



Description:

Test setup includes a standard (Sybron) 90° Stainless still block, placed on a digital analytic scale (at one milligram measurement resolution). Above the block, a file holder was placed, connected to a micrometer that measures the file vertical movement (depicted in the picture below). Three files types were selected for comparison Protaper (Blue 0.30 - Red 0.25 - yellow 0.20), Protaper Next (both are Dentsply products), and Medic N.R.G. Gentlefile with equivalent sizes . Few different measures were tested of each file type so a comparison of "Apples to apples" (or in this case - Blue to blue, red to red etc.) can be made. For each file, the test setup was aligned so zero vertical location is read upon file reaching the 90° curve in the block. As of reaching the curve, (with zero load on the weight), each file was moved down in a 0.5 mm' steps, and the load measured by the scale was recorded.

Results are presented on the graphs.

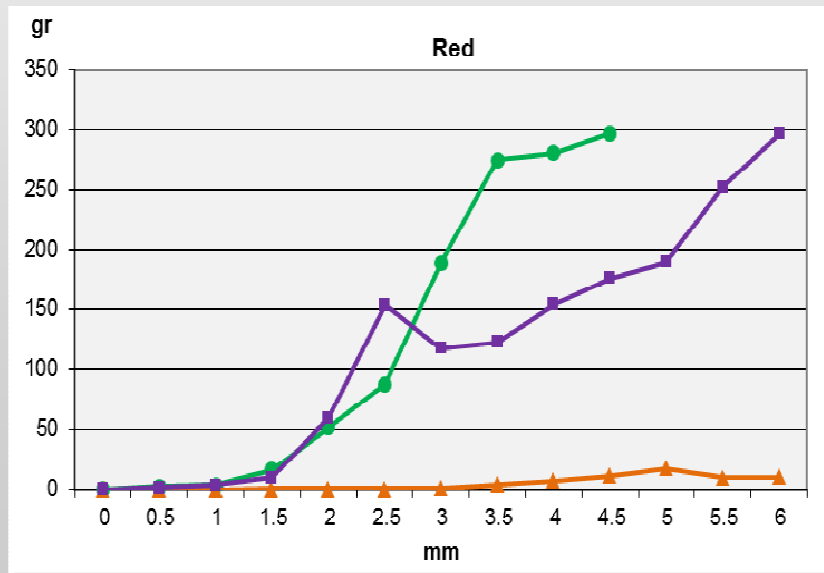
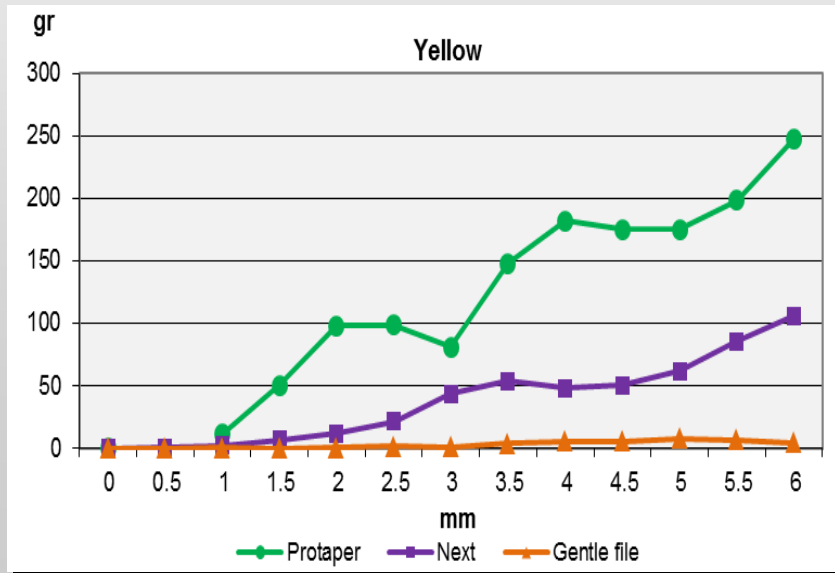
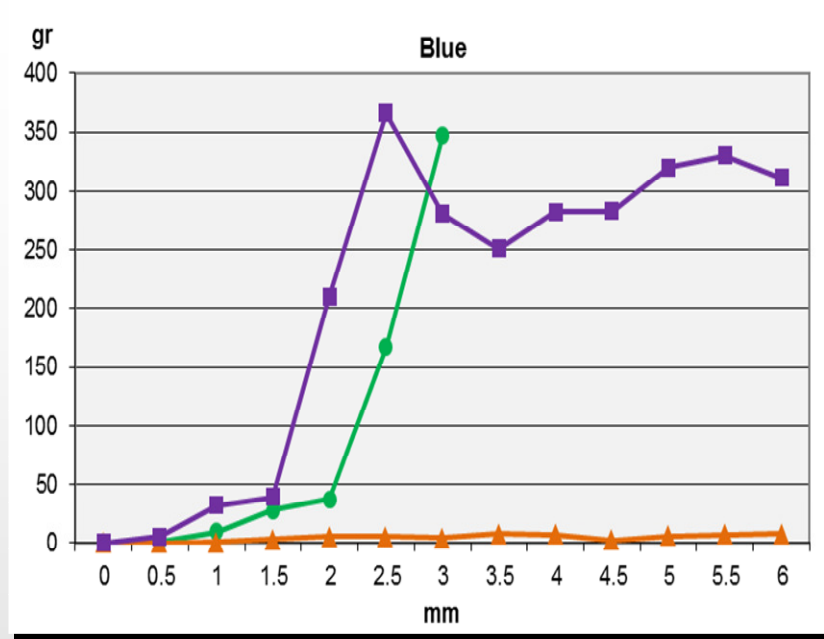
One can clearly see that Gentlefile applies less than 10 grams of vertical force, while both the Protaper and Protaper Next NiTi files applied up to 300 and 360 gram and above respectively - 360 grams being the maximal measuring range of the scale, and where the trial had to be stopped.

Comparison of vertical force applied by Endodontic files. 11.2013





Gentlefile —
 Next (Dentsply) —
 Protaper (Dentsply) —



Active load measured by torque moment

Gentlefile

NiTi



No-load



Stall torque –when the file stopped

