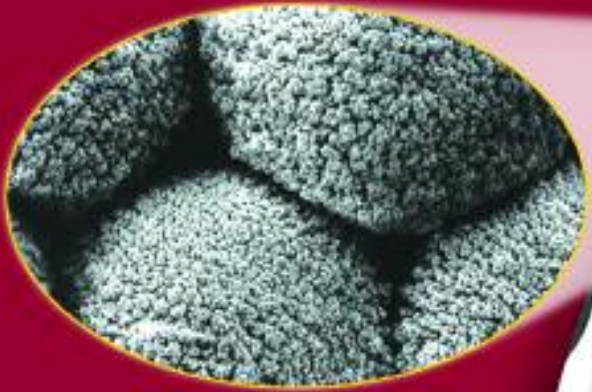


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Triathlon® Knee System with Peri-Apatite™

**Peri-Apatite™ is Stryker's
Patented Technology for applying a
biologic coating to three-dimensional
in-growth surfaces.**



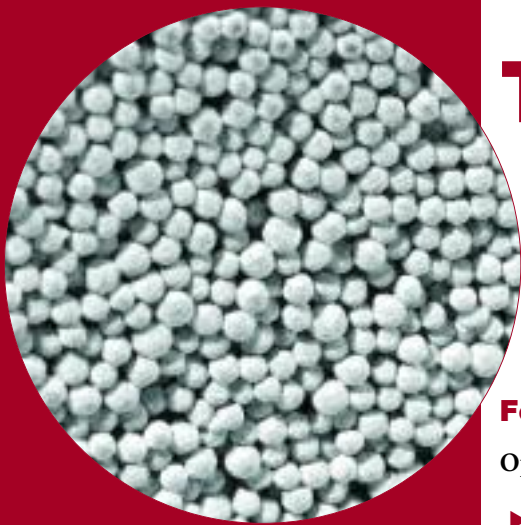
Optimized coverage for porous surfaces

- ▶ Three-dimensional coverage¹
- ▶ Average hydroxyapatite (HA) coating thickness of 20 μm to allow for in-growth¹

Bone-like hydroxyapatite

- ▶ 100% crystalline HA²
- ▶ High surface area like bone crystals¹





Peri-Apatite™ was developed to coat hydroxyapatite onto porous coated fixation surfaces

Triathlon® Knee System

Increased Motion

- ▶ The Triathlon® Knee System allows for natural knee motion and up to 150 degrees of flexion.

Better Fit

- ▶ The design of Triathlon® offers a wide range of sizing options that closely match both female and male anatomy.⁵

Improved Wear Performance

- ▶ New test results show Stryker's Triathlon® Knee System with X3® advanced bearing technology demonstrates up to 96% less wear than competitive premium bearing technology.⁴

Triathlon® Knee System with Peri-Apatite™

Features

Optimized Coverage for Porous Surfaces

- ▶ The surface area of Peri-Apatite™ HA is approximately 1000 times greater than that of the HA plasma sprayed coatings.¹
- ▶ The crystals deposited from the Peri-Apatite™ form an HA coating with an overall average thickness of 20 µm, which allows for bone in-growth.¹

Benefits

- ▶ As opposed to plasma-sprayed HA coatings, Peri-Apatite™ HA coating wraps itself around the circumference of the porous surface, increasing the HA surface available for fixation¹ (see figure below).
- ▶ The Peri-Apatite™ HA coating does not block the openings of the porous metal implant.

The image below depicts the distinct advantage of the Peri-Apatite™ technique. PA uniformly coats three-dimensional surfaces providing a larger surface area for fixation thus avoiding coating only substrate surfaces in the direct line with the plasma spraying HA technique.¹

Peri-Apatite™ HA Coating Coverage



This image compares the solution-deposited or PA coating versus the plasma-sprayed HA coating. The Peri-Apatite™ coating is depicted on the left side of the image. HA = red.

Bone-like Hydroxyapatite

- ▶ Deposited PA coating is 100% crystalline HA, whereas the HA coating deposited from plasma spraying is less pure and less crystalline.²
- ▶ A consistent HA coating purity and crystallinity allows for reliable and reproducible *in-vivo* performance of Peri-Apatite™ HA coating for implant fixation.²

1. Serekian, Paul (2004), Hydroxyapatite: from Plasma Spray to Electrochemical Deposition. From: Fifteen Years of Clinical Experience with Hydroxyapatite Coatings in Joint Arthroplasty: Edited by Jean-Alain Epinette and Michael T. Manley. Springer, France, pp 29-33.
2. Zitelli, Joseph P. and Higham, Paul (2000), A Novel Method For Solution Deposition of Hydroxyapatite Onto Three Dimensionally Porous Metallic Surfaces: Peri-Apatite HA. Materials Research Society Symposium Proc., Vol. 599.
3. Stryker Orthopaedics Test Report 04-039.
4. Stryker Orthopaedics Test Report RD-06-013.
5. Hitt, Kirby, et al: Anthropometric Measurement of the Human Knee: Correlation to the Sizing of Current Knee Arthroplasty Systems, JBJS, Vol. 85-A, Supplement 4, 2003.

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