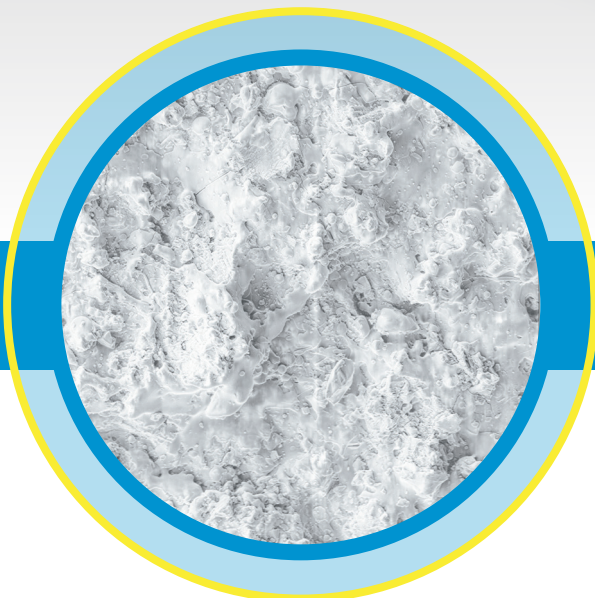
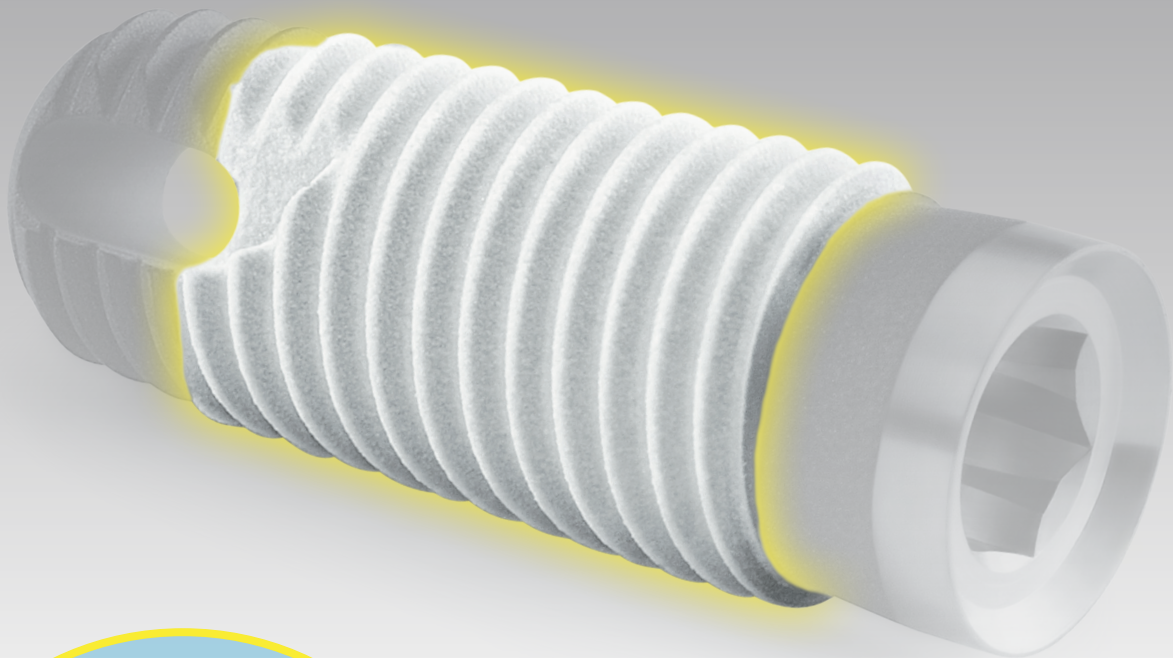




Zimmer®  
MP-1® HA  
Technology

HISTORY.  
PERFORMANCE.  
SUCCESS.



**Hydroxyapatite Surface Technology**  
Celebrating Over Three Decades of Clinical Success

 **zimmer** | dental

# DOCUMENTED CLINICAL SUCCESS

Implants with *MP-1* HA enjoy outstanding clinical outcomes that further demonstrate the quality and performance of the coating.

## CUMULATIVE IMPLANT SURVIVAL RATE



Documented clinical survival rates for **5,099** Zimmer *MP-1* HA coated Implants:

- Implant survival rate mean **98.9%** (range from 93.2% to 100%)
- Follow-up times range from **12 to 108** months (mean = 56.6 months)



# ZIMMER DENTAL HA TECHNOLOGY CHAMPION

Zimmer Dental has led the industry in hydroxyapatite (HA) technology for over 30 years. Dental literature has widely documented the ability of HA coatings to increase bone-to-implant contact (BIC), enhance osseointegration and provide a strong platform to bind with the bone.<sup>1-2</sup> The innovative *MP-1* HA coating is a technological advancement in both stability and performance. The proprietary *MP-1* HA coating is unique to Zimmer with features superior to competitive HA coatings.

## ZIMMER MP-1 HA BENEFITS

- **BETTER OSTEOCONDUCTIVE POTENTIAL**

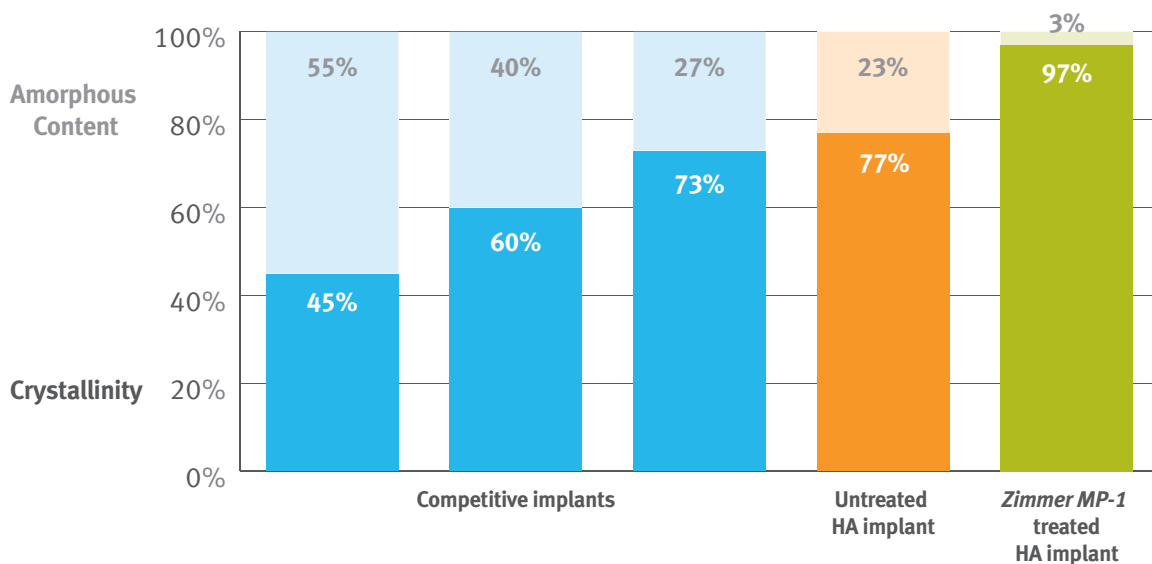
Highly crystalline HA coatings exhibit more bone apposition than those with lower crystallinity. Zimmer's *MP-1* HA with up to 97% crystalline HA content is significantly higher than the 45-73% crystalline content of the competitive HA coatings tested.<sup>3</sup>

- **LESS RESORPTION**

To minimize resorption, Zimmer's HA coating is subjected to a proprietary *MP-1* heat treatment that decreases the amorphous content down to 3%<sup>1</sup>, significantly lower than the 29-62% amorphous content of other commercial HA coatings.<sup>3</sup>

- **MORE STABILITY**

A coating of high crystallinity and low dissolution rate lends stability to the implant bed.<sup>2</sup> Calcium dissolution for *Zimmer MP-1* HA is lower than other commercially available HA coatings.<sup>3</sup>



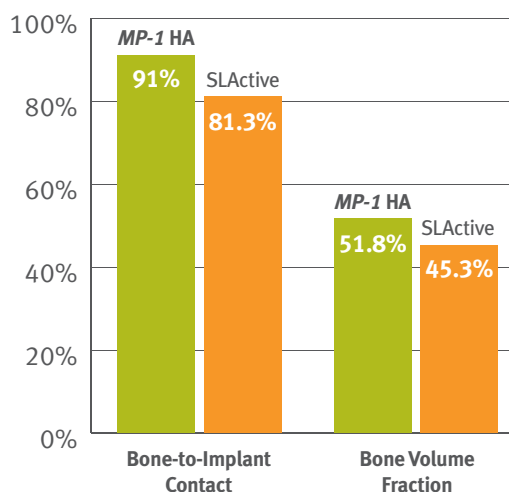
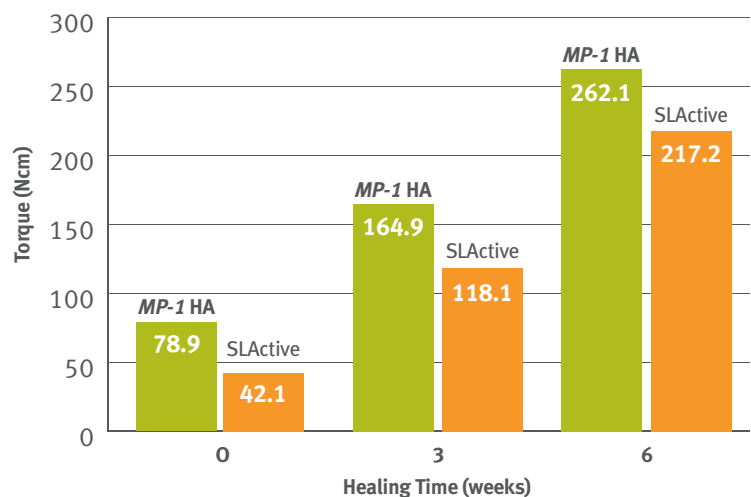
# EARLY SECONDARY BETTER THAN SLACTIVE

## BIOMECHANICAL EVALUATIONS<sup>12</sup>

A study was performed in sheep to compare the stability and bone tissue response of Zimmer's *MP-1* HA implants and implants with Straumann's SLActive surface. After 3 and 6 weeks of early healing, results demonstrated that Zimmer's *MP-1* HA implants achieved significantly better stability and osseointegration than Straumann's SLActive implants. This study showed the following benefits:

### GREATER BONE FIXATION<sup>12</sup>

- Zimmer's *MP-1* HA implants achieved significantly higher reverse torque values after 3 and 6 weeks ( $p < 0.01$ ) than Straumann's SLActive Surface in this study.
- Reverse torque values demonstrate the degree of bone fixation to implant surfaces.



### HIGHER BONE TO IMPLANT CONTACT<sup>12</sup>

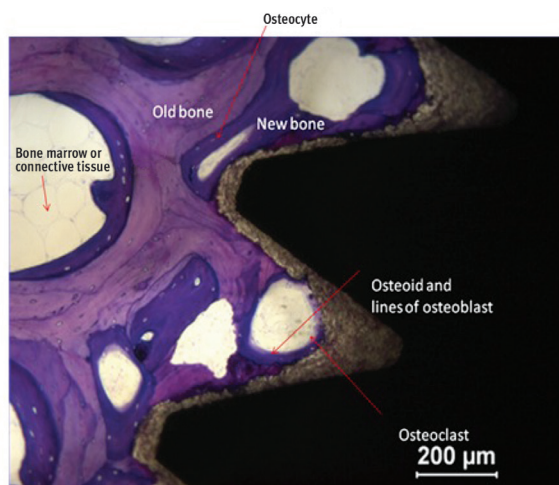
- Zimmer's *MP-1* HA implants achieved significantly higher BIC and bone volume fraction (BV/TV) ( $p < 0.05$ ) after 3 and 6 weeks than Straumann's SLActive Surface in this study.
- Bone-to-implant contact (BIC) and bone volume fraction indicate evidence of an implant physically anchored in bone.

# STABILITY EVALUATION

## HISTOLOGICAL EVALUATION<sup>12</sup>

Bone response to the implant surfaces was conducted by histological evaluations. *MP-1* HA coated surfaces exhibited no adverse tissue responses both at 3 and 6 weeks in this study. New bone with osteoclastic and osteoblastic activity indicated active bone remodeling. Interstitial tissues in the HA implant interface region was predominantly mature while the SLActive surface exhibited a less mature marrow closer to implant surface in this study.<sup>12</sup>

### BETTER BONE DENSITY<sup>12</sup>

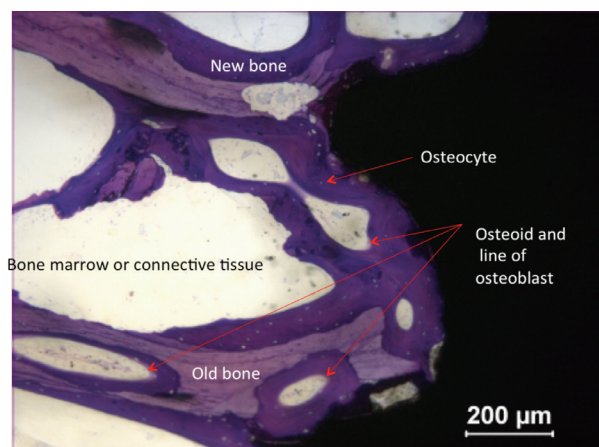


#### *MP-1* HA AT 6 WEEKS

Newly formed trabecular bone was thick and showed an increase in bone density compared to SLActive in this study.

#### SLACTIVE AT 6 WEEKS

Observed bone density was variable at threaded implant surfaces and within cross sections compared to *MP-1* HA in this study.



## These Zimmer Dental implants are available with the proprietary MP-1 HA coating:

- Tapered Screw-Vent® Implants with MP-1 HA Dual Transition Selective Surface
- Screw-Vent® Implants with MP-1 HA Selective Surface
- Spline® Twist™ Implants with MP-1 HA Surface
- SwissPlus® Implants with MP-1 HA Dual Transition Selective Surface (not shown)



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Zimmer Dental  
1900 Aston Avenue  
Carlsbad, CA 92008-7308  
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