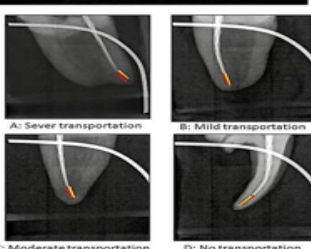
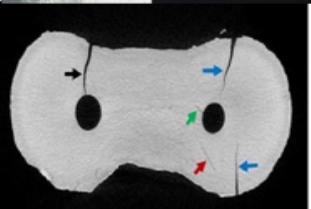
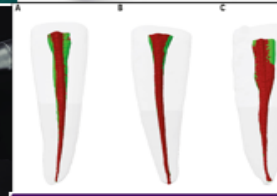
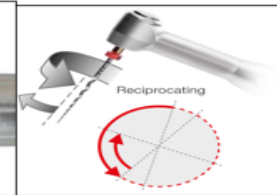
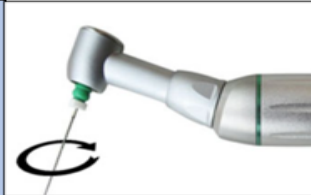


ROTARY FILES VS RECIPROCATING FILES : TWIRLING IN THE CANAL

ROTARY FILES

Rotates at a fixed speed - (360° continuous rotation in the canal). Ex- Protaper Gold, Protaper Next, Protaper Ultimate, Protaper Universal, Trunatomy, Hyflex EDM, Twisted files, K3, LightSpeed



RECIPROCATING FILES

Designed to move Clockwise 90° & Anticlockwise 30° - Constantly Engaging and Disengaging from root canal walls - in Back & Forth in reciprocating motion. Ex-Wave One, Wave one Gold, Reciproc, Reciproc Blue

1.Cyclic fatigue: Reciprocating files showed better cyclic fatigue resistance than the rotary files, because of the possible difference in the cross-sectional design of two files. Reciprocal motion - relieves stress on the file and therefore reduce the risk of cyclic fatigue caused by tension and compression – thus reducing the incidence of File fracture.

2.Dentinal microcracks: Rotary files induces higher number of dentinal microcracks compared to Reciprocating files on SEM analysis - Because of their larger cross-sections, greater stiffness & higher levels of torque and bending forces.

3.Maintenance of Canal Centering ability: Reciprocating file maintain better root canal anatomy than rotary files. Two different cross-sections along the length of the active portion of reciprocating file is the reason for decreased core diameter leading to the increased flexibility of the file and better canal-centering ability of the Reciprocating file systems

4.Canal Transportation: Reciprocating Files show lesser Canal transportation than Rotary Files. Because of their better flexibility and their Reciprocating motion. Also, the semi-active tip reduces the risk of canal transportation and subsequent aberration apically.

5.Shaping ability: Studies showed - Rotary files has less aggressive dentin cutting and more centered preparation than the Reciprocating files. Because Rotary file has two cutting blades and Reciprocating file has three cutting blades.

6.Bacterial Reduction: Reciprocating files resulted in similar bacterial reduction to those obtained with Rotary file systems.

7.S smear layer removal: Rotary files removes smear layer better than Reciprocating files, as Rotary files has Greater taper - allowing for greater flow of root canal irrigants to clean root canal walls.

8.Apical Debris Extrusion: Studies showed - Reciprocating files has more apical extrusion of debris than Rotary files, as Rotary motion tends to pull dentinal debris into the flutes of the file and directs it toward the coronal aspect of the canal. Also, Continuous rotation, requires less inward pressure compared to reciprocating files and improves capacity to auger the debris out of a root canal.

Conclusion: *Rotary spins, Reciprocating sway & Yet Both files Sculpt the Dental way. One Whirls & One Oscillates in line, Yet both Refine with Precision fine.*