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European Association of Urology

Letter to the Editor not referring to a recently published article

Women Pay Attention to Shoe Heels: Besides Causing Schizophrenia They Might Affect Your Pelvic Floor Muscle Activity!!

A few months ago, when I read the article in *Daily Mail* (29 October 2007) concerning the hypothesis that heeled footwear might cause schizophrenia, I jumped in my chair terrified. Why? Because as many other women, I like heeled shoes and although they are sometimes uncomfortable, I continue to wear them in an effort to appear more slender and taller. There are many other reasons women wear high heels, especially the dictates of fashion. According to this bizarre medical theory, generations of women, trying to be more fashionable and attractive, were self-sentenced to complain of mental diseases. Moved by curiosity, I read the original paper concerning the possible association between the use of heeled footwear and schizophrenia, published in 2004 in a scientific journal by Jarl Flensmark [1]. It is well-conducted historical research across the centuries in support of the very close association between the use of heeled footwear and schizophrenia. This statement might be questioned in many instances, but it is difficult to

refute this hypothesis because all findings reported would seem to support the conjecture without contradiction. I do not have the skills to refute or confirm this hypothesis, but as a woman reading nonscientific papers, I remain astonished in the face of “bizarre medical theories” published in nonscientific journals in the absence of any scientific filter or key reading, because they might be misunderstood. As paladin of all women who love heeled shoes, I tried to find something healthy in them, and at the end I reached my goal. I am a urologist and I collaborate with psychiatrists, with the aim of better understanding the relationship between posture and pelvic floor muscle activity in women with and without stress urinary incontinence.

At the last European Association of Urology Congress in Berlin, we presented a poster on the effects of ankle position on pelvic floor muscle electromyographic activity in women with stress urinary incontinence [2]. The enthusiasm and interest developed (it won the session best poster presentation and was cited in the following highlights) led us to continue our study. We found that in both incontinent and continent young women

Table 1 – Median pelvic floor muscle activity at rest and during maximal contractions according to different heel heights and shoe sizes

USA female shoe size	Europe female shoe size	Heel height	Median rPFMa (IQR) (μ V) in incontinent women	Median mPFMa (IQR) (μ V) in incontinent women
Whatever size	Whatever size	Moccasins	33.0 (27.0–40.0) μ V	262.0(132.0–456.0) μ V
5.5; 6.5–7.5; 8–9.5	37; 38–39; 40–41	2.2; 2.3; 2.4	31.0 (27.0–37.0) μ V	308.0 (150.5–482.0) μ V
5.5; 6.5–7.5; 8–9.5	37; 38–39; 40–41	4.3; 4.5; 4.7	33.0 (26.0–38.0) μ V	320.5(188.0–438.5) μ V
5.5; 6.5–7.5; 8–9.5	37; 38–39; 40–41	6.5; 6.7; 7	33.0 (26.0–38.0) μ V	322.5(177.0–429.5) μ V
USA female shoe size	Europe female shoe size	Heel height	Median rPFMa (IQR) (μ V) in continent women	Median mPFMa (IQR) (μ V) in continent women
Whatever size	Whatever size	Moccasins	28.0(21.0–37.0) μ V	371.5 (271.0–513.0) μ V
5.5; 6.5–7.5; 8–9.5	37; 38–39; 40–41	2.2; 2.3; 2.4	28.0(21.0–36.0) μ V	402.0 (245.0–550.0) μ V
5.5; 6.5–7.5; 8–9.5	37; 38–39; 40–41	4.3; 4.5; 4.7	28.0 (24.0–33.0) μ V	349.0 (240.0–570.5) μ V
5.5; 6.5–7.5; 8–9.5	37; 38–39; 40–41	6.5; 6.7; 7	27.0 (25.0–34.0) μ V	337.5 (262.5–498.0) μ V

rPFMa = resting pelvic floor muscle activity; mPFMa = maximal pelvic floor muscle activity; IQR = interquartile range (25th percentile; 75th percentile); μ V = measure unit of pelvic floor muscle activity.

(<50 yr old) an ankle plantar flexion (determined by shoe heels, for instance) might cause a posterior pelvic tilt that was able to maintain the same pelvic muscle tone as that from wearing flat moccasins, but slightly enhancing the contractile power of this musculature [3]. To obtain this effect high heels were from 2 cm up to 5 cm, according to the different shoe sizes (Table 1).

We don't know whether wearing heeled shoes will cause a further increase in schizophrenia in women or not, but it might affect their pelvic floor muscle activity, reducing myofascial pelvic pain relaxing the pelvic floor and improving pelvic organ well-being!

Conflicts of interest

The authors have nothing to disclose.

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Maria Angela Cerruto*
*Department of Biomedical and Surgical Sciences,
Urology Clinic, University of Verona, Italy*

Ermes Vedovi
*Rehabilitation Unit, Policlinic Hospital,
Verona, Italy*

William Mantovani
*Department of Medicine and Public Health,
University of Verona, Italy*

*Corresponding author. University of Verona,
Piazzale L. Scuro 10, 37134 Verona, Italy.
Tel. +39 045 812 4370/4419; Fax: +39 045 812 4080

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