

Relative Pressure Drop

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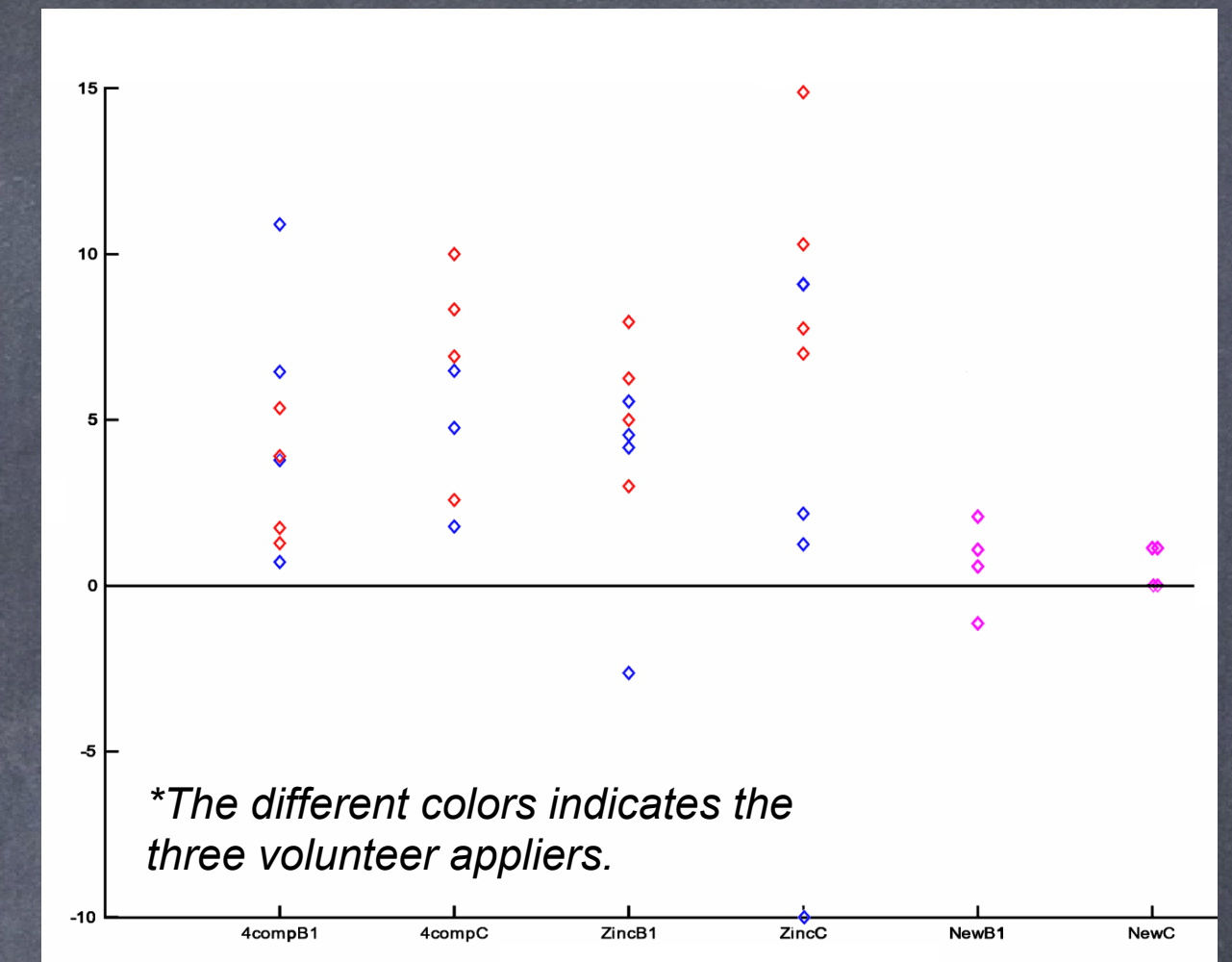
Problem: Almost all compression products loose their pressure, and hence their clinical effect, over time. How to monitor that decay?

Method: We defined the Relative Pressure Drop as:

$$RDP = 1/P \, dP/dt \approx (P(0) - P(\Delta t))/(\Delta t P).$$

To exemplify, RDP was evaluated for three different compression systems: a zinc-based bandage, a four-component system, and a new smart textile compression system. The zinc and four-component systems were applied by the same well-experienced individual on two healthy volunteers. The new smart textile compression system was self-applied by a third healthy volunteer. The interface pressures of the lower leg were measured at points (B1) and (C) in supine position directly after the application, and again after four hours. The procedure was repeated for four consecutive days.

Result: The relative pressure drop was greatest for the four-component system at (B1) followed by the zinc system at (C). For the new system, however, the RPD was very limited, and in two cases, even zero.



Conclusion: The RDP measure gave a clear view of how the pressure was maintained over time by the new system. In conclusion, the suggested RPD measure can, in a straight-forward way, describe pressure behaviour over time for a compression product and its application.