

\*\*\* ADDENDUM \*\*\*

**SUMMARY OF ENDOACTIVATOR RESEARCH**

RECENT RESEARCH & PUBLICATIONS

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- I. **Comparative safety of various intracanal irrigation systems**  
(University of Tennessee: Himel V, et al, *J Endod* 35:4, pp. 545-549, 2009)

Result & Conclusion:

This study showed the “EndoActivator extruded statistically significantly less irrigant than manual, ultrasonics, and RinsEndo groups.”

AND/OR

“Manual, ultrasonics, and RinsEndo groups had significantly greater amount of extrusion compared with EndoVac and EndoActivator.”

- II. **Assessment of irrigant activation efficiency in the apical third of curved canals; A scanning electron microscope study** (Paris 7 – Denis Diderot University, France: Caron G, *J Endod* 36:8, pp. 1361-1366, 2010)

Result & Conclusion:

“The Sonic Activation Group (final rinse 17% EDTA / 3% NaOCl and EndoActivator) showed statistically significantly better smear layer removal (P<0.05) in comparison with the No Activation Group and other Test Groups in the apical third.”

- III. **A quantitative and qualitative analysis of ultrasonic versus sonic endodontic systems on canal cleanliness and obturation** (University of Florida: Kanter V, Weldon E, et al, Article in Press, *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*, 2011)

Result & Conclusion:

- Loose Debris 3mm from Radiographic Apex: EndoActivator was statistically significantly better than Ultrasonics and the control group.
- Opened Dentinal Tubules 3mm from Radiographic Apex: EndoActivator was statistically significantly better than the Ultrasonic group.
- EndoActivator provided better obturation of lateral and accessory canals (P<0.01)

- IV. **Representative images demonstrating the efficacy of the EndoActivator in curved mesial canals in mandibular molar teeth** (Nova SE University: Kuttler S, *Personal Correspondence*, 2009)

Conclusion:

Sonic agitation with the EndoActivator in highly curved canals of mandibular molars demonstrated a high level of cleanliness as evidenced by no smear layer and open, patent tubules.

- V. **The synergistic antimicrobial effect by mechanical agitation and two chlorhexidine preparations on biofilm bacteria** (University of British Columbia, Canada: Haapasalo M, et al, *J Endod* 36:1, pp. 100-104, 2010)

Result & Conclusion:

“Sonic activation (EndoActivator) showed the highest levels of bactericidal activity with CHX-plus after both exposure times.”

“The low-intensity ultrasonic or sonic agitation improves the action of disinfectants against biofilm bacteria.”

- VI. **A collagen “bio-molecular film” ex vivo model to evaluate the efficacy of dynamic irrigation using the EndoActivator System** (UCL Eastman Dental Institute, University College London, UK: Gulabivala K, et al, Abstract, *IEJ 2010*, British Endodontic Society, Spring Scientific Meeting, 2010)

Conclusion:

Automated dynamic irrigation using the EndoActivator System was significantly more effective in removing stained collagen from the root canal than manual dynamic and static irrigation. The efficacy of the EndoActivator was increased with tip size and power setting.

- VII. **Effect of EndoActivator System on Antibacterial Efficacy of MTAD** (Loma Linda University: Harhash AI, Shabahang S, Torabinejad M, Accepted for publication *J Endod* 2011)

Conclusion:

Activation of MTAD with the EndoActivator System for 1.5 minutes was an effective method to completely inhibit the growth of *E. faecali*.

- VIII. **Comparative evaluation of the antimicrobial efficacy of a 5% sodium hypochlorite subsonic-activated solution** (University of Turin, Italy: Berutti E, et al, *J Endod* 36:8, pp. 1358-1360, 2010)

Results:

“The results show a significant improvement of root canal disinfection in the EA 30 group in which 30 seconds of agitation was applied compared with irrigation alone.”

- IX. **Analyzing endosonic root canal file oscillations: an in vitro evaluation** (University of Birmingham, UK: Lumley PJ, et al, *J Endod* 36:5, pp. 880-883, 2010)

Result & Conclusion:

Ultrasonic energy produces a series of nodes/antinodes along the length of an activated tip. Because of this mode of action, when an ultrasonically vibrating tip or canula contacts the surface of a prepared canal, then the displacement amplitudes and the biophysical forces necessary to maximize cleaning are undesirably reduced.

- X. **Determination of the minimum instrumentation size for penetration of irrigants to the apical third of root canal systems** (Isfahan Medical University, Iran: Khademi A, et al, *J Endod* 32:5, pp. 417-420, 2006)

Result & Conclusion:

This paper showed the interrelationship and importance between apical diameter and apical taper in curved canals on removing the smear layer and related debris.