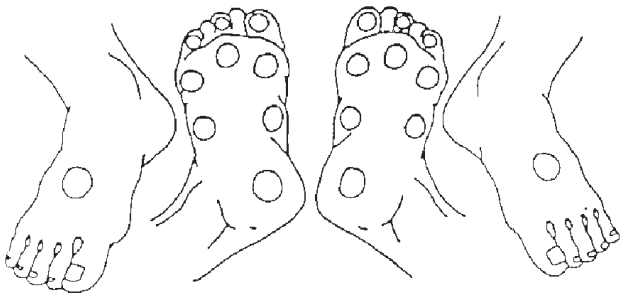
*Diabetic Foot Screen**

TEXAS Department of State Health Services
Stock #45-12000
TEXAS DIABETES COUNCIL
Approved 04-23-04

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

	NO	YES	
Acute swelling and/or Acute deformity	☐	○ →	**Page 4–A**
Skin breakdown (ulcer)	☐	○ →	**Page 4–C**
Callus – with deeper color changes	☐	○ →	**Page 4–B**
Digital Deformity or chronic midfoot/rearfoot prominence	☐	○ →	**Page 3–C**
History of amputation and/or ulceration	☐	○ →	**Page 3**
Dystrophic Nails &/or Dry Skin	☐	○ →	**Page 3–D**
Neuropathy: using 10-gram nylon monofilament performed yearly 4 out of 10 sites imperceptible = "yes"	☐	○ →	**Page 3–B**



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:		**PALPABLE**	**NONPALPABLE**	
Right:	Dorsalis Pedis	☐	○ →	**Ankle Brachial Index (ABI) Page 1–A**
	Posterior Tibialis	☐	○ →	
Left:	Dorsalis Pedis	☐	○ →	
	Posterior Tibialis	☐	○ →	

Resources & References:

1. International Consensus on the Diabetic Foot, 2003. International Working Group on the Diabetic Foot (consultative section of the International Diabetes Federation)
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
4. American Diabetes Association: Clinical Practice Recommendations. *Diabetes Care*. 2004; 27[S1]:63-64.

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*Diabetic Foot Exam***

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***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, midtarsal, metarsophalangeal
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

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Diabetic Foot Care/ Referral Algorithm

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ABBREVIATIONS:

MD	medical doctor
DO	doctor of osteopathy
DPM	doctor of podiatric medicine (Podiatrist)
NL	normal
ABNL	abnormal
ABI	ankle/brachial index
TCPO2	transcutaneous oxygen pressure
NCV	nerve conduction velocities
PSSD	pressure specified sensory device

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

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

Abnormal (ABNL)

NORMAL testing-repeat per change in exam or onset symptoms

A

ABNL VASC
NL neuro
NL msk
NL derm

VASCULAR CONSULT/TESTING
Consider: PVR, Seg. pres., ABI, TCPO2
- 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

NL vasc
ABNL
NEURO
NL msk
NL derm

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

- EDUCATION: signs/symptoms
- HIGH RISK foot status
- Foot screen every MD/DO/DPM, or physician extender visit, **PRN**

C

NL vasc
NL neuro
ABNL MSK
NL derm

COMPLETE BIOMECHANICAL EXAM
(Podiatrist, Orthopedist)
- discuss clinical significance
- Treatment options: surgical, non-surgical

- EDUCATION: signs/symptoms
- Intervention: surgery→healed = low risk
- Biomech: shoes, orthoses, phys.medicine
- Follow up DPM per modality needed
- Foot screen: every MD/DO/ physician extender visit

D

NL vasc
NL neuro
NL msk
ABNL DERM

Dystrophic (thick, discolored) toenails

- Debride/reduce
- Culture as needed
- Educate on condition management
- Referral as needed (podiatrist, dermatologist)

Dry skin, fissures

- Diagnostic tests as indicated, e.g., for fungus
- Topicals as indicated
- Referral as indicated

Ingrown toenail

- Instruct on proper nail care
- Matrixectomy if NL vasc exam

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High Risk Scenario and Ulcer Management

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A

Peripheral Sensory **Neuropathy & Unilateral Swelling** / calor
- x-ray exam
- r/o infection

Deep venous thrombosis (DVT)

→ **No skin breakdown** or **Lesion**, no erythema → Extremely High Probability of **Charcot Arthropathy** → Treat as such until proven otherwise **COMPLETE OFF-LOADING OF EXTREMITY** to prevent severe foot/ankle deformity

→ **Skin Breakdown** → Treat as **Ulcer** 4-C (below) → **CAUTION** → Consider Double ETIOLOGY, **OFF-LOAD to prevent severe foot/ankle deformity**

B

Hyperkeratosis
With underlying sub-epidermal hemorrhage (no ulceration)

→ Follow pathways for associated abnl VASC, NEURO as indicated

→
1. **DEBRIDE** callus
2. Re-examine MSK exam for underlying cause – follow 3-C

→
1. **OFF-LOAD** as needed (change insole, offloading devices as indicated)
2. Assess **Footwear & Insoles** for causes, prevention

→
1. Re-examine/debride q 3–7 days until skin normalized
2. Progress back to normal activities/ footwear based on etiology & risk factors

C

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

→
1. Frequent re-assessment & re-debridements as indicated
2. Continued changes in dressings/wound care
3. Advanced wound care if needed

Grade Ulcer
1. Assess size, depth, tissue levels
2. X-ray exam

→ **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

TYPE of Ulcer
- underlying etiology

→
1. **Neuropathic**
2. **Ischemic**
3. **Neuro-Ischemic**

→ Assess/manage causal pathway(s) 3–A, B, C

→ **OFF-LOAD** (relieve pressure)
- non-weightbearing essential
- crutches, walkers, modified shoes/insoles, total contact cast, etc.

INFECTION
Assess: fever, WBC, ESR, erythema, calor, 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

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

Etiologic 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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