

“Hydroxylapatite (HA) Coated dental implants have been successfully used for almost 25 years.

It has been well documented in the **scientific literature** over the past 25 years that HA coated implants have the following advantages over uncoated implants.

- Enhanced osseointegration at earlier stages,
- Greater initial implant/bone strengths,
- Quicker initial implant/bone attachment,
- Higher initial success rates,
- Withstand greater immediate loads,
- Achieve better bone contact in less dense and decreased amounts of bone

From a clinical perspective, I have personally placed over 10,000 HA coated implants with a 98+% success rate. The few times I placed uncoated implants resulted in more failures, loss of revenues and unhappier patients. There is no question in my mind that a HA coated implant is more successful, can be loaded earlier and develops a quicker, stronger bond with the bone than an uncoated one.

While there have been claims of coatings shearing from the implant and/or the coatings dissolving from the surface of the implant, my experience and the literature do not support these claims. It is important to realize that all HA coatings are not the same. HA coating of implants is both an art and a science. HA coatings can have a shear strength from 1,800 PSI for TCP coatings to 8,000 PSI for HA coatings. The quality of the coating is dependent upon the experience and quality control of the coating company. The quality of the HA coating depends upon a number of factors including;

- The Coating Technique,
- Degree of Crystallinity
- Density,
- Purity,
- Chemical Composition.
- Macrotecture of the Implant Surface,
- Coating Thicknes
- Dissolution Rate,
- Bond Strength.

Plasma sprayed HA coatings of dental implants and joint replacement implants performed by reputable coating companies have consistently performed as good or better than uncoated implants. The standard in the industry is still Plasma Spray although there now exists numerous methods to coat HA onto implants including;

- Plasma Spray,
- Electronic Spray Deposition,
- Pulsed Laser Deposition,
- Micro-arc Oxidation,
- RF Magnetron Sputter Deposition,
- Sol-gel Film,
- Spark Discharge,
- Chemical Vapor Deposition,
- Ion Beam Assisted Deposition,
- Hot Isostatic Pressing.

As well, numerous HA coatings are available including;

- Fluorapatite,
- Dicalcium Pyrophosphates,
- Chemical Made Apatite,
- Nano-Structured Ceramics,
- CaTiZirconium Phosphates,
- CaTi Surfaces,

While these new coatings show promise, the standard in the industry today is the Plasma Sprayed HA coating performed by a reputable, experienced coating company."

Simpler Implants contract all their coatings to one of the largest HA coating companies in the world who have been in the coating business for over 25 years. They coat hips and knees for the medical community as well as dental implants for the dental community. This company has ISO 13485:2003 certification, the highest quality control standards in the world. The dual coated Simpler Implants have a shear strength close to 8,000 psi. The bone will fracture before the coating will come off.

There is no question that an HA Coated Narrow Diameter implant will out perform and uncoated one. On request, Simpler can provide you with a comprehensive list of over 125 scientific articles from the past 25 years which substantiate these above claims and comments.

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