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## **Modern root canal treatments – getting to the root of the problem**

**Every year more than one million teeth are extracted in Austria. But removal isn't always necessary. From 11-14 September the Biennial Congress of the European Society of Endodontology (ESE) at the Austria Center Vienna will be looking at the best ways for patients to keep their teeth.**

“A dazzling smile radiates health and beauty. And so that smiles continue to dazzle for as long as possible, as endodontologists we have devoted ourselves to the long-term preservation of natural teeth,” said Johannes Klimscha, General Secretary of the Austrian Association of Endodontology (ÖGENDO) and country representative at the ESE. “Natural teeth are and will continue to be superior to any implants,” confirmed his colleague, ÖGENDO Treasurer Matthias Holly.

### **Over a million teeth extracted each year**

In light of the statistics, the long-term objective will be a difficult goal to achieve with 765,000 teeth pulled each year in Austria and a further 310,000 surgically removed. But extraction it isn't always necessary. Initial preventive measures such as regular brushing or direct or indirect capping to protect the nerve of a damaged tooth can help preserve teeth. According to European studies that can be applied to Austria, fewer and fewer teeth have been removed in recent years and the number of teeth saved through root canal treatments is rising all the time.

### **Filling in the gaps**

If the dental pulp – i.e. the nerve inside the dental cavity – is irreversibly inflamed or has died then root canal treatment is the only remaining course of action. “The success of a root canal treatment depends on a multitude of small steps. Dentists all over Austria are achieving great results, and many cases of toothache and inflammation can be treated quickly via a standard root canal procedure. The long-term success rates are generally between 60% and 90%. One variable is the overall condition of the tooth, or prior damage. “From a dentistry point of view, the most important factor is the practitioner's level of training and experience and the amount of time they have,” Klimscha noted. There are currently ten dentists in Austria who specialise exclusively in endodontology – i.e. preservation of teeth through root canal treatment. A further 150 of the nation's 5,000 dentists have extensive endodontological training. “Which is why we want to use the ESE Congress to send out a message about specialised training and education for tooth preservation,” Klimscha confirmed.

### **Latest findings to be presented at the congress**

The goal of a root canal treatment is to completely rid the dental cavity of any inflamed or dead tissue and to remove any bacteria that may have moved into the site. However, not all root canal treatments are the same. The more precise the cleaning, the better the long-term chances of success. The latest breakthroughs in this area will be presented at the ESE congress. "The use of dental dams, new nickel titanium instruments, special microscopes for operations and innovative bioceramic filling material can have a significant influence on the outcome of a root canal treatment," Holly added. A dental dam is a thin sheet of latex or nitrile that is positioned over the tooth to protect it from the inside of the mouth, preventing saliva and bacteria that are present from entering the root canal during treatment. Instruments made from nickel and titanium alloy offer greater elasticity than the steel tools that have been the standard up to now. This makes it easier to follow the original path of the canal during a root canal treatment, leading to fewer treatment errors. It also plays an important part in ensuring that the cavities are prepared and disinfected all the way down to the apex of the root.

### **90%-plus success rate for modern root canal treatments**

State-of-the-art operation microscopes make it possible to better inspect and magnify the tooth cavity during treatment, creating the ideal conditions to ensure that all nooks and crannies of the root canal system are identified and treated. The use of electronic measurements to determine the precise length of the root canal is another key development that enhances the precision of treatment. "All in all, success rates for root canal treatments carried out using the latest scientific breakthroughs are up to 90-98% for initial procedures and 80-90% in the case of retreatment," Klimscha explained. Even if the tooth no longer has nerves or blood supply after root canal treatment, it can still be seen as a fully-functioning tooth from the patient's point of view. Teeth preserved in this way have the same strength and stability.

### **Independent tooth growth after childhood dental trauma**

Another milestone has recently been reached in children's dentistry. If root development has stalled in the wake of an infection caused by dental trauma it is now possible to trigger root growth through targeted and controlled stimulation of the circulation in the root canal system. Circulation is restored in the tissue and the root, making it possible for the tooth to develop into its originally intended form.

### **About IAKW-AG**

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