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# Silver based wound dressings and topical agents for treating diabetic foot ulcers

Review

Intervention

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## Abstract

English

### Background

Foot ulceration affects 15 to 20% of people with diabetes. It is a major precursor to amputation in this patient group, and early and appropriate treatment provides the greatest opportunity for healing. The use of silver for its antimicrobial properties has re-emerged, and modern wound dressings that release a sustained amount of free silver ions, are now widely used in wound management.

### Objectives

To evaluate the effects of silver-containing dressings and topical agents on infection rates and healing of diabetes related foot ulcers.

### Search methods

We searched the Cochrane Wounds Group Specialised Register (Searched 8/2/10); The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*, 2010 Issue

1); Ovid MEDLINE - 2007 to January Week 3 2010; Ovid MEDLINE - In-Process & Other Non-Indexed Citations (Searched 4/2/10); Ovid EMBASE - 2007 to 2010 Week 04; EBSCO CINAHL - 2007 to 8 February 2010.

## Selection criteria

Randomised controlled trials and non-randomised controlled clinical trials were considered for inclusion. Studies were included if they involved participants with Type 1 or Type 2 diabetes and related foot ulcers, met the requirements for randomisation, allocation and concealment where appropriate, and compared the intervention with a placebo or a sham dressing, an alternative non silver based dressing or no dressing, and reported outcomes that represent healing rate or infection.

## Data collection and analysis

Two authors independently evaluated the papers identified by the search strategy against the inclusion criteria but identified no trials eligible for inclusion in the review. It was not possible to perform planned subgroup and sensitivity analysis in the absence of data. In future, if eligible trials become available, a random effects model will be applied for meta-analysis in the presence of statistical heterogeneity (estimated using the  $I^2$  statistic). Dichotomous outcomes will be reported as risk ratios with 95% confidence intervals (CI), and continuous outcomes as weighted mean differences (WMD) with 95% CI. Statistical significance will be set at P value < 0.05 for all outcomes and the magnitude of the effect will be estimated by calculating the number needed to treat (NNT) with 95% CI.

## Main results

No studies were identified that met with the inclusion criteria

## Authors' conclusions

Despite the widespread use of dressings and topical agents containing silver for the treatment of diabetic foot ulcers, no randomised trials or controlled clinical trials exist that evaluate their clinical effectiveness. Trials are needed to determine clinical and cost-effectiveness and long term outcomes including adverse events.

## Plain language summary

English

### **Silver based wound dressings and topical agents containing silver for treating diabetic foot ulcers**

People with diabetes can develop foot ulcers. These are often due to reduced blood supply, reduced sensation, a change in the amount of movement in the lower leg, a foot deformity or the presence of some trauma. Therapies for foot ulcers include pressure reducing or relieving footwear and wound care through frequent dressing changes. Healing the wound can be delayed by poor control of blood sugar levels, compliance with therapies and the amount of bacteria on the wound surface. Foot ulcers in people with

diabetes frequently become infected. Silver is an antimicrobial and dressings which contain silver have been developed. The authors of this Cochrane review wanted to find evidence on whether silver based dressings reduced infection and encouraged wound healing. They searched the medical literature for randomised and controlled clinical trials but found no studies which were eligible for inclusion in the review. We therefore do not know if silver containing dressings and topical agents containing silver are beneficial to diabetic foot ulcer healing.

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