A recurring issue in our professional circles is the question whether solid, full-contour zirconia crowns are at all indicated in the view of aesthetics, abrasion characteristics, compatibility and strength.

Can we recommend them to our patients?

Prettau Zirconia

Zirconium is one of the oldest and most abundant elements in the terrestrial crust and it is the basis for Zirconium oxide (yttrium stabilized Zirconium dioxide). This first-class performance material was successfully used for artificial limbs and joints in the medical field in the last decades and now it is also available to the dental industry.

Due to its excellent biological characteristics, Zirconium is nowadays the preferred material for dental restorations. It's use in the dental field is on the increase since the 1990s. It is assumed that 15,000 to 20,000 units are made in zirconium every day. Laboratory tests revealed that zirconium bridges and metal ceramic bridges on the basis of precious metal alloy show the same fracture resistance. Due to its excellent health-friendly characteristics, zirconia is nowadays the preferred material of modern dental restorations among dental ceramic materials available today.

What is Zirconia?

• Zircon ($ZrSiO_4$) is a mineral belonging to the mineral class of Silicates, discovered in 1789 by M.H. Klaproth.

• Zirconium dioxide (ZrO_2) is a compound of the element zirconium occurring in nature and has already been used for 10-15 years in prosthetic dentistry due mainly to it's high bending strength.

Why Zirconia?

- **Zirconia has a high resistance and is fully biocompatible.**
- **It is increasingly used in dentistry (posts, crowns, bridges and implants).**
- **The white basic color of Zirconia.**
- **The possibility in dentin colors.**
- **Its biotechnological characteristics enable the production of biocompatible, high-quality and esthetic dental and implant reconstructions.**
- **Sintered Prettau Zirconia displays incredible density and smoothness. Therefore the material does not cause any wear on natural dentition.**

• *By contrast veneer porcelain (or even metal) will cause wear on natural dentition due to its highly porous structure which acts like sandpaper.*

SK Dental Lab, Inc.

Commitment To Excellence

Especially in the field of implant dentistry, in cases of limited available space or restorations with tissue flanges, Prettau Zirconia comes into a world of its own. One of the many advantages is the complete elimination of posterior occlusal chipping because only the labial or buccal surfaces are porcelain veneered; all functional areas are maintained as solid Prettau zirconia.

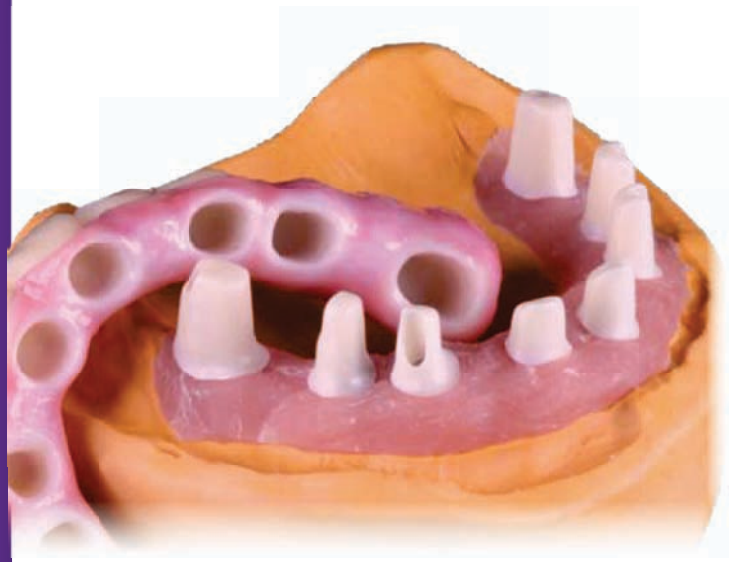
Q: Will there be "extra load" on the mandible joints?

A: The joints' surfaces are "padded" by the disc which acts as a shock absorber. The hardness of a restoration bears no influence on the joints.

Q: How durable is the Prettau Zirconia?

A: The flexural strength of Prettau Zirconia lays 10% below regular zirconia but this shortfall is more than compensated for by the extra frame dimension (full contour!)

- ***High translucency***
- ***No black margins***
- ***Absolutely metal-free***
- ***Excellent health compatibility***
- ***Extreme solidity***
- ***Longevity***



Individual Abutments

Individual abutments offer the ease of quickly and effortlessly making repairs and adjustments without disassembling the restoration and completely removing the appliance from the patient. This technique is a leap ahead from the one-piece full-anatomical contour that has been standard for full arch implant restorations.

Milling

Prettau Zirconia can be full-anatomical contour milled using MAD/MAM technology. After checking the verification jig the prototype is prepped in individual abutments. We then scan each abutment to create individual zirconia copings and apply high quality porcelain. The copings are then ready for individual cementation to the substructure.

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