

Auxein Medical Unveils Groundbreaking Study on Customized Temporomandibular Joint Implants

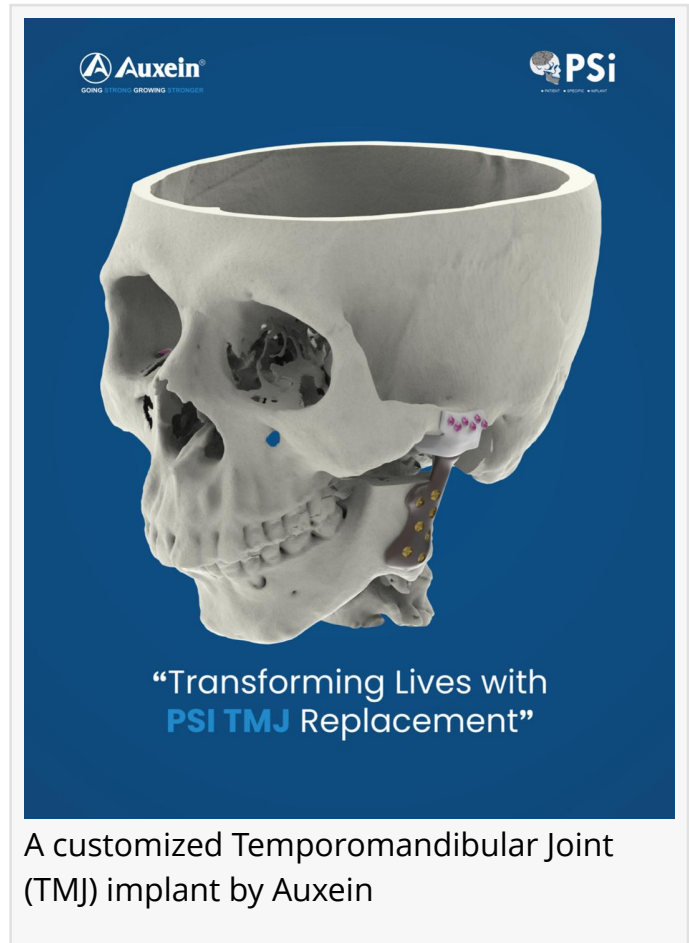
Auxein Medical proud to announce the publication of a comprehensive simulation study focusing on a customized Temporomandibular Joint (TMJ) implant

DELHI, DELHI, INDIA, October 14, 2024 /EINPresswire.com/ -- Auxein Medical, a pioneering orthopedic solution provider in India, is proud to announce the publication of a comprehensive simulation study focusing on a customized Temporomandibular Joint (TMJ) implant. This research aims to enhance the stability and functional behavior of TMJ implants for long-term applications, addressing the increasing prevalence of TMJ dysfunction in today's changing lifestyle and dietary habits.

The TMJ, a crucial bilateral hinge joint, plays a vital role in essential activities such as speaking, chewing, and yawning. Unfortunately, this joint is often susceptible to dysfunction, particularly among populations experiencing heightened stress and evolving dietary patterns. Auxein's customized Patient-Specific Implant (PSI) TMJ implants, developed using patient-specific CT scan data, offer significant advantages, including improved anatomical adaptability and reduced surgery time.

Key Features of the Study:

- **Finite Element Analysis (FEA):** The study utilizes FEA to assess stress and displacement in both bone and implant components under static loading conditions.
- **3D Printing Technology:** 3D models of the anatomical bone, ramus component, and fossa component were created to evaluate implant fitment accurately.
- **Material Selection:** The customized TMJ implant incorporates titanium for the ramus and ultra-high-molecular-weight polyethylene (UHMWPE) for the fossa, ensuring compliance with ISO



standards for material properties.

The findings indicate that von Mises stress values remain within acceptable limits for both implant components. UHMWPE displays controlled displacements while titanium demonstrates remarkable resilience under simulated chewing forces of 130 N, optimizing load distribution and minimizing adverse effects on surrounding bone structures.

“This study emphasizes the biomechanical performance and material suitability of customized TMJ implants, marking a significant advancement in maxillofacial surgery,” stated Mr. Gaurav Luthra, Vice President Global Manufacturing and Regulatory Head, Auxein Medical “The integration of PSI technology and virtual surgery planning enhances precision and improves the quality of life for patients undergoing TMJ replacement surgeries.”

As India’s leading orthopedic solution provider, Auxein is dedicated to advancing medical technology through innovative, patient-specific implant solutions. Our PSI implants promise greater precision, better fit, improved efficiency, reduced surgery times, and faster recovery, ultimately enhancing patient satisfaction.

About Auxein Medical: Auxein is dedicated to advancing medical technology through innovative Orthopedic and Arthroscopy solutions, committed to improving patient outcomes worldwide. We deliver excellence through cutting-edge research, superior manufacturing, and a deep understanding of healthcare needs.

Key Highlights:

- 20+ Million Patients Cared For
- 500+ Worldwide Employees
- Operations in 90+ Countries
- 3000+ Products, 200+ FDA-Approved Products

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