

# Clarity for peripheral vascular assessment practices from consolidation of recent evidence

Author: Sylvia McAra PhD., Podiatrist



Charles Sturt University



## Background

Optimal assessment of the peripheral vascular status of people with wounds and vascular disease is important not only for determining healing potential and suitability for compression therapy, but also for detecting peripheral arterial disease (PAD). Recent consolidation of research evidence provides clarity for clinical assessment practices. Highlights are drawn from recent publications:

## Key Findings

### *Is it time to say goodbye to the ABI?*

A review of 11 studies (Trevethan 2018). While  $ABI < 0.80$  is an abnormal result, no ABI value is an indication of absence of disease, with sensitivity decreasing in proportion to atherosclerosis. Poor sensitivity renders it invalid as a screening tool for PAD in populations at risk including people with diabetes.

### *Toe pressure and TBI: Uses, abuses and shades of gray*

The second review article (Trevethan 2019) distils four sets of clinically useful information to guide practice :

1. There should be a separation between diagnostic and screening applications for toe pressure and toe-brachial index (TBI) tests.
2. There are distinct clinical applications for toe pressure testing versus TBIs.
3. Two reference tables are provided as clinical guides – one for toe pressures, and one for TBIs – each detailing the ranges of normal, borderline and abnormal values.

### *Clinical vascular screening of the foot: For life and limb*

Best-practice guidelines for obtaining toe pressures and TBIs are provided (McAra et al. 2017, Trevethan 2019).

## Recommendations

- Caution when using the ABI is recommended. Conducting toe pressures for people only after high ABI results should be discontinued due to the propensity for false negatives concealed in mid-range ABI results.
- Toe pressure is superior in validity compared with both the ABI and TBI for indicating healing prognosis.
- The TBI is a superior detector of peripheral arterial disease than either toe pressure or ABI.
- Pedal arterial Doppler provides invaluable context for interpretation of toe pressures.
- Attention to evidence-based protocols for toe pressure testing improves validity.

Quoted from the Medicare benefits schedule “When peripheral vascular assessment informs decision making in patient care, appropriate use of the Medicare benefits schedule item #11610 applies to a toe pressure/TBI, plus pedal arterial Doppler waveform studies” This is for medical doctors. Podiatrists can claim for vascular assessment from DVA- item #F104. Private health fund rebates are available for their members for items F104 for Doppler waveforms and F101 for toe pressures/ TBIs.

## References:

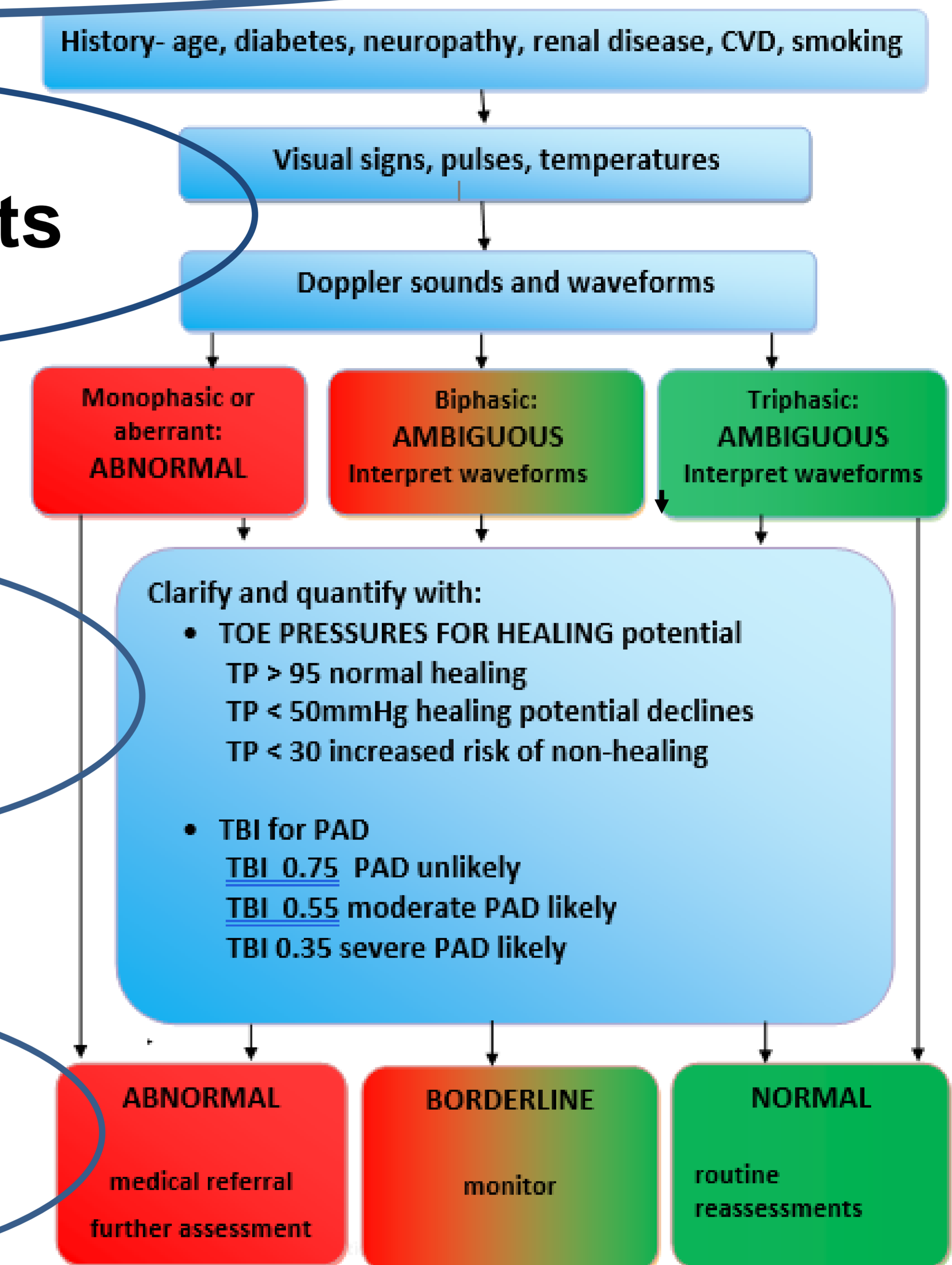
- McAra, S., Trevethan R., Wang L., & Tinley P. (2017). Clinical vascular screening of the foot: For life and limb. *Diabetes & Primary Care Australia*, 2, 16-24
- Trevethan, R. (2018). Subjecting the ankle-brachial index to timely scrutiny: Is it time to say goodbye to the ABI? *Scandinavian Journal of Clinical and Laboratory Investigation*, 78 :94-101
- Trevethan, R. (2019). Toe systolic pressures and toe-brachial indices: Uses, abuses, and shades of gray. *Blood Pressure Monitoring*, 24, 45–51

## 3 steps to screening:

### 1. Choose valid tests

### 2. Interpret results

### 3. Take action



(Flowchart adapted from McAra et al. 2017, Trevethan 2019)

## Protocols for toe pressures include:

- position the subject with level of the toe the same as the heart
- multiple readings are necessary to account for inter and intra-test variability
- repeat measures until two within 10mm Hg are procured
- do not average more disparate results for a mean pressure.

References, toe pressure protocol and other clinical resources available:

[www.sylviamcarapodiatrist.com](http://www.sylviamcarapodiatrist.com)  
[sylvia.mcara11@gmail.com](mailto:sylvia.mcara11@gmail.com)

