

CELEBRATING DOCUMENTED SUCCESS
 60 years of osseointegration
 10 years of TiUnite



TiUnite® – proven to perform.

Science First

TiUnite has set the standard in implant surface technology. Since its launch in 2000 it has been clinically documented in more than 190 publications with over 9600 patients, 29,000 implants and up to 10 years follow-up. In total, more than 11 million implants with TiUnite surface have been used.

- Proven longevity with 10-year clinical data and over 12 years of clinical experience.^{6,7,11}
- High performance under the most challenging conditions including soft bone and immediate loading.^{1,2,9,12,13,14,16}
- Stability maintained at a high level during the critical healing phase after implant insertion due to enhanced osseointegration and anchorage in surrounding bone.^{3,4,5}

- Stable marginal bone levels after the initial bone remodeling phase and over the long term.^{6,7,11,15}
- Soft tissue defense morphology behaves similarly to soft tissue around a natural tooth.⁸

A unique surface

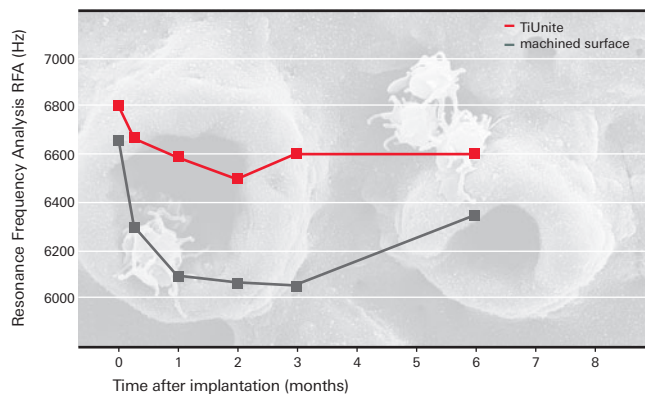
TiUnite is a moderately rough thickened titanium oxide layer with high crystallinity and phosphorus content. Its ceramic-like properties and micropores ensure high osteoconductivity and fast anchorage to the collagen matrix.

High cumulative survival rate (CSR)

Short-term 1 year	98.5% ¹⁰
Mid-term 5 years	98.3% ¹⁰
Long-term 10 years	97.9% ¹¹

High stability in the critical healing phase

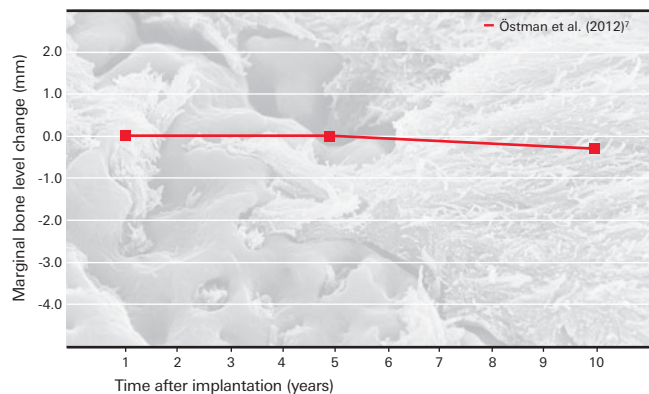
TiUnite maintains implant stability immediately after placement with enhanced osseointegration and anchorage in surrounding bone. This is particularly important in regions with soft bone and/or high occlusal loads, and for immediate loading protocols.



Higher stability with immediately loaded implants with TiUnite surface than with the same implants with machined surface in the posterior maxilla.³

Stable marginal bone levels over the long term

Implants with TiUnite surface demonstrate excellent crestal bone stability over the long term.^{6,7,11} In the latest study on TiUnite, for example, mid-term change between 1 and 5 years is on average 0.0mm; and long-term change between 1 and 10 years is -0.3mm.⁷



Stable marginal bone levels after initial remodeling. Baseline adjusted at year 1.

Key studies on TiUnite®.

- 1 Glauser R. Implants with an Oxidized Surface Placed Predominately in Soft Bone Quality and Subjected to Immediate Occlusal Loading: Results from a 7-Year Clinical Follow-Up. *Clin Implant Dent Relat Res* 2011 [Epub ahead of print]
- 2 Liddelov G and Henry P. The immediately loaded single implant-retained mandibular overdenture: a 36-month prospective study. *Int J Prosthodont* 2010; 23:13-21
- 3 Glauser R, Portmann M, Ruhstaller P, Lundgren AK, Hammerle CH, Gottlow J. Stability measurements of immediately loaded machined and oxidized implants in the posterior maxilla. A comparative clinical study using resonance frequency analysis. *Applied Osseointegration Research* 2001; 2:27-9
- 4 Zechner W, Tangl S, Furst G, Tepper G, Thams U, Mailath G, Watzek G. Osseous healing characteristics of three different implant types. *Clin Oral Implants Res* 2003; 14:150-7
- 5 Ivanoff CJ, Widmark G, Johansson C, Wennerberg A. Histologic evaluation of bone response to oxidized and turned titanium micro-implants in human jawbone. *Int J Oral Maxillofac Implants* 2003;18:341-8
- 6 Degidi M, Nardi D, and Piattelli A, 10-Year Follow-Up of Immediately Loaded Implants with TiUnite Porous Anodized Surface. *Clin Implant Dent Relat Res* 2012 [Epub ahead of print]
- 7 Östman PO, Hellman M, Sennerby L. Ten years later. Results from a prospective single-centre clinical study on 121 oxidized (TiUnite) Brånemark implants in 46 patients. *Clin Implant Dent Relat Res* 2012 [Epub ahead of print]
- 8 Schüpbach P, Glauser R. The defense architecture of the human periimplant mucosa: a histological study. *J Prosthet Dent* 2007; 97(6 Suppl):15-25
- 9 Mura P. Immediate Loading of Tapered Implants Placed in Postextraction Sockets: Retrospective Analysis of the 5-Year Clinical Outcome. *Clin Implant Dent Relat Res* [Epub ahead of print]
- 10 Rieben AS, Alifanz J, Jannu AS. Survival rates of implants with a highly crystalline phosphate enriched surface – a literature review [#191], in 20th Annual Scientific Congress of the European Association for Osseointegration. 2011: Athens, Greece
- 11 Data on file
- 12 McAllister BS, Cherry JE, Kolinski ML, Parrish KD, Pumphrey DW, Schroering RL. Two-year Evaluation of a Variable-Thread Tapered Implant in Extraction Sites with Immediate Temporization: A Multicenter Clinical Trial. *Int J Oral Maxillofac Implants* 2012; 27:611-8
- 13 Rocci A, Martignoni M, Gottlow J. Immediate loading of Brånemark System TiUnite and machined-surface implants in the posterior mandible a randomized open-ended clinical trial. *Clin Implant Dent Relat Res* 2003; 5 suppl 1:57-63
- 14 Marzola R, Scotti R, Fazi G, Schincaglia GP. Immediate loading of two implants supporting a ball attachmentretained mandibular overdenture a prospective clinical study. *Clin Implant Dent Relat Res* 2007; 9:136-43
- 15 Nickenig H, Wichmann M, Schlegel K, Nkenke E, Eitner S. Radiographic evaluation of marginal bone levels adjacent to parallel-screw cylinder machined-neck implants and rough-surfaced micro-threaded implants using digitized panoramic radiographs. *Clin Oral Impl Res* 2009;20:550-4
- 16 Kielbassa A, Martinez-de Fuentes R, Goldstein M, Arnhart C, Barlattani A, Jackowski J, Knauf M, Lorenzoni M, Maiorana C, Mericske-Stern R, Rompen E, Sanz M. Randomized controlled trial comparing a variable-thread novel tapered and a standard tapered implant interim 1-year results. *J Prosthet Dent* 2009;101:293-305
- 17 Albrektsson T, Zarb G, Worthington P, Eriksson AR. The long-term efficacy of currently used dental implants: a review and proposed criteria of success. *Int J Oral Maxillofac Implants* 1986;1:11-25

For a comprehensive list of relevant studies visit nobelbiocare.com/scientific-evidence

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