



Plant Abiotic Stress

Guest Editor



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Message from the Guest Editor

Dear Colleagues,

In Endodontics, thoroughly knowledge of root canal anatomy is absolutely necessary to avoid excessive stress accumulation on the endodontic rotary instruments, in order to avoid, or at least reduce, their intracanal separation. Despite the introduction of imaging methods increasingly suitable for the analysis of the endodontic anatomy, this is still very challenging, and often leads to iatrogenic errors.

To achieve the most complete canal chemo-mechanical disinfection as possible, the endodontic irrigants and their subsequent activation, if not supported by adequate shaping procedures, are not sufficient to reduce the bacterial count and allow the immune response to start healing procedure, since the irrigants are not able to reach the apical third of the roots.

The instruments currently in use, in addition to make the canals shaping faster, have made the entire endodontic practice safer, considerably limiting the risk of iatrogenic errors or intracanal separation. Depending on the characteristics required by the specific clinical case, it is possible to select the most suitable NiTi rotary instrument to the anatomical characteristics of the root canal system.

Several studies have been published in recent years concerning nickel titanium rotary instruments, but the interest on this topic always remains very high, considering all the new products that are launched on the market, and the different technologies that are used for their production. Many of these differ from each other for the heat treatments, which greatly affects their mechanical properties.

The outcome of endodontic therapy is still importantly dependent on the mechanical shaping of the root canal system. It is now clear that both resistance to cyclic fatigue and resistance to torsional stress should be considered for the evaluation and comparison of endodontic rotary instruments.

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The aim of this Special Issue is to understand the development of new NiTi rotary instruments, the changes that have been introduced by heat treatments or production procedures, and the actual improvements in their mechanical properties, considering the whole of stresses generated during canal instrumentations.

I expect to receive articles regarding the mechanical characteristics improvements of NiTi rotary instruments and their development.

Original articles, case reports and reviews in the field of endodontics, which aim to enrich scientific knowledge and help not only clinicians, but also researchers involved in the development of new dedicated software and Ni-Ti rotary instruments, diagnostic tools and technological improvements are warmly welcome.

Prof. Dr. Luca Testarelli

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