# MIIG®X3

## High Strength Injectable Graft for Compression Fractures

SURGICAL TECHNIQUE


WRIGHT.

# MIIG® X3

HIGH-STRENGTH INJECTABLE GRAFT FOR COMPRESSION FRACTURES

surgical techniques as described by
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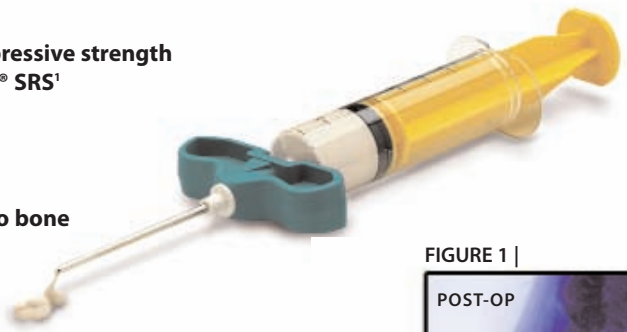
# MIIG X3

## HIGH STRENGT
## For Compressio

The next generation least-invasive grafting option for compression fractures is an injectable calcium sulfate with significantly higher compressive strength. MIIG® 115 (Minimally Invasive Injectable Graft) was the first injectable graft to provide temporary support and resorb at a predictable rate. Now, MIIG®X3 Graft provides even higher compressive strength with the same reliable resorption.

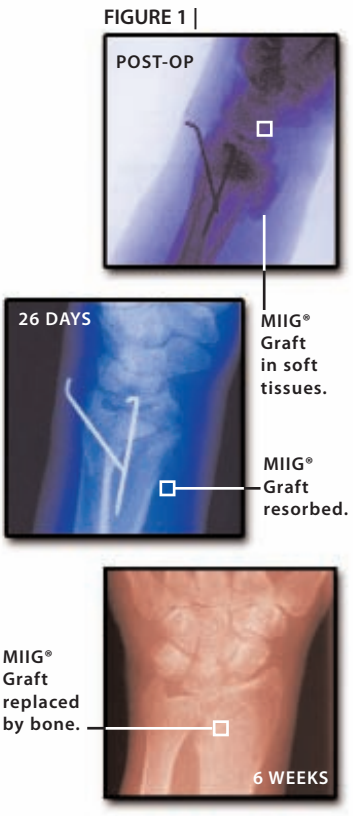
## MIIG® X3 Graft

- **Greater compressive strength than NORIAN® SRS[1]**
- **Injects**
- **Resorbs**
- **Remodels into bone**



| **MIIG® X3 Graft** - Resorbable Salt | VS. | **Injectable Calcium Phosphate** - Slow Resorbing Ceramic |
|---|---|---|
| • No Extravasation Issues - Resorbs quickly in soft tissues and synovium | | • Ceramic must be removed if leaked into joint space or soft tissues |
| • Faster resorption and replacement by bone (10-12 weeks) | | • Resorption rate 2-3 years |
| • Straightforward surgical technique:<br>a) Reduce<br>b) Inject graft<br>c) Drill/tap for final hardware | | • Backwards technique<br>a) Reduce<br>c) Place final hardware<br>b) Inject graft |

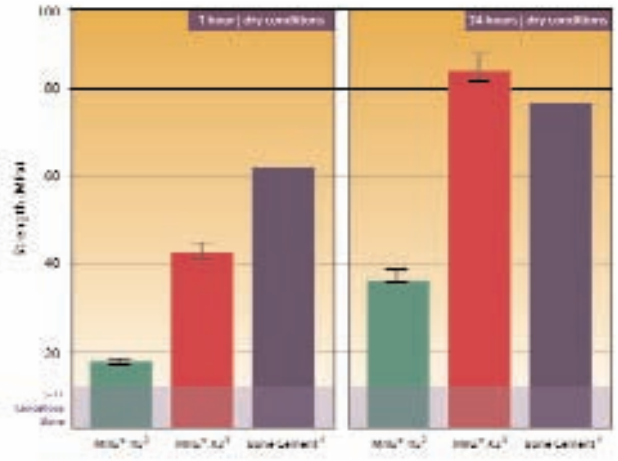
FIGURE 1 |



## High-Strength

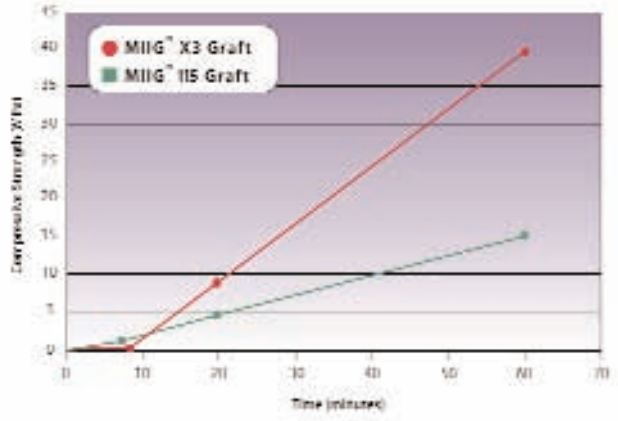
- **MIIG® X3 Graft provides 160% greater compressive strength than MIIG® 115 Graft**

**FIGURE 2 | Compressive Strength in a Dry Environment**



In a dry environment, MIIG® X3 Graft demonstrates compressive strengths comparable to reported bone cement values.

**FIGURE 3 | Compression Strength in a Simulated *In Vivo* Environment**




At one hour in a simulated wet environment, MIIG® X3 Graft maintains 160% greater compressive strength than the MIIG® 115 Graft.

## Resorbable

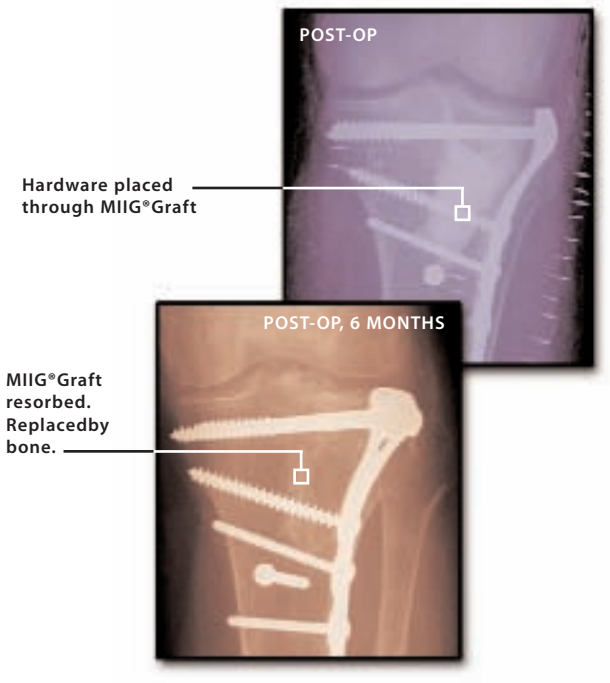
- **Reliable resorption and replacement by bone**

**FIGURE 4A |**

**FIGURE 4B |**

A 13x50mm cylindrical defect (outlined) was surgically created in a canine humera model and filled with MIIG® X3 calcium sulfate. Contact radiographs demonstrate an osteoconductive effect through new bone regeneration and subsequent remodeling at 13 weeks.

**FIGURE 5 |**




## Ordering Information

| | |
|---|---|
| 84XS-0405 | 5cc |
| 84XS-0415 | 15cc |

## For Open Reduction, Internal Fixation, Try:

**ALLOMATRIX® DR GRAFT**

| | |
|---|---|
| 86DR-0300 | 3cc |

**ALLOMATRIX® CUSTOM PUTTY**

| | |
|---|---|
| 86XC-0560 | 5cc |
| 86XC-1000 | 10cc |

**LOCON-T® DISTAL RADIUS PLATING SYSTEM**

| |
|---|
| 4900-1000 |

## Design Features

- High-Strength
- Injects through small gauge needle
- Hardens in defect
- Replaced by bone
- Temporary support medium
- May be drilled or tapped for hardware

## References


[1] Reported at 50MPa at 24 hours.

[2] Hand-mixed.

[3] Vacuum-mixed.

[4] Belkoff SM, et al. The effect of the monomer-to-powder ratio on the material porperties of acrylic bone cement. J Biomed Mater Res (Appl Biomater) 2002; 63:396-399. Monomer-to powder ratio was 0.45 ml/g.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