

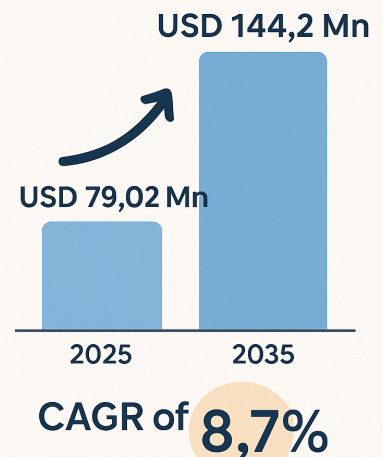
# Global Robotic Biopsy Devices Market Set to Surge, Projected to Reach USD 144.2 Million by 2035 | FMI

*Explore emerging trends, innovations, and market forecasts driving the growth of robotic biopsy devices from 2025 to 2035*

NEWARK, DE, UNITED STATES, May 14, 2025 /EINPresswire.com/ -- The global [robotic biopsy devices](#) market is poised for transformative growth, with projections estimating the market to expand from USD 79.02 million in 2025 to approximately USD 144.2 million by 2035, reflecting a compelling Compound Annual Growth Rate (CAGR) of 8.7%. This robust trajectory is fueled by technological innovation, the escalating burden of cancer worldwide, and a rapidly growing demand for precision diagnostics in healthcare.

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In 2025, the global robotic biopsy devices market is projected to reach approximately USD 79.02 million, and is expected to grow to around USD 144.2 million by 2035, reflecting a Compound Annual Growth Rate (CAGR) of 8.7%.



Robotic Biopsy Devices Market

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"Robotic Biopsy Devices Market Insights – Trends & Forecast 2025 to 2035" is key for understanding the dynamic developments shaping the future of the medical device sector."

*Sabyasachi Ghosh, Principal Consultant. Future Market Insights*

Robotic biopsy devices represent a new frontier in diagnostic medicine—delivering minimally invasive, image-guided tissue sampling with enhanced accuracy, safety, and speed. These systems, comprising robotic arms, real-time imaging technologies (MRI, CT, and ultrasound), [artificial intelligence](#) (AI)-driven navigation software, and integrated tracking platforms, have emerged as essential tools for oncologists, radiologists, and surgeons across the globe.

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## Market Drivers: The Confluence of Innovation and Healthcare Demand

Several macroeconomic and technological trends are driving adoption across the robotic biopsy devices market. Chief among them is the rising incidence of cancer globally, which is fueling the demand for early, accurate, and less invasive diagnostic procedures. According to global cancer statistics, early detection significantly increases treatment efficacy and survival rates—creating a pressing need for more precise diagnostic systems.

Simultaneously, the healthcare industry's accelerated embrace of AI and robotics—especially in surgery and diagnostics—is propelling the evolution of biopsy techniques. Robotic biopsy systems, integrated with advanced imaging and real-time analytics, offer consistency and reproducibility in tissue sampling, reducing human error and patient trauma.

In addition, the surge in hospital automation investments, rising prominence of digital pathology, and government-backed cancer screening programs are catalyzing the commercial and clinical deployment of robotic biopsy technologies.

## Regional Outlook: North America Leads, Asia-Pacific Rising

Regionally, North America continues to dominate the global robotic biopsy devices market, driven by robust healthcare infrastructure, strong R&D investment, and early adoption of emerging medical technologies. The U.S., in particular, has witnessed growing implementation of robotic biopsy systems in leading hospitals and academic centers.

Europe is witnessing a steady rise in market penetration, aided by favorable reimbursement policies and increasing adoption of minimally invasive diagnostics. Meanwhile, the Asia-Pacific region is projected to experience the fastest growth during the forecast period, owing to rising cancer prevalence, improving healthcare access, and growing investments in medical technology in countries such as China, India, and South Korea.

Eastern Europe, Latin America, and the Middle East & Africa are also expected to see gradual adoption, supported by public health initiatives and international partnerships aimed at upgrading diagnostic capabilities.

## Market Trends and Success Factors

Several industry-wide trends are reshaping the robotic biopsy devices landscape:

- Integration of AI for real-time navigation, enhancing tissue targeting accuracy.
- Expansion of multi-modal imaging systems enabling seamless procedural visualization.
- Growing preference for day-care diagnostic procedures, supporting the rise of outpatient and

ASC-based biopsies.

- Cross-disciplinary collaboration between medtech companies, academic institutions, and healthcare providers to drive product innovation.

Recent industry developments reflect increasing momentum. Notable examples include partnerships between robotic surgical platforms and imaging companies, as well as FDA approvals of novel robotic biopsy systems designed for soft tissue sampling.

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### Challenges and Opportunities

While the outlook is promising, certain challenges persist. High upfront costs and complexity of robotic systems may limit adoption in resource-constrained settings. Additionally, the need for specialized training and integration into existing clinical workflows poses a learning curve for many providers.

Nevertheless, these challenges are counterbalanced by significant opportunities:

- Expansion into emerging economies with rising healthcare spending.
- Integration with electronic health records (EHRs) and telepathology systems for remote diagnostics.
- Development of compact, portable robotic systems suitable for point-of-care diagnostics.

### Competitive Landscape: Innovation at the Core

The robotic biopsy devices market is characterized by a mix of established medtech players and agile innovators. Leading companies are heavily investing in R&D, strategic acquisitions, and collaborative development to stay ahead in this high-growth segment.

Key players include

- Medtronic – Renowned for their extensive surgical robotics portfolio.
- Renishaw plc – Specializes in neurosurgical robotic systems.
- iSYS Medizintechnik GmbH – Focuses on minimally invasive robotic-guided interventions.
- Mazor Robotics (now part of Medtronic) – Known for spine and brain robotics.
- Biobot Surgical Pte Ltd – Pioneers in prostate biopsy robotics.
- Medrobotics – Offers flexible, snake-like robots for difficult-to-access anatomical regions.
- Medtech SA – Acquired by Zimmer Biomet; involved in robotic brain surgery.

- Accuray Inc. – Known for integrating radiation therapy with precision biopsy.
- Auris Health, Inc. (now part of Ethicon/Johnson & Johnson) – Developer of robotic bronchoscopes.
- Hologic, Inc. – A major player in women's health and breast biopsy devices.

These companies are expected to play a central role in shaping the future of robotic diagnostics, not only by enhancing technological capabilities but also by making robotic biopsies more accessible and standardized across global healthcare settings.

## Market Segmentation: Diverse Applications and End Users

The robotic biopsy devices market is categorized across several key segments:

### By Product:

- Systems: These include complete robotic platforms designed for automated or semi-automated biopsy procedures.
- Instruments & Accessories: Biopsy needles, probes, software, and ancillary components that support robotic operation.

### By Application:

- Brain Biopsy: Utilized in neurosurgery for minimally invasive tissue sampling in suspected tumors or lesions.
- Lung Biopsy: Allows for highly precise sampling of nodules and lesions within delicate pulmonary tissue.
- Prostate Biopsy: Frequently performed in prostate cancer diagnostics with the aid of transrectal ultrasound (TRUS) and MRI fusion.
- Others: Includes breast, liver, and kidney biopsies, where robotic systems enhance procedural precision and minimize complications.

### By End User:

- Hospitals: Leading adopters of robotic biopsy systems due to their ability to offer comprehensive diagnostic services and manage complex cases.
- Ambulatory Surgical Centers (ASCs): Emerging as cost-effective alternatives for outpatient diagnostic procedures.
- Academic & Research Institutes: Critical to technological innovation, testing, and clinical validation of robotic biopsy technologies.

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## Future Outlook

As healthcare systems continue to prioritize early cancer detection and minimally invasive

diagnostics, robotic biopsy devices are set to become a mainstay in clinical practice. With advancements in AI, miniaturization, and image fusion technologies, the next decade will likely see a broader scope of applications, improved procedural workflows, and increased affordability.

The robotic biopsy revolution is not just about machines—it's about redefining precision in patient care. Stakeholders across the healthcare ecosystem—from device manufacturers to providers and policymakers—must collaborate to ensure these innovations translate into better outcomes for patients around the world.

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