

Comment and questions to Mottola et al: 2019 Canadian guideline for physical activity throughout pregnancy

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Letter to the editor

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We have read the Canadian guideline for physical activity throughout pregnancy with great interest. We note that the guideline team have made their recommendation regarding pelvic floor muscle training (PFMT) based on evidence from a systematic review from the same research group (Davenport et al 2018). The main results of this review are in line with the latest Cochrane review (Woodley et al 2017) on the same topic; while there are some methodological differences and variations in which studies were included or not (two of the largest studies on PFMT was left out from the Davenport review; Mørkved et al 2003 and Stafne et al 2012), the findings in terms of size and precision of effect are similar, although Davenport et al used odds ratio and Woodley et al used risk ratio for their summary statistic. Davenport et al reported that PFMT gave a 50% reduction in prenatal UI and a 35% reduction in postnatal UI, but the guideline team concluded a “weak recommendation” for PFMT because UI was not rated as a “critical outcome” and the evidence was of “low quality”. We find this conclusion at odds with the evidence and the interpretation of the evidence based on the guideline team’s own criteria.

The Canadian guideline grades evidence as either “strong or weak based on the (1) balance between benefits and harms, (2) overall quality of the evidence, (3) importance of outcomes (ie, values and preferences of pregnant women), (4) use of resources (ie, cost), (5) impact on health equity, (6) feasibility and (7) acceptability. A strong recommendation is one where “Most or all pregnant women will be best served by the recommended course of action” and a weak recommendation is one where “Not all pregnant women will be best served by the recommended course of action; there is a need to consider other factors such as the individual’s circumstances, preferences, values, resources available or setting. Consultation with an obstetric care provider may assist in decision-making.”

We disagree with how PFMT has been classified in relation to these criteria and would like to question and comment on the following:

1. Balance between benefits and harms: the effect size of antenatal PFMT for prevention of UI is moderate and there are no harms of PFMT, so this would be in favor of a strong recommendation. In addition, many of the studies in the Davenport et al (2018) review did not compare PFMT with no exercise/untreated controls, rather the control groups typically also had some advice or instruction

in PFMT as part of 'routine' care. Such trials are likely to under- rather than overestimate the effect of PFMT, suggesting the true effect size may be larger than that calculated by Davenport et al (2018).

2. Overall quality of the evidence: There are three issues to consider here:

a. Research design. There are sufficient numbers of RCTs evaluating effect of PFMT on UI during pregnancy to do meta-analyses without including cohort studies with lower internal validity. The Davenport review (2018) referred to cohort studies and showed that general exercise (not PFMT) may increase the odds of developing UI. Aerobic exercise usually includes high impact activities (jumping and running). Numerous studies (Bø 2004, Nygaard & Shaw 2016) have shown that high impact activities are associated with UI, therefore this combination is likely to be provocative of UI and mask a stand-alone effect of PFMT on reduction of UI. Studies on aerobic exercise can therefore not be expected to have a positive effect on UI and should not be recommended to be combined with studies on PFMT. In all reports in this area general exercise /physical activity needs to be separated from specific PFMT, in order not to confuse the readers.

b. Risk of bias. All the trials are inevitably at risk of bias through an inability to blind participants and providers, yet this would be the same for all forms of physical activity (yoga) and should not affect the rating of PFMT more than other exercise. The included trials are also the usual 'mixed bag' of less and more robust trials. While most studies are small to moderate in size it seems likely that the true underlying effect is within the existing confidence limits of the effect estimate (Herbison et al 2011). Both in the Cochrane (Woodley et al 2017) and the Davenport et al (2018) reviews the upper limits of the confidence intervals suggest clinically important reduction in UI.

c. Statistical heterogeneity. For PFMT, a plausible explanation for statistical heterogeneity is the different training doses and supervision (Hay-Smith et al 2011). We agree that more work is needed to find a 'cut off' for effectiveness in PFMT delivery and dose, but in the meantime there are certainly robust trials with well described interventions demonstrating clinically significant effect that are suitable models for application in practice.

3. Importance of outcome: UI is a prevalent (>30%) and bothersome condition reducing QoL and especially participation in physical activity (Nygaard et al 2005, Hamid et al 2015), and therefore important to prevent. In the Canadian guideline it is stated that prior to convening the panel, "10 pregnant women were recruited by convenience sampling and invited to provide input on the perceived benefits and harms of physical activity, and to identify pregnancy outcomes that were most important to them." Studies consistently finds women perceive UI as stigmatizing and at the same time 'normal' for parous women, and UI is a topic they are reluctant to talk about (Hamid et al 2015). Postpartum the dominant view of women is that of 'if only I'd known then what I know now', and 'I wish someone had told me about UI, and taught me how to do PFMT properly' (Mason et al 2001,

Mason et al 2001, Neels et al 2016). If the 10 pregnant women in the expert group were continent, not aware that they might develop incontinence after birth and were more concerned about other common maternity conditions or the health of the babies, UI may not have reached their attention. We are surprised that specialized women's health physiotherapists who are the experts in this field both in high quality research and clinical practice, were not included in the panel nor as experts.

4. Use of resources: PFMT is already part of ante- and postnatal health care in most developed countries. PFMT has proved to be effective as part of group training for women and can therefore be administered at low cost to the health system.

5. Impact of health equity: Not informing or providing PFMT to pregnant women creates inequity as failure to prevent UI in pregnancy means that women are potentially set up for many years of UI symptoms with all the consequent effects on self-esteem, withdrawal from physical activity, not playing with their children, the cost of buying products and laundry and the cost of physiotherapy and surgery.

6. Feasibility: PFMT has successfully been incorporated in comprehensive exercise classes since 1986 (Bø et al 1990, Mørkved et al 2003, Stafne et al 2012).

7. Acceptability: PFMT research is firmly on the side of acceptability. Studies show that women want to do PFMT as first line treatment, but they must be informed about why and how they should do it (Mason et al 2001, Mason et al 2001). The long-term effect of PFMT is, as for all exercise interventions, dependent on maintenance of training. There are challenges with long term adherence/attrition from all forms of exercise/physical activity programs, and this is NOT a specific nor more pronounced problem for PFMT. Again, this is not an argument for assigning PFMT a weak recommendation.

In summary, it appears the guideline panel has, perhaps in deciding on a weak recommendation, over-emphasized concerns about quality of evidence (in which other areas of exercise in medicine are there more RCTs showing clinically relevant effect?), and may not have 'heard' how bothered women are about the problem of UI. Most, or all, pregnant women would benefit from PFMT during pregnancy to prevent UI because: PFMT does prevent UI in late pregnancy, postpartum, and potentially for life (as well as preventing pelvic organ prolapse), it does no harm, women would do PFMT if they knew why it was important (but the system fails them by not giving them this information), women who do leak experience significant bother, and the training can be incorporated with other physical activity to maximize gains from time spent in exercise. The Canadian guidelines' weak recommendation appears inconsistent with the evidence and positive impact of existing research.

Strong recommendation for yoga?

We further question the evidence for the “strong recommendation” and “high quality evidence” that adding yoga and gentle stretching is beneficial. For which conditions is yoga beneficial during pregnancy? It would seem that yoga/ gentle stretching classes would indeed have the same cost and feasibility/ equity/ acceptability concerns as group training of the PFM.

Diastasis recti abdominis

Why is diastasis recti abdominis considered a critical outcome? There is no scientific evidence that this causes any harm. The guidelines refer to the systematic review of Davenport et al (2018 b). They conclude that there is no relationship between prenatal exercise and diastasis. However, the guideline states that continuing aerobic exercise (walking) is associated with less odds of development of diastasis. Based on which studies? Neither Sperstad et al (2016) nor Fernandes de Mota et al (15) found such associations.

The guideline recommends that women with a diastasis postpartum should avoid curl-ups and refer to Mota et al (2015) to support this statement. However, Mota et al (2015) found the contrary; abdominal crunch narrows the inter-rectal distance and indrawing opens the gap. This has now been supported by several studies.

In conclusion, we are concerned with how the Canadian guideline group have defined quality of evidence. Weak and strong recommendations, may mislead pregnant women and health care providers to believe that there is weak scientific evidence to prevent and treat effects of PFMT for UI. This may discourage pregnant women from starting or continuing PFMT in a very important period to prevent and treat the condition. The guideline group may have – inadvertently – through issuing a weak recommendation for PFMT in pregnancy, put the onus onto individual health care professionals and women to make decisions about teaching or doing the exercises without regard to all the factual information. Women ‘don’t know what they don’t know’. Are we truly accepting that one third of women will experience stress urinary incontinence by mid-age when this could potentially be prevented through ante-natal PFMT? We urge the panel to re-consider their recommendation and are happy to supply any further evidence as required to guide the evidence grading.

Strength training of the pelvic floor muscles can be done in an exercise class and is effective in preventing and treating urinary incontinence.

Image provided by Kari Bø.

One position used to strengthen pelvic floor muscles. Image provided by Kari Bø.

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Competing interests

None declared

References

1. Bø K. Urinary Incontinence, Pelvic Floor Dysfunction, Exercise and Sport. *Sports Med* 2004; 34: 451-464.
2. Bø K, Hagen RH, Kvarstein B, Jørgensen J, Larsen S. Pelvic floor muscle exercise for the treatment of female stress urinary incontinence: III. Effects of two different degrees of pelvic floor muscle exercises. *Neurourol Urodyn*; 1990; 9,5:489-502.
3. Davenport MH, Nagpal TS, Mottola MF et al. Prenatal exercise (including but not limited to pelvic floor muscle training) and urinary incontinence during and following pregnancy; a systematic review and meta-analysis. *Br J Sports Med* 2018; 52: 1397-1404.
4. Davenport MH (B), Ruchat SM, Sobierajski F et al. Impact of prenatal exercise on maternal harms, labour and delivery outcomes: a systematic review and meta-analysis. *Br J Sports Med*. 2018 Oct 18. pii: bjsports-2018-099821. doi: 10.1136/bjsports-2018-099821. [Epub ahead of print]
5. Fernandes da Mota PG, Pascoal AG, Carita AI, Bø K. Prevalence and risk factors of diastasis recti

- abdominis from late pregnancy to 6 months postpartum, and relationship with lumbo-pelvic pain. *Man Ther* 2015; 20:200-2005
7. Hamid TA, Pakgohar M, Ibrahim R, Dstjerdi MV. "Stain in life": The meaning of urinary incontinence in the context of Muslim postmenopausal women through hermeneutic phenomenology. *Archives Geront Geriatr* 2015; 60: 514-521.
 8. Hay-Smith EJC, Herderschee R, Dumoulin C, Herbison GP. Comparisons of approaches to pelvic floor muscle training for urinary incontinence in women. *Cochrane Database of Systematic Reviews* 2011, Issue 12. Art. No.: CD009508. DOI: 10.1002/ 14651858. CD009508.
 9. Herbison P, Hay-Smith J, Gillespie WJ. Meta-analyses of small numbers of trials often agree with longer-term results. *J Clin Epidemiol* 2011; 64: 245-153.
 10. Mason L, Glenn S, Walton I, Hughes C. Do women practice pelvic floor exercises during pregnancy or following delivery? *Physiotherapy* 2001, 87; 662-670.
 11. Mason L, Glenn S, Walton I, Huges C. The instruction in pelvic floor exercises provided to women during pregnancy or following delivery. *Midwifery* 2001; 17: 55-64.
 12. Mota PI, Pascoal AG, Carita AI, Bø K. The Immediate Effects on Inter-rectus Distance of Abdominal Crunch and Drawing-in Exercises During Pregnancy and the Postpartum Period. *J Orthop Sports Phys Ther.* 2015;45:781-8.
 13. Mørkved S, Bø K, Schei B, Salvesen KA. Pelvic floor muscle training during pregnancy to prevent urinary incontinence: a single-blind randomized controlled trial. *Obstet Gynecol.* 2003;101: 313-9.
 14. Neels H, Wiebren A, Tjalma A, Wyndaele, De Wachter S, Wyndaele M, Vermandel A. Knowledge of the pelvic floor in menopausal women and in peripartum women. *J. Phys. Ther Sci.* 2016; 28: 3020–3029.
 15. Nygaard IE, Shaw JM. Physical activity and the pelvic floor. *Am J Obstet Gynecol.* 2016; 214: 164-171.
 16. Nygaard I, Girts T, Fultz NH, Kinchen K, Pohl G, Sternfeld B. Is urinary incontinence a barrier to exercise in women? *Obstet Gynecol.* 2005;106: 307-14.
 17. Sperstad JB, Tennfjord MK, Hilde G, Ellström-Engh M, Bø K. Diastasis recti abdominis during pregnancy and 12 months after childbirth: prevalence, risk factors and report of lumbopelvic pain. *Br J Sports Med.* 2016;50: 1092-1096.
 18. Stafne SN, Salvesen KÅ, Romundstad PR, Torjusen IH, Mørkved S. Does regular exercise including pelvic floor muscle training prevent urinary and anal incontinence during pregnancy? A randomised controlled trial. *BJOG.* 2012 Sep;119(10):1270-80. doi: 10.1111/j.1471-0528.2012.03426.x. Epub 2012 Jul 17.
 19. Woodley SJ, Boyle R, Cody JD, Mørkved S, Hay-Smith EJC. Pelvic floor muscle training for prevention and treatment of urinary and faecal incontinence in antenatal and postnatal women. *Cochrane Database of Systematic Reviews* 2017, Issue 12. Art. No.: CD007471. DOI: 10.1002/14651858.CD007471.pub3.

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