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# Effects of Pilates on Urinary Incontinence in Pre-menopausal Females: A Systematic Review

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## ABSTRACT

**Introduction:** The impaired pelvic floor muscle function and impaired quality of life are associated with urinary incontinence in premenopausal women. Pilates is a controlled core strengthening program effective in improving urinary incontinence symptoms in females.

**Aim:** The aim of this is to systematically review the effects of Pilates in improving the severity of urinary incontinence, pelvic floor muscle strength and quality of life in premenopausal females.

**Materials and Methods:** The keywords used for search included, 'Pilates', 'pelvic floor muscle function', 'quality of life', 'urinary incontinence', 'quality of life', 'randomised controlled trials'. Two independent reviewers screened the included databases and extracted the findings based on pre-decided participant characteristics, intervention protocols, outcome measures, and key findings. The databases PubMed, MEDLINE, Clarivate, PEDro, ProQuest, and Cochrane Library were thoroughly searched for data published in the last two decades, i.e., from 2005 to 2025. Included studies were randomised controlled trials, controlled clinical trials, and meta-analyses assessing the effect of Pilates-based treatment on the severity of urinary incontinence, pelvic floor muscle strength and quality of life in premenopausal females. Methodological quality and risk of bias were evaluated using standardised assessment tools.

**Results:** In the data extracted, seven randomised controlled trials met the inclusion criteria. Pilates interventions have shown significant improvements in urinary incontinence severity, pelvic floor muscle strength, and quality of life compared with baseline measures. Pilates generally reported greater improvements in muscle activation and symptom reduction as compared to the conventional or only pelvic floor musculature strengthening group.

**Conclusion:** Pilates-based interventions are effective in improving urinary continence in pre-menopausal females. Pilates may represent a feasible programme, particularly when access to supervised rehabilitation is limited.


**Keywords:** Pilates, Pre-menopausal females, Quality of Life, Systematic review, Urinary incontinence.

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