APPENDIX 1

DOING A SENSORY FOOT EXAMINATION

Peripheral neuropathy can be detected using the 10g (5.07 Semmes-Weinstein) monofilament (detects loss of protective sensation) and a tuning fork (128 Hz, detects loss of vibratory sensation).

10g (5.07) Semmes-Weinstein monofilament

- First apply the monofilament on the patient's hands (or elbow or forehead) to demonstrate what the sensation feels like.
- Test three different sites on both feet, selecting from those shown in Figure 4.
  Ensure the patient cannot see whether or where the examiner applies the filament.
- Apply the monofilament perpendicular to the skin surface (Figure 5a) with sufficient force to cause the filament to bend or buckle (Figure 5b).
  The total duration of the approach -> skin contact -> and removal of the filament should be approximately 2 seconds.
- Do not apply the filament directly on an ulcer, callus, scar or necrotic tissue.
  Do not allow the filament to slide across the skin or make repetitive contact at the test site.
- Press the filament to the skin and ask the patient whether they feel the pressure applied ('yes'/'no') and next where they feel the pressure (e.g., 'ball of left foot'/'right heel).
  Repeat this application twice at the same site, but alternate this with at least one 'mock' application in which no filament is applied (a total of three questions per site).
  Protective sensation is: present at each site if the patient correctly answers on two out of three applications; absent with two out of three incorrect answers.
  Encourage the patients during testing by giving positive feedback.

Monofilaments tend to lose buckling force temporarily after being used several times on the same day, or permanently after long duration use. Depending on the type of monofilament, we suggest not using the monofilament for the next 24 hours after assessing 10-15 patients and replacing it after using it on 70-90 patients.

Figure 4: Sites that should be tested for loss of protective sensation with the 10g Semmes-Weinstein monofilament

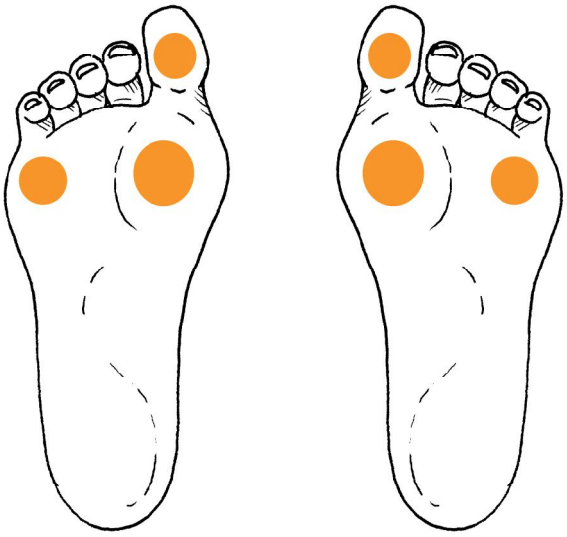
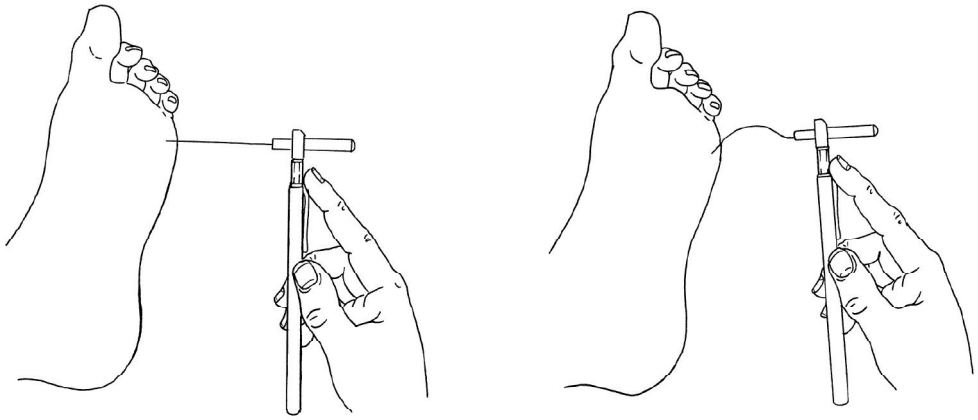


Figure 5: Proper method of using the 10g Semmes-Weinstein monofilament



128 Hz Tuning fork

- First, apply the tuning fork on the patient's wrist (or elbow or clavicle) to demonstrate what the sensation feels like.
- Ensure the patient cannot see whether or where the examiner applies the tuning fork.

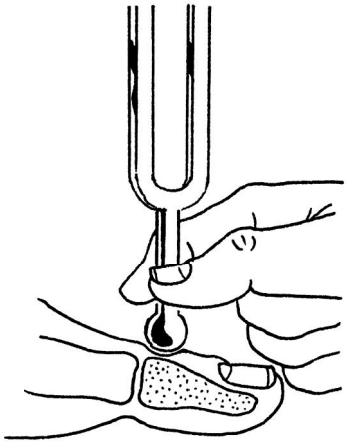
Apply the tuning fork to a bony part on the dorsal side of the distal phalanx of the first toe (or another toe if the hallux is absent).

- Apply the tuning fork perpendicularly, with constant pressure (Figure 6).

  Repeat this application twice, but alternate this with at least one 'mock' application in which the tuning fork is not vibrating.
- The test is positive if the patient correctly answers at least two out of three applications, and negative if two out of three answers are incorrect.

  If the patient is unable to sense the vibrations on the toe, repeat the test more proximally (e.g., malleolus, tibial tuberosity).
- Encourage the patient during testing by giving positive feedback.

Figure 6: Proper method of using a 128 Hz tuning fork to check for vibratory sensation



Light touch test

This simple test (also called the Ipswich Touch test) can be used to screen for loss of protective sensation (LOPS), when the 10 gram monofilament or 128 HZ tuning fork is not available. The test has reasonable agreement with these tests to determine LOPS, but its accuracy in predicting foot ulcers has not been established.

Explain the procedure and ensure that everything is understood

- Instruct the subject to close the eyes and to say yes when they feel the touch

  The examiner lightly sequentially touches with the tip of hers/his index finger the tips of the first, third, and fifth toes of both feet for 1–2 s
- When touching, do not push, tap, or poke
- LOPS is likely when light touch is not sensed in 2 sites