

Diabetic Foot Ulcer Flow Chart

Assessment

History

- medical
- medications
- wound
- psychosocial/nutrition

Characteristics of the wound

- site, area, depth, ulcer bed, infection
- classify as neuropathic, neuro-ischaemic or ischaemic

Assess risk factors*

- assess peripheral arterial disease (PAD), via pedal pulses, Doppler waveforms, ankle or toe brachial pressure index (ABPI/TBI) An ABPI less than 0.9, or TBI <0.75 suggests PAD. ABPI greater than 1.3 requires further investigation
- assess neuropathy, e.g. use monofilament testing, vibration testing and clinical assessment
- assess structural abnormality and past foot disease

* Assessment should be undertaken by trained health practitioners

Wound Bed Management

- Gently cleanse the wound with a neutral, non-irritating solution e.g. warm water or normal saline
- Remove necrotic or devitalised tissue, unless revascularisation is needed*
- Select a dressing which will:
 - maintain a moist wound environment
 - protect surrounding skin
 - manage wound exudate
 - be non-traumatic and cost effective

If infection is present:

- obtain a biopsy for culture
- treat with an effective antibiotic
- investigate suspected osteomyelitis
- hospitalise if severe infection is present

* Sharp debridement should only be undertaken by trained health practitioners



When to refer

Refer for urgent specialist help if life or limb-threatening diabetic foot disease is present, i.e.

Ulcer with fever or signs of sepsis

Ulcer with limb ischaemia

Suspicion of deep tissue or bone infection

Gangrene (with or without ulceration)

Management

- Offload pressure points, e.g.
 - use non-removable knee-high devices or total contact cast for neuropathic plantar ulcers
 - secondary options are removable knee or ankle devices
 - use surgery, knee or ankle-high devices, footwear modifications or orthoses for ulcers at other sites

Consult a specialist if infection or ischaemia is present

- Refer for revascularization if:
 - ABI <0.5,
 - toe pressure <30mmHg
 - critical limb ischaemia (rest pain, failure to heal, tissue loss)
- Promote oxygenation of the wound by avoiding dehydration, smoking, cold, stress and pain
- Optimise glucose control
- Document regular progress in healing
- Re-evaluate treatment if failure to achieve 50% ulcer size reduction after four weeks
- Involve a multidisciplinary team; include podiatrists, orthotists, GPs, vascular/orthopaedic surgeons, nurses and endocrinologists
- Consult remote expert advice with digital imaging for clients living in remote areas

References:

International Working Group on the Diabetic Foot. IWGDF Guidelines on the prevention and management of diabetic foot disease. 2019 <https://iwgdfguidelines.org/> • Lavery L et al. Diabetic foot ulcer treatment guidelines. Wound Repair Regen 2016; 24:112-26. • Registered Nurses' Association of Ontario. Assessment and management of foot ulcers for people with diabetes. 2013, RNAO: Toronto. <https://rmao.ca> • NHMRC. National evidence-based guideline on prevention, identification and management of foot complications in diabetes. 2011, Baker IDI: Melbourne. • Scottish Intercollegiate Guidelines Network. Management of diabetes: A national clinical guideline. 2017. <https://www.sign.ac.uk/assets/sign116.pdf>

Prevention

- Assess all clients with diabetes for PAD, neuropathy and foot deformity and classify the level of risk
- Protective footwear is required for those at moderate or high risk, i.e. with PAD, neuropathy, callus, foot deformity and/or previous ulceration
- Teach clients at risk of ulcers to:
 - wear appropriate footwear
 - inspect feet and inside of shoes daily
 - practise good foot care (hygiene, careful drying, moisturise dry skin, nail care, avoid trauma)
 - seek professional help for problems
- Ensure an annual foot examination by a health professional (three–six monthly for moderate risk, one–three monthly for high risk)
- Treat modifiable risk factors (callus, fissures, ingrown nails, fungal infection)
- Offer a foot protection program for those at moderate or high risk of ulceration

Characteristics of a Diabetic Foot Ulcer



Diabetic ulcers typically:

occur on the sole of the foot or over pressure points e.g. toes



the wound bed can be shallow or deep, producing low to moderate amounts of exudate

the surrounding skin is usually dry, thin and frequently has callous formation



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