

## In patients with a foot wound undergoing revascularisation surgery, what is the time frame for improvement in toe systolic pressures? A pilot study

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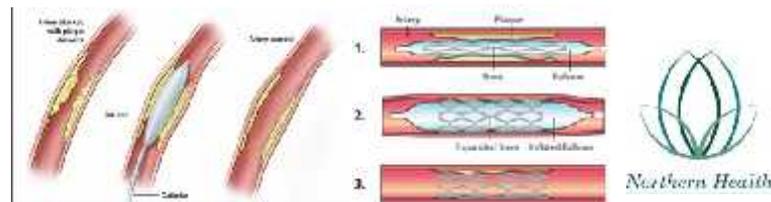
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### Background and aims:

The Toe Systolic Pressure (TP) and Ankle Brachial Index (ABI) are non-invasive tests used in the assessment of peripheral arterial disease (PAD). This information is used, along with other clinical measures, to determine the requirement for vascular surgical intervention, for example balloon angioplasty and stent with balloon angioplasty, to improve peripheral arterial blood flow, and to help direct suitability of some wound management practices.

Aim: The aim of this study is to determine the time period at which TP reached their maximum following revascularisation surgery for people with foot wounds.



Balloon angioplasty: Medifit Biologicals, 2017

Stent with balloon angioplasty: Vascular care centre, 2017

### Materials & methodology

Demographic data of consenting patients admitted to The Northern Hospital (TNH) with a foot wound undergoing a revascularisation procedure was collected. NH Podiatry staff performed TP prior to revascularisation and then again at days 1, 3, 7 and 14 post revascularisation, to monitor the progression of the patient's lower limb arterial perfusion.

### Results

A total of 21 patients undergoing 22 vascular interventions were included in this study. 42.8% (n=9) patients were female. Average age was 68.2 (range 52-86). 86% (n=19) patients had history of T2DM, 4.5% (n=1) had T1DM and 9.5% (n=2) with nil history of diabetes mellitus. Median time frame for improvement in TP post revascularization was 3.0 days, interquartile range (IQR) 1.5-12.3 days.

### Conclusion and significance of findings

This study found that TPs reached their maximum value at 3 days post revascularisation. Given the small sample size, it is difficult to infer that these results can be applied clinically to guide patient care. However it may be used at the clinicians discretion in conjunction with other clinical investigations to identify when arterial perfusion is optimised. This may prevent unnecessary surgical intervention (debridement or amputation).

### References

- Angioplasty. (2017). Medifit Biologicals. Retrieved 27 February 2017, from <http://medifitbiologicals.com/angioplasty/>
- Vascular Care Centre. (2017). Vascularcarecentre.com. Retrieved 27 February 2017, from <http://www.vascularcarecentre.com/how-balloon-angioplasty-work.php>



Toe pressure assessment from NH, HRFS



Diabetic toe ulcer from NH HRFS