



Trabecular Metal™ Primary Hip Prosthesis



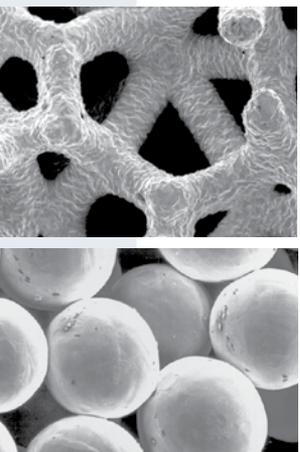
The Best Thing Next To Bone™

TRABECULAR METAL TECHNOLOGY

Trabecular Metal™ material provides for a high-friction bone interface for excellent scratch fit and initial implant stability. In addition, its highly porous, strut configuration enables extensive in-growth and strong long-term fixation.¹

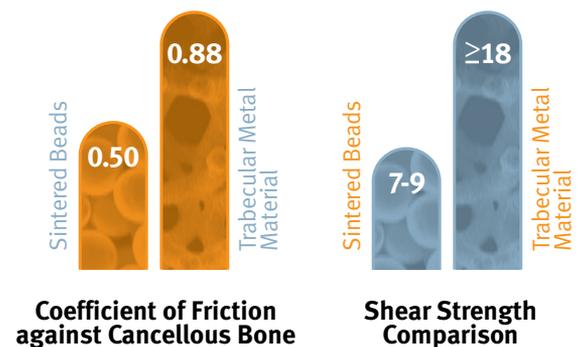


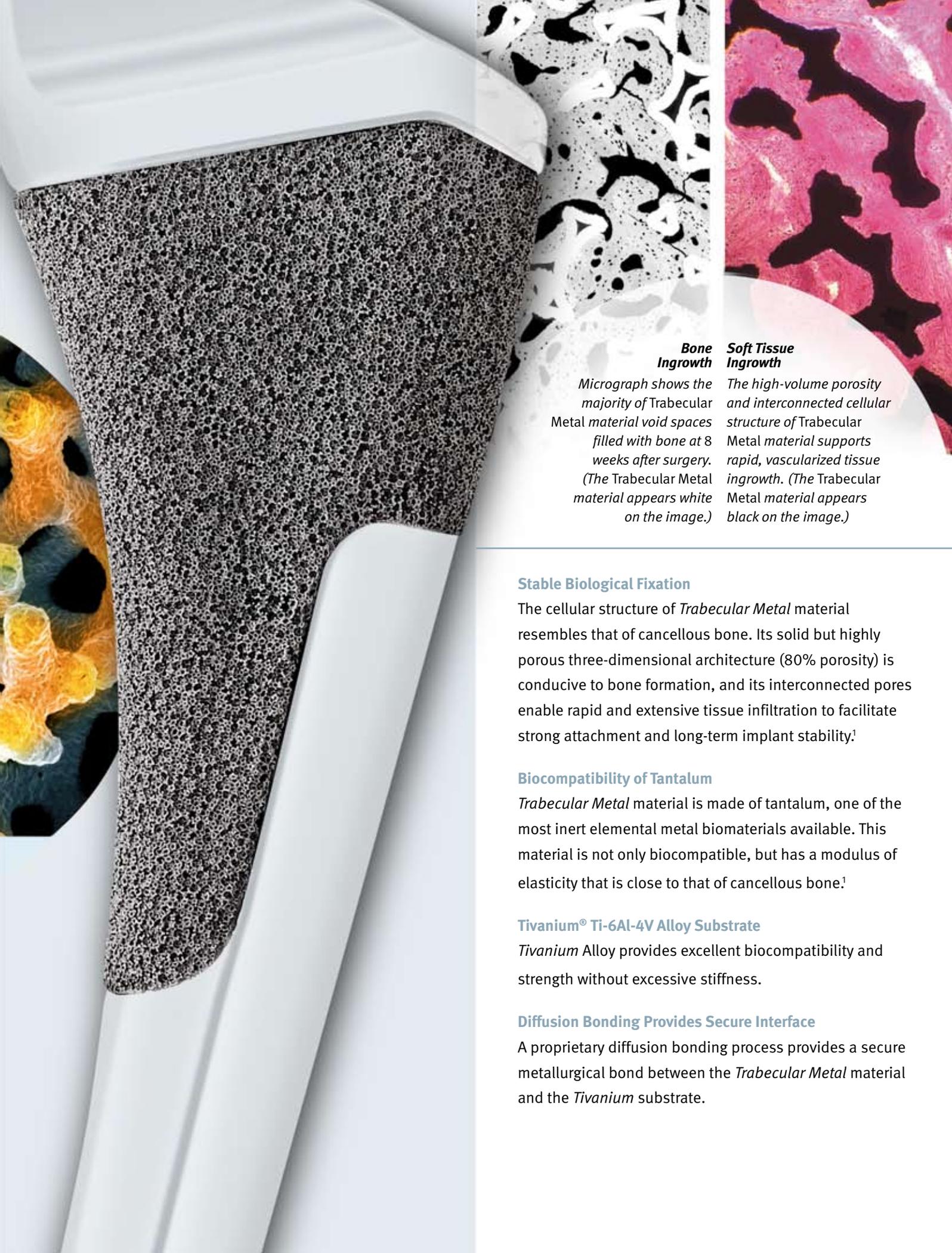
t h e b e s t t h i n g
n e x t t o b o n e



Compared to Sintered Beads

Trabecular Metal material addresses the need for initial and long-term implant stability. Its coefficient of friction against cancellous bone is substantially higher than sintered beads.² This facilitates direct bone apposition,^{3,4} creating a scratch fit that maximizes initial stability at implantation. Moreover, it has a higher bone interface shear strength than sintered beads (MPa).^{1,5}





**Bone
Ingrowth**

Micrograph shows the majority of Trabecular Metal material void spaces filled with bone at 8 weeks after surgery. (The Trabecular Metal material appears white on the image.)

**Soft Tissue
Ingrowth**

The high-volume porosity and interconnected cellular structure of Trabecular Metal material supports rapid, vascularized tissue ingrowth. (The Trabecular Metal material appears black on the image.)

Stable Biological Fixation

The cellular structure of *Trabecular Metal* material resembles that of cancellous bone. Its solid but highly porous three-dimensional architecture (80% porosity) is conducive to bone formation, and its interconnected pores enable rapid and extensive tissue infiltration to facilitate strong attachment and long-term implant stability!

Biocompatibility of Tantalum

Trabecular Metal material is made of tantalum, one of the most inert elemental metal biomaterials available. This material is not only biocompatible, but has a modulus of elasticity that is close to that of cancellous bone.¹

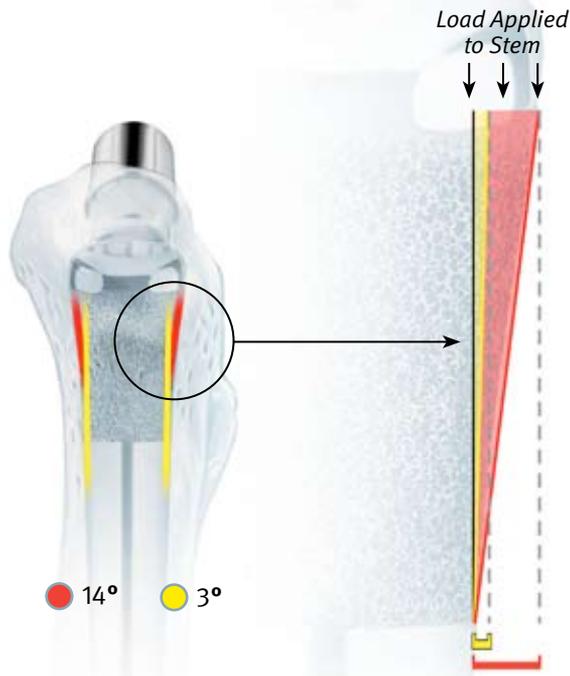
Titanium® Ti-6Al-4V Alloy Substrate

Titanium Alloy provides excellent biocompatibility and strength without excessive stiffness.

Diffusion Bonding Provides Secure Interface

A proprietary diffusion bonding process provides a secure metallurgical bond between the *Trabecular Metal* material and the *Titanium* substrate.

14° Proximal Taper



Forces are distributed to a greater area across the proximal bone with a 14° taper.



- 1 Efficient Proximal Load Transfer**

The 14° proximal A/P taper (7° per side) optimizes proximal load transfer by distributing more compressive forces in the proximal region of the femur to minimize stress shielding.^{6,7}
- 2 Resistance to Subsidence**

The proximal geometry of the stem, coupled with the scratch fit and ingrowth characteristics of the *Trabecular Metal* material enhances stability, helps resist stem subsidence, and, in turn, reduces femoral hoop stress.^{1,6,7}
- 3 Additional Proximal Loading and Eased Stem Insertion**

The smooth distal 3° taper helps to encourage proximal loading and prevents impingement during stem insertion.

Wide Range of Patient Anatomies

The *Trabecular Metal* Primary Hip Prosthesis is proportionally sized to meet a wider range of patient anatomies.

STABILITY PROVIDES

The *Trabecular Metal* Primary Hip Prosthesis

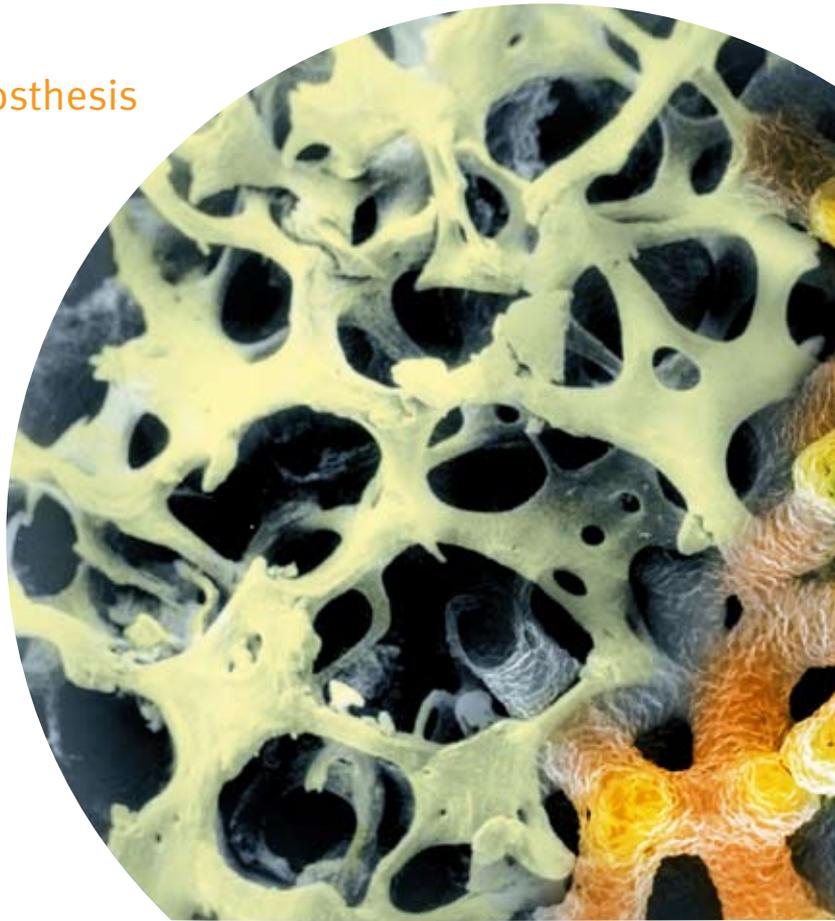
brings the distinctive properties and

clinically proven benefits of

Trabecular Metal Technology to a

bone conserving and proximal

loading stem design.



b o n e i n g r o w t h
p r o v i d e s

C O N F I D E N C E



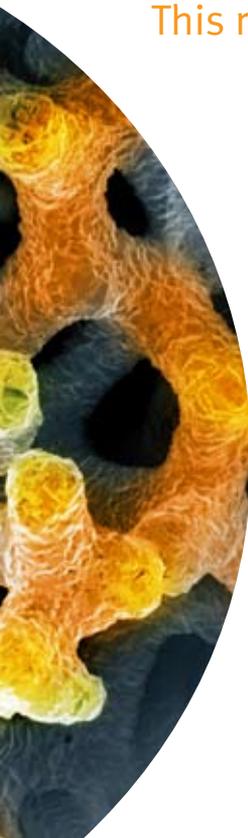
This results in an optimal combination of initial stability, enhanced, long-term biological fixation and efficient proximal load transfer.^{1,7}

The features and benefits of the *Trabecular Metal Primary*

Hip Prosthesis proves that collaborative relationships

and innovative solutions benefiting surgeons and

patients alike is truly “*confidence in your hands*”.



S T A B I L I T Y

23.5° Neck Resection Angle



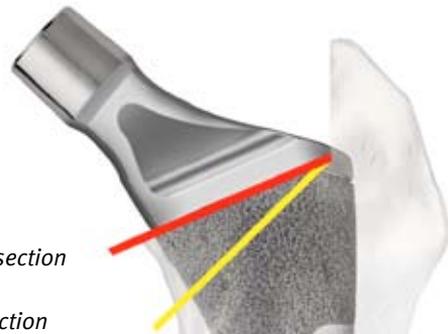
Trapezoidal stem cross-section provides optimized fit within the proximal femur.

Acetabular Options

Zimmer provides a complete line of acetabular options with the proven stability and fixation benefits of *Trabecular Metal* material.



- 23.5° Neck Resection
- 40° Neck Resection



Increased Rotational Stability

The 23.5° neck resection angle helps retain proximal bone, which increases surface area contact with the *Trabecular Metal* material. This increases initial and rotational stability, as well as long-term biological fixation.^{6,7}

4 Optimized Soft Tissue Balance

Standard and Extended offsets are offered to facilitate optimal anatomic soft tissue restoration. Extended offsets are achieved through a parallel neck shift of 5mm without changing neck angle so leg length will not be affected.

5 Full Range of Femoral Head Options

A 12/14 neck taper accommodates a complete selection of metal and ceramic femoral heads.

6 Improved Range of Motion

A reduced neck geometry below the 12/14 taper helps increase range of motion.

Zimmer® Minimally Invasive Solutions™ Compatible Instrumentation

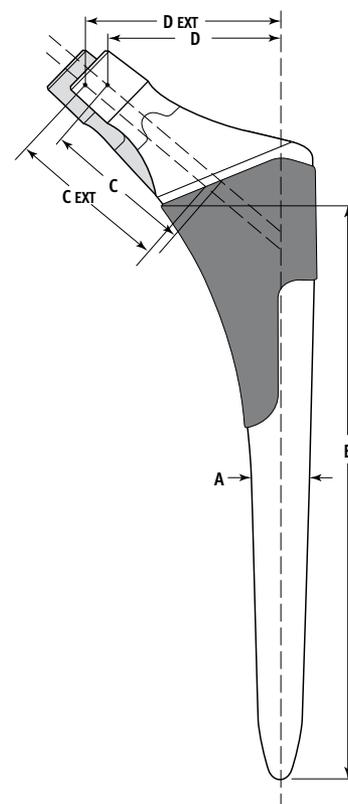
Instrumentation is compatible with a variety of approaches and surgical techniques, including both minimally invasive and standard open procedures.



Trabecular Metal Primary Hip Prosthesis

Prod. No. STD	A Stem Size (mm)	B Stem Length (mm)	C Neck Length (mm) When Head/Neck Component Selected is:					D Stem Offset (mm) When Head/Neck Component Selected is:				
			-3.5	+0	+3.5	+7.0	+10.5	-3.5	+0	+3.5	+7.0	+10.5
			00-7864-009-00	9	100	24.3	27.8	31.3	34.8	38.3	28.4	31.0
00-7864-010-00	10	106	25.3	28.8	32.3	35.8	39.3	29.9	32.5	35.1	37.7	40.4
00-7864-011-00	11	117	28.4	31.9	35.4	38.9	42.4	32.9	35.5	38.1	40.7	43.4
00-7864-012-00	12	128	31.4	34.9	38.4	41.9	45.4	35.9	38.5	41.1	43.7	46.4
00-7864-013-00	13	138	32.4	35.9	39.4	42.9	46.4	37.4	40.0	42.6	45.2	47.9
00-7864-014-00	14	149	33.4	36.9	40.4	43.9	47.4	38.9	41.5	44.1	46.7	49.4
00-7864-015-00	15	160	34.4	37.9	41.4	44.9	48.4	40.4	43.0	45.6	48.2	50.9
00-7864-016-00	16	171	35.6	39.1	42.6	46.1	49.6	41.9	44.5	47.1	49.7	52.4
00-7864-017-00	17	172	36.5	40.0	43.5	47.0	50.5	43.4	46.0	48.6	51.2	53.9
00-7864-018-00	18	172	37.4	40.9	44.4	47.9	51.4	44.9	47.5	50.1	52.7	55.4

Prod. No. EXT	A Stem Size (mm)	B Stem Length (mm)	C EXT Neck Length (mm) When Head/Neck Component Selected is:					D EXT Stem Offset (mm) When Head/Neck Component Selected is:				
			-3.5	+0	+3.5	+7.0	+10.5	-3.5	+0	+3.5	+7.0	+10.5
			00-7864-011-20	11	117	30.6	34.1	37.6	41.1	44.6	37.9	40.5
00-7864-012-20	12	128	33.6	37.1	40.6	44.1	47.6	40.9	43.5	46.1	48.7	51.4
00-7864-013-20	13	138	34.6	38.1	41.6	45.1	48.6	42.4	45.0	47.6	50.2	52.9
00-7864-014-20	14	149	35.6	39.1	42.6	46.1	49.6	43.9	46.5	49.1	51.7	54.4
00-7864-015-20	15	160	36.6	40.1	43.6	47.1	50.6	45.4	48.0	50.6	53.2	55.9
00-7864-016-20	16	171	37.8	41.3	44.8	48.3	51.8	46.9	49.5	52.1	54.7	57.4
00-7864-017-20	17	172	38.6	42.1	45.6	49.1	52.6	48.4	51.0	53.6	56.2	58.9
00-7864-018-20	18	172	39.7	43.2	46.7	50.2	53.7	49.9	52.5	55.1	57.7	60.4



1. Bobynd JD, Hacking SA, Chan SP, et al. Characterization of new porous tantalum biomaterial for reconstructive orthopaedics. Scientific Exhibition: 66th Annual Meeting of the American Academy of Orthopaedic Surgeons; 1999; Anaheim, CA.
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4. Hacking SA, Bobynd JD, Toh K-K, et al. The osseous response to corundum blasted implant surfaces in a canine total hip arthroplasty model. *Clin Orthop*. 1999;364:240-253.
5. Bobynd JD, Stackpool G, Toh K-K, et al. Characteristics of bone ingrowth and interface mechanics of a new porous tantalum biomaterial. *J Bone Joint Surg*. 1999;81-B:907-914.
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