



LTS-BASE®
BY ABUTMENTS4LIFE.DE



ABUTMENTS 4 LIFE
LongTermStable-Base

Our philosophy

As safe and simple as possible.

On the following pages we want to introduce a complete concept of angulated hybrid abutments and of a revolutionary screw being unique in its kind.

Our aim was to develop the world's best components for implants giving the implantologist an economical and easy in practice usable concept.

A development taken from practice for the use in practice

Inaccurate impression taking on implant level should be omitted as well as two to three treatments. Thus aesthetics and soft tissue stability realized by means of the hitherto available abutments should significantly be improved.

Aesthetics & Functionality

The result of our development is the LTS-BASE®. LTS stands for Long-Term-Stable Base. It is the long-term adhesive abutment – both in aesthetic and in mechanical respect. Through the angulated screw access channel additional space is gained for the ceramic veneering in the buccal region. The big screw head of previous adhesive abutments was placed into the tool and shaped into a socket spanner.

As very often an adaption to the patient's anatomy is necessary, a cut-off has to be considered in which parts of the adhesive abutments have to be removed. We solved this problem with the help of our backpacker that reinforces in form of a groove-shoulder attachment. This also leads to a significant reduction of the fracture risks of the ceramic body. Additionally, it may take occlusal forces, offers a better support and reduces the risk of fracture of restorations.

Mechanical and Biological Long-term-Stability

Long-term-stability may also biologically be improved. The titanium nitride coated surface of the LTS-BASE® has an antibacterial effect, and she has an adhesive area especially adapted to the grain-size of genuine adhesive composites making sandblasting totally redundant. Not speaking of the improved aesthetics by the warm colour.

Innovative horizontal macroretentions are fitted to a bone structure-conform adhesive's basal surface as it is required in recent studies. They offer further possibilities for soft tissue to adhere and thus prevent gingival recession without increasing the risk of bacterial contamination.

Comparison of Backpacker and Standards



LTS-BASE®

6 basic shapes suitable for all teeth

LTS hybrid adhesive base for the premolar area – and against orally at 11° angulated screw access channel and two stabilizing grooves. The adhesive surface is 5 mm high and may be securely bevelled up to 40°.

Microretentions for adhesive surface – Macroretentions for soft tissue complex, Titanium nitride -coatings and the opportunity of fitting a lateral screw.



LTS hybrid adhesive base for the molar region and against orally at 11° angulated screw access. This is designed for the provision of wider gaps at a reduced number of implants and if the available bone material is insufficient. A lateral screw may be fitted. The angulation facilitates the screw access channel to come right in the middle below the fissure.

LTS hybrid adhesive base developed especially for the front tooth region considering an emergence profile at palatal implant position. She shows the above mentioned characteristics.

The screw access channel is displaced palatally. For this reason the incisal edge is not broken through and the risk of a ceramic crown to break is considerably reduced.



Mesially/distally angulated or straight

LTS hybrid adhesive base for the premolar and molar region – mesially or distally angulated

This adhesive base is always then used if an implant could not be placed in the middle underneath a tooth or if two implants were placed too close together. It balances discrepancies at the saggital plane and it facilitates the use of abutments with thicker walls which results in an improved aesthetics.



Upper right and lower left quadrant



Upper left and lower right quadrant

LTS XL adhesive base for hybrid abutments without angulation but with an improved inner geometry and changed anti-rotation protection.

The forces acting in the adhesive base could be reduced to values significantly below the yield strength of titanium by the use of conical screw design. This makes it different to comparable products. It is available for different gingival heights.



Prefabricated or individual adhesive bodies

For the geometries of LTS adhesive bases libraries were created that can be incorporated into nearly all available software systems. There are no more barriers for the design of individual abutments.

All LTS-BASE® radii are designed in such a way that adhesive bodies may be prepared on almost every CAD machining center and with available CAM modules. Milling cutters smaller than Ø 1mm are not needed.

Prefabricated adhesive bodies

Clinical experience has shown a frequent similarity in the design of individual abutments with regard to their place of use. This resulted in the development of adhesive bodies that are at disposal, either virtually standardised in libraries or prefabricated. They are made of a tooth-like cuttable high-performance ceramics having a high translucency. They are available in different colours for front and lateral teeth. Wall thickness is optimized to load and aesthetics and the ceramic producers' parameters are also taken into consideration.



The shape of adhesive base and adhesive bodies is designed in such a way that they may be used for different gingival heights. Every adhesive base has two adhesive bodies in two sizes. They can easily intra-orally be ground by means of a turbine or handpiece and red diamond using water cooling.



Hybrid abutments: „best of 2 worlds“

The LTS hybrid abutments incorporate the positive attributes of a titanium abutment with regard to the implant-abutment connection's tightness and stability and the aesthetics of a full ceramic abutment but do not have the disadvantages of an increased fracture risk. In close consultation with the manufacturers of abutment adhesives we developed the innovative adhesive surface for the adhesive body. There is no sandblasting necessary before bonding. Thus the TiN coating is remained and contamination does not come into existence.



Organic Compatibility

The development of the emergence profile is based on 20 years of clinical experience. It is adapted to the bone structure and considers the biological diversity. The titanium nitride (TiN) coating reduces bacterial deposition. Recent clinical studies have indicated that a too smooth basal surface of the abutment favours bacterial infiltration towards the implant. Therefore, polishing should definitely be avoided. In basal region the LTS-BASE® is equipped with a unique wave profile preventing bacterial infiltration and offering the soft tissue complex macroreten-

tions to adhere but without increasing the risk of pathogenic germs to adhere. This may result from basal surface expansion through laser techniques and is known from infected implant surfaces.

Efficiency & Profitability for Implantologists: One Abutment – One time

Advanced implant systems have with their improved surfaces a significantly higher primary stability and thus a reduced healing-in time.

By means of an ergonomic torque ratchet the fitting torque of the implant during insertion may exactly be measured and may directly be read. If a good primary stability is achieved - the fitting torque of the implant exceeds the initial torque of the abutment screw (approx. 25-30 Ncm) – the implants may early be loaded, and nothing opposes both transgingival healing in and temporary provision of the abutment in infra occlusion. Open healing is known and tested in many one-piece systems. The bone quality of



the surrounding bone is significantly better than with a closed and unloaded healing. (Microstrains)

Abutments4life supplies together with the LTS-BASE® and prefabricated, easy to grind abutment bodies all components necessary for a non-functional immediate restoration. The implantologically operating dentist may immediately implant the final hybrid abutment instead of using the cover screw. Thus the soft tissue has the same amount of time for healing as the implant has for osseointegration. There is no need to remove the hybrid abutment. Like a natural tooth it may be ground and impressed intra-orally.

Appointments for implant uncoverings, follow-up treatments and replacing secondary components are no longer necessary. This means less pain- and stressful treatments for the patient and also enormous savings of cost and time.

Certainly, the dentist has the option with implantations in newly restored bone or with lower primary stability to undergo a conservative procedure of closed healing or an open transgingival healing with healing cap. Shape-identical healing caps and impression posts are available in different versions for the dentist.



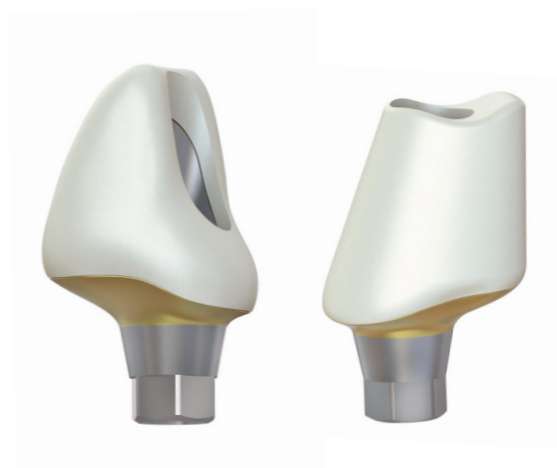
Shape Congruency Throughout

Healing caps are required in situations of first closed healing of the implant or in situations of open transgingival healing (fitting torque of the implant at 20 to 30 Ncm). Abutments4life offers several shape-identical series of healing caps, impression posts and adhesive bases provided with an anatomic emergence profile. Also in this field we did pioneering work and developed the Push-Papilla-Design: Healing cap and abutment differ slightly in the interdental region: The healing cap should provide the soft tissue with sufficient space for healing in the interdental region and is therefore fitted with a concave flank. If it is replaced by the final abutment, the papilla is then pushed laterally and coronally in the interdental region to support the forming of a papilla.



Healing caps are available in two different versions:

There is a one-piece reasonable variant having a straight channel made of highly molecular, organically compatible PMMA. It belongs to the group of thermoplastics and does not contain residual monomer. Therefore, plaque deposition is very low. In the two-piece variant the adhesive body, of the same material, is adhered to the adhesive base. In this variant the advantages of the angulated screw access channel come into effect.

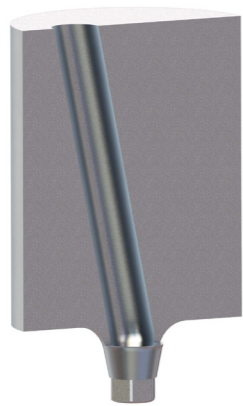


The impression posts developed are prepared for splinting with orthodontic wire and use the advantages of our screw head making an angulation towards the implant axis possible. While screwing and unscrewing of the impression post screw there are less interferences to the opposing jaw.

System Accessories

Scanbody and Laboratory Analogues

Abutments4life offers you a complete product range of high-quality accessory parts in which every component was re-developed. For example, the scanbody was developed in cooperation with the manufacturers of the digitizers. It is especially slim, reflection-optimized and has marks enabling the user to do a better matching.



Milling blanks with angulated screw access channel

Abutments4life supplies commercial customers having appropriate hardware equipment with milling blankets with angulated screw access channel of best material quality.

Upon request we produce clamps especially for your system.

Scientific Documents

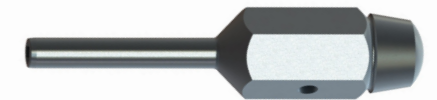
Numerous estimations by means of the finite element method (FEM/FEA) and various load tests have immensely influenced design of the LTS-BASE® and its screw.

During this project we received a lot of input from various universities. Results of scientific investigations from recent clinical studies - some of them still unpublished – are also included.

We are very grateful to all who have supported us in this project.

System Compatibility

Our wrench sockets and drivers ISO shaft for angled handpieces are standardised and may be used in almost every common system.



We have already designed our products for all common systems.

Contact

www.abutments4life.de



Dr. Bruno Spindler

Dentist

Industriestrasse 2 - 4
77728 Oppenau
+49 7804/91 0909

webmaster@zahnarzt-spindler.de
bspindler@fraeszentrum-ortenau.de



Curd Gadau

Master Dental Technician

Ludwigstraße 3
63739 Aschaffenburg
+49 170 5259437

curd@gadau-consulting.com
www.gadau-consulting.com

ABUTMENTS 4 LIFE

Industriestrasse 2 - 4 · 77728 Oppenau

Telefon +49 7804/91 0909 · info@abutments4life.de · www.abutments4life.de