Foot ulcers are a common and serious complication of diabetes. A systematic review evaluated preventive patient education.

**Educating patients to prevent diabetic foot ulceration**

**Review question**
Can educating people with diabetes about foot care help to reduce foot ulcers and amputations?

**Nursing implications**
Foot ulceration is a common problem for people with diabetes, especially those with peripheral neuropathy and/or peripheral vascular disease. Individuals who develop these types of ulcers may need a total or partial amputation of the affected limb.

Foot ulcers can not only lead to physical disability and loss of quality of life for patients but also increase costs in healthcare and affect employment. The thrust of health promotion should therefore be towards preventing foot ulcers from occurring.

A systematic review was undertaken to examine patient education programmes designed to prevent diabetic foot ulcers.

**Study characteristics**
This summary is based on a Cochrane systematic review containing 11 randomised controlled trials with a total of 2,686 participants aged over 18 years with either type 1 or type 2 diabetes.

The studies evaluated educational programmes that aimed to reduce foot ulcer incidence. Foot care education could be part of a larger educational programme, as long as it contrasted with the control intervention. An explicit focus on foot care was required. There was no minimum number of sessions stipulated. All types of control interventions were considered for education.

Primary outcomes were: foot ulceration or ulcer recurrence and amputation. Secondary outcomes included disease-oriented outcomes such as callus development; resolution of callus; fungal infection; and number and duration of hospital admissions for diabetic foot problems.

**Summary of key evidence**
Of the 11 included studies, only four assessed the occurrence of foot ulceration and amputation as an end result following foot care education interventions.

One study showed that, after a one-year follow-up, one hour of group education given by a podiatrist had reduced the incidence of foot ulcers and amputation. However, this study was considered to be at high risk of bias as, for example, there was no allocation concealment, and blinding of participants was not explicit in the report.

One similar but more methodologically robust study did not confirm this finding. The other two studies did not demonstrate any effect of education on ulcer incidence or amputation but were underpowered.

Short-term, positive effects of foot care knowledge were demonstrated in five out of eight studies in which this was assessed. However, this difference of effect was shown to have disappeared after seven years in one study. Similarly, patients’ self-care behaviour at six and 18 months was shown to have improved in seven of the nine studies that assessed this outcome.

Two studies described temporary improvements on callus, nail problems and fungal infections after an educational intervention.

While some results suggested positive effects, they should be viewed with caution due to the lack of methodological quality of the studies. There is insufficient robust evidence that limited patient education alone is effective in achieving clinically relevant reductions in ulcer and amputation incidence. Further research of better methodological quality should explicitly define the content of the educational packages and show a clear distinction between what is considered standard education and the experimental packages.

**Best practice recommendations**
The review found that there is currently no research to support the use of education alone to prevent foot ulceration and amputations. However, because diabetes has enormous and growing effects on individuals, increasing patient awareness of the implications of not caring for their feet must be part of educational packages and within all nurses’ health promotion role.

The study does indicate that more intensive and comprehensive preventive interventions may be needed to achieve clinically relevant reductions in ulcer and amputation incidence.

**Reference**

The full review report, including references, can be accessed at: tinyurl.com/cochrane-diabetes

Ruth Rojahn is senior lecturer, De Montfort University, Leicester, and a member of the Cochrane Nursing Care Field