

# Zumax operating microscope

Why should I invest?



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2. **To see or not to see. Treatment quality.**
3. **Patient communication.**
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6. **Technology and prices have changed.**

# 1. Dentotar & return on investment.

# Dentotar

- **The updated tarif allows invoicing the use of the operating microscope (OMS) without any problem.**
- **With the new tarif, the OMS has become a very interesting investment.**

# Dentotar

## 4.0980 Utilisation d'un microscope opératoire

<b>Validité</b>	01.01.18 - 31.12.99
<b>Pt (AA/AM/AI)</b>	69.70
<b>Pt (PP) max</b>	80.20
<b>Pt (PP) min</b>	59.20
<b>Taux de TVA</b>	Aucun taux (0.0%)

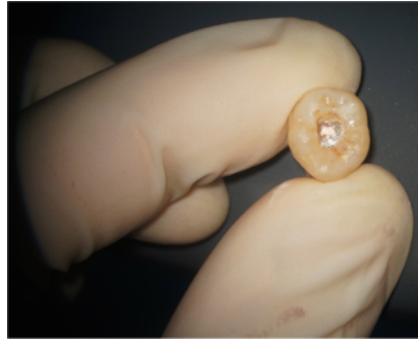
Ne peut être facturée qu'après concertation avec l'assureur

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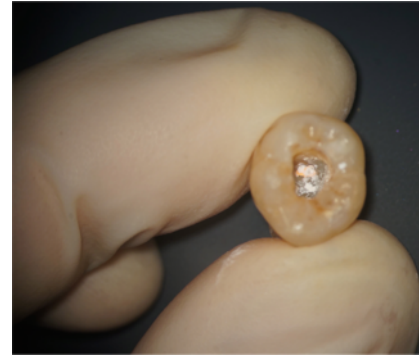
## Return on investment Calculation

Microscope (OMS) ROI			
Treatments done per day		OMS invoiced (CHF)	
1 Endo		80.00	Full tarif
1 veneer		50.00	Tarif with discount
2 composite fillings		30.00	Tarif with discount
Total per day (CHF)		160.00	Values can be a lot higher with regular use of OMS.
Total per week (CHF)	5	800.00	
Total per month (CHF)	4	3'200.00	
Cost of leasing per month (CHF)		600.00	New price OMS between 20k to 25 k roughly.
Income p.M. after leasing (CHF)		2'600.00	
Income p.year after leasing (CHF)	12	31'200.00	

**2. To see or not to see.  
Treatment quality.**



x2,8



x4,7



x7,5



x12

**zumax**



x18,7



J Endod. 2017 May;43(5):726-732. doi: 10.1016/j.joen.2017.01.015. Epub 2017 Mar 11.

## The Effect of the Dental Operating Microscope on the Outcome of Nonsurgical Root Canal Treatment: A Retrospective Case-control Study.

Khalighinejad N<sup>1</sup>, Aminoshariae A<sup>2</sup>, Kullid JC<sup>1</sup>, Williams KA<sup>3</sup>, Wang J<sup>1</sup>, Mickel A<sup>1</sup>.

 Author information

### Abstract

**INTRODUCTION:** The aim of the current investigation was to assess the effect of the use of a dental operating microscope on the outcome of nonsurgical root canal treatment (NS RCT) while treating the mesiobuccal (MB) root of the maxillary first molar.

**METHODS:** This retrospective investigation included endodontically treated maxillary first molars (ETMs) with apparent adequate previous NS RCT and restorations referred for endodontic retreatment at the endodontic graduate clinic. Inclusion criteria were ETMs that were diagnosed with irreversible pulpitis and normal periapical tissues before the initial NS RCT and ETMs that presented with a minimum of 1 identifiable periapical lesion (PAR) at 1 of the roots at the time of retreatment. One hundred ninety-five ETMs were included and divided into 2 groups: (1) the initial NS RCT had been performed using a microscope (n = 83) and (2) NS RCT had been performed without the use of a microscope (n = 112). Data extracted were whether the second MB (MB2) canal was located initially and the presence of an MB PAR at the time of retreatment. Data were statistically analyzed using binary logistic regression ( $\alpha = 0.05$ ).

**RESULTS:** The MB root was 3 times more likely to present with a PAR at the time of retreatment if the initial NS RCT was performed without the use of a microscope ( $P < .05$ , odds ratio = 3.1). There was a significant association between a missed MB2 canal and an MB PAR in the group in which the initial NS RCT was performed without the use of a microscope ( $P < .05$ , odds ratio = 5.1). However, in cases in which the initial NS RCT was performed using a microscope, a missed MB2 canal was not associated with the presence of an MB PAR.

**CONCLUSIONS:** With proper education, dentists can gain further insight into recognizing limitations in treating cases that require advanced training and advanced optics such as a microscope. Based on this strategy, it would appear that the outcome of NS RCT can be improved.

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### Comment in

Use of a microscope during endodontic treatment seems to have helped locating second mesiobuccal root in maxillary first molars that needed retreatment. [J Am Dent Assoc. 2017]

PMID: 28292597 DOI: [10.1016/j.joen.2017.01.015](https://doi.org/10.1016/j.joen.2017.01.015)

MB root 3 x more periapical lesions when treated  
without OMS

Rev. J. Morphol. Embryol., 2017,58(3):1083-1089.

## **Middle mesial canal of the permanent mandibular first molars: an anatomical challenge directly related to the outcome of endodontic treatment.**

Perlea P<sup>1</sup>, Nistor CC, Imre M, Gheorghiu IM, Iliescu AA.

⊕ Author information

### **Abstract**

To effectively clean and shape the mandibular permanent first molars it is mandatory to understand in detail their complex internal anatomy. The middle mesial canal is an additional canal located between the usual mesiobuccal and mesiolingual canals in the mesial root of mandibular first molars. The incidence of the middle mesial canal, its relationship with main canals of the mesial root and the possibility for it to be negotiated is an important practical issue in endodontics. To identify the presence of this canal is mandatory. Accordingly, a modified endodontic access, the use of the operating microscope and periapical radiographs in two different horizontal projections are indicated to enhance the long-term favorable outcome of the endodontic treatment.

PMID: 29250894

Middle mesial canal in mandibular first molars: OMS is indicated.

*Oper Dent*, 2018 Mar 7. doi: 10.2341/17-169-C. [Epub ahead of print]

## **Effect of Magnification on the Precision of Tooth Preparation in Dentistry.**

Eichenberger M, Biner N, Amato M, Lussi A, Perrin P.

### **Abstract**

**OBJECTIVES:** To evaluate the impact of magnification aids on the precision of tooth preparation under simulated clinical conditions.

**METHODS AND MATERIALS:** Two plastic blocks marked with a geometric shape were fixed in a dental phantom head: a circle as the distal surface of tooth 16 (UNS 3) and a y-shaped figure as the occlusal surface of tooth 36 (UNS 19). Sixteen dentists (mean age: 39 years; range: 26-67 years) prepared the geometric shapes from the inside to the boundary line with a cylindrical bur and water-cooling. The boundary line had to be touched but not erased. Chair-side assistance was provided to simulate the clinical situation. Tooth 16 was prepared under indirect vision via a dental mirror. Tooth 36 was prepared under direct vision A) without magnification aids, B) with Galilean loupes, 2.5× and light-emitting diode light, and C) with a microscope, 6.4× and coaxial light. The preparation procedure was performed three times in different sequences of the magnification devices and with a break of at least 1 week between each procedure. The correctly prepared contour and the incorrectly prepared areas were evaluated in relation to the whole circumference of the geometric shapes.

**RESULTS:** For both values the precision was significantly higher when a microscope was used, followed by preparation using loupes; precision was lowest without magnification aids ( $p < 0.0001$ ). This was true for both indirect and direct vision ( $p < 0.05$ ).

**CONCLUSIONS:** Magnification devices improved the precision of tooth preparation under simulated clinical conditions.

PMID: 29513642 DOI: [10.2341/17-169-C](https://doi.org/10.2341/17-169-C)

Magnification devices improve the precision of tooth preparation

# 3. Patient communication.

# Patient communication



# 4. Ergonomics.



# Ergonomics



Naked Eye.

Reading Glasses

2.5x Loupes

5x Loupes With Headlight

Operating Microscope

# Ergonomics

## Ideal treatment ergonomics

Appropriate working posture and ergonomics play a key role in maintaining the dentist's own health and personal well-being. For some operators, this is the main criterion for daily use in their practice.





**5. Clinical staff, young dentists know OMS.**

## Clinical staff, young dentists know OMS

- All dental universities in Switzerland now train young dentists with operating microscopes (OMS).
- Not being able to use OMS is very frustrating for them.
- Clinics offering the use of operating microscopes are a lot more attractive.
- Soon operating microscope will be a standard... It is a competitive advantage to react quickly.

# Zumax, University of Geneva



# Zumax, University of Basel



# Zumax, Prof. Von Arx, University of Bern

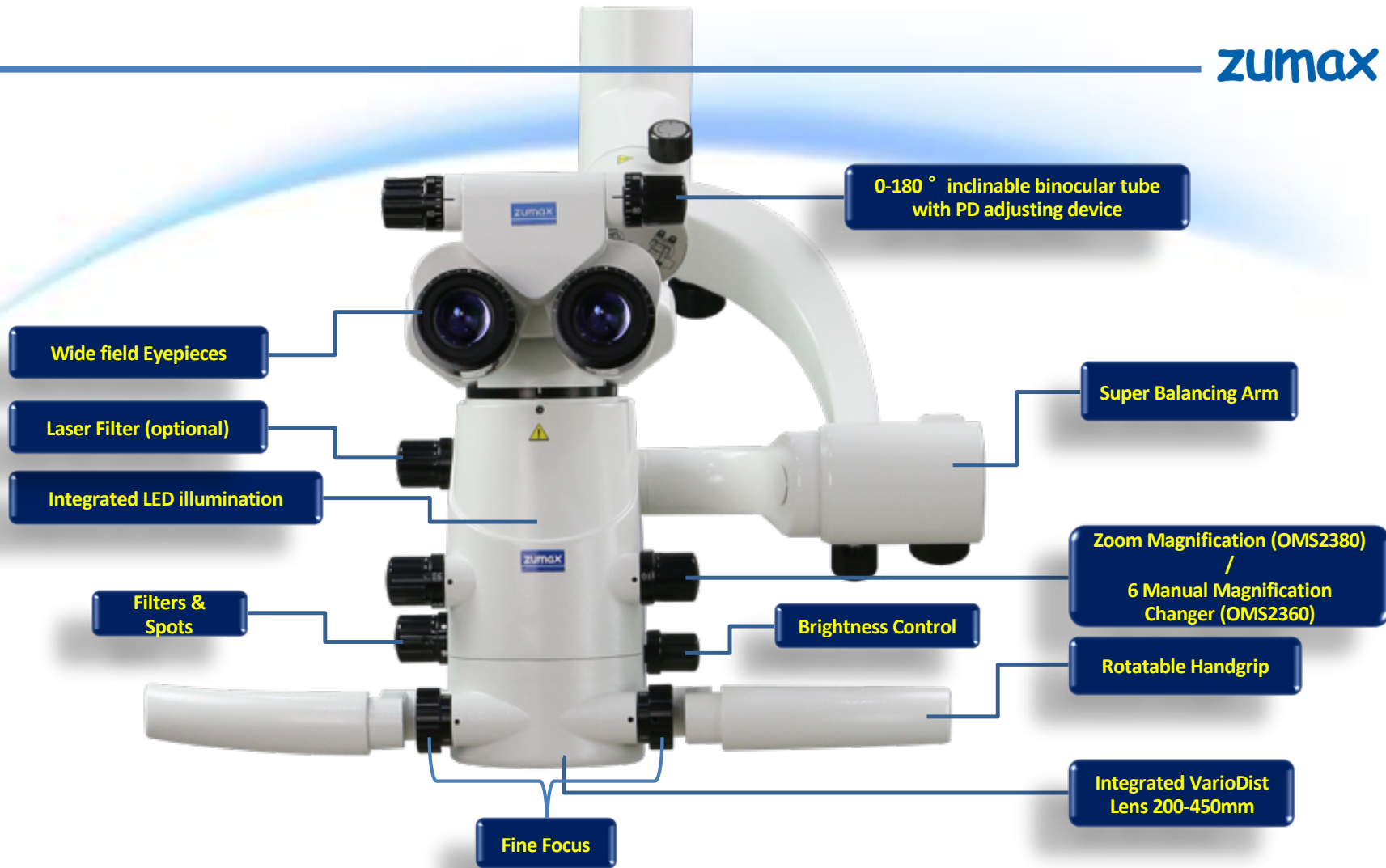


## **6. Technology and prices have changed.**

# Technology and prices have changed

- LED light is the new standard. Less maintenance, excellent light.
- Variable optics is becoming a standard, easier to learn how to use a OMS. Zoom optics is very easy to use.
- OMS used to be 40 k to 80 k CHF, today a good basic Zumax OMS is about CHF 20k, a well equipped OMS around CHF 25 k.
- Camera options have become cheaper and more versatile.
- For a first look at Zumax OMS see here:
- <http://www.ftcdental.ch/zumax>

**zumax**





# Questions? Comments?

## Please contact us!

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