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## Instrumentation for non-circular canals: a new approach

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The main goal of endodontic treatment is to make the root canal system free of as many microorganisms as possible. The anatomical complexity of this system involves numerous lateral, secondary and accessory root canals that communicate the pulp cavity to the periodontium, which makes eradication of microorganisms impossible. However, bacteria located in areas of branches, deltas, irregularities and dentinal tubules not affected by endodontic disinfection procedures probably have their substrate radically reduced, which renders the medium unsuitable for survival. Although sterilization of the root canal system is impractical, there are some determinants for successful endodontic therapy. Principles of cleansing and modeling, already advocated and recognized as essential by Schilder in the 1970s, were established as prerequisites for subsequent procedures to be performed successfully, raising the success rate. Rotating nickel-titanium instruments have become important allies of endodontic therapy, enabling a more accurate modeling of the root canals, optimizing the action of irrigating agents and facilitating three-dimensional hermetic obturation of the intraradicular space. However, anatomical factors remain a huge challenge. The importance of the knowledge of the intraradicular morphology is unquestionable, and we do not rarely find variations of the aspect of normality like extra canals, C-shaped canals, accentuated curvatures, etc. In Endodontia, the use of mechanized nickel-titanium single-file systems has been widely propagated, especially

the reciprocating files. Several studies have shown that no system currently, whether of rotating or reciprocating files, is capable of touching all the walls of the root canal system. In my private practice I have carried out an instrumentation protocol aiming to improve the modeling of non-circular canals in order to better clean areas of difficult access to mechanized instruments. This instrumentation would complement the cleaning and modeling of previously used instruments because it allows the instrument to enter areas of histories, flattening and reentrances. This will improve our disinfection and facilitate the action of our irrigating solution and auxiliary chemical substances, for better disinfection and therefore better filling in order to achieve the success of the case.

### Speaker Biography

Samuel Nogueira Lima has completed his degree in Dentistry from the University of Fortaleza in 2000 and has been an Endodontic Specialist since 2002 by the Brazilian Association of Dentistry, where he has earned the title of outstanding student of his specialization course. He has been a Specialist in Orthodontics since 2011 at the Vale do Acaraú University. He has completed his Post-graduation in Dental Prosthesis in 2008 at Dental School of the Cearense, Academy of Dentistry. He was a Brazilian Air Force Endodontist from 2006 to 2012, is an Endodontist of the Brazilian System of Health. He has a Master's degree in Endodontics from the School of Dentistry and Medicine São Leopoldo Mandic. He is a Professor at the Faculty of Technology of Alagoas, is a Post-Doctoral Professor in Endodontics and is a founding partner of Endodontics 100% Online and has been working as an Endodontist in his private practice for 16 years.

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