The goal of root canal shaping is to allow an effective irrigation that will facilitate the cleaning and to eliminate the pulp, the bacteria. The desired shape should altogether prepare a cavity specific to the root canal anatomy and allow a three-dimensional obturation.

Stephen Cohen, Richard C. Burns – ‘Pathways of the Pulp’

Technological advances and manufacturing processes are allowing the practitioner the ability to get closer to ideal root canal therapy. The ‘perfect’ file should touch all the walls of the canal without changing its shape, while still allowing room for disinfecting irrigation solutions. The aim is to achieve optimal disinfection in a minimally invasive fashion. Thus, both aims of root canal therapy can be achieved: A healthy surrounding periodontium and a strong root with maximal resistance to fracture.

FKG aims to develop advanced endodontic instruments that provide dentists with the best shaping ability, even in curved or oval canals. The XP-endo Shaper is the latest instrument of the FKG’s range of 3-D instruments. It is the epitome of whatincremental innovation can create for modern dentistry; it features the combination of a dual technology and a unique expertise.

Firstly, the exclusive MaxWire alloy provides the instrument with an exceptional flexibility and an extreme resistance to cyclic fatigue. It allows the XP-endo Shaper to shape and to progress inside the root canal with agility, while expanding and contracting its shape, adapting itself to the specific morphology of each canal.

In addition, the Booster Tip, thanks to its six cutting edges, guides the instrument easily toward the apical terminus and enables to start the shaping at an ISO diameter of 15, then gradually to increase its working scope to reach an ISO diameter of 30.

Clinical examples

Case 1: Pulpectomy on a first upper right molar (Figs. 1a & b)—By Dr Kleber K.T. Carvalho, Brazil
A 62-year-old Caucasian female patient presented with a symptomatic pulpitis on tooth 16.

After a glide path of 15/.02 with a hand file, the canals were shaped using the XP-endo Shaper. For each canal, the instrument was used by applying five light up-and-down movements and then removed and cleaned.

After irrigating the canal, five more up-and-down movements were applied and the final size was ver-
ified using a Gutta Percha 30/.04. Finally, the canals were obturated with TotalFill BC Points and TotalFill BC Sealer.

Case 2:
Treatment (ex-vivo) of a first upper right premolar (Figs. 2a–d)—By Dr Hubert Gołąbek, Poland
Endodontic treatment of a first upper right premolar (tooth 14), extracted for orthodontic reasons. The aim of this procedure was to assess the ability of XP-endo Shaper to instrument irregularities of the canal system and prepare it for the filling.

After preparing a glide path to 20/.02, the canals were shaped thanks to the XP-endo Shaper to the desired final size 30/.04. The XP-endo Shaper could get to canal irregularities, and maintained the original shape of the canal.

Finally, the canals were obturated with TotalFill BC Points and TotalFill BC Sealer.

Case 3:
Pulpectomy on a first lower right molar (Figs. 3a–d)—By Dr Gilberto Debelian, Norway
A 42-year-old Caucasian male patient presented with a symptomatic pulpitis.

After preparing a glide path to 20/.02, the mesial canals were shaped thanks to the XP-endo Shaper to the final size of 30/.04. The distal canals, which were initially larger than the mesial canals, were also shaped with the XP-endo Shaper, creating a space to adapt a size 40/.04 TotalFill BC Points.

After shaping, disinfection was completed with the XP-endo Finisher for all canals. The obturation was carried out with TotalFill BC Points and TotalFill BC Sealer.

The one to shape your success
These technical advantages, combined with high-speed continuous rotation and minimum torque, minimise the stresses exerted onto the canal walls and prevent debris compaction in the dentinal tubules; they also promote the creation of micro-debris, which can be easily eliminated thanks to the turbulence generated by the instrument. It provides the patient with a non-aggressive, conservative treatment.

This instrument is an amazing new single file system from FKG. It allows for faster treatment in the majority of root canals. With its enhanced flexibility, compared to instruments of the same size and its high cyclic fatigue resistance, shaping becomes a simple, safe and quick process.

This high-tech instrument helps dentists to perform their procedures with reproducible success._

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Fig. 2a: Radiograph showing the bucco-lingual aspect of the maxillary first premolar.
Fig. 2b: Cross-section at 1 mm from the apex.
Fig. 2c: Cross-section at 4 mm from the apex.
Fig. 2d: Cross-section at 7 mm from the apex.

Fig. 3a: Pre-operative view.
Fig. 3b: Microscopic view (12 x) of three mesial canals after instrumentation and cleaning thanks to XP-endo instruments.
Fig. 3c: Post-operative view.
Fig. 3d: Microscopic view (12 x) of three mesial canals after obturation with TotalFill BC Points 30/.04 and TotalFill BC Sealer.