

# CONSIDERING THE BIOLOGICAL DISTANCE IN PRESERVING CRESTAL BONE FOR ESTHETIC RESULTS

JUAN BLANCO

## Introduction

In October 2007 Straumann launched its new bone level implant. After very promising results in pre-clinical and clinical multicenter studies, several countries were invited to participate in the "Bone Level Non-Interventional Study" (NIS<sup>1</sup>). One of the main objectives of the Straumann® Bone Level Implant is the preservation of as much crestal bone possible, in order to obtain an excellent soft tissue appearance and thus good esthetic results.

## Surgical procedures:

*New implant concept, same procedures.*

From a surgical point of view, it is not necessary to change any of the conventional Straumann instruments. Apart from the additional profile drill for dense bone, burs are the same as before. Therefore the procedure is similar to the one carried out with the Straumann® Tapered Effect Implant. The most important advancement is that a new implant concept could be added to the Straumann® Dental Implant System, while still using the same surgical instrument kit. In this way, the surgical protocol remains the same and does not influence the other implant lines (Straumann® Standard/Standard Plus/Tapered Effect). The only thing to consider is to place the implant shoulder flush with the crest. This enables the management of the entire soft tissue above the implant in a flexible way through a comprehensive portfolio of healing abutments.

## Prosthetic procedures:

*Easy insertion with respect to the key biological principles.*

The prosthetic part shows some changes in comparison with Straumann's existing portfolio. The Straumann® Bone Level Implant has a new internal connection. Moreover, a new impression coping and new abutments are required. However, in my opinion, and from a clinical point of view, these changes do not result in a more difficult prosthetic procedure. Both impression coping and abutments are very easy to insert, which is crucial at bone level, due to the limited visibility. Hence the requirement of feeling how the prosthetic parts engage has

## Background:

### Bone Level Non-Interventional Study (NIS)

In addition to the comprehensive activities in pre-clinical and clinical studies, Straumann conducts a non-interventional study (NIS) within the Straumann® Bone Level project. The NIS emphasizes Straumann's general clinical approach and is set up to collect real life data from private practitioners. Well-known clinicians support this type of study in their role as national principal investigators. Data is collected in a similar way as a clinical study via electronic Case Report Forms (eCRF) accessible over the internet. As the name "non-interventional" implies, Straumann does not interfere with the doctor-patient relationship. The products are sold via normal channels to the participants and it is up to the clinician to decide which patients and indications will be treated within this study. There is no control group, no study hypothesis, and only a very limited study protocol.

been well met with the clear-cut tactile response and the self-guiding connection. The microgap of the prosthetic connection between implant and restoration is shifted inwards. This means that the biological distance is taken into consideration and that more space is left for the "insertion" of the epithelium and the connective tissue of the periimplant soft tissue – in order to preserve crestal bone.

The clinical case at the end of this article shows an example of an esthetic restoration with the Straumann® Bone Level Implant.

## Conclusion

The new implant means that more options for clinicians are available to choose the best clinical solution in every indication. In the author's opinion, the most important achievements of the Straumann® Bone Level Implant is that it respects the biologics of the periimplant soft tissue and therefore ensures esthetic outcomes.

## Reference

1. 10 NIS centers in Spain with the goal of obtaining data on a total of 200 implants inserted.

*Juan Blanco, Department of Stomatology, Faculty of Medicine and Dentistry, University of Santiago de Compostela, Santiago, Spain*



Figure 1: Initial situation on day 0.



Figure 2: Straumann® Profile Drill for Bone Level Implant.



Figure 3: Implant insertion (Straumann® Bone Level Implant 4.1mm, SLActive).



Figure 4: Measurement of required soft tissue thickness.



Figure 5: First stage surgery including connective soft tissue graft from palatal region.



Figure 6: X-ray on day 0.



Figures 7, 8: Final result.



Figure 9: X-ray in week 18.

## CLINICAL CASE

### Esthetic restoration of teeth 11 and 12 with a Straumann® Bone Level Implant with SLActive surface

#### Initial situation

In the following case, teeth 11 and 12 were missing. The challenges for a good esthetic result consisted of the vertical and horizontal resorption of bone in region 12. Space limitations allowed only one implant on 11. Therefore, 12 would become a cantilever. Moreover, adaptation of the final restoration not only to teeth 21 and 22, but also to the already existing crown on teeth 13 was necessary. From an esthetic point of view, it is favourable that the soft tissue is of medium-thick biotype and rather flat (not too much scalloped). A submerged two-stage technique was applied.

#### 1st stage, surgical procedure (day 0)

Submerged healing was applied using a closure screw (0.5mm) and connective tissue graft from the palatal region.

#### 2nd stage (week 7)

Soft tissue was re-opened, closure screw removed, impression was taken and a conical healing abutment was placed.

#### Week 11

The provisional was placed to model the papilla, followed by the screw-retained final restoration (in week 16).

#### Week 18

The final result showed a highly esthetic result through the harmonious course of the mucosal margin. The shape and colour of the restoration is well adapted to the existing teeth and the edges of the incisors are consistently arranged (frontal and occlusal view, Figures 7, 8).

*Reprinted with permission from Institut Straumann AG. Starget 01/2008*