Laser-Lok Technology

By BioHorizons

Laser-Lok overview
Laser-Lok microchannels is a proprietary dental implant surface treatment developed from over 20 years of research initiated to create the optimal implant surface. Through this research, the unique Laser-Lok surface has been shown to elicit a biologic response that includes inhibition of epithelial downgrowth and maintain connective tissue attachment. The Laser-Lok phenomenon has been shown in post-market studies to be more effective than other implant designs in reducing bone loss.4,5,6,7

Unique surface characteristics
Laser-Lok microchannels is a series of cell-sized circumferential channels that are precisely created using laser ablation technology. This technology produces extremely consistent microchannels that are optimal sized to attach and organize both osteoblasts and fibroblasts.10 The Laser-Lok microstructure also includes a repeating nanostructure that maximizes surface area and enables cell pseudopodia (or 1.35mm).4 In a retrospective, clinical advantage over other implant designs has been shown in several studies to offer a physical attachment to dental implants.11 In a prospective, controlled multi-center study, Laser-Lok implants placed in a variety of site conditions and followed up to 3 years produced bone loss of 0.46mm.5 In a prospective, University-based over-denture study, Laser-Lok implants reduced bone loss by 63% versus No-bellReplace™ Select.6 Reduced bone loss by 63% versus No-bellReplace™ Select.6 Reduced bone loss by 63% versus No-bellReplace™ Select.6

The clinical advantage
The Laser-Lok surface has been shown in several studies to offer a clinical advantage over other implant designs. In a prospective, controlled multi-center study, Laser-Lok implants placed alongside identical implants with a traditional surface, were shown at 37 months post-op to reduce bone loss by 70% (or 1.9mm) in a retrospective, private practice study, Laser-Lok implants placed in a variety of site conditions and followed up to 3 years minimized bone loss to 0.46mm.5 In a prospective, University-based overdenture study, Laser-Lok implants reduced bone loss by 63% versus No-bellReplace™ Select.6

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Captions
1. Implant success rate is the weighted average of all published human studies on BioHorizons implants. These studies are available for review in this document and BioHorizons document number ML0130.

Human histology shows the apical extent of the junctional epithelium below which there is a suprabony connective tissue attachment to the Laser-Lok surface.

Colorized SEM of a dental implant harvested at 6 months post-op shows the connective tissue is physically attached and interdigitated with the Laser-Lok surface.