



OsteoCentric®
TECHNOLOGIES

UnifiMI® MIS Bone Preservation Interface Technology

*The Principles of Minimally Invasive Surgery (MIS)
Applied to Bone*

Improving & Accelerating the Patient's Path to Recovery

OsteoCentric Technologies continues to redefine Orthopedic MIS technology by applying its patented UnifiMI MIS Bone Preservation Technology capable of unprecedented performance capabilities¹ across all orthopedic market segments.

First there was **Osseointegration**

A pivotal breakthrough in medical technology uncovering Titanium's ability to fuse with bone allowing for time-dependent biological implant stability.

Now there's **Mechanical Integration**

Following in the footsteps of Osseointegration, **UnifiMI** - MIS bone preserving interface technology creates an immediate structural and functional connection that provides sustained primary implant stability.

Inherent Clinical Challenges

Bone Damage. Insufficient Fixation.
Implant Instability & Loosening.

Implant fixation has its limitations and still poses¹ a relevant clinical problem within the Orthopedic industry due to the inherent challenges of bone damage during implant insertion², insufficient fixation and instability that can lead to implant loosening³.

Advanced Particle Based Simulation

Simulates complex bone structure subjected to high compression and crushing deformations resulting in micro bone fragments.

Damaged Bone Architecture



Are you Familiar with the Implant Stability Dip?

Stability Lifecycle Explained

Stability Dip - Legacy Compression-Based Interface

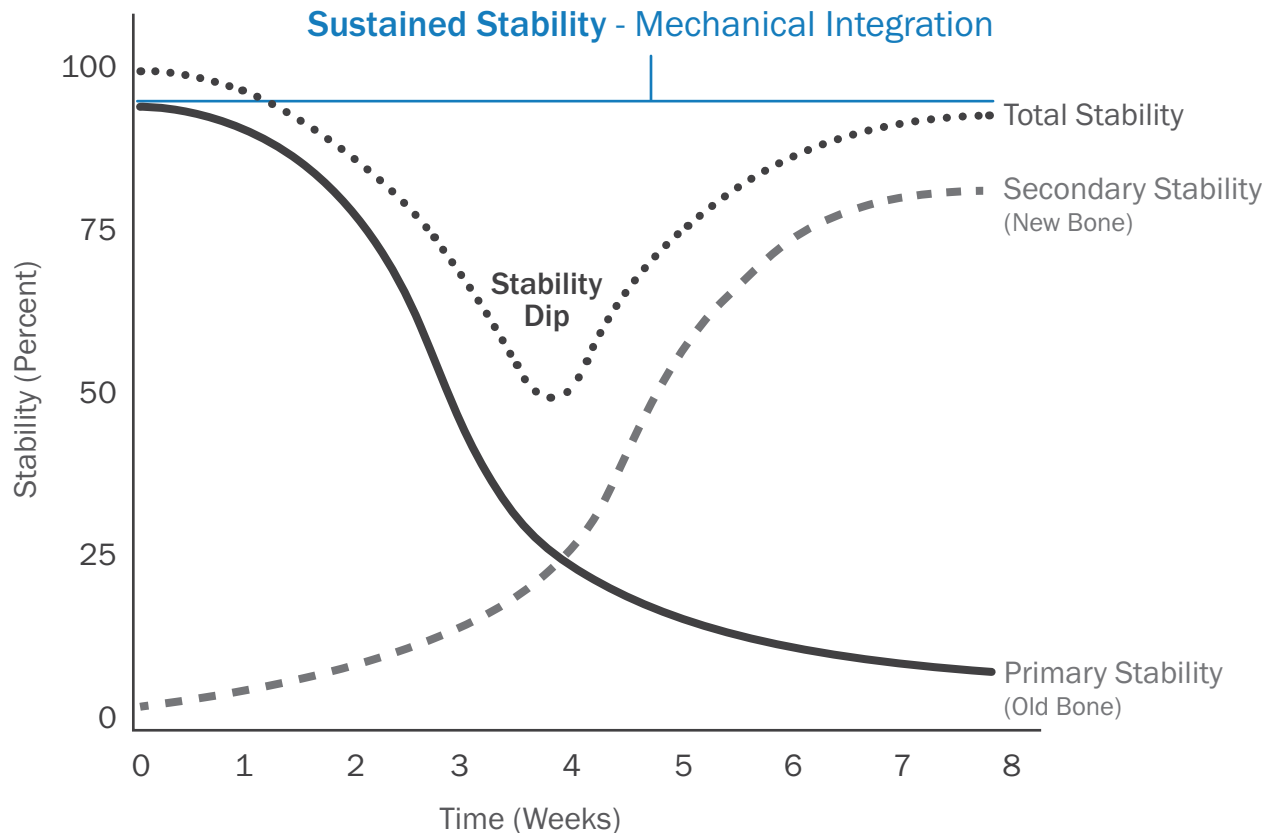
Time 0 Primary Implant Stability Established

Weeks 1 - 4/5 Primary Implant Stability Decreases

Weeks 5+ Secondary Implant Stability Increases

Sustained Stability - UnifMI Mechanical Interface

Time 0+ Primary Implant Stability Established & Sustained Over Time



Dentists discovered the stability dip because they are able to monitor and measure implant stability during patient follow up. Whereas compared to an orthopedic procedure, post-operative access to the implant is not possible. Monitoring stability and determining when the implant is capable of bearing loads is considered a critical factor in the short and long-term success of the implant. Most Orthopedic implants are impacted by and experience a similar stability response during the recovery phase.

The Dip in Implant Stability

The dip in implant stability is due to the structural and biologic response to bone damage that occurs during implant insertion² which dramatically affects implant stability and limits the bone's ability to bear functional loads while it reconstitutes.

90+

Elite Level 1
Trauma Centers



UnifiMI™
An OsteoCentric
Technology

9+

Years of Proven
Performance

Over \$150 Million Invested in Biomechanical Testing, Advanced Research & Development, and Clinical Evaluation

A New Era in Orthopedics

OsteoCentric Technologies is leading an industry-wide, global revolution to address the systemic issue of bone damage, compromised implant stability and loosening by developing new, minimally invasive techniques, instruments, and implants that go beyond soft tissues and focuses on preparing and preserving bone.

OsteoCentric developed and engineered UnifiMI Technology to meet the highest quality standards of the medical device industry and is also being optimized for non-medical multi-use applications.

Trusted & Adopted in:

- SI Joint
- Spine
- Trauma
- Sports Medicine
- Extremities
- Dental
- Veterinary



Surgeons Finally Have a Choice

Discover the MIS bone preservation solution that elite surgeons in world-renowned institutions have rapidly adopted and trust to help accelerate the patient's healing journey.

MIS Bone Preservation Tapping Technology & Instant Interlocking Thread-form

UnifiMI, the new standard and clinically proven platform technology that utilizes the principles of MIS bone preservation and mechanical integration to address the challenges associated with implant survivorship and patient outcomes by:



Preserving the architecture
of the patient's bone during
implant insertion



Sustaining primary
implant stability
over time



Leveraging MIS technology
to accelerate the patient's
healing journey

Advancements in Technology

UnifiMI® Fastener Technology was developed & engineered to meet the highest quality standards of the medical device industry and is being optimized for non-medical multi-use applications.

UnifiMI Platform Technology
Applications are Endless

Aerospace & Defense

Transportation



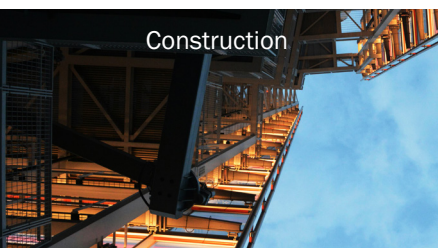
Sporting Goods



Oil & Gas



Construction



Automotive



Agriculture



Non-medical market segments developed advanced interfaces technologies to achieve mechanical stability while considering different material types and environmental conditions. Substrate preservation and interlocking for off-axis load resistance is critical for initial and sustained long-term stability. Orthopedics is one of the LAST industries still dependent on the compression-based interference fit.

References:

1. Widmer J, Aubin CE, van Lenthe GH, Matsukawa K. Innovations to improve screw fixation in traumatology and orthopedic surgery. *Front Bioeng Biotechnol.* 2022 Nov 25;10:1094813. doi: 10.3389/fbioe.2022.1094813. PMID: 36507265; PMCID: PMC9733944.
2. Steiner JA, Ferguson SJ, van Lenthe GH. Screw insertion in trabecular bone causes peri-implant bone damage. *Med Eng Phys.* 2016 Apr;38(4):417-22. doi: 10.1016/j.medengphy.2016.01.006. Epub 2016 Feb 23. PMID: 26920074.
3. Steiner JA, Christen P, Affentranger R, Ferguson SJ, van Lenthe GH. A novel in silico method to quantify primary stability of screws in trabecular bone. *J Orthop Res.* 2017 Nov;35(11):2415-2424. doi: 10.1002/jor.23551. Epub 2017 Mar 8. PMID: 28240380

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