

# Bone Grafting Explained Materials

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## Implant

When there is adequate bone height and width and when the density of the bone is acceptable, implant placement and ensuing success is almost a foregone conclusion. However, many of our patients are deficient in bone and in order for the implant placement to be successful, we have to select a means of regenerating this missing bone. While this is not necessarily an easy task, it does have a high degree of success when carried out with skill and knowledge. This short article will exam the materials that are used in bone regeneration and some of the latest techniques for accomplishing this minor miracle.

## GRAFT MATERIALS:

### Autogenous

Bone - Generally considered the best material for bone grafting. In many implant procedures, bone for this purpose can be secured from adjacent sites, the chin, the tuberosity and occasionally from the hip or other areas of the body.

Allografts - They are derived from genetically unrelated members of the same species. This is generally Cadaver bone which has been specifically prepared for this purpose, Freeze dried cortical bone is in this category.

Xenografts - Bone derived from other species such as cows. Bio-Oss (Osteohealth - Shirley, NY) is a popular one at this time. These materials generally work via either Osteoconduction, the formation of new bone from host cells along a framework of a compatible alloplast, or biological material, or Osteoinduction, the formation of new bone from the biomechanically differentiation of the host mesenchymal cells. Bone Morphogenic Protein (BMP) is the material that will stimulate osteoinduction and the research that is currently ongoing gives us great hope of being able to use BMP to predictably and very rapidly induce the growth of bone just about anywhere we want it.

### Barrier

Membranes - In addition to the grafting materials and BMP, membranes are very often used to guide the generation of new bone. When there is a defect in bone, there is a competition between the bone cells and the epithelial and connective tissue cells to fill up the defect. If left alone, bone usually looses. The membrane allows the bone to win by blocking out the epithelial cells and the connective tissue cells from the site.

### Graft Material

### Membrane

### Healing