

The clinical effectiveness and cost-effectiveness of interventions for preventing continence issues resulting from birth trauma: a rapid review

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EXECUTIVE SUMMARY

What is a Rapid Review?

Our rapid reviews use a variation of the systematic review approach, abbreviating or omitting some components to generate the evidence to inform stakeholders promptly whilst maintaining attention to bias.

Who is this Rapid Review for?

This Rapid Review was conducted as part of the Health and Care Research Wales Evidence Centre Work Programme. The review question was suggested by representatives of the Women's Health Team of the Welsh Government. The intended audience is Women's Health and continence service commissioners and policy makers in Wales.

Background / Aim of Rapid Review

Urinary and faecal incontinence, which are often linked to the stresses and strains of childbirth, particularly perineal trauma, are debilitating conditions that can significantly impact women's quality of life. Approximately 85% of vaginal births in the United Kingdom (UK) are affected by childbirth related perineal trauma, either spontaneously or due to episiotomy. Incontinence also places a significant financial burden on the healthcare system. Previous estimates have shown that stress urinary incontinence alone costs the National Health Service (NHS) £177 million per year. The prevention of continence issues following childbirth through evidence-based interventions is essential for the health of women both short-term and later in life. The economic cost of incontinence on both individuals and the healthcare system is substantial and the implementation of effective interventions to prevent incontinence following birth trauma can prevent avoidable and costly care in future. The aim of this rapid review was to identify evidence on the clinical effectiveness and cost-effectiveness of interventions for preventing continence issues resulting from birth trauma.

Results of the Rapid Review

The evidence base:

- The review included evidence available up until June 2024 (when the searches were conducted). The included studies identified in this rapid review were published between 2003 and 2024. Twenty-three studies were included in this rapid review: 20 systematic reviews of clinical effectiveness and three economic evaluations.

Key findings:

- Twelve systematic reviews of prenatal and/or postnatal pelvic floor muscle training (PFMT) and mixed exercise modes (with a PFMT element) were identified.
- Of the eleven systematic reviews (five of which included meta-analyses) assessing prenatal PFMT and mixed exercise, eight reported findings to support PFMT and exercise for the prevention of urinary incontinence in the postnatal period (up to 6 months postpartum).
- Evidence from two meta-analyses of longer-term outcomes did not support the effectiveness of prenatal PFMT to prevent urinary incontinence in the late postpartum period (defined as greater than 6-12 months) or after 5 years following childbirth. However, data on longer-term outcomes were combined from a diverse set of studies with varied prescription of the PFMT regimens and the reviews did not explicitly examine the impact of continuing PFMT postnatally.
- Of the two systematic reviews that assessed postnatal PFMT one focused on existing incontinence and found no evidence on prevention, and the other found conflicting evidence on the prevention of urinary incontinence.

- Five systematic reviews (of which, three included meta-analyses) explored the effectiveness of prenatal perineal massage. None of the meta-analyses found any significant differences in incidence of urinary incontinence (evidence from three meta-analyses) or faecal incontinence (evidence from two meta-analyses) following prenatal perineal massage. For the other two systematic reviews, one reported a reduction in faecal and gas incontinence but not urinary incontinence, while the other found no effect on any type of incontinence.
- Two systematic reviews reported on the effectiveness of vaginal devices for existing incontinence but did not report on the prevention of incontinence.
- In a systematic review of pushing technique, results demonstrated a significant difference in urinary incontinence scores from baseline to postpartum in the spontaneous pushing group compared with the directed pushing group.
- A cost-utility analysis (conducted to inform NICE guideline 210) utilising a decision analytic Markov model of supervised prenatal pelvic floor muscle training in a population of pregnant women found the intervention to be cost-effective for preventing urinary incontinence when compared to no intervention. The intervention was likely to be cost-effective for all willingness to pay thresholds over £11,000 per QALY gained.
- A cost-effectiveness analysis found that group-based pelvic floor muscle training was more cost-effective than individually supervised training for the prevention of urinary incontinence, at a cost of \$14.53 per case of urinary incontinence prevented or cured if eight women attended a training session.
- A RCT and cost-consequence analysis reported no significant difference in urinary or faecal incontinence between groups of nulliparous women adopting an upright or lying down birthing position; but the intervention was not specifically designed to prevent incontinence.

Policy and Practice Implications

This rapid review complements existing NICE guidance on the prevention and non-surgical management of pelvic floor dysfunction (NG210, 2021), and the management of faecal incontinence (CG49, 2007). The NICE 2021 guidance recommends pelvic floor muscle training for prenatal and postnatal women, and our rapid review also identified a large evidence base regarding exercise-based interventions to prevent urinary incontinence. However, the NICE guidance indicates limited evidence supporting the long-term effectiveness of PFMT, which also aligns with the findings of our review. We identified two meta-analyses that failed to demonstrate the effectiveness of PFMT in preventing incontinence in the long term, but the included studies varied in prescription of PFMT regimens and did not examine the impact of continuing PFMT postnatally. Incontinence is a potential long-term burden as pregnancy and childbirth can weaken the pelvic floor, making women more susceptible to incontinence in later life. Menopause often exacerbates these issues due to hormonal changes and by further weakening the pelvic floor muscles. Although our review considered a broader range of interventions than the NICE 2021 guidance, other interventions, such as prenatal perineal massage and vaginal devices were less represented in the available evidence base, especially for faecal incontinence outcomes. Despite a paucity of economic evaluations assessing the cost-effectiveness of interventions for incontinence, the substantial economic burden of incontinence on the NHS necessitates investment in clinically effective, preventative options. Our findings present the case for investing in exercise-based interventions. Future recommendations for policy and practice should also consider qualitative findings of women's experiences and the acceptability and feasibility of rolling out interventions for the prevention of incontinence.

Research Implications and Evidence Gaps

A significant evidence gap exists regarding the cost-effectiveness of interventions aimed at preventing incontinence resulting from birth trauma. Further research is needed for non-exercise interventions and maintenance interventions. Future studies adopting longer time horizons are also needed to assess any potential long-term outcomes such as incidence of incontinence during the menopause. Future evidence reviews need to consider qualitative research of the acceptability and feasibility of interventions to prevent continence issues.