

## The Impact of Urinary Incontinence on Falls

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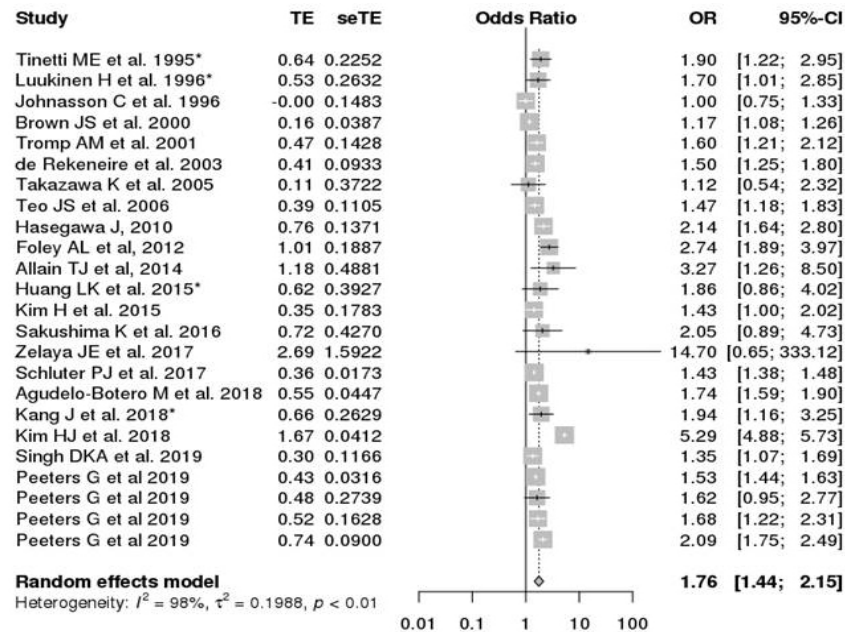
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**Background/Aims:** To investigate the association and influence of urinary incontinence (UI) on falls through systematic review and meta-analysis of relevant studies

**Methods:** We searched citation databases, including PubMed and Embase, for relevant studies from inception to October 2019 using a variety of search terms relating to “urinary incontinence” and “fall”. From these studies, we calculated the pooled odds ratios (ORs) for fall with 95% confidence intervals (CIs) using the Mantel-Haenszel method.

**Results:** Included in the analysis were 21 articles evaluating 162,526 participants. The meta-analysis showed that UI was significantly associated with falls (OR, 1.76; 95% CI, 1.44 to 2.15). Subgroup analyses were performed based on the age of participants and sex. A significant association was found between UI and falls in the subgroup of elderly ( $\geq 65$  years) (OR, 1.73; 95% CI, 1.19 to 2.52), men (OR, 1.82; 95% CI, 1.35 to 2.46) and women (OR, 1.36; 95% CI, 1.21 to 1.52).

**Conclusions:** UI is a predictor of more common falls in the general and in the elderly population.



Subgroup Analysis of the association between urinary incontinence and falls.

Subgroup	No. of studies	OR (95% CI)	Heterogeneity ( $I^2$ ), %
Age, $\geq 65$ years	12	1.73 (1.19 - 2.52)	99%
Sex			
Men	3	1.82 (1.35 - 2.46)	84%
Women	8	1.36 (1.21 - 1.52)	87%
Definition of falls			
Falls $\geq 1$	18	1.74 (1.40 - 2.17)	98%
Studies with high quality	8	1.51 (1.38 - 1.66)	85%
Falls $\geq 2$	9	1.86 (1.47 - 2.34)	58%
Studies with high quality	5	1.56 (1.42 - 1.72)	0%