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#### [Intervention Review]

## Pelvic floor muscle training for prevention and treatment of urinary and faecal incontinence in antenatal and postnatal women

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#### **ABSTRACT**

## **Background**

About one-third of women have urinary incontinence and up to one-tenth have faecal incontinence after childbirth. Pelvic floor muscle training (PFMT) is commonly recommended during pregnancy and after birth for both prevention and treatment of incontinence.

This is an update of a review previously published in 2012.

## **Objectives**

To determine the effectiveness of pelvic floor muscle training (PFMT) in the prevention or treatment of urinary and faecal incontinence in pregnant or postnatal women.

## **Search methods**

We searched the Cochrane Incontinence Specialised Register (16 February 2017) and reference lists of retrieved studies.

#### **Selection criteria**

Randomised or quasi-randomised trials in pregnant or postnatal women. One arm of the trial included PFMT. Another arm was no PFMT, usual antenatal or postnatal care, another control condition, or an alternative PFMT intervention.

## **Data collection and analysis**

Review authors independently assessed trials for inclusion and risk of bias. We extracted data and checked them for accuracy. Populations included: women who were continent (PFMT for prevention), women who were incontinent (PFMT for treatment) at randomisation and a mixed population of women who were one or the other (PFMT for prevention or treatment). We assessed quality of evidence using the GRADE approach.

#### **Main results**

The review included 38 trials (17 of which were new for this update) involving 9892 women from 20 countries. Overall, trials were small to moderate sized, and the PFMT programmes and control conditions varied considerably and were often poorly described. Many trials were at moderate to high risk of bias. Other than two reports of pelvic floor pain, trials reported no harmful effects of PFMT.



Prevention of urinary incontinence: compared with usual care, continent pregnant women performing antenatal PFMT may have had a lower risk of reporting urinary incontinence in late pregnancy (62% less; risk ratio (RR) for incontinence 0.38, 95% confidence interval (CI) 0.20 to 0.72; 6 trials, 624 women; low-quality evidence). Similarly, antenatal PFMT decreased the risk of urinary incontinence in the midpostnatal period (more than three to six months' postpartum) (29% less; RR 0.71, 95% CI 0.54 to 0.95; 5 trials, 673 women; moderate-quality evidence). There was insufficient information available for the late (more than six to 12 months') postnatal period to determine effects at this time point.

Treatment of urinary incontinence: it is uncertain whether antenatal PFMT in incontinent women decreases incontinence in late pregnancy compared to usual care (RR 0.70, 95% CI 0.44 to 1.13; 3 trials, 345 women; very low-quality evidence). This uncertainty extends into the mid- (RR 0.94, 95% CI 0.70 to 1.24; 1 trial, 187 women; very low-quality evidence) and late (RR 0.50, 95% CI 0.13 to 1.93; 2 trials, 869 women; very low-quality evidence) postnatal periods. In postnatal women with persistent urinary incontinence, it was unclear whether PFMT reduced urinary incontinence at more than six to 12 months' postpartum (RR 0.55, 95% CI 0.29 to 1.07; 3 trials; 696 women; very low-quality evidence).

Mixed prevention and treatment approach to urinary incontinence: antenatal PFMT in women with or without urinary incontinence (mixed population) may decrease urinary incontinence risk in late pregnancy (26% less; RR 0.74, 95% CI 0.61 to 0.90; 9 trials, 3164 women; low-quality evidence) and the mid-postnatal period (RR 0.73, 95% CI 0.55 to 0.97; 5 trials, 1921 women; very low-quality evidence). It is uncertain if antenatal PFMT reduces urinary incontinence risk late postpartum (RR 0.85, 95% CI 0.63 to 1.14; 2 trials, 244 women; low-quality evidence). For PFMT begun after delivery, there was considerable uncertainty about the effect on urinary incontinence risk in the late postnatal period (RR 0.88, 95% CI 0.71 to 1.09; 3 trials, 826 women; very low-quality evidence).

Faecal incontinence: six trials reported faecal incontinence outcomes. In postnatal women with persistent faecal incontinence, it was uncertain whether PFMT reduced incontinence in the late postnatal period compared to usual care (RR 0.68, 95% CI 0.24 to 1.94; 2 trials; 620 women; very low-quality evidence). In women with or without faecal incontinence (mixed population), antenatal PFMT led to little or no difference in the prevalence of faecal incontinence in late pregnancy (RR 0.61, 95% CI 0.30 to 1.25; 2 trials, 867 women; moderate-quality evidence). For postnatal PFMT in a mixed population, there was considerable uncertainty about the effect on faecal incontinence in the late postnatal period (RR 0.73, 95% CI 0.13 to 4.21; 1 trial, 107 women, very low-quality evidence).

There was little evidence about effects on urinary or faecal incontinence beyond 12 months' postpartum. There were few incontinence-specific quality of life data and little consensus on how to measure it. We found no data on health economics outcomes.

#### **Authors' conclusions**

Targeting continent antenatal women early in pregnancy and offering a structured PFMT programme may prevent the onset of urinary incontinence in late pregnancy and postpartum. However, the cost-effectiveness of this is unknown. Population approaches (recruiting antenatal women regardless of continence status) may have a smaller effect on urinary incontinence, although the reasons for this are unclear. It is uncertain whether a population-based approach for delivering postnatal PFMT is effective in reducing urinary incontinence. Uncertainty surrounds the effects of PFMT as a treatment for urinary incontinence in antenatal and postnatal women, which contrasts with the more established effectiveness in mid-life women.

It is possible that the effects of PFMT might be greater with targeted rather than mixed prevention and treatment approaches and in certain groups of women. Hypothetically, for instance, women with a high body mass index are at risk factor for urinary incontinence. Such uncertainties require further testing and data on duration of effect are also needed. The physiological and behavioural aspects of exercise programmes must be described for both PFMT and control groups and how much PFMT women in both groups do, to increase understanding of what works and for whom.

Few data exist on faecal incontinence or costs and it is important that both are included in any future trials. It is essential that future trials use valid measures of incontinence-specific quality of life for both urinary and faecal incontinence.

## PLAIN LANGUAGE SUMMARY

How effective are pelvic floor muscle exercises undertaken during pregnancy or after birth for preventing or treating incontinence?

## **Review question**

To assess whether doing pelvic floor muscle exercises (PFME) during pregnancy or after birth reduces incontinence. This is an update of a review published in 2012.

### **Background**

More than one-third of women experience unintentional (involuntary) loss of urine (urinary incontinence) in the second and third trimesters of pregnancy and about one-third leak urine in the first three months after giving birth. About one-quarter of women have some involuntary loss of flatus (wind) or faeces (anal incontinence) in late pregnancy and one fifth leak flatus or faeces one year after birth. PFME are commonly recommended by health professionals during pregnancy and after birth to prevent and treat incontinence. The muscles



are strengthened and kept strong with regular PFME. Muscles are contracted several times in a row, more than once a day, several days a week and continued indefinitely.

## How up-to-date is this review?

The evidence is current to 16 February 2017.

#### **Study characteristics**

We included 38 trials (17 new to this update) involving 9892 women from 20 countries. The studies included pregnant women or women who had delivered their baby within the last three months. Women reported leakage of urine, faeces, both urine or faeces, or no leakage. They were allocated randomly to receive PFME (to try and prevent incontinence or as a treatment for incontinence) or not and the effects were compared.

### **Study funding sources**

Nineteen studies were publicly funded. One received grants from public and private sources. Three studies received no funding and 15 did not declare funding sources.

#### **Key results**

Pregnant women without urine leakage who did PFME to prevent leakage: women may report less urine leakage in late pregnancy and three to six months after childbirth. There was not enough information to determine whether these effects continued beyond the first year after the baby's birth.

Women with urine leakage, pregnant or after birth, who did PFME as a treatment: it was uncertain whether doing PFME during pregnancy reduced leakage in late pregnancy or in the year following childbirth. It was unclear if doing PFME helped women with leakage after giving birth.

Women with or without urine leakage (mixed group), pregnant or after birth, who did PFME to either prevent or treat leakage: women who began exercising during pregnancy were less likely to report leakage in late pregnancy and up to six months after birth, but it was uncertain if the effect lasted at one year following birth. For women who started PFME after delivery, the effect on leakage one year after birth was uncertain.

Leakage of faeces: few studies (only six) had evidence about leakage of faeces. One year after delivery, it was uncertain if PFME helped decrease leakage of faeces in women who started exercising following childbirth. It was also uncertain if women with or without leakage of faeces (mixed group) who started PFME while pregnant were less likely to leak faeces in late pregnancy or up to one year after birth.

There was little information about how PFME may affect leakage-related quality of life. There were two reports of pelvic floor pain but no other harmful effects of PFME were noted. It is unknown if PFMEs offer value for money because no study had a health economics analysis. It is unknown if PFME offer value for money as no health economics data were identified.

## Quality of the evidence

Overall, studies were not large and most had design problems, including limited details on how women were randomly allocated into groups, and poor reporting of measurements. Some of the problems were expected because it was impossible to blind health professionals or women to whether they were exercising or not. The PFME differed considerably between studies and were often poorly described. Evidence quality was generally low to very low.