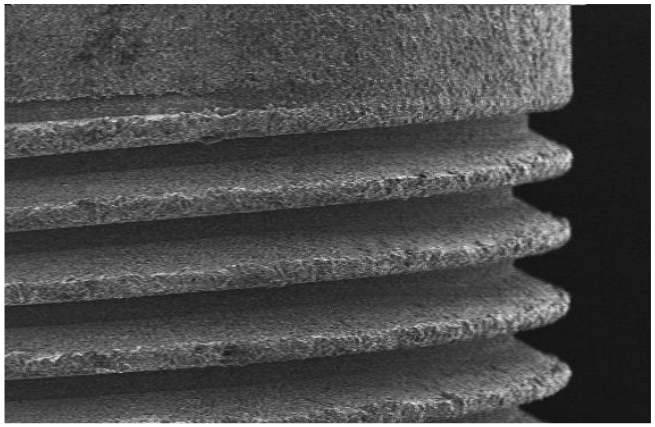
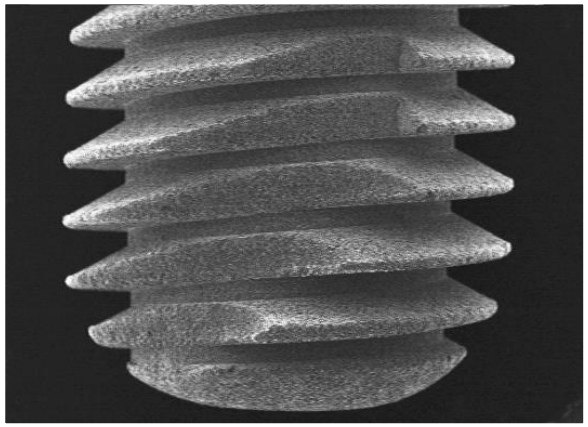
All Inclusive® Concept

One Brand 4 All Solutions

Glidewell laboratories, een tandtechnisch laboratorium met 4000 tandtechniekers op 1 locatie
Producent en wereldmarktleider in de productie van bruxzir

Development of the Inclusive Tapered Implant





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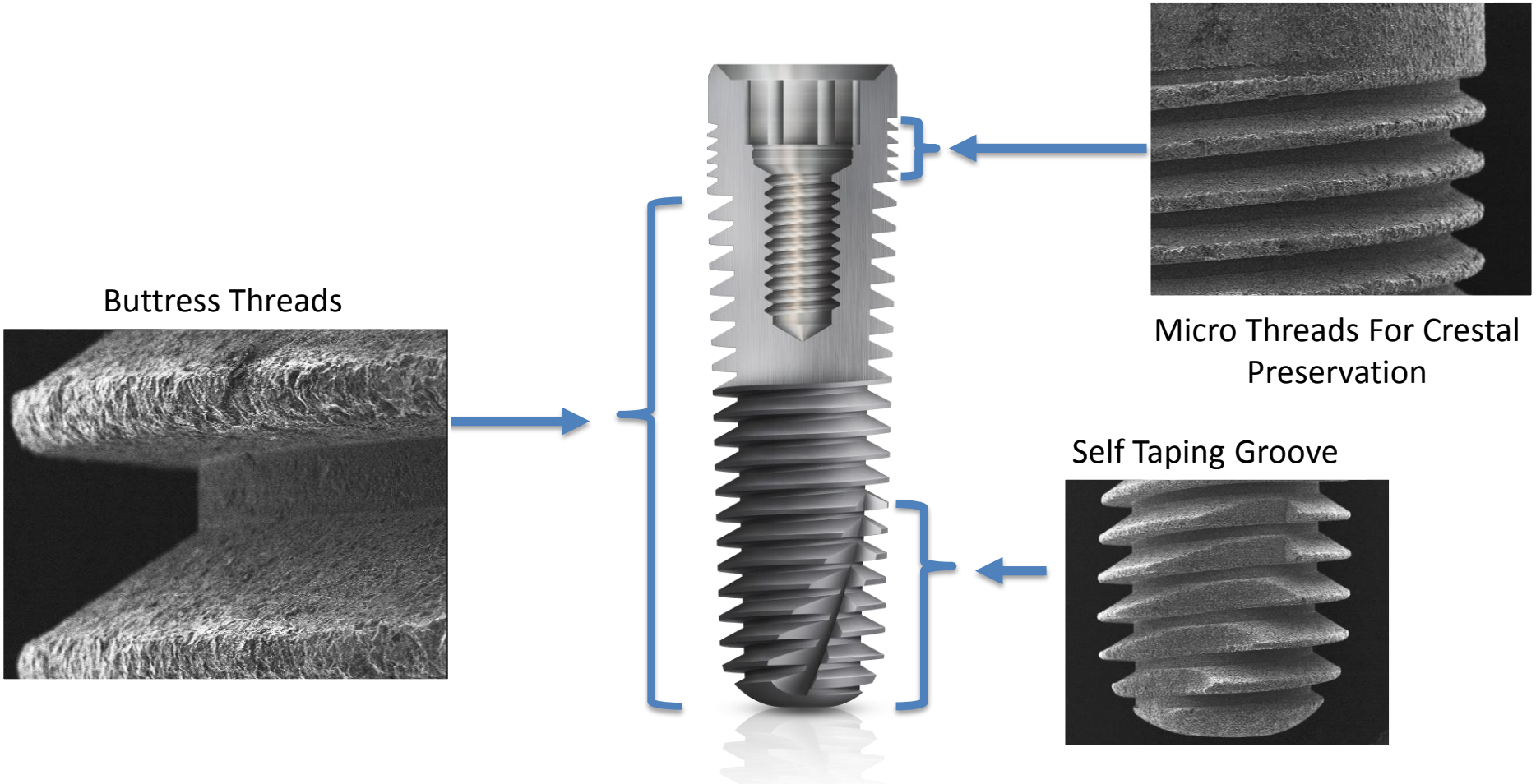
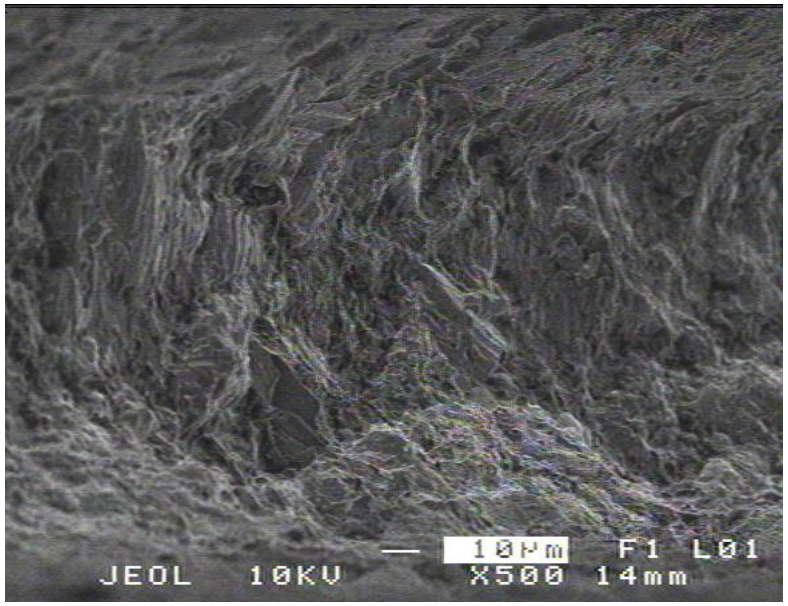
Development of the Inclusive Tapered Implant



RBM Surface

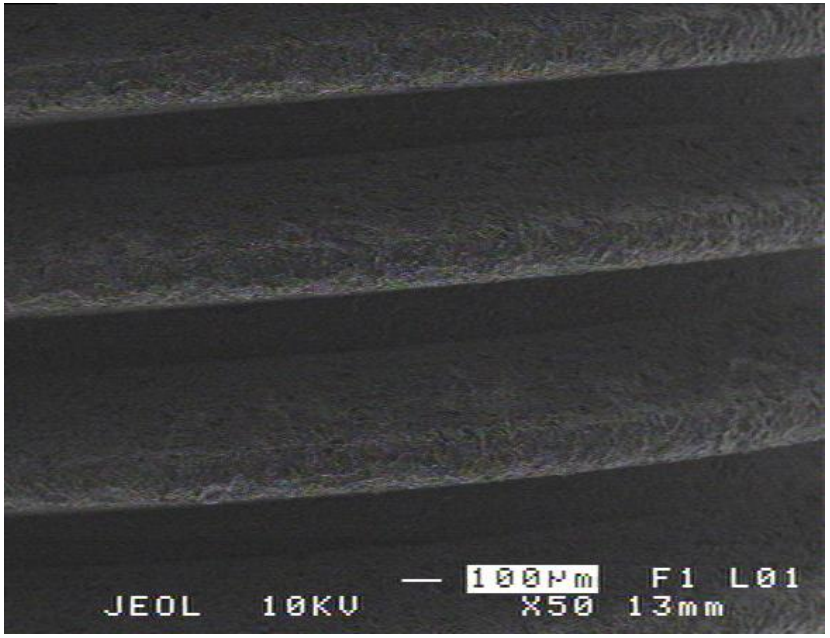
Advantages of the RBM Treated Dental Implant?

RBM has long been recognized as a superior dental implant surface treatment for a number of reasons.



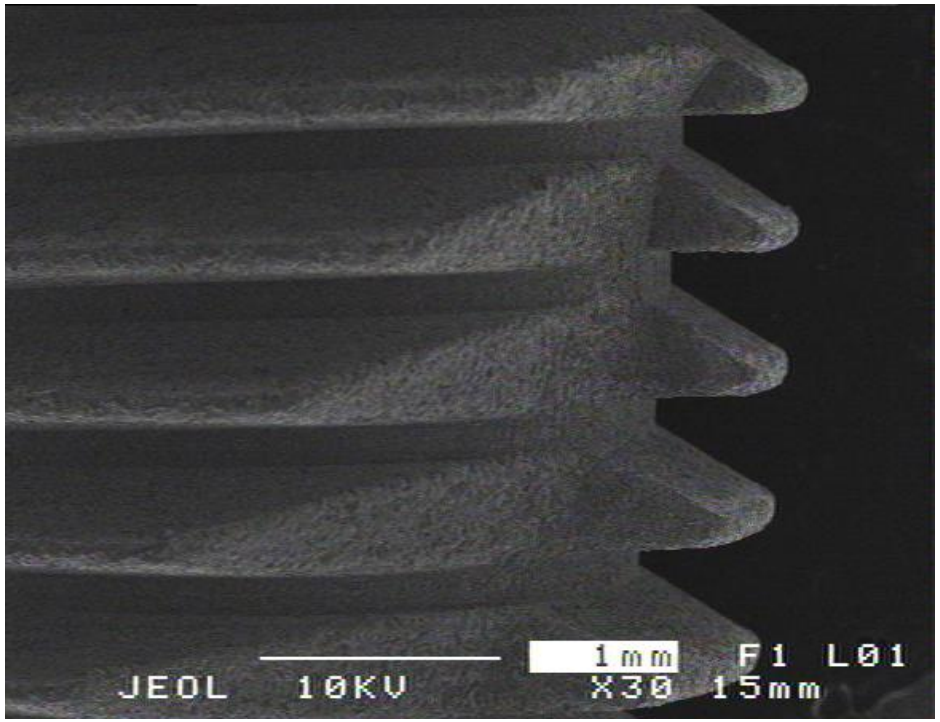
RBM Surface

1. RBM provides a hydrophilic surface. . . This is important as RBM's hydrophilic nature draws blood and the cells that the blood carries to the implant surface. These cells, contained in the blood, are the engines that initiate the osseointegration process.



RBM Surface

2. RBM is an osteoconductive surface. Which means it literally develops bone from the implant out into the surrounding structures.



PROPRIETARY RBM SURFACE

Cool Laser Interferometer Surface Roughness Measurements

After blasting we etch the implants in heated nitric and hydrofluoric acid to alter the surface topography

This increases the surface area available for bony attachment and passivates the implant surface, creating a clean hydrophilic surface for the osseointragration process to begin unimpeded

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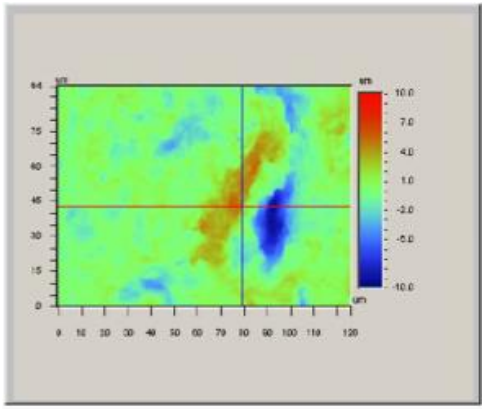
PROPRIETARY RBM SURFACE



Implant Sample		Sa	Spk/Sk	Svk/sk	spk/Svk	Sty X Ra	Sty Y Ra
	1	1.11	0.47	0.68	0.64	0.99	0.70
	2	0.86	0.35	0.66	0.52	0.75	0.66
	3	1.22	0.38	0.60	0.64	1.02	0.85
	4	0.93	0.45	0.61	0.78	0.83	0.66
	5	1.06	0.42	0.61	0.70	0.91	0.76
Average		1.04	0.41	0.63	0.66	0.90	0.73

3D Statistics

Sa: 1.19 um
Sz: 15.32 um
Spk: 2.22 um
Sk: 2.60 um
Svk: 2.63 um
Spk/Sk: 0.85
Svk/Sk: 1.02
Spk/Svk: 0.84

Stylus Statistics

Stylus X Ra: 1.07 um
Stylus X Rz: 7.99 um
Stylus X Rpm: 3.33 um
Stylus X RSm: 21 um
Stylus X L-C: 125.00 um

Stylus Y Ra: 0.76 um
Stylus Y Rz: 3.97 um
Stylus Y Rpm: 1.90 um
Stylus Y RSm: 17 um
Stylus Y L-C: 80.00 um

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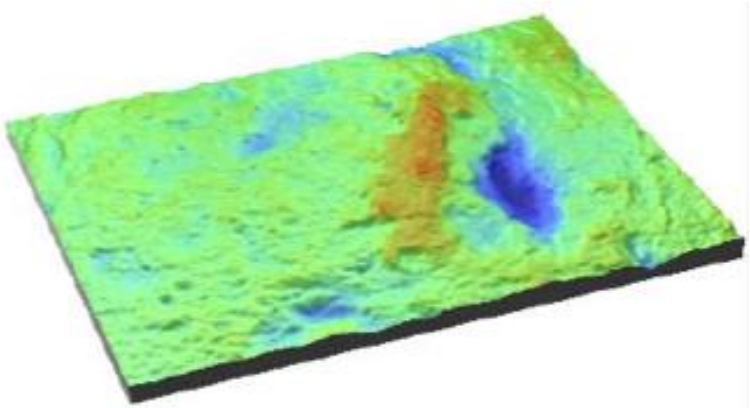
PROPRIETARY RBM SURFACE



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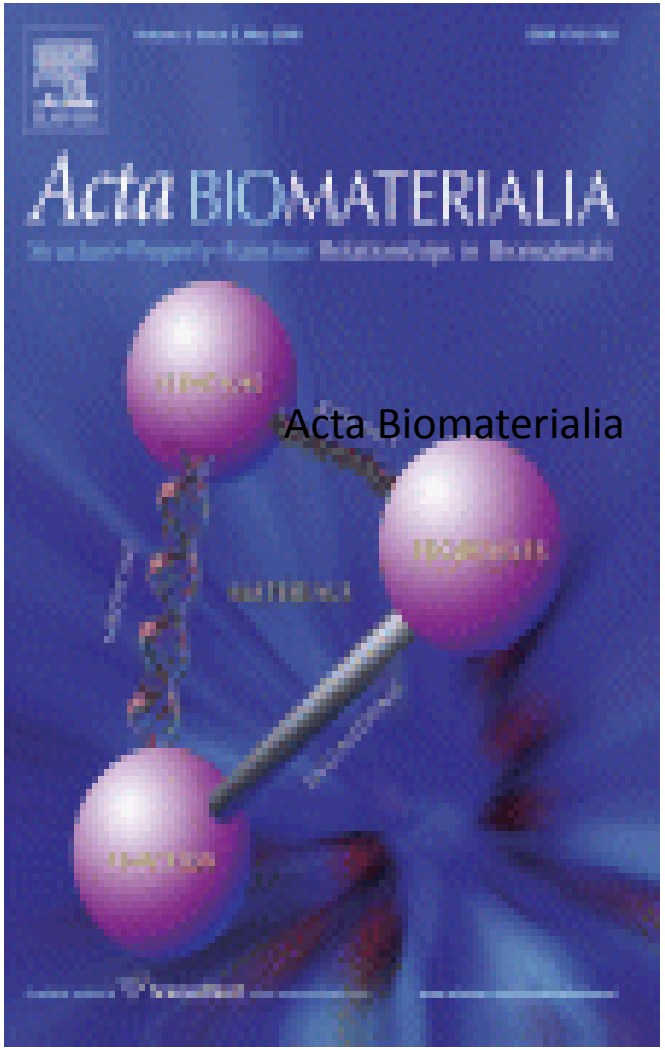
PROPRIETARY RBM SURFACE

SURFACE TREATMENT	IMPLANT SYSTEM/SURFACE
Acid-etched Etching with strong acids increases the surface roughness and the surface area of titanium implants.	BIOMET 3i OSSEOTITE® and NanoTite™
Anodized This electrochemical process thickens and roughens the titanium oxide layer on the surface of implants.	Nobel Biocare TiUnite®
Blasted Particles are projected through a nozzle at a high velocity onto the implant. Various materials, such as titanium dioxide, aluminum dioxide and hydroxyapatite (HA) are often used. HA treatments also include microtextured (MTX) surface treatments and RBM surface treatments *(Figs. 2a, 2b)*.	DENTSPLY Implants ASTRA TECH TiOblast™, Zimmer Dental MTX™, Inclusive® Tapered Implants
Blasted and acid-washed/etched Implants undergo a blasting process. Afterward, the surface is either washed with non-etching acid or etched with strong acids.	CAMLOG Promote®, DENTSPLY Implants FRIALIT® and FRIADENT® plus, Straumann® SLA®
Hydroxyapatite (HA) HA is an osteoconductive material that has the ability to form a strong bond between the bone and the implant.	Implant Direct (various), Zimmer Dental MP-1®
Laser ablation High-intensity pulses of a laser beam strike a protective layer that coats the metallic surface. As a result, implants demonstrate a honeycomb pattern with small pores.	BioHorizons® Laser-Lok®
Plasma-sprayed Powdery forms of titanium are injected into a plasma torch at elevated temperatures.	Straumann® ITI® titanium plasma-sprayed (TPS)

Osteoblastic cell behaviour on different titanium implant surfaces

DOI: 10.1016/j.actbio.2007.12.002



Osteoblastic cell behaviour on different titanium implant surfaces

Abstract
The behaviour of osteoblastic MC3T3-E1 cells was compared on four different titanium surfaces: mirror-polished (Smooth-Ti), alumina grit-blasted (Alumina–Ti) or biphasic calcium phosphate ceramic grit-blasted (BCP–Ti) and a commercially available implant surface (SLA). Scanning electron microscopy and profilometry showed distinct microtopographies…

Osteoblastic cell behaviour on different titanium implant surfaces

Abstract
…The BCP–Ti group had higher average surface roughness (Ra = 2.5 µm) than the other grit-blasted groups. Hydrophilicity and surfaces energies were determined on the different substrates by dynamic contact angle measurements…

Osteoblastic cell behaviour on different titanium implant surfaces

Abstract

…The most hydrophilic surface was the Alumina–Ti discs, while SLA was the most hydrophobic. The titanium surfaces were all oxidized as TiO2 and polluted by carbon contaminants, as determined by X-ray photoelectron spectroscopy…

Osteoblastic cell behaviour on different titanium implant surfaces

Abstract

…Alumina–Ti samples also exhibited aluminium peaks as a result of the blasting. The BCP–Ti discs contained traces of calcium and phosphorus. MC3T3-E1 cells attached, spread and proliferated on the substrates. For both the SLA and BCP–Ti groups, the entire surface was covered with a layer of osteoblastic cells after 2 days. At high magnification, the cells exhibited cytoplasmic extensions and filopodia.

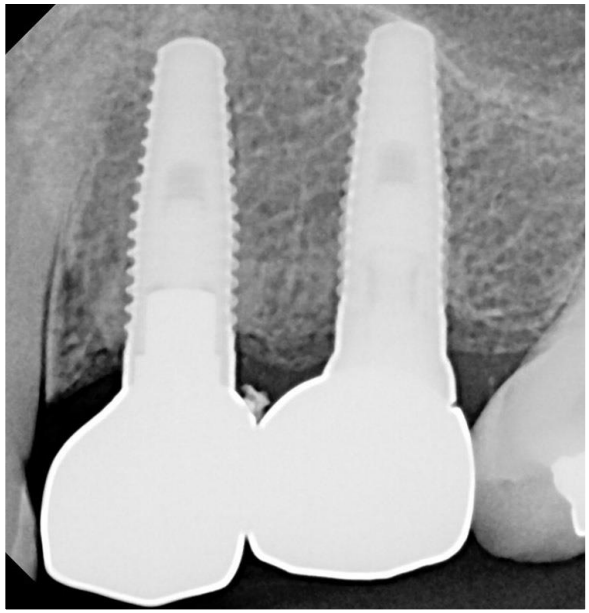
Osteoblastic cell behaviour on different titanium implant surfaces

Abstract

…Compared with plastic, cell viability was similar with the Smooth–Ti, slightly lower with the Alumina–Ti and superior with the SLA and BCP–Ti groups. Alkaline phosphatase activity increased with the culture time whatever the substrate. This study shows that BCP-blasting produces rough titanium implants without surface contaminants.

Tapered Implant System Crestal Bone Stability

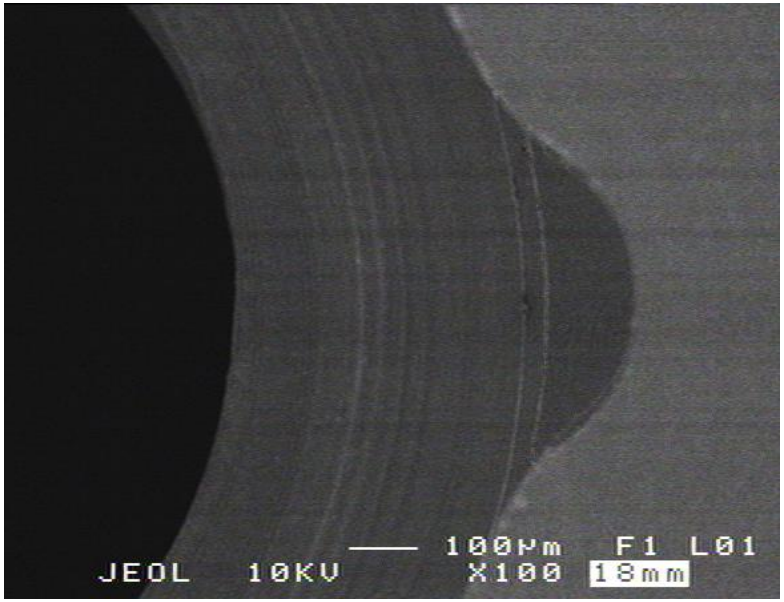
Restoration Delivery



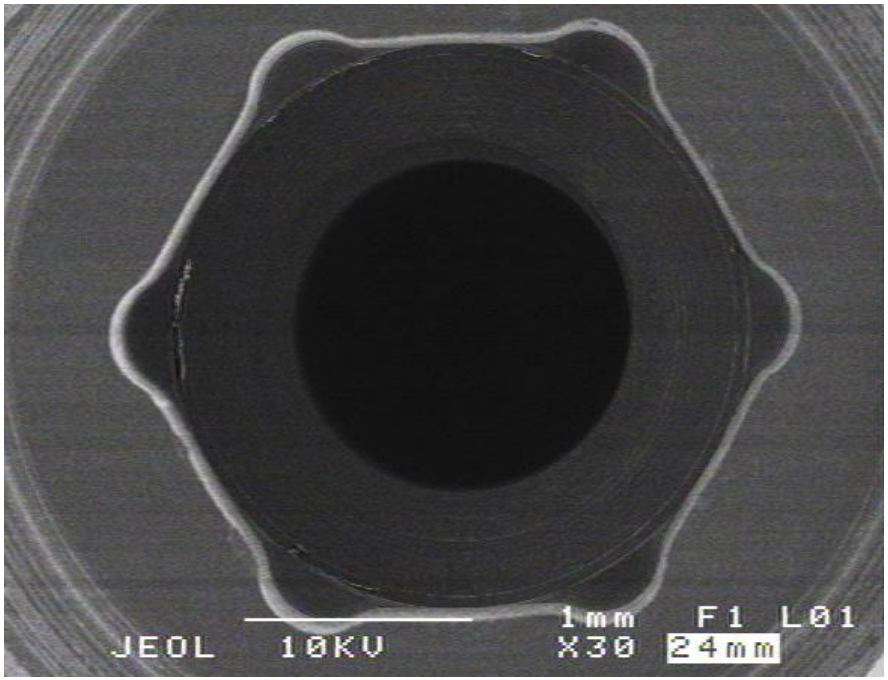
1 Year Post Delivery

Strength of Connection

Incorporating the radius added strength



Strong and Simple



Stress to Failure test proved a strong connection that required 187Ncm to fail

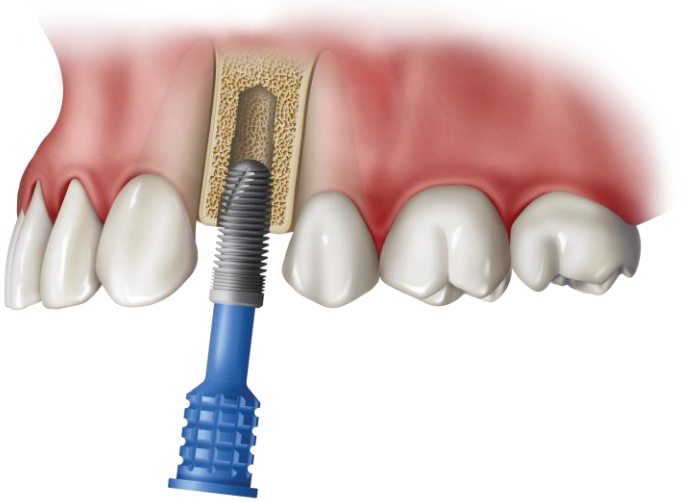
The internal hex is the most universal and flexible connection

Implant Success

In-house Trials

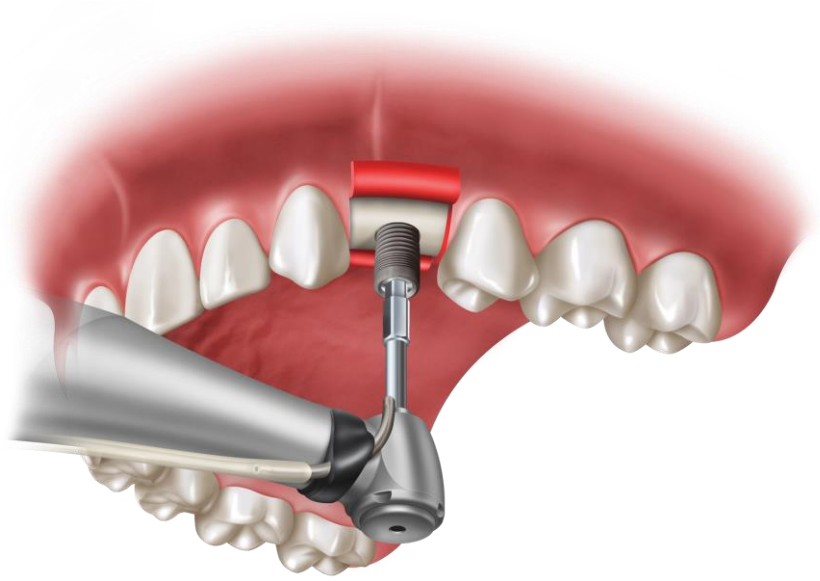
- **Introduction**

The purpose of this study was to evaluate the efficacy of Inclusive Tapered Implants placed in human subjects using post-placement and post-restorative clinical observations collected over 24 months.



In-house Trials

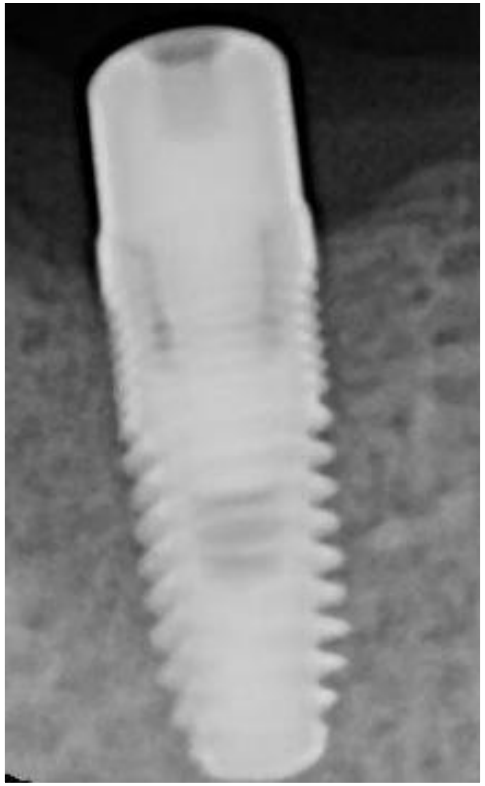
This study is a retrospective evaluation of 167 Inclusive Tapered Implants placed at the Glidewell Laboratories Operatory. Implants were placed in 54 male patients and 44 female patients. The titanium implants were placed according to a standard surgical protocol.



In-house Trials

- **Materials and Methods**

The single-stage protocol was followed for 107 procedures. Patients were recalled for follow-up evaluations at various points in time to assess implant survival and healing processes.



In-house Trials

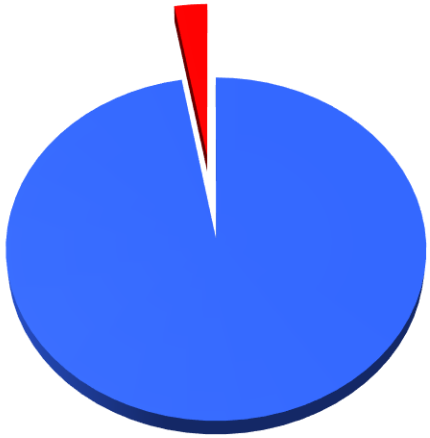
- **Results**

Of the 167 implants placed, there were four surgical failures. Screw-retained restorations were placed on 151 implants, and cemented restorations were seated on 16 implants. Implant survival rate was 97.7%. Implant failure rate was 2.3%.

In-house Trials

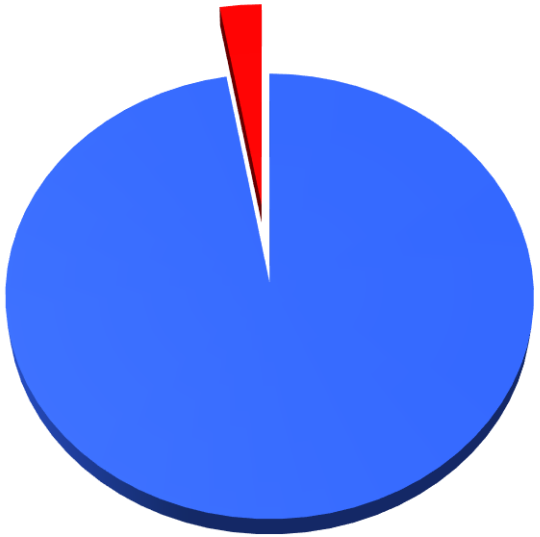
- **Conclusion**

Inclusive Tapered Implants have been used to achieve positive surgical and restorative results. Post-placement and post-restorative results show that Inclusive Tapered Implants demonstrate a high survival rate in male and female patients.



In-house Trials

- Number of Inclusive Implants Placed: 248
- Success Rate: 98.4



Private Practice Experiences

Timothy F. Kosinski, DDS, MAGD

- Dr. Kosinski is an Adjunct Assistant Professor at the University of Detroit Mercy School of Dentistry and serves on the editorial review board of Reality, the information source for esthetic dentistry, *Contemporary Esthetics and Clinical Advisors*. He is a Diplomat of the American Board of Oral Implantology/Implant Dentistry, the International Congress of Oral Implantologists and the American Society of Osseointegration. He is a Fellow of the American Academy of Implant Dentistry and received his Mastership in the Academy of General Dentistry. Dr. Kosinski has received many honors including Fellowship in the American and International Colleges of Dentists, the Academy of Dentistry International, is a member of OKU and the Pierre Fauchard Academy. Dr. Kosinski was the University of Detroit Mercy School of Dentistry Alumni Association's "Alumnus of the Year" in 2001 and most recently received the Academy of General Dentistry's Lifelong Learning and Service Recognition. Dr. Kosinski has placed nearly 6,000 dental implants, published over 66 articles on the surgical and prosthetic phases of implant dentistry and was a contributor to the textbook, *Principles and Practices of Implant Dentistry and Dental Implantation and Technology*.

Private Practice Experiences

- **Introduction**

The purpose of this study was to evaluate the efficacy of Inclusive Tapered Implants following extraction and immediate placement in human subjects using post-placement and post-restorative clinical observations collected over 18 months in the private practice of Dr. Tim Kosinski.

Private Practice Experiences

- **Materials and Methods**

This study is a retrospective evaluation of 200 Inclusive Tapered Implants placed in the private practice of Dr. Tim Kosinski. The titanium implants were placed immediately in extraction sites with bone graphing material.

The single-stage protocol was followed. Patients were recalled for follow-up evaluations at various points in time to assess implant survival and healing processes.

Private Practice Experiences

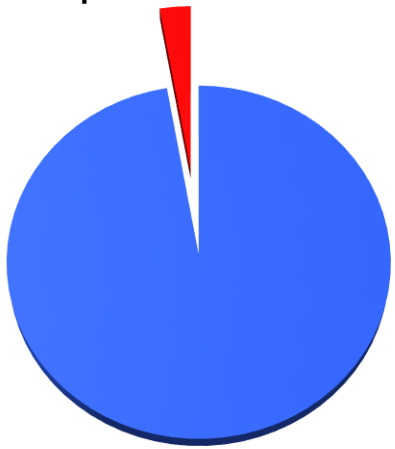
- **Results**

Of the 200 implants placed by Dr. Kosinski, there were 7 non-integrations that occurred prior to restoration. Three of the non-integrations were in one patient. Of the non-integrated implants, 5 were in the maxilla and 2 were mandibular. Implant integration rate was 96.5%. Implant non-integration rate was 3.5%.

Private Practice Experiences

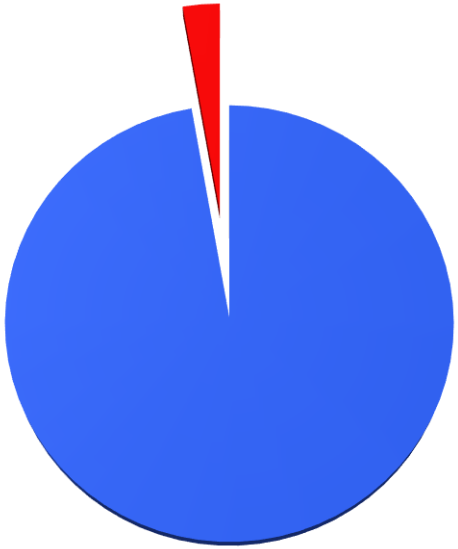
- **Conclusion**

Inclusive Tapered Implants have been used to achieve positive surgical and restorative results when placed in graphed extraction sites. Post-placement and Post-restorative results show that Inclusive Tapered Implants demonstrate a high survival rate in male and female patients.



Private Practice Experiences

- Number of Inclusive Implants Placed in Graphed Extraction Sites: 200



Summary

- Prismatik Implant products moved from in-house use to open market with great success
- U.S. Dentists and Dental Laboratories continued to reorder implants and implant restorative components
- Over 130,000 implant cases have been restored with Prismatik product demonstrating the quality of the manufacturing

Summary

Tapered Implant System Development

- A team of dental implant engineers and machinists with over 175 years of experience are involved in the design and manufacturing of the Inclusive Tapered Implant System
- In-house clinical trails validated the success of the implant design
- Launched in the U.S. in February 2012, the Inclusive Tapered Implant was well received by the market due to long history of implant component manufacturing and dental restoration experience at Glidewell

Summary

Tapered Implant System Clinical Results

- 97.7% success rate on167 implants placed and reviewed after 1 year in-house study
- 96.5% success rate on 200 implants placed immediately in grafted extraction sites in a private clinic study
- There were 7 non-integrations that occurred prior to restoration. Three of the non-integrations were in one patient.
- Inclusive Tapered Implants demonstrate a high degree of predictability, even in grafted extraction sites.

Summary

Tapered Implant System Features

- Hybrid design incorporates the best of contemporary implant systems
- Micro Threads encourage crestal bone preservation
- Buttress Threads provide a high degree of initial stability
- Apical grooves create a self-tapping implant delivery
- Proprietary RBM surface treatment enhances osseointegration
- Universal internal connection make for easy