

## PREVALENCE OF STRESS URINARY INCONTINENCE IN WOMEN PRACTICING REGULAR PHYSICAL ACTIVITIES IN GYMS

### Hypothesis / aims of study

The aim of this study was evaluate the prevalence of stress urinary incontinence (SUI) in women that practicing regular physical activities in gyms and evaluate which factors are associated with the presence of SUI.

### Study design, materials and methods

Was performed a quantitative, cross-sectional, observational study which evaluated women practicing regular physical activities in gyms registered in the prefecture of our city. 88 gyms were found, with a total population of 11003 women (mean 132.57 + 152.95).

Were drawn 20 academies randomly and held a proportionate collection. Were eligible for the study women aged greater than or equal 18 years, practicing the activity at least three months, weekly frequency greater than or equal to twice, and the session length greater than or equal to 50 minutes. Volunteers who underwent treatment for strengthening the pelvic floor muscles (PFMs) or who underwent a surgery for lower urinary tract symptoms (LUTS) were excluded.

To assess stress urinary incontinence was applied the International consultation on incontinence questionnaire - short form (ICIQ-SF). Was registered subjectively weight and height and then calculated the body mass index (BMI).

For a quantitative assessment of the back pain, visual analogue scale (VAS) was used. The type of physical activity, type and number of births and abortions, menopausal status and hormone replacement therapy (HRT), use of diapers or pads daily and constipation was characterized.

The minimum sample size was calculated, and found a number of 362 women, considering the prevalence of urinary incontinence in women by 30%, a confidence interval of 95%, a margin of error of 5% and a theoretically infinite population. The significance of associations between variables with urinary incontinence was assessed with chi-square test. The variables that had values below 5% were included in the logistic regression model.

### Results

Were evaluated 362 women with a mean age of 36.3 ± 14.7 years (18-85 years), mean BMI of 24.3 ± 4.2 kg/h<sup>2</sup> (16.8 to 42 kg/h<sup>2</sup>). The prevalence of SUI was 15.2%. 20.8% reported that this symptom interferes in their lives. The prevalence of low back pain has reached 79.2% of women. In relation to pregnancy, 62.7% were nulliparous, 14.4% had vaginal delivery, 9.9% of women had at least one abortion. 9.3% were menopausal, and only 5% with HRT and 32% had constipation.

Variables that showed statistical significance in the bivariate analysis correlated with SUI were age, practicing the Pilates method, dance classes, jump fit training, step training, abdominal training, pregnancies, deliveries, abortions, menopause, hormone replacement and low back pain. However, in logistic regression analysis, the presence of SUI was associated only with four variables: Pilates method as a protective factor for SUI and jump fit, vaginal delivery and low back pain as risk factors (Table 1).

TABLE 1 - Logistic regression of the variables that were statistically significant in the bi variable model for women with stress urinary incontinence.

Variables	P-Value	Odds Ratio (OR)	95% Confidence Interval	
			Baixo	Maior
Pilates Method	0,027	0,39	0,174	0,900
Jump Fit training	0,036	2,11	1,052	4,325
Low Back Pain	0,043	1,94	1,022	3,597
Vaginal delivery	0,0001	4,10	1,903	8,837

### Interpretation of results

Women practitioners of Pilates method arrived to present 61% less likely to have SUI, while practitioners Jump Fit arrived to present 111% more likely to have SUI. Long jumps enable the contact of the feet with the ground and can generate a maximum reaction force that increases 16 times body weight. This impact caused by impact exercises, can affect the continence mechanism by changing the amount of force transmitted to the PFMs (1). The Pilates method, by strengthening the PFMs, is perhaps the only exercise that allows the balance between increased abdominal strength and increased resistance of PFMs and has been used as a treatment for SUI (2). Performing vaginal birth increase 310% in the odds of having SUI and the presence of low back pain increased 94% the odds of having SUI in this population. This association throws new light on the evaluation and treatment of SUI with specific focus on the pelvic floor and valuing the lumbosacral stabilization. Was demonstrated improvement in urinary continence and low back pain in a woman with urinary incontinence after three weeks of treatment based on strengthening the PFMs and activation of transverse abdominal muscle, too similar to the Pilates method. After a six months follow-up treatment, the patient still reported full urinary continence and had no back pain (3).

### Concluding message

Was found a prevalence of SUI in 15.2% of women, with vaginal birth as a strongly factor associated with SUI, increasing by 310% the odds of having this symptom. Regarding physical activity, the Jump Fit also obtained negative association, increasing the odds of having SUI in 111%. The Pilates method was the only factor that was a positive significantly association, showing that practicing this physical activity decreases by 61% the odds of developing SUI. In addition, low back pain increased by 94%

the odds of having SUI.

Therefore, developing strategies to training PFM and specific pelvic stabilization exercises, which was performed in Pilates method, can be a good preventive and therapeutic option for SUI.

#### References

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#### Disclosures

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