Shaping the Future of Bone Repair

Opteform®

Exactech®

Opteform® is Shaping the Future of Bone Repair

Opteform's clinical effectiveness, convenience and economic advantages are meeting the needs of surgeons, operating room personnel and hospital administrators. With clinically proven results in more than 40 indications, Opteform is the natural choice for biological bone repair.

Constituents

Opteform is a composite graft that contains demineralized bone matrix (DBM) which, through osteoinductive potential, provides for osteogenesis.[1] It also features an inert biological carrier which retains the bone constituents at the healing site.

Additionally, Opteform contains an optimal amount of cortical cancellous bone chips—100 percent densely packed by volume—to yield for osteoconductivity.[3] The chips are precisely sized and shaped to provide a porous conductive lattice for bone cell migration and has the potential for early and complete vascularization.

Opteform is a DBM-based allograft that offers the flexibility of a dry material for a wide range of mixing options and applications. Its composition is science-based to create a graft with osteoinductive* bone forming potential.[1,2] With cortical cancellous bone chips, Opteform also provides for osteoconductivity.

Confidence

Surgeons and patients can rely on the quality and safety of the allograft constituents. Opteform undergoes a viral inactivation step and then is terminally sterilized using gamma irradiation under carefully controlled conditions to maintain the DBM's biological integrity.

The osteoinductive potential of our DBM is verified using the Urist athymic nude animal model* that has been the standard for more than 40 years. Only DBM material that is demonstrated by its histology to be osteoinductive is used to produce Opteform.

The yield of calcium from explanted ossicles was scientifically studied to ensure Opteform was designed to deliver the optimal concentration of DBM for maximum new bone formation.[5]

Convenience

True to its name, Opteform may be molded to any shape. At body temperature, this material becomes a resilient solid and stays in place even when bulb lavaged. The gelatin carrier keeps the graft in place facilitating bone growth during the healing process.[5] It also maintains biological integrity while stored at room temperature.[4]

Cost-effective

Opteform's broad scope of clinical applications* offers hospitals a single source supplier, simplifying purchasing and inventory management. Additionally, surgery time and hospital stays are reduced as a result of the elimination of the autograft collection and the need to mix or grind bone. Opteform's performance, matched with Exactech's service, saves time and money for surgeons, hospitals and patients.

Osteoinductivity, Osteoconductivity, Osteogenesis

The body's ability to grow new bone is dependent on three key factors: osteoinductivity, osteoconductivity and osteogenesis. Put the science of bone healing at your fingertips with clinically proven constituents and mixing options.

Demineralized Bone Matrix for Osteoinductivity[1]

Osteoinductivity is the stem cells' ability to differentiate into osteoblasts through stimulation by local growth factors. Demineralizing the bone exposes the organic cascade of growth factors. These growth factors or Bone Morphogenic Proteins (BMPs) are the signaling molecules required for the transformation, development and homeostasis of new bone formation.

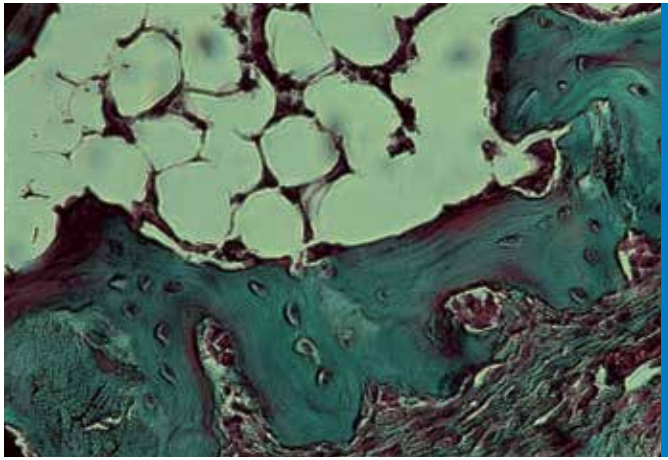
Cortical Cancellous Bone Chips for Osteoconductivity[3]

Osteoconductive properties are determined by the presence of a scaffold that allows for vascular and cellular migration, attachment and distribution. The optimal composite graft will provide stronger, quicker bone healing when an effective osteoconductive scaffold is present.[6] This porous lattice is a crucial vehicle for housing osteogenic cells and osteoinductive growth factors at the healing site.

Mix With Blood for Osteogenesis[1]

Osteogenesis—the ability to produce new bone—is determined by the presence of osteoprogenitor cells and precursor cells in the area. Osteoprogenitor cells also are found in bone marrow aspirate and autogenous bone graft.

**Finished allograft induced bone formation when implanted in a Urist athymic nude rat assay. Findings from an animal model are not necessarily predictive of human clinical results.*



Opteform

- Osteoinductive potential[1]
- Osteoconductive[3]
- Osteogenic[1], when mixed with blood
- Easy to mold
- Becomes a resilient solid at body temperature
- Non-water soluble; won't wash away
- Terminally sterilized
- Every lot tested for quality and safety

Surgeons Have Chosen Opteform for a Wide Variety of Bone Repair Applications.*

Opteform is indicated:

- For bony voids or gaps that are not intrinsic to the stability of the bone structure
- To be packed into bony voids or gaps of the skeletal system (e.g., the extremities, spine and pelvis). These defects may be surgically created osseous defects or osseous defects created from traumatic injury to the bone
- To provide a bone void filler that resorbs and is replaced with bone during the healing process.

Oncology
Giant Cell Tumors • Bone Cysts • Benign and Malignant Tumors

Total Joint
Acetabular Impaction Grafting • Sloof Technique • Ring/Cage Revisions • Fractures • Contained and Uncontained Defects • Osteotomies • Revisions Osteolytic Defects • Trochanteric Fractures • Non-unions • Joint Fusion • Condular Defects • Proximal Tibial Defects • Avascular Necrosis • Iliac Crest Graft Backfill • On-lay with Femoral Struts

AVN
Calcaneous • Talus • Femoral Head

Sports Medicine
Wedge Opening HTO • ACL/PCL Reconstructions

Foot and Ankle
Talus and Calcaneal Fractures • Joint Fusion • Lis Frank Procedures • Pilon Fractures • Osteotomies: Opening and Closing Wedge, Translational • Primary and Revision Arthrodesis: Pan Taylor, Ankle, Triple, Double, Isolated Hindfoot, Forefoot, Midfoot

Hand
Osteotomies: Opening and Closing Wedge, Translational • Joint Fusion • Distal Radius and Scaffold Fractures • Non-unions

Upper Extremity
Supracondular and Comminuted Fractures • Non-Unions

Neurosurgery
Cranial Suture Fusions • Illiac Crest Backfill

Trauma
Long Bone Fractures (Open and Closed) • Non-unions • Segmental Defects with External Fixation • Tibial Plateau and Pilon Fractures • Contained and Uncontained Defects

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4. **Han B, Yang Z, Nimni M.** Effect of Moisture and Temperature on the Osteoinductivity of Demineralized Bone Matrix. *J Orthop Res.* 2005 July;23(4):855-61. Epub 2005 Jan 19.

5. **Wironen JF, et al.** Effect of Bone Protein and Carrier Matrices on BMP-Stimulated Osteogenesis. Transactions of the Meeting of the Orthopaedic Research Society, 1998 Mar 16-19; New Orleans, LA.

6. **Enneking WF, Mindell ER.** Observations on Massive Retrieved Human Allografts: *J Bone Joint Surg Am.* 1991 Jul;73-A(3):1123-41.

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