

> WATER THE PLANTS  
& BLEACH THE CANALS

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**Welcome to the first REC newsletter of 2012!** Irrigation is an important part of endodontics that often takes a back seat to instrumentation. There is evidence for using multiple irrigants and activating them with either sonic or ultrasonic energy. In order to maximize the effectiveness of irrigation a few factors should be considered:

- Properties of the irrigant
- Volume used (the more the better)
- Depth of penetration of the irrigant
- Activation of the irrigant

Sodium hypochlorite (NaOCl) removes organic tissue; 15% ethylenediaminetetraacetic acid (EDTA) removes calcified tissue and softens dentine. Thus, EDTA is necessary to remove the smear layer and it enhances one's ability to negotiate a calcified canal. Irrigation during instrumentation can make instrumentation easier.

Research demonstrates that NaOCl alternated with EDTA débrides both instrumented and non-instrumented canal walls. Also, the combination of the two irrigants is more effective at killing bacteria than NaOCl alone. Both NaOCl and EDTA fatigue, so maximum effectiveness requires frequent replenishing.

The higher the concentration of NaOCl the more effective it is at dissolving organic tissue. There is no evidence to support 'watering down' NaOCl to avoid post-op pain; needle lock and technique errors are the cause of NaOCl accidents.

Due to the high surface tension in the confined space of a canal no fluid progresses more than 1 – 2 mm beyond the tip of a needle. After instrumentation a canal will have a greater taper and larger overall diameter; this is conducive to both the needle and irrigant gaining access to more apical portions of a canal. Irrigation is most effective after instrumentation has enlarged a canal.

Activation of an irrigant is either via sonic or ultrasonic energy. Compared to passive irrigation, use of an ultrasonic will significantly increase debris removal from canals, isthmuses, and anatomical irregularities. The sonic device (EndoActivator®) I use has a plastic tip; a typical ultrasonic tip is a metal file that has the potential to cut into the wall of the canal when activated. Activation of irrigants is better than no activation.

Regards,



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**Maximise the effectiveness of your irrigation protocol please consider the following:**

- Irrigation during the early stages of instrumentation compliments the two goals of gaining patency and removing debris
- Use copious amounts of the freshest and highest concentration of legally available NaOCl and EDTA
- Alternate between NaOCl and EDTA during instrumentation and afterwards when actively activating the irrigants
- Active (sonic or ultrasonic) irrigation is most effective after instrumentation is done

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8am to 5pm - Monday to Saturday  
Extended hours are also available

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If you have any questions about this or other newsletters please contact our office.