

Added value for the practitioner

ZEISS EXTARO 300



Using loupes and microscopes in dental treatments, e.g. in restorative dentistry, is a daily routine nowadays – hardly anybody would deny its benefits. But did you know that the first surgery under a microscope, in clinical medicine, was already conducted in the early 20th century? The doctors performing that surgery used a ZEISS microscope and the surgery was a dental treatment.¹ However, broader use of this method only began in the 1980s?² It was primarily Noah Chivian who took the lead in popularizing use of the microscope, especially in endodontics³. Studies in this field have repeatedly shown that use of a surgical **microscope improves the treatment quality and significantly increases the probability of a successful outcome**³. Less well known, however, and less frequently studied are the benefits of its application in other dental treatments. Sitbon et al. found that it was still not a standard aid for any other treatment area more than 30 years after the first usage of a dental microscope in endodontics².

This is interesting, as dental microscopes account for significant utility in other areas of dentistry as well. For example, Cairo et al. demonstrated in a case study that a surgical **microscope can be a highly useful instrument in plastic periodontal surgery for gingival recession**⁵. And Pasetto et al. found that with surgical microscopes, **details like preparation margins that may otherwise go unnoticed, can be observed, and perception improved in general**⁶.

In their article “Magnification in dental practice: how useful is it?”⁷, Mallukarjun et al. advocate that use of microscopic enlargement in microsurgical procedures provides **“absolute clinical accuracy”**. It states further, that application of surgical microscopes has brought revolutionary change, **opening an array of possibilities for dentists**, including in restorative dentistry, as Glenn has presented⁸ in an article describing the benefits of microscope use in the preparational phase of a fixed prosthetic restoration: These include much better recognition of furcation and preparation margins via microscope. In addition to an **improved view**, magnification also enables the practitioner to work with smaller instruments and **perform much less invasive procedures**².

Today’s high-performing dental microscopes, like the EXTARO® 300 from ZEISS, deliver considerable added value, offering several tools to enhance magnification for potentially improved dental treatment, such as combining optical magnification with caries detection technology. With the help of the **Fluorescence Mode**, tooth enamel and dentin are more easily distinguishable from the typical composite materials. The advantage: **Seeing more and with greater precision means advanced treatment**. The **NoGlare Mode** with polarized illumination facilitates the accurate assessment of tooth color tones, optimizing aesthetical color selection for filling materials. Additionally, the **TrueLight Mode** can prevent premature curing of materials*, in a near to natural light setting.

Dental microscopes also offer ergonomic benefits. Magnification and simultaneous daylight-like illumination, make it possible to **maintain an ergonomic work posture, without losing quality of treatment**.^{8,9} Ideal conditions ensure a predictable treatment outcome and ultimately also benefit patients, who in turn associate microscopes with a **high level of competence, quality of treatment and improve trust in the dentist**, also creating a marketing benefit for the dental practice².

* For specifications see user manual.

Literature

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