

TiOblast™

The Astra Tech TiOblast™ surface is grit blasted with titanium dioxide particles to achieve an isotropic, moderately roughened surface. TiOblast was launched in 1990 and is the precursor of the OsseoSpeed™ surface.

The TiOblast surface shows excellent outcomes when compared with machined titanium surfaces in theoretical models ¹⁻³, in terms of *in vitro* cell biocompatibility evaluations ^{4,5}, and in *in vivo* histomorphometrical comparisons (i.e. removal torque strength ⁶⁻⁸, resonance frequency analysis ⁹). Good results were also achieved in a human histological study where patients received microimplants with a TiOblast surface or a machined titanium surface. After a healing period of up to 6 months, significantly more bone-to-implant contact was found for the TiOblast surface ¹⁰. The extensive pre-clinical documentation on TiOblast amount to 49 published articles ¹⁻⁴⁹.

Clinical studies evaluating the safety and efficacy of the TiOblast surface show good and predictable results for overdenture treatments ⁵⁰⁻⁵⁵, fixed full arches ⁵⁶⁻⁶⁶, fixed partial dentures ⁶⁷⁻⁸², and single tooth rehabilitations ^{69, 78, 83-104}. Similar good and predictable results are reported for varying surgical techniques (one-stage ^{68, 88, 105-108}, extraction sockets ^{87, 92, 99, 109-111}, bone augmentation techniques ^{63, 64, 69, 77, 89, 111-124}), different loading protocols (immediate /early loading ^{53, 56-58, 78, 85-87, 109, 110, 122, 125-129}) and in periodontally compromised cases ^{72, 81, 84, 90, 91, 114, 130}.

Only minor marginal bone level alterations (on average 0.3 mm during a 5 year follow-up) are registered for the Astra Tech TiOblast implants ^{51, 55, 66, 70, 72, 81, 82, 92, 101, 104, 105}. The maintained marginal bone is a prerequisite for the maintenance of a long-term good esthetic result. In fact, TiOblast was the first moderately roughened implant surface with long-term, i.e. 10 years follow-up reported in the literature ^{62, 114, 131}.

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