

Rising Demand for Minimally Invasive Procedures Drives Growth in Robotic Biopsy Devices Market

Rising demand for minimally invasive procedures is primarily driving the robotic biopsy devices market

VANCOUVER, BC, CANADA, January 23, 2025 /EINPresswire.com/ -- The [Robotic Biopsy Devices Market](#) is expected to grow from an estimated USD 452.6 million in 2024 to USD 1495.2 million in 2033, at a CAGR of 14.20%. The global market for robotic biopsy devices is witnessing significant growth, driven by the increasing demand for minimally invasive procedures. Robotic biopsy devices offer numerous benefits, such as increased precision, reduced complications, and faster recovery times compared to traditional surgical methods. These advantages are leading healthcare systems worldwide to focus on these advanced technologies to improve patient outcomes and reduce surgical risks.



Regulatory Support and Technological Advancements

The U.S. Food and Drug Administration (FDA) has approved various robotic-assisted systems for lung and prostate biopsies, highlighting the regulatory support for these technologies. The National Cancer Institute (NCI) reports a rising incidence of cancers, particularly prostate, breast, and lung cancers, which is increasing the demand for improved diagnostic tools. Robotic biopsy systems ensure more accurate tissue sample collection, leading to earlier detection and higher survival rates.

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Incentives and Reimbursement Policies Fuel Demand

Government incentives, such as funding from the U.S. National Institutes of Health (NIH), are facilitating the research and development of advanced biopsy technologies. Additionally, reimbursement policies for robotic biopsy procedures have stimulated demand. The Centers for Medicare & Medicaid Services (CMS) recently expanded reimbursement for robotic surgeries, encouraging healthcare providers to adopt these advanced technologies. As a result, robotic biopsy devices are becoming more widely available in healthcare facilities, contributing to market growth.

Technological Advancements Boost Market Growth

Advancements in robotic biopsy device technology, including real-time imaging, enhanced precision, and AI-assisted diagnostics, have significantly contributed to market growth. These improvements enable more accurate and minimally invasive procedures, leading to better patient outcomes. FDA-approved robotic systems, such as the CorPath GRX for vascular procedures, have demonstrated improved biopsy accuracy and reduced human error. AI enhancements in these systems facilitate precise targeting and sample collection, particularly in complex procedures like lung biopsies.

The NIH has been awarding grants for AI and robotics research, aiming to reduce diagnostic errors and advance medical procedures. These technological advancements are expected to increase the demand for robotic biopsy devices in oncology and neurology.

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Challenges: High Initial Costs

Despite the benefits, the high initial costs of robotic biopsy devices pose a challenge for market growth. These systems require significant capital investment for healthcare facilities, making them less accessible to smaller hospitals and clinics, especially in low-resource regions. The costs include the purchase price of the device, maintenance, training, and software updates.

The World Health Organization (WHO) reports that the expense of advanced medical technology, including robotic biopsy devices, deters their use in low- and middle-income countries (LMICs). While advanced economies offer reimbursement options for robotic procedures, smaller facilities may find the costs prohibitively high, limiting widespread adoption. In the U.S., initial investment costs, although reimbursed by government schemes, continue to restrict the penetration of robotic biopsy technologies in outpatient settings and community hospitals.

Market Segmentation Insights

The robotic biopsy devices market is segmented into Systems and Instruments & Accessories. The Systems segment dominates the market due to the growing adoption of advanced robotic

technologies in precision-guided procedures. Systems like CorPath GRX from Corindus Vascular Robotics and Medtronic's Hugo™ are leading the market, integrating state-of-the-art imaging technologies with robotic arms for minimally invasive biopsies.

The Instruments & Accessories segment is the fastest-growing, driven by advancements in specialized tools that supplement robotic systems in biopsy procedures. Biopsy needles, forceps, imaging probes, and sample collection tubes ensure efficient and accurate procedures. The increased demand for precision instruments in minimally invasive surgeries for cancers, such as prostate and lung cancer, is making this segment the fastest growing in the market.

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Robotic Biopsy Devices Top Companies and Competitive Landscape

The robotic biopsy device market is dominated by companies such as Intuitive Surgical and Medtronic, which focus on highly precise and minimally invasive solutions. Market growth is supported by increased diagnostics adoption and a growing demand for innovative technologies. Emerging markets in Asia Pacific are growing rapidly with improvements in healthcare access. With continuous innovation and improved infrastructure, the industry is set for strong expansion worldwide.

In June 2024, RevelAi Health and Zimmer Biomet partnered to co-market AI-driven solutions enhancing orthopaedic care and health equity. Zimmer Biomet will promote RevelAi's patient care management platform and new products, aiming to improve patient engagement and address healthcare disparities.

Some of the key companies in the global Robotic Biopsy Devices Market include:

Medical Device Business Services, Inc.

Stryker

Zimmer Biomet

Smith & Nephew

Medtronic

Integra LifeSciences Corporation.

Wright Medical Group N.V.

Acumed LLC

Bioretec GmbH

Cardinal Health.

Robotic Biopsy Devices Latest Industry Updates

In July 2022, The FDA approved Intuitive's robotic-assisted platform integration with Siemens Healthineers' mobile imaging for lung biopsies, enabling 2D and 3D imaging during procedures.

In March 2022, Biobot Surgical and BEBIG Medical signed an MOU to develop robotic-guided HDR brachytherapy solutions for prostate cancer treatment.

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Robotic Biopsy Devices Market Segmentation Analysis

Product Outlook (Revenue, USD Million; 2020-2033)

Systems

Instrument & Accessories

Application Outlook (Revenue, USD Million; 2020-2033)

Brain Biopsy

Lung Biopsy

Prostate biopsy

Others

End-user Outlook (Revenue, USD Million; 2020-2033)

Hospitals

Ambulatory Surgical Centers

Academic & Research Institutes

Regional Outlook (Revenue, USD Million; 2020-2033)

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

Benelux

Rest of Europe

Asia-Pacific

China

India

Japan

South Korea

Rest of Asia-Pacific

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Brazil

Rest of Latin America

Middle East and Africa

Saudi Arabia

UAE

South Africa

Turkey

Rest of MEA

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Eric Lee

Emergen Research

+ +91 90210 91709

sales@emergenresearch.com

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