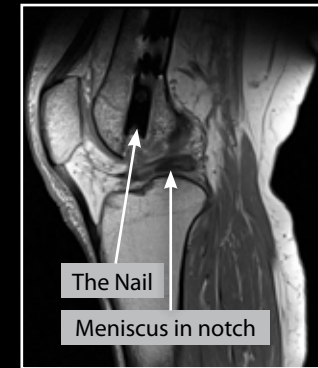




Carbon Fiber Implants – Better Callus Faster¹

CarboFix Trauma - Enhance your patient's chance of healing

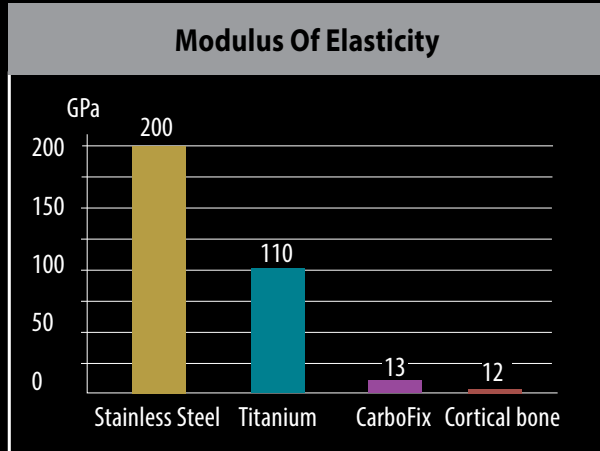
- **Modulus of Elasticity similar to cortical bone**
 - Earlier callus formation
 - Potentially decreases complications such as stress risers etc.
- **Unparalleled fatigue resistance**
 - Prolonged support for delayed union and oncology patients
- **Radiolucency**
 - Enhanced reduction and screw placement
 - Better follow-up of fracture healing process
- **Essential in oncology patients**
- **MRI/CT Artifact free**
- **No cold welding or bone ingrowth**
 - Facilitates easier hardware removal



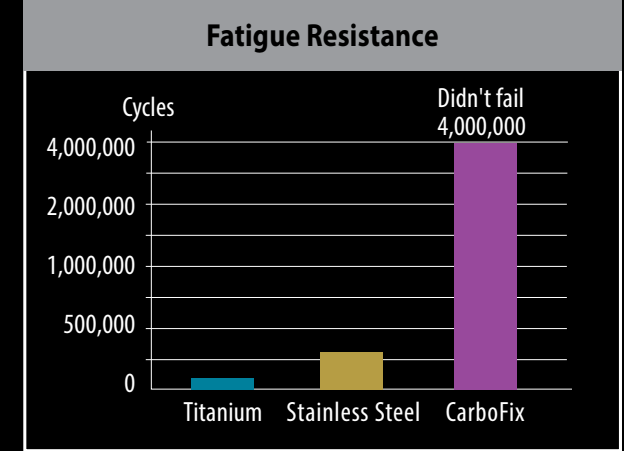
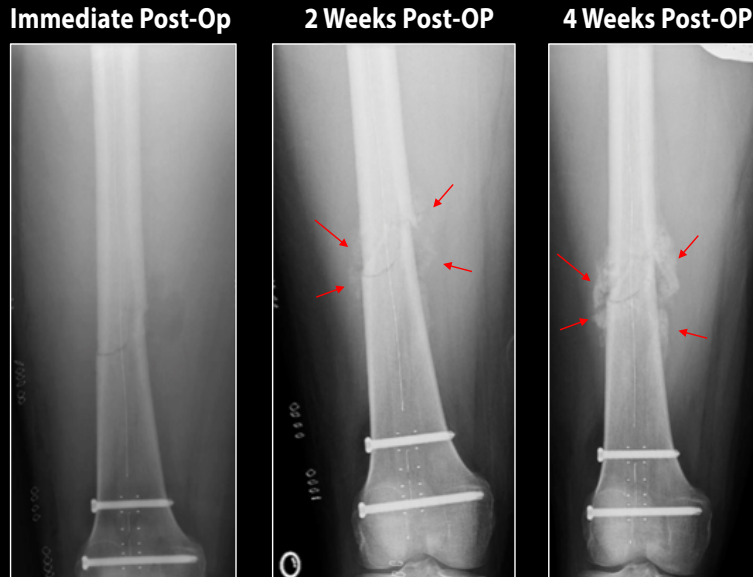


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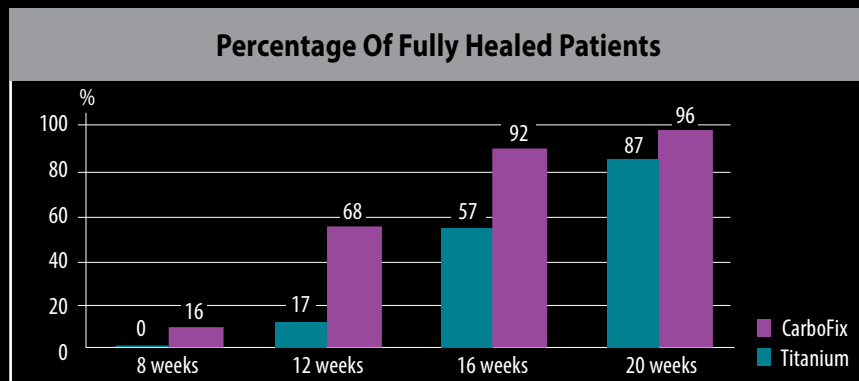


The Modulus of Elasticity of CFR-PEEK mimics Cortical Bone²



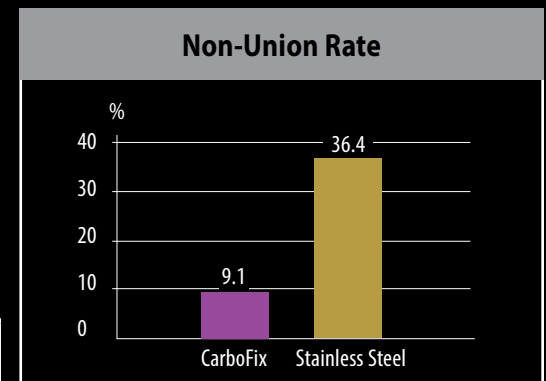
CarboFix CFR-PEEK implants have an Unparalleled Fatigue Resistance

Tibial Carbon Fiber Vs. Titanium Nail³



Distal Femur Carbon Fiber Vs. Stainless Steel Plate⁴

| | CarboFix | Stainless Steel |
|---|------------|-----------------|
| No. of Patients | 11 | 11 |
| Age (Average) | 71.7 | 57.3 |
| Diabetic Patients % | 54.5 | 9.1 |
| Peripheral Vascular Disease % | 18.2 | 0 |
| Avg. Time to Full Weight-Bearing (weeks) | 9.8 | 11.7 |



¹ Dr. B.Ziran - OTA 2017

² Alok D Sharan, Simon Y Tang, Alexander R. Basic Science of Spinal Diseases Japee bothers medical publishers.2013; 159-160

³ O'Pry et. al. Carbon Fiber Reinforced PEEK versus Titanium Tibial Intramedullary Nailing: A preliminary analysis and results

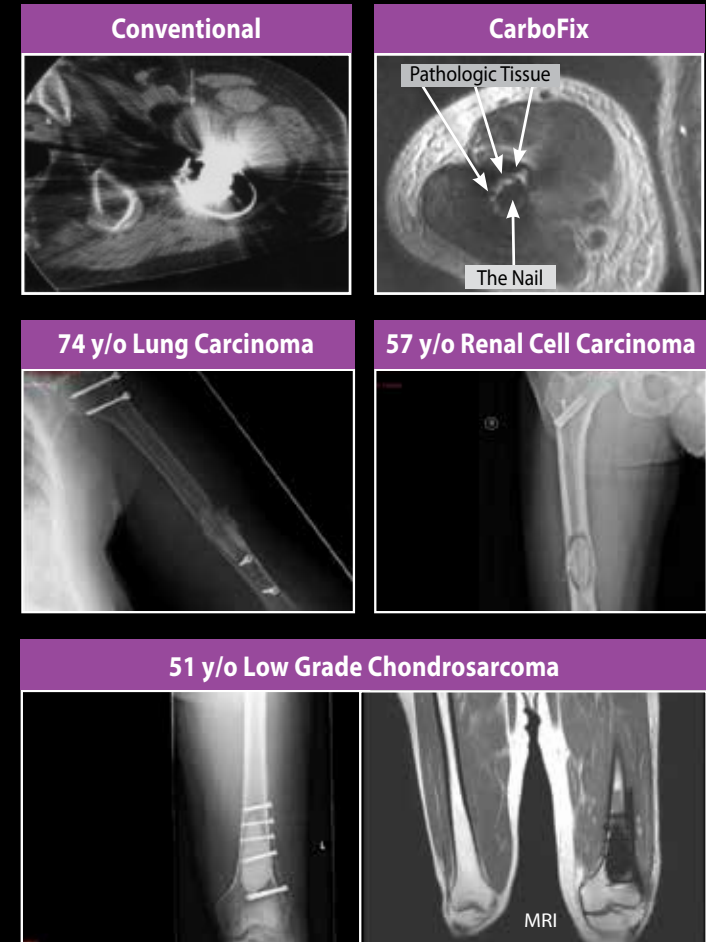
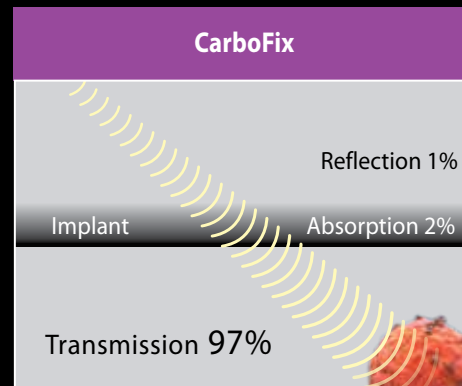
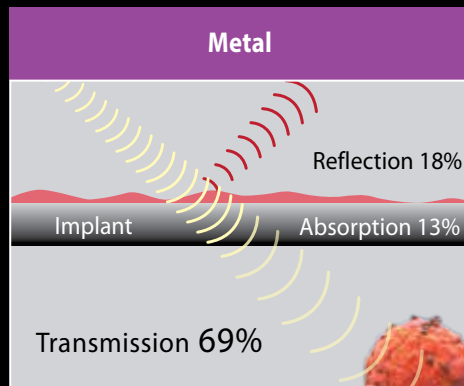
⁴ Mitchell M et al. Early Comparative Outcomes of Carbon Fiber Reinforced Polymer Plate in the Fixation of Distal Femur Fractures. Journal of Orthopaedic Trauma Publish Ahead of Print DOI: 10.1097/BOT.0000000000001223



CarboFix Trauma - Clearly Better

Essential in Oncology Trauma Surgery

- **Unparalleled fatigue resistance⁵**
- **MRI/CT Artifact free**
 - Allows precise follow-up and identification of local recurrence⁶
 - Improved radiation planning accuracy⁷
 - Reduced radiation planning work time⁸
- **Negligible effect on radiotherapy dose distribution⁹**



⁵ E.L. Steinberg, et al. Carbon fiber reinforced PEEK Optima - A composite material biomechanical properties and wear/debris characteristics of CF-PEEK composites for orthopedic trauma implants. *Journal of the Mechanical Behavior of Biomedical Materials* (2012), <http://dx.doi.org/10.1016/j.jmbbm.2012.09.013>

⁶ M.N. Zimel, et al. Carbon fiber intramedullary nails reduce artifact in postoperative advanced imaging. *Skeletal Radiol.* DOI 10.1007/s00256-015-2158-9

⁷ Xin-Ye, et al. The prospect of carbon fiber implants in radiotherapy, *Journal of Applied Clinical Medical Physics*, Volume 13, Number 4, 2012

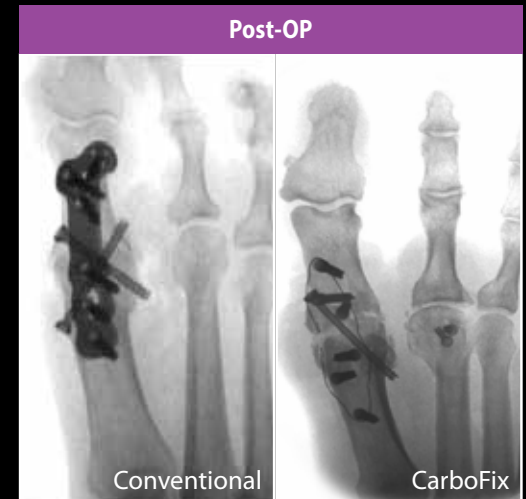
⁸ J.W. Snider III, et al. Challenges Associated With Pencil Beam Scanning Proton Therapy for Spinal Tumors Following Surgical Stabilization: A Robustness Evaluation of Carbon Fiber Reinforced Polyetheretherketone (Carbon-PEEK) Versus Titanium, *International Journal of Radiation Oncology*, Volume 96, Number 2S, Supplement 2016, pp. E699–E700

⁹ A. Nevelsky, E. Borzov, S. Daniel, R. Bar-Daroma. Perturbation effects of the carbon fiber-PEEK screws on radiotherapy dose distribution. *J Appl Clin Med Phys.* 2017 Mar;18(2):62-68



Carbon Fiber Implants – Better Callus Faster¹

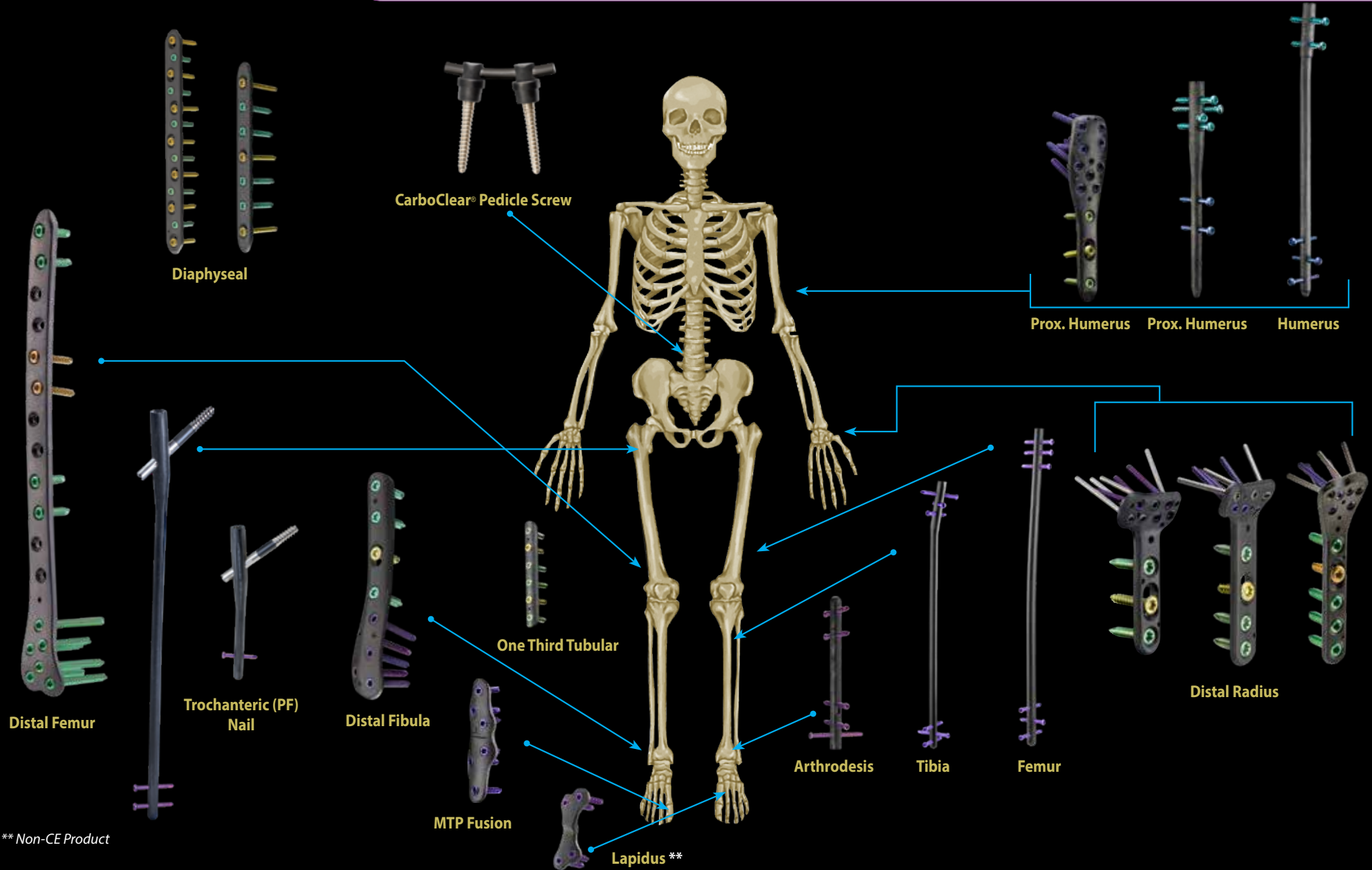
CarboFix Trauma - Enhance your patient's chance of healing





Carbon Fiber Implants – Better Callus Faster¹

CarboFix Trauma - Portfolio & Sizes



** Non-CE Product



Carbon Fiber Implants – Better Callus Faster¹

CarboFix Trauma - Portfolio & Sizes

| Plates | | | |
|--------------------------|--|---------------|-------------------|
| Implant | Number of Holes (Length, mm) | Orientation | Thickness (mm) |
| Distal Radius-Standard | 3, 4, 7 (52, 60, 90) | Right or Left | 2.4 |
| Distal Radius-Narrow | 3, 4 (52, 60) | Right or Left | 2.4 |
| Distal Radius-Triangular | 3, 4 (54, 63) | Right or Left | 2.4 |
| Proximal Humerus | 3, 4*, 6, 8, 12* (102, 120*, 156, 192, 262*) | Bi-Lateral | 3.7 |
| Distal Fibula | 3*, 4, 5*, 6, 9, 11 (72*, 85, 96*, 114, 155, 184) | Right or Left | 2.3 |
| One Third Tubular | 5, 6, 7, 9, 11 (56, 67, 78, 98, 122) | Bi-Lateral | 2.3 |
| Diaphyseal-Narrow | 7, 9 (154, 190) | Bi-Lateral | 4.7 |
| Diaphyseal-Broad | 9, 11, 13 (160, 185, 220) | Bi-Lateral | 5.3 |
| Diaphyseal No Holes | (160, 185, 220) | Bi-Lateral | 5.3 |
| Distal Femur | 6, 8, 10, 12, 14, 16 (171, 207, 243, 279, 315, 350) | Right or Left | 5.1 |
| MTP | Dorsiflexion: 0°, 5° (50) | Right or Left | 2.0 |
| Lapidus ** | Flat / 1 mm / 2 mm | Right or Left | 2.0 |

| Nails | | | |
|-------------------|---|---------------------|------------------------|
| Implant | Length (mm) | Diameter (mm) | Prox. Diameter (mm) |
| Humerus | 180, 200, 220, 240, 280 | 8.5 | 10.0 |
| Proximal Humerus | 150 | 8.0 | 11.0 |
| Tibia | 260, 280, 300, 320, 340, 360, 380, 400 | 10.0, 11.0 | 11.5 |
| Femur | 300, 320, 340, 360, 380, 400, 420 | 10.0, 11.0, 12.0 | 11.5, 11.5, 12.0 |
| Ankle Arthrodesis | 160, 200, 240 | 10.0, 12.0 | 12.0 |

| | | | |
|--|---|------|------|
| Trochanteric (PF) Nail 125°* / 130° | 180, 300, 320, 340, 360, 380, 400, 420, 440*, 460* | 11.0 | 17.0 |
| Lag Screw Carbon Fiber or Titanium | 80, 85, 90, 95, 100, 105, 110 | 10.4 | - |

* Special Order
** Non-CE Product

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