

# Effect of prion decontamination protocols on nickel-titanium rotary surfaces

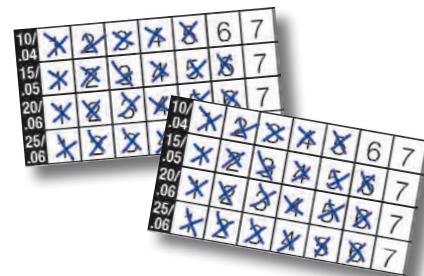
Sonntag D, Peters OA, JOE 2007; 33: 442-446

**Aim:** The aim of this study was to determine whether currently recommended prion decontamination protocols are adequate to clean NiTi rotaries without damaging the instrument surface.

**Methodology:** The effect of prion removal protocols on 7 brands of nickel-titanium files was investigated. Baseline debris scores were determined under magnification after staining with van Gieson's solution. After shaping root canals in vitro, rotary instruments were mechanically and ultrasonically cleaned followed by immersion for 24 hours in 2 M sodium hydroxide (NaOH), 6 M CH<sub>5</sub>N<sub>3</sub>, or 3% sodium hypo-chlorite (NaOCl); control files were stored dry. After sterilization, files were again stained and evaluated.

**Results:** Two of seven file brands demonstrated significantly higher baseline debris scores (K3: 96,3% and RaCe) compared to final scores. M<sub>two</sub><sup>®</sup> and ProTaper<sup>®</sup> achieved the best baseline values (10%). Uniformly, debris could not be completely removed on any instrument system; there were no significant differences among the prion decontamination protocols. After immersion in NaOCl, 27.8% of instruments showed corrosion; however, no deterioration after immersion in the other solutions was found in the other groups. Regarding corrosion, no significant difference was found between brands.

**Conclusions:** Based on these findings, single use of nickel-titanium rotary instruments appears beneficial.



M<sub>two</sub><sup>®</sup> Control Sticker