

Nobel Biocare

The Mucointegration™ era has begun

Nobel Biocare introduces the Xeal abutment surface and TiUltra implant surface. From abutment to implant apex, surface chemistry and topography have been reimagined to optimise tissue integration at every level.

Dense soft-tissue contact with an abutment can act as a barrier to protect the underlying bone and is the basis for long-term tissue health and stability.¹⁻⁴ Xeal is a pioneering surface for soft-tissue integration that demonstrates a statistically significant increase in soft-tissue height compared to machined abutments.⁵ A smooth, non-porous, nanostructured and anodised surface, Xeal possesses surface chemistry and topography that are specially designed to promote soft-tissue attachment.⁶⁻⁸

When it comes to osseointegration, treatment success with implants that have a moderately rough anodised surface is well proven.^{9,10} Now, Nobel Biocare's expertise in anodisation technology has led to the creation of TiUltra, an ultra-hydrophilic, multi-zone implant surface¹¹⁻¹⁷ that goes beyond roughness alone—it grasps the power of chemistry too. TiUltra's precisely tailored surface chemistry is achieved by anodising the surface with a specific electrolytic solution. This solution can modify the chemical composition of the oxide layer to influence the interaction between surface and proteins. For ideal integration and tissue stability, different tissues demand different surfaces. To meet this need, TiUltra's topography changes gradually from a minimally rough, non-porous, and nanostructured collar to a moderately rough and porous apex¹¹⁻¹⁷. Fundamentally, it respects the natural transition from hard, dense cortical bone to spongy, porous cancellous bone to achieve the ultimate goal of both early osseointegration and long-term bone stability.^{18,19}

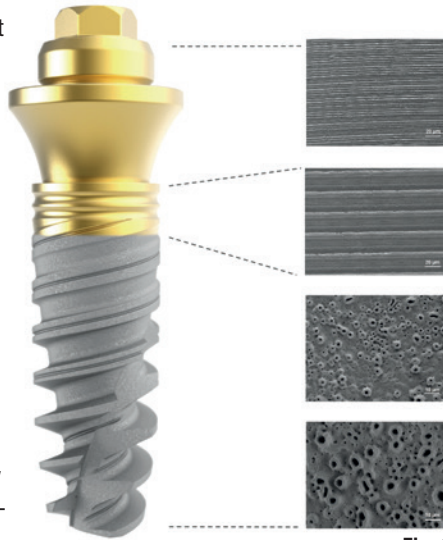


Fig. 1

Pristine surface from production to placement

The pristine surface chemistry and hydrophilicity of Xeal and TiUltra, achieved with Nobel Biocare's extensive expertise in implant surface, are preserved throughout shelf-life by a Protective Layer, which dissolves when in contact with any liquid, such as blood.^{16,17,20} This layer ensures that the quality of implant and abutment surface is maintained from production to placement.

Building on the foundation of nearly two decades' research supporting the success of anodised-surface implants, rigorous science and testing

has been a key driving force behind the creation of Xeal and TiUltra. For an in-depth insight into the evidence supporting Xeal and TiUltra, a dedicated supplement to *Clinical Implant Dentistry and Related Research* will provide a compelling story from design and *in vitro* characterisation, to behaviour in animal studies, and most notably, to the pre-market clinical study.

The new Xeal surface is available for the On1 Base and the Multi-unit Abutment. TiUltra is available on Nobel Biocare's best-selling NobelActive and NobelParallel Conical Connection implants.

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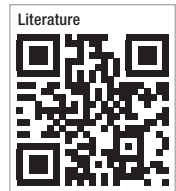


Fig. 2

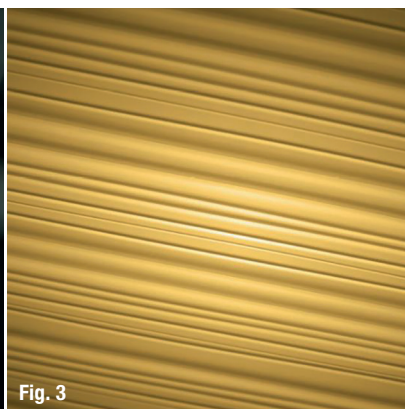


Fig. 3

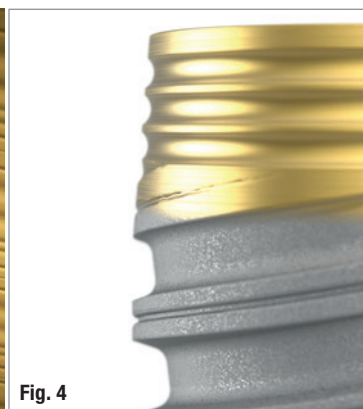


Fig. 4

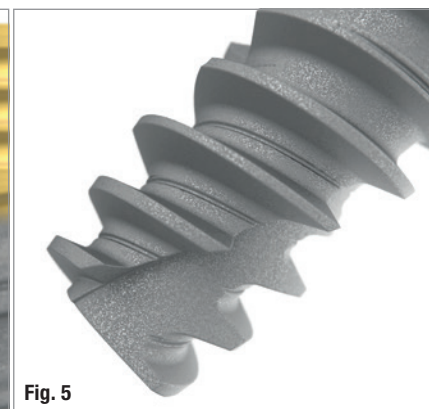


Fig. 5

Fig. 1: Nobel Biocare's extensive expertise in anodisation technology is applied to the full implant system, from abutment to apex. **Fig. 2:** A synergy of surfaces: The Xeal and TiUltra surfaces have been created to optimise tissue integration at every level. **Fig. 3:** The Mucointegration™ era: The surface chemistry and topography of Xeal abutments are designed to promote soft-tissue attachment.^{6-8,21} **Fig. 4:** At collar level, the TiUltra surface is minimally rough, non-porous and nanostructured. Its surface chemistry and topography are specially designed to support bone stability.^{18,19} **Fig. 5:** TiUltra features a gradual change in topography, becoming moderately rough and porous towards the implant apex.