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Vulvodynia

Chronic vulvar pain in a cohort of post-menopausal women: Atrophy or Vulvodynia?

Mitro SD, Harlow SD, Randolph JF, Reed BD.

Womens Midlife Health. 2016;2. pii: 4. doi: 10.1186/s40695-016-0017-z. Epub 2016 Jun 9

https://www.ncbi.nlm.nih.gov/pubmed/28127441

BACKGROUND: Although postmenopausal vulvar pain is frequently attributed to vaginal atrophy, such symptoms may be due to vulvodynia, a chronic vulvar pain condition. Given the limited research on vulvodynia in postmenopausal women, the objective of this study was to provide preliminary population-based data on the associations of vaginal symptoms, serum hormone levels and hormone use with chronic vulvar pain in a multiethnic sample of post-menopausal women. **METHODS:** We used data from 371 participants at the Michigan site of the Study of Women's Health Across the Nation (SWAN) who participated in the 13th follow-up visit. Women completed a validated screening instrument for vulvodynia and provided information on additional vaginal symptoms as well as demographic characteristics, and hormone use by questionnaire. Blood samples were obtained to assess hormone levels. We compared women who screened positive for vulvodynia and women with past or short-duration vulvar pain to women without vulvar pain, using Chi-squared and Fisher's Exact tests. Relative odds ratios and 95 % confidence intervals were calculated using multinomial logistic regression models adjusting for age, body mass index, and race/ethnicity. **RESULTS:** Current chronic vulvar pain consistent with vulvodynia was reported by 4.0 % of women, while 13.7 % reported past but not current chronic vulvar pain or short-duration vulvar pain symptoms. One quarter of women who reported current chronic vulvar pain did not report vaginal dryness. Women with current chronic and with past/short duration vulvar pain symptoms were more likely to have used hormones during the preceding year than women without vulvar pain symptoms (13.3 %, 17.6 %, 2.0 %, respectively; $p < .01$). Increased relative odds of current vulvar pain symptoms were associated with each log unit decrease in serum dehydroepiandrosterone-sulfate, estradiol and testosterone levels at the previous year's visit. **CONCLUSION:** Some women who experience chronic vulvar pain symptoms do not report vaginal dryness, and others report continued or first onset of pain while using hormones. Vulvodynia should be considered in the differential diagnosis of postmenopausal women presenting with vulvar pain symptoms.

Recommendations for Self-report Outcome Measures in Vulvodynia Clinical Trials.
Pukall CF, Bergeron S, Brown C, Bachmann G, Wesselmann U; Vulvodynia Collaborative Research Group.
Clin J Pain. 2016 Nov 10.
https://www.ncbi.nlm.nih.gov/pubmed/27841834

OBJECTIVES: Vulvodynia (idiopathic chronic vulvar pain) is a prevalent condition associated with significant and negative impacts in many areas of function. Despite the increased research interest in vulvodynia in recent years, recommendations for outcome measures for use in clinical trials are missing. The purpose of this paper, therefore, was to provide recommendations for outcome measures for vulvodynia clinical trials so that consistent measures are used across trials in order to facilitate between-study comparisons and the conduct of large multi-center trials, and to improve measurement of the multiple dimensions of vulvodynia. **METHODS:** Given that provoked vestibulodynia (PVD)-characterized by provoked pain localized to the vaginal opening-is the most common subtype of vulvodynia and the current main focus of clinical trials, this paper focused on recommended outcome measures in PVD clinical trials. The framework used to guide the selection of outcome measures was based on the one proposed by the Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials (IMMPACT). **RESULTS:** The IMMPACT framework provided a well-suited guideline for outcome measure recommendations in PVD clinical trials. However, given the provoked presentation of PVD and the significant impact it has on sexuality, modifications to some of the IMMPACT recommendations and specific additional measures were made. **DISCUSSION:** Measures that are specific to vulvovaginal pain are ideal for adoption in PVD clinical trials, and many such measures currently exist that allow the relevant IMMPACT domains to be captured.

Current practice patterns for management of vulvodynia in the United States.
Lua LL, Hollette Y, Parm P, Allenback G, Dandolu V.
Arch Gynecol Obstet. 2016 Dec 20. doi: 10.1007/s00404-016-4272-x.
https://www.ncbi.nlm.nih.gov/pubmed/28000024

PURPOSE: To evaluate the current practice patterns for the management of vulvodynia in the United States (US) and to estimate healthcare costs related to this condition. **METHODS:** Truven MarketScan Commercial Claims and Encounters databases for years 2009-2013 were utilized for analysis. The study cohort included women, 18 years or older, with a diagnosis of vulvodynia (ICD-9 625.70), who had been continuously enrolled for 360 days from the date of diagnosis. Measures included the most common prescriptions, primary procedures, associated diagnoses, as well as net healthcare costs. Statistical Analysis Software 9.3 was used for statistical analysis. **RESULTS:** Among 24,122 subjects with vulvodynia, 12,584 met enrollment criteria. Mean age was 41.0 ± 12.9 years. Vulvar biopsy (29.6%), urinalysis (27.8%), urine culture (27.5%) and wet mount for infectious agents (25.5%) were commonly performed primary procedures. The most common prescriptions were antidepressants (32.4%), followed by opiates (27.6%), antifungals (26.1%), and steroidal agents (22.7%). Vulvodynia was frequently associated with vulvovaginitis (32.0%), urinary tract infection (20.6%), and chronic fatigue (18.6%). The mean net cost per patient including pharmacy claims during the follow-up period was $9591.80 (SD $14,595.52; 95% CI $9333.45-$9850.13). **CONCLUSIONS:** Our findings confirm great variation in the current management of vulvodynia. The variety of treatment approaches is a reflection of the poor current understanding of the etiology and pathophysiology of vulvodynia. Further research is needed to determine which treatments are most effective in the management of each subtype of vulvodynia.

Vulvodynia: What We Know and Where We Should Be Going.
Havemann LM, Cool DR, Gagneux P, Markey MP, Yaklic JL, Maxwell RA, Iyer A, Lindheim SR.
J Low Genit Tract Dis. 2016 Dec 15.
https://www.ncbi.nlm.nih.gov/pubmed/27984345

OBJECTIVE: The aim of the study was to review the current nomenclature and literature examining microbiome cytokine, genomic, proteomic, and glycomic molecular biomarkers in identifying markers related to the understanding of the pathophysiology and diagnosis of vulvodynia (VVD). **MATERIALS AND METHODS:** Computerized searches of MEDLINE and PubMed were conducted focused on terminology, classification, and "omics" variations of VVD. Specific MESH terms used were VVD, vestibulodynia, metagenomics, vaginal fungi, cytokines, gene, protein, inflammation, glycomic, proteomic, secretomic, and genomic from 2001 to 2016. Using combined VVD and vestibulodynia MESH terms, 7 references were identified related to vaginal fungi, 15 to cytokines, 18 to gene, 43 to protein, 38 to inflammation, and 2 to genomic. References from identified publications were manually searched and cross-referenced to identify additional relevant articles. A narrative synthesis of the articles was conducted; however, meta-analysis was not conducted because of substantial heterogeneity in the studies and limited numbers of control-matched studies. **RESULTS:** Varying definitions of VVD complicate a meta-analysis, and standard definitions will better allow for comparisons of studies and enhance the applicability of evidence to patient populations. Although data are still limited, genomic and molecular diagnostic testings continue to be investigated as potential tools for the diagnosis of VVD. **CONCLUSIONS:** Standardized nomenclature will allow for comparability of studies and progress in research related to the pathophysiology of VVD and to facilitate clinical decision making and treatment choices. Although the current understanding of the pathogenesis of VVD is limited, there are new opportunities to explore potential diagnostic markers differences in women with VVD, which may lead to targeted therapy.

The experience of pain severity and pain interference in vulvodynia patients: The role of cognitive-behavioural factors, psychological distress and fatigue.
Chisari C, Chilcot J.
J Psychosom Res. 2017 Feb;93:83-89. doi: 10.1016/j.jpsychores.2016.12.010. Epub 2016 Dec 23.
https://www.ncbi.nlm.nih.gov/pubmed/28107898

OBJECTIVE: Vulvodynia is a chronic pain condition characterised by severe pain affecting the vulva. Biopsychosocial models have revealed the importance of illness perceptions, cognitive-behavioural variables and psychological distress in explaining the experience of pain and disability across several conditions. These factors have never been collectively examined in vulvodynia. We predicted that distress, fatigue, illness perceptions, and cognitive-behavioural factors would be associated with pain severity and interference among women with vulvodynia. **METHODS:** This online cross-sectional study recruited 335 vulvodynia patients from an Italian charity association (Vulvodiniapuntoinfo.com), who completed pain severity and interference measures in addition to the Hospital Anxiety and Depression scale, Revised Illness Perception Questionnaire, Chalder Fatigue Questionnaire, Cognitive-Behavioural Symptom Questionnaire and a demographic questionnaire. **RESULTS:** Hierarchical regression models controlling for demographic and illness characteristics, revealed that lower treatment control beliefs, greater illness identity, catastrophizing and psychological distress, were significant predictors of pain severity, explaining 35% of the variance. A second adjusted hierarchical regression model revealed that low treatment-control, higher fatigue, distress, and avoidance/resting behaviours were significant predictors of pain interference, explaining 48% of the variance. **CONCLUSION:** Distress, illness

perceptions, fatigue, and cognitive-behavioural factors are associated with pain severity and interference in patients with vulvodynia, highlighting the importance of adopting a biopsychosocial approach in this setting. Future research should examine these factors over time to inform the development of future tailored interventions to help support women better manage vulvodynia.

The Costs and Benefits of Sexual Communal Motivation for Couples Coping With Vulvodynia.
Muise A, Bergeron S, Impett EA, Rosen NO.
Health Psychol. 2017 Feb 6. doi: 10.1037/hea0000470.
https://www.ncbi.nlm.nih.gov/pubmed/28165264

OBJECTIVE: Most women with vulvodynia-a prevalent, chronic, vulvovaginal pain condition-engage in intercourse with their partners despite experiencing pain. Their motivation for doing so appears to be interpersonally oriented (e.g., to meet their partners' sexual needs), but the costs and benefits of such motivations are unknown. We tested whether sexual communal strength (being responsive to a partner's sexual needs) and unmitigated sexual communion (focusing on a partner's sexual needs to the exclusion of one's own needs) were associated with sexual function, and sexual and relationship satisfaction in couples with coping with vulvodynia. **METHOD:** In an 8-week daily experience study, 95 women diagnosed with vulvodynia and their partners reported on sexual communal strength, unmitigated sexual communion, sexual function, and sexual and relationship satisfaction on days when sexual activity occurred. **RESULTS:** On days when women reported higher sexual communal strength, both they and their partners reported greater sexual function and satisfaction, and their partners reported greater relationship satisfaction. When women's partners reported higher sexual communal strength, both they and the women reported better sexual function, partners reported greater sexual satisfaction, and women reported greater relationship satisfaction. On days when women reported higher unmitigated sexual communion, they reported poorer sexual function and lower sexual satisfaction, and both the women and partners reported lower relationship satisfaction. When women's partners reported higher unmitigated sexual communion, they reported poorer sexual function. **CONCLUSIONS:** These novel aspects of sexual motivation should be targeted in psychological interventions aimed to improve the sexual and relationship well-being of affected couples.

2016 European guideline for the management of vulval conditions.
van der Meijden WI, Boffa MJ, Ter Harmsel WA, Kirtschig G, Lewis FM, Moyal-Barracco M, Tiplica GS, Sherrard J.
J Eur Acad Dermatol Venereol. 2017 Feb 6. doi: 10.1111/jdv.14096.
https://www.ncbi.nlm.nih.gov/pubmed/28164373

Vulval conditions may present to a variety of clinicians, such as dermatologists, gynaecologists and general practitioners. Women with these conditions are best managed by a multidisciplinary approach, which includes clear referral pathways between disciplines or access to a specialist multidisciplinary vulval service. Informed consent is a prerequisite for all examinations, investigations and treatments. Consent is particularly important for intimate examinations of the anogenital area, and a chaperone should be offered in all cases. All efforts should be made to maintain a patient's dignity. Depending on symptoms and risk factors, screening for sexually transmitted infections (STI) should be considered. If the patient presents with vulval itch, particularly if also complaining of increased vaginal discharge, vulvaginal candidiasis should be excluded. Sexual dysfunction should be considered in all patients with vulval complaints, either as the cause of the symptoms or secondary to symptoms, and assessed if

appropriate. This guideline covers several aspects, such as diagnosis and treatment, of the more common vulval conditions (relatively) often encountered at vulval clinics, i.e. vulval dermatitis (eczema), psoriasis, lichen simplex chronicus, lichen sclerosus, lichen planus, vulvodynia and vulval intraepithelial neoplasia (VIN).

Provoked Vestibulodynia

Fractional CO2 Laser Treatment of the Vestibule for Patients with Vestibulodynia and Genitourinary Syndrome of Menopause: A Pilot Study.
Murina F, Karram M, Salvatore S, Felice R.
J Sex Med. 2016 Dec;13(12):1915-1917. doi: 10.1016/j.jsxm.2016.10.006. Epub 2016 Nov 15.
https://www.ncbi.nlm.nih.gov/pubmed/27864031

INTRODUCTION: Chronic vulvar pain and burning remains one of the most perplexing problems faced by practicing gynecologists. **AIM:** To evaluate the effectiveness and safety of the application of micro-ablative fractional CO_2 laser to the vulvar vestibule in the management of patients with vulvar pain from vestibulodynia or genitourinary syndrome of menopause. **METHODS:** Patients (N = 70) underwent fractional micro-ablative CO_2 laser treatment for vestibular pain plus vestibulodynia (n = 37) or genitourinary syndrome of menopause (n = 33). Inclusion criteria were the existence of vestibular atrophic changes and the absence of moderate or severe pelvic floor hypertonic dysfunction. **MAIN OUTCOME MEASURES:** A visual analog scale of pain and the Marinoff score of dyspareunia were chosen to evaluate improvement. Grading of vestibular health also was quantified using a four-point scoring system (0 = no atrophy, 3 = severe atrophy). Data were collected at baseline, at weeks 4, 8, and 12, and 4 months after the final treatment. **RESULTS:** For visual analog scale and dyspareunia scoring and for the overall vestibular health index scoring, statistically significant improvement was noted after three sessions of vestibular fractional CO_2 laser treatment. Improvement gradually increased throughout the study period and was maintained through the 4-month follow-up visit. There was no statistically significant difference in outcomes between the two study groups. No adverse events from fractional CO_2 laser treatment were noted. Overall, 67.6% of patients stated significant improvement from the laser procedure. **CONCLUSION:** This preliminary case series showed encouraging results using fractional CO_2 laser treatment of the vestibule in women with vestibulodynia and genitourinary syndrome of menopause.

Repeated hapten exposure induces persistent tactile sensitivity in mice modeling localized provoked vulvodynia.
Landry J, Martinov T, Mengistu H, Dhanwada J, Benck CJ, Kline J, Boo B, Swanson L, Tonc E, Daughters R, Fife BT, Chatterjea D.
PLoS One. 2017 Feb 3;12(2):e0169672. doi: 10.1371/journal.pone.0169672. eCollection 2017.
https://www.ncbi.nlm.nih.gov/pubmed/28158195

BACKGROUND: Vulvodynia is a remarkably prevalent chronic pain condition of unknown etiology. Epidemiologic studies associate the risk of vulvodynia with a history of atopic disease. We used an established model of hapten-driven contact hypersensitivity to investigate the underlying mechanisms of allergy-provoked prolonged sensitivity to pressure. **METHODS:** We sensitized female ND4 Swiss mice to the hapten oxazolone on their flanks, and subsequently challenged them four days later with

oxazolone or vehicle for ten consecutive days on the labia. We evaluated labiar sensitivity to touch, local mast cell accumulation, and hyperinnervation after ten challenges. **RESULTS:** Oxazolone-challenged mice developed significant tactile sensitivity that persisted for over three weeks after labiar allergen exposures ceased. Allergic sites were characterized by mast cell accumulation, sensory hyper-innervation and infiltration of regulatory CD4+CD25+FoxP3+ T cells as well as localized early increases in transcripts encoding Nerve Growth Factor and nerve-mast cell synapse marker Cell Adhesion Molecule 1. Local depletion of mast cells by intra-labiar administration of secretagogue compound 48/80 led to a reduction in both nerve density and tactile sensitivity. **CONCLUSIONS:** Mast cells regulate allergy-provoked persistent sensitivity to touch. Mast cell-targeted therapeutic strategies may provide novel means to manage and limit chronic pain conditions associated with atopic disease.

Primary and Secondary Provoked Vestibulodynia: A Review of Overlapping and Distinct Factors.
Pukall CF.
Sex Med Rev. 2016 Jan;4(1):36-44. doi: 10.1016/j.sxmr.2015.10.012. Epub 2016 Jan 8.
https://www.ncbi.nlm.nih.gov/pubmed/27872003

INTRODUCTION: A common subtype of vulvodynia is provoked vestibulodynia (PVD), characterized by severe pain upon contact to the vaginal entrance. Some researchers have further delineated the PVD group based on pain onset (primary vs secondary PVD, referred to as PVD1 and PVD2, respectively). **AIM:** This study aims to review available evidence regarding sociodemographic variables, pain characteristics, medical history and examination findings, quantitative sensory testing, genetic markers, psychosocial/sexual/relationship function, treatment outcome, and brain imaging in women with PVD1 and PVD2. **METHODS:** All available data related to PVD1 and PVD2 were reviewed. **MAIN OUTCOME MEASURES:** There is mixed evidence supporting the assumption that women with PVD1 fare worse on all variables investigated. **RESULTS:** The review indicated that although women with PVD1 seem to fare worse on many variables examined (eg, pain severity, genetic markers), many studies also indicated no significant group differences or-less commonly-that women with PVD2 fare worse on some variables (eg, sexual function). **CONCLUSION:** Although it has been suggested that different pathophysiologic processes are involved in the development and maintenance of PVD1 and PVD2, the data reviewed were mixed. While most studies indicated that women with PVD1 have higher pain intensity, higher sensitivity, more genetic influence, more evidence of inflammation, lower successful treatment outcomes, and different neural activation patterns and structural findings, these results were not consistently reported. In addition, the data for subgroup differences in psychosocial, sexual, and relationship variables were not convincing. A more precise definition of primary and secondary PVD is needed, and importantly, prospective, longitudinal studies are essential for clarifying any differences within these PVD subgroups.

Recent advances in understanding provoked vestibulodynia.
Lev-Sagie A, Witkin SS.
F1000Res. 2016 Oct 26;5:2581. eCollection 2016.
https://www.ncbi.nlm.nih.gov/pubmed/27853523

Vulvodynia refers to pain in the vulva of at least 3 months' duration in the absence of a recognized underlying cause. Provoked, localized vestibulodynia is the term used to describe superficial pain confined to the vulvar vestibule, provoked by touch. This review will focus on provoked vestibulodynia with regard to its suggested causative factors and will discuss the role of inflammation, vulvovaginal

infections, mucosal nerve fiber proliferation, hormonal associations, central pain mechanisms, pelvic floor muscle dysfunction, and genetic factors. Clinical observations, epidemiological studies, and data from basic research emphasize the heterogeneity of vulvar pain syndromes. There is a critical need to perform prospective, longitudinal studies that will allow better diagnostic criteria and subgrouping of patients that would lead to improvements in our understanding of provoked vestibulodynia and its treatment.

A local inflammatory renin-angiotensin system drives sensory axon sprouting in provoked vestibulodynia.
Liao Z, Chakrabarty A, Mu Y, Bhattacherjee A, Goestch M, Leclair CM, Smith PG.
J Pain. 2017 Jan 3. pii: S1526-5900(16)30367-4. doi: 10.1016/j.jpain.2016.12.008.
https://www.ncbi.nlm.nih.gov/pubmed/28062309

Vestibulodynia is a form of provoked vulvodynia characterized by profound tenderness, hyperinnervation, and frequently inflammation within well-defined areas of the human vestibule. Prior experiments in animal models show that inflammatory hypersensitivity and hyperinnervation occur in concert with establishment of a local renin-angiotensin system (RAS). Moreover, mechanical hypersensitivity and sensory axon sprouting are prevented by blocking effects of angiotensin II on AT2 receptors. This case-control study assessed whether a RAS contributes to hyperinnervation observed in human vestibulodynia. Vestibular biopsies from asymptomatic controls or patients' nontender areas showed moderate innervation and small numbers of inflammatory cells. In women with vestibulodynia, tender areas contained increased numbers of mechanoreceptive nociceptor axons, T-cells, macrophages and B-cells, while mast cells were unchanged. RAS proteins were increased due to greater numbers of T-cells and B-cells expressing angiotensinogen, and increased renin-expressing T-cells and macrophages. Chymase, which converts angiotensin I to angiotensin II, was present in constant numbers of mast cells. To determine if tender vestibular tissue generates angiotensin II that promotes axon sprouting, we conditioned culture medium with vestibular tissue. Rat sensory neurons cultured in control-conditioned medium showed normal axon outgrowth, while those in tender tissue-conditioned medium showed enhanced sprouting that was prevented by adding an AT2 antagonist or angiotensin II neutralizing antibody. Hypersensitivity in provoked vestibulodynia is therefore characterized by abnormal mechano-nociceptor axon proliferation, which is attributable to inflammatory cell-derived angiotensin II (or a closely related peptide) acting on neuronal AT2 receptors. Accordingly, reducing inflammation or blocking AT2 represent rational strategies to mitigate this common pain syndrome. **PERSPECTIVE:** This study provides evidence that local inflammation leads to angiotensin II formation which acts on the angiotensin II receptor type 2 to induce nociceptor axon sprouting in vulvodynia. Preventing inflammation and blocking AT2 therefore present potential pharmacological strategies for reducing vestibular pain.

Understanding the Sexual Satisfaction of Women With Provoked Vestibulodynia and Their Partners: Comparison With Matched Controls.
O Rosen N, Santos-Iglesias P, Byers ES.
J Sex Marital Ther. 2016 Nov 28:1-13. doi: 10.1080/0092623X.2016.1263705.
https://www.ncbi.nlm.nih.gov/pubmed/27892829

Provoked vestibulodynia (PVD)-a recurrent, localized vulvar pain-interferes with couples' sexual relationships as evidenced by lower sexual satisfaction compared to controls. Little is known about what

components of sexual satisfaction contribute to this lower satisfaction. Using the Interpersonal Exchange Model of Sexual Satisfaction (IEMSS), we compared the sexual exchanges (sexual rewards and costs, relative sexual rewards and costs, balance of sexual rewards and costs, balance of relative sexual rewards and costs, equality of sexual rewards and costs) and sexual satisfaction of 50 women with PVD and their male partners to 50 matched-control couples. We also compared women with PVD and their partners on these same components. Participants completed standardized measures of sexual exchanges and sexual satisfaction. Women with PVD and their partners reported lower relative sexual rewards, a less favorable balance of relative sexual rewards to costs, and lower sexual satisfaction than controls, although differences were larger for women. Women with PVD also reported lower levels of sexual rewards, higher levels of sexual costs, a less favorable balance of sexual rewards to costs, and lower equality of sexual costs, than control women. Findings identify IEMSS exchange components that may contribute to overall lower satisfaction in couples affected by PVD.

Provoked Vestibulodynia: A Comparative Examination of Mental Health, Sleep, Sexual Functioning, and Relationship Adjustment.
Dargie E, Gilron I, Pukall C.
Clin J Pain. 2017 Jan 21. doi: 10.1097/AJP.0000000000000480.
https://www.ncbi.nlm.nih.gov/pubmed/28118257

OBJECTIVES: Provoked vestibulodynia (PVD) is an idiopathic vulvar pain condition characterized by burning pain at the vaginal opening in response to contact or pressure. Previous research has established some of the psychosocial difficulties experienced by these patients, but direct comparisons with other pain conditions are needed. The purpose of this study was to compare women with PVD to those with post-herpetic neuralgia and pain-free control participants. **METHODS:** Participants were invited to complete an anonymous online survey consisting of sociodemographic questions and a range of validated measures. **RESULTS:** Women with PVD and PHN did not differ in terms of pain catastrophizing or pain anxiety, but women with PHN reported greater pain disability than those with PVD. Participants in both pain groups reported significantly more symptoms of stress, depression, anxiety, and sleep disturbances than pain-free controls; women with PHN reported more symptoms of depression than those with PVD, with no other differences between pain groups. Groups did not differ on relationship adjustment, but participants with PVD reported poorer sexual functioning than the other groups. **DISCUSSION:** These results indicate that women with PVD and PHN experience similar mental health difficulties, but women with PHN experience more severe impact on their day-to-day functioning and mood. These results support the classification of PVD as a chronic pain condition, since both the pain groups differed from pain-free control participants on a range of measures. Finally, the presence of mental health difficulties and poorer sexual functioning highlights the importance of conducting biopsychosocial pain assessments.

Interpersonal Goals and Well-Being in Couples Coping with Genito-Pelvic Pain.
Rosen NO, Dewitte M, Merwin K, Bergeron S.
Arch Sex Behav. 2016 Dec 27. doi: 10.1007/s10508-016-0877-1.
https://www.ncbi.nlm.nih.gov/pubmed/28028667

In the context of genito-pelvic pain, consideration of interpersonal goals is particularly relevant given that couples' distress is often predicated upon the relational setting. However, relationship goals have not been examined in this population. We investigated (1) the associations between relationship goals

and women's pain during intercourse as well as the sexual, relational, and psychological well-being of women with provoked vestibulodynia (PVD) and their partners and (2) the moderating role of sexual goals in these associations. Women with PVD (N = 134) and their partners completed measures of relationship goals, sexual goals, sexual satisfaction, relationship satisfaction, and depressive symptoms. Women also reported on their average pain intensity during intercourse. Women with stronger relationship approach goals reported more sexual satisfaction. When the partner pursued more relationship approach goals, both women and partners reported more sexual and relationship satisfaction and partners reported less depression. Stronger relationship avoidance goals in the partner were associated with less sexual satisfaction in women. Several significant interactions showed that the combination of relationship and sexual approach goals was associated with greater relationship and sexual satisfaction, and fewer depressive symptoms, whereas the combination of relationship and sexual avoidance goals was related to lower relationship satisfaction as well as to greater pain during intercourse for women. Targeting relationship approach and avoidance goals as well as those goals specific to sexual activity may improve the quality and efficacy of couples-based psychological interventions for PVD.

Dyspareunia

Assessment of vulvar discomfort with sexual activity among women in the United States.
Flynn KE, Carter J, Lin L, Lindau ST, Jeffery DD, Reese JB, Schlosser BJ, Weinfurt KP.
Am J Obstet Gynecol. 2016 Dec 14. pii: S0002-9378(16)33174-X. doi: 10.1016/j.ajog.2016.12.006.
https://www.ncbi.nlm.nih.gov/pubmed/27988269

BACKGROUND: Multidimensional self-report measures of sexual function for women do not include the assessment of vulvar discomfort, limiting our understanding of its prevalence. In an effort to improve the measurement of patient-reported health, the National Institutes of Health funded the creation of the Patient Reported Outcomes Measurement Information System (PROMIS). This included the development of the PROMIS Sexual Function and Satisfaction measure, and version 2.0 of the Sexual Function and Satisfaction measure included 2 scales to measure vulvar discomfort with sexual activity. **OBJECTIVES:** The objectives of the study were to describe the development of 2 self-reported measures of vulvar discomfort with sexual activity, describe the relationships between these scales and scales for lubrication and vaginal discomfort, and report the prevalence of vulvar discomfort with sexual activity in a large, nationally representative sample of US women. **STUDY DESIGN:** We followed PROMIS measure development standards, including qualitative development work with patients and clinicians and psychometric evaluation of candidate items based on item response theory, in a probability sample of 1686 English-speaking US adult women. We tested 16 candidate items on vulvar discomfort. We present descriptive statistics for these items, correlation coefficients among the vulvar and vaginal scales, and mean PROMIS scores with 95% confidence intervals separately by menopausal status for the 1046 women who reported sexual activity in the past 30 days. **RESULTS:** Based on the psychometric evaluation of the candidate items, we created 2 separate 4 item scales, one to measure labial discomfort and pain and one to measure clitoral discomfort and pain. Additional items not included in the scales assess pain quality, numbness, and bleeding. The correlations between the lubrication, vaginal discomfort, and the 2 vulvar discomfort measures ranged from 0.46 to 0.77, suggesting that these measures represent related yet distinct concepts. In our nationally representative sample, 1 in 5 US women endorsed some degree of vulvar discomfort with sexual activity in the past 30 days. Menopausal status was associated with lower lubrication and higher vaginal discomfort but not with

vulvar discomfort. **CONCLUSION:** The PROMIS Vulvar Discomfort with Sexual Activity-Labial and Vulvar Discomfort with Sexual Activity-Clitoral scales are publicly available for use in research and clinical settings. There is limited overlap between vulvar discomfort and lubrication or vaginal discomfort. The importance of measuring vulvar discomfort as part of a comprehensive assessment of sexual function is underscored by its prevalence

Co-morbid Disorders

Transvaginal Pelvic Floor Muscle Injection Technique: A Cadaver Study.
Gupta P, Ehlert M, Sirls LT, Peters K.
Female Pelvic Med Reconstr Surg. 2017 Jan/Feb;23(1):61-63.
https://www.ncbi.nlm.nih.gov/pubmed/27898454

INTRODUCTION: Women with pelvic floor dysfunction can have tender areas on vaginal examination, which can be treated with trigger-point injections. There are no publications to evaluate the accuracy of pelvic floor muscle injections. **METHODS:** Trigger-point injections were performed on 2 fresh cadaveric pelvises using a curved nasal cannula guide and 7-in spinal needle. This was performed using our standard template of 2 sets of injections at the 1-, 3-, and 5-o'clock positions distally and proximally. The first pelvis was dissected to examine dye penetration. Based on these results, we modified our technique and repeated the injections on the second cadaver. We dissected the second pelvis and compared our findings. **RESULTS:** The 1-o'clock proximal and distal injections stained the obturator internus and externus near the insertion at the ischiopubic ramus. The 3-o'clock injections stained the midbody of the pubococcygeus and puborectalis. The distal 5-o'clock position was too deep and stained the fat of the ischiorectal space. The proximal 5-o'clock injection stained the area of the pudendal nerve. Our goal at the distal 5-o'clock position was to infuse the iliococcygeus muscle, so we shortened the needle depth from 2 to 1 cm beyond the cannula tip. In our second dissection, the distal 5-o'clock injection again stained only the fat of the ischiorectal space. **CONCLUSIONS:** This is the first study to characterize the distribution of pelvic floor muscle injections in a cadaver model and confirms the ability to deliver medications effectively to the pelvic floor muscles.

Vulvar Varicosities: A Review.
Kim AS, Greyling LA, Davis LS.
Dermatol Surg. 2016 Dec 21. doi: 10.1097/DSS.0000000000001008.
https://www.ncbi.nlm.nih.gov/pubmed/28005626

BACKGROUND: Vulvar varicosities (VV) are dilated and tortuous veins occurring within the external female genitalia. Patients may seek treatment of these varices for both medical and cosmetic purposes. In some patients, VV may be associated with a chronic pelvic pain syndrome called pelvic congestion syndrome (PCS). **OBJECTIVE:** To review the English language literature on VV in both pregnant and nonpregnant women. **MATERIALS AND METHODS:** A literature search pertaining to vulvar varicosities and PCS was performed using PubMed and Google Scholar databases. **RESULTS:** There is an overall paucity of literature discussing VV, particularly in nonpregnant women without PCS. Management options for VV include compression, sclerotherapy, embolization, and surgical ligation. Treatment can be dependent on the coexistence of pelvic or leg varicosities and may require referral to a vein specialist for advanced imaging techniques and procedures. Direct sclerotherapy to VV may not provide adequate

treatment if pelvic or leg varices are also present. **CONCLUSION:** In women with persistent VV, imaging studies should be obtained before treatment to evaluate the surrounding venous anatomy of the pelvis and leg, as the results often affect the treatment approach. Patients presenting with VV and chronic pelvic pain should be evaluated for PCS.

Pudendal Neuralgia

Anatomical Variants of the Pudendal Nerve Observed during a Transgluteal Surgical Approach in a Population of Patients with Pudendal Neuralgia.
Ploteau S, Perrouin-Verbe MA, Labat JJ, Riant T, Levesque A, Robert R.
Pain Physician. 2017 Jan-Feb;20(1):E137-E143
https://www.ncbi.nlm.nih.gov/pubmed/28072805

BACKGROUND: Several studies have described the course and anatomical relations of the pudendal nerve. Several surgical nerve decompression techniques have been described, but only the transgluteal approach has been validated by a prospective randomized clinical trial. The purpose of this study was to describe the course of the nerve and its variants in a population of patients with pudendal neuralgia in order to guide the surgeon in the choice of surgical approach for pudendal nerve decompression. **OBJECTIVES:** In order to support the choice of the transgluteal approach, used in our institution, we studied the exact topography, anatomical relations, and zones of entrapment of the pudendal nerve in a cohort of operated patients. **STUDY DESIGN:** Observational study. **SETTING:** University hospital. **METHODS:** One hundred patients underwent unilateral or bilateral nerve decompression performed by a single operator via a transgluteal approach. All patients satisfied the Nantes criteria for pudendal neuralgia. The operator meticulously recorded zones of entrapment, anatomical variants of the course of the nerve, and the appearance of the nerve in the operative report. **RESULTS:** One hundred patients and 145 nerves were operated consecutively. Compression of at least one segment of the pudendal nerve (infrapiriform foramen, ischial spine, and Alcock's canal) was observed in 95 patients. The zone of entrapment was situated at the ischial spine between the sacrospinous ligament (or ischial spine) and the sacrotuberous ligament in 74% of patients.Anatomical variants were observed in 13 patients and 15 nerves. Seven patients presented an abnormal transligamentous course of the nerve (sacrotuberous or sacrospinous). A perineal branch of the fourth sacral nerve to the external anal sphincter was identified in 7 patients. In this population of patients with pudendal neuralgia, the pudendal nerve was stenotic in 27% of cases, associated with an extensive venous plexus that could make surgery more difficult in 25% of cases, and the nerve had an inflammatory appearance in 24% of cases. **LIMITATIONS:** We obviously cannot be sure that the anatomical variants identified in this study can be extrapolated to the general population, as our study population was composed of patients experiencing perineal pain due to pudendal nerve entrapment and their pain could possibly be related to these anatomical variants, especially a transligamentous course of the pudendal nerve. The absence of other prospective randomized clinical trials evaluating other surgical approaches also prevents comparison of these results with those of other surgical approaches. **CONCLUSIONS:** This is the first study to describe the surgical anatomy of the pudendal nerve in a population of patients with pudendal neuralgia. In more than 70% of cases, pudendal nerve entrapment was situated in the space between the sacrospinous ligament and the sacrotuberous ligament. Anatomical variants of the pudendal nerve were also observed in 13% of patients, sometimes with a transligamentous course of the nerve. In the light of these results, we believe that a transgluteal approach is the most suitable surgical approach for safe pudendal nerve

decompression by allowing constant visual control of the nerve.Key words: Surgical, operative technique, pudendal, neuralgia, transgluteal approach.

Lichen Sclerosus

PHOTODYNAMIC THERAPY WITH GREEN LIGHT FOR THE TREATMENT OF VULVAR LICHEN SCLEROSUS - PRELIMINARY RESULTS.

Osiecka BJ, Jurczyszyn K, Nockowski P, Murawski M, Ziółkowski P.

Photodiagnosis Photodyn Ther. 2016 Dec 2. pii: S1572-1000(16)30090-4. doi: 10.1016/j.pdpdt.2016.11.015.

https://www.ncbi.nlm.nih.gov/pubmed/27919664

INTRODUCTION: The standard treatment for lichen sclerosus (LS) is symptomatic and is primarily based on the chronic use of corticosteroids, sometimes resulting in unsatisfactory effects. Therefore, other non-pharmacological methods are being sought, which are less aggravating for the patient. LS can be treated topically by using photodynamic therapy (PDT) based on 5-aminolevulinic acid (5-ALA). Unfortunately, therapy with the red light is often connected with severe local pain during the illumination. Green light can also be characterised by its ability to turn on photodynamic reactions in cells. **MATERIALS AND METHODS:** The aim of this study was an evaluation into the efficacy and tolerance of 5-ALA-PDT with a green light (540nm±15nm) in 11 patients with chronic LS that were characterised by severe itching. The disease lasted from 1.5 to 4 years. All the patients were treated with three sessions of PDT. **RESULTS:** Following treatment with PDT, a significant improvement of local status, as well as a reduction of the main symptom (pruritus), were observed. No patient complained of severe pain during the sessions that would have required an interruption of irradiation or local application of analgesics. **CONCLUSIONS:** Our preliminary results of using green light in PDT for superficial skin non-oncological lesions are very promising but require further studies.

Combined therapy in vulvar lichen sclerosus: does topical tretinoin improve the efficacy of mometasone furoate?

Borghi A, Minghetti S, Toni G, Virgili A, Corazza M.

J Dermatolog Treat. 2017 Jan 8:1-8. doi: 10.1080/09546634.2016.1277178.

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ABSTRACT PURPOSE: To assess efficacy and safety profile of combining a potent corticosteroid with a retinoid in the treatment of vulvar lichen sclerosus (VLS). **METHODS:** We retrospectively compared 21 VLS patients treated with tretinoin (T) in short-contact therapy and mometasone furoate (MMF) (group A) and 20 treated with cold cream (CC) and MMF (group B) for 5 consecutive days/week for 12 weeks. The efficacy parameters were the response rate, the percentage of patients achieving an improvement from baseline of ≥75% in subjective and objective scores and the mean reduction in subjective and objective scores. **RESULTS:** Thirteen patients (75.2%) were considered as responders in group A and 15 (78.9%) in group B; 50% and 61.1% of patients in group A and 100% and 63.1% in group B achieved an improvement of at least 75% in subjective and objective scores, respectively. The scheme combining MMF and CC was better tolerated than the combination of MMF and T. **CONCLUSIONS:** The combination with a topical retinoid did not enhance the effectiveness of a potent corticosteroid in the

treatment of VLS. Either the scarce efficacy of the short-contact therapy regimen or a less favorable safety profile of such combination may account for these findings.

Lichen sclerosus and risk of cancer.
Halonen PM, Jakobsson MI, Oskari Heikinheimo MA, Riska AE, Gissler MV, Pukkala EI.
Int J Cancer. 2017 Jan 25. doi: 10.1002/ijc.30621.
https://www.ncbi.nlm.nih.gov/pubmed/28124469

Malignant potential of lichen sclerosus (LS) has been suspected, but evidence is sparse. We used the population-based Finnish Cancer Registry data to further study this connection. We identified all women with the diagnosis of LS (n= 7,616) listed in the Finnish Hospital Discharge Registry from 1970-2012. The cohort was followed through the Finnish Cancer Registry for subsequent cancer diagnoses until 2014. Standardized Incidence Ratios (SIRs) were calculated for different cancers by dividing the observed numbers of cancers by expected ones. The expected numbers were based on national cancer incidence rates. During the follow-up period, we found 812 cancers among patients with LS (SIR: 1.13, 95% CI: 1.05-1.21). LS was associated with an increased risk of vulvar (182 cases, SIR: 33.6, 95% CI: 28.9-38.6) and vaginal cancer (4 cases, SIR: 3.69, 95% CI: 1.01-9.44). The risk of cancers of the uterine cervix and lung were significantly decreased. LS is associated with an increased risk for vulvar and vaginal cancer. These data are important when designing the care of women diagnosed with LS.