

Zirkonzahn®

*Human Zirconium Technology*



100% WHITE

*Metal free dental restorations made of high quality zirconia*



ENGLISH

[www.zirconiawhite.com](http://www.zirconiawhite.com)



100% WHITE

Zircon ( $ZrSiO_4$ ) is the oldest mineral in the earth's crust and it is the base for zirconium dioxide ( $ZrO_2$ , commonly known as zirconia). This first-class-performance material has been successfully used in hip surgery since the 70's and since the 90's it is also used in dental technology. Due to its excellent biocompatibility, zirconia is the preferred material for modern dental restorations among dental ceramic materials available today.

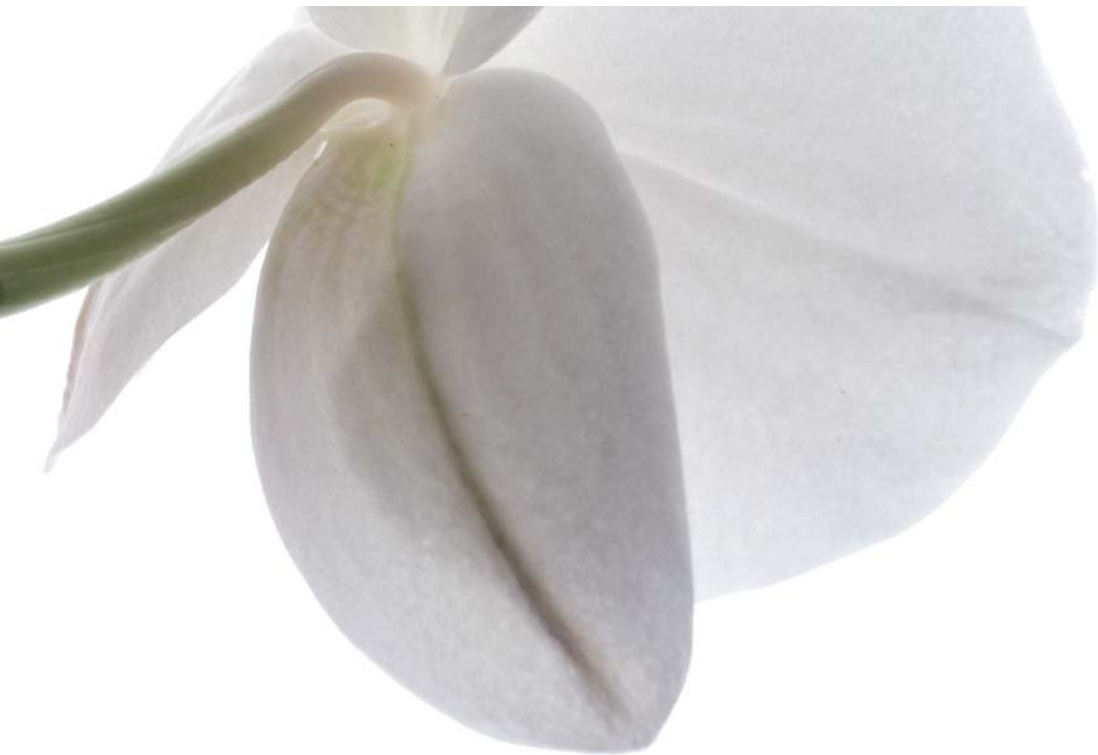




THE ADVANTAGES

- High translucency and naturalness
- Precoloured or manually personalisable with the patient's tooth colour
- No black margins
- Absolutely metal-free
- Excellent health compatibility
- Extreme solidity
- Longevity and aesthetics





AESTHETICS AND NATURALNESS

The high translucency of the zirconia, enhanced by the possibility to colour the frame structures with the individual patient's tooth colour favours the aesthetic and natural look of dental restorations. Due to the zirconia's light colour, there are no black margins in case of age-related receding gingiva, as this is frequently the case with metal restorations.

*Interior view 3-units bridge*



Metal-based dental restoration – black margins possible



Metal-free, white zirconia – no black margins



WEARING COMFORT AND CLEANLINESS



The material is free of pores which prevents the absorption of hazardous substances or microorganisms and which makes cleaning fast and easy. Moreover, the natural tooth is not abraded by zirconia, which was proven by various In-vitro studies. The material's excellent fitting as well as its very good elaboration properties assure rehabilitations comfortable to wear and good hygiene.





EXCELLENT HEALTH COMPATIBILITY

According to scientific investigations, zirconia, an absolutely metal-free material, does not cause any allergies or intolerance in the mouth thanks to its particularly high compatibility with the mucous membrane and tissues. Furthermore, it is acid-resistant and does not harm nerves, since it transfers heat and cold more slowly than dental restorations made of metal. In addition, its easy cleaning helps to prevent periodontitis.





LONGEVITY AND STABILITY

With a correct dental construction, zirconia dental restorations are an investment for life. Due to the extreme hardness and high density of the material, it withstands the highest biting force within all areas of the mouth, it does not wear off and so its colour remains unchanged.





100% ZIRCONIA

Zirconia meets all requirements of high-quality, durable dental restorations and retains the fresh and neat appearance of the natural teeth. Thanks to its stability and wear comfort, restorations from crowns to full-arch bridges can be produced.

Endow yourself and your loved ones with a carefree smile!



# FACTS AND POSSIBILITIES

## *General*

### **What is zirconia?**

Zirconium dioxide ( $ZrO_2$ ), commonly known as zirconia, is a high-performance ceramic, non-metallic and inorganic material. It is a compound of the element zirconium (Zr), and is mainly obtained from the mineral called zircon ( $ZrSiO_4$ ), which can be found in nature. Since the mid 90's it is used in prosthetic dentistry as it is a material for any kind of dental restoration, from single crowns up to 14-unit bridges.

### **Not all zirconia is equal – Zirconia from Zirkonzahn**

In the Zirkonzahn headquarters, amidst the South Tyrolean Alps, zirconia powder is refined by means of a special procedure and pressed into blanks. Out of the still “soft” zirconia blank, the dental restoration is milled in the desired form at the dental laboratory and then burnt in a sintering furnace at 1500 °C or 1600 °C. Only by this combustion procedure, zirconia attains its final hardness and resistance. The purity of the material is crucial for its solidity and biocompatibility. The high-quality raw material is characterized by exceptional flexural strength, hardness and constant dimensional properties. A constant shrinking value during combustion is the basis of both the highest fit precision and comfort.



Zirkonzahn manufactures zirconia with different translucency characteristics, like: ICE Zirkon Translucent for layering with ceramics, Prettau® Zirconia especially suitable for large and stable restorations and Prettau® Anterior® for very aesthetic jobs. There is no need to layer Prettau® Zirconia restorations with ceramics, which prevents ceramic chipping.

*Zirkonzahn Headquarters in Gais, South Tyrol*



# FACTS AND POSSIBILITIES

## *Which types of dental restorations exist?*

*Dental prosthesis*, colloquially known as “false teeth”, are generally used to improve or re-establish the appearance, the language or the chewing function after the loss of one or several teeth. A distinction is made between removable and fixed dental prosthesis. It is also possible to combine these two types.

A *fixed dental prosthesis*, which is firmly embodied in the mouth, best corresponds to the natural “feeling in the mouth”, since the chewing and speech function can be reconstructed almost completely. Usually, the patient quickly gets used to cemented restorations and does not consider them foreign objects. Crowns, bridges and implant restorations are fixed dental rehabilitations.

With the help of a *crown*, destroyed tooth areas which can no longer be provided with a filling, are entirely (full crown) or partially (partial crown) reconstructed. To be able to attach a crown to a damaged tooth and to provide enough space for the crown, the dentist grinds the tooth.

A *bridge* replaces one or more teeth and is fastened to neighbouring teeth. If a fixed dental restoration can not be inserted into the patient's mouth for different reasons (e.g. neighbouring teeth are too weak or too damaged), then one should resort to a removable prosthesis in the form of partial or full denture. Partial prostheses can be supported by the teeth still existing in the mouth, full prostheses on the other hand are used for edentulous cases.

An *implant* is screwed into the jaw bone, serving as artificial tooth root. It has to firmly grow together with the bone and can then, like a dowel in the wall, act as anchoring for crowns and bridges.

# FACTS AND POSSIBILITIES

## *Which materials are used for dental restorations?*

### *Amalgam:*

Amalgam is an alloy made of mercury and other metals and is used as a filling material only after the caries is removed from the damaged tooth. Due to the mercury content, allergic reactions can arise.

### *Precious metal alloys:*

The most common variants are gold-platinum or palladium alloys. Precious metal is very compatible, extremely long-lasting and resistant in the patient's mouth unlike other materials (acids or saliva). However, it is heat and cold conducting and can therefore lead to sensitivity reactions.

### *Non-precious metal alloy:*

Cobalt-based or nickel-based alloys are used in particular in the field of removable dental prosthesis. Allergic reactions to these alloy components are possible.

## ***Ceramics:***

Ceramics have many positive characteristics such as biocompatibility and natural appearance and are thus perfectly suitable for dental prostheses, veneers and inlays. Zirconia is a high performance ceramic with many applications in dental technology. It can be used monolithically and in combination with other materials like titanium, e.g. for bars.

## ***Composite:***

Composite is mainly used as a material for dental fillings. This soft material is not particularly resistant and discolorations can occur.

## ***Resin:***

Due to their properties, resins are mainly employed for short and long-term temporaries. In addition, transparent or highly flexible resins are also used in splint therapy.



# BEFORE - AFTERWARDS

Due to an accident, the patient's teeth chipped. She wanted a radiant, bright and authentic dental prosthesis. This was achieved by using zirconia.

*Nely, 36 – Mexico City, Mexico*



*MDT Eladio González. Fusión Taller Dental – Cuernavaca, Mexico*

One of the advantages of zirconia is that no black margins are visible in case of receding gingiva. On the contrary, this can occur with a traditional metal dental prosthesis.

*Maria, 38 – Milan, Italy*



*Antonio Lazetera Dental Laboratory – Savona, Italy  
Dr. Giampaolo Folegatti Dental Practice – Milan, Italy*

# Zirkonzahn®



## 100% WHITE – 100% ZIRCONIA

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*All information is subject to change. Errors and omissions excepted. Version: 28/10/2017*

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