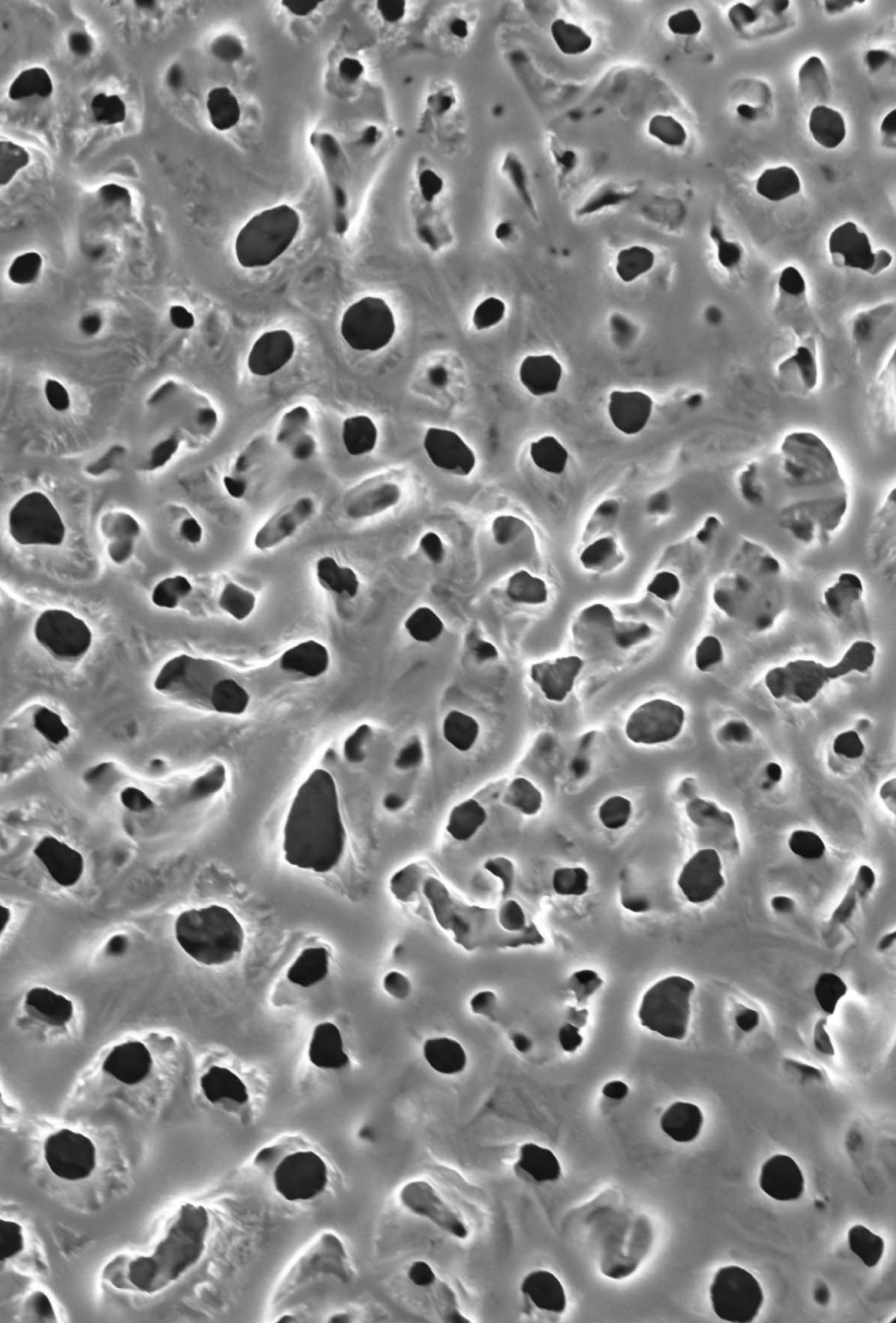


myriadTM
implant system

equinox



Equinox Medical Technologies welcomes you to the world of "Myriad™"- the world's most technologically advanced, application specific dental implant system.

Success in Implantology is the result of a certain level of experience and competence of the dentist combined with products that are optimized to function predictably in living tissue. Features of the Myriad™ system embody the balance between technology and biology to ensure long term functional and esthetic solutions for your patient needs.

The Myriad™ implant form is based on the Anaform™ root shaped, tapered body design which is the most proven and versatile shape for immediate and delayed implantation.

The Bioprofile™ thread featured on all Myriad™ implants is an asymmetrical surface extensive thread. Bioprofile™ essentially comprises one synchronized self tapping thread composed of three distinct thread profiles that are adapted to three different levels of bone biology.

All Myriad™ implants carry the unique Nanopore™ titanium anodic oxidation surface. This calcium oxidized nano surface results in 11% calcium deposits saturating the implant surface. Nanopore™ exhibits three dimensional interconnecting porosities which is a characteristic that mimics the structure of human cancellous bone.

The Tri-Cone™ connection on the Myriad-Plus™ implant is a 17 degree conical connection with a three position indexing design. The conical connection provides a zero micromotion solid connection as well as a bacteria proof seal to ensure optimally healthy peri-implant tissue and virtually no risk of screw loosening and subsequent breakage.

The In-Plane Switching™ concept incorporated on all Myriad™ implants in combination with the Tri-cone™ conical connection and the external cortical implant microthreads provide a combination of elements that ensure the most stable and predictable soft and hard tissue peri-implant connection.

Each application specific design of the Myriad™ system that is available in multiple diameters share the Uno Platform™ concept ensuring one single prosthetic platform with one single diameter of all prosthetic components.

The unique All-in-one™ packaging concept of Myriad™ includes the implant fixture, cover screw, healing abutment, impression transfer, lab analog and application specific abutment, all within the same package.

The Direct-to-site™ delivery protocol ensures that all Myriad™ implants are directly lifted from the packaging with the insertion adapter to be carried to the implant site and inserted in one single action.

The host of intelligent and innovative features of the Myriad™ system promise to enrich the user experience and facilitate treatments that will bring comfort to the lives of people across a broad spectrum of society around the world.

application specific

The myriad of treatment options with seven application specific implant designs cover practically every indication ranging from crown & bridge solutions for single tooth and multiple tooth replacements, fixed and removable options for fully edentulous jaws as well as transitional designs for provisional crown & bridge and overdenture prostheses.

Myriad™ application specific designs include one and two stage treatment modalities in combination with single and two piece implant designs.

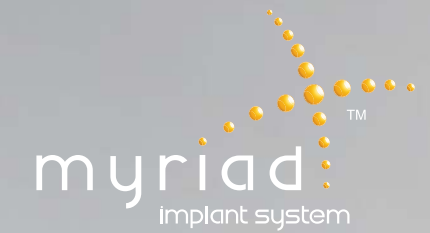
Myriad-Plus™ offers a two stage, two piece solution for crown & bridge indications. One stage, single piece crown & bridge applications are covered by the Myriad-Smart™ and the innovative Myriad-Hybrid™ designs.

The Myriad-Hybrid™ implant is the world's first single piece implant with the osseous component of the implant body in titanium and the transmucosal peri-implant soft tissue emergence area and abutment component in Zirconia. This combines the benefits of the Nanopore™ titanium surface in bone with the optimal soft tissue integration characteristics of Zirconia. This unique combination provides perfect harmony between the implant body and the biological hard and soft tissue around it.

Myriad-Connect™ is a one stage, two piece design of choice to treat complete edentulism with overdentures and screw retained prostheses. The host of prosthetic attachments include bar abutments, bridge abutments, ball attachments and Locator® attachments. The Myriad-Snap™ one stage, single piece implant offers a simple cost effective solution for ball attachment retained overdentures.

Myriad-Provi™ and Provi-snap™ are indicated for transitional use for temporary crown & bridge and overdenture applications.

Depending on the indication, case selection, surgical and prosthetic treatment planning, the implantologist can choose from seven application specific designs and select from five specific lengths and five diameters.



plus™
2 stage - two piece

D	L
3.8	8
4.5	9.5
5.7	11
	13
	15

smart™
1 stage - single piece

D	L
3.3	8
3.8	9.5
4.5	11
5.7	13
	15

hybrid™
1 stage - single piece

D	L
3.3	8
3.8	9.5
4.5	11
5.7	13
	15

connect™
1 stage - two piece

D	L
3.8	9.5
4.5	11
	13
	15

snap™
1 stage - single piece

D	L
2.5	9.5
3.3	11
	13
	15

provi™
1 stage - single piece

D	L
2.5	9.5
	11
	13
	15

provi-snap™
1 stage - single piece

D	L
2.5	9.5
	11
	13
	15



crown & bridge



complete edentulism



transitionals



simplified prosthetics

The All-in-one™ packaging of every Myriad™ implant includes all components for surgery, uncover, healing, impression taking & transfer as well as the final abutment.

This ensures single use of components like cover screws, healing abutments, impression posts and laboratory analogs. Single use of these components ensures the repeated precision and quality of the components. Single use availability of these components enhances user comfort and potentially prevents errors and complications that could arise from the use of damaged, deteriorated and over-used components.

All Myriad™ single piece implant packages include prosthetic components like the impression transfer coping, laboratory analog, comfort caps, temporization relines caps, retraction caps and castable copings. These components packaged with every implant ensure precise impressioning and transfer of the stump from the oral cavity to the laboratory working model. The Myriad-Smart™ includes a straight extender as well as a cement-on angled extender to circumvent angulation and deep transmucosal emergence problems.

The Myriad-Plus™ system for crown & bridge situations is delivered packaged with the cover screw, gingivaformer, impression post cum straight abutment, abutment screw as well as the laboratory analog. Additionally available individual components include extra long gingivaformers and impression posts, open tray impression posts, Biotemp™ temporary abutments, angled abutments, cast-to-base precious metal Resolve™ abutments, castable bridge abutments and Zirconia abutments for the esthetic zone.

The Myriad-Connect™ system for complete edentulous jaws offers the user a choice between a bar abutment, a ball attachment, a non-engaging castable abutment for hybrid bridge restorations as well as a Locator® attachment option. (Locator® is a registered trademark of Zest Anchors, Inc.)



nanopore™ surface

The Nanopore™ surface developed at the University of Gothenburg in Sweden is a patented calcium oxidized, nano-porous surface that features 3-dimensional interconnecting porosities. This unique surface consists of a thin layer of nano-porous titanium oxide that is saturated with 11% calcium. The characteristics of this unique and innovative surface optimize tissue response, stimulate early bone deposition and enhance osseointegration. The Nanopore™ surface is supported by 8 years of intensive research and a score of internationally published research articles. These publications demonstrate significantly pronounced levels of osteoconductivity leading to higher levels of bone to implant contact as compared to plain anodic oxidation or etched and blasted implant surfaces.

Further reference literature:

Sul YT, Johansson CB, Albrektsson T . Oxidized titanium screws coated with calcium ions and their performance in rabbit bone. Int J Maxillofac Implants A 2002;17(5):625-634.

Sul YT, Johansson CB , Jeong Y , Wennerberg A, Albrektsson T. Resonance frequency and removal torque analysis of implants with turned and anodized surface oxides. Clin Oral Implants Res. B . 2002;13(3):252-259.

Sul YT, Johansson CB , Kang Y , Jeong D G, Albrektsson T . Bone reactions to oxidized titanium implants with electrochemical anion sulphuric acid and phosphoric acid incorporation. Clin Implant Dent Relat Res.C 2002;4(2):78-87.

Sul YT, Byon ES, Jeong Y . Biomechanical measurements of calcium-incorporated oxidized implants in rabbit bone: effect of calcium surface chemistry of a novel implant. Clin Implant Dent Rel Res. 2004;6(2):101-110.

Suh JY, Jeung OC, Choi BJ, Park JW. Effects of a novel calcium titanate coating on the osseointegration of blasted endosseous implants in rabbit tibiae. Clin Oral Implants Res.2007;(Epub)

Arvidsson A , Franke-stenport V, Andersson M, Kjellin P, Sul YT, Wennerberg A . Formation of calcium phosphates on titanium implants with different surface preparations. An in-vitro study. Accepted for publication.

Fröjd V, Franke-StenpoV, Meirelles L, Wennerberg A . Increased bone contact to a calcium-incorporated oxidized commercially pure titanium implant: an in-vivo study in rabbits, Int J Oral Maxillofac Surg (2008) doi:10.1016/j.ijom.2008.01.020).

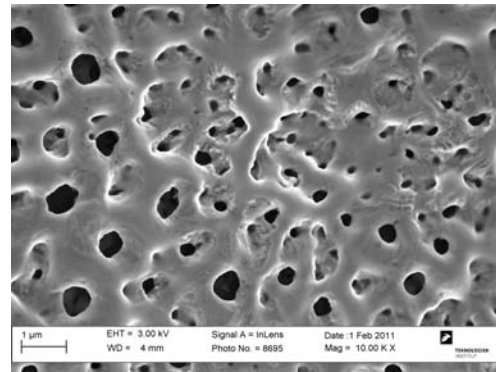
Sul YT. The significance of the surface properties of oxidized titanium to the bone response: special emphasis on the potential biochemical bonding of oxidized titanium implants. Biomaterials 2003;24:389-33 907.

Sul YT, Jeong Y, Johansson C, Albrektsson T. Oxidized bioactive implants are rapidly and strongly integrated into bone. Clin oral Implants Res. A 2006;17(5):521-526.

Sul YT, Johansson C, Albrektsson T . Which surface properties enhance bone response to implants? Comparison of oxidized magnesium, TiUnite and Osseotite Implant surfaces. Int J Prosthodont B 2006;19(4):319-328.

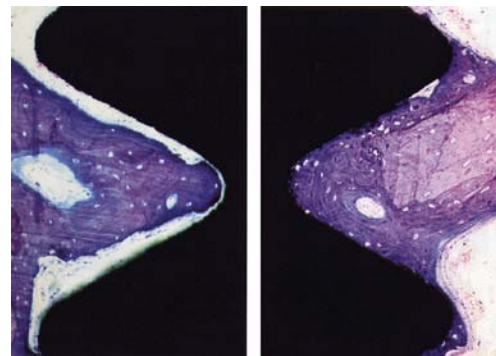
Sul YT, Johansson C, Byon E , Albrektsson T . The bone response of oxidized bioactive and non-bioactive titanium implants. Biomaterials 2005;26(33):6720-6730

3-dimensional interconnected nano-porosity



The Nanopore™ surface with its calcium deposits and 3-dimensional interconnecting nano-porosity comes as close to nature as possible. The SEM picture of the surface bears a striking resemblance to and almost mirrors the microstructure of human cancellous bone. This unique surface topography provides an optimized osteoconductive environment for mechanical interlocking by bone apposition.

calcium reinforced surface chemistry



Calcium reinforced oxidized implants showing a higher surrounding bone volume and a remarkable degree of bone to implant contact as compared to a controlled machined surface. (Sul YT - *The role of micro porous structure and chemical composition of the surface oxide in enhanced osseointegration. Thesis, University of Goteborg. ISBN 91-628-5221-3*)

The reinforcement of osseointegration with Nanopore™ is influenced by two primary factors which are mechanical interlocking and chemical bonding. The moderately rough surface with 3-dimensional interconnecting porosities provide the osteoconductive characteristics to enhance mechanical interlocking of bone onto the implant surface. The chemical bonding is derived from the calcium deposited surface chemistry characteristic of Nanopore™. These two factors contribute to the documented enhanced osseointegration values of the Nanopore™ surface during development at the University of Gothenburg in Sweden*.

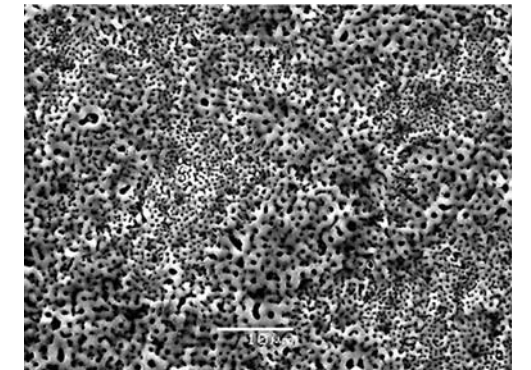
These mechanical and chemical bonding characteristics provide a greater degree of primary stability to the implant, thereby allowing for early or immediate loading in select indications.

*Dept of Biomaterial Sciences/Handicap Research, Institute for Surgical Sciences, Faculty of Medicine, University of Gothenburg, Sweden Gothenburg 2002.)

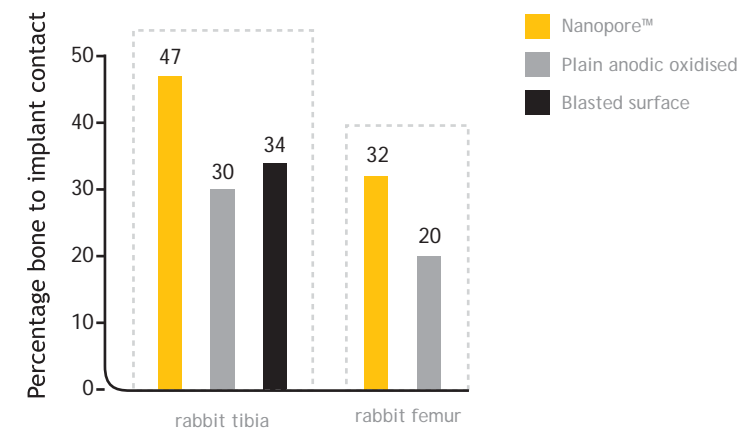
optimized surface roughness

In a review* focusing on topographic and chemical properties of different implant surfaces, moderately rough surfaces such as the Nanopore™ surface showed stronger bone response than relatively smoother or rougher surfaces. Rough surfaces such as the aggressively etched and blasted or the plasma sprayed surfaces have an increased incidence of peri-implantitis due to the increased risk of retaining bacteria when exposed to the oral environment.

*Albrektsson T, Wennerberg A. Oral implant surfaces: Part 1-Review focusing on topographic and chemical properties of different surfaces and in vivo response to them. *Int J Prosthodont* 2004;17:536-543. Albrektsson T, Wennerberg A. Oral implant surfaces: Part 1-Review focusing on clinical knowledge of different surfaces. *Int J Prosthodont* 2004;17:544-564.)

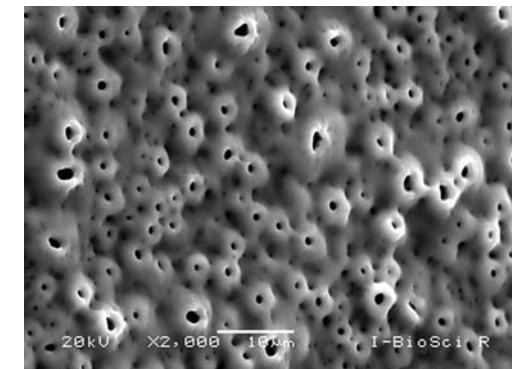


Nanopore™ calcium oxidized surface

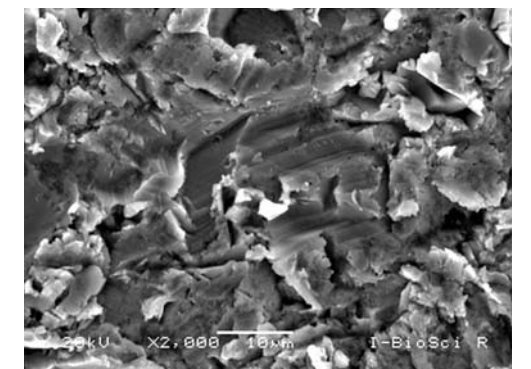


A significant increase of bone contact was found for smooth Sa < 0.5 µm but more densely peaked calcium incorporated oxidized implants when compared to somewhat rougher Sa = 0.5-1.0 µm oxidized or blasted implants. (Frojd V, et al., *Increased bone contact to a calcium-incorporated oxidized commercially pure titanium implant: an in-vivo study in rabbits, Int J Oral Maxillofac Surg* (2008) doi:10.1016/j.ijom.2008.01.020)

The moderately rough Nanopore™ surface with an Sa Value of < 0.5 microns offers the benefits of a rough surface for early bone apposition combined with an optimized soft tissue friendly smoother surface, without the negative characteristics of thicker and rougher anodic oxidation or etched and blasted surfaces.



Plain anodic oxidation surface



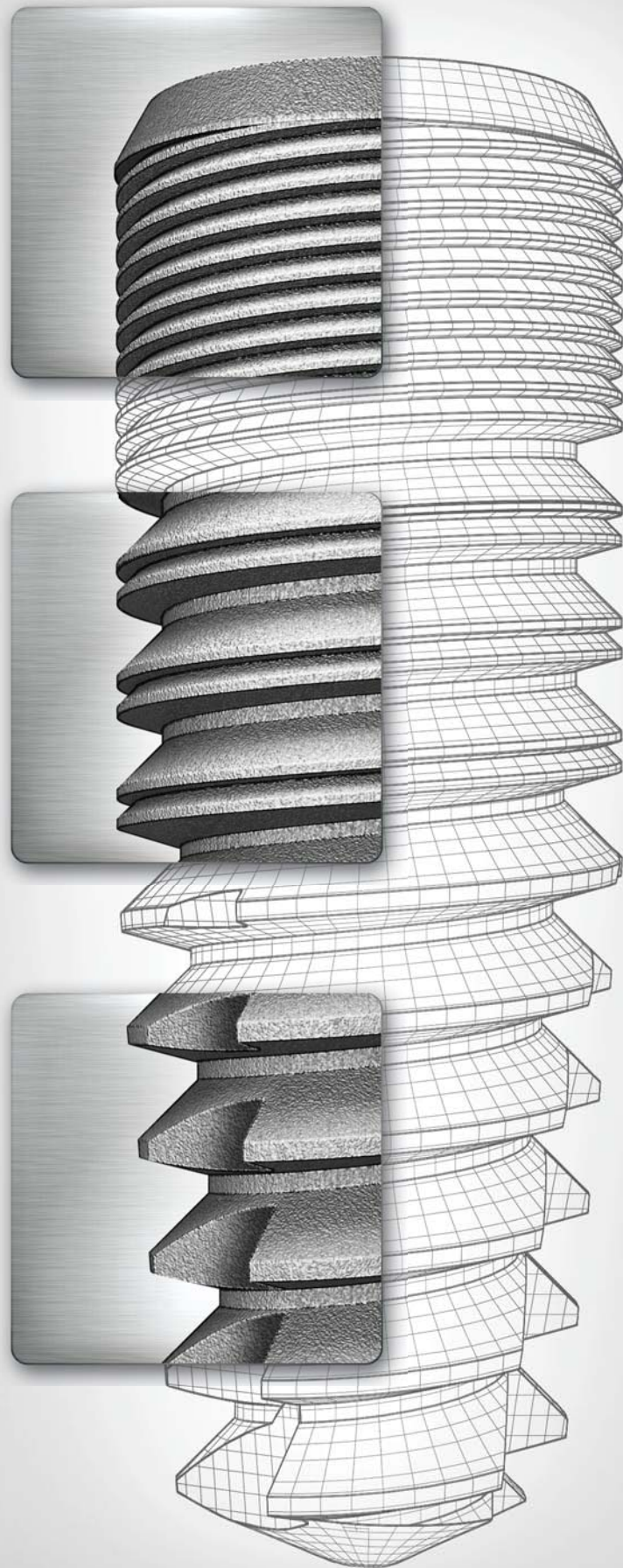
Blasted surface

documented and certified

Repeated and reproducible studies show reinforcement and osseointegration by mechanical interlocking and chemical bonding between bone and implant on the Nanopore™ surface.

All Myriad™ Implants are made from Grade IV titanium, which is the most documented and strongest grade of commercially available medical grade pure titanium.

The Nanopore™ surface is CE and US FDA certified.



bioprofile™ thread

The Myriad™ implant form is based on the Anaform™ root shape design which is by far the most proven and versatile shape for immediate and delayed implantation. The tapered body design is also proven to perform better in early load as well as soft bone situations.

The Bioprofile™ is an asymmetrical, self tapping and surface extensive thread design. Bioprofile™ essentially comprises one synchronized self tapping thread composed of three distinct thread profiles that are adapted to three different levels of bone biology.

These three thread profiles synergize to deliver the unique self tapping, osteocompressive and stabilization characteristics of the implant body, while enhancing overall surface area and optimizing the dissipation of forces at the cortical neck bone level.

The apical cancellous portion of the implant features a deep, actively asymmetrical cutting thread with a depth of 0.35mm that enhances the self tapping and osteocompressive properties of the design in the softer cancellous bone areas.

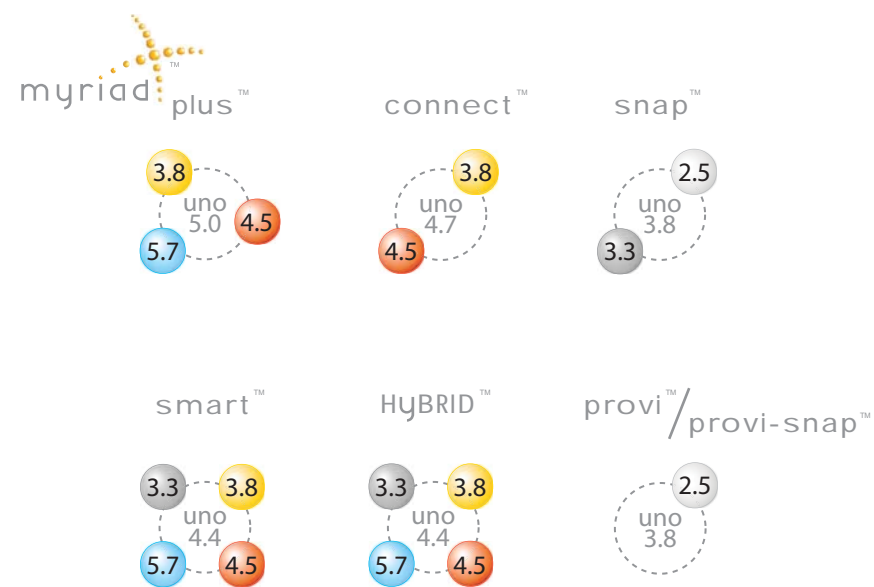
The middle segment comprises a surface extensive asymmetrical double thread with a self tapping property that cuts into the bone actively, thereby preserving bone mass and optimizing bone fill of the threads, which improves mechanical stability and speeds up the osseointegration process.

The microthreads in the marginal bone provide greater stability with reduced crestal bone resorption. Axisymmetric finite element analysis have demonstrated a combination of a conical implant abutment connection, with a microthread in crestal bone and sufficient wall thickness and modulus of elasticity results in axial loading stresses to be transmitted lower down in the bone, thereby reducing greatly the incidence of marginal/crestal bone loss.



uno prosthetic platform™

Through the entire family of the Myriad™ system the concept of maintaining one prosthetic platform through various diameters of implants has been adhered to. The Uno prosthetic platform™ simplifies prosthetic procedures, laboratory communication and reduces component inventories for both the clinician and the laboratory.



(all dimensions in mm)

in-plane switching™

The In-Plane Switching™ concept that controls crestal bone loss around dental implants is incorporated in all Myriad™ implant designs.

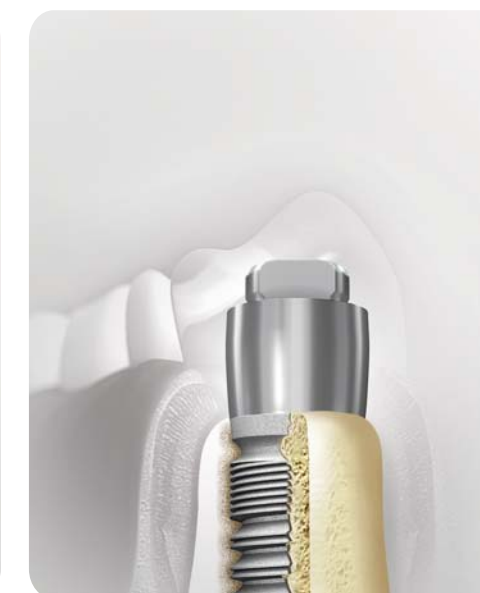
The implant-abutment interface diameter switch in combination with the Tri-cone™ conical connection and the external cortical implant microthreads provide the elements that ensure the most stable and predictable soft and hard tissue peri-implant interface.

In-Plane Switching™ shifts the implant abutment interface and axial forces to a more central and apical position, away from the implant shoulder perimeter. This optimizes stress distribution along the body of the implant thereby stabilizing the implant abutment connection interface. In-Plane Switching™ also provides a wider platform for bone deposition and soft tissue attachment at the bone crest.

Keeping in sync with the In-Plane Switching™ concept, all the Myriad™ single piece transmucosal implants incorporate a switch area that provides a crestal bone lock.



plus™



connect™



smart™



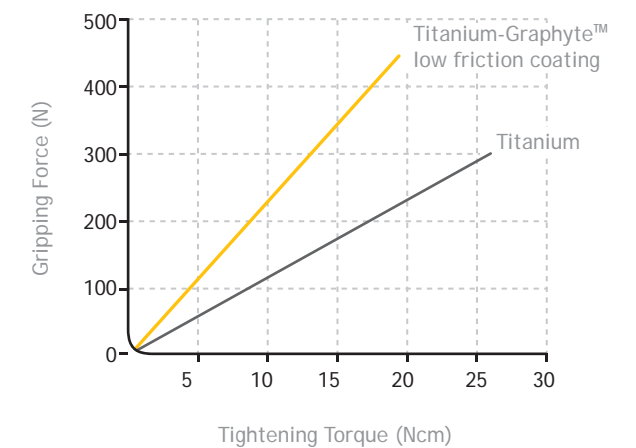
tri-cone™ connection

The Myriad-Plus™ system features the Tri-cone™ 17 degree internal cone abutment connection. The conical connection from an engineering perspective is one of the most stable mechanical implant abutment connections. The Tri-cone™ three position internal indexing allows for torque transfer during implant placement as well as facilitates indexing for crown and bridge abutments. The Tri-cone™ conical connection provides a zero micromotion solid connection that virtually removes the risk of screw loosening and subsequent breakage. The tight bacteria proof seal minimizes stress induced resorption in the marginal bone by optimally distributing load and ensures inflammation free and healthy peri-implant soft tissue.

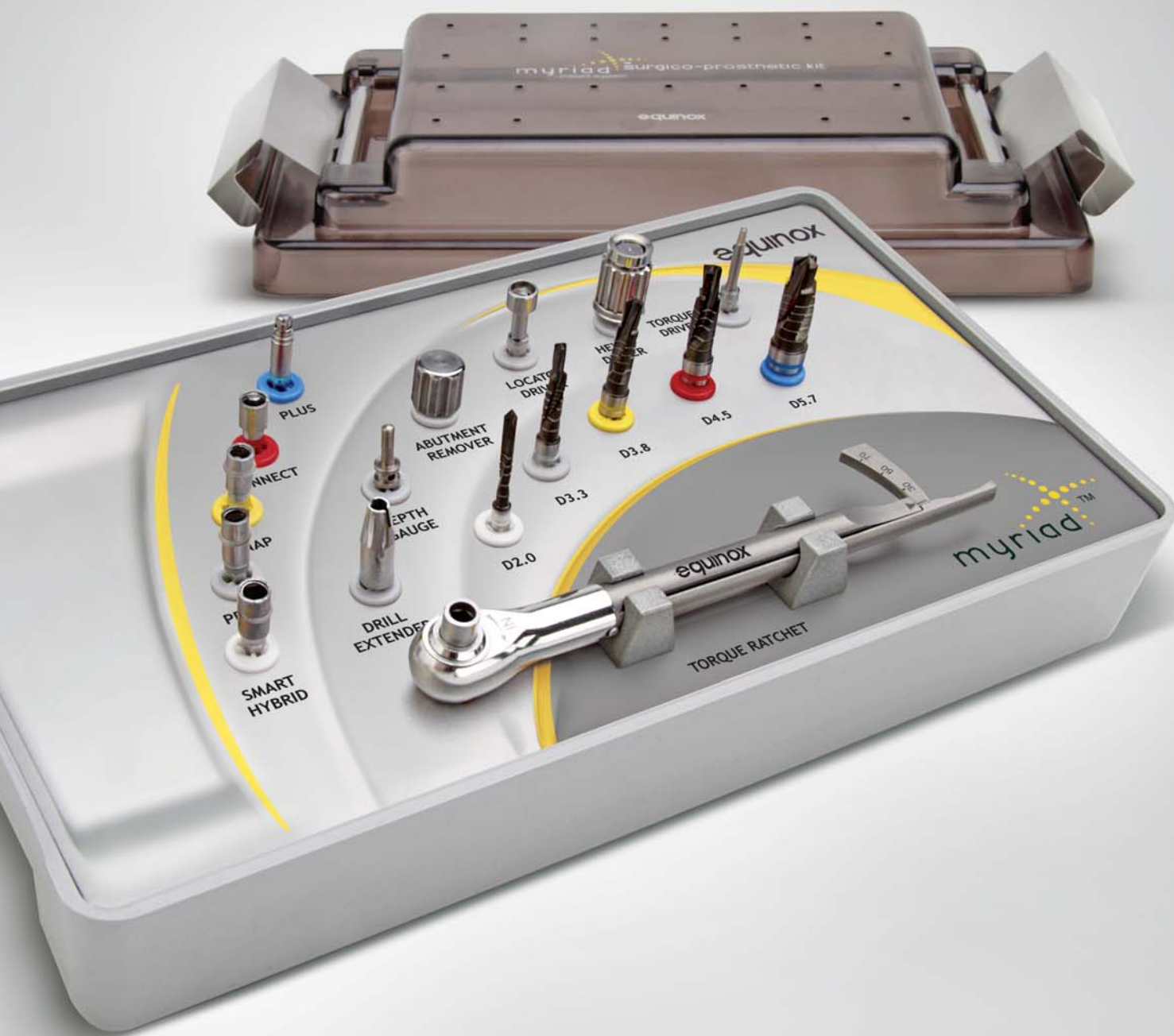


graphyte™ low friction screws

All Myriad™ abutment screws feature the innovative Graphyte™ low friction coating that delivers optimal pre-loads at minimum torque levels. Titanium inherently is a high friction material as compared to stainless steel or gold. High friction between two titanium components can be compensated by the application of higher torque, but higher torque in an abutment screw assembly can increase torsion stress in the screw stem which is not ideal. The Graphyte™ low friction coating on all Myriad™ abutment screws reduce friction to deliver a higher gripping force at lower tightening torque values.



Higher gripping force for Graphyte™ low friction coated screws at lower tightening torque values as compared to standard titanium screws



intelligent instrumentation

duracarb™ drills

Myriad™ offers seven application specific implant designs that facilitate rehabilitation of partially and fully edentulous jaws in a single stage or two stage procedure using single or two piece Implant designs. All seven application specific implant designs can be placed and restored using the intelligent and intuitive Myriad™ Surgico-Prosthetic kit that consists of just 17 components.

The internally cooled Myriad™ drills have a special low friction Duracarb™ coating that minimizes heat transfer and overheating of the bone, especially at the drill tip where external and internal cooling do not effectively reach.

The Duracarb™ coated drills are more surface wear resistant thereby maintaining durability and sharpness to increase drill life. The contrast of the drill depth markings against the black Duracarb™ coating makes the depth markings more visible during drilling procedures.

All five drills and insertion adapters are colour coded for easy identification and visual communication.





intelligent instrumentation

myriad™ torque ratchet

The Myriad™ torque ratchet is the world's most technologically advanced torque controlled instrument for surgical and prosthetic use.

The lightweight titanium two piece construction makes it simple to separate, clean and assemble before sterilization. With a torque range of 0-70Ncm with clearly visible markings it is equipped with an inbuilt automatic overload safety mechanism.

Intelligent cross-compatible instruments simplify the Myriad™ surgico-prosthetic armamentarium and reduce the number of components within the kit.

Implant insertion adapters and prosthetic hexed drivers are designed to fit hand drivers, handpieces as well as the Myriad™ torque ratchet. Versatile instruments offer the choice to be used hand driven, engine driven or hand torque driven.

all-in-one™ packaging

The All-in-one™ packaging concept of the Myriad™ system is one of a kind in the dental implant industry and will set the trend for times to come. The double sterile packaging includes the implant fixture as well as all prosthetic components required to complete the treatment.

Typically the Myriad-Plus™ package includes the implant fixture, cover screw, gingivaformer, impression post cum straight abutment and the laboratory analog.

The Myriad-Connect™ package includes the implant fixture, gingivaformer, impression post, laboratory analog and a bar/bridge sleeve or a ball attachment or a Locator® attachment depending on the type of prosthetic solution chosen.

(Locator® is a registered trademark of Zest Anchors, Inc.)

The Myriad-Smart™ and Myriad-Hybrid™ package includes the implant fixture, comfort caps long & short, impression transfer cap, impression coping, retraction cap, laboratory analog, temporization coping and laboratory castable coping in one package.

The Myriad-Snap™ package includes the implant fixture, impression transfer cap, laboratory analog and ball attachment housing with the insert.

The Myriad-Provi™ package includes the implant fixture, impression transfer cap, laboratory analog, temporization coping and castable coping.

The Myriad-Provi-snap™ package includes the implant fixture, impression transfer cap, laboratory analog and ball attachment housing with the insert.



direct-to-site™ delivery



All Myriad™ implants are delivered in titanium vials that facilitate Direct-to-site™ delivery.

Direct-to-site™ delivery circumvents the use of placement heads required for implant delivery to the osteotomy site that are time consuming and add an additional step to the surgical procedure.

All Myriad™ implants can be lifted out of their titanium vials using the insertion adapter connected to the torque ratchet or the surgical handpiece.

All insertion adapters when inserted into the implant communicate a tactile click to confirm a secure fit of the insertion adapter into the implant.

Implants are directly lifted out of the packaging using the insertion adapter, directly delivered to the osteotomy site and torqued into place in one uninterrupted action.



equinox

Medical Technologies B.V.

de Stuwdam 25
3815 KM Amersfoort
the Netherlands
Tel: +31 33 4793661
Fax: +31 33 4790468

E-mail: info@equinoxmed.com
Website: www.equinoxmed.com