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Urogynecological, neurological, and psychosexual consequences of cycling in women: a narrative review of compressive pathomechanisms and preventive strategies

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Abstract

Background. Despite the growing popularity of cycling among women, pelvic urogynecological and neurological injuries remain an under-researched issue in medical literature, which has historically favored male anatomy. Equipment designed without considering female biomechanics generates pathological compression of perineal tissues.

Aim. This review aims to synthesize evidence on the pathomechanisms of structural vulvar injuries, pudendal nerve compression, and psychosexual dysfunction in female cyclists, and identify preventive strategies based on biomechanical interventions (bike-fitting).

Materials and methods. A systematic literature review of PubMed and PMC databases was conducted. Applying rigorous inclusion criteria (full-text articles, English language, and thematic relevance encompassing female anatomy and biomechanical analyses), 20 peer-reviewed articles were qualified for the final synthesis.

Results. Biomechanical and clinical evidence demonstrates that inadequate saddle width and low handlebars force an anterior pelvic rotation, which drastically increases pressure on perineal soft tissues. This results in a higher incidence of chronic labial lymphedema (bicyclist's vulva) and pudendal nerve compression. While showing no higher rate of overall urinary tract dysfunction compared to other athletes, an increased susceptibility to urinary tract infections (UTIs) has been demonstrated. Furthermore, this compression leads to neuropathy manifesting as a loss of clitoral vibratory sensation, abrasions, and chronic genital pain, which directly contributes to dyspareunia and female sexual dysfunction (FSD).

Conclusions. Equipment individualization through professional bike-fitting (saddle parameters and bicycle geometry) and medical education are crucial for preventing compression injuries. This issue

necessitates a multidisciplinary approach to diagnose and treat intimate ailments and psychosexual health in female cyclists.

Key words: female cycling, pudendal nerve, urogynecology, urinary tract infections, bike-fitting, vulvar edema, pelvic biomechanics, female sexual dysfunction (FSD), psychosexual health

1. Introduction

Cycling, in both recreational and competitive forms, is experiencing an unprecedented surge in popularity among women worldwide. From a public health perspective, regular cycling constitutes one of the most effective forms of preventing lifestyle-related diseases. Comprehensive health impact assessments, based on epidemiological modeling, clearly demonstrate that the benefits derived from this physical activity—including a drastic reduction in cardiovascular mortality risk, improvement in metabolic profile, and reduction in obesity—significantly outweigh potential risks associated with traffic accidents or exposure to air pollution (Johan de Hartog et al., 2010). Nevertheless, despite these unquestionable systemic benefits, this discipline is associated with extreme, often chronic, and non-physiological loading of the structures of the lesser pelvis and the perineal tissues.

In medical and urological literature, gender-specific complications in male cyclists have been extensively documented for many decades. A vast body of scientific research exists analyzing the impact of the saddle on the compression of the pudendal nerves and arteries, which in men directly translates into erectile dysfunction, neuropathy, and prostate pathologies (Humphries et al., 2002). A surprising paradox of contemporary sports medicine is the fact that the urogynecological health of female cyclists has remained a topic marginalized by the academic community. This has led to the emergence of a significant research data gap (the so-called "gender data gap"). This phenomenon has had far-reaching clinical and technological consequences—it led to the establishment of manufacturing and design standards for cycling equipment that favored, and often still favor, exclusively male anatomy, treating women in sports as "smaller men" (Guess et al., 2011).

The primary biomechanical issue generating urogynaecological injuries in female cyclists is the chronic mechanical compression of the perineal soft tissues between the hard surface of the bicycle saddle and non-physiologically positioned bony structures of the pelvis. The specificity of female anatomy is crucial here. Women are characterized by a distinct pelvic architecture: they possess a wider pubic arch and a statistically larger inter-ischial distance (tuber ischiadicum). The use of standard, narrow saddles in their case results in the ischial tuberosities lacking stable support. This leads to a drastic redistribution of body mass – the weight of the torso does not rest on the skeleton but collapses, transferring critical pressure values (saddle pressure) to the anterior perineal compartment and the external genitalia (Lin et al., 2023; Vicari et al., 2025). This situation is further exacerbated by the requirement to adopt a leaned-forward, aerodynamic posture. Reducing the height difference between the saddle and the handlebars

forces a compulsory anterior pelvic tilt, which mechanically crushes the neurovascular structures of the vulva against the pubic symphysis (Leibovitch et al., 2005).

Massive pressure and friction forces generated during multi-hour training units lead to specific chronic pathologies. Clinical evidence collected to date indicates that female cyclists experience progressive compression of the pudendal nerve. Clinically, this manifests as sensory loss (confirmed by studies demonstrating an elevated vibratory sensation threshold within the clitoral region), and in advanced stages – numbness and chronic genital pain, which frequently radiates and translates into psychosexual dysfunction (Fergus et al., 2020; Greenberg et al., 2019; Lui et al., 2021; Warburton et al., 2006). Additionally, mechanical trauma and vascular entrapment disrupt lymphatic and venous drainage, predisposing to the development of structural changes, such as chronic and painful labial edema (a condition known as bicyclist's vulva) (Baeyens et al., 2002). Furthermore, epidemiological studies show that cycling itself constitutes an independent risk factor predisposing athletes to the occurrence of painful epidermal abrasions (saddle sores) and UTIs, which is closely linked to the specific perineal microflora and the shorter female urethra (Gaither et al., 2018).

Research Objective. Given the growing scale of the problem, the increasing participation of women in cycling across all proficiency levels, and the persistently insufficient awareness within the medical community regarding the intimate health of female cyclists, this study formulates two main research objectives. The primary objective is a systematic and multifaceted synthesis of available scientific evidence regarding the impact of interactions with cycling equipment on urogenital, dermatological, neurological and psychosexual pathomechanisms in women. The secondary objective is to identify evidence-based, effective preventive and therapeutic strategies, with particular emphasis on the necessity of multidisciplinary collaboration (gynecologist-urologist-physiotherapist) and the essential modification of the equipment's biomechanical parameters through professional bike-fitting (Chiaramonte et al., 2021).

2. Research materials and methods

2.1. Participants.

Due to the review nature of this work, the study participants are indirectly the populations analyzed in the selected literature. The primary target group in the 20 included scientific articles consisted of female cyclists. Furthermore, populations from cross-sectional and biomechanical studies involving men and women practicing other sports disciplines (e.g., swimming, running) were included in the synthesis. These groups served as essential control material to demonstrate the specificity of female pelvic biomechanics and to identify sex-differentiating pathomechanisms.

2.2. Procedure.

The study was conducted in accordance with the systematized narrative review procedure. The search procedure was carried out in two major medical databases: PubMed and PubMed Central (PMC), using the following keywords in English: female cyclists, pudendal nerve entrapment, bicyclist's vulva, saddle pressure, pelvic floor, biomechanics, urinary tract infections.

To maintain evidentiary rigor (Evidence-Based Medicine), a strict selection procedure was applied. Research papers published in peer-reviewed scientific journals and available in the Open Access model were included in the analysis. Publications hidden behind a paywall were excluded from the final review due to the inability to verify the full methodology, as well as conference reports and duplicates.

2.3. Data collection and analysis.

As part of the data analysis, the 20 selected full-text articles were subjected to qualitative research synthesis to identify urogynecological and neurological determinants. Due to the narrative nature of the literature review, this study refrained from using dedicated statistical software (Statistical Software) and quantitative statistical methods (Statistical Methods).

2.3.1. AI.

AI was utilized for two specific purposes in the preparation of this manuscript: 1. Text analysis of the clinical literature to identify patterns and categorize evidence; 2. Assistance in refining the academic language of the manuscript, ensuring clarity and adherence to scientific writing standards. All AI tools were used strictly as assistive instruments under human supervision. The final interpretation of results, methodology, and conclusions were determined solely by the author.

3. Research results

3.1. Biomechanics and quantitative load distribution in the female pelvis

The key factor determining urogynecological injuries in female cyclists is the direct interaction between the unique anatomy of the female pelvis and the rigid weight-bearing point of the bicycle saddle. Biomechanical literature clearly emphasizes that the evolutionary sexual dimorphism of the pelvis constitutes the foundation of the problem. Females are characterized by a wider inter-ischial distance (ischial tuberosities) and a lower-descending, wider pubic arch compared to males. Research utilizing advanced digital saddle pressure mapping systems, based on sensor mats recording real-time force distribution, has revealed drastic sex differences. The use of standard, narrow saddles (often less than 140 mm in width) causes the wider ischial tuberosities in women to "slip off" the hard supporting platform. This results in a non-physiological redistribution of body weight – the lack of bony support forces the transfer of extreme peak pressure directly onto the delicate soft tissues of the perineum, which are mechanically pressed into the saddle structure (Lin et al., 2023; Vicari et al., 2025).

Quantitative analysis of pressure distribution indicates that while load in male cyclists is concentrated in the posterior part of the saddle, a highly dangerous concentration of pressure in the anterior part (on the so-called saddle nose) is observed in women (Vicari et al., 2025). Furthermore, studies on trunk kinematics prove that cycling position acts as an independent risk modifier. Reducing the height difference between the saddle and the handlebars (handlebar drop), employed to achieve an aerodynamic, leaned-forward posture, forces an anterior pelvic tilt. Such an angular change drastically reduces the space for soft tissues between the inferior pubic rami and the saddle nose, leading to physical compression of the neurovascular structures of the vulva (Leibovitch et al., 2005). Importantly, in the context of equipment design, research shows that popular cut-out saddles, intended to theoretically offload the perineum, often produce the opposite effect in women. The lack of bony support causes the

labia to be forced into the saddle opening, while the edges of the cut-out generate localized shear forces, drastically restricting blood flow and exacerbating edema (Lin et al., 2023).

The final key biomechanical aspect is the response of the pelvic floor muscles (PFM) to dynamic loading. During hours of riding, the pelvis is subjected to continuous micro-trauma and high-frequency vibrations transmitted from the road surface. To maintain trunk stability and protect the pelvic organs from shocks, the PFM enter a state of continuous, reflexive isometric contraction. Prolonged exposure to such forces, without a relaxation phase, leads to the development of chronic hypertonia (excessive muscle tone). An overloaded pelvic floor not only generates pain but also tightens around nerve structures, constituting a secondary, internal damaging mechanism (Scoz et al., 2021; van de Berg et al., 2026).

3.2. Pathophysiology of structural and dermatological vulvar changes

Chronic, repetitive mechanical pressure combined with extreme frictional forces generated during pedaling leads to the development of deep structural pathologies within the female genitalia. The most serious and most extensively documented clinical entity in the literature is chronic lymphedema of the labia, medically classified as "bicyclist's vulva." The pathomechanism of this condition is purely compressive in nature. Prolonged compression of soft tissues between the saddle and the hard structure of the pubic symphysis leads to the constriction of superficial and deep perineal lymphatic vessels. The inability to drain lymph (lymphatic stasis) initially induces acute inflammation and edema, which over time—due to progressive tissue fibrosis—evolves into irreversible, unilateral or bilateral hypertrophy of the labia majora. These changes, described in numerous case studies, are associated with severe resting and mechanical pain and, in advanced stages, require radical surgical interventions such as reduction labiaplasty (Aljuhani et al., 2024; Baeyens et al., 2002; Vicari et al., 2023).

Concurrent with deep tissue destruction, cycling represents a potent stressor for the epidermal barrier. The microclimate developing within the interface between the saddle and the perineum (elevated temperature, lack of ventilation, sweat retention), combined with mechanical friction, leads to epidermal maceration. Advanced epidemiological studies based on large athletic cohorts demonstrate that cycling per se constitutes an independent and highly statistically significant risk factor for the development of infectious urogenital disorders. Female athletes practicing this discipline report a significantly higher susceptibility to painful ulcerations, abscesses, and skin lesions (so-called saddle sores) compared to control groups such as runners or swimmers (Gaither et al., 2018).

Furthermore, the disruption of the protective skin barrier in an environment conducive to pathogen proliferation correlates directly with urological health. The anatomical specificity of the female pelvis—primarily the short urethra—under conditions of continuous mechanical compression of the perineum against the saddle, facilitates the mechanical translocation of bacterial flora and the ascent of microorganisms into the bladder. This translates into an alarmingly high rate of recurrent UTIs among female cyclists, creating a linked infectious focus that requires specialized urogynecological care (Gaither et al., 2018; Husband et al., 2024).

3.3. Neurological deterioration: Biothesiometry and Pudendal Nerve Entrapment (PNE)

From the perspective of sports neurology, the most dangerous and insidious consequence of prolonged cycling in women is progressive pudendal neuropathy (PNE – Pudendal Nerve Entrapment). The pathophysiology of this phenomenon is based on chronic ischemic and mechanical compression of the nerve trunk along its anatomical course. Cycling generates critical pressure on the structures of the lesser pelvis, causing physical compression of the pudendal nerve between the saddle and the sacrotuberous ligament, as well as within the pudendal canal (Alcock’s canal). This phenomenon leads to chronic ischemia of the nerve trunk, which directly results in severe impairments of nerve impulse conduction (Chiaromonte et al., 2021; Humphries et al., 2002).

To objectively measure the degree of nerve damage in female athletes, recent clinical studies utilize biothesiometry—a precise, quantitative method for mapping superficial sensation. This technique involves applying vibratory stimuli of increasing amplitude directly to the structures innervated by the pudendal nerve. These studies provide irrefutable evidence: regular cycling is associated with a statistically significantly higher vibratory perception threshold within the genitals (including the clitoris and labia) compared to control groups, such as runners (Greenberg et al., 2019; Warburton et al., 2006). A significantly higher vibration threshold indicates objectively decreased sensation. This implies that the nerve fibers in female cyclists are impaired as a result of compression, leading patients to require a physical stimulus of significantly greater intensity to register any sensation in this area at all.

Clinical and psychosocial consequences of these structural damages have a drastic impact on the quality of life of women. Extensive survey studies demonstrate that the vast majority of active female cyclists report acute episodes of perineal numbness during or immediately after training (Guess et al., 2011). Although this symptom is often normalized and downplayed within the sports culture, from a neurological perspective, it constitutes the first warning signal of progressive nerve trunk ischemia. In the chronic phase, this numbness transforms into chronic, refractory neuropathic genital pain (pudendal neuralgia). It has been scientifically proven that these dysfunctions are directly and highly significantly correlated with the occurrence of sexual discomfort and pain (dyspareunia), which unequivocally proves that the lack of appropriate equipment-based prophylaxis in cycling leads to serious psychosexual health disorders in female athletes (Fergus et al., 2020; Lui et al., 2021).

3.4. Impact on female psychosexual health and intimate comfort

A reduction in superficial sensation and pain complications within the perineum raise significant questions regarding the impact of cycling on female sexual health. This relationship is complex and is described in the medical literature as paradoxical. On the one hand, general cardiovascular benefits derived from regular physical exertion positively influence vitality and systemic sexual functions. Multicenter epidemiological studies utilizing validated questionnaires (such as the Female Sexual Function Index – FSFI) indicate that active female cyclists do not exhibit a deterioration in overall sexual function, and in some domains, they achieve higher scores compared to non-athletic women (Gaither et al., 2018).

On the other hand, despite general health benefits, local compression injuries constitute a direct factor disrupting intimate comfort at a local level. Studies objectively document that prolonged cycling leads to a significant reduction in sensation (elevation of the vibration threshold) within the genitals, including

the clitoris (Guess et al., 2011). This phenomenon, observed in individuals practicing cycling, is attributed to chronic compression and recurrent ischemia of the perineal area resting against the hard surface of the saddle (Leibovitch et al., 2005).

Consequently, although cycling does not impair general sexual desire in women, the mechanical side effects of this discipline pose significant physical barriers. Chronic genital numbness, the presence of painful skin ulcerations (saddle sores), and edematous states of the labia generate local discomfort and pain, which is identified in the literature as a cause of pain during sexual activity (dyspareunia) and a reduction in the overall intimate comfort of female athletes (Fergus et al., 2020; Gaither et al., 2018).

3.5. Correlation of training volume with symptom severity (Dose-response relationship)

From the perspective of clinical epidemiology, the key evidence confirming the purely mechanical and cumulative nature of urogynecological injuries in cycling is the demonstration of a dose-response relationship. Analysis of multicenter cross-sectional and survey-based studies unequivocally confirms that the occurrence and severity of the described pathologies are directly proportional to the training volume (the so-called risk factor exposure), measured in hours spent in the saddle on a weekly basis and in total career duration (Gaither et al., 2018; Guess et al., 2011).

In studies focusing on urological and sexual functions, a statistically significant risk stratification has been observed: elite female athletes and high-volume amateurs (cycling more than 3 times per week or covering significant distances) report a drastically higher rate of episodes of acute numbness, painful abrasions (saddle sores), and UTIs compared to women who engage in cycling exclusively for recreation (Gaither et al., 2018; Lui et al., 2021). This relationship also applies to structural changes. Chronic labial edema (bicyclist's vulva) and persistent pudendal neuralgia manifest almost exclusively in female cyclists with many years of experience, which confirms that the process of soft tissue fibrosis and nerve sheath degradation is cumulative, requiring a long-term and repetitive compressive stimulus (Baeyens et al., 2002; Chiamonte et al., 2021; Guess et al., 2011). Demonstrating this correlation is of critical practical significance—it proves that these injuries are not the result of incidental training errors, but of chronic exposure to faulty equipment biomechanics, making position optimization (bike-fitting) the most urgent intervention for female cyclists in the highest training load group.

Table 1. Main categories of identified injuries and their pathomechanisms

Category of pathology	Primary pathomechanism (Etiology)	Target structures	Main clinical symptoms and complications	Developmental stage / Characteristics
Dermatological and Urological	Disruption of the epidermal barrier (friction) and microclimate	Perineal skin integument, urethra	Abrasions, ulcerations (saddle sores), facilitated microbial ascent (UTI)	Acute / Recurrent
Structural (Edematous)	Ischemia and compression of venous and lymphatic vessels	Labia, superficial lymphatic vessels	Painful perineal edema, chronic hypertrophy of the labia (bicyclist's vulva)	Chronic / Requiring intervention

Neurological	Mechanical and ischemic compression in Alcock's canal	Pudendal nerve trunk and its branches	Elevated vibration perception threshold, acute numbness, pudendal neuralgia (PNE)	Progressive (cumulative)
Psychosexual	Secondary impairment of pelvic perfusion and nerve conduction	Genitalia (clitoris, vagina)	Pain during intercourse (dyspareunia), difficulty achieving arousal (FSD)	Chronic (often stigmatized)

4. Discussion

This systematic literature review unequivocally demonstrates that the urogynecological and neurological consequences of cycling in women constitute a highly complex clinical problem, extending far beyond the superficial epidermal injuries commonly accepted in sports medicine. A thorough analysis of pathomechanisms reveals that the vast majority of diagnosed conditions—ranging from recurrent UTIs, through chronic lymphedema (bicyclist's vulva), to deep pudendal nerve entrapment (PNE) and secondary sexual dysfunction—share a common, purely biomechanical and compressive etiology. This finding necessitates a complete paradigm shift in the approach to this patient group: transitioning from isolated symptomatic treatment (e.g., antibiotic therapy for UTIs or dermatological treatment of abrasions) to holistic causative treatment.

4.1. The diagnostic gap and the need for targeted clinical anamnesis

The first and foremost area of discussion emerging from the analyzed research papers is the phenomenon of systemic underdiagnosis. Survey-based studies reveal a striking dissonance: while a vast proportion (exceeding 60% in some studies) of active female cyclists experience acute numbness, pudendal neuralgia, and dyspareunia, these issues are extremely rarely reported to specialists in the fields of gynecology or urology (Fergus et al., 2020; Guess et al., 2011; Lui et al., 2021). This phenomenon is multifactorial in origin. On one hand, it stems from a myth entrenched in sports culture, where perineal pain is treated as an "inherent element" of adaptation to cycling. On the other hand, it results from a historical medical gender data gap, which has led to equipment standards being optimized exclusively for male anatomy for decades, thereby normalizing discomfort in women (Guess et al., 2011).

To break this vicious cycle, an urgent update of clinical anamnesis standards is necessary. Primary care physicians, urologists, and gynecologists should routinely include questions regarding cycling activity and training volume for patients presenting with idiopathic vulvar pain, recurrent urinary tract infections, and unexplained pelvic sensory disturbances. As demonstrated in the literature, the identification of this iatrogenic factor allows for the immediate implementation of the most effective form of therapy: modification of the compression environment (Chiaramonte et al., 2021; Gaither et al., 2018).

4.2. Clinical protocol for biomechanical intervention (Medical Bike-fitting)

A key conclusion derived from the literature synthesis is the necessity of regarding professional bike-fitting (digital and biometric optimization of the cycling position) not as a service to improve athletic performance, but as a fundamental first-line medical intervention (Chiaramonte et al., 2021). Based on the analyzed evidence, the preventive and therapeutic protocol for female patients should be based on two absolute pillars:

First: Quantitative optimization of the point of support.

In accordance with demonstrated sexual dimorphism, female pelvic width requires the use of a widened support platform (Burnie et al., 2026). Saddle selection must be strictly preceded by the measurement of bi-ischial width (ischial tuberosity spacing). An appropriately wide saddle acts as a structural "scaffold"—it elevates the pelvis, preventing the collapse of perineal soft tissues and relieving the pudendal nerve from compression (Lin et al., 2023). Furthermore, verification of this setup should be conducted via digital pressure mapping to ensure that peak load has been effectively transferred from the anterior vulvar compartment to the posterior bony structures (Vicari et al., 2025).

Second: Kinematic correction in the sagittal plane.

Saddle replacement alone is insufficient if the torso inclination angle obliterates the perineal space. Biomechanical literature proves that reducing the height difference between the saddle and the handlebars (reducing the so-called handlebar drop) reduces anterior pelvic rotation. Even a minimal elevation of hand position significantly decompresses the neurovascular structures within Alcock's canal and reduces shear forces that generate skin damage and lymphatic stasis (Baeyens et al., 2002; Leibovitch et al., 2005).

Table 2 Detailed guidelines for hardware parameter optimization

Hardware Parameter	Damaging Mechanism (Faulty Setting)	Clinical Consequence	Targeted Intervention (Bike-fitting Protocol)
Saddle width	A profile that is too narrow, preventing support of the ischial tuberosities.	Pelvic collapse, crushing of soft tissues and perineal vascular plexuses.	Saddle selection based on biometric measurement of the distance between the ischial tuberosities (bi-ischiatic width).
Handlebar height	Increased handlebar drop forcing anterior pelvic rotation.	Extreme increase in pressure in the anterior vulvar compartment (pudendal nerve compression).	Reduction of the height difference between the saddle and the handlebars to reduce the degree of anterior pelvic rotation.
Saddle profile (Cutout)	Central cutout in the absence of bony support creating focal shear forces.	Mechanical protrusion of the labia into the opening, exacerbating edema and ischemia.	Verification of pressure distribution using sensory mats (pressure mapping) prior to recommending a cutout.

4.3. The necessity of multidisciplinary rehabilitation

In cases where permanent structural changes have already occurred (such as advanced pudendal neuropathy demonstrated in biothesiometric testing), equipment intervention alone may not provide immediate relief (Greenberg et al., 2019; Warburton et al., 2006). Accumulated scientific evidence indicates the absolute necessity of implementing multidisciplinary care. Therapeutic management must integrate the collaboration of a qualified bike fitter, a sports medicine physician, and a urogynecological physiotherapist. Manual therapy, biofeedback, and targeted relaxation of overloaded and hypertonic pelvic floor muscles (PFM) constitute a critical component of conservative treatment for chronic pelvic pain and pudendal neuralgia in female cyclists (Chiaramonte et al., 2021; Scoz et al., 2021; van de Berg et al., 2026).

4.4. Limitations of the study

Despite maintaining high methodological rigor, this literature review has certain structural limitations. A significant portion of the analyzed papers consists of observational, survey-based studies based on subjective reporting of symptoms (self-reported data) and clinical case reports. In the field of female sports medicine, there is still a deficit of prospective, multicenter randomized controlled trials (RCTs) with long follow-up periods. Additionally, the exclusion from the analysis of articles located behind a paywall may have influenced the narrowing of certain therapeutic aspects. This establishes a definitive direction for future research, which should focus on the objective, clinical evaluation of the preventive efficacy of structured bike-fitting programs.

5. Conclusions

Based on the conducted in-depth and systematic synthesis of scientific evidence, the following final conclusions have been formulated:

1. The interaction of unique female anatomy with inadequate cycling equipment generates drastic compressive forces in the anterior perineal compartment. This constitutes a direct cause of mechanical disruption of the epidermal barrier (saddle sores), facilitating the development of ascending UTIs.
2. Prolonged lack of bony support on the ischial tuberosities leads to chronic compression of vascular plexuses, resulting in lymph stasis and the development of the clinical entity known as vulvar lymphedema (bicyclist's vulva).
3. Adopting an aggressive, aerodynamic position (increased handlebar drop) directly compresses the pudendal nerve, leading to compression neuropathy (PNE). This results in a clinically proven increase in the sensory threshold (loss of sensation), chronic numbness, pain, and secondary psychosexual dysfunctions.
4. Professional biomechanical optimization (bike-fitting), targeted at measuring the distance between the ischial tuberosities and minimizing pelvic rotation, constitutes the most effective causative medical intervention and should be prescribed to patients on par with traditional treatment methods.
5. Addressing the epidemic of underdiagnosed saddle-induced genital injuries requires an immediate reduction of stigmatization during medical history-taking and the implementation of

close collaboration between gynecologists, pelvic floor physiotherapists, and biomechanics experts (Saulicz et al., 2024).

Disclosure

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