Foot
Amputation is one of the most common and feared complications of diabetes mellitus. Many times this unfortunate complication can be prevented. With the current team-approach prevention programs, amputation rates have fallen significantly. All patients should have routine foot evaluation by a primary care provider or specialist and should perform daily foot care and assessments.

Diabetic foot evaluation
Basic foot evaluation should be performed at each medical visit. It is recommended that the patient remove his/her shoes and socks prior to evaluation. This facilitates examination and serves as a reminder to the patient of the importance of foot health. Inappropriate footwear is a contributory factor in the development of foot ulceration, the patient’s shoes should be inspected. If pathology is noted or significant risk factors exist, a referral to a specialist – podiatric, vascular or orthopedic surgeon – is recommended for a comprehensive examination.

Basic
The basic examination includes a visual and tactile evaluation of the lower extremity vascular status and a monofilament screening for peripheral neuropathy. The provider should also visually inspect for musculoskeletal deformities and dermatologic pathologies. See the attached form for further details.

Comprehensive
The comprehensive examination includes a thorough evaluation of vascular, neurologic, musculoskeletal and dermatologic systems. This is generally used for an annual examination or evaluation by a specialist. See the attached form for further details.
**ADA Risk Classification**

Diabetic foot risk classification system of the International Working Group on the Diabetic Foot

* Loss of protective sensation (LOPS), Peripheral arterial disease (PAD)

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Definition</th>
<th>Treatment recommendations</th>
<th>Suggested follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>No LOPS*, PVD* or deformity</td>
<td>Patient education including self-care and appropriate footwear</td>
<td>Annually (by generalist and/or specialist)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>LOPS* No PVD* or deformity</td>
<td>Patient education including self-care and appropriate shoe gear</td>
<td>Every 3-6 months (by generalist and/or specialist)</td>
</tr>
</tbody>
</table>
| 2A | LOPS* and deformity No PVD* | - Patient education including self-care and appropriate shoe gear  
- Consider prescriptive or accommodative footwear  
- Consider prophylactic surgery if the deformity is not able to be safely accommodated in footwear | Every 2-3 months (by specialist) |
| 2B | PVD ± LOPS and/or deformity | - Patient education including self-care and appropriate shoe gear  
- Consider prescriptive or accommodative footwear  
- Consider a vascular consultation | Every 2-3 months (by specialist) |
| 3A | History of ulcer | - Patient education including self-care and appropriate shoe gear  
- Consider prescriptive or accommodative footwear  
- Consider a vascular consultation | Every 1-3 months (by specialist) |
| 3B | History of amputation | - Patient education including self-care and appropriate shoe gear  
- Consider prescriptive or accommodative footwear  
- Consider a vascular consultation | Every 1-3 months (by specialist) |

**Routine care**

Routine care such as nail and callous debridement is recommend by a physician if the patient is a greater than or equal to a category one risk.

**Self-assessment and education**

The goal of instructing a patient in daily foot care is the identification and prevention of foot problems that could lead to amputation. Most important is the daily inspection for problems and when to seek help from a health care professional. Patients may also benefit from daily application of skin cream or lotion. This serves as a daily tactile evaluation of the foot and also prevents xerosis in patients with autonomic peripheral neuropathy. Other topics include appropriate footwear, management of minor foot problems, benefits of extra depth shoes, and the dangers of soaking feet, hot water bottles and heating pads. Additional information includes the avoidance of foot trauma and tobacco use cessation. Presence and degree of neuropathy, presence of peripheral vascular disease, and the implications for foot care. They should be instructed to remove their shoes and stockings and have their feet examined at each visit.

**Reference**

### Medical History

<table>
<thead>
<tr>
<th>Type of DM:</th>
<th>Past Medical History:</th>
<th>Tobacco Use:</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ Type I</td>
<td>✔ Peripheral Neuropathy</td>
<td>□ No □ Yes</td>
</tr>
<tr>
<td>✔ Type II orally controlled</td>
<td>✔ Nephropathy</td>
<td>How much: How long:</td>
</tr>
<tr>
<td>✔ Type II insulin dependent</td>
<td>✔ Retinopathy</td>
<td>1. Any change in the foot or feet since the last evaluation?</td>
</tr>
<tr>
<td>✔ Gestational</td>
<td>✔ Vascular Disease</td>
<td>□ No □ Yes</td>
</tr>
<tr>
<td>✔ Hypertension</td>
<td>✔ Dyslipidemia</td>
<td>2. Current ulcer or history of a foot ulcer?</td>
</tr>
<tr>
<td>✔ Retinopathy</td>
<td>✔ Heart Disease</td>
<td>□ No □ Yes</td>
</tr>
<tr>
<td>✔ Vascular Disease</td>
<td>✔ Stroke</td>
<td>3. Is there pain in the calf muscles when walking that is relieved by rest?</td>
</tr>
<tr>
<td>✔ Hypertension</td>
<td>✔ Amputation</td>
<td>□ No □ Yes</td>
</tr>
<tr>
<td>✔ Retinopathy</td>
<td>✔ Other:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration of DM:</th>
<th>History of amputation:</th>
<th>History of ulceration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ N □ Y</td>
<td>□ N □ Y</td>
</tr>
</tbody>
</table>

### Physical Exam

**Dermatologic examination:**
1. Are the nails thick, elongated, or ingrown? □ No □ Yes
2. Are there calluses or fissures? □ No □ Yes
3. Is there maceration or open lesions in the web space? □ No □ Yes
4. Is there redness or warmth? □ No □ Yes

**Musculoskeletal examination:**
1. Are deformities present? □ Bunion □ Hammertoes □ Prominent metatarsals □ Collapsed arch □ Previous amputation

**Neurologic examination**
10-gram Monofilament

R: /6
L: /6

**Footwear assessment:**
1. Does the patient wear appropriate shoes? □ No □ Yes

**Vascular examination**
1. Is pedal hair growth present? □ No □ Yes
2. Are pedal pulses present? □ No □ Yes
   - Dorsalis Pedis R: /4 L: /4
   - Posterior Tibial R: /4 L: /4

### Assessment

**American Diabetes Association Classification**
- □ 0: No complications
- □ 1: Loss of protective sensation + deformity/callus
- □ 2: Loss of protective sensation + PVD
- □ 3: History of ulceration or amputation

### Management Plan

**Self-management Education:**
- □ Patient education for preventive foot care
- □ Provide or refer for tobacco cessation counseling
- □ Provide general diabetes information such as HgA1C recommendations

**Referral:**
- □ Primary Care Physician
- □ Podiatric surgeon
- □ Vascular surgeon
- □ Endocrinologist
- □ Nephrologist
- □ Diabetes Educator
- □ Nutritional Educator

Signature: ________________________ Date: __________________
Comprehensive Foot Examination

Patient: __________________________ Date: __________________________ ID: __________________________

Primary care physician: __________________________ Last seen: __________________________

### Medical History

**Type of DM:**
- [ ] Type I
- [ ] Type II orally controlled
- [ ] Type II insulin dependent
- [ ] Gestational

**Duration of DM:**

**History of amputation:**
- [ ] N  [ ] Y

**History of ulceration**
- [ ] N  [ ] Y

### Past Medical History:

- [ ] Peripheral Neuropathy
- [ ] Nephropathy
- [ ] Retinopathy
- [ ] Vascular Disease
- [ ] Hypertension
- [ ] Dyslipidemia
- [ ] Heart Disease
- [ ] Stroke
- [ ] Amputation
- [ ] Other:

**Tobacco Use:**
- [ ] No  [ ] Yes
- How much: __________________________
- How long: __________________________

1. Any change in the foot or feet since the last evaluation?
- [ ] No  [ ] Yes

2. Current ulcer or history of a foot ulcer?
- [ ] No  [ ] Yes

3. Is there pain in the calf muscles when walking that is relieved by rest?
- [ ] No  [ ] Yes

### Physical Exam

#### Dermatologic examination:

1. Are the nails thick, elongated, or ingrown?
   - [ ] No  [ ] Yes
2. Is the skin thin, fragile, or shiny?
   - [ ] No  [ ] Yes
3. Is the foot or ankle swollen?
   - [ ] No  [ ] Yes
4. Are there calluses or fissures?
   - [ ] No  [ ] Yes
5. Is there maceration or open lesions in the web space?
   - [ ] No  [ ] Yes
6. Is there redness or warmth?
   - [ ] No  [ ] Yes

#### Musculoskeletal examination:

1. Are digital deformities present?
   - [ ] No  [ ] Yes
2. Are bunion deformities present?
   - [ ] No  [ ] Yes
3. Are the metatarsal heads prominent?
   - [ ] No  [ ] Yes
4. Is there at least 5° of ankle dorsiflexion?
   - [ ] No  [ ] Yes
5. Is there at least 45° of 1st metatarsophalangeal ROM?
   - [ ] No  [ ] Yes
6. Is there a Charcot deformity?
   - [ ] No  [ ] Yes

#### Neurologic examination

I: Intact, D: Diminished, A: Absent

- 10-gram Monofilament
  - R: __________________________
  - L: __________________________
- Vibration (128Hz turning fork)
  - R: __________________________
  - L: __________________________
- Achilles reflex
  - R: __________________________
  - L: __________________________

#### Michigan Neuropathy Index

**R:** __________________________  **L:** __________________________

Total ≥ 2.5 = Peripheral Neuropathy

Points:
- Intact=0, Diminished=0.5, Absent=1
- Deformity=1
- Callus, Ulcer or history of ulcer=1

Mark dorsal lesions or deformities

Mark plantar lesions or deformities
### Vascular examination
1. Is pedal hair growth present?
   - [ ] No  [ ] Yes
2. Are varicosities present?
   - [ ] No  [ ] Yes
3. Are pedal pulses present?
   - [ ] No  [ ] Yes
   - Dorsalis Pedis R: /4  L: /4
   - Posterior Tibial R: /4  L: /4

### Education assessment:
1. Has the patient had prior foot care education?
   - [ ] No  [ ] Yes
2. Can the patient demonstrate appropriate self-care?
   - [ ] No  [ ] Yes

### Footwear assessment:
1. Does the patient wear appropriate shoes?
   - [ ] No  [ ] Yes
2. Does the patient wear inserts/orthotics?
   - [ ] No  [ ] Yes

## Assessment
### American Diabetes Association Classification
- [ ] 0: No complications
- [ ] 1: Loss of protective sensation + deformity or callus
- [ ] 2: Loss of protective sensation + vascular disease
- [ ] 3: History of ulceration or amputation

## Management Plan
### Self-management Education:
If previously provided, please list date below.
- [ ] Patient education for preventive foot care  
  [ ] Provide or refer for tobacco cessation counseling  
  [ ] Provide general diabetes information such as HgA1C recommendations

### Footwear Recommendations:
- [ ] None
- [ ] Athletic shoes
- [ ] Extra-depth shoes
- [ ] Custom inserts/orthotics
- [ ] Custom molded shoes
- [ ] Double upright brace
- [ ] Charcot Restraint Orthotic Walker (CROW)

### Diagnostic Studies:
- [ ] Non-invasive vascular study
- [ ] Epidermal nerve fiber density biopsy
- [ ] Toenail biopsy
- [ ] Serum lab test
  - [ ] Hemoglobin A1C
  - [ ] Creatinine level
  - [ ] Vitamin D3 level
  - [ ] C-reactive protein
  - [ ] Erythrocyte Sedimentation Rate (ESR)

### Referral:
- [ ] Primary Care Physician
- [ ] Podiatric surgeon
- [ ] Vascular surgeon
- [ ] Endocrinologist
- [ ] Nephrologist
- [ ] Diabetes Educator
- [ ] Nutritional Educator
- [ ] Other:

## Follow up
- [ ] Date:
  - Level 0: Annual examination
  - Level 1: 3-6 months
  - Level 2 and 3: 3 months

Signature: __________________________________________________________
Date: ________________