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Patient Information





"Dear Patient,"

Healthy and nice teeth, and thus a beautiful smile, have a huge impact on your whole life. Well-being, confidence, contact with people, these are just some areas of your life, which is affected by the quality and appearance of the teeth. This document will provide general information about regenerative treatments available from your dentist.

Many dental procedures, such as implant placement, require enough size and shape for optimal results. Sufficient jawbone provides an ideal support for clinical treatment plan success.

Only a trained clinician can determine the best treatment plan. Feel free to ask your clinician to explain the benefits and risks to decide if bone regeneration is the right treatment for you and which material is right for you.

Bone grafts provide a framework in areas of missing bone where your own cells can start the rebuilding process. Through this biological activity, over time, a bone graft will be remodeled into the healthy, functioning bone.

At Purgo Biologics, we are committed to providing high-quality biomaterials that were already evaluated in several international sutdies.

Our medical devices solutions comply with the applicate market requirements for safety and performance as confirmed by international and national regulatory organizations.

PurgoBiologics Inc. President

Kang Ho Chang

Dentistry

The profession of science dealing with the prevention and treatment of diseases and malformations of the teeth, gums, and oral cavity, and the removal, correction, and replacement of decayed, damaged or lost parts, including such operations as the filling and crowning of teeth, the straightening of teeth, and the construction of artificial dentures.

WHAT ARE THE CAUSES BEHIND THE DENTAL BONE LOSS?

The jawbone is an essential part of the face. It proviedes support to your facial features and allows you to speak and chew properly. Bone loss in the jaw can affect numerous other aspects of your oral and overall health. Jawbone loss can stem from several causes. While the most common causes are tooth loss and gum disease, a range of other issues can lead to tissue loss in your jaw. For example, smoking can affect the density of the bone in all areas of the body, including the jaw.

Jawbone tissue loss can affect your appearance as well as your oral health. Significant jawbone loss can alter your facial features in several ways. If not treated for a long time period, jawbone loss can lead to facial collapse.

A well-known, effective method to resotre jawbone tissue is bone grafting procedures. During this procedure, your dentist or surgeon replaces lost tissue with grafting material. Over a few months, your body absorbs the bone graft material and replaces it with healthy, natural tissue, restoring the density and volume of your jaw.

Periodontopathic

Median of periodontal disease;

Mainly gingivitis; at a later stage, in addition to the gums, they affect the entire periodontium, until the edge of the gum decreases, and the teeth lose, even to lose them.

Children and adolescents have plaque-related gingivitis and chronic periodontitis (so-called periodontitis) in adults.

When is bone reconstruction necessary?

Periodontal Disease

Tooth

Gum

Bone

Chronic infection in the gum tissue, known as periodontal disease, affects tooth-supporting sturctures, such as the alveolar bone and other ligaments.

In advanced stages, the bacteria associated with periodontal disease begins to eat away at supporting gum and bone tissue, causing tooth loss and bone loss in the jaw.

Since many of the symptoms of gum disease are painless, this condition often goes unnoticed for long periods of time. When periodontal disease is left untreated, it can cause serious damage to the strength and stability of your jaw.

Dental implant

A dental implant, alos known as an endosseous implant or fixture, is a medical device that interfaces with your jawbone to support a dental prosthesis, such as a bridge, crown, denture, or other facial prosthesises.

Through osseointegration, the implant will fuse securely to your bone, providing a strong and durable result that will last for years.



When is bone reconstruction necessary?

Implantology

Dental implant surgery is a procedure that replaces your tooths with a metal medical device. A screw-like post replaces damaged or missing teeth with artificial teeth that look and function much like real ones.

Dental implant surgery can offer a good alternative to dentures or bridgework that doesn't fit well, it offers an alternative when a lack of natural teeth roots don't allow building denture or bridgework tooth replacements. Prior to implant placement, a bone grafting procedure might be needed if your jawbone isn't thick enough or is too soft. A bone graft can create more solid support for the implant.

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Dental prosthesis

A dental prosthesis is an artificial replacement for one or more natural teeth or part of a tooth, or associated structures, ranging from a portion of a tooth to a complete denture. (prosthetic crowns, bridges, implants, plate and embedded teeth with braces on it).

When is bone reconstruction necessary?

Tooth removal

Extractions are needed when a tooth is badly decayed, damaged, infected or has experienced trauma and cannot be repaired through a restorative procedure. A severely decayed tooth can lead to infection risk that can spread to other teeth that's why it is very often recommended to remove it. It is also recommended to remove a tooth that has experienced extreme trauma or damage.

Following a tooth extraction, to prevent bone loss of your jaw, it is recommended to have bone grafting procedure.

Specifically. it is an alveolar ridge(along with periodontal tissue) that will shrink down in the months and years following tooth extraction. Getting a bone graft right after tooth extraction can often (but not always) avert the need for bone grafting just before dental implant surgery.

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✓ THE Graft[™]

Collagen barrier

membrane

Atrophy Disappearance

Gradual atrophy of tissue, bones of the jaw or mandible, due to tooth or tooth loss.

When is bone reconstruction necessary?

Bone loss

After tooth extraction, the jawbone is not naturally stimulated and has a natural tendency to resorb or shrink.(ridge atrophy)

Overtime significant bone loss can occur, resulting in a very deficient and thinned ridge.

Bone loss can compromise the ability to place a dental implat to replace the missing tooth.

To successfully complete implant placement, the dental implant needs to be properly integrated into the host bone. This requires bone graft procedure to achieve the adequate height and volume of alveolar bone.

Major bone grafting procedures can restore original bone volume.

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Cyst

Dental cysts (also termed Periapical cyst, Radicular cyst, Odontogenic cysts) are cystic lesions arising from teeth.

They are also known as odontogenic cysts. Dental cysts are in fact the commonest of all odontogenic cysts.

Endodontics

Branch of dentistry that deals with diseases of the tooth root, dental pulp. and surrounding tissue.



When is bone reconstruction necessary?

Removal

After removing the cyst, it is sometimes necessary to fill the defect with a bone graft to restore the bone structure.

Root resection

After tooth resection when the bone defect is significant, it is recommended to fill the defect with a biomaterial.

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Penumatization of the maxillary sinus

Sinus pneumatization is a continuous physiological process that causes the paranasal sinuses to increase in volume.

When is bone reconstruction necessary?

Sinus augmentation

THE Graft[™]

Due to insufficient bone within the region, in addition to other limiting factors such as anatomical pneumatization of the maxillary sinus, bone grafting of the maxillary sinus is a common procedure used to counteract these problems.



Bone grafting material and process

Bone possesses the intrinsic capacity for regeneration as part of the repair process in response to injury, as well as during skeletal development or continuous remodeling throughout your life. However, there are cases of fracture healing in which bone regeneration is impaired. Bone grafting is a commonly performed surgical procedure to augment bone regeneration in a variety of maxillofacial procedures with biomaterials.

The bone graft material may act as a scaffolding material for the host site to lay new bone. There are many bone graft technologies that can help achieve bone remodeling and substantial differences among them. They work differently, and they are made from different materials. Designed considerations such as porosity (free of organic substance), Designed considerations such as porosity (similar to human), pore shape (micro, macro, and nanopores), purity (free of organic substance), and biocompatibility with human bone play significant roles and biocompatibility with human bone play significant roles in determining graft performance.

THE Graft[™] is a natural, porous bone mineral matrix. It is produced by the removal of all organic components from the porcine bone. Due to its natural structure the anorganic bone mineral of THE Graft[™] is similar in physical and chemical aspects of the mineralized matrix of human bones. If you filled in THE Graft[™] into a bone defect, THE Graft[™] gradually resorbs and is replaced with architecture bone during the healing process.

It is now important to ensure that the environment for bone regeneration is stable. To do this, cover the grafted site with a collagen membrane. The membrane covers the bone graft site for a period of time, and helps regenerate bones by acting as a barrier between the grafted site and soft tissues including external sources of infection or surrounding area. The shield covers the bone grafting area for a period of time to prevent penetration of external sources of infection or surrounding soft tissue to help regenerate the bone.

How is bone grafting carried out?

The following information is a guide to help you to understand what happens during a dental bone graft procedure. *



In some cases, bone grafting and simultaneous implant placement can be achieved.

* Alveolar ridge regeneration of damaged extraction sockets using deproteinized porcine versus bovine bone minerals: A randomized clinical trial. 100 patients. Clin Implant Dent Relat Res 2018 Jul 27. Epub 2018 Jul 27.



What is THE Graft biomaterial?

THE Graft[™]is a natural, mineral material for bone reconstruction. It is produced by removing all organic ingredients from the porcine bone.*

THE Graft[™]has a high similarity with the human bone. The high biocompatibility of pig-derived materials with a human has already been confirmed in other medical areas, among other cardiology.

After application, THE Graft[™] biomaterial is gradually absorbed and replaced into the newly formed bone during the healing process. THE Graft[™] is replaced into vascularized and architecture newly formed bone for long term results.**

Safe and clean

Safety and purity are the most important concern when using a biomaterial. Thanks to the highly efficient patented manufacturing process, THE Graft[™] is free from any organic components that might be potential causes of infection or immune reaction.*

This unique process preserves most of the physical properties of the native porcine osseous structure of THE Graft[™].

THE Graft[™] has established its fame throughout the world, both scientifically and clinically, becoming the favorite bone regeneration material.

** Alveolar ridge regeneration of damaged extraction sockets using deproteinized porcine versus bovine bone minerals: A randomized clinical trial. 100 patients. Clin Implant Dent Relat Res 2018 Jul 27. Epub 2018 Jul 27.

Is porcine bone safer than bovine bone?

THE Graft[™] demonstrated a protein content lower than that of the natural bovine bone graft material. Bovine cancellous bone is Not Free of Zoonoses, such as BSE-Bovine Spongiform Encephalopathy. Porcine bone has a relatively low risk of zoonosis.*

The Graft[™] is structurally similar to human bone. It has a high possible level of porosity combined with natural interconnectivity to enhance bone regeneration.



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* "Process development of a virally-safe dental xenograft material from porcine bones." The Korean Journal of Microbiology 52.2 (2016): 140-147.





^{*} Physicochemical characterization of porcine bone-derived grafting material and comparison with bovine xenografts for dental applications. J Periodontal Implant Sci. 2017 Dec;47(6):388-401

After Bone Grafting Procedure.

Remember that smoking and improper oral hygiene can negatively affect bone healing.

Following bone grafting procedure, sewlling may occur, which is a normal reaction of the body. Swelling may be minimized by the immediate use of ice packs. If pain occurs, use the pain medication instructed by your doctor.

Good oral hygiene is essential to achieve good healing. During the first weeks, while brushing, aviod the area around the procedure. Use an anti-bacterial fluid recommended by your doctor.

During the first days after the procedure, avoid drinking coffee, drinking alcohol and smoking. This will improve wound healing and reduce the risk of postoperative bleeding.

Observe follow-up visits, even when in your opinion the healing process is very good.

Always follow your doctor instructions.

