



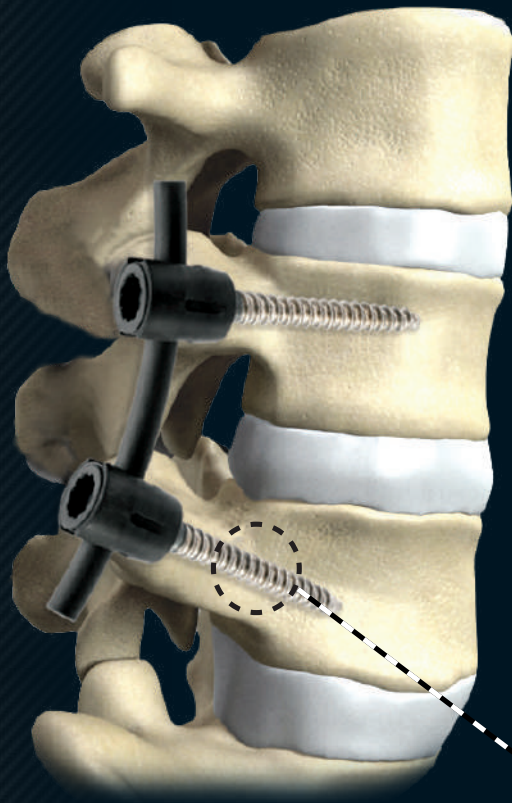
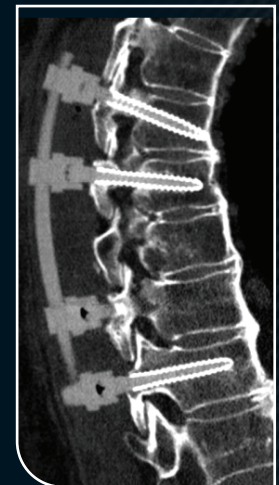
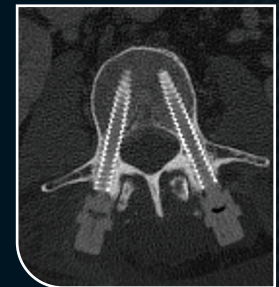
**CARBOFIX
SPINE**

CarboClear® X Pedicle Screw System

Carbon Fiber Implants - Essential in Oncology Spine and DDD Surgery**

The Only Full Carbon Fiber System

- **Unparalleled fatigue resistance**
- **CT/MRI artifact free**
 - Enhanced follow-up
- **Enhanced radiation therapy administration**
 - Negligible backscattering and attenuation for optimal dosage
 - Improved radiation precision & reduced planning time



Cross Section showing the Carbon Fiber core & the Ultrathin Titanium Shell

Ultrathin Titanium Shell to allow:

- X-Ray visualization
- Bone integration

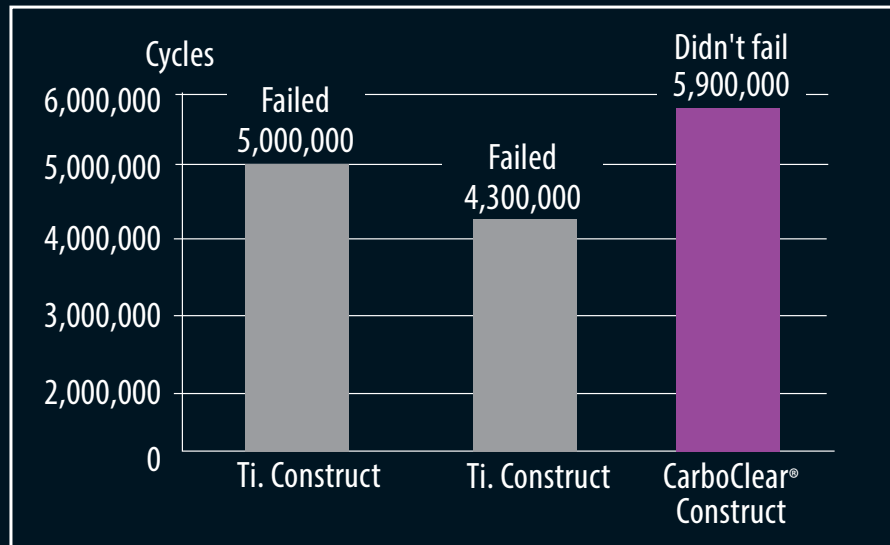


**CARBOFIX
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Unparalleled Fatigue Resistance



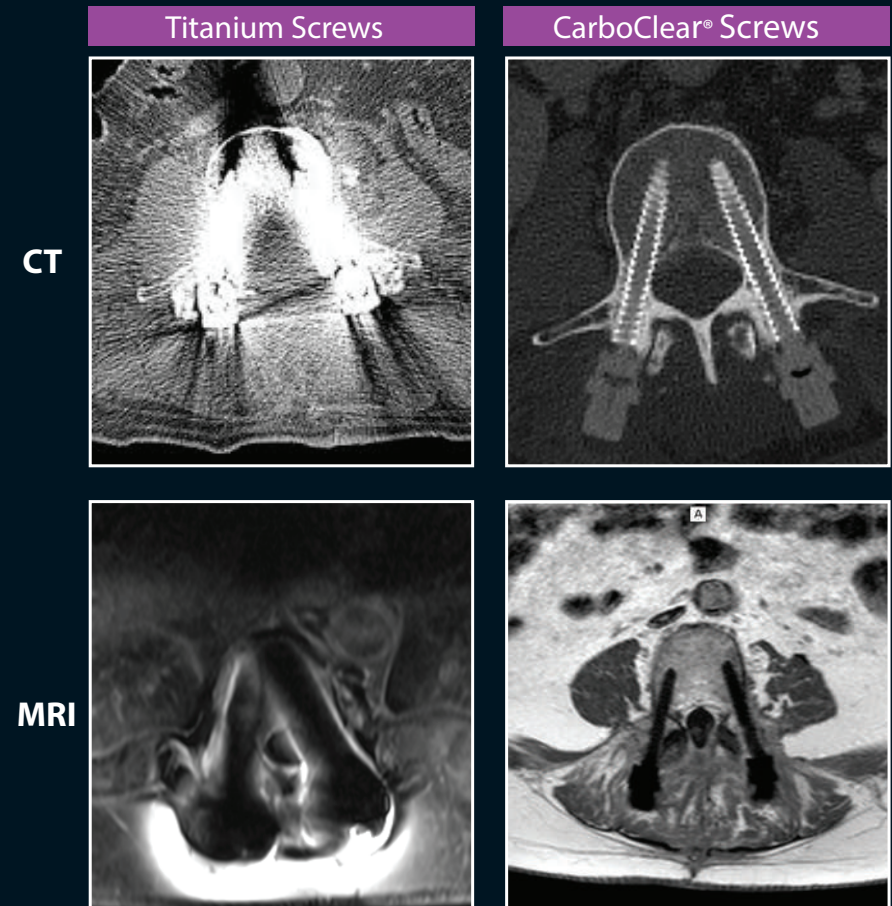
- Enhanced support for non-fusion and delayed fusion** patients

¹ S. Boriani, et al. Carbon-fiber-reinforced PEEK fixation system in the treatment of spine tumors: a preliminary report. *Eur Spine J*. DOI 10.1007/s00586-017-5258-5

² E. Mastella, et al. Dosimetric characterization of carbon fiber stabilization devices for postoperative particle therapy. *Physica Medica* 44 (2017) 18–25

³ 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.

CT/MRI Artifact Free



- Allows precise follow-up and identification of local recurrence¹
- Improved radiation planning accuracy²
- Reduced radiation planning work time³



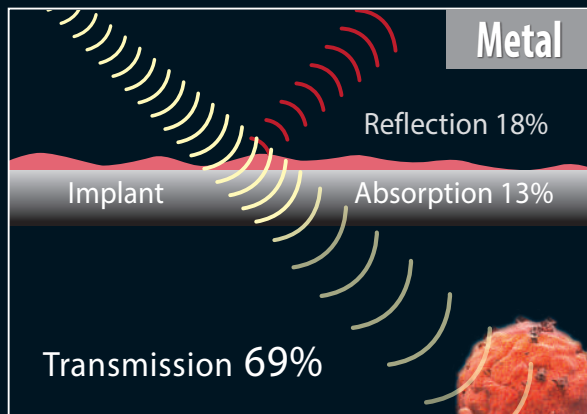
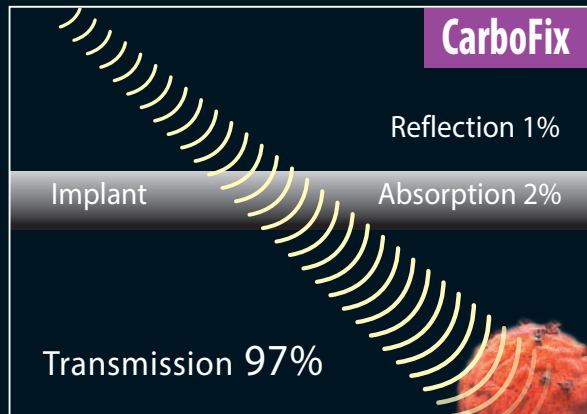
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Enhanced Radiation Therapy Administration

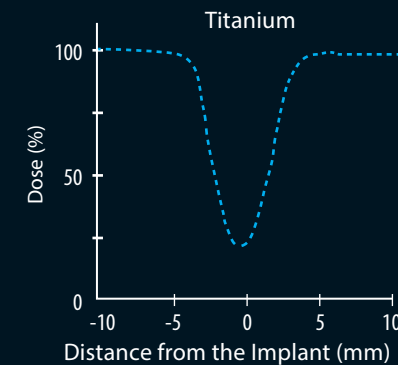
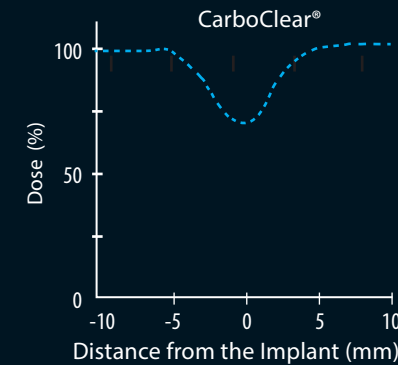
Radiation Therapy (Photon)

Negligible Effect on Radiotherapy Dose Distribution⁴



Proton Therapy

Attenuation of Carbon Fiber Vs. Titanium Implants²



- Attenuation of titanium in radiosurgery is up to 78% vs. negligible attenuation with carbon fiber

⁴A. 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.

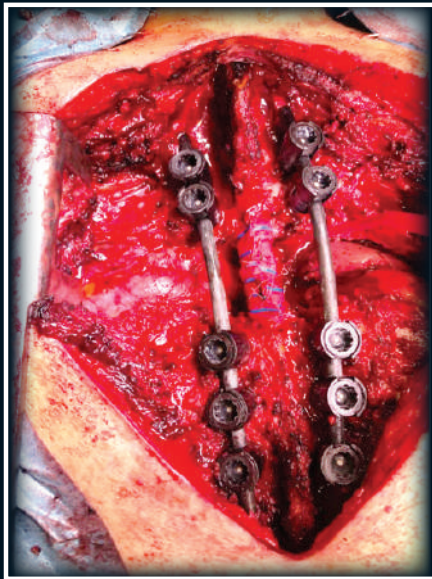


**CARBOFIX
SPINE**

CarboClear® X Pedicle Screw System

Carbon Fiber Implants - Essential in Oncology Spine and DDD Surgery**

All system implants made of Carbon Fiber, including rods, screw, tulip & trans-connectors



Pedicle Screws

Cat. Number	Diameter (mm)	Length, mm (increments)	Cannulated	
PNNS50XXN	5.0	25-45	No	
PNNS55XXN	5.5	30-45 (5)	No	
PNNS65XXN	6.5	35-55 (5)	No	
PNNSC65XXN			Yes	
PNNS75XXN	7.5	35-55 (5)	No	
PNNSC75XXN			Yes	
PNNSC85XXN	8.5	65-95 (10)	Yes	

• xx - length, in mm

Trans-Connectors

Cat. Number	Description	Diameter (mm)	Length (mm)	
PPTCR60XX	Trans-Connector Rod	6	32-70 (2)	
PPILR6100	Iliac Crest Rod	6	100	
PPSTCC4000	Trans-Connector Locking Element + Ring			

Shaped Long Rods

Cat. Number	Rod Type	Diameter (mm)	Length (mm)	
PPLCR6190S	"S" Shaped Rod Type 1	6.0	190	
PLMCR6200	Curved Rod Type 2	6.0	280	
PNNR4270	Shaped Rod Type 3	6.0	270	
PNNR6270	Shaped Rod Type 4	6.0	285	
PPLSR6270	Straight Rod Type 5	6.0	270	
PNNR6300	Titanium Rod (Ti6Al4V)	6.0	300	

Patient specific rods can be promptly supplied

Short Rods

Cat. Number	Type	Diameter (mm)	Length, mm (Increments)	
PPLOS60XX	Straight	6.0	35-80 (5)	
PPLOC60XX	Curved	6.0	60-80 (5)	

• xx - length, in mm

Locking Elements (Set Screw)

Cat. Number	Type	
PPLCUR4000N	Regular	



All implants supplied sterile.

MANUFACTURED BY:

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E-Mail: info@carbo-fix.com

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E-Mail: usa@carbo-fix.com

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Germany

Patent protected

** DDD indication is not cleared in the US

CE
2797 Rx ONLY



**CARBOFIX
SPINE**

www.carbo-fix.com

US Indications for use: The CarboClear X Pedicle Screw System is intended to restore the integrity of the spinal column even in the absence of fusion for a limited time period in patients with advanced-stage tumors involving the thoracic and lumbar spine in whom life expectancy is of insufficient duration to permit achievement of fusion. For complete indications for use, contraindications, warnings and precautions, refer to the product IFU.