

PREVENTION OF PERI-IMPLANTITIS AND BONE RECESSION USING THE ELECTRONIC STEM GENERATOR

The scientific community recognizes there is no efficient treatment nowadays for the already installed peri-implantitis. As 34% of implanted patients show peri-implantitis, the use of preventive treatments remains the only efficient approach.

Bone recession is the common disease in peri-implantitis, periodontal disease, grafts recession, periapical granuloma and orthodontic treatment. The cause of bone recession is the activation of osteoclasts, caused by microbes present in the oral cavity and occlusal forces. Scientific literature proves ratio receptor activator NF-kappa B ligand (RANKL) and its decoy receptor, osteoprotegerin (OPG) - RANKL/OPG as the bone recession indicator, which is higher as long as osteoclasts are activated.

In order to reduce the RANKL/OPG ratio, the certified 2A class medical device Electronic Stem Generator was created, based on long waves electromagnetic field to be applied in the patient's home for a long time, and required for an efficient stimulation of deep bone progenitor cells in order to increase osteoblasts and OPG.

Technology

The Electronic Stem Generator is the only electromagnetic medical device that stimulates the bone by improving the activity of osteoblasts. New bone cells proliferate slowly and can take a considerable time to trigger.

Used at home as adjuvant for classical therapies (scaling and root planning, orthodontic treatment, endodontic treatment), the ESG therapy helps ensure for the duration of one's life a cellular balance within the deep bone which might prevent bone recession in case of future possible dental implant and bone graft.

This simple, home-based treatment can improve bone structure, prevent and treat teeth mobility, gum recession and bone resorption. Patients wear either an external face applicator or a U-shaped

mouthguard which are connected to the signal generator.

Patients only need to switch the device on and follow the on-screen instructions, while reading, watching TV or walking in the garden.

It must be noted that even if the affected teeth are extracted and root planning are carried out, the bone cellular destruction will continue because the osteoclasts remain activated and the RANKL/OPG ratio remains high. Thus, any possible future dental implant will be affected by peri-implantitis if the ESG is not used prior to the implantation process.

Clinical benefits

The Electronic Stem Generator provides a number of clinical benefits:

- as adjunctive treatment to hygiene procedures.
- a low RANKL/OPG ratio to stimulate the healing of the periapical granuloma after the endodontic treatment.
- to be used after restorative treatment with ceramic crowns in order to prevent gum recession and change of bridges.
- in cases where bone grafting or immediate loading of implants is carried out, 20 days before implantation and 30 days following implantation are recommended.
- helps strengthen the bone and maintain tooth stability quickly either during orthodontic treatment or directly after.

Alternatively, because the ESG treatment is home-use and non-traumatic, the osteoblast triggering can be repeated often in order to initiate appropriate cell regeneration for the reduction of bone recession characterized by low RANKL/OPG ratio.

The clinical results obtained after the certification of the Medical Device with 1000+ patients recommend the Electronic Stem Generator as an adjuvant to classical dental procedures for any patient above 30 years of age.



Electronic Stem Generator device

<https://www.stemgenerator.com/en/>
 e-mail: info@stemgenerator.com
 Tel: +40722660766

Florin - Eugen Constantinescu
 DMD, PhD Student
 Editorial Director, Product News

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