

Comparative Study of Apical Extrusion
of Intracanal Bacteria Using Different
Instruments and Techniques.
(*An In vitro study*)

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ABSTRACT

The objective of this study was to evaluate the amount of apically extruded intracanal bacteria after the use of Hand Protaper NiTi instruments, Rotary Protaper instruments and Hand Stainless Steel instruments. The microorganism which used in this study was *Enterococcus Faecalis*.

Brain Heart Infusion and Brain Heart Blood Infusion Agar were used to culture and counting of bacteria, sixty freshly extracted single rooted teeth were divided to three groups, each group have twenty samples, teeth were sterilized in autoclave and about 7.1×10^7 CFU/ ml of bacteria were added to each sample by the use of insulin syringe, the samples were left about 4 hours in 37 °C and a known amount of air were pushed through the canal to remove the access of bacteria, the amount of bacteria which have been lost were calculated and subtracted from the total amount. After instrumentation the apically extruded bacteria were cultured in 37°C for 24 hours, and were counted.

According to this study their were no significant difference between the amount of apically extruded intracanal bacteria by Hand and Rotary Protaper instruments were their were Significant difference between the amount of apically extruded intracanal bacteria by the use of Hand SS instruments and Rotary Protaper , Hand Protaper instruments. This means that instrumentation by the use of Hand SS lead to push a large amount of intracanal bacteria through the apical foramen which lead to increase possibility of failure of root canal treatment when compared with the use of Rotary and Hand Protaper NiTi instruments which lead to push a lesser amount of intracanal bacteria from the apical foramen.