



SAF

INFINITUM



Enjoy Endo

 **MADE IN
GERMANY**

THE CHALLENGES

THE SOLUTION

ANATOMICAL SHAPING

Inability to adapt to the natural anatomy

- The limitations of the conventional instruments leave many areas in the root canal uninstrumented.
- Debris is packed to the untouched areas and interferes with the cleaning efforts.
- Excessive removal of sound dentin weakens the tooth.

Anatomical adaptation

- The Self-Adjusting File (SAF) is made of a hollow NiTi lattice that compresses, expands and adapts to the natural anatomy.
- Operation in quick vertical vibrations, to scrub the root canal walls and gradually expand it during 2 minutes of work.
- Minimally-invasive preparation: The SAF expands the canal by 2-3 ISO sizes, following the natural morphology and preserving sound dentin.

Cleaning and disinfection

- Packing of debris limits the ability of disinfecting solutions to reach uninstrumented areas.
- Extrusion of debris delays the healing of apical periodontitis and causes post-operative pain.
- Even advanced irrigation solutions - ultrasonic or sonic agitation, use of chelating agents, etc. - cannot provide sufficient disinfection.
- Proper 3D obturation cannot be achieved.
- Cleaning in re-treatment is limited, as the instruments cannot reach the uninstrumented area and improve the level of cleaning.

Simultaneous irrigation and agitation

- Continuous irrigation through the hollow lumen, removing the very fine debris created by the scrubbing motions, while the sonic vibrations agitate the irrigant and make it more potent.
- The synergistic effect of the simultaneous Shaping-Cleaning-Agitation actions prevents packing of debris and apical extrusion of debris.
- The irrigant is constantly refreshed, while the built-in suction removes the excess fluids and debris.
- Meticulous cleaning assures proper 3D obturation by any common technique.
- Re-treatment is highly efficient, as the SAF scrubs the remnants of the obturation materials and washes them away.

CLEANING & DISINFECTION

Safety risks related to instrument design

- Rotary files break, screw into the canal walls and are almost impossible to retrieve.
- Excessive removal of sound dentin leads to risk of fracture.
- Creation of dentinal micro-cracks by excessive force.
- Risk of sodium-hypochlorite accidents during irrigation.

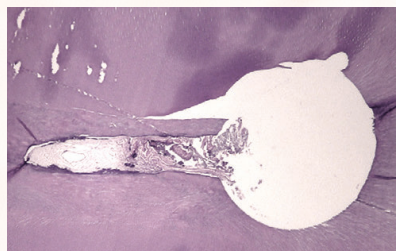
Superior safety achieved

- The lattice structure of the SAF and its mode of operation prevents it from blocking the canal, and even in the rare occasion of breakage it is easily removed.
- The SAF does not create micro-cracks, and preserves sound dentin, to prevent any potential dentinal fractures.
- The hollow shape of the SAF, combined with no-pressure irrigation and suction, prevents any risk of sodium hypochlorite accidents, despite the extensive use of irrigant.

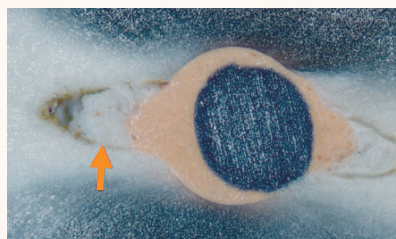
SAFETY



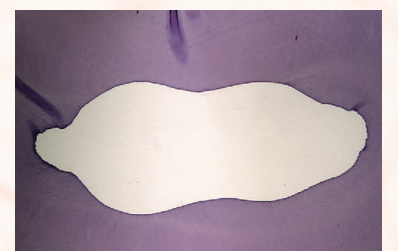
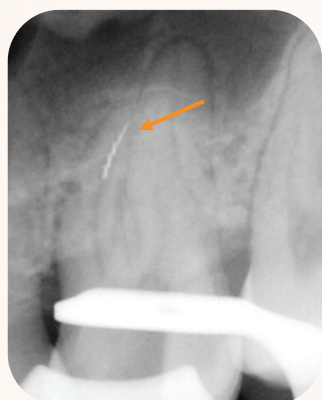
Courtesy of Dr. Frank Paqué, University of Zürich



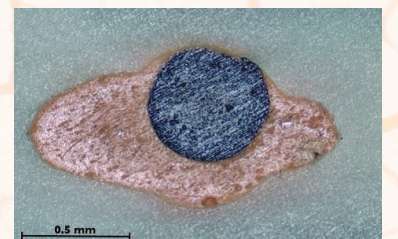
De-Deus et al., J Endod 2011



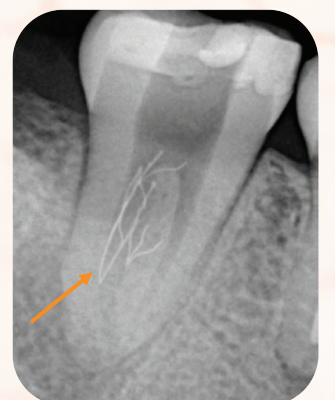
De-Deus et al., J Endod 2012



De-Deus et al., J Endod 2011



De-Deus et al., J Endod 2012

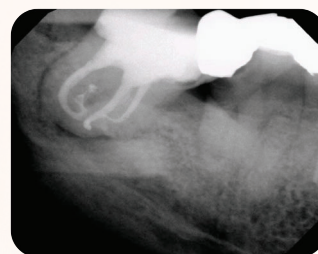
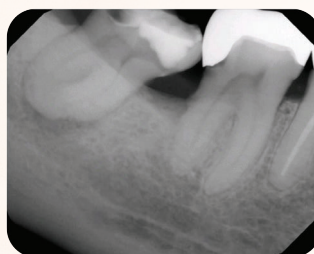


Courtesy of Dr. Guillaume Jouanny

Clinical cases

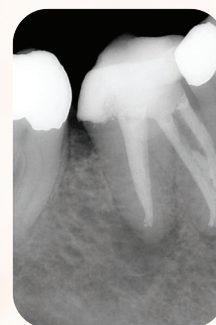
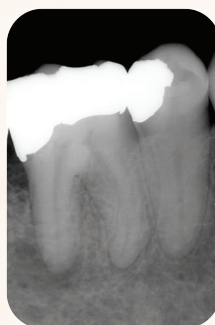
Dr. Tomas Lang

Third mandibular molar with very curved canals. Working length could not be reached neither with rotary instruments nor with NiTi hand files. The entire treatment was conducted with the SAF System. Obturation by heat-treated GP.



Dr. Michael Solomonov

Mandibular first molar that was treated with the SAF System. The angulated X-ray demonstrates the high level of cleaning of the long-oval distal canal, as well as the isthmus between the mesial canals. Obturation was done by combination of lateral compaction and warm vertical compaction of GP.



Evidence-based endodontics

- “Although it touched more of the root canal walls, the SAF system removed less dentine”. *Zuolo et al, Int Endod J 2018;51(5):564-571*
- “By using SAF instrument, flat-oval-shaped canals of mandibular incisors were homogenously and circumferentially prepared”. *Versiani et al, J Endod 2011;37:1002-1007*
- “Results appeared to have confirmed the superiority of the SAF in bacterial biofilm reduction in these hard-to-reach apical anatomic irregularities”. *Lin, Shen, Haapasalo, J Endod 2013;39(5):658-663*
- “SAF promoted a significant reduction in bacterial populations even after only 2 minutes regardless of the NaOCl concentration”. *Alves et al, J Endod 2011;37(10):1451-1455*
- “The SAF protocol was significantly more efficient for debridement of oval root canals than the rotary ...”. *De Deus et al, J Endod 2011;37(5):701-705*
- “... SAF system resulted in less hard-tissue debris accumulation in isthmus-containing root canal systems compared with instrumentation with ProTaper rotary files”. *Paque et al, Int Endod J 2012;45:413-418*
- “Patients treated with the SAF system were associated with significantly less postoperative pain”. *Jain et al, ENDO (Lond Engl) 2016;10(3):153-160*
- “SAF instrumentation results in cleaner root canals with less debris in canal irregularities and better adaptation of thermoplastic gutta-percha”. *Pawar et al, Biology 2021;10,1074*



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