

The effect of high impact exercise on stress urinary incontinence in physically active women

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INTRODUCTION: Stress urinary incontinence (SUI) is a condition in which increased abdominal pressure with coughing, laughing, sneezing, or exercise can cause unintentional leakage of urine in the female population. CrossFit and other high impact aerobic exercises, are popular forms of exercise amongst women all age groups. The purpose of this study was to examine specific high impact exercises that can affect SUI in women.

MATERIALS AND METHODS: A cross-sectional study was conducted with physically active women. Participants were surveyed regarding their activity levels, history of pregnancies, and symptom severity based on the Incontinence Symptom Severity Scale (ISSS). Subjects were also surveyed regarding the frequency and severity of leakage during common high impact exercises (box jumps, burpees, jumping rope, double unders, thrusters, squats without weights, weighted squats, running, and trampoline) as well as mechanisms used to prevent SUI. Participants were stratified based on parity, forms of exercise (Crossfit vs. high-impact

aerobics), and severity of SUI during exercise.

RESULTS: 104 patients participated in this study with a mean age of 29.55 (range 18-59). All participants suffering from SUI were in the Crossfit group and none in the high-impact aerobic exercise group ($p < 0.001$). Previously pregnant women had higher ISSS scores ($p = .0006$) and more severe SUI during all exercises ($p < 0.001$) especially with jumping rope, double unders, and thrusters compared to nulliparous women ($p = 0.007$; $p = 0.003$; $p = 0.029$, respectively). Squats without weights and running were the only exercises not significantly associated with SUI. A reduction of caffeine intake and wearing dark pants were mechanisms that were consistently used to address SUI ($p < 0.05$).

CONCLUSION: There is a higher risk of SUI during high-impact exercise in women participating in Crossfit compared to other aerobic exercises regardless of parity. When comparing to jumping rope, double unders, and thrusters, squats without weights and running had a lower incidence of SUI. The results of the study will provide helpful recommendations to women engaging in high-impact exercises to prevent SUI.

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