

CONDUIT™ Interbody Platform EIT™ Cellular Titanium

3D printed cellular titanium implants that feature 80% porous macro-, micro- and nanostructures, are designed to mimic cortical and cancellous bone, and facilitate fusion.^{1,2}

BONE-MIMICKING CELLULAR TITANIUM MATERIAL

BONE-MIMICKING – Cellular structure of the material is designed to mimic the published properties of bone and facilitate fusion

EXCELLENT VISUALIZATION – Ability to clearly visualize the cage intra- and post-operatively on imaging modalities without interference^{3,4}

TARGETED MODULUS OF ELASTICITY – Modulus of Elasticity similar to cancellous bone (Figure 1)^{5,6}



BONE-MIMICKING

Cellular design facilitates fusion and mimics the properties of bone with macro-, micro- and nanostructures¹

Macrostructure:

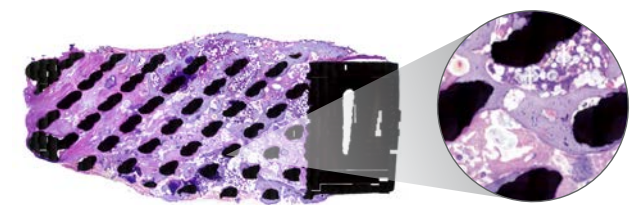
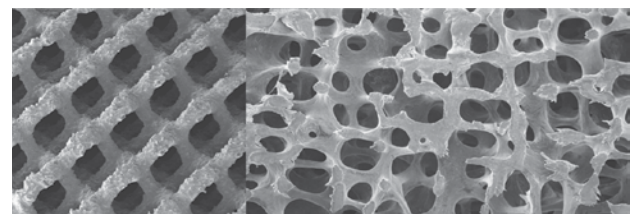
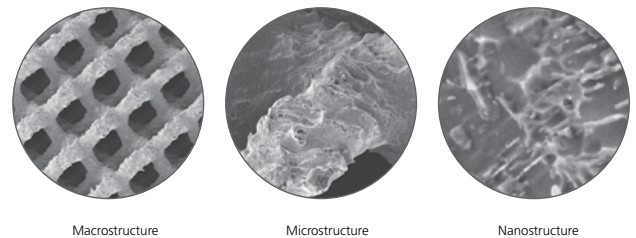
- Surface roughness has been shown to have a beneficial effect on cell differentiation and proliferation in in-vitro studies of osteoblast-like cells cultured on similar roughened titanium materials^{7,8}

Microstructure:

- In-vitro studies have reported greater osteoblastic differentiation in human stem cells cultured on similar porous titanium constructs compared to solid titanium surfaces⁹
- In-vivo studies with similar porous titanium materials show that bony in-growth is increased at the 500-700 µm pore size range compared to larger or smaller pores¹⁰⁻¹²
- The porosity of cancellous human bone is typically 50-90%¹³
- Based on this published science, CONDUIT™ Implants are designed with 80% porosity and 700 µm pore size^{2,14}

Nanostructure:

- Similar titanium materials with nanoscale features have shown in in-vitro studies to lead to increased osteoblast adhesion when compared to conventional titanium materials¹⁵
- All CONDUIT Implants undergo acid etching and heat treatment to promote micro- and nanoscale surface roughness¹



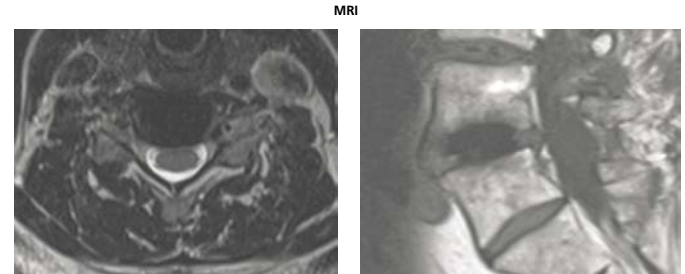
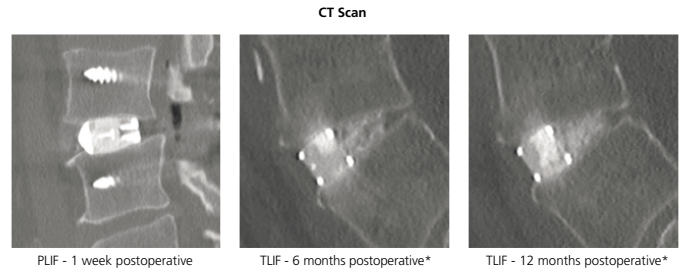
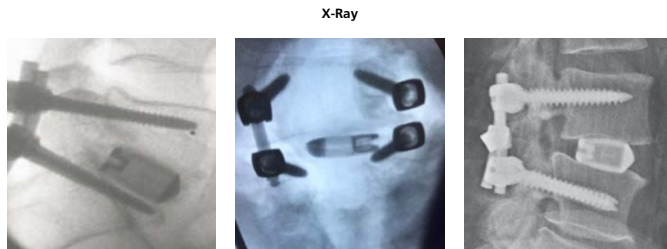
Histological slice (H&E staining) of a CONDUIT Cervical explant 2 years postoperative. Blue indicates trabecular bone and pink demonstrates bone marrow. Extensive bone ingrowth is seen endplate-to-endplate, indicating mechanical loading throughout the implant. Mature, lamellar bone and healthy bone marrow in direct contact with the titanium scaffold without fibrous tissue interface formation. (n=1)

EXCELLENT VISUALIZATION

Ability to clearly visualize the cage intra- and post-operatively on imaging modalities without interference^{3,4}

80% porosity²:

- High radiographic visibility allows for better contouring, endplate-implant contact evaluation and absence of tantalum marker scattering intra- and post-operatively
- Clear visualization of the implant on X-Ray, absence of scattering on CT Scan and diminished artifacts in MRI^{3,4}

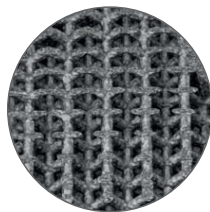


TARGETED MODULUS OF ELASTICITY

Modulus of Elasticity similar to cancellous bone^{5,6}

Proprietary 3D printing technology leads to cellular design that offers Modulus of Elasticity of titanium similar to bone⁵

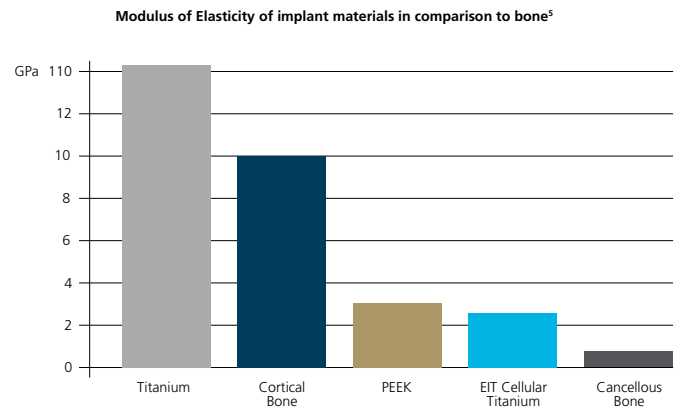
- Highly porous surface area and implant footprint variety that allows for maximum endplate-implant contact¹⁶



CONDUIT ALIF Implant
Porous structure

*Note: Supplemental fixation is present but not visible in this CT Scan image.
Bench test results may not necessarily be indicative of clinical performance.
Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Figure 1



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