

## Research review

This instalment features papers on the factors that influence adherence to pelvic floor muscle (PFM) exercises (PFMEs), the influence of regular exercise on PFM strength and the effect of high-impact exercise on the pelvic floor. Two articles on overactive bladder and two new Cochrane Reviews are also covered.

Venegas *et al.* (2018) looked at factors that influence long-term adherence to PFMEs in women with urinary incontinence (UI), using a questionnaire to evaluate 61 participants. The women involved categorized their levels of adherence as: (low) 33%; (moderate) 47%; and (high) 20%. Venegas *et al.* (2018) found that forgetting to do PFMEs and boredom with the exercises were the factors most related to low adherence, while motivation and commitment were associated with high adherence. The authors comment that it is important to assess the behaviour and attitudes of patients towards PFMEs, and to select effective strategies to facilitate adherence.

Bø *et al.* (2018) investigated whether regular exercisers had stronger PFMs than those who performed PFMEs only intermittently during mid-pregnancy. These authors studied 218 women, and defined regular exercise as at least 30 min, three or more times a week. They used a pressure transducer connected to a vaginal balloon catheter to measure vaginal resting pressure, and PFM strength and endurance. Bø *et al.* (2018) found that regular exercisers had statistically significantly stronger PFMs and better endurance. There was no difference between the groups with regard to the prevalence of UI. The authors consider that general or moderate exercise may be beneficial, whereas strenuous exercise is detrimental to those who are at risk.

Karmakar & Dwyer (2018) and Kruger (2018) reviewed the evidence on whether high-impact exercise may cause pelvic floor dysfunction in a journal debate. The argument relates to the theory that high-impact exercise raises intra-abdominal pressure on the pelvic floor. Karmakar & Dwyer (2018) gave examples of research in which 50% of elite athletes had reported UI, and suggested that athletes had significantly greater signs of incontinence. A longer-term study reported a significantly higher chance of incontinence later in life when athletes had given birth to between two and three children. Kruger (2018) reported

that there was little evidence that exceeding an intra-abdominal pressure threshold would cause prolapse, and also that every individual has a threshold limit and certain exercises, such as weightlifting, where risks may be higher, may need modification.

In the first of two articles considering overactive bladder (OAB), Booth *et al.* (2018) appraised the published literature on the effectiveness of transcutaneous tibial nerve stimulation (TTNS) for adults with OAB syndrome in a systematic review. These authors retrieved 13 studies involving a total of 629 participants. While they found that the risk of bias in these trials was unclear because of inadequate reporting, the samples were generally small, and there was marked heterogeneity and no standardization of TTNS intervention (although all used 10–20 Hz), every paper reported some benefit from the technique. Booth *et al.* (2018) conclude that there is limited evidence to show that TTNS is an effective, safe intervention for idiopathic OAB and may be of benefit in neuropathic OAB, but further studies are essential.

A survey of patients attending outpatient urogynaecology clinics was carried out by Clancy *et al.* (2018) to establish the most commonly used search engines and terms used to find information on OAB. They then employed the most common, and found 35 websites to analyse. These authors found that popular websites on OAB are of low quality, and often lack adequate information to allow assessment for potential commercial bias. They advise that patients should be cautioned that incomplete and potentially biased information on OAB is prevalent online.

Two Cochrane Reviews were published in 2017.

Woodley *et al.* (2017) considered the evidence for PFM training (PFMT) to prevent and treat UI and faecal incontinence in antenatal and postnatal women. Their review included 38 trials (mostly small to moderate in size) involving 9892 women, and many of these had a moderate to high risk of bias. They found that targeting continent antenatal women early in pregnancy and offering a structured PFMT programme may prevent the onset of UI in late pregnancy and postpartum; however, the cost-effectiveness of this approach is unknown. These authors also reported that it

is uncertain whether a population-based approach for delivering PFMT is effective in reducing UI, and that uncertainty surrounds the effects of this form of exercise as a treatment for UI in ante- and postnatal women, in contrast to its known effectiveness in women in midlife. They suggest that the effects of PFMT might be greater with targeted rather than mixed prevention and treatment approaches, and in certain groups of women.

Stewart *et al.* (2017) reviewed the evidence for electrical stimulation with non-implanted devices for stress UI in women. Their review included 56 trials involving 3781 women, but the risk of bias was unclear in many papers, high in 25% and the overall quality of the evidence was low. These authors conclude that electrical stimulation is better than no treatment at all or sham treatment, but there is not enough evidence to say that it is better or worse than other treatments, such as PFMT.

Many thanks go to Becky Corran and Kirstie Ross, the reviewers for this instalment.

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