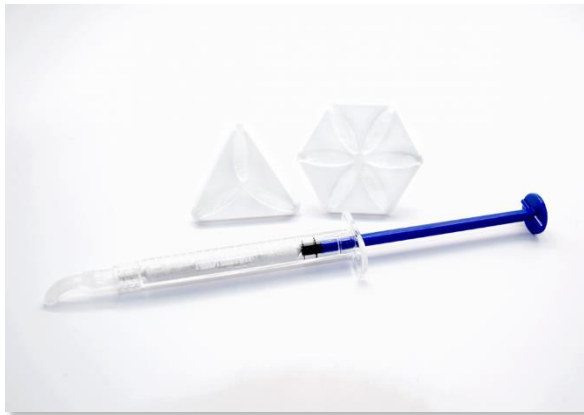


A Paradigm Shift in Bone Grafting

The Do's and Don'ts of SteinerBio Bone Graft Products

SteinerBio bone grafts were developed to be different. The goal was to stimulate mineralization, not just allow it to happen. The unique qualities built into our grafts have given us a pathway to achieving significant clinical advancements, such as our early implant placement at one month and our 3D printed ridges for ridge augmentation and implant placement in the same visit. Therefore, it is important to understand the do's and don'ts of our bone graft products in order to achieve successful bone regeneration. The purpose of this article is to guide our product users and boost implant success rates when the proper steps are followed.

SPECIFICATIONS FOR SOCKET GRAFTING



Bone graft materials used for extractions are:

[Socket Graft](#): a packable putty, used when all walls remain after extraction (graft comes in a tray)

[Socket Graft Injectable](#): a non-packable putty, used when all walls remain after extraction, inject and cover (graft comes in a syringe)

[Socket Graft Plus](#): a packable putty, used for all socket grafting situations including missing walls and small ridge augmentations (graft comes in a tray)

These bone grafts are not intended to set up after placement and should be covered immediately with a d-PTFE membrane after the sockets have been filled.

After tooth extraction, do not manipulate the socket wall other than to remove granulation tissue. The less trauma, the quicker the healing process and the less pain your patient will experience.

[\(Atraumatic Extraction Method\)](#)

Most bone graft training is based on traditional materials that heal differently. Since this is a paradigm shift in dental bone grafting, let's begin with **what not to do** when using SteinerBio bone graft products.

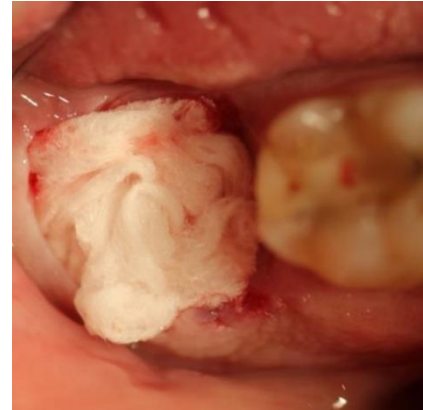


THE DON'TS

✘ Do not scrape the walls of the bone to create bleeding or to remove the periodontal ligament

Our socket graft products work best when blood is not present. To avoid “graft washout” keep the socket as dry as possible. We are targeting the cells (osteoblasts) that produce bone and live in the bone. To help stop the blood flow, place a sterile 2x2 gauze in the socket and wait for the bleeding to subside.

If the socket is profusely bleeding, wet a sterile 2x2 gauze with 1:50 lido and pack it into the socket until the bleeding subsides. Repeat this step until the bleeding is under control. Quickly apply the graft material and cover with a d-PTFE membrane (remove the membrane after 1 month). Preparing the gingiva and membrane before placing the graft helps facilitate the process. If bleeding continues during packing of the graft material, apply a dry sterile 2x2 gauze on top of the graft material and pack the material using a bone packer. After packing, cover the socket with a d-PTFE membrane and remove the membrane in one month.



If using [Socket Graft Injectable](#), follow the same steps as above, but since it is an injectable, it does not require packing. Simply fill the socket and cover with a d-PTFE and remove the membrane after 1 month. If extra graft material is available, overfill the socket and use the membrane to displace any extra graft material. This will fill any voids that may be present.

✘ Do not use animal / human membranes (including chorion amniotic membranes) or animal / human sutures

The foreign proteins in these membranes and sutures will compromise SteinerBio bone graft products.
([Sutureless Membrane technique](#))

✘ Do not mix with other products, including PRF

SteinerBio bone graft products have been formulated to an exact science that allows regenerative cells to thrive in the graft material.



THE DON'TS

✘ Do not use a laser

Photobiomodulation has been around for 50 years and has been applied to every possible human malady. If it has any positive benefits for bone regeneration, it is still debatable. We earnestly request that it not be applied to sites grafted with our graft materials.

✘ Do not use any chemicals to rinse out the socket, including antibiotics

Chemicals compromise the cells living in the bone.

✘ Do not pack hard during the application of the graft material

Our putty materials do not require hard packing like other bone graft products. Filling the socket somewhat firm and making sure all the voids are filled is most important when applying.

✘ You do not need to wait 4 to 6 months to place your implant

Due to the osteogenic properties in our bone grafts, bone regenerates more quickly than other bone grafts, giving the clinician the ability to place their implants 1 month after grafting or at membrane removal. However, if you are new to these products, we recommend waiting 3 months after grafting to place your implants. This will allow you to become familiar with the characteristics and handling of the material.

[\(1-month Implant Placement\)](#)

✘ Do not torque your implants when using SteinerBio graft materials

Evaluating implant placement via torque is worthless with SteinerBio grafts. The reason SteinerBio bone graft products do not require torque when seating the implant is because during the process of osteogenesis, as the osteoblasts are secreting osteoid, the osteoid gets placed onto the implant surface creating bone to implant integration. During the process of torquing, the bone gets damaged and the bone that produces torque will be resorbed and replaced. SteinerBio graft materials produce integration when floating the implant in graft material with no bone contact. Superior integration comes from superior osteoblast vitality, not the hardness of the bone in contact with the implant during placement.

[\(Implant Floated in Graft\)](#)



THE DO'S

✔ Practice atraumatic extractions

The less trauma caused to the socket during extraction, the quicker the healing process and the less pain and inflammation your patients will have afterwards. When you apply force to the tooth, that force is transmitted into the bone. The bone does not bend or flex when you force out a tooth- it is fracturing. Bone absorbs force via microfractures that you do not see but millions of these fractures is what allows the socket to expand and the tooth to be removed. Each of the microfractures creates an inflammatory response that results in resorption of the damaged bone and then repair of the microfracture. If the extraction is traumatic, the resorption of the microfractures can result in the loss of complete socket walls over the following weeks. When extracting a tooth, destroy the tooth but not the bone. ([Atraumatic Extraction Method](#))

✔ Only use synthetic membranes and sutures

Using animal or human products in combination with SteinerBio products will compromise the results. During the process of osteogenesis, millions of osteoblasts are proliferating and secreting osteoid throughout with an abundance of signaling and communication going on between the cells. When foreign proteins from animal or human-derived materials are used, regenerating cells come into contact with the foreign proteins. The cells will stop the bone regeneration process to attack the foreign proteins because they don't belong to the host.

✔ Remove the granulation tissue

Any granulation tissue left in the site will compromise the graft.

✔ Rinse twice with sterile saline then graft

Sterile saline significantly reduces the number of bacteria in the socket.

✔ Use systemic antibiotics

Systemic antibiotics may be used if infection is present.

✔ Use a low dose of antibiotics even when there is no infection

During the process of bone regeneration, the body needs help with healing and preventing possible infection.

Sinus Grafting Using Sinus Graft

✘ Do not create a large window to lift your membrane

Use a minimally invasive small osteotomy technique and lift the membrane hydraulically via injection of [Sinus Graft](#). Minimally invasive surgery is always superior (if a large lateral window is required, use [Ridge Graft Kit](#) to regenerate the sub-antral maxilla). After the sinus membrane is lifted, place your implants at time of lift and load them 3 months later. All SteinerBio materials have been proven to produce implant integration to the grafted site of the implants making delayed implant placement unnecessary. ([Steiner Sinus Lift](#))

✘ Don't worry about a perforated sinus membrane

If you perforate the sinus membrane, it is ok. The material will wash out the back of the patient's throat and will not stay inside the sinus membrane due to its flowable viscosity. As long as the material remains underneath the perforated sinus membrane, you can still achieve the hydraulic lift. The sinus membrane will repair itself in a matter of days. If the membrane is destroyed, remove it from the floor of the sinus and fill with Sinus Graft and place implants. The sinus membrane over the graft is not needed. Simply use the flap created for the osteotomy and close it with sutures or [Oral Bond](#) (*no sutures needed*). Immediately after the lift, place your implants and load them in 3 months.

Note: Working time to place your implants after the hydraulic lift is about 30 minutes, the graft material will set inside the dry sinus. If the material sets, use your drill set to create the desired osteotomy for implant placement in order to avoid lifting the graft material off the floor of the sinus.

BioDensification

✘ Do not manipulate the bone to cause bleeding

Follow the same principals as previously explained for grafting sockets.

Other Specifications by Product

- ✘ Do not throw away or return your implant if you get a “spinner” during implant placement

As with all of our bone graft products, [BioDensification](#) was also designed to cause integration to the implant surface. Therefore, when you remove your spinning implant, fill the osteotomy with BioDensification and replace your implant. The osteoblasts will migrate through the graft material and secrete osteoid onto the implant surface causing bone to implant integration saving your implant, having to regraft, sending your patient back home and waiting for the bone to regenerate the osteotomy site.

If the site has been previously grafted with a cadaver bone graft, the bone will never regain its vitality and you can expect poor results from any subsequent grafting procedure irrespective of the graft material used. If an implant was placed in a cadaver bone graft site and the implant is lost, all future implants will have a poor long-term prognosis. The only possible way to overcome this problem is to remove all of the sclerotic bone created by the cadaver bone graft. This requires aggressive bone removal.

Immediate Implant Placement Using Immediate Graft and BioDensification

- ✘ You do not need to place your implant using the socket of the extracted tooth as a guide if it is out of alignment

Create the osteotomy exactly at the angle you chose and fill the voids with graft material. When a large portion of the implant is not in bone, first fill the socket with BioDensification and then place your implant. Since [Immediate Graft](#) contains β TCP granules, it is not recommended to fill the apical portion of the osteotomy before placing the implant as the β TCP granules will interfere with the seating of the implant. Instead, Use BioDensification in the apical portion for filling all voids and then drive your implant into the filled osteotomy.

Use Immediate Graft, which contains β TCP granules to fill the crestal portion of the voids and cover your implant with a d-PTFE or seal the gingiva with a healing abutment or temporary crown. If primary closure is possible, a membrane is not necessary. If the defects around an immediate implant are large, simply fill the socket with BioDensification and place the implant.

- ✘ Do not manipulate the bone to cause bleeding

Follow the same principals as previously explained for grafting sockets.

Simple Ridge Augmentation Using Ridge Graft Kit

⊗ Do not mix with other bone graft materials, including PRF

⊗ Do not use chemicals if rinsing the site

Saline water is ok to use, but chemicals compromise the cells living in the bone.

⊗ Do not use animal / human membranes (including chorion amniotic membranes) or animal / human sutures

The foreign proteins in these membranes and sutures will compromise SteinerBio bone graft products.
([Sutureless Membrane technique](#))

⊗ Do not use if other bone grafts have been used in the same site if attempting to regenerate onto a previously grafted site