

*"...ALL INSTRUMENTATION TECHNIQUES LEFT 35% OR MORE
OF THE CANAL'S SURFACE AREA UNCHANGED."*¹

— Peters OA, Schönenberger K, Laib A.



ProUltra  **PIEZOFLOW**[®]
ULTRASONIC IRRIGATION NEEDLE



DENSPLY
TULSA DENTAL
SPECIALTIES

**EVEN WITH TODAY'S ROTARY TECHNIQUES,
ROOT CANAL SYSTEMS REQUIRE SIGNIFICANTLY BETTER
CLEANING WITH CONTINUOUS ULTRASONIC IRRIGATION.**

SIGNIFICANTLY CLEANER CANALS.

Experience the easy-to-use ProUltra® PiezoFlow® ultrasonic irrigation needle from DENTSPLY Tulsa Dental Specialties. Its continuous ultrasonic irrigation facilitates the introduction of irrigants into the root canal structure – including dentinal tubules and isthmuses. It removes debris from the root canal system and promotes the disruption of biofilms.

Simply introduce the ProUltra PiezoFlow 25-gauge ultrasonic irrigation needle with its continuous irrigant flow into the canal, and activate the connected ProUltra Piezo Booster for one minute.

The result of this advanced irrigation protocol is superior cleaning power.

PROVEN TO CLEAN IN BETWEEN.

Research shows that, following hand/rotary preparation, adding one minute of PiezoFlow irrigation significantly improves canal cleanliness over soaking with bleach alone for one minute. Experience this whole new level of clean for yourself with the ProUltra PiezoFlow ultrasonic irrigation needle. Conventional irrigation protocols simply can't compare.



60 seconds with PiezoFlow.²

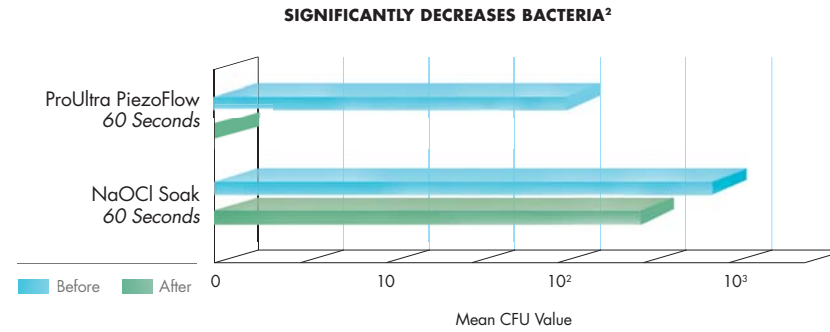
Extracted molar illustrating 100% cleanliness with hand/rotary preparation followed by ProUltra PiezoFlow with 6% NaOCl for 60 seconds. Trichrome staining technique. Original magnification: 2.5x. (Dentin projections evident in isthmus.)



DISCOVER WHAT SIGNIFICANTLY CLEANER CANALS CAN DO FOR YOUR LONG-TERM CLINICAL OUTCOMES.

NEGATIVE BACTERIA CULTURES. POSITIVELY CLEAN.

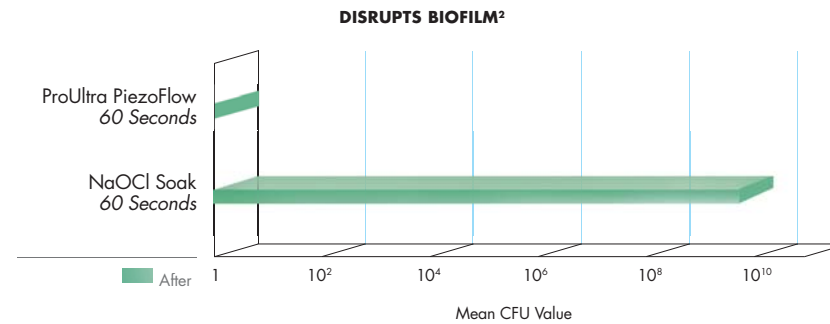
Why the ProUltra PiezoFlow? Because you're more likely to get a negative culture than with bleach soak alone. Fact is, adding one minute of PiezoFlow irrigation following hand/rotary instrumentation significantly decreases the chance of a positive bacterial culture.



Antimicrobial analysis: Extracted molars – with natural bacteria – following hand/rotary preparation comparing the ProUltra PiezoFlow used with 6% NaOCl for 60 seconds versus 6% NaOCl soak for 60 seconds. Mean value of 10 samples for each group represented for bacterial count (CFU) before and after using ProUltra PiezoFlow or bleach soak.

CLEARING THE WAY BY DISRUPTING BIOFILM.

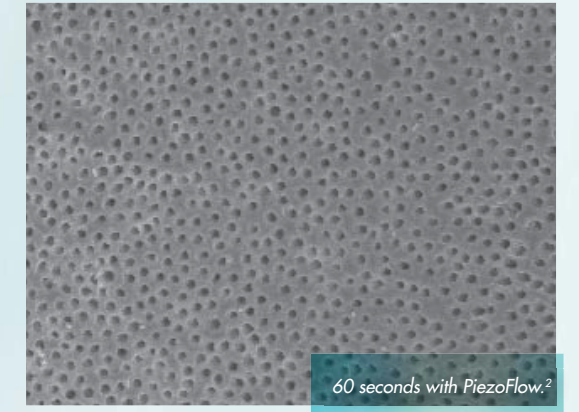
Using the ProUltra PiezoFlow ultrasonic irrigation needle promotes the disruption of biofilm. It clears the way for better cleaning.



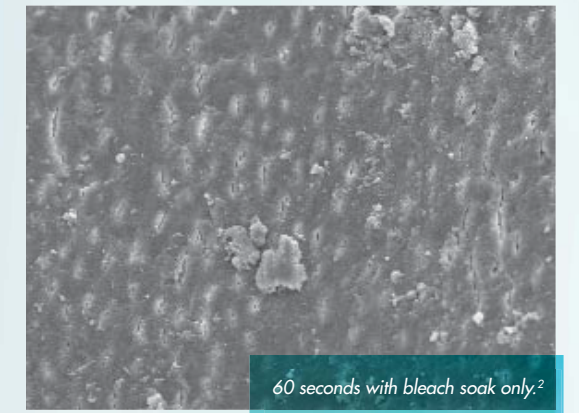
Antimicrobial analysis: Extracted molars inoculated with *E. faecalis* biofilm comparing the ProUltra PiezoFlow used with 6% NaOCl for 60 seconds versus 6% NaOCl soak for 60 seconds. Mean value of 10 samples for each group represented for bacterial count (CFU) after using ProUltra PiezoFlow or bleach soak.

EVEN TUBULES CAN'T HIDE.

Root canal therapy success depends on effectively clean canals. The ProUltra PiezoFlow ultrasonic irrigation needle delivers superior cleaning power by facilitating the introduction of irrigants into dentinal tubules.



60 seconds with PiezoFlow.²



60 seconds with bleach soak only.²

Extracted molars following hand/rotary preparation comparing the ProUltra PiezoFlow used with 6% NaOCl for 60 seconds versus 6% NaOCl soak for 60 seconds. Teeth have been sectioned in the apical third and analyzed with the SEM shown at 500x magnification. No EDTA was used in this study.

DEEP CLEAN WITHOUT GOING DEEP.



There's no need to insert the needle into the apical third. It's the ultrasonically activated irrigants, not the depth, that make the difference.

Call 1-800-662-1202
or visit www.proultra.com

"ULTRASONIC IRRIGATION HAS BEEN SHOWN TO PRODUCE CLEANER ROOT CANALS AND ISTHMUSES. THE PROULTRA® PIEZOFLOW® SYSTEM BY TULSA DENTAL SPECIALTIES CAN PROVIDE THE DENTIST THE OPPORTUNITY TO ACHIEVE THESE RESULTS."

– John Nusstein, DDS, MS
Division of Endodontics, The Ohio State University

MORE THAN FIVE YEARS OF EXTENSIVE SCIENTIFIC RESEARCH IN A UNIVERSITY SETTING PRECEDES THE INTRODUCTION OF PROULTRA PIEZOFLOW.

SELECT STUDIES USING CONTINUOUS ULTRASONIC IRRIGATION METHODS.

"Although the needle was not placed to the complete depth of the preparation, the high energy generated by the ultrasound unit, and use of sodium hypochlorite, resulted in statistically cleaner canals and isthmuses."

Gutarts R, Nusstein J, Reader A, Beck M. In Vivo Debridement Efficacy of Ultrasonic Irrigation Following Hand-Rotary Instrumentation in Human Mandibular Molars. *Journal of Endodontics* 2005;31(3):166-70

"...the 1-minute use of ultrasonically activated irrigation, following hand/rotary root canal cleaning and shaping, has been shown to improve canal and isthmus cleanliness in terms of necrotic debris/biofilm removal."

Burleson A, Nusstein J, Reader A, Beck M. The In Vivo Evaluation of Hand/Rotary/Ultrasonic Instrumentation in Necrotic, Human Mandibular Molars. *Journal of Endodontics* 2007;33(7):782-7

"...the addition of ultrasonic irrigation after hand and rotary cleaning and shaping significantly reduced CFU counts and was 7 times more likely to yield a negative culture than hand and rotary instrumentation alone."

Carver K, Nusstein J, Reader A, Beck M. In Vivo Antibacterial Efficacy of Ultrasound after Hand and Rotary Instrumentation in Human Mandibular Molars. *Journal of Endodontics* 2007;33(9):1038-43

"The results of this study indicate that the addition of 1-minute of ultrasonic irrigation following hand/rotary instrumentation is a safe procedure when used in the root canals of teeth with vital and necrotic pulps."

Pafford J, Nusstein J, Reader A, Beck M, Drum M. In Vivo Evaluation of Intraoperative and Postoperative Pain of a Hand/Rotary/Ultrasonic Technique in the Root Canals of Vital and Necrotic Teeth. *Journal of Endodontics* 2008;34(3):350

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