



# #501 Stress urinary incontinence in nulliparous female athletes – identifying causes using the physiotherapeutic process

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## Hypothesis / aims of study

High-impact sports like gymnastics, trampolining, and volleyball increase the risk of stress urinary incontinence (SUI) in female athletes. SUI prevalence varies by sport and measurement methods, with rates as high as 80% in trampolining. (1) Affected athletes often conceal symptoms due to shame, using coping strategies like pads, dark clothing, or reduced fluid intake. Many lack access to appropriate guidance, affecting their quality of life. (2) The aim of this paper is to identify physical aspects that lead to urinary incontinence in nulliparous female athletes from the perspective of Austrian physiotherapists.

## Study design, materials and methods

In this qualitative study five Austrian physiotherapists who have treated at least one nulliparous female athlete with SUI were interviewed. The appointments were arranged via email and written consent forms were obtained prior the online meeting. The interviews were conducted via Microsoft Teams, using a structured interview guide. The collected data were first transcribed and then deductively analyzed using framework analysis based on the physiotherapeutic process form physioaustria.



A hypertonic pelvic floor is a common characteristic of female athletes with SUI.



## Results

Characteristics of the athletes
<ul style="list-style-type: none"><li>training 4x/week</li><li>high-impact sports (volleyball, marathon, horse-riding, track &amp; field, gymnastics)</li><li>age between 15 and 35 years old</li></ul>

Categories	Results
Medical history	<ul style="list-style-type: none"><li>No prior diagnosis</li></ul>
Physiotherapeutic assessment	<ul style="list-style-type: none"><li>Anamnesis and questionnaire</li><li>Pad test</li><li>Vaginal palpation</li><li>Hip movement and SLR</li></ul>
Physiotherapeutic diagnosis	<ul style="list-style-type: none"><li>Hypertonic pelvic floor</li><li>Fatigue of the pelvic floor</li><li>Reduced ability to contract and relax the muscles</li><li>Reduced coordinated co-contraction of abdominal muscles and pelvic floor</li><li>Leakage mainly in luteal phase</li></ul>
Treatment	<ul style="list-style-type: none"><li>Tension regulation (stretching, triggerpoint-massage)</li><li>Pelvic floor training</li><li>Pre-Timing and Co-Contraction</li></ul>
Success control	<ul style="list-style-type: none"><li>Continence or reduced leakage</li></ul>

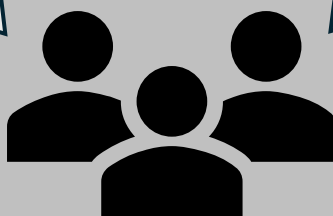
## Interpretation

The study shows that physical aspects such as a hypertonic pelvic floor, fatigue of the pelvic floor muscles, hormonal fluctuations or a lack of coordination of the abdominal and pelvic floor muscles contribute to SUI during sports. SUI affects the quality of life of female athletes, but it often takes a long time for those affected to seek help. Current treatment strategies are primarily conservative and focus on behavioral changes, detonation of the pelvic floor muscles and pelvic floor training. If the potential causes are known, SUI in female athletes can be reduced by physiotherapeutic treatment. To prevent incontinence, education of athletes, coaches and health care professionals is needed. A program promoting awareness and control of the pelvic floor would be advantageous and targeted strengthening but also relaxing the pelvic floor muscles should be an integral part of training. (3)

The study also encountered limitations. The interview guideline designed for conducting expert interviews provided a framework that may have overlooked certain relevant themes related to the topic. Some of the treated athletes described a gush-like loss of urine whereas others only mentioned a dribbling of urine. The cause of these differences could not be identified.

“What also didn't work was the coordination of the pelvic floor and transversus abdominis.” (E4, L.123-124)

“There was never one that was hypotonic. They tended to be hypertonic in varying degrees.” (E1, L. 95-96)



“They would have had good strength if they had known how to let go of the pelvic floor.” (E2, L.102-103)

## References

(1) Almousa, S., & Bandin Van Loon, A. (2019). The prevalence of urinary incontinence in nulliparous female sportswomen: A systematic review. J Sports Sci, 37(14), 1663-1672. <https://doi.org/10.1080/02640414.2019.1585312>

(2) Jácome, C., Oliveira, D., Marques, A., & Sá-Couto, P. (2011). Prevalence and impact of urinary incontinence among female athletes. Int J Gynaecol Obstet, 114(1), 60-63. <https://doi.org/10.1016/j.ijgo.2011.02.004>

(3) Pires, T., Pires, P., Moreira, H., & Viana, R. (2020). Prevalence of Urinary Incontinence in High-Impact Sport Athletes: A Systematic Review and Meta-Analysis. J Hum Kinet, 73, 279-288. <https://doi.org/10.2478/hukin-2020-0008>