Type 2 diabetes
Prevention and management of foot problems*

Key priorities for implementation

**General management approach**

- Effective care involves a partnership between patients and professionals, and all decision making should be shared.
- Arrange recall and annual review as part of ongoing care.
- As part of annual review, trained personnel should examine patients' feet to detect risk factors for ulceration.
- Examination of patients' feet should include:
  - testing of foot sensation using a 10 g monofilament or vibration
  - palpation of foot pulses
  - inspection of any foot deformity and footwear.
- Classify foot risk as:
  - at low current risk
  - at increased risk
  - at high risk
  - ulcerated foot.

**Care of people at low current risk of foot ulcers (normal sensation, palpable pulses)**

- Agree a management plan including foot care education with each person.

**Care of people at increased risk of foot ulcers (neuropathy or absent pulses or other risk factor)**

- Arrange regular review, 3–6 monthly, by foot protection team.
- At each review:
  - inspect patient's feet
  - consider need for vascular assessment
  - evaluate footwear
  - enhance foot care education.

**NB** If patient has had previous foot ulcer or deformity or skin changes manage as high risk (see below).

**Care of people at high risk of foot ulcers (neuropathy or absent pulses plus deformity or skin changes or previous ulcer)**

- Arrange frequent review (1–3 monthly) by foot protection team.
- At each review:
  - inspect patient's feet
  - consider need for vascular assessment
  - evaluate and ensure the appropriate provision of
    - intensified foot care education
    - specialist footwear and insoles
    - skin and nail care.
- Ensure special arrangements for those people with disabilities or immobility.

**Care of people with foot care emergencies and foot ulcers**

- Foot care emergency (new ulceration, swelling, discoloration)
  - Refer to multidisciplinary foot care team within 24 hours.
- Expect that team, as a minimum, to:
  - investigate and treat vascular insufficiency
  - initiate and supervise wound management
  - use dressings and debridement as indicated
  - use systemic antibiotic therapy for cellulitis or bone infection as indicated
  - ensure an effective means of distributing foot pressures, including specialist footwear, orthotics and casts
  - try to achieve optimal glucose levels and control of risk factors for cardiovascular disease.

Further information

**Distribution**

The distribution list for this quick reference guide is available from www.nice.org.uk/CG010distributionlist

**NICE guideline**

*NB* The NICE guideline is available from www.nice.org.uk/CG010publicinewenglish (version in English and Welsh).

**Information for the public**

NICE has produced a version of this guidance for people with type 2 diabetes, their families and carers, and the public. The information is available from www.nice.org.uk/CG010publicinewenglish (English version) and www.nice.org.uk/CG010publicinewenglish (version in English and Welsh). Printed versions are also available – see below for ordering information.

**Related guidance**

This guideline is one of a series on the management of type 2 diabetes. Other guidelines in the series cover retinopathy (screening and early management), renal disease (prevention and early management), management of blood glucose, and management of blood pressure and blood lipids. For information about these guidelines and other NICE guidance on diabetes and wound care that has been issued or is in development, see www.nice.org.uk

**Review date**

The process of reviewing the evidence is expected to begin 4 years after the date of issue of this guideline. Reviewing may begin earlier than 4 years if significant evidence that affects the guideline recommendations is identified sooner. The updated guideline will be available within 2 years of the start of the review process.

*Update of the guideline entitled Clinical Guidelines and Evidence Review for Type 2 Diabetes: Prevention and Management of Foot Problems published by the Royal College of General Practitioners in 2000.*

Clinical Guideline 10
Developed by the National Collaborating Centre for Primary Care

*MidCity Place, 71 High Holborn, London WC1V 6NA; website: www.nice.org.uk*
Foot care for people with type 2 diabetes: pathway of care

On diagnosis of type 2 diabetes, and at annual review thereafter
- examine patient’s feet and lower legs to detect risk factors – include:
  - testing of foot sensation using 10 g monofilament or vibration
  - palpation of foot pulses
  - inspection for any foot deformity
  - inspection of footwear

Is person at low current risk of foot ulcer? (normal sensation, palpable pulses)
- No
- Yes

Refer urgently to multidisciplinary foot care team

Does the individual have a foot ulcer?
- No
- Yes

• Promptly refer patients who may benefit from revascularisation
• Wound management:
  - closely monitor wounds and change dressings regularly
  - carefully remove dead tissue from foot ulcers (unless revascularisation is required)
  - use intensive systemic antibiotic therapy for non-healing or progressive ulcers with clinical signs of active infection
• Consider total contact casting (unless there is severe ischaemia)
• Try to achieve optimal glucose levels and control of risk factors for cardiovascular disease
• Manage as ‘at high risk’ when ulcer is healed

If new
- ulcer (wound)
- swelling
- discoloration

THEN REFER TO
multidisciplinary foot care team immediately
within 24 hours

If suspected Charcot osteoarthropathy
REFFER TO
multidisciplinary foot care team immediately
for immobilisation of the affected joint and
long-term management of offloading to
prevent ulceration

Is person at high risk of foot ulcer? (risk factor + deformity or skin changes or previous ulcer)
- No
- Yes

Refer to foot protection team* for classification

Is person at increased risk of foot ulcer? (neuropathy or absent pulses or other risk factor)
- No
- Yes

Management by foot protection team
- inspect patient’s feet 3–6 monthly
- review need for vascular assessment
- evaluate footwear
- enhance foot care education

† A team with expertise in protecting the foot; typically members of the team include podiatrists, orthotists and footcare specialists
† A team of highly trained specialist podiatrists and orthotists, nurses with training in dressing diabetic foot wounds and diabetologists with expertise in lower limb complications

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General management approach
- Share decision making with patients
- Adequately train healthcare professionals and other personnel involved in assessment of diabetic feet
- Be extra vigilant in caring for people aged over 70, or who have had diabetes for a long time, have poor vision, smoke, are socially deprived or live alone
- If necessary, make special arrangements for people who are housebound, live in care or nursing homes
- Encourage patients to inspect their feet and monitor their condition

Patient education
- Make available structured patient education at initial diagnosis and as required, based on a regular, formal assessment of need
- Offer patient education on an ongoing basis
- Use different approaches
- For patients with foot ulcers or previous amputation, consider offering graphic visualisations of the sequelae of disease, and providing clear, repeated reminders about foot care

Note:
The Guideline Development Group produced a framework of key points that might provide a useful starting point for patient education. See Appendix E in the NICE guideline for details.

Recommendation grading
- directly based on category I evidence (meta-analysis of randomised controlled trials [RCTs] or at least one RCT)
- directly based on category II evidence (at least one study without randomisation or at least one other type of quasi-experimental study) or extrapolated from category I evidence
- directly based on category III evidence (non-experimental descriptive studies) or extrapolated from category I or II evidence
- directly based on category IV evidence (expert committee reports or opinions and/or clinical experience of respected authorities) or extrapolated from category I, II or III evidence
- drawn from NICE 2003 appraisal of patient education models for diabetes

See the NICE guideline for further information (www.nice.org.uk/CG010NICEguideline)