REFERENCES:


EXCLUSIVE U.S. DISTRIBUTOR

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Post-implantation, release of SiO₂ triggers angiogenesis, enhances osteoblastic differentiation, and stimulates bone formation. Silica gel is transformed into an osteogenic scaffold. Once the organic matrix is in place, osteogenesis and remodeling proceed.

There is as much surface area in 1g of NanoBone as in a tennis court. This large internal surface area of NanoBone strongly attracts and binds autologous osteopontin, osteocalcin, and BMP-2 molecules that are critical for new bone formation. In clinical cases, NanoBone is completely converted to autologous bone.

Equal to Autograft, Fewer Complications

In a prospective study of trauma cases, fracture healing with NanoBone Bone Graft alone was comparable to autograft and had a lower complication rate. NanoBone has been used in more than 100,000 patients worldwide in all indications.

60 year old male chronic alcoholic admitted with tibial fracture. Initial treatment was with plate and screws. 8 weeks later, readmitted with grossly infected tibia (staph. aur.) and skin breakdown. Converted to external fixator, infected tibia resected, and gentamicin beads implanted. 4 weeks later, beads removed and replaced with 15ml NanoBone Putty. At one year, tibia is fully healed, patient is weight bearing and has returned to normal activities.
Applied NanoBiology Explained:1,2

- Nanocrystalline Hydroxyapatite (HA)
  - Biodegradable HA
  - Autologous proteins adsorb rapidly to surface

Amorphous Silica Gel Matrix (ASG)
- Rapidly transforms into an osteogenic matrix
- Releases SiO2, triggering angiogenesis, the basis for bone formation
- Highly nanoporous with large internal surface area
- Extremely hydrophilic

Post-implantation, release of SiO2 triggers angiogenesis, enhances osteoblastic differentiation, and stimulates bone formation. Silica gel is transformed into an osteogenic scaffold. Once the organic matrix is in place, osteogenesis and remodeling proceed.

Organics in -> SiO2 out

Rapidly transforms into an osteogenic matrix
Releases SiO2, triggering angiogenesis, the basis for bone formation
Highly nanoporous with large internal surface area
Extremely hydrophilic

Harnessing the Power of NanoBiology

- Autologous molecules adsorb to the nanopores
- Matrix turnover complete
- Activation of autologous, physiological reconstruction

Very Large Internal Surface Area is Crucial for Protein Adhesion and Bone Regeneration

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Timeline:

- 0 weeks
- 8 weeks
- 12 weeks
- 52 weeks

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