

For the Patients

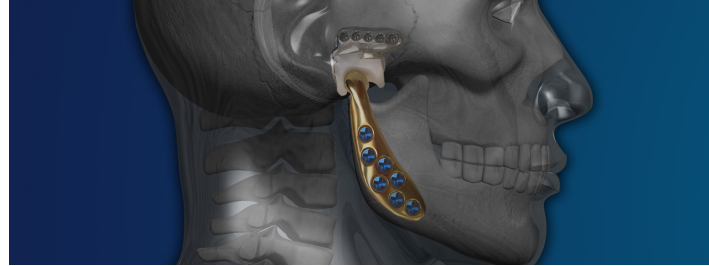
When you're considering a TMJ system, it is important to understand the vital features and the clinical research behind the design, materials, and function of the implant system.

The OrthoTiN TMJ system is a comprehensive design which has demonstrated proven performance and patient satisfaction. The system was researched and developed by a highly regarded design team, through extensive clinical and laboratory research. Through the research and development process, OrthoTiN is able to produce natural pain-free implants with long-term durability of the implant system components and maximum biocompatibility of the implant materials.

Ask your surgeon about the OrthoTiN system and if it and its long-term benefits are right for you.

Advantages of Titanium Implants

OrthoTiN TMJ Implants are made from Titanium Alloy. Titanium has many desirable characteristics, and it is more biocompatible and more flexible than the cobalt-chromium alloys used in other TMJ systems. It is widely considered the material of choice for the orthopedic implants. To improve the hardness and enhance biocompatibility of the titanium implants, OrthoTiN Ramus component is coated with titanium nitride coating, resulting in increased lubricity, improved durability, improved scratch resistance, improved hardness, reduced UHMWPE wear, and increased isolation of the of the titanium alloy ions. Furthermore, the wear rates associated in Tin Coat on UHMWPE are so low that this technology, coupled with biocompatible implants, promise the potential for a lifetime joint replacement.



ORTHOTiN

Biological Compatibility

There are numerous advantages of solid titanium alloy over the traditional Co-Cr alloy. The lower modulus of titanium alloy allows for more uniform load distribution, reducing stress shielding. Titanium alloy is also more biocompatible than Co-Cr alloy. The main disadvantage of titanium alloy is its inferior abrasion resistance, a problem resolved with the use of the extremely hard TiN coating. With the use of C-TiN-C, there is no need for a Co-Cr condylar head, which eliminates the metal-metal interface, reducing prosthesis cost and enhancing overall performance.



CONTACT

Get in touch

If you have any enquiries regarding our services or if you have a special request, we'd like to hear from you!



9 Whippany Road, Bldg. A1 Unit 12B
Whippany, NJ 07981, USA



sales@orthotin.com
www.orthotin.com



+1 (973)-585-4281

OrthoTiN TMJ System

The OrthoTiN TMJ System is not currently available for distribution in the United States.

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The OrthoTiN TMJ system is designed with a focus on matching patient anatomy

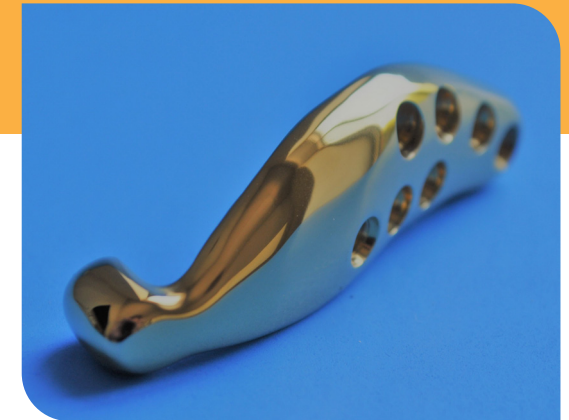
The implants geometry is generated from the CT Scan of the patient. OrthoTiN Prosthesis are intended to provide a custom bone fitting surface replacements for the joint maintaining maximum bone stock. The temporomandibular joint system is composed of a ramus and fossa component. The Ramus component is used to replace the condylar head while being secured to the lateral side of the mandible. In order to provide long-term durability for the articulating surface of the implant, a titanium nitride surface coating is applied. The fossa is composed of solid titanium alloy featuring eminence flanges and an ultra-high molecular weight polyethylene (UHMWPE) bearing insert for replacing the glenoid fossa and articulating with the ramus prosthetic condylar head. Each prosthesis is individually fabricated to the unique anatomy of the patient. Customizing the implant fit allows for excellent adaptation to these discrepant features providing maximum fixation and optimal function of the Temporomandibular joint.



Advantages of OrthoTiN Custom TMJ Design

One of the advantages of a OrthoTiN custom system is the familiarity of the patient's anatomy that the design team develops throughout the generation of the anatomical model as well as the prosthesis design. Using OrthoTiN's CT scan protocol results in scan data that best approximates patient anatomy and leads to a more accurate device. With an accurate representation of the patient's anatomy, surgical planning becomes more accessible and reliable. Osteotomy planning, occlusion adjustment, and any patient specific considerations can be addressed. Also, a 3D Biomodel can be printed for verification of the design as well as for surgical reference and planning.

- ✓ Custom implants matching patients anatomy
- ✓ Titanium Alloy Ti6Al4V with Ceramic Titanium Nitride Coating provides superior mechanical performance
- ✓ Ceramic Titanium Nitride Coating on UHMWPE articulation provides superior wear characteristics when compared to CoCr
- ✓ Biologically most compatible implant material available
- ✓ Oblong Condylar Head Design Increases Contact area and Reduces Wear
- ✓ Isolation of Metal Ions



Condylar Head Design Increases Contact & Reduces Wear

The standard design for the condyle in the OrthoTiN TMJ prosthesis is a modified barrel shape which allows for quasi area contact between the condylar head and the UHMWPE bearing surface. This shape allows for greater disbursement of component contact as compared to a traditional ball design, which results in point contact. The increased contact area decreases the wear of the polyethylene bearing. Mathematical analysis shows an approximate ten-fold decrease in contact stress, which offers a significant biomechanical advantage over conventional ball on flat surface.

Titanium Nitride Coating on Ramus Reduces Wear & Friction

In order to provide for durability of the implant, a titanium nitride (TiN) surface coating is applied to the entire ramus component (C-TiN-C). C-TiN-C is a near diamond hard and highly biocompatible ceramic coating with a low coefficient of friction. The wear experienced by the TiN coated implant on UHMWPE bearing is approximately 1/3 of the wear experienced by an equivalent CoCr/Poly couple. This makes C-TiN-C finished titanium a sound mechanically and biologically compatible implant material.