

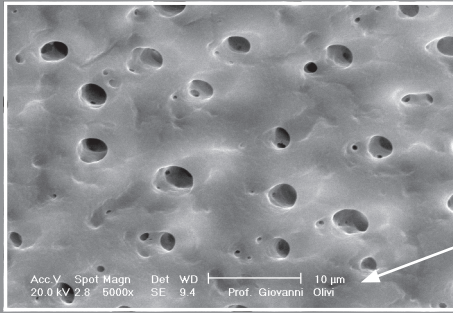


# The Power of **ASP**

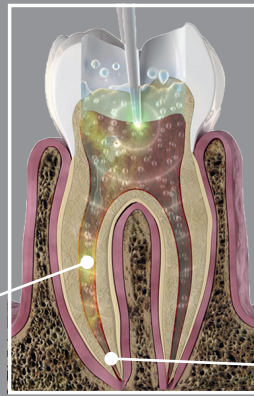
## SWEEPS<sup>®</sup> Photoacoustic Endodontics

Looking for a more effective endodontic treatment?

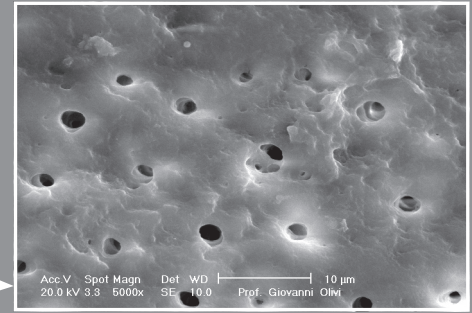
- Shock Wave Enhanced Emission Photoacoustic Streaming
- Improved debridement and disinfection
- Minimally invasive
- Faster, safer and more effective
- More patient friendly



SEM picture after SWEEPS® at 6 mm from the apex



SWEEPS® method



SEM picture after SWEEPS® at 1 mm from the apex

Courtesy of Prof. Giovanni Olivetti MD, DDS

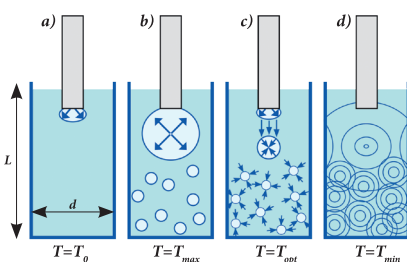
## What is SWEEPS® Endodontic Treatment?

**SWEEPS®** (Shock Wave Enhanced Emission Photoacoustic Streaming) is a revolutionary method for cleaning and disinfecting the root canal system, utilizing the power of the Er:YAG laser to create powerful, deeply penetrating shockwaves within the cleaning and debriding solutions in the root canal.

SWEEPS® promises to represent an entirely new way of thinking about root-canal therapy. With SWEEPS®, practitioners are able to offer patients faster, safer and more effective root-canal treatments.

## How Does SWEEPS® Work?

Fotona's 3<sup>rd</sup> generation **ASP** (Adaptive Structured Pulse) laser-power generation technology is the only available method for generating the SWEEPS® process. This innovative technique consists of delivering a second laser pulse into the cleaning fluid at an optimal time when the initial bubble is in the final phase of its collapse. The growth of the subsequent bubble exerts pressure on the collapsing initial bubble, accelerating its collapse and the collapse of secondary bubbles, resulting in the emission of primary and secondary shock waves, also in spatially confined reservoirs such as root canals.



Lukac N, Tasic B, Jezersek M, Lukac M. Photoacoustic Endodontics Using the Novel SWEEPS Er:YAG Laser Modality. *J. LA&HA - J. Laser Health Acad* 2017; 2017(1): 1-8.

SWEEPS® (Shock Wave Enhanced Emission Photoacoustic Streaming) uses patented technology to deliver an optimal sequence of shock waves into the cleaning fluids, reaching deep into lateral canals and microscopic tubules to deeply disinfect dentinal walls by removing tissue, debris, biofilm and bacteria.

## SWEEPS® with LightWalker® and SkyPulse®?

In the SWEEPS® approach, available only with the ASP-powered LightWalker® and SkyPulse®, super-short pulses combined with the efficient design of Fotona's proprietary Er:YAG tip, allow for the lowest possible energy per pulse and repetition rate. This minimizes thermal effects and maximizes the propagation of photon-induced photoacoustic shock waves.

SWEEPS® endodontic treatment goes beyond just cleaning the primary canals; it can also three-dimensionally remove the smear layer and debride in and around the lateral canals.

Additionally, LightWalker® and SkyPulse® features the ultimate in convenience and ergonomics. Its easy-to-use touch screen offers a simple menu of pre-programmed endodontic treatments. You pick the treatment and the laser automatically sets your optimum starting parameters.

## How Safe & Effective is SWEEPS®?

SWEEPS® is an advanced and highly effective enhancement of the pioneering SSP single-pulse irrigation technique, enabling shockwaves to optimally penetrate the confined spaces of root canals. The clinical safety and efficacy of the SSP single-pulse irrigation technique has been investigated and confirmed by many studies.

A preliminary study examined potential apical irrigant extrusion during SWEEPS® laser irrigation. Irrigation using two standard endodontic irrigation needles

(notched open-end and side-vented) was compared with the SSP single-pulse irrigation technique and the enhanced SWEEPS® laser irrigation procedure. Both techniques resulted in a significantly lower apical extrusion compared to conventional irrigation with endodontic irrigation needles, in agreement with previous reports.

## Advantages of SWEEPS® for You and Your Patients

An important advantage of the SWEEPS® laser endodontic treatment is that it cleans and disinfects root canal systems more effectively compared to conventional treatments. Due to its ability to clean thin areas of complex root canal structure, the final file size required for canal shaping can be significantly reduced, allowing for minimally invasive preparations. Overall treatment time is also shortened and fewer follow up visits are required, which is highly appreciated by patients.

Dental lasers are proven to be an ideal tool for fast, easy-to-perform, and extremely effective treatment of root-canal infections, and a patient-friendly alternative to conventional techniques.

## Getting Started with SWEEPS®

The LightWalker® and SkyPulse® training program is organized in cooperation with the Laser and Health Academy ([www.laserandhealth.com](http://www.laserandhealth.com)). During an intensive two-day workshop, participants cover basic laser physics and gain an in-depth understanding of laser-tissue interaction. Hands-on sessions under the guidance of dental laser experts help participants gain insight into the effects of laser light on different tissues. Presentations and discussions are led by experienced lecturers and cover a variety of dental therapies, including SWEEPS®.

Practitioners can also gain a deeper knowledge of SWEEPS® by attending the LightWalker® Advanced Endodontics Training Course.