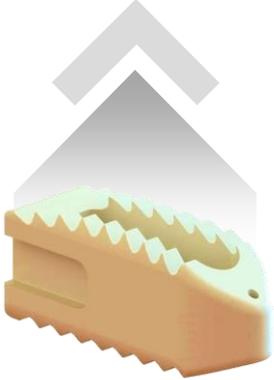
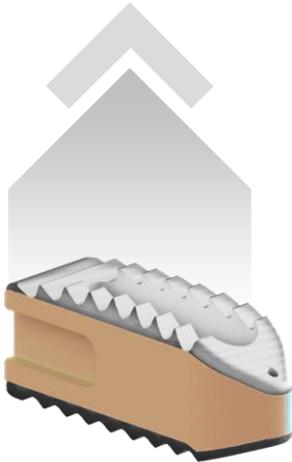


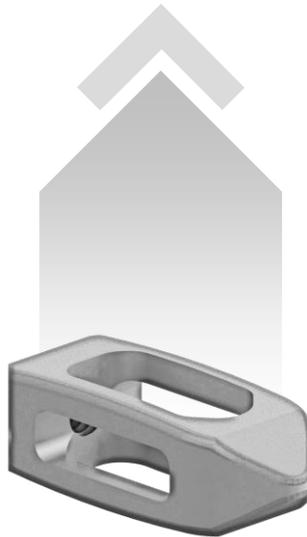
NEXXT Matrixx™ 3D PRINTED POROUS TITANIUM



PEEK



Coated
PEEK



Solid
Titanium



NEXXT
Matrixx™
3D PRINTED POROUS TITANIUM

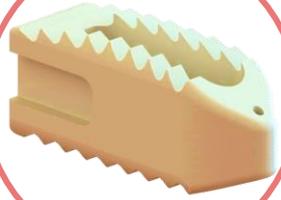
COMPARISON OF INTERBODY MATERIAL



INTERBODY MATERIAL EVOLUTION

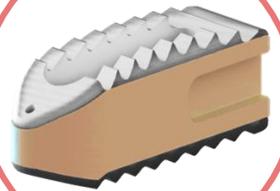
PEEK

PEEK is a popular option due to its radiolucency. However, bone does not grow onto it and in some instances, may promote fibrous tissue formation instead of bone.^{2,3}



Coated PEEK

To address PEEK's limitation, some have applied a titanium coating to the surface of PEEK. However non-cohesive coatings may delaminate during impaction and are susceptible to wear debris.⁷



Solid Titanium

In an effort to utilize the proven osteogenic potential of roughened titanium, some companies have reverted to rigid titanium cages that have been textured or are partially porous. Although bone *does* grow onto titanium, the rigidity and material density may lead to subsidence and poor radiographic performance.^{2,3}



**NEXXT
MATRIXTM**
3D PRINTED POROUS TITANIUM



EXPERIENCE THE NEXXT DIFFERENCE

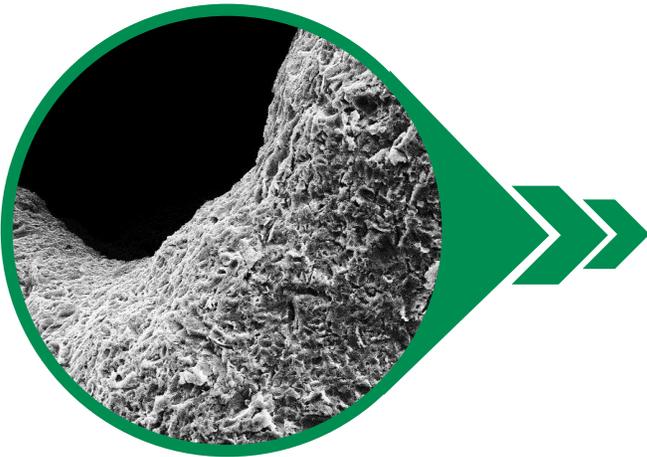
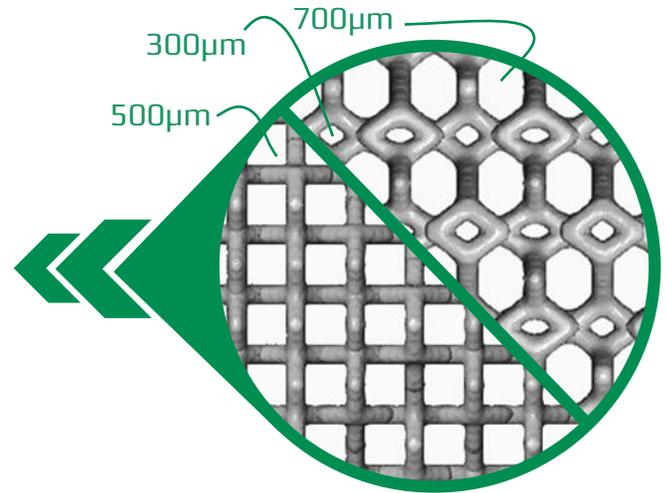


NEXXT MATRIXX™ 3D PRINTED POROUS TITANIUM



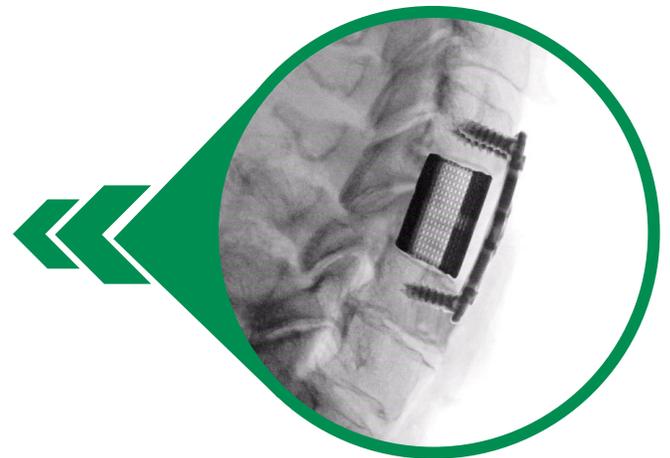
The NEXXT MATRIXX™ porous titanium material exhibits a **varied 300, 500, and 700µm pore architecture** engineered to encourage integration. Pores greater than 300µm in size have been shown to advance and support vascularization, leading to direct osteogenesis.^{1,4,5}

A **fully interconnected 75% porous**, open titanium architecture, results in up to **2X more open volume** available for potential boney incorporation.^{4,5,6}



Nexxt Spine has developed a proprietary **residue-free, micro roughening process** creating a highly cohesive 7µm roughened topography. Due to the roughened porous structure of the NEXXT MATRIXX™ material, NEXXT MATRIXX™ implants exhibit up to **4X more surface area** for bone apposition than conventional spinal implants.^{2,3,6}

Large 700µm lateral pores within the 75% open porous architecture minimize titanium material for an overall reduced density thereby facilitating **enhanced radiographic imaging** and post-operative fusion evaluations.⁶



* Pre-clinical data may not represent clinical results.

1. Karageorgiou V, Kaplan D. Porosity of 3D biomaterial scaffolds and osteogenesis. *Biomaterials*. 2005;26(27):5474-91.

2. Olivares-Navarrete R, Hyzy SL, Slosar PJ et al. Implant materials generate different peri-implant inflammatory factors: poly-ether-ether-ketone promotes fibrosis and microtextured titanium promotes osteogenic factors. *Spine*. 2015;40(6):399-404.

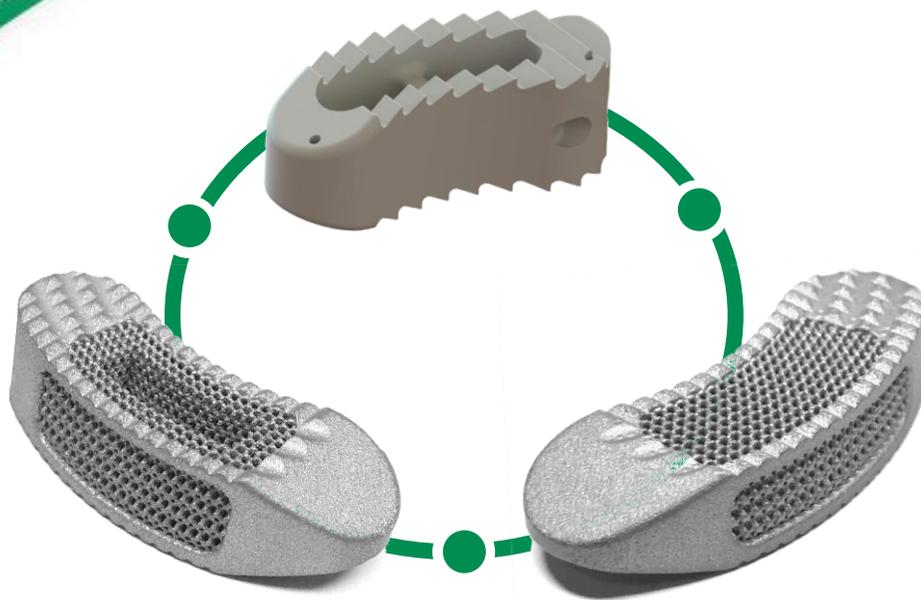
3. Olivares-Navarrete R, Hyzy SL, Gittens RA, et al. Rough titanium alloys regulate osteoblast production of angiogenic factors. *Spine J*. 2013;13(11):1563-70.

4. Ponader S, von Wilmsowsky C, Widenmayer M, et al. In vivo performance of selective electron beam-melted ti-6al-4v structures. *J Biomed Mater Res A* 2010;92A:56-62

5. Li JP, Habibovic P, et al.: Bone ingrowth in porous titanium implants produced by 3D fiber deposition. *Biomaterials* 28:2810, 2007.

6. Data on file at Nexxt Spine, LLC.

7. Kienle A, Graf N, Wilke HJ. Does impaction of titanium-coated interbody fusion cages into the disc space cause wear debris or delamination? *The Spine Journal* 16 (2016) 235-242.



The osteogenic potential of the NEXXT MATRIX[™] System is under clinical evaluation by Dr. Francis Farhadi at Ohio State University in a study titled “Lumbar Fusion with 3D-Printed Porous Titanium Interbody Cages – A Single Blinded Randomized Controlled Trial Evaluating NEXXT MATRIX[™] Versus PEEK Cages”.

Nexxt Spine, LLC manufactures quality, American-made spinal implants, instruments and interbodies. At Nexxt Spine, 100% of all spinal implants and 95% of surgical instruments are manufactured in our state of the art facility in Noblesville, Indiana.

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