

Klinikum der Universität München • Poliklinik für Zahnerhaltung und Parodontologie  
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**LYSIS Italia s.r.l.**

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| Ihr Zeichen<br>Endox Endodontic<br>System | Unser Zeichen<br>dr.haf | Ansprechpartner<br>dr.haf | Telefon<br>004989 51607614 | Telefax<br>004989 51607631 | E-Mail<br>chaffner@dent.med.uni-muenchen.de |
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Dear ladies and gentleman,

in the following we will present protocoll of investigation and clinical use with the Endox Endodontic System.

In the year 1997 we started to think about the new method to deal with all the problems concerning sufficient endodontic treatment. The aim of an endodontic treatment is the removal of pulpal tissue and the reduction of bacteria inside the root canal system. The Endox Endodontic System® was presented in 1997 to our department

The Endox Endodontic System® is based on the following concept:

The high current density of an electrosurgery system, transferred by an electrode applied under endometrical control into the root canal, leads to an increase of temperature for only about 0.14 seconds. Pulpal tissue and microorganisms are steamed away. Superficial melting of the root canal walls should simplify or at least replace mechanical instrumentation.

To exclude thermal effects on adjacent tissue (root surface, periapical region) the temperature change was examined along the root canal surface as well as in the periapical tissue. After extraction 40 single rooted teeth were fixed into an experimental construction. Tooth crown were opened and the root canal entrance was . Under endometrical control the impulse was placed for only one time. Due to an installed infrared camera the temperature increas could be observed. The medium temperature increase was about 14°C (+/- 3 °C) within all 40 specimen. Although there is a great difference about thermal conductivity of oral tissue further more investigation had to be performed. The results, gained in the *In-Vitro* investigation, required profound histological investigation of the root canal surface (dentinal structures).

Histological investigation as well as SEM investigation confirmed that there was no thermal sideeffect to adjacent tissue. The root canal surface was also determined with the SEM to show the effect of high frequent alternating current to deeper zones of root canal surface.

In addition to that there was performed a quantitative determination of bacterial reduction inside the root canal caused by the highfrequent impulse. The application of the impulse could lead to a nearly 100 % (99,98 %) reduction of bacteria inside the root canal system.

Since moreover five years the Endox Endodontic System is used clinically within the Munich Endodontic Concept (MEC) and students as well as assistant professors rely upon the system.

The highfrequent impulse is placed right at the beginning of endodontic procedure to get rid of pulpal tissue as well as bacteria. A only minimal invasive mechanical root canal treatment ensures shape for the tide obturation. Immediate before root canal filling root canal is dried and cleaned with the impulse again.

The Endox Endodontic System is one of the main factors of sufficient root canal tretament within our clinical concept.



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