This is a guide only and does not replace clinical judgment

promoting healthy skin
Champions for Skin Integrity

References

Botros M, Kuhnke J, Embil JM et al. Best practice recommendations for the prevention and management of diabetic foot ulcers. Foundations of Best Practice for Skin and Wound Management. Wounds Canada 2027; www.woundscanada.ca/

Brouwers JJ, Willems SA, Goncalves LN et al. Reliability of bedside tests for diagnosing peripheral arterial disease in patients prone to medial arterial calcification: systematic review. EClinical Medicine 2022; 50.

Deng J, Yang M, Zhang X, Zhang H. Efficacy and safety of autologous platelet-rich plasma for diabetic foot ulcer healing: systematic review and meta-analysis of randomized controlled trials. J Orthopaedic Surg Res 2023; 18:1-15.

Kaminski MR, Golledge J, Lasschuit JWJ et al. Australian guideline on prevention of foot ulceration: part of the 2021 Australian evidence-based guidelines for diabetes-related foot disease. J Foot Ankle Research 2022; 15:53.

Lazzarini PA, Raspovic A, Prentice J et al. Australian evidence-based guidelines for the prevention and management of diabetes-related foot disease: a guideline summary. Med J Aust 2023; 219:485-495.

National Institute for Health and Care Excellence. Diabetic foot problems: prevention and management. NICE Guideline 2019; www.nice.org.uk/guidance/ng19

Schaper NC, van Netten JJ, Apelqvist J et al. IWGDF Guidelines on the prevention and management of diabetes-related foot disease. 2023; www.iwgdfguidelines.org

QUT Queensland University of Technology

School of Nursing, Faculty of Health
Queensland University of Technology
Kelvin Grove Qld 4059 Australia
E: woundresearch@qut.edu.au

This Project was previously funded by the Australian Government Department of Health and Ageing under the Encouraging Better Practice in Aged Care (EBPAC) program.

Diabetes-related Foot Ulcers

Information for health professionals

promoting healthy skin
Champions for Skin Integrity

QUT Queensland University of Technology

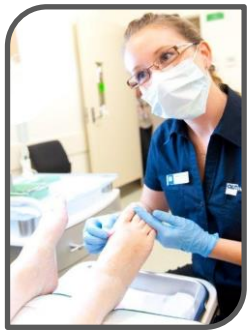
Diabetes-related Foot Ulcers

Assessment

- Assessment should be undertaken by trained health practitioners
- Take a comprehensive medical, lower limb, ulcer, glycaemic, nutrition & psychosocial history
- Assess for peripheral arterial disease, via history, pedal pulses, skin characteristics, Doppler waveforms, Ankle Brachial Pressure Index (ABPI), Toe Pressures (TP) and/or Toe Brachial Index (TBI). An ABPI <0.9 or TBI <0.7 or abnormal Doppler waveform suggests PAD. An ABPI >1.3 requires further investigation
- Assess loss of protective sensation (LOPS) via monofilament testing, vibration testing and clinical assessment
- Assess for structural abnormality
- Classify the level of risk for a foot ulcer as:
  - very low: no risk factors present
  - low: LOPS or PAD present
  - moderate: LOPS + PAD, OR LOPS + foot deformity, OR PAD + foot deformity
  - high: LOPS or PAD AND either past foot ulcer or amputation or end-stage renal disease
- Classify ulcer as neuropathic, neuro-ischaemic or ischaemic
- Regularly assess and document ulcer characteristics and progress in healing

Management

- Involve a multidisciplinary team with GP, nurse, podiatrist, orthotist, vascular surgeon, endocrinologist. Consider remote expert advice for people living in remote areas
- Offloading of pressure points is necessary:
  - non-removable knee-high devices or total contact casts are the first preference for neuropathic plantar ulcers. Secondary options are removable knee or ankle-high devices, or felted foam with appropriate footwear
  - options for ulcers at other sites are surgery, removable offloading devices, footwear modifications or orthoses
- Refer for urgent medical or specialist help when:
  - ulcer with fever or signs of sepsis
  - ulcer with limb ischaemia
  - clinical suspicion of deep soft tissue or bone infection
  - ABPI <0.4, ankle systolic pressure <50mmHg, TP <30mmHg, or critical limb ischaemia (rest pain, failure to heal, tissue loss) for revascularization
- Gently cleanse the ulcer with a neutral, non-toxic solution
- Debride necrotic and deviatlised tissue, unless revascularization is necessary.
  **Sharp debridement should only be undertaken by trained health professionals*
- Dressings should maintain a moist wound healing environment, protect peri-ulcer skin, be non-traumatic and cost effective
- Re-evaluate treatments if ulcer fails to reduce by 50% in size after 4 weeks of therapy



- If infection is present:
  - obtain tissue biopsy for culture from soft tissue infection
  - treat with an appropriate antibiotic
  - refer those with suspected osteomyelitis for investigations and specialist wound care
  - hospitalize those with severe foot infection
- Optimise glucose control
- Additional therapy may be useful, including
  - topical negative pressure therapy
  - platelet-rich plasma
  - hyperbaric oxygen therapy

Diabetes-related foot ulcers usually occur on the sole of the foot or over pressure points; surrounded by dry, thin, and/or calloused skin

Prevention

- All people at moderate or high risk need protective therapeutic footwear
- Provide structured foot self-care education to people at risk and family, including:
  - wear appropriate shoes indoors and outdoors
  - practice safe foot care (careful drying, moisturize dry skin, nail care, avoid trauma)
  - inspect feet and insides of shoes daily
  - promptly seek professional help for any problems
- A trained health professional should do a foot examination:
  - annually in those at very low risk
  - 6 to 12 monthly for those at low risk
  - 3 to 6 monthly in those at moderate risk
  - 1 to 3 monthly in those at high risk
- Provide a foot protection program for those at moderate or high risk, including education, review & appropriate footwear