Les Lanternes Rouges: The Race for Information About Cycling-Related Female Sexual Dysfunction

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ABSTRACT

Introduction. Cycling is growing in popularity among women. As in men, it is associated with genital neuropathies and decreased sensation in female riders. However, there is a gap in research and information addressing the relationship between cycling and female sexual dysfunction (FSD) in women.
Aims. To review the literature investigating pelvic floor injuries and sexual dysfunction in female cyclists.
Methods. Searches in several electronic databases were conducted, and relevant articles that met the inclusion criteria were identified for critical review.
Main Outcome Measures. The main outcome measure to be determined was the strength of the current body of evidence in published literature of a correlation between cycling-related pelvic floor injuries and FSD.
Results. Data on FSD from cycling-related injuries in women are limited. Research indicates that bicycle setup and riding equipment may be contributing factors. Women's ergonomics and physiology interact differently with the bicycle than men's. Current evidence offers insufficient foundation to recommend various effect-mitigating equipment and products.
Conclusions. While gender-specific cycling products offer a promising direction for protecting women riders, studies addressing FSD and pelvic floor injuries in women cyclists are inadequate to indicate clear etiology or provide treatment recommendations. Current evidence is also insufficient to recommend effect-mitigating equipment and products. **Partin SN, Connell KA, Schrader SM, and Guess MK. *Les lanternes rouges*: The race for information about cycling-related female sexual dysfunction. J Sex Med 2014;11:2039–2047.**

Key Words. Female Sexual Dysfunction; Pelvic Floor Injuries; Bicycling; Pudendal Nerve; Neuropathy

Introduction

Cycling is a popular sport among women and men, serving as a source of recreation and exercise. It provides an excellent moderate-intensity, low-impact form of physical activity. It also imparts all of the health benefits associated with this class of exertion, such as improved cardiovascular fitness, better weight control, and alleviated symptoms of chronic disease [1–4].

The Outdoor Foundation listed bicycling as the second most popular activity by participation in the United States [5], and between 2000 and 2010, U.S. women riding enthusiasts increased by 8% [6,7]. Recent reports suggest that nearly half of

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cyclists are women, and for the first time in U.S. history, women between the ages of 29 and 48 are driving the U.S. bicycling market [7]. While increased popularity in riding among women carries many benefits, cycling-related injuries in female cyclists are not uncommon.

Aims

Women's sexual health in relation to bicycling has concerned society since the popularization of bicycles in the late 1800s. At that time, the medical community primarily focused on protecting female sexual purity from the undue stimulation believed to be caused by the saddle [8]. Physicians advocated and recommended that females adopt an erect sitting position on the bike and a crotchless saddle design in order to avoid any prurient arousal [8]. In the more than a century that has since passed, increasing evidence supports a possible correlation between cycling and abnormal sexual function in women. The purpose of this article is to provide an overview of the current body of evidence addressing pelvic floor injuries and female sexual dysfunction (FSD) in women cyclists.

Methods

Search Scope

Literature searches were performed in PubMed, MEDLINE, Google Scholar, Academic Search Complete, and EBSCO databases, as well as MasterFILE Premier, using the key terms "cycling," "female pelvic floor," "female sexual dysfunction," "pudendal nerve," "cycling nerves," "cycling blood supply," "saddle pressures" and "cycling-related neuropathies." The bibliographies of all papers identified using the defined search terms were reviewed, and any articles that were full articles and deemed relevant based on the abstract or title were obtained and reviewed for eligibility.

Inclusion Criteria

In 1998, the Sexual Function Health Council of the American Foundation of Urologic Disease convoked 19 sex experts from five countries in order to evaluate and revise the definition for FSD [9]. These experts developed a consensus approach to improve treatment efforts for women and to address the paucity of research on FSD. This resulted in an expanded definition of FSD including classifications into psychogenic and organic causes, as well as the addition of a personal distress criterion to the fourth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) and the 10th revision of the World Health Organization's International Classification of Diseases (ICD-10) [9,10]. Their results were published in the *Journal of Urology* [9]. In order to adequately and fully compile all articles relevant to the progression of knowledge involving pelvic floor injuries and sexual dysfunction in female cyclists, articles dating from 1998 and onward are included in this review. All articles that evaluated the impact of cycling on genital injuries or sexual function in women that were published in or translated into English during the designated time period were considered eligible and reviewed in this manuscript. Table 1 provides an overview of all of the studies included in this review. The overall level of evidence supporting the various bicycle modifications was determined using the U.S. Preventive Services Task Force's levels of evidence for clinical and observational studies (see Table 2) [11].

Results

Potential Mechanisms of Pelvic Floor Injuries and FSD Resulting from Cycling

Current evidence suggests that central and peripheral neurological responses and vascular modifications play an essential role in the normal sexual response [2,12–17]. Altered nerve conduction and reduced blood flow to the vagina and clitoris can result in delayed vaginal engorgement or in pain or discomfort with intercourse, as well as diminished vaginal lubrication, reduced vaginal and clitoral sensation, and anorgasmia [16,18–20]. While this is usually associated with atherosclerotic vascular disease, factors unique to cycling can also predispose women to neurovascular injuries and may lead to FSD [16,20].

Prevailing evidence suggests that neurovascular damage occurs during cycling as a result of chronic compression of the genitals against the saddle [13,21]. In 1987, pudendal nerve entrapment was first described in a male cyclist who reported transient genital and perianal paresthesia and hypoesthesia. At the time, the symptoms were attributed to compression of the pudendal nerve in Alcock's canal [21]. However, newer studies have emerged suggesting that pudendal nerve injury results from stretching of the nerve during pedaling, as it spans between the sacrospinous and

Table 1 Summary of eligible studies addressing pelvic floor issues and cycling

Study	Study design	Study population	Subject assessed	General findings
[2] Guess 2006	Cross-sectional	Women (N = 70): runners (n = 22), cyclists (n = 48)	Effect of riding on saddle pressures and genital sensation	Bicycling is associated with increased perineal pressures and decreased genital sensation.
[3] Partin et al. 2012	Cross-sectional Secondary analysis	Cyclists: women (N = 48)	Effects of bicycle setup and cyclists' attributes on saddle pressures and genital sensation	Handlebars being positioned in the drops is significantly associated with increased perineum pressures and decreased genital sensation.
[20] Battaglia et al. 2009	Case series	Women (N = 6): mountain bikers (n = 4), horseback riders (n = 2)	Clinical and sexual impact of chronic trauma on the clitoris	Chronic trauma is associated with clitoral microhematomas, inflammation, and/or degenerative processes.
[24] Potter et al. 2007	Cross-sectional	Cyclists (N = 22): men (n = 11), women (n = 11)	Influence of gender, power, hand position, and ischial tuberosity width on saddle pressure during seated stationary cycling	Significant gender-related differences occur in saddle loading, especially in the drops, as more weight is supported by anterior pelvic structures.
[25] Sauer et al. 2007	Cross-sectional	Cyclists (N = 26): men (n = 12), women (n = 14)	Effects of gender, power, and hand position on pelvic motion	Pelvic motion occurs naturally in both genders, but women have greater average anterior tilt than men.
[26] Baeyens and Vermeesche-Bourgeois 2002	Case series	Cyclists: women (N = 6)	Cycling-related injuries to the labium major	Lymphatic damage results from compression of the groin area and repetitive skin infections.
[27] Frobose et al. 2003	Cross-sectional	Cyclists: women (N = 12)	Comparison of gel-cushioned, traditional, and partial-cutout saddles on pressure distribution in two cycling positions	Upright positioning is associated with increased comfort and decreased pressure in the genitalia. The partial-cutout saddle increases pressure on the central part of the perineum.
[28] Humphries 2002	Case series	Cyclists: women (N = 4)	Unilateral vulval hypertrophy in competitive female cyclists	Unilateral vulval enlargement appears frequently in cyclists as a result of biomechanical factors.
[29] Munarriz et al. 2002	Cross-sectional	Women (N = 13)	Characteristics of sexual dysfunction resulting from blunt perineal trauma	The exhibited decreased genital sensation implies a connection between pudendal nerve injury and sexual dysfunction.
[30] Lowe et al. 2004	Cross-sectional	Police cyclists (N = 33): men (n = 32), women (n = 1)	Comparison of saddle designs (complete-seat noseless, split-seat shortened-nose, split-seat noseless) with a traditional saddle with regard to effects on seat, pedal, and handlebar pressure	Noseless saddles significantly reduced pressure to the perineal area. The degree of pressure to the perineal area is influenced by saddle geometry and shape.
[31] Schrader et al. 2008	Prospective Cohort	Police cyclists: men (N = 121)	Effectiveness of a noseless saddle design	Noseless saddles effectively reduced pressure to the perineal area.
[32] Guess et al. 2011	Cross-sectional Secondary analysis	Cyclists: women (N = 48)	Correlations between saddle design, seat pressure, and genital nerve function	Cutout and narrower saddles negatively affect saddle pressures.
[38] Keytel and Noakes 2002	Cross-sectional	Cyclists (N = 11): men (n = 5), women (n = 6)	Comparison of a traditional saddle and a shortened-nose guttered seat with regard to comfort and pelvic floor issues	The nontraditional saddle is more comfortable and alleviates saddle-related issues.
[39] Jeong et al. 2002	Cross-sectional	Cyclists: men (N = 20)	Wider and narrower saddles' effects on penile blood flow during cycling	The narrower saddle is associated with significant reductions in penile blood flow and factors into vasculogenic impotence.
[41] Schwarzer et al. 2002	Cross-sectional	Cyclists: men (N = 20)	Influence of a traditional narrow saddle with liberal padding, a traditional narrow saddle with middle groove, a wide unpadded seat, and a women's noseless padded saddle on penile perfusion	Saddles can relieve encumbrances to penile blood flow by offering sufficient support to the perineal area. Saddle width is an important factor in protecting penile perfusion. Using a noseless saddle is an effective method to avoid decreased penile blood flow.
[42] Bressel and Larson 2003	Cross-sectional	Cyclists: women (N = 20)	Comparison of influence of traditional saddle and partial and complete cutouts on pelvic angle, trunk angle, and comfort	Partial- and complete-cutout saddles increase anterior pelvic tilt. The partial-cutout design feels more comfortable than others. Increased saddle width and complete-cutout design increase trunk flexion angles.
[44] Breda et al. 2005	Cross -sectional	Cyclists: men (N = 29)	Maintenance of penile blood flow with a modified-nose partial cutout and a simpler partial cutout	The modified-nose partial-cutout saddle is protective of penile perfusion.
[36] Carpes et al. 2009	Cross-sectional	Cyclists (N = 22): men (n = 11), women (n = 11)	Effects of two different workloads and use of a traditional saddle vs. a partial-cutout saddle on saddle pressures	Saddle pressures increase with workload. Partial-cutout saddles may provide some protection for women under certain conditions.
[46] Carpes et al. 2009	Cross-sectional	Cyclists (N = 22): men (n = 11), women (n = 11)	The effect of trunk position on saddle pressures using traditional and partial-cutout saddles	Lower saddle pressures occur when men are in a forward position on a partial-cutout saddle. No relationship between trunk position and saddle pressures was found in women.
[45] Bressel and Cronin 2005	Cross-sectional	Cyclists (N = 19): men (n = 10), women (n = 19)	Baseline pressure measurements and patterns during different workloads and hand positions	Men and women respond differently to the influence of various workloads and hand positions. Specific trial pressure measurements are reliable and valid statistically.
[43] Buller 2001	Cross-sectional	Cyclists: women (N = 52)	Effectiveness of an ergonomically designed experimental bicycle seat	The saddle design provided noticeable relief to perineal symptoms.

Table 2 U.S. Preventive Services Task Force grades of evidence

Level	Definition
A	The strength of evidence indicates a substantial benefit. Findings are based on consistent results derived from well-designed and well-conducted studies in appropriate cohorts that directly analyze effects on health outcomes.
B	The strength of evidence indicates a moderate benefit. Evidence is sufficient to identify effects on health outcomes; however, there are limitations on the amount, generalizability, quality and consistency of individual studies.
C	The strength of evidence does not clearly indicate a benefit. Evidence is unsatisfactory to identify effects on health outcomes and is limited by the power of the study, amount of studies, weakness in the support for underlying suppositions or lack of generalizability.

sacrotuberous ligaments, as well as compression of the nerve against the saddle where it innervates the perineum and symphysis [22].

Unfortunately, one cannot adequately infer etiology or treatments for pelvic floor injuries or altered sexual function in women based on male studies. Literature indicates that there are significant gender-specific anatomical differences that affect how the bodies of women and men interact with the bicycle [23]. Specifically, women have a wider pelvis and a lower center of gravity and demonstrate a greater pelvic tilt when riding [24,25]. In novel work, Potter et al. also identified substantial differences in saddle pressure distribution between male and female riders [24].

While cycling may not produce the same effects in women as in men owing to the dramatic differences in pelvic anatomy and overall physique, several studies have identified pathology resulting from neurovascular compromise in the pelvic floor of female cyclists. In 2002, Baeyens et al. reported on an observation in six female professional cyclists that they described as "bicyclist's vulva." This was characterized by permanent unilateral swelling of the labium major that was associated with chafing, folliculitis, and nodules. The symptoms were more pronounced after longer training sessions and were thought to result from impaired lymphatic drainage in the genital region [26]. To further explore the relationship between riding and neurovascular compromise, a study by the Brugmann University Hospital in Brussels, Belgium, assessed more than 60 competitive female cyclists and found that one in six of the women suffered from lymphatic swelling, with 70% of the remaining participants reporting other groin-related issues, including chafing, folliculitis, nodules, and temporary insensitivity of the clitoris [27]. In addition, Humphries reported that unilateral vulval hypertrophy is more common among competitive female cyclists than in the noncycling population [28]. Finally, in the first comparative study of female cyclists, a global decrease in genital sensation was identified at eight sites along the perineum in competitive cyclists when compared to a control group of competitive runners [2]. In this study, however, none of the cyclists or runners reported sexual dysfunction.

Work by Munarriz et al. also suggests that pudendal nerve insults may occur following an incidental trauma during cycling [29]. These authors reported that 77% of bicycle injury cases were caused by incidental pelvic floor trauma, most commonly involving the crossbar. They studied 26 women exhibiting FSD with and without a history of blunt perineal trauma; they concluded that blunt perineal trauma leads to a marked decrease in genital sensation [29]. Owing to the fact that all of the women in this study had sexual dysfunction, an assessment of the contributory effect of altered genital sensation on FSD in the cyclists could not be determined. While it is conceivable that sustained increases in genital pressure and altered genital sensation could result in altered sexual function, the level of evidence to substantiate this supposition is currently grade C.

Evidence Supporting the Role of Bicycle Accoutrements Affecting Pelvic Floor Injuries and FSD in Women

The ergonomics of the traditional cycling position and typical saddle designs result in the perineum being tasked with bearing the weight of the rider [2,3,30–36]. Owing to their anatomy, women experience dramatic changes in the positioning of and pressure on their perineum when riding [24]. As such, several riding-related factors, including the configuration of the saddle and the positioning of the handlebars, have been implicated as contributing to female pelvic floor injuries during riding.

Saddle Design

Recent innovations have produced numerous saddle designs developed specifically to alleviate saddle-related chronic injuries in female riders [24,32,37,38]. These innovations include increasing the width of the posterior aspect of the saddle

to accommodate women's greater ischial tuberosity (IT) widths, adding gel to cushion the saddle, and removing sections of the saddle that come in contact with the perineum. Despite the many advances, limited research has been published supporting the effectiveness of many of these modernizations in protecting the female pelvic floor.

While several studies have reported that narrow saddles lead to perineal injuries in men [23,37,39–41], the supposition that, like men, women will benefit from using a wider saddle has only been supported in a few cross-sectional studies [24,32]. In a subgroup analysis of competitive female cyclists, narrower saddles were associated with increased peak perineal and mean total saddle pressures when compared with traditional saddles after adjusting for age, body mass index, and saddle design [32]. However, in the aforementioned study, saddle width was not associated with changes in neurologic function in the genitalia or with FSD [32]. Potter et al. assessed the influence of gender, power, hand position, and ischial tuberosity width on saddle pressures in 22 experienced cyclists (11 men and 11 women) [24]. All of the riders were evaluated on a traditional saddle, while 9 of the 11 female riders were also tested on an alternate saddle that was marketed as a traditional saddle designed specifically for women. The saddle was wider in the rear and transition region and had increased compliance in the perineal region. With the "female-specific" saddle, notable reductions (32%) in the normalized anterior maximum pressure were recorded. This encourages the notion that wider saddles that also offer more perineal compliance design elements are better for women, with the authors positing that they provide better bony support owing to their ability to accommodate women's greater ischial tuberosity widths [24]. Further research is needed to determine the correlation between wider saddles and perianal compliance elements in relation to saddle pressures. Unfortunately, this study was very small, and exposures were different for men and women. Thus, while evidence appears to indicate that a wider saddle is effective in relieving compression of the pudendal nerve, the short- and long-term effects of wider saddles on nerve function and FSD have not been confirmed.

Forbrose et al. assessed the effects of two saddle types on perineal pressure in women, comparing a gel-cushioned saddle design with intact nose against a partial-cutout saddle design (the anterior–medial section of the saddle was removed) [27]. They reported that the gel saddle distributed pressure over a larger surface area. They also noted that the majority of women found the gel cushion saddle more comfortable compared to the cut-out saddle design. As this study was limited to a cross-sectional evaluation of 12 women, more research is needed to fully evaluate the effectiveness of gel saddles in alleviating pain, pressure, or neuropathies and protecting against FSD.

Bressel and Larson evaluated the effects of traditional, partial-cutout, and noseless (the entire nose of the saddle was removed) saddles on pelvic floor pressure in women in both the "tops" (i.e., hands resting on top of the handlebars) and "drops" (i.e., hands resting at the bottom of the handlebars) hand positions [42]. They reported that while both saddle designs allowed for increased anterior pelvic tilt angles, the cyclists found the partial-cutout to be the most comfortable. Although the noseless saddle favorably increased trunk flexion angles, which should potentially decrease stress on the lumbar spine, it was reported as being the least comfortable by the riders [42]. The investigators speculated that cyclists might find the noseless saddle uncomfortable due to a perceived insecurity from the inability to rely on the anterior region of the saddle for stability and steering. They opine that the partial-cutout saddle is a suitable compromise, as it increases anterior tilt yet is very similar in shape to the traditional saddle [42].

Interestingly, Frobose et al. found that the partial-cutout saddle did not alleviate or change the pressure applied to the central part of the saddle. In fact, they noted that the highest saddle pressures were found in the central aspect of the saddle, around the edges of the hole, when women rode in the racing position on partial-cutout saddles (40 degrees from the horizontal) [27]. Researchers speculate that in the bent-over position, the edges of the cut-out portion of the saddle cause higher pressure to the outer genitalia, leading to increased discomfort [27]. Previous work by our group also suggests that higher pressures are distributed along the hole of partial-cutout saddles. Additionally, our work showed that mean and peak perianal pressures were significantly higher in partial-cutout saddles as compared with traditional saddles [32]. It is important to note, however, that our study was unable to elucidate a significant relationship between saddle design and neurological or sexual function among our participants. The current body of evidence strongly suggests that partial-cutout saddles do not confer a protective effect on the female perineum.

Amid these studies evaluating the effects of cutout saddle designs on pelvic floor support, cycling equipment designers and researchers are experimenting with modifying the nose of the saddle. The Murray Orthoped bicycle saddle and shortened-, absent-, and downward-deviating-nosed saddles [30,37,42] are among the newest attempts to try to relieve pressure on the perineum. In a study evaluating saddle design, Buller reported that a sample of female cyclists (n = 52) experienced relief from genital pain, numbness, and discomfort using the study's experimental, ergonomically designed saddle [43]. While these new saddles sound promising, studies assessing their effects on the perineum have either been very small [37] or only included male subjects [30,44]. It is important to understand how these saddles influence genital pressures, genital sensation, and pelvic floor symptoms in order to fully understand any protective factor they may provide.

Bicycle Setup

Cycling enthusiasts as well as researchers advocate proper bicycle fit [24,27,37,34], and classic bike-fit certifications and hardware setup instructions ("fit kits") offer similar basic body position recommendations, modified for recreational and competitive cyclists. However, given the wide range of body types, body weight, and weight distribution and the influx of newer, faster, and lighter bicycle designs, the precise definition of proper fit is continually evolving. While there are bike fits designed for specific bicycles and their corresponding activities, such as mountain biking, track racing, and cyclocross racing, the current body of literature chiefly addresses road cycling. Currently, there are two typical bicycle fits for cycling on roads, a competitive fit and a recreational fit. A competitive or racing fit is geared towards making the cyclist as aerodynamic as possible; the rider is bent over more, and the handlebars tend to be lower than the saddle. A recreational fit accommodates the cyclist's comfort needs more than aerodynamic needs for speed; the rider sits up more, and the handlebars tend to be higher than the saddle. In a subanalysis, our group examined the effect of bicycle setup on genital sensation and saddle pressures in female cyclists. We showed that handlebars positioned lower than the saddle are associated with increased perineal pressures and decreased genital sensitivity [3]. Another study reported that the female subjects were more comfortable when sitting in a more upright position. The researchers theorized that the upright position allowed their ischial tuberosities to support more of their weight [27]. Ultimately, a bicycle setup that encourages the rider to lean his or her pelvis forward, either by a lower placement of handlebars or by saddle design and orientation, forces the perineum to bear an increased load and suffer detrimental effects [3,24,42].

In addition to wider ischial tuberosity widths, females have other gender-based pelvic differences from men [25]. Sauer et al. investigated the effect of the relationship between hand position (drops vs. tops) and power on pelvic motion in experienced cyclists (12 men and 14 women). Findings indicated that in female (but not male) riders, the pelvis moves substantially when in the saddle and has a greater anterior tilt and nonsagittal pelvic rotation, resulting in increased anterior pelvic pressure, when the hands are in the drops position compared with the tops position [25]. Bressel and Cronin also found that women (n = 10) riding stationary bikes exhibited higher peak saddle pressure in the anterior region of the saddle when they moved from the tops to the drops compared with men [45]. The authors speculate that women's lower center of gravity may inhibit any load transfer to the handlebars. Interestingly, a study by Carpes et al. found that trunk position only influenced saddle pressures in male riders (n = 11) when shifting between a 90° position (relative to the handlebars) and a 60° position on traditional and partial-cutout saddles [46]. Saddle pressures were unaffected by either trunk position or saddle type in the female sample (n = 11). While these findings appear to contradict previous studies recommending cyclists take a more upright position in order to relieve pressure [3,22,24,27,42], they nonetheless underscore the differences in men's and women's anatomy and how their bodies interact with the bicycle. These studies support the notion that bicycle position may play an important role in pelvic floor pathology and potentially affect sexual function in some women. However, none of the aforementioned manuscripts evaluated the effects of bicycle setup on sexual function. More research is needed to fully elucidate recommendations for a specific bike fit that can help protect women from bicycle-related sexual issues.

Breakaway Remarks

Literature has gradually evolved recommending bicycle modifications to decrease genital injury and prevent sexual dysfunction in women

[3,23,24,32,33,37,38,42,44]. However, to date, evidence suggests that most of these recommendations are without sound scientific merit. There is level B evidence to suggest that wider saddles offer better protection than narrow saddles and that partial-cutout saddles offer the least protection against high pressures in the perineal region when compared with traditional and wider saddles [24,32]. Selecting an apropos saddle width is recommended; however, further evidence is needed in determining an effective method to ensure ischial tuberosity width is appropriately assessed and a well-suited saddle choice is made. While the body of literature indicates the importance of perineal region compliance, it does not adequately elucidate the concept. Further research is needed to establish the optimal compliance needed to confer protection for women riders.

The noseless saddle offers a novel strategy by removing the area of the saddle that would normally compress the genitalia. This design offers a bona fide construct to eliminate pressure in the perineum and can be beneficial for women who experience pain or numbness in the genitalia. It is important to note, however, that no studies have identified a correlation between saddle design or genital pressure and sexual dysfunction in women. It is also premature to advocate the use of gel padding or a saddle with a modified nose without studies in women to support the theorized benefit.

Changing handlebar height may be one of the most immediate sources of relief. This modification is supported by level B evidence that handlebars placed above the saddle reduce perineal pressures and protect against reduced genital sensation as compared with riding with hands in the drops position. Unfortunately, riding in a more upright position does not provide the aerodynamic efficiency sought by most competitive riders and thus may not be a suitable option for all riders. It is important to note that most studies to date have been very small, and several lack standardized interventions that allow for gender-stratified intragroup comparisons. Before strong recommendations can be made about the best bicycle setup and saddle design for all women, there is a strong need to utilize appropriate selection strategies that will yield representative samples for both recreational and professional female cyclists.

Conclusion

The present body of literature underscores the importance of staying alert to the details when designing saddles and devising fits to accommodate the female anatomy and cycling biomechanics. Undoubtedly, women have fallen to the back of the race in terms of elucidating cycling's effects on sexual health. Research involving larger study populations of both recreational and professional female cyclists is essential to gaining a better understanding of these potential associations. The medical community, through an evidence-based approach to understanding potential short- and long-term effects of cycling on female sexual health, can make an important impact on FSD and change women's sexual health from the *lanterne rouge* to the *maillot jaune*.

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