

Second-generation ceramic implant

Successional whiteSKY zirconia implant from bredent medical

bredent medical, Germany

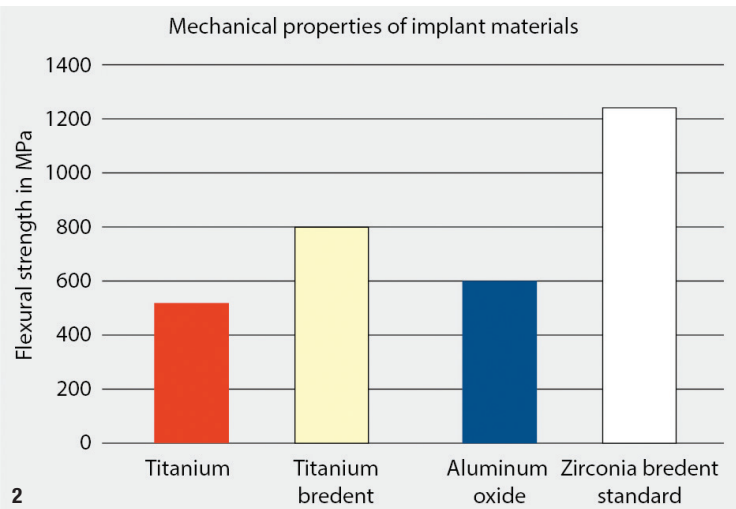
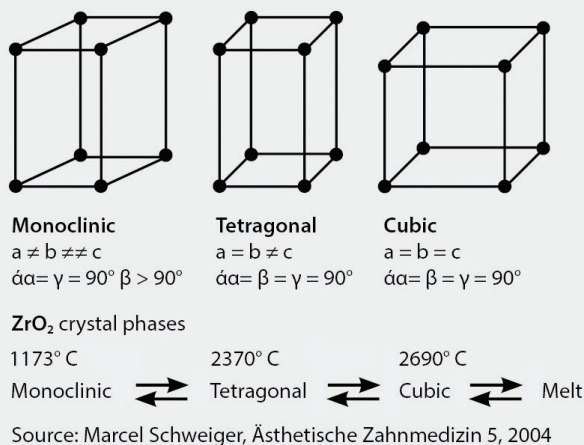


Fig. 1: The zirconia used for whiteSKY implants has a tetragonal structure. This structure only occurs in nature at temperatures between 1,173°C and 2,370°C. Ytria is added to stabilise the structure at room temperature. **Fig. 2:** Unground zirconia has a strength triple that of titanium and double that of alumina. Industrial grinding increases its strength even further, meaning that a strength of approximately 2,000N can be achieved in implants.

The contemporary zirconia implant is truly comparable to titanium and has no treatment limitations. This makes it a reliable alternative for patients with metal allergies, those wishing to lead a metal-free lifestyle and those needing implants in the aesthetic zone to ensure that dark shading does not affect the aesthetic outcome of the restoration. Zirconia is perfectly suited for implants, since its strength is three times higher than that of titanium and it exhibits ideal elasticity and long-

term resistance to fracture. Scientific studies have shown that zirconia features the same characteristics as comparable titanium surfaces regarding osseointegration.^{1,2}

The whiteSKY zirconia implant system developed by bredent medical has been proved to be safe and durable, demonstrating excellent long-term results since its introduction in 2006.^{1,2} The company has now built on this success with the launch of a second generation of the system. The new whiteSKY Tissue Line and Alveo Line ceramic implants incorporate all the features of the classic whiteSKY implant in an improved, contemporary design and new shape which has been scientifically and clinically proved.

For the first generation of whiteSKY implants, clinical and scientific evaluations have been carried out from the very beginning, and histological investigations have confirmed the implant's excellent osseointegration and verified its long-term clinical outcomes. Research shows that its survival rate is on par with that of titanium implants and that bone levels remain stable in the long term, and the red-white aesthetics have been shown

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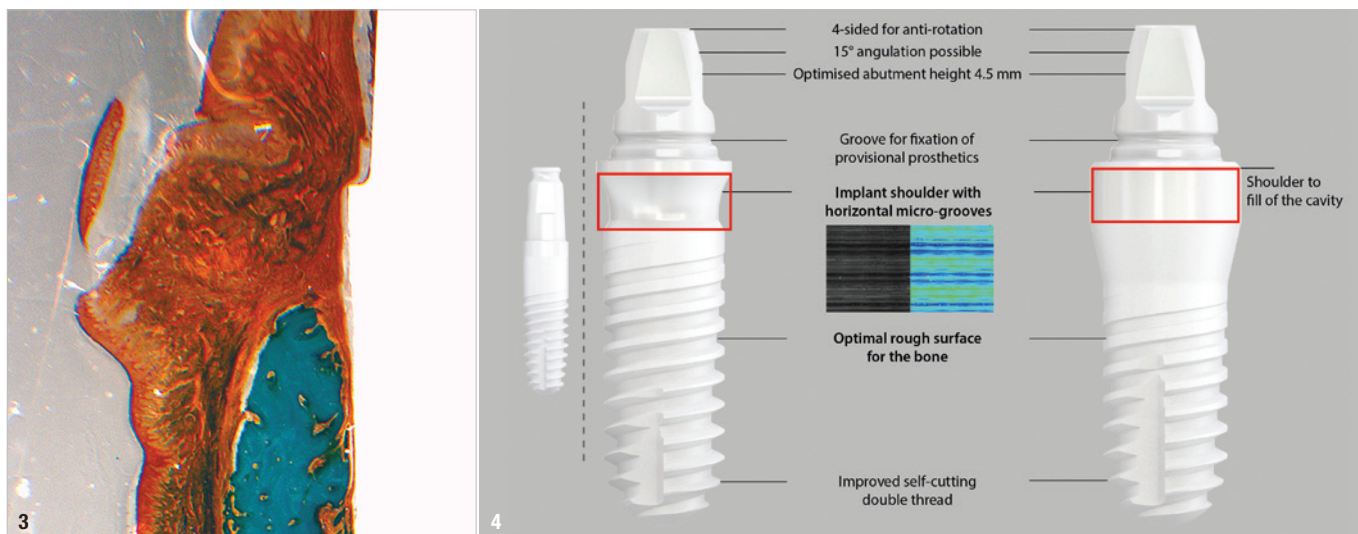


Fig.3: Histology demonstrates excellent muco-integration of the whiteSKY zirconia implants, which is the basis of the long-term success! **Fig.4:** Retaining proven properties and developing these successes further was the goal of the development of the second generation of whiteSKY. The same highly stable material has been used in the same production process and improvements have been made to the neck design, which is now available in two forms. The improvements in the superstructure design ease the integration of both temporary and definitive prosthetic restoration and optimise the digital workflow.

to be outstanding.^{1,2} Furthermore, studies have demonstrated that ceramic dental implants exhibit good biocompatibility, good epithelial attachment and low plaque accumulation.³⁻⁶

For the newly launched second generation, several additional, customer-requested improvements have been introduced and the following proven success factors have been retained: the complex manufacturing

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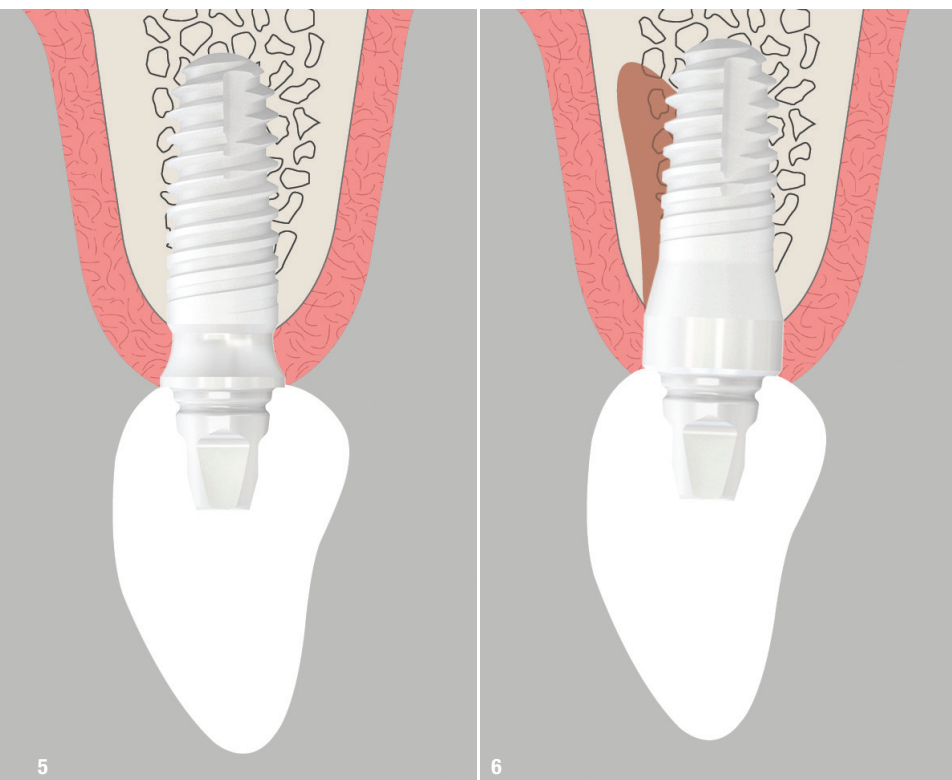


Fig. 5: Placed whiteSKY Tissue Line implant. **Fig. 6:** Placed whiteSKY Alveo Line. Ideal for immediate implantation.

process involving hot isostatic pressed zirconia; the surface treatment; the one-piece design, which ensures micro-gaps do not occur and therefore guarantees the long-term survival of the implant; and the optimised design and bone-oriented surgical protocol, which have been shown to achieve excellent primary stability. This is a prerequisite for immediate restoration, which is highly recommended, as clinical research indicates that it can increase bone-implant contact by 50%.³ The tooth-coloured whiteSKY zirconia implant meets patients' high aesthetic demands—no dark shades will affect the beauty of the restoration.

The implant can be used in cases of low gingival height. Its one-piece design makes it ideal for immediate loading. It has the same requirements as for an immediately loaded titanium implant, such as sufficient bone volume, adequate primary stability and connection to adjacent teeth or to other whiteSKY implants.

Two designs one goal—aesthetics

The second generation of whiteSKY is available in two designs for the different user philosophies. whiteSKY Tissue Line with the slim and scalloped sulcus design offers the maximum space for the soft tissue and limits the need for customisation—therefore, it is ideal for the standardised analogue and digital workflows.

whiteSKY Alveo Line with its wide platform for the closure of the alveolus is ideal for customisation according to the anatomical situation of the patient to achieve maximum in aesthetics in any case—then it is used in the analogue and digital workflow like a natural tooth.

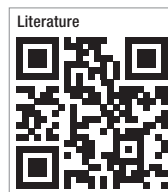
whiteSKY Alveo Line and Tissue Line have the reduced abutment height with a 15° bevel at the tip which facilitates the restoration of tilted implants in the maxillary anterior region. The horizontal groove ensures easy insertion of temporary restorations and facilitate temporary and permanent cementation.

The one-piece whiteSKY Tissue Line and Alveo Line are versatile and suitable for a wide range of indications, from single restorations in the aesthetic zone as well as the posterior zone to short-span bridges in the premolar-molar region and even in free-end situations. Depending on the competence of the dental team, the new generation whiteSKY can be used also for very challenging cases of full arch restorations.

There is also no limitation in terms of implant placement timing—all options are possible from immediate implant placement to late implant placement for both systems.

In all cases, the manufacturer recommends the immediate restoration of the whiteSKY implants because of the proven improved osseointegration and patients' wish for speedy but safe restoration.

This year, bredent medical celebrates 15 years of the whiteSKY implant system in various European cities. At various international events you can find out more about the new whiteSKY implant system.



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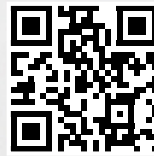
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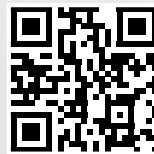
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