

## **Foot Evaluation**

### **Introduction**

- Foot ulcers affect an estimated 15% of diabetic patients.
- The risk of lower -extremity amputation is up to 40 times greater in a diabetic than a nondiabetic.
- Approximately 50% of all nontraumatic amputations in the U.S. are due to complications of diabetes.
- 50% of diabetics will die within 3-5 years after an amputation.
- After a first amputation, 50% of diabetics will require a second amputation.

### **Factors that increase risk of amputation**

- Loss of sensation (neuropathy).
- Inadequate vascular supply.
- Structural deformities.
- Skin or nail deformities.
- History of prior ulcer.

### **Comprehensive foot exam**

- Evaluation for structural abnormalities, i.e., hammer toe, bony prominence, Charcot deformity, decreased mobility (hallux flexion<30%).
- Vascular Evaluation
  - Warmth and color of foot.
  - Palpation of pedal pulses. If pedal pulses are decreased, consider noninvasive vascular evaluation or check ankle/brachial index (ABI). ABI<0.9 is abnormal.
  - Because diabetics tend to occlude vessels distally, pedal pulses may be intact with distal occlusion. Venous filling time provides a reasonable assessment of general perfusion. A venous filling time of >25 seconds implies increased risk for ulceration, infection, and poor healing.
- Sensory Evaluation
  - Loss of sense of vibration, sharp/dull, hot/cold, or position sense and loss of ankle jerk are signs of peripheral neuropathy and increased risk of ulceration.
  - Loss of sensation to 5.07 monofilament at any site on foot is associated with increased risk of ulceration.

- Education

This is an ongoing process with additional education as needed at each visit.

Instruct the patient to:

- Examine their feet daily, including between the toes and the soles (with a mirror or by someone else if needed).

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- Wash feet daily in tepid water. Test temperature of water with hand or thermometer.
- Apply moisturizing cream or lotion to dry or cracked skin (not between toes).
- Dry between toes, use antifungal cream if necessary.
- Trim nails to shape of toe and file nails to remove sharp edges (refer for nail care if patient is unable to perform this).
- Do not use any sharp object to trim calluses or cuticles.
- Report signs of infection or other problems as soon as possible.

**Perform a comprehensive foot exam annually and stratify to high or low risk**

**Low Risk**

- Educate on foot care and repeat comprehensive exam annually.

**High Risk**

- Increased frequency of exams.
- Repeated education on foot care.
- Possible referral for: vascular evaluation, specialized footwear, nail care.

**Ulcer Present**

- Maximize metabolic control.
- Refer for surgical debridement.
- Appropriate antibiotics.

**An answer of “Yes” to any of the following puts the patient in the high-risk category:**

- History of previous ulcer or amputation.
- Bony foot deformity present.
- Bunion, excessive callus, or corn present.
- Loss of sensation.
- Decreased vascular supply.

**References:**

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