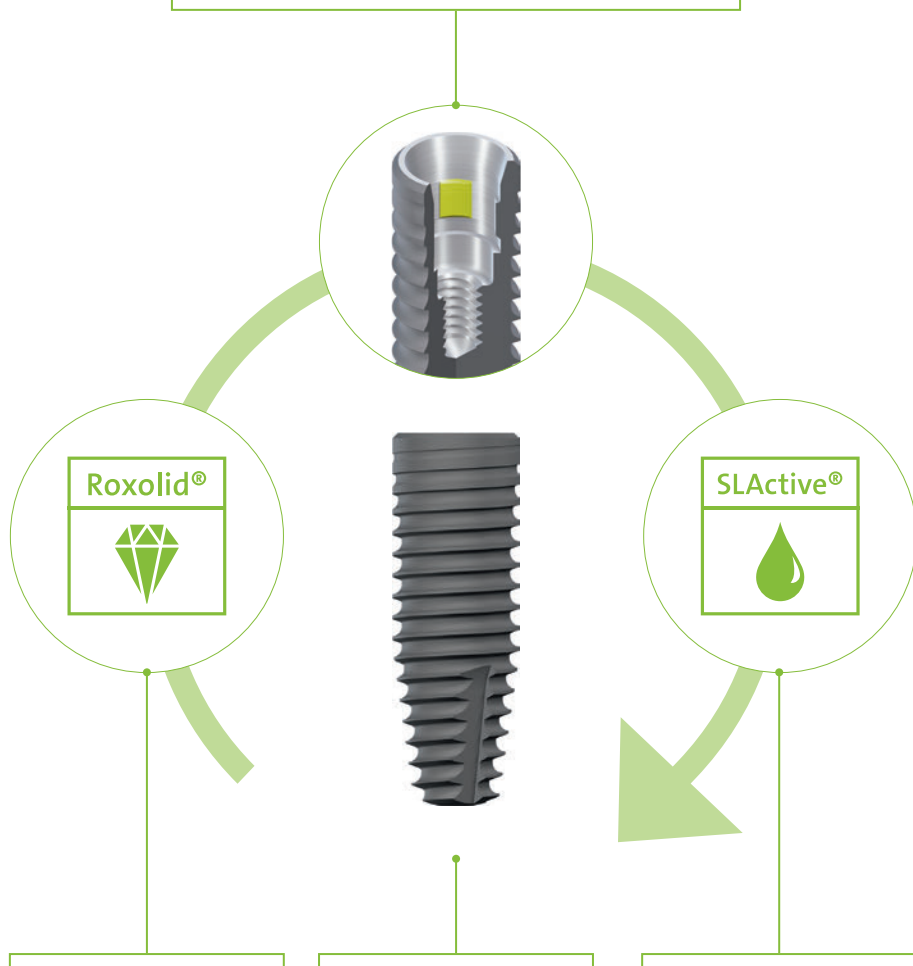


Straumann®

Bone Level Tapered Implant

STRAUMANN® CROSSFIT® CONNECTION

Restorative flexibility with the prosthetic components
of the Straumann® Bone Level Implant line



Roxolid®

An alloy of titanium and zirconium with excellent mechanical properties.

Apically tapered implant body design

allows underpreparation and supports a high primary stability in soft bone.

SLActive® surface

allows fast and predictable osseointegration.

High primary stability

Fast osseointegration

Immediate function

Broad treatment options

HIGH PRIMARY STABILITY

Primary stability of dental implants, defined as the stability at the time of implant placement, is an important prerequisite for achieving successful osseointegration (Branemark et al., 1977; Meredith, 1998). High primary stability prevents micromovements of the implant and therefore warrants its rigidity. This is important since the implant should not be subjected to micromotion of more than 50–150 µm during the healing phase in order to avoid fibrous tissue encapsulation (Cameron et al., 1973; Szmukler-Moncler et al., 1998). Straumann® Bone Level Tapered Implants have an apically tapered implant body and show excellent primary stability in soft bone and fresh extraction sockets. A study demonstrated that for tapered implants the initial stability is secured over the bone remodeling

stages (Rokn et al., 2011). One reason for this is that the tapered implant body design allows for preparing the site with tools one size smaller than the diameter of the implant, thus increasing the resistance to implant insertion. The lateral compression of the bone around the underprepared osteotomy walls leads to a continuous increase of insertion torque, an important observation especially for soft bone types as increasing peak torque values have been correlated to increased implant stability during the healing phase (Molly, 2006).

FAST OSSEOINTEGRATION

Surface modifications play an important role in the speed of osseointegration and thereby influence implant strength as well as aging resistance and success of immediate and early loading protocols (Buser et al., 1991; Coelho et al., 2011; Dos Santos et al., 2011; Elias et al., 2008; Shalabi et al., 2006). Straumann® SLActive® is a chemically modified hydrophilic surface which is clinically proven to accelerate the osseous healing (Buser et al., 2004; Lang et al., 2011; Oates et al., 2007; Schwarz et al., 2007). The hydrophilic and chemically active properties of SLActive® provide a larger accessible surface area for increased blood protein adsorption (Kopf et al., 2015), greater osteoblast differentiation and increased production of bone-building osteocalcin (Zhao et al., 2005) as well as stimulated blood vessel growth

(Schwarz et al., 2008). Beyond that, studies with **Roxolid®** Implants with the SLActive® surface have osseointegration properties even superior to those of titanium SLActive® implants (Gottlow et al., 2012; Lang et al., 2011; Oates et al., 2007; Wen et al., 2013). Roxolid® is a unique metal alloy composed of ~15 % zirconium and ~85 % titanium, the only two metals commonly used in implantology that do not inhibit the growth of osteoblasts (Steinemann, 1998). Interestingly, titanium-zirconium alloys like Roxolid® have a better biocompatibility than titanium (Ikarashi Y et al., 2005) and an up to 40 % higher fatigue strength than comparable titanium implants (Bernhard N. et al., 2009). Straumann® Bone Level Tapered Implants from Roxolid® and with the SLActive® surface speed up the process of new bone formation upon the implant and thereby shorten the critical transition phase between primary and secondary stability.

DID YOU KNOW?

The current global tapered design implants market is continuously growing (Fig. 1). More and more dental experts use tapered implants. The trend is driven by the growing patient demand for the immediate restoration of esthetics and function, but with simpler, more cost-effective and less time-consuming treatment procedures.

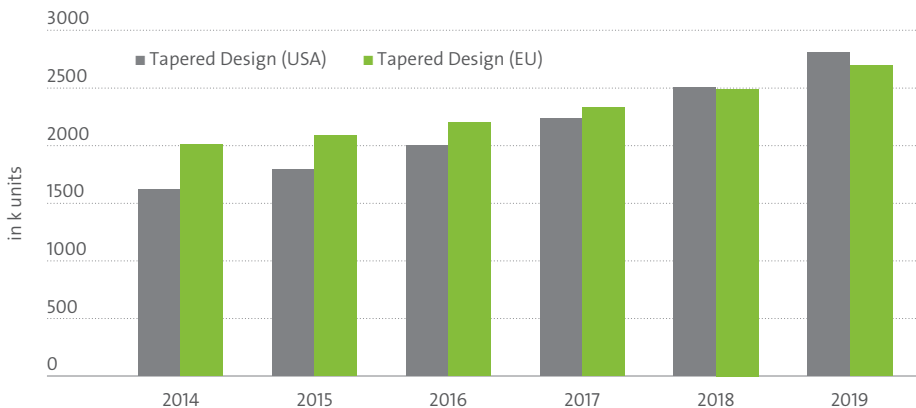


Fig. 1: Current global tapered design implants market trends (iData Research Inc., 2013; Millenium research group, 2015).

IMMEDIATE FUNCTION

Immediate function can offer many potential advantages such as reduced number of surgical procedures and an immediate esthetic and functional solution (Cordaro et al., 2012). Patients who have regained an important piece of their quality of life, may be more tempted to evaluate the treatment as success. It could be demonstrated that Straumann® Bone Level implants with SLActive® surface can successfully be used in early treatment protocols (Bornstein et al., 2010; Buser et al., 2013b; Nicolau et al., 2011). The micro-gap of the Straumann® CrossFit® connection is extremely small and reduces inflammation, which helps to preserve bone (Cochran et al., 2013; Heitz-Mayfield et al., 2013; Jung et al., 2008). Even in poor-quality bone, survival rates are comparable with those from conven-

tional or delayed loading. The mean bone-level change is not deemed to be clinically significant and compared well with the typical bone resorption observed in conventional implant loading. Thus, the Straumann® Bone Level Tapered Implant is suitable for placement into fresh extraction sockets or into bone of low quality (Akkoçoglu et al., 2005) and can be successfully used in conjunction with immediate and early loading protocols.

BROAD TREATMENT OPTIONS

Many patients have difficult health conditions which could compromise the treatment outcome of the implant therapy. Especially in challenging indications, the use of an implant system which is clinically proven and backed by scientific literature is mandatory to minimize the risk of treatment failure. The Straumann® Bone Level Tapered Implant mimics the shape of a natural tooth root which is advantageous with anatomic constraints (Fig. 2), including facial undercuts, converging root tips, concave jaw structure or narrow atrophied ridges. A high predictability of implant placement in augmented sites could be shown (Chiapasco et al., 2012a; Chiapasco et al., 2012b; Santing et al., 2013). Treatment of irradiated patients in the head and neck area showed 100 % survival rate after 14 months (Heberer et al., 2011) and of patients with poorly controlled type II diabetes, 98 % survival rate after 16 weeks were re-

ported (Khandelwal et al., 2013). Immediate loading of overdentures supported by two implants reached 99 % survival rate after up to 40 months (Stoker and Wismeijer, 2011). Additionally, the tapered design is of advantage for full-arch fixed restorations, as the temporary prosthesis is often placed at the day of surgery. For this indication, Straumann® Bone Level Tapered Implants provide the primary implant stability which is needed for reliable anchorage of the temporary prosthesis in the bone. From an esthetic point of view, Straumann® Bone Level Implants have demonstrated excellent esthetic results and high patient satisfaction in daily dental practice (Filippi et al., 2013; Furze et al., 2012). Pleasing esthetic outcomes after early loading with healthy and stable peri-implant soft tissues in the anterior maxilla even after 9 years have been reported (Buser et al., 2013a; Buser et al., 2013c; Buser et al., 2009; Buser et al., 2011). Therefore, Straumann® Bone Level Roxolid® SLActive® Implants have been tested in very challenging indications and successful treatment outcomes have been documented.

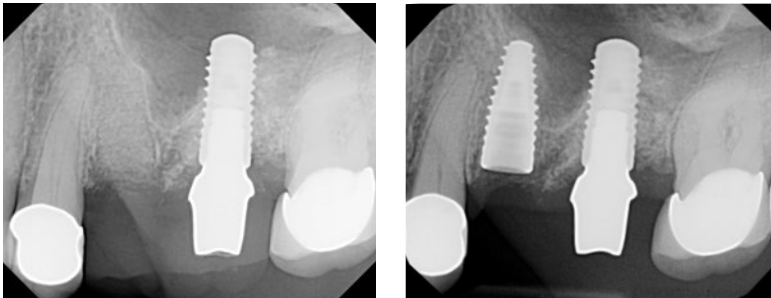


Fig. 2: Female patient presenting with a prior oral-antral fistula. The fistula with the prior implant was obturated and the Straumann® Bone Level Tapered Implant offered the opportunity to avoid sinus involvement. Courtesy of Dr. Robert L. Holt.

DID YOU KNOW?

A recent global survey among dental experts from 19 countries showed that

- There is a high level of satisfaction with the Straumann® Bone Level Tapered Implant (Average rating 8.5 out of 10)
- The reason for satisfaction is mainly due to the ease of use, the advantages of the Roxolid® material and the SLActive® surface

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