

Research on the efficacy of **Brix3000®** papain gel

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SUMMARY

BRIX3000® and the exclusive E.B.E.(Encapsulating Buffer Emulsifier) technology have been evaluated and compared to rotary treatment. The parameters which have been assessed are: treatment time, pain scale (Chipp's Scale); caries detector, permanence in the mouth without isolation, drying at room temperature, support by the operator, subjective efficacy, general performance, after-treatment cavity characteristics.

INTRODUCTION

The ART technique is based on excavating and removing dental caries using solely manual tools and then sealing.

Apart from the ART, an enzyme is used (proteolytic, bactericidal and anti-inflammatory)

and it only eliminates carious tissue without affecting the healthy dentin. (SELECTIVITY). This completes the ART technique by offering optimum efficacy.

The current research has been carried out with patients from a dental check-up school campaign program organized by Rotary Club Carcarañá, Santa Fe, Argentina.

One-hundred patients aged 6 to 17 and one hundred aged 35 to 70 were selected, parents of the formers who presented dental caries without pulpitis or irreversible damage. (200 patients in total)

All the patients have been treated with BRIX 3000 with the purpose of evaluating:

- Caries removal efficacy
- Pain perception (CHIPPS scale)
- Working time
- Performance regarding caries detector
- Volatile residues during treatment
- Pre and post treatment difference of the cavity size.

METHOD AND MATERIALS

Method: Chemo-mechanical removal with manual tools and caries detector application. ART sealing with Ionomero Vítreo.

Product: BRIX3000®

Caries detector: Caries detector (2 applications)

Operators: Supplied with BRIX3000® 1ml- multi-dose syringes

TABLE GIVEN TO THE OPERATOR

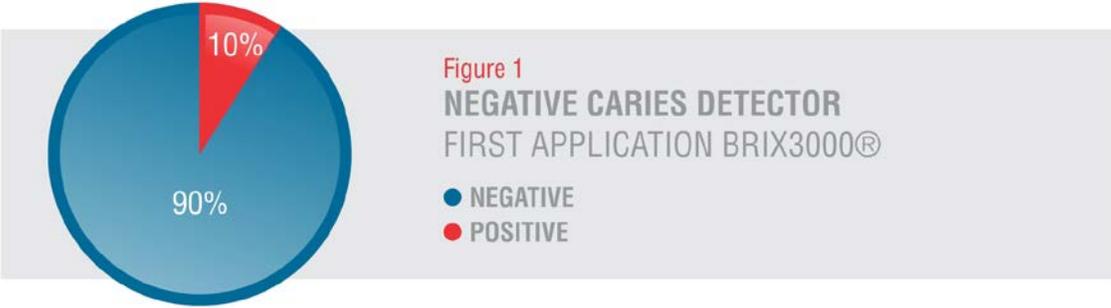
| NAME | AGE | CHIPPS SCALE | | REMOVAL TIME | PATIENT PERCEPTION COMFORT | | FINAL SURFACE | | PIECE | SIZE AT THE END OF THE REMOVAL | | |
|------|-----|--------------|--------------|--------------|----------------------------|-----|---------------|-------|-------|--------------------------------|-----|------|
| | | PAIN | PAIN ABSENCE | | ROTARY | GEL | EVEN | ROUGH | | EVEN | 50% | 100% |
| | | | | | | | | | | | | |

RESULTS

- As regards BRIX 3000®'s exposure to caries detector, it has shown high effectiveness in its first application (90% negative) and in its second application (negative 96%) Fig 1 and 2.

- It has been determined that BRIX3000®'s average working time in the oral cavity is of 7 ½ minutes.
- As regards pain degree, 93% of the patients have not suffered from pain. Fig 3.
- BRIX3000® can remain in the oral cavity before starting drying for enough time.
- Subjective efficacy which has been measured by the operator resulted in the following: all the professionals who have taken part in this have preferred BRIX3000® as their working material to traditional caries treatment.
- Pre and post treatment difference of the cavity size: BRIX3000® has shown high conservation of biological material in comparison to conventional techniques. Fig 4
- None of the patients have shown inflammatory reactions in the tissues surrounding the treatment area.
- The technique does not produce volatile residues.
- Total operating time: The enzymatic technique took 16 minutes on average with a 2.5-minute standard deviation. While in the rotary technique it took 34 minutes with a 4- minute deviation.
- Patient preference: High acceptance of the enzymatic technique, preference by comparison

**Fig. 1 - NEGATIVE CARIES DETECTOR
FIRST APPLICATION, BRIX3000®**



**Fig. 2 - NEGATIVE CARIES DETECTOR
SECOND APPLICATION, BRIX3000®**

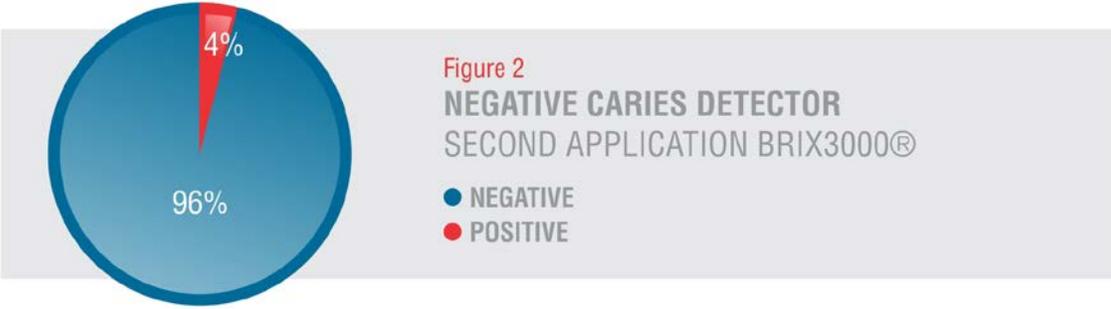
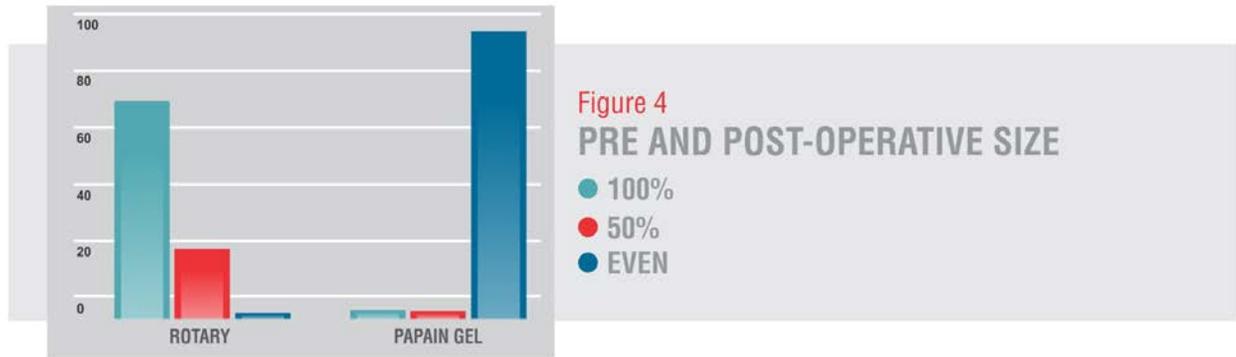


Fig. 3 - PAIN PERCEPTION



Fig. 4 - PRE AND POST-OPERATIVE SIZE



CONCLUSIONS

Brix3000® has effective and selective proteolytic action to remove collagen fibres in the carious tissue. It has an antibacterial and antifungal power, thus it has an antiseptic power at the tissue level. The above suggested technique offers small cavities with rough surfaces. It shortens working time. It has convenient storage. All these advantages make BRIX3000® the chosen treatment by 90% of the professionals who have taken part in this research.

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