A systematic review of complication and recurrence rates of musculocutaneous, fasciocutaneous, and perforator-based flaps for treatment of pressure sores
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CRD summary
This review concluded that there were no statistically significant differences between surgical reconstruction of pressure sores with musculocutaneous, fasciocutaneous and perforator-based flaps. The absence of studies with head-to-head comparisons mean this conclusion may not be reliable.

Authors' objectives
To evaluate complication and recurrence rates following surgical reconstruction of pressure sores with musculocutaneous, fasciocutaneous or perforator-based flaps.

Searching
The Cochrane Library, LILACS, MEDLINE and EMBASE databases were searched up to November 2010 for publications in English. Search terms were reported.

Study selection
Two reviewers independently selected studies that examined musculocutaneous, fasciocutaneous or perforator-based flaps for pressure sores in the sacrum, ischium and/or trochanteric regions. Studies of recurrent pressure sores were excluded. Outcomes of interest were complication (dehiscence, infection, necrosis, other) and recurrence rates.

Participant characteristics were not reported.

Assessment of study quality
The authors did not assess study quality.

Data extraction
Key characteristics were extracted from the included studies. The authors did not state how many reviewers performed the extraction.

Methods of synthesis
Complication and recurrence rates (repeat occurrence of tissue breakdown during the follow-up period after reconstruction) and associated 95% confidence intervals (CIs) were pooled using a random-effect model. Cochran Q and I² statistics were calculated to quantify heterogeneity among studies. Publication bias was assessed using a funnel plot.

Results of the review
Fifty-five studies (1,194 patients) were included in the review. Most of the included studies appeared to be case series with sample sizes that ranged from 10 to 65 patients. Reported follow-up ranged from one to 168 months.

Musculocutaneous flaps were associated with an overall complication rate of 18.6% (95% CI 14.0 to 23.6; 27 studies; I²=58%). The recurrence rate was 8.9% (95% CI 5.5 to 13.2; 22 studies; I²=58%).

Fasciocutaneous flaps were associated with an overall complication rate of 11.7% (95% CI 7.4 to 16.9; 11 studies; I²=11%). The recurrence rate was 11.2% (95% CI 6.1 to 17.6; 11 studies; I²=43%).

Perforator-based flaps were associated with an overall complication rate of 19.6% (95% CI 13.6 to 26.4; 14 studies; I²=55%). The recurrence rate was 5.6% (95% CI 1.7 to 11.6; nine studies; I²=57%).

Funnel plots suggested there was some evidence of publication bias.

Authors' conclusions
There were no statistically significant differences between complication and recurrence rates following the use of regional flaps available in plastic surgeons' armamentarium for the repair of pressure sores.

**CRD commentary**
The research question for this review was supported by broad but appropriate inclusion criteria, a range of databases were searched for potentially relevant studies published in English and efforts were made to minimise bias and error in their selection. However, it appeared that most of the evidence came from small uncontrolled case series and that the authors' conclusions were not based on any head-to-head comparisons of approaches. Details of the methods for this comparison were not reported and insufficient data were available to judge whether populations that received the different interventions were sufficiently similar to allow a fair comparison. Length of follow-up was highly variable and this may have contributed to the substantial heterogeneity between studies on recurrence rates and longer-term complications.

Given the review limitations, the conclusion that such rates were not significantly different between approaches may not be reliable.

**Implications of the review for practice and research**

**Practice:** The authors stated that choice of flap technique can be based on desired advantage of a particular approach rather than concerns about complications or recurrence rates.

**Research:** The authors recommended well-designed comparative studies with adequate sample size to elucidate any difference between flap techniques.

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