Clinical guidelines for type 2 diabetes: Prevention and management of foot problems

This brief guideline is one of six to cover areas within type 2 diabetes. Full evidence reviews and additional recommendations will be available for all six areas. The areas covered are:

- Foot care (prevention and management of foot problems)
- Eye care (screening and early management of retinopathy)
- Raised lipid levels
- Raised blood pressure
- Renal care
- Glycaemic control.

The guidelines have been developed by a multiprofessional group and subjected to extensive professional review. The national guideline is aimed at all healthcare professionals providing care to people with diagnosed type 2 diabetes in primary and secondary care, irrespective of location. Depending on the type, stage and severity of clinical problem, the guidelines may also be valuable to those who work in the tertiary sector of diabetes care. They may also be shared with people who have type 2 diabetes.

Introduction

The guidelines printed opposite are a result of a collaborative programme between the Royal College of General Practitioners, British Diabetic Association (now Diabetes UK), Royal College of Physicians, and Royal College of Nursing. They are intended to assist in the management of type 2 diabetes (non-insulin dependent diabetes), and have a supporting base of research evidence. The guidelines are a synthesis of up-to-date international evidence and make recommendations on case management.

Foot problems in type 2 diabetes

Foot complications are common in diabetes. Overall, 20–40% of people with diabetes have neuropathy and 20–40% have peripheral vascular disease (PVD), depending on the measurement and definition used. Neuropathy and PVD are secondary to poor blood glucose control and adverse arterial risk factors (smoking, dyslipidaemia). Annually, around 5% of patients develop foot ulcers. The ulcerated foot can easily become infected (especially with poor glucose control). If not managed appropriately, infection can lead to avoidable amputation.

Foot complications are further associated with social deprivation, poor vision, disability, foot deformity, and absence of professional foot care, all factors which limit a person's ability to practise good personal foot care.

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Foot care emergency

The following require referral to a specialised podiatry/foot care team within 24 hours:

- New ulceration
- Cellulitis
- Discolouration.

Evidence base

The evidence in the guideline is graded as shown in *Table 1*. The recommendations are graded in the complete document (which contains the full evidence base, complete set of recommendations and methodological details), but are not graded in the summary document shown opposite.

Further information and copies of the full evidence base for the guidelines will soon be available from:

The Sales Office
Royal College of General Practitioners
14 Princes Gate
Hyde Park
London SW7 1PU
or at their website — http://www.rcgp.org.uk

Suggested reference citation:

Hutchinson A, McIntosh A, Feder G, Home PD, Young R (2000) *Clinical Guidelines for Type 2 Diabetes: Prevention and Management of Foot Problems*. Royal College of General Practitioners, London

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Table 1. Evidence and recommendation grading

Ia	Evidence from meta-analysis of randomised controlled trials
Ib	Evidence from at least one randomised controlled trial
IIa	Evidence from at least one controlled study without randomisation
IIb	Evidence from at least one other type of quasi-experimental study
III	Evidence from non-experimental descriptive studies, such as comparative studies, correlation studies and case control studies
IV	Evidence from expert committee reports or opinions and/or clinical experience of respected authorities.

Prevention and management of foot problems in type 2 diabetes

This guideline does not deal with the management of risk factors such as raised blood glucose levels, smoking, raised lipid levels, raised blood pressure

Principal recommendations	Evidence
Foot care for all people with diabetes	

● Arrange recall and annual review of complications and their risk factors, by trained personnel
● Examine feet, and lower legs, as part of annual review to detect risk factors for ulceration. Include:
  ● Testing of foot sensation using a 10g monofilament or vibration
  ● Palpation of foot pulses
  ● Inspection of foot shape and footwear
● Classify foot risk as: low current risk or at risk or high risk or ulcerated foot
	Ib Evaluation of skin, soft tissue, musculoskeletal, vascular and neurological condition on an annual basis is important for the detection of feet at raised risk of ulceration
	III Both measurement of vibration perception threshold (biothesiometer) and sensation threshold (10g monofilament) predict raised risk of ulceration

Foot care for the low current risk foot (normal sensation, palpable pulses) ● Agree a management plan including foot care education with each person	Ib An agreed plan of management between people with diabetes and healthcare professionals is important to achieve adequate levels of care
Foot care for the at risk foot (neuropathy or absent pulses or other risk factor) ● If previous foot ulcer or deformity or skin changes manage as high risk ● Enhance foot care education ● Inspect feet 3–6 monthly ● Review need for vascular assessment	III A range of risk factors have been identified to indicate increased risk of ulceration ● Neuropathy ● Peripheral vascular disease ● Previous ulceration or amputation ● Old age ● Plantar callus ● Foot deformities ● Poor footwear ● Duration of diabetes ● Social deprivation or isolation ● Poor vision ● Cigarette smoking

Foot care for the high risk foot (risk factor+deformity or skin changes or previous ulcer)
● Arrange frequent review (1–3 monthly) from specialised podiatry/foot care team
  ● Intensified foot education
  ● Specialist footwear and insoles
  ● Frequent (according to need) skin and nail care
● Review education/footwear/vascular status as for the at risk foot
● Ensure special arrangements for those people with disabilities or immobility
	Ib Implementing a screening and protection programme for patients with gross risk factors for ulceration reduces morbidity and is cost effective

Foot care for the ulcerated foot
● Arrange, urgently, foot ulcer care from a team with specialist expertise
● Expect that team to ensure, as a minimum:
  ● Investigation and treatment of vascular insufficiency
  ● Local wound management, appropriate dressings, and debridement as indicated
  ● Systemic antibiotic therapy for cellulitis or bone infection
  ● Effective means of distributing foot pressures, e.g. specialist footwear, casts
  ● Tight blood glucose control
	III There is inadequate evidence about the relative effectiveness of different antibiotic regimens for treating serious diabetic foot infections
	IIa For superficial or skin deep ulcers, there is inadequate evidence to show whether antibiotics are more effective than placebo and standard wound care
	Ib There is insufficient evidence to support the effectiveness of any type of protective dressing, or topical applications/solutions, over any other for treating diabetic foot ulcers

Foot care emergency: new ulceration, cellulitis, discolouration – referral to specialised podiatry/foot care team within 24 hours