Patient information

bone & tissue regeneration

botiss biomaterials

Socket preservation

Safeguarding bone volume and gum tissue

protection

stabilization

preservation

Bone – a living tissue

Reduced ridge dimensions following tooth extraction

Due to their hardness, bones are commonly considered as solid, static structures. On the contrary, our bones are flexible, dynamic tissues that are constantly subject to change. When teeth are healthy, they transmit pressure onto the jaw during chewing. This mechanical force acts as a stimulus for the maintenance and preservation of the bone. After tooth extraction, however, the lack of this stimulus causes a continuous degradation of the jaw bone.

Immediately following tooth extraction, the socket fills with blood and a clot develops. Over the next coming weeks the socket heals and new bone starts to form. However, unless stimulated by chewing pressure, the newly formed bone, as well as the pre-existing bone decrease in their dimensions. As a consequence, the gum tissue collapses, thus additionally affecting the aesthetics of the region.

Blood vessel and nerve supply in the healthy tooth

Why socket preservation?

Maintenance of jaw bone and gum tissue following tooth extraction

"Socket preservation" refers to procedures that aim to preserve the natural bone volume and gum structure after tooth extraction. Typically, a biomaterial or scaffold is applied immediately after tooth removal to prevent naturally occurring bone loss and gum deformation.

If implant placement is planned, socket preservation may avoid surgical reconstruction of your jaw, reducing treatment time and costs. Additionally, when a conventional bridge restoration is planned, socket preservation ensures an aesthetic outcome by maintaining the ridge dimensions and hence the natural profile of your gum.

Bone preserving measures support the aesthetics and long-term success of prosthetic restoration. The portfolio of botiss biomaterials includes a wide range of biomaterials with different characteristics. The material of choice will be determined by your doctor, to fit the individual needs of your clinical situation.

Situation prior to tooth extraction

Bone resorption and soft tissue collapse following natural healing (without socket preservation)

Maintained ridge dimensions following socket preservation

Stabilizing the socket with collacone®

Healing support after tooth extraction

Following tooth extraction, a blood clot forms in the “empty” tooth socket. This clot attracts bone forming cells and promotes the ingrowth of blood vessels. Through the interaction of different cell types and signaling molecules, a preliminary tissue forms, which eventually transforms into new bone.

Application of collacone®, a cone-shaped collagen sponge, promotes blood clotting and stabilizes the clot within the socket, thereby supporting the natural healing and bone regeneration. Due to the fast natural resorption of collacone®, implant placement into the newly healed tooth socket is possible.

collacone® is manufactured from collagen of animal origin. The selected type of collagen is very similar to human collagen, and therefore has a high biocompatibility. A controlled multi-step cleaning process ensures the purity and safety of the product.

What is collagen?

Collagen is a family of fibrous proteins, which account for about 30% of the total protein content within the human body. Collagen is an essential component of bones, cartilage and connective tissues.

collacone® may be easily inserted into the socket; It immediately absorbs blood like a sponge and naturally promotes socket healing

Socket sealing with mucoderm®

Protection of your alveolar sockets

Another method for promoting the healing of extraction sockets is the covering of the tooth socket with tissue from the palate, or animal derived collagen matrices. A particular benefit of this technique is the preservation of the gum contour and volume, which is of significant importance to the aesthetic outcome of the front teeth area.

mucoderm® is a collagen matrix that is sutured to the surrounding gum

Your own oral mucosa may be harvested from the palate and used to cover the tooth socket. An alternative solution, which saves you the discomfort of tissue harvesting, is the use of mucoderm®, a native collagen matrix of animal origin. The complex multi-step cleaning process ensures the purity and safety of mucoderm®.

Because of its natural biologic origin, mucoderm® is well tolerated by the body and safeguards the socket from entry of food and bacteria, while the surrounding gum is stabilized.

The application of mucoderm® reduces post-operative discomfort by avoiding harvesting of palatal tissue.

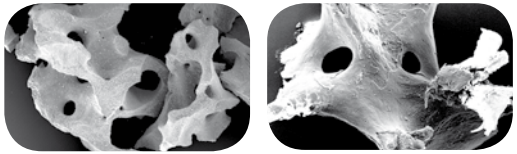
Socket preservation using bone substitutes

In the case of conventional bridge restoration, or if implant placement is not planned, bone grafting procedures are crucial to maintain bone and soft tissue stability.

Granules of the cerabone® bone graft

cerabone® is a bovine bone graft that ensures a long-term volume stability. The material is derived from the femoral heads of cattle, which are processed by a high temperature treatment (>1200°C) that removes organic components and eliminates the risk of bacterial/viral contamination. Owing to its close structural resemblance to human bone, cerabone® integrates into the body's own bone tissue, where it maintains stability and permanent support.

Depending on the specific indication and biologic situation, alternative bone graft materials may be of interest. As an alternative the fully synthetic bone graft maxresorb® as well as the allogeneic bone graft maxgraft® may be applied. The maxgraft® bone graft originates from human donors in countries that incorporated the European directive into their national law (e.g. Germany, Austria, Switzerland). This directive defines the quality standards for the donation, procurement and testing of tissues of human origin. The safety of the final product is warranted by a strict selection of donors and a certified production process. The maxgraft® bone graft has a very good biologic potential due to its close resemblance to your own bone.



The porous structure of cerabone® (left handside) shows a strong resemblance to that of human bone (right handside)

Safeguarding your sockets with collacone® max

collacone® max is an innovative cone, specifically developed for socket preservation. The cone is composed of synthetic maxresorb® granules, which are embedded within a collagen sponge. collacone® max supports bone formation by providing a scaffold for cell and blood vessel ingrowth.

collacone® max maintains the volume of the socket and promotes bone regeneration

collacone® max is easily inserted into the extraction socket owing to its cone-like shape. After application, it saturates with blood and acts as a stable scaffold for the blood clot, thus promoting the formation of new bone.

collacone® max operates in two ways during bone regeneration: its volume maintains the natural shape of the socket and prevents collapse of the gum, its dual composition of collagen and bone graft is similar to that of natural bone. While collagen helps to control the bleeding and attracts cells, the bone graft confers temporary stability and acts as a scaffold for cells and vessels thus promoting new bone formation.

soft tissue

education

hard tissue

bone & tissue regeneration

botiss biomaterials

Innovation.
Regeneration.
Aesthetics.

Your attending dentist will advise you on the properties and advantages of the presented products.

This patient information was presented by:

botiss biomaterials GmbH
Hauptstr. 28
15806 Zossen / Germany

Tel.: +49 33769 / 88 41 985
Fax: +49 33769 / 88 41 986

contact@botiss.com
www.botiss.com
www.facebook.com/botissdental

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