

Pedar In-shoe Analysis – Studded boots

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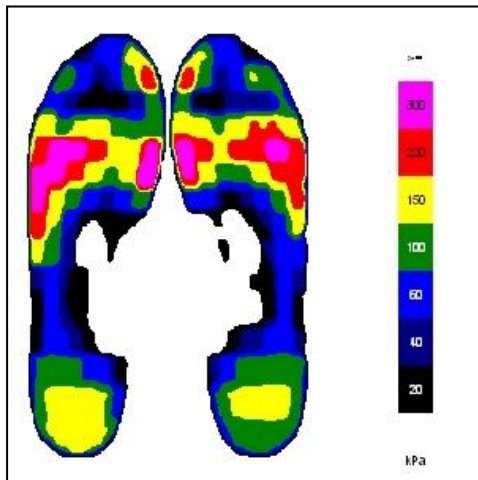


Figure 1 (football boot)

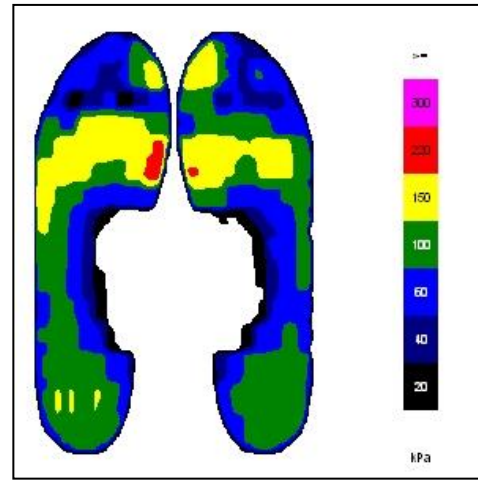


Figure 2 (running shoe)

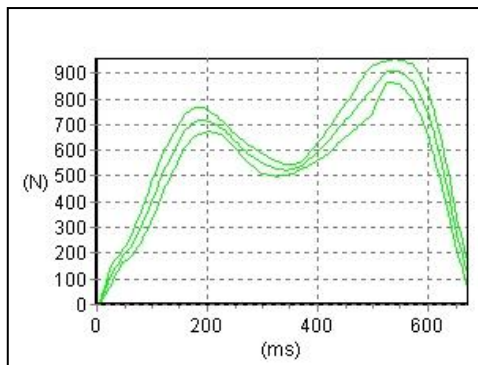


Figure 3 (football boot)

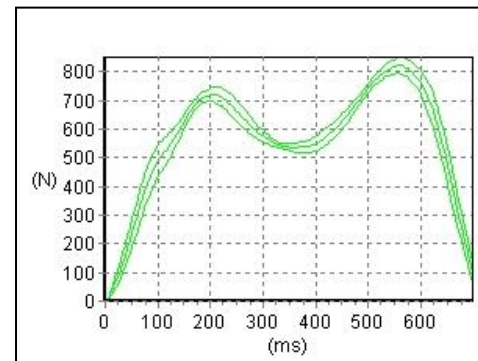


Figure 4 (running shoe)

In-shoe pressure system distribution

Figure 1 (football boot) shows the pressure picture in demonstrating classically high load beneath the Hallux, 1st and 5th MTPJs due to the narrow nature and stud location. Compare this to Figure 2 and the running shoe.

Vertical load distribution during weight-bearing

Figures 3 & 4 show the M shaped curve – force (Newtons) against time (milliseconds) for the football boot (3) compared to the running shoe (4). There are three lines as the trace shows the average (central line) and +/- one standard deviation. The first peak shows load at heel contact, while the second peak represents the end of contact phase with propulsion loads. In Figure 3 (football boot), note how the first peak is relatively lower, indicating reduced heel contact and thus greater load on the forefoot. This is common due to the flat nature of football boots.

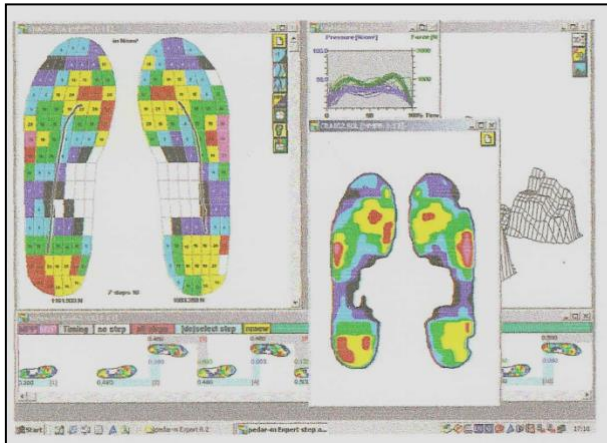


Figure 5 (rugby player with stud)

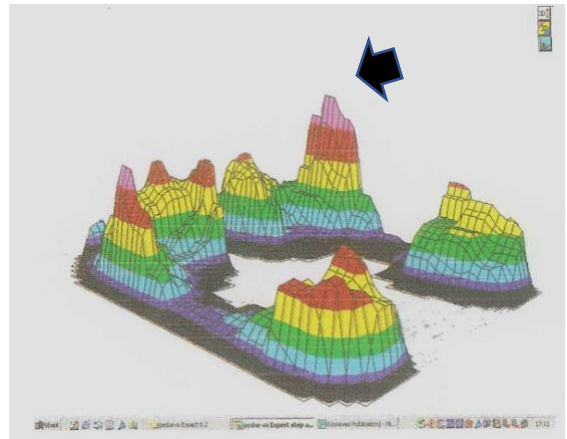


Figure 6 (rugby player with stud)

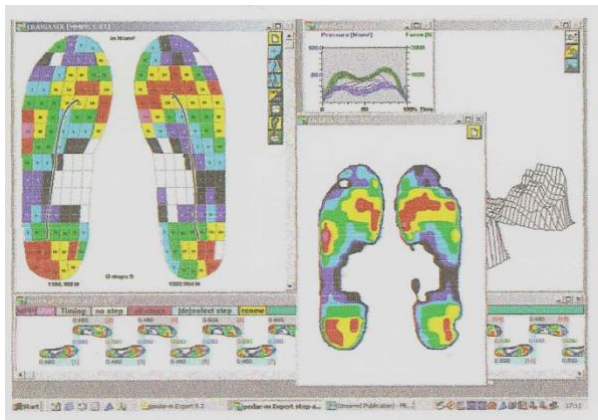


Figure 7 (rugby player – stud removed)

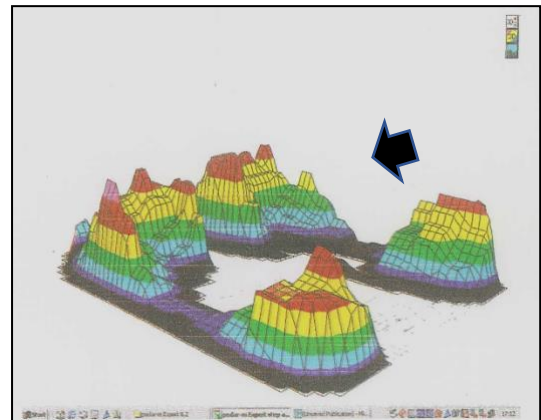


Figure 8 (rugby player – stud removed)

Composite pictures with pedobarographic representation, M shaped-vertical loads and 3-D vertical loads

Figure 5-8 (rugby boots) shows the pressure pictures of a rugby player with such wide feet that the 5th metatarsal hung off the side of the boot. The high-pressure point at the lateral forefoot (Figures 5 and 6) illustrates the 4th metatarsal head which was directly over the most proximal stud resulting in a fracture. Figures 7-8 represented the load when the stud was removed.