

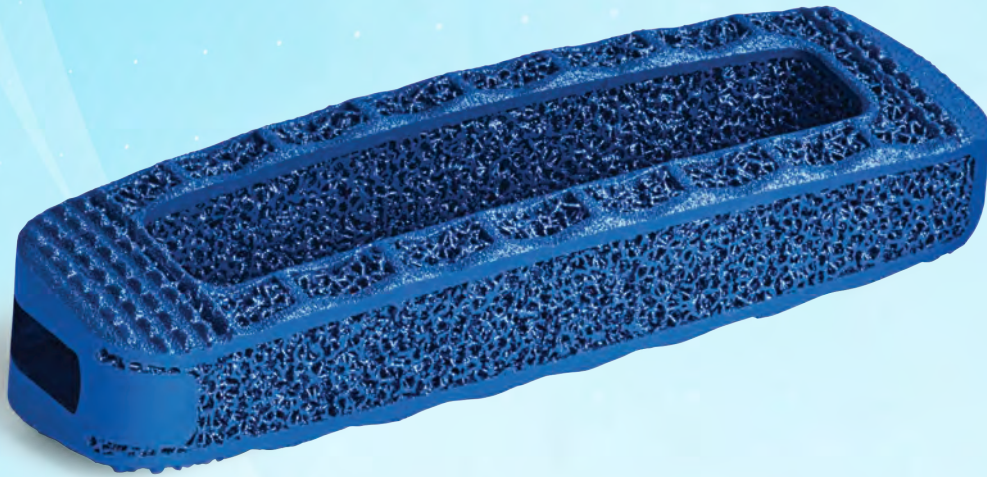
HEDRON™

THE FACE OF FUSION

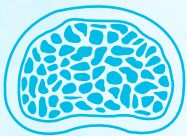
ACDF | ALIF | LLIF | PLIF | TLIF



THE FACE OF FUSION



HEDRON™ 3D printed titanium interbody spacers feature a biomimetic porous scaffold designed to promote bone formation onto and through the implant.



**Trabecular Bone
Inspired Design**



**Encourages
Cellular Response**



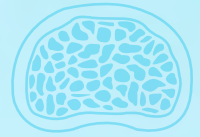
**Promotes
Bone Formation**

HEDRON™

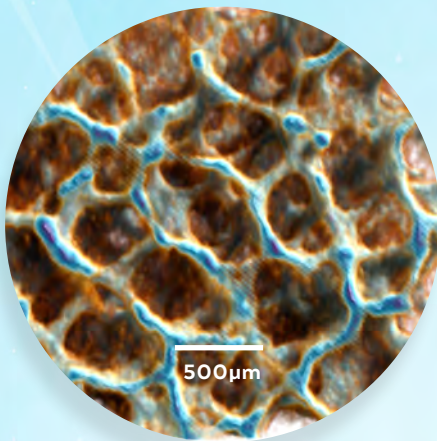
Accommodates Multiple Approaches and Techniques

Procedure	HEDRON™ Spacer	Footprint	Heights	Lordosis
ACDF	 HEDRON C™	12x14, 14x16, 15x18mm	5, 6, 7, 8, 9, 10, 11, 12mm	0°, 7°, 12°, 15°, 20°
	 HEDRON IC™	12x14, 14x16, 15x18mm	5, 6, 7, 8, 9, 10, 11, 12mm	0°, 7°, 12°
ALIF	 HEDRON A™	22x29, 24x35, 28x39mm	9, 11, 13, 15, 17, 19, 21mm	8°, 15°, 20°
	 HEDRON IA™	24x30, 26x34, 29x39mm	11, 13, 15, 17, 19, 21mm	8°, 15°, 20°, 25°, 30°
LLIF	 HEDRON L™	18, 22mm widths 40–60mm lengths	7, 9, 11, 13, 15mm	10°, 15°
PLIF	 HEDRON P™	8x22, 10x22, 10x26, 10x30, 12x26, 12x30mm	7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17mm	8°, 15°
TLIF	 HEDRON T™	10x28, 11x33mm	7, 8, 9, 10, 11, 12, 13, 15, 17mm	8°, 15°

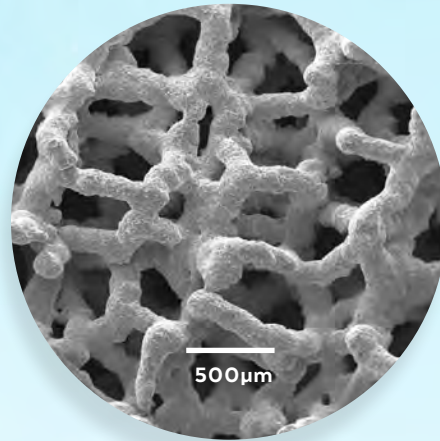
TRABECULAR BONE INSPIRED DESIGN



Osseointegration between an implant and surrounding bone may help achieve stability. HEDRON™ integrates biomimetic architecture with characteristics of established interbody fusion devices.



MicroCT of trabecular bone



SEM image of HEDRON™

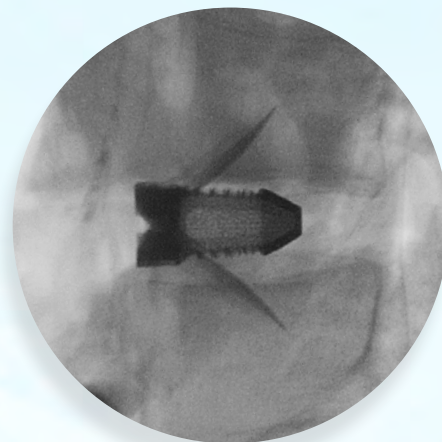
FEATURES

Lattice stiffness comparable
to trabecular bone¹

70% porosity

Expansive pore size distribution

Roughened surface texture

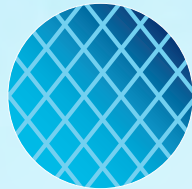


Clear visualization
(Supplemental fixation required)

1. Mechanical study data on file.

Strength and Porosity

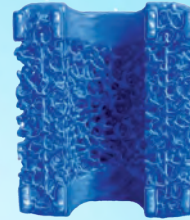
Unlike first generation 3D printed implants (grid and open architecture), HEDRON™ strikes the ideal balance of strength and porosity through a sturdy frame and pore size distribution similar to trabecular bone.



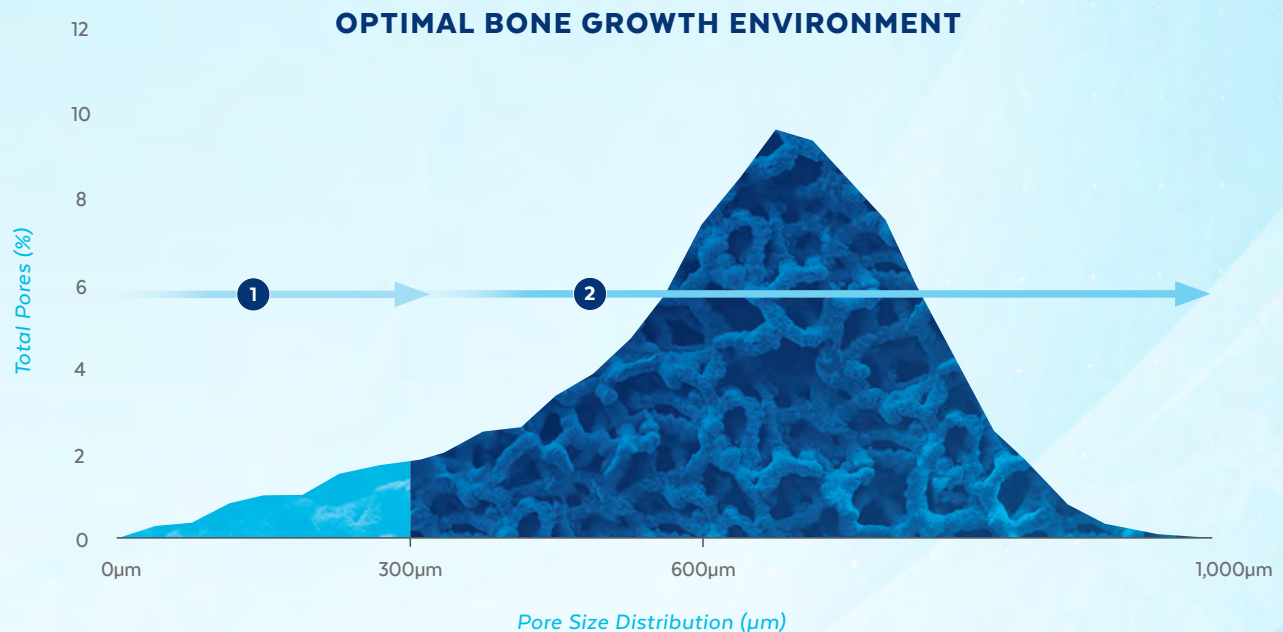
Grid



Open architecture



HEDRON™



1

ONGROWTH

<300μm

Small pores (<300μm) are recommended to support initial surface adhesion²

2

BONE FORMATION

>300μm

Large pores (>300μm) have been shown to lead to direct osteogenesis³

2. Torres-Sanchez et al. *Material Science and Engineering*. 2017 Mar; 219–228.

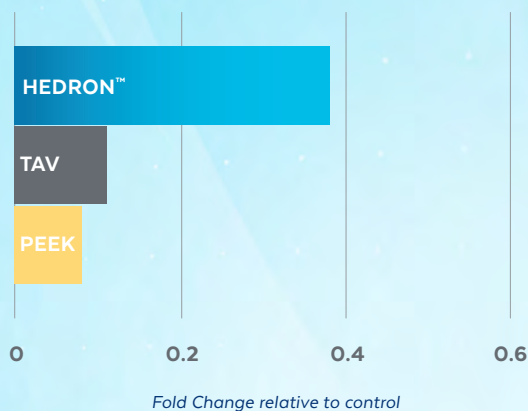
3. Karageorgiou V, Kaplan D. *Biomaterials*. 2005;26(27):5474–91.

ENCOURAGES CELLULAR RESPONSE

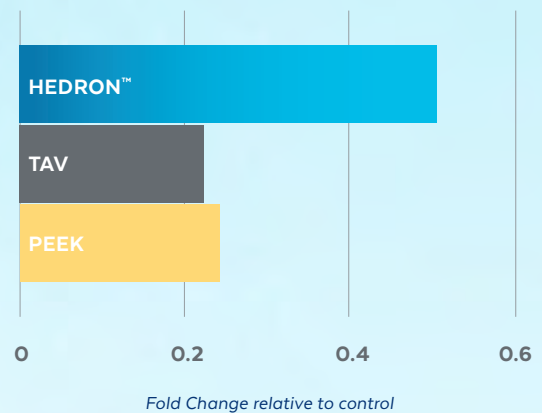


In Vitro testing demonstrated that HEDRON™ generated a greater expression of Vascular Endothelial Growth Factor (VEGF) and Osteocalcin, two biological indicators of bone formation.⁴

Osteocalcin Gene Expression



Vascular Endothelial Growth Factor



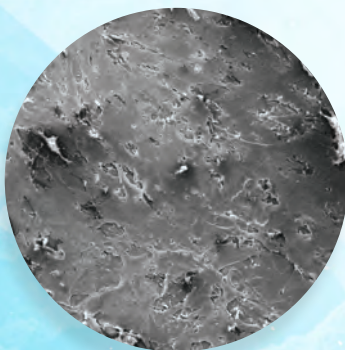
236% GREATER OSTEOCALCIN
COMPARED TO TAV

429% GREATER OSTEOCALCIN
COMPARED TO PEEK

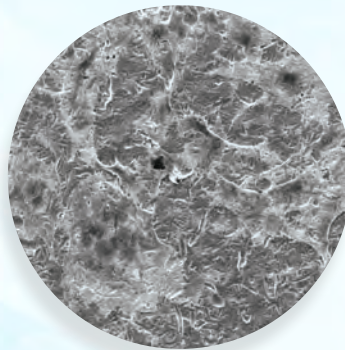
150% GREATER VEGF
COMPARED TO TAV

127% GREATER VEGF
COMPARED TO PEEK

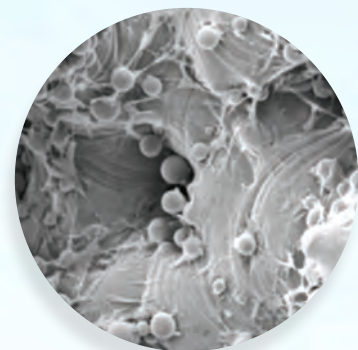
SEM images of cell proliferation at 21 days (500x magnification)



PEEK



TAV



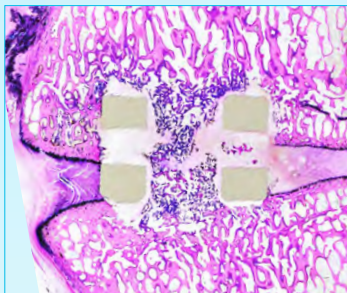
HEDRON™

⁴. Cell study data on file.

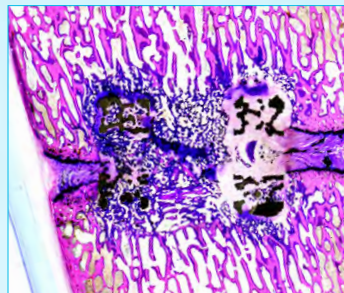
PROMOTES BONE FORMATION



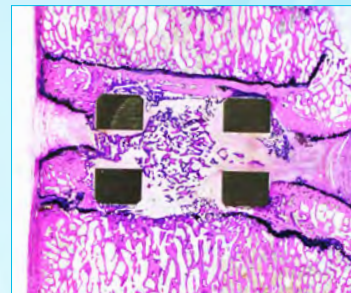
Unlike PEEK and TAV, the porous architecture of HEDRON™ allows for bone to grow through the spacer walls and incorporate into the fusion mass. In a pre-clinical ovine study, HEDRON™ implants showed significantly more bone growth compared to PEEK and titanium implants at 6-weeks post-op.⁵



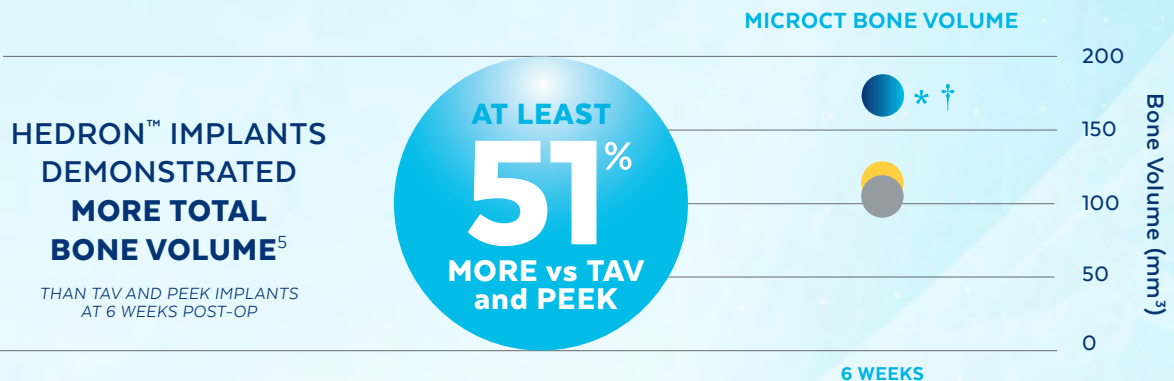
PEEK



HEDRON™



TITANIUM



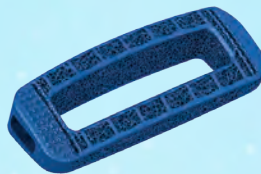
5. Animal study data on file.

*p<0.05 vs PEEK. †p<0.05 vs TAV

HEDRON™



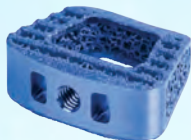
HEDRON A™
ALIF SPACER



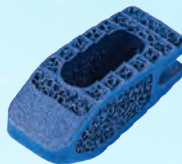
HEDRON L™
LLIF SPACER



HEDRON IA™
INTEGRATED ALIF SPACER



HEDRON C™
ACDF SPACER



HEDRON P™
PLIF SPACER



HEDRON IC™
INTEGRATED ACDF
PLATE-SPACER



HEDRON T™
TLIF SPACER



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