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*Cochrane Database of Systematic Reviews* 2017, Issue 7. Art. No.: CD001754.  
DOI: [10.1002/14651858.CD001754.pub4](https://doi.org/10.1002/14651858.CD001754.pub4).

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[Intervention Review]

# Traditional suburethral sling operations for urinary incontinence in women

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**Editorial group:** Cochrane Incontinence Group.

**Publication status and date:** Edited (no change to conclusions), published in Issue 7, 2017.

**Citation:** Rehman H, Bezerra CA, Bruschini H, Cody JD, Aluko P. Traditional suburethral sling operations for urinary incontinence in women. *Cochrane Database of Systematic Reviews* 2017, Issue 7. Art. No.: CD001754. DOI: [10.1002/14651858.CD001754.pub4](https://doi.org/10.1002/14651858.CD001754.pub4).

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## ABSTRACT

### Background

Stress urinary incontinence constitutes a significant health and economic burden to society. Traditional suburethral slings are one of the surgical operations used to treat women with symptoms of stress urinary incontinence.

### Objectives

To determine the effects of traditional suburethral slings on stress or mixed incontinence in comparison with other management options.

### Search methods

We searched the Cochrane Incontinence Group Specialised Register (searched 3 June 2010) and the reference lists of relevant articles.

### Selection criteria

Randomised or quasi-randomised trials that included traditional suburethral slings for the treatment of stress or mixed urinary incontinence.

### Data collection and analysis

At least three reviewers independently extracted data from included trials onto a standard form and assessed trial methodological quality. The data abstracted were relevant to predetermined outcome measures. Where appropriate, we calculated a summary statistic: a relative risk for dichotomous data and a weighted mean difference for continuous data.

### Main results

We included 26 trials involving 2284 women. The quality of evidence was moderate for most trials and there was generally short follow-up ranging from 6 to 24 months.

One medium-sized trial compared traditional suburethral sling operations with oxybutynin in the treatment of women with mixed urinary incontinence. Surgery appeared to be more effective than drugs in treating participant-reported incontinence (n = 75, risk ratio (RR) 0.18, 95% confidence interval (CI) 0.08 to 0.43).

One trial found that traditional slings were more effective than transurethral injectable treatment (RR for clinician-assessed incontinence within a year 0.21, 95% CI 0.09 to 0.21)

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Seven trials compared slings with open abdominal retropubic colposuspension. Participant-reported incontinence was lower with the slings after one year (RR 0.75, 95% CI 0.62 to 0.90), but not when assessed by clinicians. Colposuspension, however, was associated with fewer peri-operative complications, shorter duration of use of indwelling catheter and less long-term voiding dysfunction. One study showed there was a 20% lower risk of bladder perforation with the sling procedure but a 50% increase in urinary tract infection with the sling procedure compared with colposuspension. Fewer women developed prolapse after slings (compared with after colposuspension) in two small trials but this did not reach statistical significance.

Twelve trials addressed the comparison between traditional sling operations and minimally invasive sling operations. These seemed to be equally effective in the short term (RR for incontinence within first year 0.97, 95% CI 0.78 to 1.20) but minimally invasive slings had a shorter operating time, fewer peri-operative complications (other than bladder perforation) and some evidence of less post-operative voiding dysfunction and detrusor symptoms.

Six trials compared one type of traditional sling with another. Materials included porcine dermis, lyophilised dura mater, fascia lata, vaginal wall, autologous dermis and rectus fascia. Participant-reported improvement rates within the first year favoured the traditional autologous material rectus fascia over other biological materials (RR 0.45, 95% CI 0.21 to 0.98). There were more complications with the use of non-absorbable Gore-Tex in one trial.

Data for comparison of bladder neck needle suspension with suburethral slings were inconclusive because they came from a single trial with a small specialised population.

No trials compared traditional suburethral slings with anterior repair, laparoscopic retropubic colposuspension or artificial sphincters. Most trials did not distinguish between women having surgery for primary or recurrent incontinence when reporting participant characteristics.

For most of the comparisons, clinically important differences could not be ruled out.

### Authors' conclusions

Traditional slings seem to be as effective as minimally invasive slings, but had higher rates of adverse effects. This should be interpreted with some caution however, as the quality of evidence for the studies was variable, follow-up short and populations small, particularly for identifying complication rates. Traditional sling procedures appeared to confer a similar cure rate in comparison to open retropubic colposuspension, but the long-term adverse event profile is still unclear. A brief economic commentary (BEC) identified two studies suggesting that traditional slings may be more cost-effective compared with collagen injection but not cost-effective when compared with minimally invasive sling operations. Reliable evidence to clarify whether or not traditional suburethral slings may be better or worse than other surgical or conservative management options is lacking.

## PLAIN LANGUAGE SUMMARY

### Traditional sling operations for urinary incontinence in women

Traditional sling operations are used to treat women with stress urinary incontinence. This is loss of urine when coughing, laughing, sneezing or exercising due to damage to the muscles that hold up the bladder, and injuries to the nerves that may occur during childbirth. A significant amount of the woman's and her family's income can be spent on managing the symptoms. Sometimes stress incontinence occurs together with 'urge incontinence' - known as 'mixed incontinence'. The sling operation aims to hold up the bladder with a strip of material which may be biological or synthetic. The results showed that there is not enough information on which to judge whether traditional sling operations are better or worse than any other treatments. Long-term results are awaited. In terms of costs, a brief review of economic studies, which considered the overall costs and effects, suggested that traditional slings are less costly when compared with collagen injection but expensive when compared with minimally invasive slings. In this review there were few trials, of high quality, comparing slings with other forms of surgery and only one study comparing sling operations with non-surgical treatment.