

The effectiveness of felt padding in offloading diabetes-related foot ulcers, initially and after a period of wear

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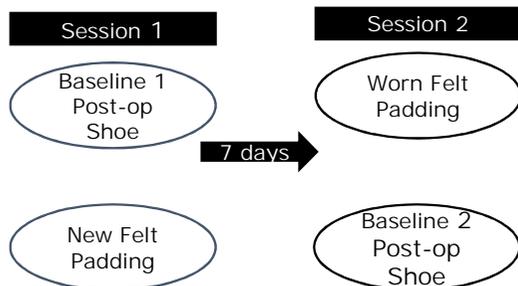
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Aim

The primary aim of this study was to quantify pressure offloading from diabetes-related, non-complicated plantar neuropathic ulcer sites, when felt padding was first adhered to the foot and after it had been worn for one week.

Method

Fifteen Podiatry & High Risk Foot Service patients with diabetes and plantar neuropathic foot ulcers from Northern Health Service, Melbourne, Australia were recruited (n=16 ulcers). Their usual prescription of felt padding, 20-30mm thick, cut out around the ulcer site, was adhered directly to the foot. Data was collected using a standardised plantar pressure measurement protocol with the PedarX® system (Novel, Munich, Germany).



Results

Peak Pressure Under Ulcer Site

Mean peak plantar pressure at the ulcer site was the highest with no felt padding and the lowest with newly applied felt

Difference in Peak Pressure Under Ulcer Site

Pressure at the ulcer site decreased 47% and 33% when new and worn felt respectively were compared to no felt

Table 1: Difference in Peak Pressure under ulcer site

	Mean difference (kPa)	Percentage difference	P-value
No felt / New felt	188	49% decrease	0.001
No felt / Worn felt	248	32% decrease	0.003
Worn felt / New felt	367	32% decrease	0.069

Conclusion

These findings indicate that new felt padding offloads approximately half the amount of plantar pressure applied over sites of plantar neuropathic ulceration. The increase in contact area under the entire foot is one possible mechanism by which felt achieves this result. Given these results, further studies are required to evaluate the effectiveness of felt padding directly on ulcer healing.



Figure 1: Example of felt padding used to offload a plantar neuropathic foot ulcer

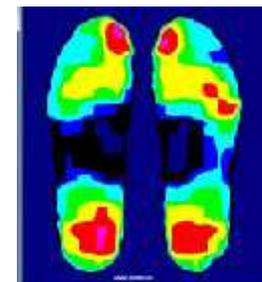


Figure 2: PedarX® system animation of pressure data

