Diabetic Foot Screen*

*performed every primary care visit (for complete foot exam details, see page 2 of 4)

Acute swelling and/or Acute deformity ................................................................. NO □ YES □ → Page 4–A

Skin breakdown (ulcer)........................................................................................... NO □ YES □ → Page 4–C

Callus – with deeper color changes ...................................................................... NO □ YES □ → Page 4–B

Digital Deformity .................................................................................................. NO □ YES □ → Page 3–C

or chronic midfoot/rearfoot prominence

History of amputation and/or ulceration ................................................................. NO □ YES □ → Page 3

Dystrophic Nails &/or Dry Skin ............................................................................. NO □ YES □ → Page 3–D

Neuropathy: using 10-gram nylon monofilament .................................................. NO □ YES □ → Page 3–B

performed yearly

4 out of 10 sites imperceptible = “yes”

Assign Risk Category:

No Present Risk

___ 0 No loss of protective sensation, no deformity.

Impending Risk

___ 1 No loss of protective sensation. Deformity present.

High Risk

___ 2 Loss of Protective sensation with or without weakness, deformity, callus, pre-ulcer or history of ulceration.

Adapted from the National Foot Treatment Center LEAP Program

FOOT PULSES: 

Right:

Dorsalis Pedis ......................................................... PALPABLE □ NONPALPABLE □ → Page 1–A

Posterior Tibialis ..........................

Left:

Dorsalis Pedis .........................................................

Posterior Tibialis ..........................

Resources & References:


2. University of Texas Health Science Center-San Antonio Texas-Department of Orthopedics-Division of Podiatry

3. Scott & White Clinic / Texas A&M University System Health Science Center-Department of Surgery, Division of Podiatry

Diabetic Foot Exam**

**Performed Initially at Diagnosis, Annually in Primary Care**

### Foot History
1. Ulcers: location, time to heal, wound care necessary for healing
2. Infections: type, bacteria involved, medical treatment necessary
3. Amputations: type, time to heal, modalities used in healing process
4. Surgeries/Injuries: type, location

### Foot Exam

#### Vascular (Vasc)
1. Palpate DP, PT pulses (present or absent)
2. Temperature gradient: from ankle to toes, focal “hot spots”
3. General Color: pink, palor, rubor on dependency
4. Digital Capillary refill time: in seconds
5. ABI: for both DP & PT arteries (abnl if <0.85–0.9)

#### Neurologic (Neuro)
1. 10-gram nylon monofilament: test sites on feet as indicated on page 1
2. Vibratory perception: via 128 Hz tuning fork (>10 secs) OR Biothesiometer (>25 volts)—tested at hallux
3. Tactile sensation (light touch): via cotton wool (dorsum of foot)
4. Reflexes: Achilles tendon

#### Dermatologic (Derm)
1. General skin turgor/texture
2. Focal lesions: calluses (debride to fully assess), cracks, pigmentation
3. Interdigital: calluses, maceration
4. Nails: incurvated, nail plate thickness, coloration, inappropriate self-care

#### Musculoskeletal (Msk)
1. General Range of Motion: ankle, subtalar, metatarsal, metatarsophalangeal
2. Foot type: rectus, pes planus, pes cavus, Charcot foot
3. Digits: hammertoes, claw toes, mallet toes, bunion/hallux abductovalgus
4. Bony prominences

#### Footwear
1. Type
2. Wear pattern: outsole and upper counter distortion
3. Insole inspection: foreign bodies, staining, excessive wear
4. Socks: foreign bodies, staining, excessive wear

#### Social
1. Tobacco/alcohol/drug use
2. Work environment/foot demands/footwear requirements
3. Physical activities: footwear used
4. Family support: marital status, spouse/family involvement in health
5. Education: diabetes self-management
Diabetic Foot Care/Referral Algorithm

Complete Diabetic Foot Exam** (see page 2 of 4)

- Normal (NL) Exam
  - NL vasc
  - NL neuro
  - NL msk
  - NL derm

- MD/DO/DPM (or physician extender)
  - DM FOOT EDUCATION
    - patient/family (Diabetes Self-Management Education)
    - verbal/written
    - websites
    - clinic phone numbers

- Abnormal (ABNL)

  **
  - ABNL VASC
    - NL neuro
    - NL msk
    - NL derm

  A
  - vascular consult/testing
    - consider: PVR, Seg. pres., ABI, TCP02
    - peripheral arteriogram as indicated
    - intervention as indicated to re-establish blood flow

  - Documentation of vascular disease
    - OR Post intervention with improvement

  - education: signs/symptoms
    - high risk foot status
    - foot screen every MD/DO/DPM, or physician extender visit

  B
  - neuro or PM&R consult
    - consider: NCV, PSSD
    - other causes: consider and rule out as indicated
    - if painful consider pharmaceutical vs. surgical treatment

  C
  - complete biomechanical exam
    - (Podiatrist, Orthopedist)
    - discuss clinical significance
    - Treatment options: surgical, non-surgical

  D
  - dystrophic (thick, discolored) toenails

  - dry skin, fissures
    - diagnostic tests as indicated, e.g., for fungus
    - topicals as indicated

  - ingrown toenail
    - instruct on proper nail care
    - matrixectomy if NL vasc exam

ABBREVIATIONS:
- MD: medical doctor
- DO: doctor of osteopathy
- DPM: doctor of podiatric medicine (podiatrist)
- NL: normal
- ABNL: abnormal

- ABI: ankle/brachial index
- TCP02: transcutaneous oxygen pressure
- NCV: nerve conduction velocities
- PSSD: pressure specified sensory device

REPEAT Diabetic Foot Screen* per MD, DO, physician extender visits or DPM exam

- repeat every visit

normal testing-repeat per change in exam or onset symptoms

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- see disclaimer at www.tdctoolkit.org/algorithms_and_guidelines.asp
# High Risk Scenario and Ulcer Management

**Peripheral Sensory Neuropathy & Unilateral Swelling / caloric**

- X-ray exam
- R/o infection
- Deep venous thrombosis (DVT)

**No skin breakdown or lesion, no erythema**

- Extremely High Probability of Charcot Arthropathy

**Skin Breakdown**

- Treat as Ulcer 4-C below

**CAUTION**

- Consider double etiology, OFF-LOAD to prevent severe foot/ankle deformity

**Hyperkeratosis**

With underlying sub-epidermal hemorrhage (no ulceration)

**Follow pathways for associated abnl VASC, NEURO as indicated**

A. **DEBRIDE callus**

B. Re-examine MSK exam for underlying cause – follow 3-C

**CAUTION**

- Re-examine/debride q 3–7 days until skin normalized

- Progress back to normal activities/footwear based on etiology & risk factors

**ULCER**

- Assess/document

**Once healed = patient remains extremely HIGH RISK—frequent foot exams/education**

**Immediate Debridement & Wound Care**

1. Local wound care, dressings per etiology and clinical course

2. Surgical (OR) treatment if indicated

**GRADE 1**

- Superficial full thickness
- Not penetrating deeper than dermis

**GRADE 2**

- Deep ulcer (below dermis)
- Subcutaneous structures (fascia, muscle, tendon)

**GRADE 3**

- All subsequent layers involved
- Including bone and/or joint
- Assess probing to bone/soft tissue tracts

**OFF-LOAD (relieve pressure)**

- Non-weightbearing essential
- Crutches, walkers, modified shoes/insoles, total contact cast, etc.

**INFECTION**

Assess: fever, WBC, ESR, erythema, caloric, drainage, necrosis, foreign material

1. Inflammatory response may be mitigated by diabetic complications

2. Outpatient vs. inpatient based on severity of infection & co-morbidity management

**INFECTIOUS AGENTS**

- Aerobic gram positive cocci most frequent (staphylococcus)
- Gram negative & anaerobes usually part of polymicrobial, chronic necrotic ulcers

**CULTURE & SENSITIVITY VIA**

- Tissue at wound base
- Aspirating pus
- Swab base of wound after debridement
- Bone culture if suspect osteomyelitis
- Blood if systemic toxicity suspected

**ETILOGIC AGENTS**

- Aerobic gram positive cocci most frequent (staphylococcus)
- Gram negative & anaerobes usually part of polymicrobial, chronic necrotic ulcers

**ANTIBIOTICS – consider:**

- Local institutional and community susceptibility data when prescribing
- Published efficacy data

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*Diabetes Treatment Algorithms – Approved 04/23/04*