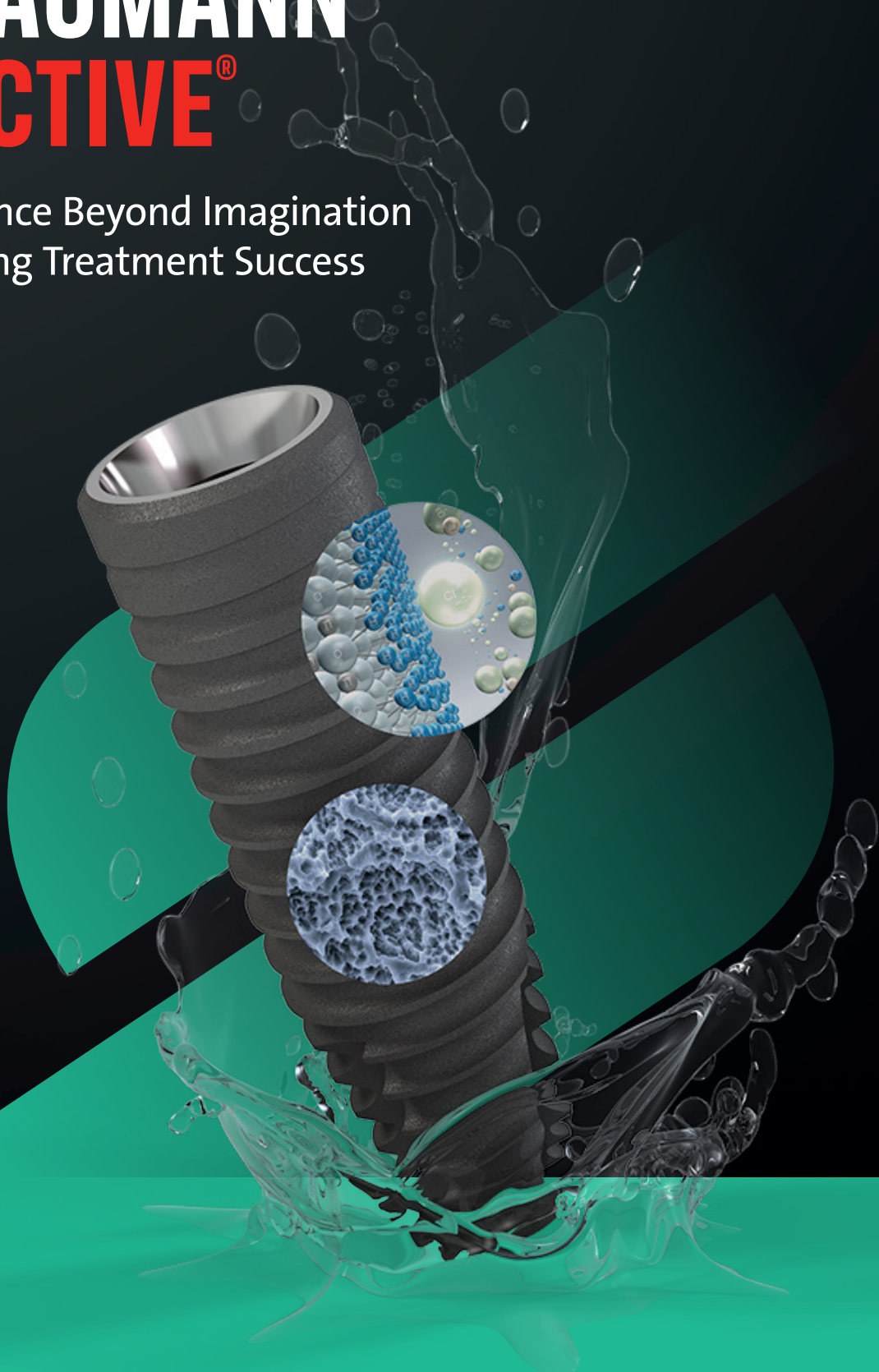


# **STRAUMANN**<sup>®</sup> **SLACTIVE**<sup>®</sup>

Performance Beyond Imagination  
Maximizing Treatment Success





## 10 YEARS OF CLINICAL SUCCESS AND PROVEN PREDICTABILITY

### **IMMEDIATE LOADING**

High predictability  
in immediate  
loading

### **COMPROMISED PATIENTS**

Emerging success in  
Diabetic and  
Irradiated Patients

### **ENHANCED BONE GRAFTING\***

Significantly higher  
formation of new  
bone aggregate

\*Based on results of a pre-clinical study in animals (minipig); the preclinical testing is not correlated to long-term clinical outcomes in humans.

# BEYOND HYDROPHILICITY

## THE SCIENCE OF HIGH PERFORMANCE

More than 10 years ago, Straumann® pioneered accelerated osseointegration with the innovative hydrophilic SLActive® surface, reducing the healing period from 6–8 down to 3–4 weeks for most indications.<sup>1</sup>

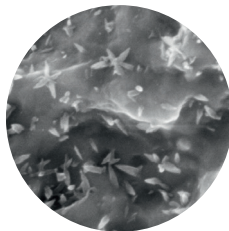
We have made faster treatment, shorter healing time, and better outcomes a reality.<sup>1</sup> The extensive healing potential of SLActive® can now be seen even in challenging patients and treatment protocols.

Leading researchers worldwide are looking at what's behind the outstanding clinical performance of SLActive®. As new insights emerge, discover how you could benefit from the high performance SLActive® surface to support your patients' healing capabilities.

**Discover the science of high performance.**

### NEW INSIGHTS INTO SLACTIVE® SURFACE PERFORMANCE

#### ULTRA-FINE TOPOGRAPHY ON SLACTIVE® SURFACE



Distinct ultra-fine topography present on the SLActive®, but not on the SLA® surface.<sup>2</sup>

#### INCREASED SURFACE AREA

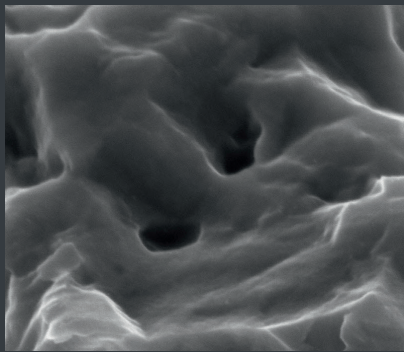


Ultra-fine topography increase the SLActive® surface area by more than 50%.<sup>2</sup>

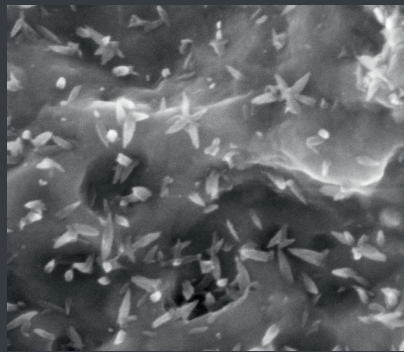
# DISCOVER THE **SCIENCE** OF HIGH PERFORMANCE



## ULTRA-FINE TOPOGRAPHY PRESENT ON THE SLACTIVE® SURFACE



Roxolid® SLA®



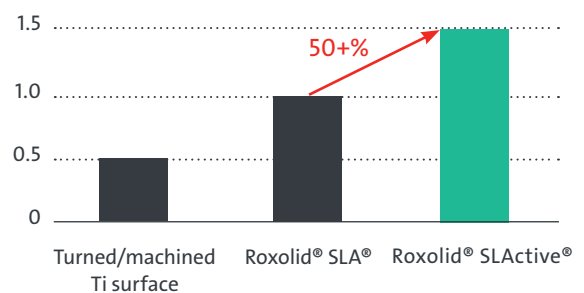
Roxolid® SLActive®

Distinct ultra-fine topography recently discovered on the SLActive® surface, prove for the first time, that the SLActive® surface topography differs from that of SLA®.

## ULTRA-FINE TOPOGRAPHY ON SLACTIVE INCREASE SURFACE AREA BY MORE THAN 50%<sup>25</sup>

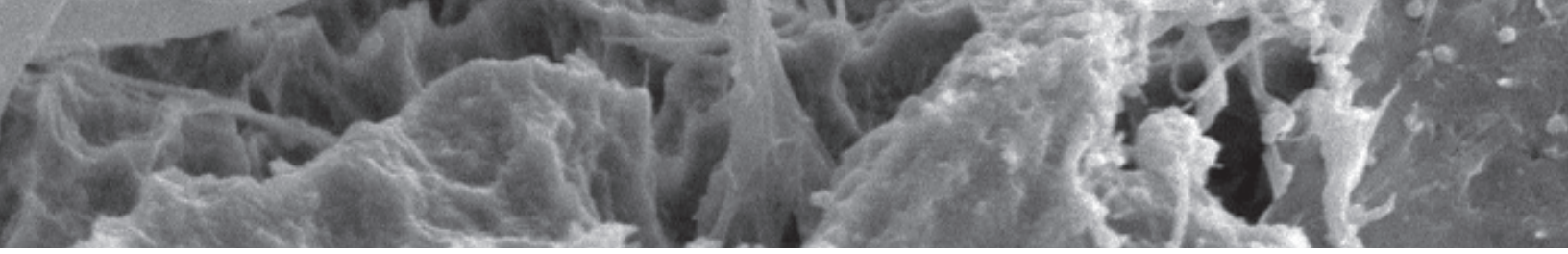
- Larger surface area in contact with bone enhances BIC\*<sup>32</sup>
- SLA/SLActive® micro-roughness increases the surface area by at least 100% compared to the machined surface<sup>26</sup>
- Ultra-fine topography increase the SLActive® surface area by more than 50%<sup>25</sup>

### IMPLANT SURFACE AREA INCREASE



Y-axis: 1=100%

\* BIC = Bone to implant contact



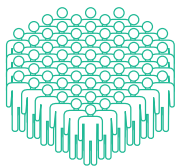
# IMMEDIATE LOADING WITH LONG-LASTING RESULTS.

New long-term data from a randomized, controlled, multicenter study demonstrate the impressive performance of SLActive® with immediate loading. In fact, the SLActive Implants delivered a 10-year survival rate of 98.2 % in this challenging protocol.<sup>3</sup>

Ever increasing patient expectations continue to drive demand for faster, and more efficient treatment protocols. Immediate loading allows the clinician to place a prosthetic restoration on the same day as the implant.

This approach allows a patient to benefit from the restoration straight away. However, this demanding protocol carries a higher risk of failure due to premature loading of a healing implant.

## STUDY DESIGN



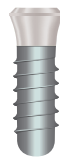
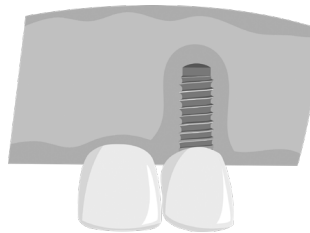
64 PATIENTS



10 YEARS  
Study follow-up

### INDICATION

maxilla or mandible of partially edentulous patients, temporary restoration (single crown or 2–4 unit fixed partial denture) was replaced by permanent restoration 20 to 23 weeks post surgery



**IMMEDIATE LOADING**  
39 implants  
(restored the same day)



**EARLY LOADING**  
50 implants  
(restored after 28–34 days)

### RANDOMIZED CONTROLLED MULTICENTER STUDY



### IMPLANT SURVIVAL RATE IN IMMEDIATE LOADING AFTER 10 YEARS<sup>3</sup>



Randomized controlled multicenter study

### STUDY CONCLUSION

- SLActive® implants provide a long-term highly predictable treatment option

# DISCOVER THE **HIGH-PERFORMANCE** OF THE SLACTIVE® SURFACE



# SLACTIVE® IN IRRADIATED PATIENTS. PREDICTABILITY BEYOND EXPECTATIONS.

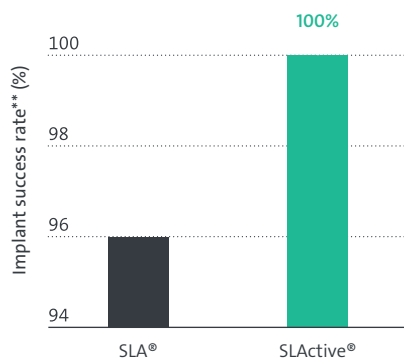
One of the most challenging patient groups for implant treatment includes patients who have undergone a combination of tumor surgery, chemotherapy and radiotherapy\*. Irradiation leads to decreased bone vascularity<sup>5,6</sup>, impaired osteoblastic activity<sup>7</sup> and reduced bone vitality<sup>8,9</sup> which severely compromises bone quality in these patients. The fragile mucosa and the risk of osteoradio-necrosis present further challenges. However, from a quality-of-life perspective, this patient group stands to benefit the most from implant supported prosthetic rehabilitation. SLActive® showed a 100 % success rate in irradiated patients in a recent randomized clinical trial (RCT).<sup>4</sup> Based on published systematic reviews<sup>10,11,12,13</sup>, no other implant surface has demonstrated such a success rate in this patient group within a setting. Remarkably, the 5-year follow-up of the trial showed that none of the surviving patients had an SLActive® implant failure. The effective implant survival rate was an outstanding 100%.<sup>14</sup>

## SLActive PERFORMANCE IN IRRADIATED PATIENTS

### Randomized Clinical Trial<sup>3</sup>:

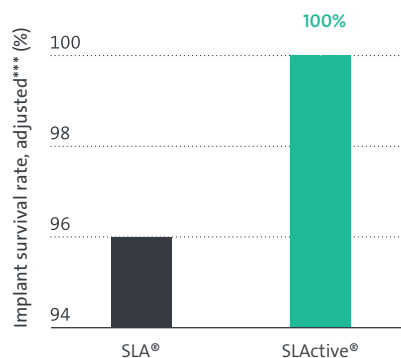
- 102 implants, 20 patients (1 year/19 patients, 5 years/15 patients)
- Post-surgery, radiotherapy and chemotherapy for oral carcinoma

### 1-YEAR FOLLOW-UP<sup>3</sup>



One patient was excluded from the study due to tumor recurrence. Therefore, the graph is based on 19 patients with 97 implants.

### 5-YEAR FOLLOW-UP<sup>13,14</sup>



Excludes four additional patients who died due to cancer. Therefore, the graph is based on 15 patients with 79 implants.

\* Patients previously irradiated in the head and neck the following recommendations for the clinician treating patients previously irradiated in the head and neck should be followed, communication with the patient's oncologist, cumulative irradiation doses less than 50 Gy are advisable. Implants should be placed at 6 to 12 months after cessation of radiation treatment and implants should be placed no less than 14 days prior to radiation treatment.

\*\* Success criteria as per Buser D. et al. Long-term stability of osseointegrated implants in augmented bone: A 5-year prospective study in partially edentulous patients. Int J Periodont Restor Dent. 2002; 22: 108-17.

\*\*\* Adjusted, excluding the patients deceased due to cancer mortality.



### RECENT OUTCOMES IN SMOKERS:

The placement of implants in smokers is often associated with high failure rates, risk of post-operative infections, and marginal bone loss.<sup>32</sup>

Results of recent clinical studies on outcomes of SLActive implants in smokers are encouraging.<sup>33,34,35</sup>

Published studies reported on titanium or titanium zirconium- alloy implants with SLActive surfaces and diameters ranging from 3.3 – 4.8 mm and lengths 8 – 12 mm.

## UNCOMPROMISED PERFORMANCE. EVEN IN DIABETIC PATIENTS.

Patients with diabetes have reduced wound healing capacity,<sup>16,17</sup> putting dental implants at risk, particularly if the patient is unaware of the condition.

Worldwide, 1 in 11 adults has diabetes, while among adults 60 years of age and older, the prevalence is twice as high.<sup>18</sup>

Over the past 30 years, the number of people with diabetes in the US has quadrupled and, according to the US Center for Disease Control (CDC), the figure could increase to as many as one in every three adults by 2050.<sup>18</sup> In an estimated 50% of people with type 2 diabetes, the disease remains undiagnosed.<sup>18</sup>

Given a rising prevalence of type 2 diabetes – how can clinicians address the risk, particularly in older patients?

### GROWING CLINICAL EVIDENCE OF PREDICTABLE PERFORMANCE OF SLACTIVE® IN DIABETIC PATIENTS:

A new clinical study<sup>19</sup> that compared SLActive® performance in patients with and without diabetes showed uncompromised performance of SLActive® implants:

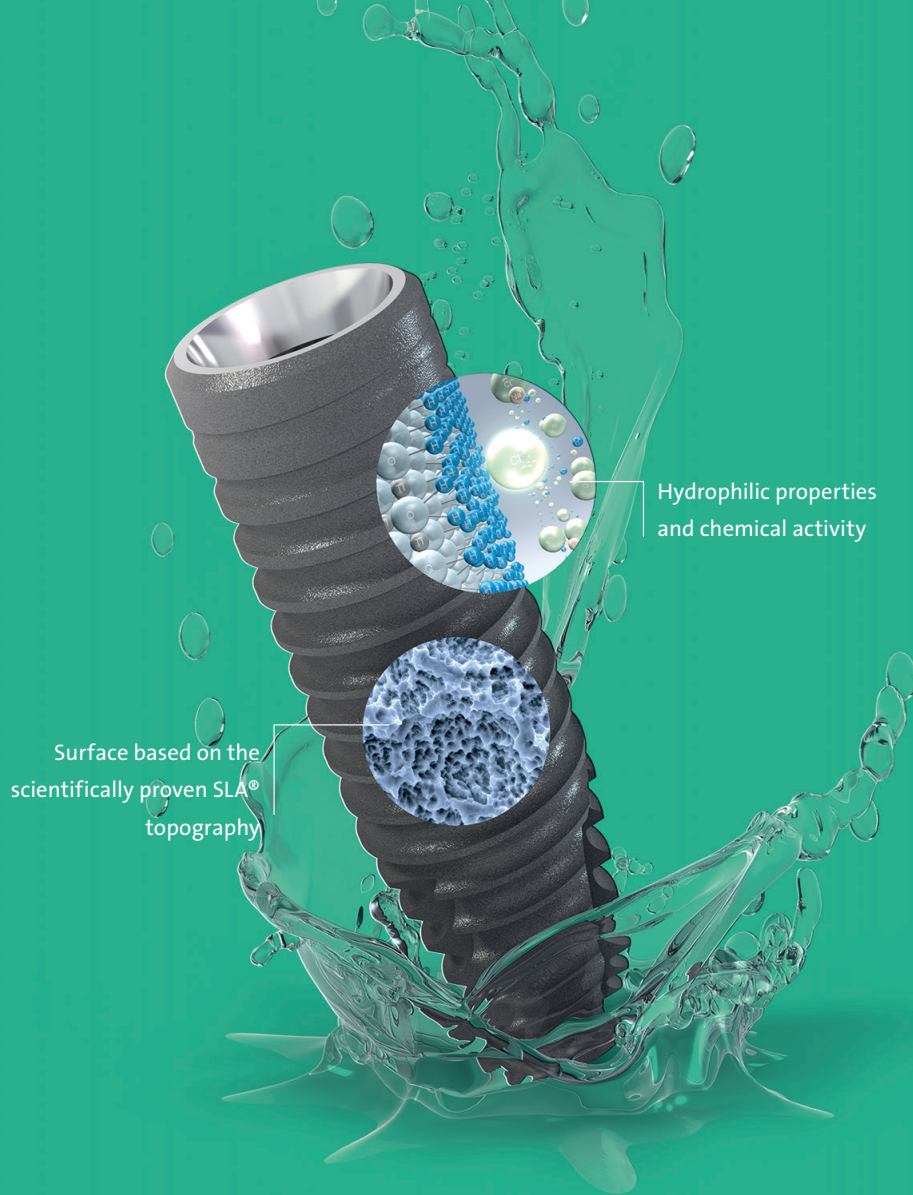
- 100 % implant success rate in the diabetic group after 2 years
- Bone changes similar to those in healthy individuals

### PERFORMANCE IN DIABETIC PATIENT GROUP<sup>20-30</sup>



A prospective, case-control clinical study (14 well-controlled and 14 non-diabetic individuals)





## NEW RESEARCH SHOWS THAT SLActive® DEMONSTRATES HIGH ANTI-INFLAMMATORY POTENTIAL:

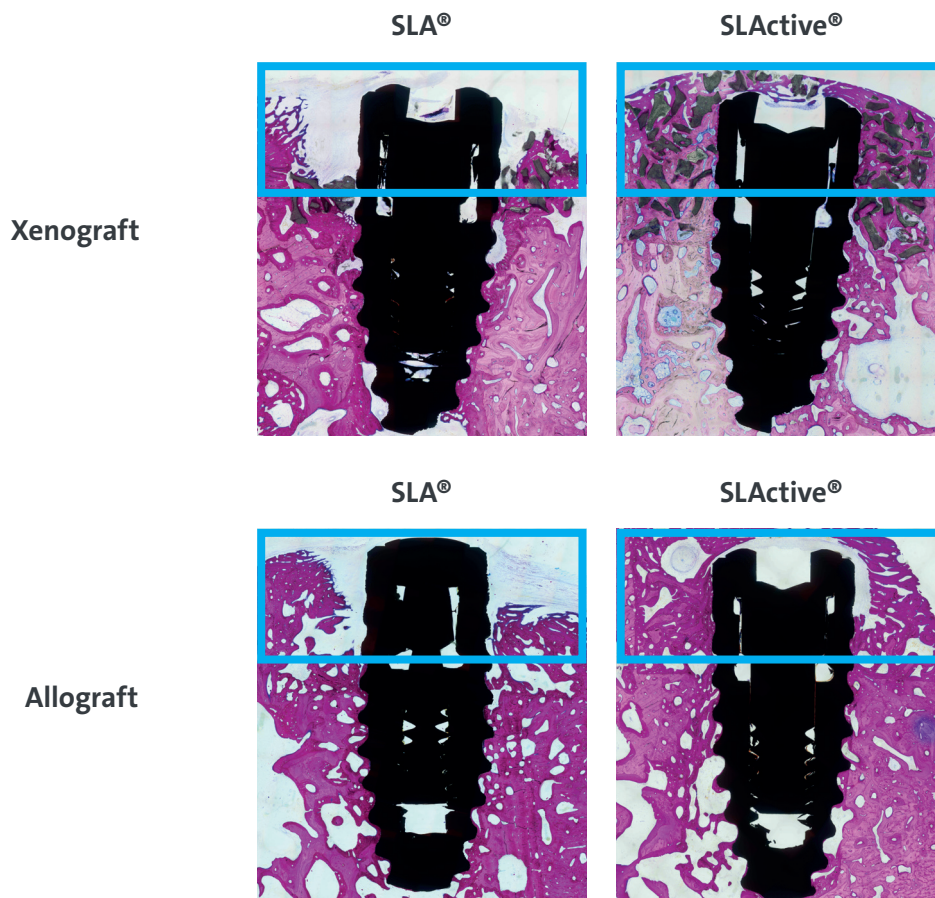
- Roxolid® SLActive® surface stimulates an early anti-inflammatory cell response<sup>30</sup>

# PROMOTION OF BONE REGENERATION IN BONE DEFECTS

Bone defects can greatly compromise the predictability of osseointegration. In a recent preclinical study<sup>31</sup>, SLActive® showed significantly higher formation of new bone aggregate within eight weeks compared to the standard Straumann® SLA® hydrophobic surface.\*

Buccal bone to implant contact was significantly higher in SLActive® groups as compared to standard SLA®, highlighting the benefit of SLActive® to support faster bone integration, in coronal circumferential defects

## BONE AGGREGATE FORMATION AT 8 WEEKS.



Histological views of bone aggregate (new bone and grafting material) 8 weeks post-grafting.

\*Based on results of a pre-clinical study in animals (minipig); the preclinical testing is not correlated to long-term clinical outcomes in humans.



## THE SURFACE WITH SUCCESS BUILT IN SLACTIVE® DESIGNED TO DELIVER:

- Faster osseointegration\* to enhance confidence in all treatments
- Reduced healing times from 6-8 weeks to 3-4 weeks\*\*
- Increased predictability in stability-critical treatment protocols

Please contact your local sales representative to get more information about the advantage of the SLActive® surface now or visit [slactive.straumann.com](http://slactive.straumann.com)

\*Based on results of a pre-clinical study in animals (fox hounds); the pre-clinical testing is not correlated to long-term clinical outcomes in humans.

\*\*Compared to SLA.

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