

# **Magnetic Resonance Imaging Market Assessment, By Field Strength [Low, Medium, High, Ultra High], By Design [Open MRI, Traditional MRI, Wide Bore MRI], By Application [Cardiology, Oncology, Neurology, Musculoskeletal, Orthopedic, Gastroenterology, Others], By End-user [Hospitals, Diagnostic and Imaging Centers, Ambulatory Surgical Centers, Others], By Region, Opportunities and Forecast, 2017-2031F**

<https://marketpublishers.com/r/MB670CEC597EEN.html>

Date: March 2025

Pages: 228

Price: US\$ 4,500.00 (Single User License)

ID: MB670CEC597EEN

## **Abstracts**

Global magnetic resonance imaging market size was valued at USD 7.4 billion in 2023, expected to reach USD 11.51 billion in 2031, with a CAGR of 5.68% for the forecast period between 2024 and 2031F. The global magnetic resonance imaging market has experienced substantial growth in recent years, driven by a convergence of key factors and fueled by remarkable innovations. Market expansion is primarily attributed to the growing geriatric population, increasing incidence of chronic diseases, introduction of novel technologies, and increasing installation and growing awareness in emerging countries.

Emerging technologies from different fields such as computer science, data processing, and semiconductors have quickly become integral to advancements in MRI technology. This integration has led to the creation of innovative applications. Through the synergies of high-performance computing and advancements in MRI technology, MRI can now generate extensive sets of both functional and anatomical image data, which serves as a vital resource across multiple diseases. Factors such as the high cost of MRI machines and the shortage of MRI technologists are negatively impacting the global

magnetic resonance imaging (MRI) market.

### Growing Geriatric Population and Increasing Incidence of Chronic Diseases

The global magnetic resonance imaging market is experiencing substantial growth, largely driven by the growing geriatric population and the rising incidence of chronic diseases. The aging demographic has considerably increased in recent years, with more elderly individuals seeking medical attention and diagnostic services. As individuals age, their susceptibility to various health issues, including chronic diseases such as cardiovascular conditions, cancer, and neurological disorders, increases. By the year 2030, one out of every six individuals worldwide will have reached the age of 60 or older. During this period, the proportion of global population comprising those aged 60 and above will rise from 1 billion in 2020 to 1.4 billion. Looking ahead to 2050, the global population of individuals aged 60 and older is projected to double, reaching 2.1 billion. Furthermore, the number of people aged 80 or older is anticipated to triple between 2020 and 2050, reaching 426 million. MRI technology has proven valuable in the early disease detection, accurate diagnosis, and monitoring of these conditions. It offers non-invasive, high-resolution imaging, making it a preferred choice for healthcare professionals. MRI aids in detecting conditions such as aneurysm, eye/ear disorders, stroke, tumor, brain injuries, and ligament injuries. Consequently, the demand for MRI technologies has surged as healthcare providers and patients recognize technology's role in improving patient outcomes and ensuring more efficient healthcare management.

### Introduction of Novel Technologies

Advancements in MRI technologies have accelerated innovation in the global magnetic resonance imaging (MRI) market. Novel developments, such as higher-field MRI scanners, multi-parametric imaging, and AI-driven image analysis, have significantly improved image quality and diagnostic accuracy. Furthermore, the integration of functional MRI (fMRI) and diffusion tensor imaging (DTI) has unlocked new possibilities in understanding brain function and connectivity, aiding in the diagnosis and treatment of neurological conditions. Additionally, the miniaturization of MRI machines and the advent of portable systems have made this diagnostic tool more accessible, even in remote or underserved regions.

In September 2023, the FDA granted regulatory approval for IGAR, a robotics system created by Insight Medbotics, making it the first and only robotic platform specifically engineered to operate within the MRI bore. The pioneering technology, IGAR, has the potential for future adaptations to function in various hospital settings. Insight Medbotics

has showcased the safety and effectiveness of IGAR through publicly available clinical studies focused on breast biopsy procedures.

At the Society of Nuclear Medicine and Molecular Imaging (SNMMI) 2023 Annual Meeting, GE Healthcare introduced its SIGNA PET/MR AIR. During the event, the company presented the incorporation of its state-of-the-art AIR technologies into the SIGNA PET/MR AIR system, aiming to improve diagnostic accuracy, streamline treatment assessment, and enhance the overall comfort of patients.

### High Field Strength MRI and Ultra High Field Strength MRI Are Dominating the Market

High field strength MRI and ultra-high field strength MRI technologies are currently dominating the MRI market. These advanced MRI systems offer high image resolution, allowing for more precise and detailed diagnosis. High field MRI, typically operating at 1.5 Tesla or 3 Tesla, has become the standard for various clinical applications, while ultra-high field MRI, operating beyond 4 Tesla or higher, is gaining prominence in research and specialized clinical settings. These powerful MRI systems are instrumental in neuroimaging, cardiovascular studies, and research into neurological disorders, providing invaluable insights that were previously difficult to gather. The primary benefits of operating at high field strengths include an increased signal-to-noise ratio and enhanced chemical shift. High signal-to-noise ratio can be used to either reduce scanning time without compromising diagnostic quality or to enhance spatial resolution.

In February 2023, A group of seven organizations, led by the Donders Institute of Brain, Cognition, and Behavior, has been awarded EUR 19 million roadmap grant from the Dutch Research Council. This funding will be dedicated to the development of the world's inaugural 14 Tesla MRI scanner. The heightened sensitivity of this scanner will enable researchers to achieve more comprehensive brain imaging, leading to an improved understanding of brain function. Additionally, it will provide fresh insights into disease mechanisms and their treatment across the entire human body.

### Increasing Installation of MRI and Growing Awareness in Emerging Countries

The installation of MRI machines is on the rise in emerging countries, marking a significant shift in healthcare infrastructure. The increase can be attributed to several factors, including rising healthcare budgets, a growing middle-class population, and the recognition of the vital role that advanced medical imaging plays in early diagnosis and treatment. Additionally, the growing awareness among healthcare professionals and the public about the benefits of MRI in detecting and monitoring various medical conditions

has driven this expansion. The availability of MRI services is improving access to high-quality healthcare, allowing for more accurate diagnosis and better patient outcomes. This trend reflects a positive step towards bridging the healthcare gap between developed and emerging nations.

### Impact of COVID-19

The global magnetic resonance imaging (MRI) market experienced significant impacts due to the COVID-19 pandemic. Initially, as healthcare resources were diverted towards managing the pandemic, non-essential medical procedures, including elective MRI scans, were postponed or canceled to prioritize COVID-19 patients. It led to a temporary downturn in MRI utilization and revenue for many healthcare facilities. However, the pandemic highlighted the importance of advanced diagnostic imaging in healthcare. As COVID-19 cases surged, MRI played a crucial role in assessing the extent of lung damage and monitoring patients' conditions. Moreover, the awareness of the need for faster and more efficient MRI diagnosis for COVID-19-related complications led to innovations in MRI technology. In the post-COVID-19 era, there has been a notable surge in the utilization of AI and machine learning in MRI, revolutionizing the field of medical imaging. These technologies are enhancing diagnostic accuracy, automating image analysis, and expediting the interpretation of MRI scans.

### Key Player Landscape and Outlook

The global magnetic resonance imaging market features a landscape dominated by key players such as GE Healthcare Technologies Inc., Canon Medical System Corporation, Koninklijke Philips N.V, Siemens Healthineers AG, Hitachi Ltd, Aurora Imaging Technologies Inc., Fujifilm Holdings Corporation, and others. Companies are enhancing their imaging capabilities by manufacturing MRI scanners that have ultra-high field strength by surpassing the old high field strength of 3 Tesla. Market players are designing MRI scanners that are open or have wide bore for patients that are claustrophobic. Market players are developing partnerships to reach emerging markets.

In September 2023, Siemens Healthineers announced the FDA approval of Magnetom Viato.Mobile, a novel 1.5 Tesla (1.5T) magnetic resonance (MR) imaging scanner. This MRI scanner is specially designed for mobile applications, offering increased versatility for deploying MR imaging. It can be conveniently set up on a trailer, facilitating transportation to remote locations, thus extending the accessibility of advanced medical imaging to patients, including those with significant health issues, who would otherwise

face long journeys for such services.

In October 2023, Philips announced its collaboration with Quibim to introduce advanced AI-driven imaging software aimed at prostate cancer detection. By combining Philips' innovative AI-enhanced MR imaging software with Quibim's AI-powered image analysis software, healthcare providers can expedite and simplify prostate cancer diagnosis and care.

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