Appendix 1a - how to examine the Diabetic Foot

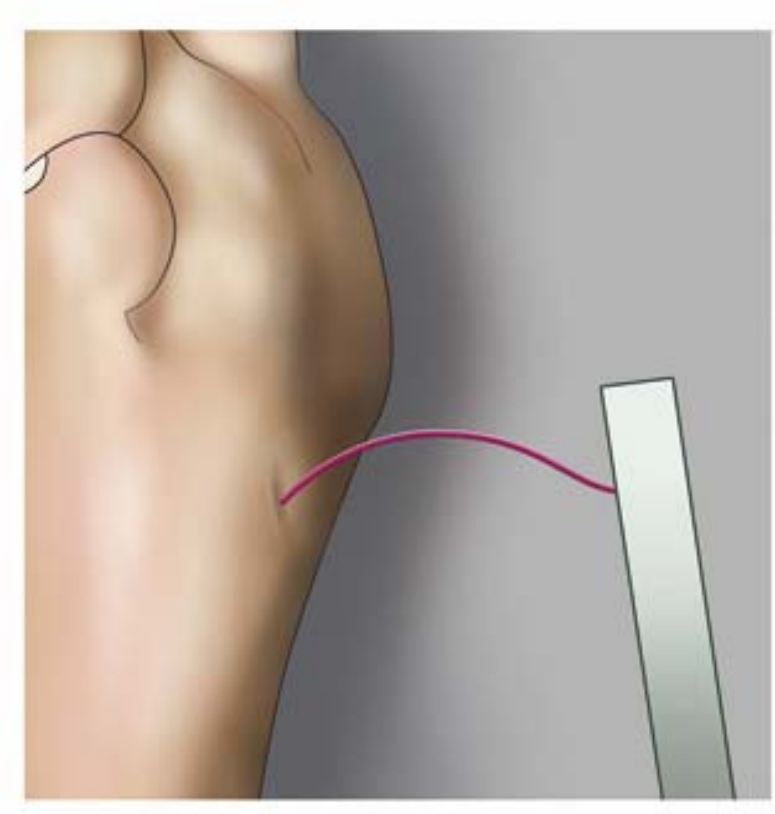
A proper foot evaluation starts with the patient's medical history. The duration of diabetes may give an idea as to the likelihood of having diabetes-related complications. Usually, the longer the duration of the diabetes, the more likely it is for complications to be present. The presence of peripheral neuropathy, as well as peripheral vascular disease, puts the patient at risk for having foot problems. Note that neuropathy can be present at diagnosis. The presence of a foot ulcer, or a prior amputation, would put the patient in the high risk category. The patient should be questioned about pain or numbness in the feet, which if present, could be indicative of peripheral neuropathy. Impairment in circulation may be suggested by pain over the calf muscles during walking which disappears after a period of rest.

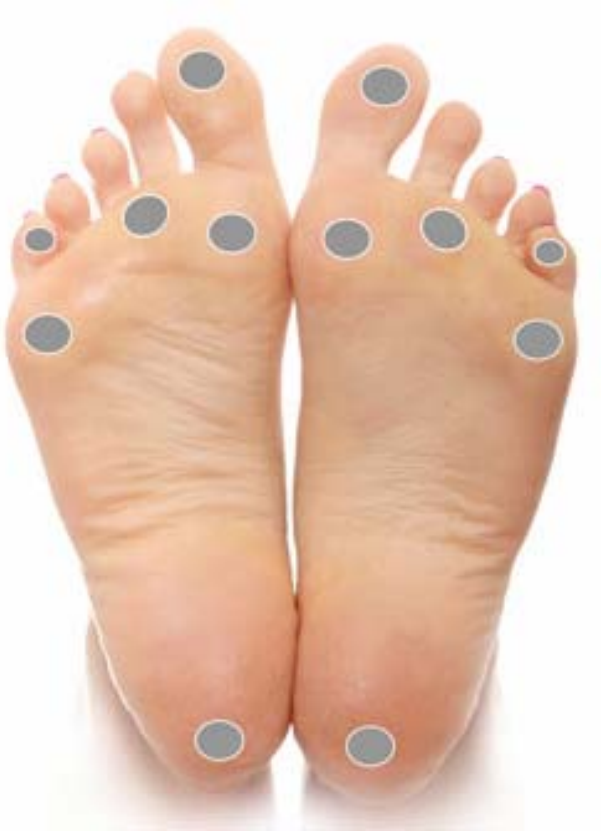
The first step in the foot examination is a visual inspection of the whole foot, including the area between each toe. The over-all condition and appearance of the skin should be noted, as well as the presence or absence of hair. Poor circulation may lead to a shiny, thin skin devoid of hair. Overly dry skin can lead to skin cracks which may predispose to infections. Note areas of redness and hyper-pigmentation. Redness may be the first sign of a beginning infection, while hyper-pigmentation may occur in those who have frequent or prolonged swelling of the lower extremities. The nails should also be inspected for the presence of fungal infection and deformities. Ingrown toenails could lead to infections. Bluish nail-beds may be seen in those with poor circulation. During the visual inspection, musculoskeletal deformities may be seen. These deformities may happen in those who have peripheral neuropathy. More severe deformities would include Charcot foot, hammer and claw toe deformities.

The next part of the foot examination involves touching and getting a feel for the temperature of the foot. A foot cold to the touch may indicate poor circulation, whereas warmth in some areas could accompany inflammation or infection. Diminished pulses may be the result of peripheral arterial disease, hence it is important that both the dorsalis pedis and posterior tibial pulses be checked during the foot examination.

Sensory examination of the foot can be done via several methods. A simple way of doing this would be to use a 10 gram nylon monofilament applied over certain areas of the foot (see figure). The monofilament should be applied at the indicated test sites, perpendicular to the skin, with sufficient force that would cause the filament to bend for one second. The inability to feel the monofilament at any of the areas indicates sensory loss leading to a higher risk for foot ulcers.

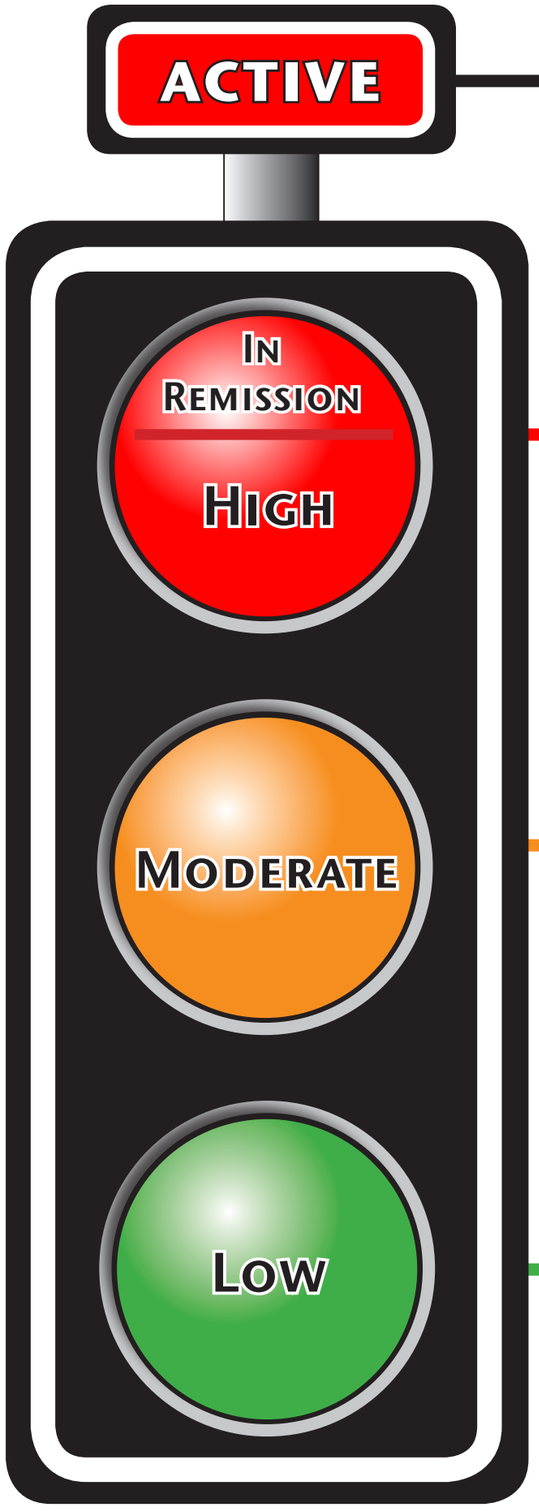
Vibration testing using a 128 Hz tuning fork applied to both big toes may be similar in sensitivity and specificity to the 10 gram monofilament test. A reduced vibration sense increases the risk for getting a foot ulcer.





APPX 1 B

Diabetic Foot Risk Stratification and Triage



ACTIVE

Definition

Presence of active ulceration, infection, with or without ischaemia, gangrene or unexplained hot, red, swollen foot with or without the presence of pain.

Action

As below and in addition:

- Rapid referral to, and management by a member of the multidisciplinary diabetes foot team or directly to vascular when appropriate

IN REMISSION HIGH

Definition

Previous ulceration, amputation or previous Charcot.

More than one risk factor present e.g. a combination of loss of sensation, signs of peripheral arterial disease, callus or deformity, unable to or has no help to self care or an eGFR<15.

Action

As below and in addition:

- Assessment by podiatrist experienced in the diabetic foot
- Referral to other relevant specialists as required
- Further review of footwear and insoles by a trained HCP/Orthotist, especially for those 'In Remission'

MODERATE

Definition

One risk factor present e.g. loss of sensation, signs of peripheral arterial disease, unable to or has no help to self care or an eGFR<15.

Action

As below and in addition:

- Additional foot assessment and agreed treatment/management plan by podiatrist or other trained HCP where required
- Provision of specialist footwear and insoles as required, measured and fitted by a trained HCP /Orthotist

LOW

Definition

No risk factors present e.g. no loss of sensation, no signs of peripheral arterial disease and no other risk factors.

Action

Annual screening by trained Healthcare Worker. Agree personal footcare and self care management plan (as anyone who is 'Low Risk' has no greater chance of developing a foot ulcer than somebody without diabetes). Review footwear. Provide written and verbal education including information on how to access podiatry (urgent or otherwise) as required. Provide cardiovascular risk reduction information. Encourage and signpost all smokers to a smoking cessation programme.

Produced by the Scottish Diabetes Group - Foot Action Group
June 2016

These risk categories relate to the use of the SCI-Diabetes foot risk stratification tool

APPENDIX 2

Annex 3

Expressions of urinary protein concentration and their approximate equivalents and clinical correlates

	Dipstick reading	**Urine protein: creatinine ratio, mg/mmol** (PCR)	**Urine total protein excretion,** (g/24 hour)	**Urinary albumin: creatinine ratio, mg/mmol** (ACR)	**Urinary albumin excretion, micrograms/min** (mg/24 hour)
Normal	Negative	<15	<0.150	<2.5 (males) <3.5 (females)	<20 (<30)
Microalbuminuria	Negative	<15	<0.150	≥2.5 to 30 (males)	20-200 (30-300)
"Trace" protein	Trace	15-44	0.150–0.449	≥3.5 to 30 (females)	
Clinical proteinuria (macroalbuminuria)	1+	45-149	0.450-1.499	>30	>200 (>300)
	2+	150-449	1.50-4.49		
Nephrotic range proteinuria	3+	≥450	≥4.50		

Values in this table are based on an assumed average creatinine excretion of 10 mmol/day and an average urine volume of 1.5 l/day.

NB males and females have different thresholds for the diagnosis of microalbuminuria as a consequence of the lower urinary creatinine excretion in women.

There is no single value for the accurate conversion between ACR to PCR, however, at low levels of proteinuria (<1 g/day), a rough conversion is that doubling the ACR gives the PCR. At proteinuria excretion rates of >1 g/day, the relationship is more accurately represented by 1.3 × ACR = PCR.

Adapted from Joint Specialty Committee on Renal Medicine of the Royal College of Physicians and the Renal Association, and the Royal College of General Practitioners guideline Chronic kidney disease in adults.