ESTHETIC RESTORATIONS

Straumann® Biomaterials — Bone Grafts

Straumann® XenoGraft and XenoFlex

Mastering everyday cases.
Versatile solutions for successful bone and tissue regeneration.

Following the well-established treatment protocol using deproteinized bovine bone granules for the efficient treatment of bone defects.

**Straumann® XenoGraft and XenoFlex:**
- Are easy to handle
- Have long-term volume stability
- Already successfully applied in over 500,000 cases worldwide

**PROPERTIES**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Straumann® XenoGraft</th>
<th>Straumann® XenoFlex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin</td>
<td>Bovine cancellous bone particles</td>
<td>Bovine cancellous bone particles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Porcine collagen type I</td>
</tr>
<tr>
<td>Composition</td>
<td>Calcium phosphate (100% pure hydroxyapatite, mineral phase)</td>
<td>90% calcium phosphate (100% pure hydroxyapatite, mineral phase)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% type I collagen</td>
</tr>
<tr>
<td>Degradation kinetics</td>
<td>Long-term integration of bovine particles, very slow, limited degradation</td>
<td>Fast binding at defect site, quick decomposition of collagen phase, long-term integration of bovine particles, limited degradation</td>
</tr>
<tr>
<td>Healing/integration time</td>
<td>6 – 9 months (depending on defect)</td>
<td>6 – 9 months (depending on defect)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>2 – 30 °C</td>
<td>2 – 30 °C</td>
</tr>
<tr>
<td>Shelf life</td>
<td>3 years (from date of production)</td>
<td>3 years (from date of production)</td>
</tr>
</tbody>
</table>
Straumann® XenoGraft – Mastering everyday cases.

Straumann® XenoGraft, for bone defect treatment, is methodically processed from bovine bone, extensively tested to eliminate antigenicity and provides a favorable environment for new bone growth. Its limited resorption rate delivers extended stability, a critical advantage in cases that require a strong framework for long-term tissue support or esthetic needs.

**WHY STRAUMANN® XENOGRAFT?**

- Volume preservation by providing a long lasting framework for excellent space maintenance (Fig. 1)
- Fast and straightforward application for optimal handling
- Innovative packaging for easy product handling and hydration
- Limited resorption rate provides extended stability
- Osteoconduction followed by organized integration and remodeling process (Fig. 2)
- Extended portfolio range

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**Fig. 1:** Long-lasting framework for excellent space maintenance.

**Fig. 2:** Four-week timepoint, rabbit model, new bone formation around Straumann® XenoGraft.
STRAUMANN® XENOGRaFT SUCCESS FACTORS

- **Optimal balance** of calcium and phosphate, comparable to human bone

  Straumann® XenoGraft  
  Human bone

  Calcium/Phosphate ratio 1.68  
  Calcium/Phosphate ratio 1.68

- **Moderate temperature treatment**, careful, but thorough, cleaning with solvents during purification process: resulting in low crystallinity and interconnected porous structure of each granule for enhanced integration of new bone

- **Hydrophilicity** enables early biological interaction

  Macro- and microporous structure: porosity is an important feature of any bone grafting material. Straumann® XenoGraft features two different pore diameters:
  - Macro pores that allow intrusion of osteoclasts, osteoblasts and microcapillaries
  - Micropores that allow intrusion of tissue fluids and fast liquid uptake via capillary effect

  Incremental intrusion (mL/g)

  Pore-size diameter (µm)

  The micro- and macropore structure of Straumann® XenoGraft are important factors facilitating fast capillary liquid uptake.¹

  Straumann® XenoGraft and XenoFlex
Straumann® XenoFlex – Mastering flexibility.

Straumann® XenoFlex is composed of 90% XenoGraft granules embedded in 10% purified porcine-derived collagen (type I). Straumann® XenoFlex is an optimal solution for graft applications required in extraction sockets and is available with a syringe applicator or as a block.

**WHY STRAUMANN® XENOFLEX?**

- Efficient, easy to handle, volume stable:
  - Straumann® XenoFlex can be easily cut to match the size and shape of the individual defect after hydration
  - Straumann® XenoFlex can be placed into the defect in one piece using tweezers, shortening surgery time
  - Outstanding product stability after thorough hydration, supporting product application
- Extended block and cylinder shape portfolio
- See explanatory handling video by scanning QR code

**STRAUMANN® XENOFLEX SUCCESS FACTORS**

- Volume stability and healing environment:
  - The collagen portion of Straumann® XenoFlex assists the initial healing environment before dissolving (within weeks)²
  - Collagen fibers have intrinsic hemostatic properties facilitating the adhesion of proteins and signaling molecules³
  - Long-term osseous integration of embedded granules providing excellent volume stability

“*Straumann® XenoFlex has immediately become a go-to product in my practice. The ability to precisely place and shape the xenograft into various defects delivers a simple surgical solution. In addition, the graft stability in a surgical field provides a level of hemostatic predictability not available with particulate grafts.*”

Dr. Tyler Borg
Broomfield, Colorado, USA
Straumann® XenoGraft and XenoFlex are designed for the following indications:

- Extraction sockets
- Sinus-floor elevation
- Horizontal augmentation
- Ridge preservation
- Peri-implant defects
- Intraosseous defects

The everyday choice for successful bone and tissue regeneration, Straumann® XenoGraft and XenoFlex.

Mastering everyday cases.
We love our everyday shoes, our favorite, worn-in sneakers. But would you use them to climb a wall? To go skiing? Or hiking? All-purpose shoes may suit our everyday activities, but challenges need a specific solution to ensure maximum performance and reliability. This is also true for dentistry, which is why we provide what we believe to be the industry’s most comprehensive biomaterials portfolio. A selection of solutions to overcome any obstacle you might face. Products that allow you to go horizontal and vertical. Products with the right “grip” and fit. Products that enable you to achieve beautiful esthetics and – of course – achieve a desirable clinical outcome. This is how you master any challenge.
# Straumann® XenoGraft

## Straumann® XenoFlex

**Straumann® XenoGraft is available in the following options**

<table>
<thead>
<tr>
<th>Order code</th>
<th>Volume (g/cc)</th>
<th>Granules Size (mm)</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1-0210-025</td>
<td>0.25 g/0.55 cc</td>
<td>0.2 – 1.0 mm</td>
<td>Straumann® XenoGraft granules in bowl-type glass vial</td>
</tr>
<tr>
<td>S1-0210-050</td>
<td>0.5 g/1.3 cc</td>
<td>0.2 – 1.0 mm</td>
<td>Straumann® XenoGraft granules in bowl-type glass vial</td>
</tr>
<tr>
<td>S1-0210-100</td>
<td>1.0 g/2.4 cc</td>
<td>0.2 – 1.0 mm</td>
<td>Straumann® XenoGraft granules in bowl-type glass vial</td>
</tr>
<tr>
<td>S1-0210-200</td>
<td>2.0 g/4.5 cc</td>
<td>0.2 – 1.0 mm</td>
<td>Straumann® XenoGraft granules in bowl-type glass vial</td>
</tr>
<tr>
<td>S1-1020-025</td>
<td>0.25 g/0.68 cc</td>
<td>1.0 – 2.0 mm</td>
<td>Straumann® XenoGraft granules in bowl-type glass vial</td>
</tr>
<tr>
<td>S1-1020-050</td>
<td>0.5 g/1.55 cc</td>
<td>1.0 – 2.0 mm</td>
<td>Straumann® XenoGraft granules in bowl-type glass vial</td>
</tr>
<tr>
<td>S1-1020-100</td>
<td>1.0 g/2.9 cc</td>
<td>1.0 – 2.0 mm</td>
<td>Straumann® XenoGraft granules in bowl-type glass vial</td>
</tr>
<tr>
<td>S1-1020-200</td>
<td>2.0 g/5.0 cc</td>
<td>1.0 – 2.0 mm</td>
<td>Straumann® XenoGraft granules in bowl-type glass vial</td>
</tr>
</tbody>
</table>

**Straumann® XenoFlex is available in the following options**

<table>
<thead>
<tr>
<th>Order code</th>
<th>Dimension L×W×H (mm/mg)</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI-0110-005</td>
<td>6 × 6 × 3 /50 mg</td>
<td>Straumann® XenoFlex block</td>
</tr>
<tr>
<td>NI-0110-010</td>
<td>6 × 6 × 6 /100 mg</td>
<td>Straumann® XenoFlex block</td>
</tr>
<tr>
<td>NI-0110-025</td>
<td>7 × 8 × 9 /250 mg</td>
<td>Straumann® XenoFlex syringe</td>
</tr>
<tr>
<td>NI-0110-050</td>
<td>9 × 10 × 11 /500 mg</td>
<td>Straumann® XenoFlex syringe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order code</th>
<th>Dimension Ø × L (mm/mg)</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI-0110-025S</td>
<td>4.6 × 40 /250 mg</td>
<td>Straumann® XenoFlex syringe</td>
</tr>
<tr>
<td>NI-0110-050S</td>
<td>5.6 × 45 /500 mg</td>
<td>Straumann® XenoFlex syringe</td>
</tr>
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</table>

**REFERENCES**

1. NIBEC Research Institute, data on file.

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