

North America Joint Resurfacing Devices Market Size and Forecast (2021 - 2031)

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Abstracts

The North America Joint Resurfacing Devices Market is projected to grow significantly, reaching an estimated US\$ 1,464.1 million by 2031, up from US\$ 1,047.7 million in 2024. This growth represents a compound annual growth rate (CAGR) of 5.0% from 2025 to 2031.

Executive Summary and Market Analysis

The North America joint resurfacing devices market is divided into three primary regions: the United States, Canada, and Mexico. Several factors are driving the growth of this market, including an advanced healthcare infrastructure, a high prevalence of osteoarthritis among the aging population, and the increasing adoption of innovative surgical technologies. According to the American Academy of Orthopaedic Surgeons, knee replacement surgeries, which often utilize resurfacing techniques, are expected to surpass 3.5 million annually in the U.S. by 2030. Resurfacing options are particularly appealing to younger patients who prefer bone-preserving alternatives to traditional joint replacement.

A notable product in this market is Smith and Nephew's OXINIUM resurfacing solution, which boasts a remarkable 94.1% survivorship rate over 20 years and a 35% reduction in revision surgeries compared to conventional metal-on-metal implants, as reported by medical device updates. Additionally, technological advancements such as robotic-assisted systems are further propelling market growth. For instance, Stryker's Mako SmartRobotics, introduced at the 2025 American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting, offers real-time guidance for hip and knee resurfacing, leading to reduced postoperative pain and faster recovery times.

In Canada, significant government investments in orthopedic innovations and the digitization of healthcare are anticipated to contribute to market expansion. The resilience of the North American market is also supported by robust reimbursement policies under Medicare and private insurance, which cover up to 80% of resurfacing procedures for eligible patients. The Centers for Disease Control and Prevention (CDC) reports that over 54 million adults in the U.S. suffer from arthritis, further driving the demand for joint resurfacing solutions. Initiatives like Zimmer Biomet's 2025 Cutting Edge Symposium aim to foster innovation and address training gaps in the field.

Market Segmentation

The North America Joint Resurfacing Devices Market can be segmented by type, material, and end user:

By Type: The market is categorized into Knee, Hip, Shoulder, Ankle, and Others, with the Knee segment leading in market share in 2024.

By Material: The market is divided into Metal, Ceramic, and Others, with the Metal segment also dominating in 2024.

By End User: The market is segmented into Hospitals, Orthopedic Clinics, Ambulatory Surgical Centers, and Others, with Hospitals holding the largest share in 2024.

Market Outlook

The integration of artificial intelligence (AI) is revolutionizing the joint resurfacing landscape by enhancing predictive analytics and real-time surgical guidance. AI algorithms can analyze extensive datasets from imaging, patient histories, and biomechanical models to optimize resurfacing procedures, improving implant placement accuracy and reducing revision rates by up to 30%. For example, Stryker's Mako system utilizes AI to transform preoperative CT scans into 3D joint models, guiding robotic arms in hip resurfacing with sub-millimeter precision. A 2025 study indicated that AI-assisted shoulder resurfacing achieved 98% optimal glenoid positioning, significantly outperforming manual techniques.

AI's role extends to mitigating risks associated with resurfacing, such as aseptic loosening, which affects 15-20% of resurfaced joints within five years. Machine learning

models trained on over 10,000 historical cases can predict stress distributions, enhancing surgical outcomes. In knee resurfacing, platforms like Enhatch employ convolutional neural networks (CNNs) to detect early osteoarthritis with 91% accuracy, supporting tailored partial resurfacing plans that preserve more native bone.

Future developments may include AI-embedded smart implants that monitor load-bearing in real-time, potentially extending device lifespan by 20-25%. AI's capabilities are expected to democratize access to high-precision resurfacing in ambulatory centers, reducing costs by 15% through fewer revisions and enabling global scaling via cloud-based analytics. However, ethical considerations regarding data privacy must evolve alongside these advancements.

Country Insights

The North America Joint Resurfacing Devices Market is primarily driven by the United States, which held the largest market share in 2024. The U.S. market reflects a significant aging population and a rapid adoption of minimally invasive technologies aimed at preserving bone stock for younger, active patients. As of 2025, hip resurfacing accounted for approximately 0.3% of all primary hip arthroplasties, translating to 1,500-2,000 annual surgeries. This figure has declined from 3.2% in 2012 due to concerns over metal-on-metal implant wear, but the segment is recovering thanks to innovations in ceramic implants.

The CDC reports that over 32.5 million U.S. adults have arthritis, with knee and hip joints being the most affected. This high prevalence is driving demand for resurfacing as an alternative to total joint replacement. Projections indicate that primary total hip arthroplasty volumes could increase by 75% by 2025, with resurfacing capturing a growing share among patients under 65. Key developments include the FDA-approved HemiCAP Patello-Femoral Resurfacing Prosthesis, which targets isolated patellofemoral damage in active individuals.

Company Profiles

Key players in the North America Joint Resurfacing Devices Market include MicroPort Scientific Corp, Stryker Corp, Zimmer Biomet Holdings Inc, Smith & Nephew Plc, JRI Orthopaedics Limited, Enovis Corp, Medacta Group SA, Corin Group, MatOrtho Limited, and JointMedica. These companies are employing various strategies such as expansion, product innovation, and mergers and acquisitions to enhance their market presence and offer innovative products to consumers.

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