]). 36 women (60%) used alcohol to lessen their pain. 26 women (43%) listed combining analgesics and alcohol to relieve their pain. 30 women (50%) smoked cigarettes. 54 women (90%) used ≥1 NDPRS. The mean number of NDPRS used was 2.1 ± 1.3 (range 0-6). The 5 most common NDPRS from women's comments were herbal medicine (40%), acupuncture (27%), massage (22%), hypnosis (15%), and mental healthcare (13%). **CLINICAL IMPLICATIONS:** Severe pain in women with vulvodynia may be a clinical indicator of those at higher risk of combining prescription pain medications with alcohol, which are all central nervous system depressants and may potentiate overdose. **STRENGTHS AND LIMITATIONS:**

This pilot study demonstrated that the mixed methods approach to help understand the complexity of vulvodynia was feasible. We identified data showing a reliance on a high-risk mix of prescriptions and alcohol to reduce vulvodynia pain and a high prevalence of cigarette smoking. However, as a pilot study, these results are considered preliminary; the sample may not be representative. Perhaps only women at the extreme end of the pain continuum participated, or women took the survey twice because identifiers were not collected. **CONCLUSION:** educe pain using multiple therapies, including alcohol, women's vulvodynia pain is severe and not controlled.

Study on the prevalence and factors associated to vulvodynia in Spain.
Gómez I, Coronado PJ, Martín CM, Alonso R, Guisasola-Campa FJ.
Eur J Obstet Gynecol Reprod Biol. 2019 Jun 21;240:121-124. doi: 10.1016/j.ejogrb.2019.06.005.
https://www.ncbi.nlm.nih.gov/pubmed/31260857

OBJECTIVE: To study the prevalence and epidemiological characteristics of women with vulvodynia. To assess the risk factors associated to the disease. **STUDY DESIGN:** A cross-sectional study was made in which questionnaires were anonymously and confidentially distributed to Spanish women over 18 years of age between April 2016 and September 2017. The questionnaires were distributed by e-mail and through social networks, women's associations and specific websites. This type of questionnaire has been validated and used in many studies of this kind. The women answered questions referred to epidemiological aspects, demographic parameters, medical history, the presence of vulvodynia, associated factors, and comorbidities. **RESULTS:** A total of 684 questionnaires were completed. The prevalence of vulvodynia was 6.6% (45 women). Thirteen percent (95 women) had experienced vulvodynia at some point in life. The factors associated to vulvodynia were prior vaginal deliveries ($p = 0.001$), vulvovaginal candidiasis ($p < 0.001$) and urinary tract infections ($p < 0.001$). Other pain syndromes such as fibromyalgia ($p = 0.012$), painful bladder syndrome/ interstitial syndrome ($p < 0.001$), temporomandibular joint pain ($p = 0.021$), coxofemoral pain ($p = 0.001$) or headache ($p = 0.001$) have also been associated to vulvodynia. **CONCLUSIONS:** The prevalence of vulvodynia in Spain is similar to that found in other countries. Many factors are involved in its development and persistence, particularly the presence of other pain syndromes and recurrent infections that could trigger complex inflammatory reactions.

Emerging Evidence of Macrophage Contribution to Hyperinnervation and Nociceptor Sensitization in Vulvodynia.
Barry CM, Matusica D, Haberberger RV.
Front Mol Neurosci. 2019 Aug 6;12:186. doi: 10.3389/fnmol.2019.00186. eCollection 2019.
https://www.ncbi.nlm.nih.gov/pubmed/31447644

Vulvodynia is an idiopathic chronic pain disorder and a leading cause of dyspareunia, or pain associated with sexual intercourse, for women. The key pathophysiological features of vulvodynia are vaginal hyperinnervation and nociceptor sensitization. These features have been described consistently by research groups over the past 30 years, but currently there is no first-line recommended treatment that targets this pathophysiology. Instead, psychological interventions, pelvic floor physiotherapy and surgery to remove painful tissue are recommended, as these are the few interventions that have shown some benefit in clinical trials. Recurrence of vulvodynia is frequent, even after vestibulectomy and questions regarding etiology remain. Vestibular biopsies from women with vulvodynia contain increased abundance of immune cells including macrophages as well as increased numbers of nerve fibers.

Macrophages have multiple roles in the induction and resolution of inflammation and their function can be broadly described as pro-inflammatory or anti-inflammatory depending on their polarization state. This state is not fixed and can alter rapidly in response to the microenvironment. Essentially, M1, or classically activated macrophages, produce pro-inflammatory cytokines and promote nociceptor sensitization and mechanical allodynia, whereas M2, or alternatively activated macrophages produce anti-inflammatory cytokines and promote functions such as wound healing. Signaling between macrophages and neurons has been shown to promote axonal sprouting and nociceptor sensitization. This mini review considers emerging evidence that macrophages may play a role in nociceptor sensitization and hyperinnervation relevant to vulvodynia and considers the implications for development of new therapeutic strategies.

[Vulvodynia - Diagnostics and Management Strategies].
[Article in German; Abstract available in German from the publisher]
Ghisu GP.
Praxis (Bern 1994). 2019 Aug;108(10):685-691. doi: 10.1024/1661-8157/a003274.
https://www.ncbi.nlm.nih.gov/pubmed/31387503

Vulvodynia - Diagnostics and Management Strategies **Abstract.** Vulvodynia is characterized by chronic, idiopathic vulvar pain lasting for at least three months. After exclusion of other, specific diseases associated with vulvar pain, which can be treated accordingly, realistic therapy goals for this chronic disease should be defined. The therapy concept is multimodal, interdisciplinary as well as individualized and includes the combination of general recommendations with physiotherapeutic and psychotherapeutic measures. Pharmacological therapy, which is indispensable, is carried out off-label and includes the topical and/or systemic use of various substances and substance combinations. Surgical measures may be regarded as a possible option, especially in women with therapy-resistant and provocable vulvodynia. Alternative therapy options such as acupuncture, hypnosis and transcutaneous electrical nerve stimulation are also worth investigating.

Vulvodynia: a neglected chronic pain diagnosis.
Pain. 2019 Jul;160(7):1680-1681. doi: 10.1097/j.pain.0000000000001559.
Bornstein J, Preti M, Radici G, Stockdale CK, Vieira-Baptista P.
https://www.ncbi.nlm.nih.gov/pubmed/31219952

Provoked Vestibulodynia

Motor Function and Perception of Health in Women with Provoked Vestibulodynia.
Næss I, Frawley HC, Bø K.
J Sex Med. 2019 Jul;16(7):1060-1067. doi: 10.1016/j.jsxm.2019.04.016. Epub 2019 May 31.
https://www.ncbi.nlm.nih.gov/pubmed/31155385

BACKGROUND: Provoked vestibulodynia (PVD) is a prevalent and disabling condition in women that may be associated with reduced quality of life and impairment of physical functioning. **AIM:** To investigate whether women with PVD have different motor functions, posture and breathing patterns, and whether they perceive their physical health differently, compared with asymptomatic

controls. **METHODS AND MAIN OUTCOME MEASURE:** The Standardized Mensendieck Test (SMT) and the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) were used to assess differences between 35 women with PVD and 35 healthy controls. **RESULTS:** There were no statistically significant differences in any of the 5 motor domains of the SMT between the women with PVD and those without PVD: standing posture, 4.0 (0.6) vs 5.0 (0.6); gait, 4.7 (0.6) vs 4.8 (0.6); movement, 4.8 (0.8) vs 5.1 (0.6); sitting posture, 4.7 (1.0) vs 4.9 (0.8); respiration, 4.7 (1.0) vs 4.7 (0.9). Women with PVD scored significantly lower in all domains on the SF-36 (adjusted Bonferroni P = .002) except physical functioning. **CLINICAL IMPLICATIONS:** Given the lack of difference in the SF-36 physical functioning domain and in all 5 domains of the SMT between women with PVD and those without PVD, the value of interventions focusing on general physical function is unclear. **STRENGTHS & LIMITATIONS:** A study strength is the use of an assessor-blinded case-control design, trained physiotherapists to conduct the tests, and valid and reliable outcome measures. A limitation is the homogeneity of the sample of young nulliparous women, which limits the generalizability of our findings to other study populations. **CONCLUSION:** Young nulliparous women with PVD did not score differently from a group of healthy controls on assessment of overall physical functioning or on standing posture, gait, movement, sitting posture, and respiration. However, the score for perception of general health was lower in the women with PVD compared with controls.

Systematic review and meta-analysis of the effects of treatment modalities for vestibulodynia in women.
Pérez-López FR, Bueno-Notivol J, Hernandez AV, Vieira-Baptista P, Preti M, Bornstein J.
Eur J Contracept Reprod Health Care. 2019 Jul 31:1-10. doi: 10.1080/13625187.2019.1643835.
https://www.ncbi.nlm.nih.gov/pubmed/31364893

Objective: To quantify the effects of available treatments of vestibulodynia. **Methods:** Systematic review of randomised controlled trials (RCTs) in six search engines until December 2018, comparing any intervention vs. placebo or sham in women with vestibulodynia. Primary outcome was dyspareunia assessed with visual analogue (VAS) or numeric rating (NRS) scales. Secondary outcomes were daily vestibular symptoms (DVS), McGill Pain Questionnaire (MPQ) and Index of Sexual Satisfaction (ISS). Effects were described as mean differences (MDs) with their 95% confidence intervals (CIs). Traditional and frequentist network meta-analyses (NMA) were performed using random effect models. **Results:** Four RCTs (*n* = 275) were included evaluating vaginal cream of conjugated oestrogens, oral desipramine with or without topical lidocaine, topical lidocaine, laser therapy and transcranial direct current. In traditional MA, interventions did not reduce dyspareunia (MD = 0.08; 95%CI = -0.49 to 0.64), DVS (MD = -0.04; 95%CI = -0.31 to 0.24; 4 interventions), or MPQ (MD = -0.17; 95%CI = -2.16 to 1.81; 4 interventions). ISS was significantly improved (MD = -5.14; 95%CI = -9.52 to -0.75). In NMA, oral desipramine with or without lidocaine significantly improved ISS vs. other treatments. **Conclusions:** Several existing interventions were not associated with improvements in vestibulodynia. There only was improvement of sexual function with oral desipramine with or without lidocaine.

Pain Trajectories and Predictors: A 7-Year Longitudinal Study of Women With Vulvodynia.
Pâquet M, Vaillancourt-Morel MP, Jodouin JF, Steben M, Bergeron S.
J Sex Med. 2019 Aug 23. pii: S1743-6095(19)31322-0. doi: 10.1016/j.jsxm.2019.07.018.
https://www.ncbi.nlm.nih.gov/pubmed/31451398

INTRODUCTION: A significant proportion of women report a reduction of symptoms over time-even without treatment-yet the natural progression of vulvodynia and which factors may explain decrease vs persistence of pain remain unclear. **AIM:** To identify subgroups of pain trajectories in women with vulvodynia and to predict these different trajectories by treatments undertaken, pain characteristics, and psychosocial factors. **METHODS:** Data on pain intensity, treatments undertaken, pain characteristics, and psychosocial factors were collected 3 times over a 7-year period from 173 women who screened positive for vulvodynia. Latent class growth analysis was conducted to identify homogeneous subgroups with distinct pain trajectories. A multivariate binomial logistic regression was used to examine whether treatments, pain characteristics, and psychosocial factors predicted these trajectories. **MAIN OUTCOME MEASURE:** The main outcome was pain intensity (0-10), measured at 3 time points with the numerical rating scale. **RESULTS:** 2 pain trajectories were identified: 1 where pain persisted (28.9%), and 1 where pain decreased over time (71.1%). Whether a treatment had been undertaken was not predictive of the course of pain over time. Women who were older at first pain onset, had pain at another location than the entrance of the vagina, and reported more anxiety were more likely to have a persistent pain trajectory relative to the decreased pain trajectory. **CLINICAL IMPLICATIONS:** Findings suggest that the evolution of pain differs among women with vulvodynia depending on pain characteristics and anxiety. **STRENGTHS & LIMITATIONS:** Strengths of the study include the 7-year longitudinal design to examine the natural history of provoked vestibulodynia and the inclusion of biopsychosocial factors as predictors of pain trajectories. However, women with major medical and psychiatric illnesses or deep dyspareunia were not included, and, thus, these factors could not be examined as predictors. **CONCLUSION:** Assessing baseline characteristics associated with different pain trajectories during medical visits could have positive implications for the management of vulvodynia. Pâquet M, Vaillancourt-Morel M-P, Jodouin J-F, et al. Pain Trajectories and Predictors: A 7-Year Longitudinal Study of Women With Vulvodynia.

Surgical Management of Neuroproliferative-Associated Vestibulodynia: A Tutorial on Vestibulectomy with Vaginal Advancement Flap.

Wu C, Goldstein A, Klebanoff JS, Moawad GN.

Am J Obstet Gynecol. 2019 Aug 10. pii: S0002-9378(19)31008-7. doi: 10.1016/j.ajog.2019.08.009.
https://www.ncbi.nlm.nih.gov/pubmed/31408632

Provoked vestibulodynia is an often under diagnosed and mismanaged medical condition that impacts the lives of many women. When symptoms are due to a dramatically increased density of pain fibers in the vestibular endoderm the condition is referred to as neuroproliferative-associated vestibulodynia (NAV). Unfortunately, assessment of pain fiber density can only be performed after surgery during histologic examination. First-line therapies for this condition often include topical or oral medications targeting hyperalgesia and allodynia at the vulvar vestibule. However, in the setting of refractory disease surgical treatment should be considered. The surgical video (Video 1) highlights anatomical landmarks as well as key surgical steps when performing a vulvar vestibulectomy with a vaginal advancement flap for the treatment of neuroproliferative-associated vestibulodynia. Surgeons should have a thorough understanding of pertinent vulvar anatomical landmarks before performing this procedure (Figure 1). The goal of vulvar vestibulectomy, as described in this video, is to excise the entirety of the vestibule containing the pathologic density of afferent pain fibers. This tutorial serves to identify key anatomical landmarks including Hart's line as well as outline the meticulous dissection required for successful completion of this procedure. We describe our surgical instrumentation as well as provide insight into steps that can be taken to minimize postoperative morbidity.

A Comparison of Mindfulness-Based Cognitive Therapy Vs Cognitive Behavioral Therapy for the Treatment of Provoked Vestibulodynia in a Hospital Clinic Setting.
Brotto LA, Bergeron S, Zdaniuk B, Driscoll M, Grabovac A, Sadownik LA, Smith KB, Basson R.
J Sex Med. 2019 Jun;16(6):909-923. doi: 10.1016/j.jsxm.2019.04.002. Epub 2019 May 15.
https://www.ncbi.nlm.nih.gov/pubmed/31103481

INTRODUCTION: Chronic and distressing genito-pelvic pain associated with vaginal penetration is most frequently due to provoked vestibulodynia (PVD). Cognitive behavioral therapy (CBT) significantly reduces genital pain intensity and improves psychological and sexual well-being. In general chronic pain populations, mindfulness-based approaches may be as effective for improving pain intensity as CBT. **AIM:** To compare mindfulness-based cognitive therapy (MBCT) with CBT in the treatment of PVD. **METHODS:** To ensure power of 0.95 to find medium effect size or larger in this longitudinal design, we enrolled 130 participants. Of these, 63 were assigned to CBT (mean age 31.2 years), and 67 to MBCT (mean age 33.7 years). Data from all participants who completed baseline measures were analyzed, with intent-to-treat analyses controlling for years since diagnosis. **MAIN OUTCOME MEASURES:** Our primary outcome was self-reported pain during vaginal penetration at immediate post-treatment and at 6 months' follow-up. Secondary endpoints included pain ratings with a vulvalgesiometer, pain catastrophizing, pain hypervigilance, pain acceptance, sexual function, and sexual distress. **RESULTS:** There was a significant interaction between group and time for self-reported pain, such that improvements with MBCT were greater than those with CBT. For all other endpoints, both groups led to similar significant improvements, and benefits were maintained at 6 months. **CLINICAL IMPLICATIONS:** Mindfulness is a promising approach to improving self-reported pain from vaginal penetration and is as effective as CBT for several psychological endpoints. **STRENGTH & LIMITATIONS:** A strength of the present study was the robust sample size (n = 130 women) who had received confirmed clinical diagnoses of PVD. **CONCLUSION:** The present study showed mindfulness to be as effective for most pain- and sexuality-related endpoints in the treatment of PVD. Brotto LA, Bergeron S, Zdaniuk B, et al. A Comparison of Mindfulness-Based Cognitive Therapy Vs Cognitive Behavioral Therapy for the Treatment of Provoked Vestibulodynia in a Hospital Clinic Setting.

Co-morbid Disorders

The association of vulvar pain and urological urgency and frequency: findings from a community-based case-control study.
Sun Y, Harlow BL.
Int Urogynecol J. 2019 Aug 2. doi: 10.1007/s00192-019-04052-2.
https://www.ncbi.nlm.nih.gov/pubmed/31375872

INTRODUCTION AND HYPOTHESIS: Vulvodynia is chronic debilitating burning vulvar pain or pain on contact. Although women who suffer from vulvodynia are more likely than others to experience co-morbid interstitial cystitis (IC) and urinary tract infections (UTIs), few studies have explored whether women with vulvodynia experience adverse urinary symptoms (lower urinary tract symptoms [LUTS]) in the absence of urological pain. **METHODS:** Two hundred and eleven participants with and 226 participants without clinically confirmed vulvodynia completed the Pelvic Pain and Urgency/Frequency (PUF) questionnaire and were scored using all questions, and then a subset of questions relating only to their current frequency and bother of urination during day and night, and the frequency, severity and bother of urgency after voiding. Total, symptom, and bother scores were compared in women with and

without vulvodynia, and regression models estimated adjusted odds ratios and 95% confidence intervals for the various LUTS symptoms. **RESULTS:** As expected, 40% of women with vulvodynia met the criteria for IC (PUF > 12) compared with 2% without vulvodynia. After excluding questions related to bladder or vulvovaginal pain, women with vulvodynia, compared with those without, were skewed toward higher PUF scores, including being 2.4 times more likely to report usually or always bothered by night-time voiding (95% CI 1.22-4.74), and 18 times more likely to report moderate/severe urgency after urination (95% CI 5.48-64.12). **CONCLUSIONS:** Women with vulvodynia are substantially more likely to report voiding dysfunction and symptoms of urgency than women with no history of vulvar pain. These findings are independent of comorbid interstitial cystitis or history of UTIs.

Provoked Vestibulodynia in Women with Pelvic Pain.
Bao C, Noga H, Allaire C, Williams C, Bedaiwy MA, Sadownik LA, Brotto LA, Smith KB, Yong PJ.
Sex Med. 2019 Jun;7(2):227-234. doi: 10.1016/j.esxm.2019.03.002. Epub 2019 Apr 4.
https://www.ncbi.nlm.nih.gov/pubmed/30954496

INTRODUCTION: Pelvic pain and vulvar pain are common conditions in women. In this study, we sought to characterize the clinical picture of patients with concurrent pelvic pain and provoked vestibulodynia (PVD). **AIM:** To analyze the association between sexual/clinical characteristics and a diagnosis of PVD among women with pelvic pain. **METHODS:** Cross-sectional analysis of a prospective registry at a tertiary referral center for pelvic pain and endometriosis, involving consecutive non-menopausal sexually active patients 18-49 years-old seen by a single gynecologist from January 2016-December 2017. The sample was divided into 2 groups: pelvic pain with PVD; and pelvic pain alone (without PVD). **MAIN OUTCOME MEASURES:** Superficial dyspareunia and deep dyspareunia on a 11-point numeric rating scale, and the sexual quality-of-life subscale of the Endometriosis Health Profile-30 (0-100%). **RESULTS:** There were 129 patients that met study criteria: one third with pelvic pain and PVD (n = 42) and two-thirds with pelvic pain alone (without PVD) (n = 87). Women with pelvic pain and PVD had significantly more severe superficial dyspareunia ≥7/10 (OR = 12.00 (4.48-32.16), P < .001), more severe deep dyspareunia ≥7/10 (OR = 4.08 (1.83-9.10), P = .001), and poorer sexual quality of life (Endometriosis Health Profile-30 ≥50%) (OR = 4.39 (1.67-11.57), P = .002), compared with the group with pelvic pain alone. Women with pelvic pain and PVD also had more anxiety, depression, and catastrophizing, more frequent tenderness of the bladder and pelvic floor, and more common diagnosis of painful bladder syndrome. On the other hand, there were no significant differences between the 2 groups in terms of dysmenorrhea, chronic pelvic pain, abdominal wall allodynia, positive Carnett test for abdominal wall pain, functional quality of life, endometriosis, and irritable bowel syndrome. **CONCLUSIONS:** In the pelvic pain population, PVD may be associated with more negative impact on dyspareunia, sexual quality of life, and bladder/pelvic floor function, but it may not significantly impact abdominopelvic pain or day-to-day function in general.

Pelvic floor myofascial pain severity and pelvic floor disorder symptom bother: Is there a correlation?
Meister MR, Sutcliffe S, Badu A, Ghetti C, Lowder JL.
Am J Obstet Gynecol. 2019 Jul 15. pii: S0002-9378(19)30904-4. doi: 10.1016/j.ajog.2019.07.020.
https://www.ncbi.nlm.nih.gov/pubmed/31319079

BACKGROUND: Pelvic floor myofascial pain, which is predominantly identified in the muscles of the levator ani and obturator internus, has been observed in women with chronic pelvic pain and other pelvic floor disorder symptoms, and is hypothesized to contribute to their symptoms. **OBJECTIVES:**

To describe the prevalence of pelvic floor myofascial pain in patients presenting with pelvic floor disorder symptoms and to investigate whether severity of pelvic floor myofascial pain on examination correlates with degree of pelvic floor disorder symptom bother. **STUDY DESIGN:** All new patients seen at one tertiary referral center between 2014 and 2016 were included in this retrospectively-assembled cross-sectional study. Pelvic floor myofascial pain was determined by transvaginal palpation of the bilateral obturator internus and levator ani muscles, and scored as a discrete number on an 11-point verbal pain rating scale (range 0-10) at each site. Scores were categorized as none (0), mild (1-3/10), moderate (4-6/10), and severe (7-10/10) for each site. Pelvic floor disorder symptom bother was assessed by the Pelvic Floor Distress Inventory short form (PFDI-20) scores. The correlation between these two measures was calculated using Spearman's rank and partial rank correlation coefficients. **RESULTS:** 912 new patients were evaluated. After excluding 79 with an acute urinary tract infection, 833 patients were included in the final analysis. Pelvic floor myofascial pain (pain rated >0 in any muscle group) was identified in 85.0% of patients: 50.4% rated as severe, 25.0% moderate, and 9.6% mild. In unadjusted analyses and those adjusted for postmenopausal status, severity of pelvic floor myofascial pain was significantly correlated with subjective prolapse symptoms such as pelvic pressure and heaviness but not with objective prolapse symptoms (seeing or feeling a vaginal bulge or having to push up on a bulge to start or complete urination) or leading edge. Severity of myofascial pain at several individual pelvic floor sites was also independently correlated with lower urinary tract symptoms, including pain in the lower abdomen (myofascial pain at all sites) and difficulty emptying the bladder (right obturator internus and left levator ani); and with defecatory dysfunction, including sensation of incomplete rectal emptying (pain at all sites combined and the right obturator internus), anal incontinence to flatus (pain at all sites combined), and pain with defecation (pain at all sites combined, and the right obturator internus and left levator ani). **CONCLUSIONS:** Pelvic floor myofascial pain was common in patients seeking evaluation for pelvic floor disorder symptoms. Location and severity of pelvic floor myofascial pain was significantly correlated with degree of symptom bother, even after controlling for postmenopausal status. Given the high prevalence of pelvic floor myofascial pain in these patients and correlation between pain severity and degree of symptom bother, a routine assessment for pelvic floor myofascial pain should be considered for all patients presenting for evaluation of pelvic floor symptoms.

The Clinical Role of LASER for Vulvar and Vaginal Treatments in Gynecology and Female Urology: An ICS/ISSVD Best Practice Consensus Document.

Preti M, Vieira-Baptista P, Digesu GA, Bretschneider CE, Damaser M, Demirkesen O, Heller DS, Mangir N, Marchitelli C, Mourad S, Moyal-Barracco M, Perematteu S, Tailor V, Tarcan T, De EJB, Stockdale CK.
J Low Genit Tract Dis. 2019 Apr;23(2):151-160. doi: 10.1097/LGT.0000000000000462.
https://www.ncbi.nlm.nih.gov/pubmed/30789385

In this best practice document, we propose recommendations for the use of LASER for gynecologic and urologic conditions such as vulvovaginal atrophy, urinary incontinence, vulvodynia, and lichen sclerosus based on a thorough literature review. Most of the available studies are limited by their design; for example, they lack a control group, patients are not randomized, follow-up is short term, series are small, LASER is not compared with standard treatments, and most studies are industry sponsored. Because of these limitations, the level of evidence for the use of LASER in the treatment of these conditions remains low and does not allow for definitive recommendations for its use in routine clinical practice. Histological evidence is commonly reported as proof of tissue regeneration after LASER treatment. However, the histological changes noted can also be consistent with reparative changes after a thermal injury rather than necessarily representing regeneration or restoration of function. The use of

LASER in women with vulvodynia or lichen sclerosus should not be recommended in routine clinical practice. There is no biological plausibility or safety data on its use on this population of women. The available clinical studies do not present convincing data regarding the efficacy of LASER for the treatment of vaginal atrophy or urinary incontinence. Also, although short-term complications seem to be uncommon, data concerning long-term outcomes are lacking. Therefore, at this point, LASER is not recommended for routine treatment of the aforementioned conditions unless part of well-designed clinical trials or with special arrangements for clinical governance, consent, and audit.

Gynecological associated disorders and management.
Jia X, Rana N, Crouss T, Whitmore KE.
Int J Urol. 2019 Jun;26 Suppl 1:46-51. doi: 10.1111/iju.13974.
https://www.ncbi.nlm.nih.gov/pubmed/31144734

BACKGROUND: Chronic pelvic pain syndrome is complex and involves multiple organ systems. The gynecological aspects of chronic pelvic pain syndrome can be divided into four different areas: intra-abdominal, vaginal, pelvic floor muscles and sexual pain. This article provides an overview of gynecological evaluation in patients with chronic pelvic pain and reviews the most common gynecological diagnoses and their management. **METHODS:** An extensive review of the literature including guidelines from the International Continence Society, the European Association of Urology, and the International Association for the Study of Pain was performed. **RESULTS:** Gynecological evaluation of patients with chronic pelvic pain begins with a thorough history and physical examination. Laboratory tests, imaging studies and diagnostic procedures can be used as adjuncts to make a diagnosis. Treatment modalities include physical therapy, medications, trigger points injections, and surgery. **CONCLUSION:** Common gynecological diagnoses of chronic pelvic pain include endometriosis, adenomyosis, vulvodynia, high tone pelvic floor dysfunction, and genitopelvic pain/penetration disorder. Gynecology is one of the many systems that can be associated with chronic pelvic pain. Managing patients with chronic pelvic pain requires a multimodal and multidisciplinary approach.

Functional Nutrition Treatment of Vulvodynia, Irritable Bowel Syndrome, and Depression: A Case Report.
Drummond J.
Integr Med (Encinitas). 2018 Jun;17(3):44-51.
https://www.ncbi.nlm.nih.gov/pubmed/30962795

A 34-y-old pregnant woman previously diagnosed with vulvodynia, irritable bowel syndrome (IBS), and depression used an elimination diet and nutritional supplementation-from 15 wk pregnant to 22 wk postpartum-to resolve her vulvodynia and IBS, and to reduce her use of antidepressant medication. This case demonstrates the potential usefulness of incorporating a customized functional nutritional approach to evaluate potential proinflammatory foods and nutritional insufficiencies in perinatal patients and postnatal patients.

Sexual pain and IC/BPS in women.
Kim SJ, Kim J, Yoon H.
BMC Urol. 2019 Jun 6;19(1):47. doi: 10.1186/s12894-019-0478-0.
https://www.ncbi.nlm.nih.gov/pubmed/31170952

Interstitial cystitis/bladder pain syndrome (IC/BPS) and female sexual dysfunction (FSD) are common conditions that substantially reduce women's health. In particular, women with IC/BPS show vulvodynia, a kind of FDS that originates from consistent pain around the vulvar area. There have been many studies attempting to find the underlying mechanisms that induce the chronic pain associated with IC/BPS and vulvodynia and explain why these two conditions often coexist. Proposed theories suggest that pain hypersensitivity is being mediated by peripheral and central sensitization. However, there are still many unknown factors, such as etiologies, that can evoke pain hypersensitivity and may be linking the casual relationship between IC/BPS and vulvodynia. At present, knowledge regarding IC/BPS and vulvodynia are insufficient when considering their clinical importance. Therefore, efforts are necessary to elucidate the issues surrounding IC/BPS and vulvodynia.

[Vulvar Pain].
[Article in German; Abstract available in German from the publisher]
Hastert L, Frey Tirri B.
Ther Umsch. 2019;73(9):565-571. doi: 10.1024/0040-5930/a001036.
https://www.ncbi.nlm.nih.gov/pubmed/31113317

Vulvar Pain **Abstract.** During their lifetime, many women experience vulvar and / or vaginal pain. The reasons of those pains or discomforts can be multiple and sometimes hard to identify and therefore difficult to treat. Besides organic causes such as infections, inflammations, changes after operations and others we can find complex conditions such as vulvodynia and dyspareunia. Vulvodynia is a vulvar pain of at least 3 months duration without clear identifiable cause, which may have potential associated factors. It is important for a successful therapy to identify these factors. It will need an individual access to every woman and there is no single therapy that fits all women. Dyspareunia is also a less common but also complex problem that needs accurate approach and therapy. With this article, we would like to give you insights in these disorders in a practical way in order to make them find their place in our daily practice.

Pudendal Neuralgia

Evaluating the Discordant Relationship Between Tarlov Cysts and Symptoms of Pudendal Neuralgia.
Lim VM, Khanna R, Kalinkin O, Castellanos ME, Hibner M.
Am J Obstet Gynecol. 2019 Jul 15. pii: S0002-9378(19)30905-6. doi: 10.1016/j.ajog.2019.07.021.
https://www.ncbi.nlm.nih.gov/pubmed/31319080

BACKGROUND: Pudendal neuralgia is a painful neuropathic condition involving the pudendal nerve dermatome. Tarlov cysts have been reported in the literature as another potential cause of chronic lumbosacral and pelvic pain. Notably, they are often located in the distribution of the pudendal nerve origin at the S2, S3, and S4 sacral nerve roots and it has been postulated that they may cause similar symptoms to pudendal neuralgia. Literature has been inconsistent on the clinical relevance of the cysts and if they are responsible for symptoms. **OBJECTIVE:** To evaluate the prevalence of S2-S4 Tarlov cysts at the pudendal nerve origin (S2-S4 sacral nerve roots) in patients specifically diagnosed with pudendal neuralgia, and establish association of patient symptoms with location of Tarlov cyst. **STUDY DESIGN:**

A retrospective study was performed on 242 patients with pudendal neuralgia referred for pelvic MRI from January 2010 to November 2012. Dedicated MRI review evaluated for presence, level, site, and size of Tarlov cysts. Among those with demonstrable cysts, subsequent imaging data was collected and correlated with the patients' clinical site of symptoms. Statistical analysis was performed using Chi-square, Pearson Chi-square, and Fisher's Exact Tests to assess significance. **RESULTS:** Thirty-nine (16.1%) patients demonstrated at least one sacral Tarlov cyst, and of the 38 patients with complete pain records, 31 (81.6%) had a mismatch in findings. A total of 50 Tarlov cysts were identified in the entire patient cohort. The majority of the Tarlov cysts were found at the S2-S3 level (32/50; 64%). Seventeen patients (44.7%) revealed unilateral discordant findings: unilateral symptoms on the opposite side as the Tarlov cyst. In addition, 14 (36.8%) patients were detected with bilateral discordant findings: 11 (28.9%) had bilateral symptoms with a unilateral Tarlov cyst, and 3 (7.9%) had unilateral symptoms with bilateral cysts. Concordant findings were only demonstrated in 7 patients (18.4%). No significant association was found between cyst size and pain laterality (p=.161), cyst volume and pain location (p=.546), or cyst size and unilateral vs. bilateral pain (p=.997) CONCLUSION: The increased prevalence of Tarlov cysts is likely not the etiology of pudendal neuralgia, yet both could be due to similar pathogenesis from part of a focal or generalized condition.

The puborectal continence reflex functions independently of the pudendal nerve.
Jonker JE, van Meegdenburg MM, Trzpis M, Broens PMA.
Colorectal Dis. 2019 Jul 4. doi: 10.1111/codi.14750.
https://www.ncbi.nlm.nih.gov/pubmed/31271490

AIM: The ability of patients with poor pudendal nerve function to voluntarily contract their external anal sphincter is limited. However, it is not known whether the condition of the pudendal nerve influences voluntary puborectal muscle contraction. Recently, we described the puborectal continence reflex that maintains faecal continence by involuntary contractions of the puborectal muscle. We aim to investigate whether both voluntary and involuntary contractions of the puborectal muscle are influenced by the condition of the pudendal nerve. **METHOD:** We retrospectively analysed 129 adult patients who underwent anorectal function tests at the Anorectal Physiology Laboratory. Anal electrosensitivity was used as a measurement of the pudendal nerve function. Voluntary and involuntary contractions of the puborectal muscle were defined as maximum puborectal muscle contractility and maximum pressure at the level of the puborectal muscle during the balloon retention test. **RESULTS:** Voluntary contraction of the puborectal muscle was significantly decreased in patients with pudendal nerve damage (P = 0.002). Involuntary contractions, however, were not associated with the condition of the pudendal nerve (P = 0.63). Multiple linear regression analysis showed that the condition of the pudendal nerve and patients' sex significantly predicted voluntary contraction but not involuntary contraction. **CONCLUSION:** Voluntary contractions of the puborectal muscle are significantly decreased in patients with pudendal nerve damage, while involuntary contractions of the puborectal muscle are comparable to those of patients without nerve damage. We conclude that the puborectal continence reflex, which controls involuntary contractions of the puborectal muscle, is not regulated by the pudendal nerve.

Initial experience of CT-guided pulsed radiofrequency ablation of the pudendal nerve for chronic recalcitrant pelvic pain.
Collard MD, Xi Y, Patel AA, Scott KM, Jones S, Chhabra A.
Clin Radiol. 2019 Aug 22. pii: S0009-9260(19)30324-1. doi: 10.1016/j.crad.2019.06.028.
https://www.ncbi.nlm.nih.gov/pubmed/31447049

AIM: To evaluate initial experience with computed tomography (CT)-guided pulsed radiofrequency ablation (pRFA) of the pudendal nerve in cases of recalcitrant neuropathic pelvic pain. Endpoints include technical feasibility, safety, and efficacy of therapy. **MATERIALS AND METHODS:** Ten patients who underwent pRFA ablation for neuropathic pudendal nerve pain during the trial period were followed for response to treatment for 6 months. Each patient was treated with pRFA under CT-guidance with concurrent perineural injection of anaesthetic and/or corticosteroid. Pain scores were then measured using a numeric rating scale at fixed intervals up to 6 months. **RESULTS:** All procedures were considered technically successful with no immediate complications. pRFA demonstrated improved duration of pain improvement compared to the most recent perineural injection (p=0.0195), but not compared to the initial injection (p=0.64). Reported pain scores were lower with pRFA than with both the first and most recent injection but this did not reach statistical significance (p=0.1094 and p=0.7539, respectively). **CONCLUSION:** Overall, pRFA of the pudendal nerve using CT-guidance can be a safe and effective therapy. This technique provides direct visualisation of the nerve to maximise safety and efficacy while offering a novel form of therapy for patients with chronic, recalcitrant pelvic pain.

Dermatological Conditions

Genomic Profiling of Vulvar Lichen Sclerosus Patients Shows Possible Pathogenetic Disease Mechanisms.
Haefner HK, Welch KC, Rolston AM, Koeppe ES, Stoffel EM, Kiel MJ, Berger MB.
J Low Genit Tract Dis. 2019 Jul;23(3):214-219. doi: 10.1097/LGT.0000000000000482.
https://www.ncbi.nlm.nih.gov/pubmed/31232912

OBJECTIVE: Vulvar lichen sclerosus (LS) is known to occur in families, suggesting a genetic link. Genomic profiling of patients with vulvar LS was investigated to find underlying pathogenetic mechanisms, with the hope that targeted therapies and future clinical research will arise. **METHODS:** Two unrelated families with vulvar LS were investigated using whole-exome sequencing. Five affected sisters from 1 family were compared with their unaffected paternal aunt (unaffected control). A mother-daughter pair from a second affected family was compared with the first family. The results of the sequencing were compared with population-specific allele frequency databases to prioritize potential variants contributing to vulvar LS development. **RESULTS:** Recurrent germ-line variants in 4 genes were identified as likely to be deleterious to proper protein function in all of the 7 affected patients, but not in the unaffected control. The genes with variants included CD177 (neutrophil activation), CD200 (inhibitory signal to macrophages), ANKRD18A (ankyrin repeat protein, epigenetic regulation), and LATS2 (co-repressor of androgen signaling). **CONCLUSIONS:** Although many providers may see a mother and daughter with vulvar LS, this condition is rarely seen in multiple family members who are available for genetic testing. This is the first report to detail genomic profiling related to a familial association of vulvar LS.

Lichen sclerosus - the course during pregnancy and effect on delivery.
Trokoudes D, Lewis FM.
J Eur Acad Dermatol Venereol. 2019 Jul 8. doi: 10.1111/jdv.15788.
https://www.ncbi.nlm.nih.gov/pubmed/31283048

Vulval lichen sclerosus (LS) is a chronic inflammatory condition most commonly affecting the anogenital skin in women. The prevalence of LS is unclear but it was reported as 1.7% of all patients in a general gynecology practice[1] . Prompt diagnosis, treatment and appropriate follow-up are essential to alleviate symptoms, stop progressive scarring and reduce the small risk of vulval carcinoma[2].

Pediatric lichen sclerosus: A systematic review of 4516 cases.
Balakirski G, Grothaus J, Altengarten J, Ott H.
Br J Dermatol. 2019 Jul 1. doi: 10.1111/bjd.18267.
https://www.ncbi.nlm.nih.gov/pubmed/31260081

Lichen sclerosus (LS) represents a chronic autoinflammatory disease of unknown etiology and is not rarely encountered in pediatric dermatology centers. Recent surveys have highlighted the lack of confidence of physicians in addressing LS in the pediatric age group. We performed a systematic analysis of the PubMed and Embase databases using the terms 'lichen sclerosus', 'lichen sclerosis', 'kraurosis vulvae', and 'balanitis xerotica obliterans' in combination with 'child', 'children', 'childhood', 'girl', 'boy' or 'infants'. It included publications up to March 2017 in English, German, French, Dutch and Russian.

The Female Genital Self-image Scale in Adult Women With Vulvar Lichen Sclerosus.
Hodges KR, Wiener CE, Vyas AS, Turrentine MA.
J Low Genit Tract Dis. 2019 Jul;23(3):210-213. doi: 10.1097/LGT.0000000000000481.
https://www.ncbi.nlm.nih.gov/pubmed/31135654

OBJECTIVE: There is no agreed upon standard way to measure vulvar lichen sclerosus disease severity. The Female Genital Self-Image Scale (FGSIS) is a validated survey tool assessing female genital self-image and is positively correlated with women's sexual function. A lower score represents a negative genital self-image. We evaluated the FGSIS in women with vulvar lichen sclerosus. **METHODS:** Women with biopsy-proven lichen sclerosus and women presenting for routine gynecologic care without lichen sclerosus matched by age were surveyed with the 7-item FGSIS. National surveys of healthy women in the United States have shown the mean 7-item FGSIS score is 21. To detect one standard deviation (20% absolute difference) between groups with a power of 80% at $p < .05$, 15 women would are needed in each group. **RESULTS:** Sixteen women with lichen sclerosus and 16 matched controls were surveyed between February and July 2018. The mean ± SD age of women with lichen sclerosus was 56.8 ± 13.5 years, 94% were white, 69% married, 81% college educated, 69% postmenopausal, and 18% on hormone replacement therapy. None of these differences were statistically different from control women. Women with vulvar lichen sclerosus had a significantly lower median 7-item FGSIS when compared with control subjects, 18 (interquartile range = 16-21) versus 25 (interquartile range = 23-27), respectively, Mann-Whitney U test, $p < .001$. **CONCLUSIONS:** Women with vulvar lichen sclerosus have a lower score on the 7-item Female Genital Self-Image Scale compared with healthy controls.