a 100% cumulative implant survival rate is reported after a mean 5 year follow-up. The mean marginal bone loss at baseline amounted to 0,05±0,03 mm. Otherwise, concerning peri-implant probing pocket depth, a mean value of 2,7±1,3 mm is reported in the present study. Additionally, based on our findings, 14 out of 438 (3,2%) examined dental implants suffered from peri-implant mucositis while no implant was diagnosed with peri-implantitis.
Conclusion: Subcrestally-placed dental implants with internal connection and platform shifting seem to be a reliable clinical solution in the medium-term. On the basis of the current knowledge, further well-conducted long-term studies with adequate sample size and follow-up are required to address the clinical validity of subcrestally placed dental implants

Comparison of marginal bone loss around axial and tilted implants: a retrospective CBCT analysis of up to 24 months.

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Aim: Dental implants, compared to teeth, are less tolerant of traumatic occlusal forces and they should be placed in line with the direction of the loading. However, the proximity of anatomical structures often preclude standard implants from being placed axially. The use of tilted implants could provide several clinical advantages. However, the stability of peri-implant tissues and, especially, the marginal bone level for these tilted implants has not been extensively studied. This clinical study retrospectively analyzed cone beam computed tomography (CBCT) images to determine potential influence of implant inclination on peri-implant marginal bone loss after 18 to 24 months of functional loading.
Methods: Twenty-five consecutive patients presenting with an edentulous or partially edentulous upper or lower jaw and adequate bone volume for receiving oral implants were selected for analysis of the marginal bone loss around tilted and/or axial implants. The study population included patients rehabilitated with Toronto bridges (TBs), fixed partial dentures (FPDs), or single crowns (SCs) on axial and/or tilted implants. The primary outcome was the CBCT analysis of peri-implant marginal bone level change, depending on inclination of implants and type of prostheses. The secondary outcome was analysis of survival and success rate of tilted and axial implants.
Results: A significant difference was observed for peri-implant buccal bone loss (mean of axials 0.42 +/- 0.06; mean of tilted 0.70 +/- 0.09) (p value = 0.009). The difference in peri-implant lingual/palatal/mesial/distal bone loss was not significant between axial and tilted implants (p >0.05). No significant difference was observed between the marginal bone level and the type of prostheses for both tilted and axial implants in all the assessed sites (p >0.05). The success rate for both tilted and axial implants was 100%, and no complications were observed for all the prosthetic rehabilitations, with 100% survival rate.
Conclusion: Tilted implants demonstrated favorable shortterm outcomes even for immediate loading protocols. Future randomized, long-term trials investigating the impact of tilted implants on marginal bone loss and survival and success rates are desirable. Compared to axial implants, tilted implants showed a significant statistical difference for peri-implant buccal bone loss, but no other differences were observed for peri-implant bone loss or for implant survival and success rate. Fixed partial or total rehabilitation using tilted or axial implants, or with tilted and axial implants, could be a reliable technique with advantages to patients and operators.

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Spectrophotometric analysis of immediate implant-supported rehabilitations: *in vitro* study

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Aim: Temporary rehabilitation on implants, whether fixed or removable, requires resin thickness that makes it aesthetic, durable and comfortable for the patient. However, these requirements are not always clinically attainable mainly due to the limited dimensions of the final structure. For this reason, it is desirable to create a framework with, on one hand constrained dimensions and, on the other hand, sufficient resistance to cyclic stresses. In addition, other factors must be taken into account, such as the economic aspect and the timing required to finalize the rehabilitation, to name some. One possibile solution to these requests was found to be the use of intraoral welding technique. The aim of this in vitro pilot study is to establish the minimum thickness of resin required to mask the metal framework used into intraoral welding technique.
Methods: Three specimens were produced with three titanium bars of grade two (2 mm diameter) (Dentsply Implants Manufacturing; Germany): the first remained untreated, the second was sandblasted, the third was opacified; three specimens of dimensions of 12x6 mm were prepared of PMMA (BreCam Multicom, Bredent GmbH & Co.) of A3 color that differ in thickness 1, 2,

3 mm; three specimens were prepared of pink resin (Palapress, Kulzer dental) of the same size as the previous ones. These were then superimposed on each other and images of the different combinations were acquired with a spectrophotometer (Spectroshade Micro, MHT) evaluating the color difference (ΔE) at three points between the different specimens and their combinations on the basis of the application of the CIEL*a*b color space system. ANOVA test were used for statistical analysis.
Results: The study shows that at least 3 mm of A3 color resin is required to mask the untreated or sandblasted metal framework ($0<\Delta E<1$). None of examined pink resin's thicknesses allowed to mask the three type of metal framework ($\Delta E>1$). The two factors "thickness" and "metal condition" examined seem to influence the outcome ΔE significantly (p value <0.05).
Conclusion: The results obtained in this in vitro study showed that was possible to mask the opaque titanium framework with a combination of at least 3 mm of pink resin and 3 mm of A3 color resin. A clinical alternative to mask the titanium framework could be the palatally/lingually placement of welded bar, compatibly with the clearance available for prosthetic rehabilitation.

Rehabilitation of a missing lateral incisor: use of narrow-diameter implant with titanium-nitride and niobium biomimetic surface

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Aim: Rehabilitation of missing lateral incisors is a quite frequent clinical situation but sometimes it also represents a challenge for dental professionals. Even if the implant-supported option is considered the best choice, the age of the patient, the stability of soft tissues with the risk of implant exposure in time, type of occlusion and the lack of enough bone volume for the placement of a regular-size implant suggest clinicians to choose sometimes valid alternatives.
Methods: A 27 years old woman with agenesis of the upper left lateral incisor requested for an esthetic treatment of her smile, with bad alignment and deep bite. An orthodontic esthetic treatment with invisible aligners has been proposed and completed in 25 weeks. At the end of the treatment, a symmetric, 6 mm space has been created for the prosthetic rehabilitation of the missing element. Unfortunately, after volumetric analysis with digital 3D tomography, insufficient bone volume and an inadequate mesio-distal distance has been found for the placement of a regular-diameter implant. Due to this clinical conditions, the thin periodontal tissues with risk of future gingival recession and the expectative of the young patient, an implant supported rehabilitation with a narrow-diameter, tapered implant with a biomimetic and esthetic titanium-nitride and niobium surface (Exactive Bioloy, Permedica, Italy) has been chosen. After the opening of the gingival flap, the implant has been placed respecting correct distances between adjacent dental roots. An adequate bone volume has been obtained through guided bone regeneration with bovine-derived bone graft (Bio-Oss, Geistlich, Switzerland) and a resorbable membrane (Bio-Gide, Geistlich, Switzerland). After 6 months of healing, the surgical site has been reopened and a fixed provisional with functional contouring of the emergency profile has been placed. 4 months later, the final ceramic restoration has been delivered.
Results: The young patient definitely abandoned the mobile, esthetic prosthesis that she was wearing since the age of 13 years old. A fixed, stable, functioning and cleanable restoration represented the solution that the patient asked for, and the regenerated bone and gingival volumes overpassed the limits given by the lack of the tooth since many years. Patient was totally satisfied of the solution, both for functional and esthetic outcomes.
Conclusion: arrow implant with 3.3 mm or less diameter represent an ideal solution for implant rehabilitation of missing upper lateral incisors. However, the professional should carefully consider the age of the patient (very young in case of agenesis) and many local factors that could affect stability both of bone and gums, and the consequent possible complications. The use of a biomimetic surface like titanium-nitride/niobium demonstrated in literature to be a valid option to achieve stable osteointegration, better resistance to challenges of bacterial biofilm, and the golden aspect of the surface allow clinicians to avoid those awful dark opacities that sometimes occur in time through gingival tissues with titanium-grey, conventional dental implants, especially in case of thin gums.

Brånemark Novum® immediate loading rehabilitation of edentulous mandibles: 16-year retrospective study

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Aim: Numerous studies have demonstrated the high