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## How effective is pelvic floor muscle training undertaken during pregnancy or after birth for preventing or treating incontinence?

Authors: Woodley SJ, Lawrenson P, Boyle R, Cody JD, Mørkved S, Kernohan A, Hay-Smith EJC

**Review question**

To assess whether performing pelvic floor muscle training (PFMT) during pregnancy or after birth reduces incontinence.

**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. Managing incontinence after pregnancy is not only important for the individuals themselves but can also have considerable costs to individuals and for healthcare systems.

PFMT is commonly recommended by health professionals during pregnancy and after birth to prevent and treat incontinence. The muscles are strengthened and kept strong with regular PFMT. 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 7 August 2019.

**Study characteristics**

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We included 46 trials involving 10,832 women from 21 countries. The studies included pregnant women or women who had delivered their baby within the last three months, and who reported leakage of urine, faeces, both urine or faeces, or no leakage. They were allocated randomly to receive PFMT (either to try to prevent incontinence or as a treatment for incontinence) or not, and the effects were compared.

**Study funding sources**

Twenty-five studies were publicly funded, one of which received grants from both public and private sources. Three studies received no funding and 18 did not declare their funding sources.

**Key results**

*Pregnant women without urine leakage who did PFMT to prevent leakage:* women probably report less urine leakage in late pregnancy and the risk is slightly less at 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 PFMT as a treatment:* there is no evidence that doing PFMT during pregnancy reduced leakage in late pregnancy or in the year following childbirth.
*Women with or without urine leakage (mixed group), pregnant or after birth, who did PFMT to either prevent or treat leakage:* women who began exercising during pregnancy probably have slightly less leakage in late pregnancy which may continue up to six months after birth. There is no evidence of effect at one year following birth. For women who started exercising after delivery, the effect on leakage one year after birth was uncertain.
*Leakage of faeces:* only eight studies had evidence about leakage of faeces. One year after delivery, it was uncertain if PFMT helped decrease leakage of faeces in women who started exercising following childbirth. For women with or without leakage of faeces (mixed group) who started PFMT while pregnant, there was no evidence of a difference in faeces leakage in late pregnancy; for those who started PFMT after delivery there was no evidence of a decrease in leakage up to one year after birth.
There was little information about how PFMT may affect leakage-related quality of life. There were two reports of pelvic floor pain but no other harmful effects of PFMT were noted.
There was no evidence about whether or not PFMT was cost-effective.

**Quality of the evidence**

Overall, studies were small 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 PFMT differed considerably between studies and was often poorly described. The quality of the evidence was generally low to moderate.

## Milk boosters (galactagogues) for mothers breastfeeding their healthy infants born at term

Authors: Foong SC, Tan ML, Foong WC, Marasco LA, Ho JJ, Ong JH

**What is the issue?**

We set out to determine the ability of milk boosters taken by mouth (medicine, herb or food) to increase milk production in breastfeeding mothers of healthy infants born at term. Poor milk supply is often given as the reason for early supplementation and weaning sooner than desired. A range of factors, including mother's and

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baby's health, baby's sucking skills, proper latch and frequency of feeds, can affect milk production. Every attempt should first be made to identify and correct the causes for low milk production before trying a milk booster.

**Why is this important?**

Inadequate milk production can be distressing for mothers and threatening to babies' health. The choice of milk booster is often influenced by familiarity or local customs. Some mothers may prefer medications, while others prefer natural remedies. Evidence for the possible benefits and harms of milk boosters is important to assist mothers in making informed decisions.

**What evidence did we find?**

We searched for evidence from randomised controlled studies up to 4 November 2019 and identified 41 eligible studies involving 3005 mothers and 3006 infants from at least 17 countries. The studies varied widely in babies ages, type of milk boosters investigated, how long they were taken, and how outcomes were reported. Medications included sulpiride, metoclopramide, domperidone and thyrotropin-releasing hormone. Natural interventions included banana flower, fennel, fenugreek, ginger, ixbut, levant cotton, moringa, palm dates, pork knuckle, shatavari, silymarin, torbangun leaves, and a variety of natural mixtures as teas or soups.

**Milk-boosting medication**

Nine studies compared a milk-boosting medication with placebo or no treatment. None reported exclusive breastfeeding rates at 3. 4 or 6 months and only one (metoclopramide, 20 participants) reported on weight gain in infants receiving only their mothers' own milk, with better results in the milk booster group. Three studies that tracked milk volume (domperidone, metoclopramide, sulpiride; 151 participants) reported more milk in the booster groups, though the certainty of the evidence was low. Adverse effects were poorly reported. Where mentioned, they were limited to minor complaints, such as tiredness, nausea, decreased appetite, headache and dry mouth.

**Natural milk boosters**

Twenty-seven studies compared natural milk boosters with placebo or no treatment. Only one (Mother’s Milk Tea; 60 participants) examined the impact on breastfeeding rates, reporting "no significant difference at 6 months" without providing any data (very low-certainty evidence). Three studies (275 participants) reported infant weight, two of which (moringa, mixed botanical tea) reported higher gains in the milk booster group, while the other study (fennel and fenugreek) was inconclusive on whether infant weight gain improved with the milk boosters. In the 13 studies tracking changes in milk volume (Bu Xue Sheng Ru, Chan Bao, Cui Ru, banana flower, fenugreek, ginger, moringa, fenugreek, ginger and turmeric mix, ixbut, mixed botanical tea, Sheng Ru He Ji, silymarin, Xian Tong Ru, palm dates; 962 participants), some showed benefits and others little or no difference, so we are very uncertain about the results for milk volume. Adverse effects were poorly reported. Where mentioned, they were limited to minor complaints, such as mothers with urine that smells like maple syrup and rash in infants (very low-certainty evidence).

**One milk booster compared with another**

Eight studies (Chanbao, Bue Xue Sheng Ru, domperidone, moringa, fenugreek, palm dates, torbangun, moloco, Mu Er Wu You, Kun Yuan Tong Ru) compared one milk booster with another. There was only one small study for



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each particular match-up, hence we cannot be certain if any one milk booster truly worked better than another.

**What does this mean?**

There is limited evidence that milk-boosting medications may increase milk volume and that natural milk boosters may improve milk volume and infants' weight, but we are very uncertain about the supporting evidence. Due to limited information, we are also uncertain if there are any risks to the mother or baby in taking any particular milk booster. More high-quality studies are needed to increase our certainty about the effects of milk boosters.

## Factors affecting use of nicotine replacement therapy and e-cigarettes in pregnancy

Authors: Campbell K, Coleman-Haynes T, Bowker K, Cooper SE, Connelly S, Coleman T

**What was studied in this review?** Nicotine replacement therapy (NRT) delivers nicotine without the harmful chemicals found in tobacco smoke. NRT helps some non-pregnant adults to stop smoking, but it does not seem to work so well in pregnancy. This may be because pregnant women generally do not use NRT as prescribed. Studies show that some pregnant women use e-cigarettes to help them cut down or quit, although their safety and effectiveness in pregnancy is not known. Little is known about the issues that influence pregnant women's use of NRT/e-cigarettes.

**What is the aim of this review?** To explore factors that affect whether women take up and use NRT or e-cigarettes to reduce or quit smoking in pregnancy.

**What are the key messages of this review?** Three main factors influence whether women take up and use NRT and e-cigarettes in pregnancy: advice women receive from health professionals on using NRT or e-cigarette in pregnancy, women's desire to protect their unborn baby from harm, and past personal experience with NRT. Each of these factors can either encourage or discourage women from using these products.

**What are the key findings?** We included 21 studies; 15 of these focused on NRT, 3 on e-cigarettes and 3 on both. Our findings suggest that women's desire to protect their unborn babies from harm is one of the main reasons they use these products. They also consider the advice from their health professionals; when professionals tell women that NRT or e-cigarettes are safer than smoking and that it is okay to use them in pregnancy, their confidence about using them increases. When women are told that NRT or e-cigarettes are as dangerous or more dangerous than smoking and that they should not use them when they are pregnant, they feel less confident about using them. Women's past experiences with NRT will also affect how willing they are to use NRT in pregnancy. For example, women who feel that NRT had worked for them (or someone they know) in the past were more confident about using it again. However, women who had negative experiences were more reluctant to use NRT. We conclude that consistent messages that are based on high-quality research and clearly explain how safe NRT and e-cigarettes are compared to smoking in pregnancy, could help women use NRT and e-cigarettes more consistently/as recommended. This may improve their attitudes towards NRT or e-cigarettes, increase their willingness to use these in their attempt to quit, and encourage them to stay smoke-free.

**How up-to-date is this review?** We searched for studies that had been published before 1 February 2019.

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## Strategies for optimising antenatal corticosteroid administration for women with anticipated preterm birth

Authors: Rohwer AC, Oladapo OT, Hofmeyr GJ

**What is the issue?**

A pregnancy normally lasts between 37 and 40 completed weeks. If the birth takes place earlier than that and the baby is born prematurely, there is a high risk that the baby will have breathing problems and might suffer from other complications. There is also a risk that the premature baby dies, especially if it is born in a facility that does not have advanced care for newborns. Mothers with signs of premature labour or planned for elective preterm birth are commonly injected with steroids, which can help mature the baby's lungs and prevent severe breathing problems once the baby is born.

**Why is this important?**

In high-income countries and in hospital settings with advanced care facilities, administration of steroids for mothers who are at risk of giving birth prematurely is standard care. As this is not always the case in low-income countries, where premature birth is more common compared to other countries, there have been worldwide efforts to increase the use of steroids in these settings. However, as there is usually also a lack of other supportive newborn care and accurate assessment of gestational age in these settings, the benefits and harms of increasing the use of steroids, compared to usual approach of care, need to be evaluated.

**What evidence did we find?**

We searched for evidence in September 2019 and identified three studies that met our inclusion criteria. All three studies assessed interventions that aimed to promote the use of steroids for mothers at risk of giving birth prematurely, while we did not find any study that assessed interventions that aimed to restrict the use of steroids. Two studies were conducted in hospital settings of mostly high-income countries, while one study was conducted in low-resource settings in six low-and middle-income countries. Two studies found that the interventions led to an increase in the use of steroids, while one study found no difference in the use of steroids. One large study in low-resource settings found that among women who delivered preterm infants, more women in the intervention group (45%) received steroids compared to women the control group (10%) (low-certainty evidence). However, in the group of women who did not deliver preterm infants more women in the intervention group (10%) compared to the control group (1%) received steroids although they did not need them (low-certainty evidence).

Only the one large study that was conducted in low-resource settings assessed important outcomes. The study found that perinatal death (death of the baby before birth or within the first seven days of life), stillbirth (death of the baby before birth), and neonatal death before 28 days (death of the baby during the first 28 days of life) probably occurs more often among all babies (not just those that are born prematurely) when the use of steroids is actively promoted compared to usual care (moderate-certainty evidence). It also found that infection in the mother may be more common when strategies to increase the use of steroids are in place. However, there may be little or no difference between groups in the mothers' risk of dying (low-certainty evidence).



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**What does this mean?**

In low-resource settings, a strategy of actively promoting the use of steroids in mothers at risk of giving birth prematurely could be harmful to infants and their mothers at population level. Policy makers need to carefully weigh the benefits against the potential risks when considering scaling up of this intervention in low-resource settings. There is a need to do more research on the effectiveness of approaches to scale up the use of steroids for mothers at risk of premature delivery in low-resource countries.

If you have any questions or comments with regard to the above document please feel free to contact me.

Kind regards

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