

United States Magnetic Resonance Imaging Coils Market By Product (Radiofrequency Coil, Gradient Coil), By Application (Neurology, Cardiovascular, Spine & Musculoskeletal, Pediatric, Breast, Abdominal, Others), By End-use (Hospitals & Clinics, Ambulatory Surgical Centers, Other) By Region, Competition, Forecast & Opportunities, 2019-2029F

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Abstracts

United States Magnetic Resonance Imaging Coils Market was valued at USD 884.21 million in 2023 and is expected to reach USD 1389.14 million by 2029 with a CAGR of 7.39% during the forecast period. The United States Magnetic Resonance Imaging (MRI) Coils Market is a dynamic and essential component of the country's healthcare industry. MRI coils, also known as radiofrequency coils, are instrumental in the functioning of MRI machines, enhancing the quality and accuracy of imaging procedures. These coils are integral to capturing detailed anatomical and functional information for a wide range of medical applications, from diagnosing injuries and diseases to guiding surgical interventions. In recent years, the United States MRI Coils Market has witnessed significant growth and innovation. The market is driven by several factors, including the increasing prevalence of chronic diseases, the need for early and accurate diagnosis, and a growing aging population. Healthcare providers are continually investing in advanced MRI equipment, including state-of-the-art coils, to ensure they can offer high-quality diagnostic services. One notable trend in the market is the development of specialized MRI coils tailored to specific anatomical areas or clinical applications. Neurovascular coils, cardiac coils, breast coils, and musculoskeletal coils are just a few examples of these specialized offerings. These coils are designed to optimize image quality and diagnostic accuracy for particular regions of interest, contributing to better patient outcomes. Furthermore, ongoing research and

development activities in the United States are fostering innovation in MRI coil technology. These efforts aim to improve the sensitivity and specificity of MRI imaging while reducing scan times and enhancing patient comfort. Additionally, the market is witnessing a shift towards the adoption of more efficient and versatile multi-channel coils, which enable parallel imaging and deliver better image quality.

Key Market Drivers

Rising Prevalence of Chronic Diseases

The rising prevalence of chronic diseases is a significant driver behind the increasing demand for Magnetic Resonance Imaging (MRI) coils in the United States. Chronic diseases such as cancer, cardiovascular conditions, and neurological disorders have become increasingly common, posing a growing healthcare challenge. As the population ages and lifestyle factors contribute to the surge in chronic conditions, early and accurate diagnosis becomes paramount for effective disease management and treatment. An estimated 129 million individuals in the United States are affected by at least one major chronic disease (e.g., heart disease, cancer, diabetes, obesity, hypertension), as defined by the U.S. Department of Health and Human Services. Notably, five of the top 10 leading causes of death in the U.S. are directly linked to preventable and treatable chronic conditions.

MRI technology, combined with advanced MRI coils, plays a vital role in the early detection, diagnosis, and monitoring of these chronic diseases. These coils enhance the sensitivity and specificity of MRI scans, leading to higher-quality images that provide healthcare professionals with detailed insights into the structure and function of affected organs or tissues. This level of precision is crucial for tailoring treatment plans and assessing treatment effectiveness.

The aging population in the United States is a key factor driving the prevalence of chronic diseases. Older individuals are more susceptible to a wide range of health issues, including musculoskeletal problems, neurodegenerative diseases, and cardiovascular conditions. MRI technology, supported by specialized coils, allows for thorough and non-invasive examination of these issues, often eliminating the need for more invasive and risky diagnostic procedures. As healthcare providers strive to meet the growing healthcare demands of this aging demographic, investments in advanced MRI technology and coils have become a priority. The ability of MRI coils to facilitate early diagnosis and guide treatment decisions is a critical component of managing chronic diseases. Timely identification of disease progression or recurrence allows for

adjustments in treatment strategies, potentially leading to better outcomes for patients. As a result, healthcare facilities are increasingly investing in the latest MRI coil technology to offer state-of-the-art diagnostic capabilities.

Growing Aging Population

The aging population in the United States is a significant catalyst behind the growing demand for Magnetic Resonance Imaging (MRI) coils. As the country's demographic landscape shifts with a larger proportion of older individuals, the need for comprehensive healthcare services, including diagnostic imaging, is on the rise. According to the Administration for Community Living, in 2022, the population aged 65 and older included 31.9 million women and 25.9 million men, accounting for 17.3% of the total population. This phenomenon is driving the expansion of the United States MRI Coils Market, as MRI technology, when complemented with advanced coils, plays a crucial role in addressing the healthcare needs of the elderly population.

Elderly individuals are more prone to a range of health issues, including musculoskeletal conditions, neurodegenerative disorders, cardiovascular diseases, and cancer. MRI technology, with the support of specialized coils, allows for non-invasive and highly detailed examination of these age-related health concerns. The precision and clarity of MRI images obtained with advanced coils are invaluable for diagnosing and monitoring these conditions, enabling healthcare professionals to develop tailored treatment plans and provide better care to older patients. The aging population is characterized by a greater need for regular health check-ups and screenings, as early detection and monitoring of age-related health issues become critical. MRI scans, with the assistance of high-quality coils, are capable of detecting potential health problems at their early stages, offering a significant advantage in disease management. This is especially important in the case of chronic diseases such as cancer or degenerative neurological conditions, where early intervention can substantially improve the prognosis.

Healthcare facilities and providers are recognizing the imperative to meet the healthcare demands of this aging demographic. As a result, investments in cutting-edge MRI technology, including advanced coils, have become a priority. Specialized coils, designed for specific anatomical regions or clinical applications, offer enhanced imaging capabilities that cater to the unique healthcare needs of older individuals. These coils are particularly valuable for providing clear and accurate scans of aging organs and tissues, contributing to the early diagnosis and effective management of age-related health concerns.

Rising Technological Advancements

Technological advancements are propelling the United States Magnetic Resonance Imaging (MRI) Coils Market to new heights, transforming the landscape of diagnostic imaging. These advancements have been a driving force behind the market's growth, enhancing the sensitivity, precision, and efficiency of MRI scans, and ultimately, improving patient care. These advanced coil designs significantly enhance the signal-to-noise ratio, providing higher-quality images and improved diagnostic accuracy. High-density array coils use multiple smaller coil elements to cover a larger portion of the body or a specific anatomical area, resulting in clearer images with better resolution. Multi-channel coils, on the other hand, offer parallel imaging capabilities, reducing scan times while maintaining image quality. These advancements not only benefit patients by making their MRI experiences more comfortable but also make MRI technology more cost-effective for healthcare providers.

The evolution of MRI coil technology has led to increased patient comfort and satisfaction. With reduced noise levels and more patient-friendly designs, MRI coils contribute to a more patient-centered care approach. Open-bore systems, ergonomic coil designs, and streamlined patient positioning make MRI scans less intimidating for patients, encouraging their cooperation and cooperation in the diagnostic process.

The constant research and development efforts in the field of MRI coils have also resulted in specialized coil designs tailored to specific clinical applications. Neurovascular coils, cardiac coils, breast coils, and musculoskeletal coils are examples of these specialized offerings. These coils are optimized for particular regions of interest, ensuring that the highest image quality and diagnostic accuracy are achieved, particularly for challenging clinical scenarios. As technology continues to evolve, MRI coil manufacturers are integrating innovations such as artificial intelligence (AI) and machine learning into their products. AI-powered coil designs can adapt to the patient's specific anatomy and provide real-time adjustments, further enhancing image quality and diagnostic accuracy.

Key Market Challenges

High Cost of MRI Equipment and Coils

The high cost of Magnetic Resonance Imaging (MRI) equipment and coils is a significant impediment to the growth of the United States MRI Coils Market. While MRI

technology has become a cornerstone of modern healthcare, its widespread adoption and accessibility are challenged by the financial burden it imposes on healthcare facilities. The initial investment required to acquire MRI equipment and coils is prohibitively expensive for many healthcare providers, particularly smaller hospitals, clinics, and healthcare facilities. This financial barrier prevents some institutions from offering MRI services, limiting patient access in certain regions. The result is a healthcare disparity, where residents in underserved areas may not have the same level of access to advanced diagnostic imaging.

Even larger healthcare institutions, while capable of affording MRI equipment, often face budget constraints that limit their ability to invest in the latest technology and coils. This can hinder their capacity to deliver state-of-the-art healthcare services to their patients.

The high cost of MRI technology can place healthcare providers at a competitive disadvantage. Facilities that cannot afford the latest MRI equipment and coils may lose patients to competitors that can offer more advanced diagnostic capabilities. This competition can lead to a race to acquire the latest technology, resulting in financial strain for healthcare organizations. Rural healthcare facilities, in particular, are often the hardest hit by the high costs of MRI equipment and coils. Smaller hospitals in rural areas may struggle to justify the investment, leading to reduced accessibility for residents living in remote regions.

Maintenance and Compatibility Issues

Maintenance and compatibility issues are significant challenges hindering the growth of the United States Magnetic Resonance Imaging (MRI) Coils Market. While MRI technology and coils have greatly advanced, they come with complex maintenance requirements and compatibility concerns that can strain the resources and efficiency of healthcare facilities. MRI coils, like any medical equipment, require regular maintenance to ensure optimal functionality. Maintenance tasks range from routine cleaning to more complex troubleshooting and repairs. These maintenance activities can be costly and time-consuming, as they often involve specialized technicians and specialized tools, which may not be readily available in every healthcare facility.

Maintenance activities often result in MRI machine downtime, which can disrupt a healthcare facility's scheduling and patient appointments. Extended downtimes for maintenance can lead to patient backlogs and reduced operational efficiency, ultimately impacting a facility's ability to provide timely diagnostic services. MRI coils are intricate pieces of technology, and when they require repair, it can be a challenging process. The

complexity of repairs can result in lengthy downtime, added costs, and difficulties in finding technicians with the expertise to service the equipment.

Key Market Trends

Specialized Coils for Enhanced Imaging

The United States Magnetic Resonance Imaging (MRI) Coils Market is experiencing a significant boost due to the growing trend of specialized coils designed for enhanced imaging. Specialized MRI coils, tailored to specific anatomical areas or clinical applications, have emerged as game-changers in the field of diagnostic imaging. These coils are finely tuned to optimize image quality and diagnostic accuracy for particular regions of interest, such as neurovascular, cardiac, breast, and musculoskeletal areas.

Specialized coils offer several key advantages. First and foremost, they allow healthcare providers to obtain exceptionally clear and detailed images of the targeted anatomical structures, enhancing diagnostic precision. For example, cardiac coils provide exceptional imaging of the heart and its intricate vascular structures, enabling more accurate diagnoses of cardiac conditions. Similarly, musculoskeletal coils offer remarkable clarity when examining bones, joints, and soft tissues, making them invaluable for orthopedic assessments.

The use of specialized coils also improves patient comfort and experience during MRI scans. By providing enhanced imaging of specific regions, healthcare professionals can conduct more focused and efficient scans, reducing overall scan times. This, in turn, reduces the time patients spend inside the MRI machine, alleviating anxiety and discomfort, particularly for those with claustrophobia. The trend towards specialized coils supports the growing emphasis on early diagnosis. In many clinical scenarios, early detection of issues in specific anatomical areas is crucial for timely intervention and improved patient outcomes. Specialized coils enable healthcare providers to identify abnormalities at their earliest stages, leading to more effective treatment plans and ultimately saving lives.

Growing Emphasis on Early Diagnosis

The growing emphasis on early diagnosis is a driving force behind the expanding United States Magnetic Resonance Imaging (MRI) Coils Market. Timely and accurate diagnosis is paramount in healthcare, as it significantly impacts treatment outcomes and patient well-being. MRI technology, when coupled with advanced coils, is playing a

crucial role in meeting the demand for early diagnosis. The rising prevalence of chronic diseases, such as cancer, cardiovascular conditions, and neurological disorders, has underscored the importance of detecting and addressing health issues in their earliest stages. Early diagnosis allows healthcare providers to initiate treatments when they are most effective, potentially preventing disease progression and improving patient prognosis. As a result, there is a growing need for precise diagnostic tools that can provide early and accurate insights into a patient's condition. Globally, approximately 100-150 million Magnetic Resonance Imaging (MRI) scans are conducted each year, with the United States contributing around 40 million scans annually. This significant volume underscores the increasing reliance on MRI technology in contemporary healthcare diagnostics.

MRI technology, supported by specialized coils that offer superior imaging capabilities, has become an invaluable tool for achieving early diagnosis. These advanced coils provide higher sensitivity, enabling the detection of subtle changes in tissues and organs. The improved signal-to-noise ratios and enhanced image resolution contribute to the early identification of abnormalities, even before clinical symptoms become apparent.

The emphasis on early diagnosis has led to the development of specialized MRI coil designs tailored to specific clinical applications. Neurovascular coils, cardiac coils, breast coils, and musculoskeletal coils are some examples of these specialized offerings. These coils are designed to optimize image quality for particular regions of interest, ensuring that the earliest signs of disease or injury are captured with exceptional clarity and precision.

Segmental Insights

Product Insights

Based on the Product, Radiofrequency Coil emerged as the dominant segment in the United States market for United States Magnetic Resonance Imaging Coils Market in 2023. Radiofrequency coils, often referred to as RF coils, are essential components of an MRI system. They serve as the primary source of radiofrequency signals used for excitation and reception during the imaging process. Without these coils, MRI scans would not be possible. The RF coils are integral to the basic functioning of an MRI machine, making them a fundamental and indispensable component. RF coils significantly impact image quality and resolution in MRI scans. These coils are designed to transmit radiofrequency pulses into the patient's body and receive the resulting

signals, which are then converted into detailed images. The sensitivity, design, and quality of the RF coils directly affect the clarity and accuracy of the images obtained. High-quality RF coils produce sharper and more detailed images, which are vital for accurate diagnosis and treatment planning.

Application Insights

Based on the Application, Neurology emerged as the dominant segment in the United States market for United States Magnetic Resonance Imaging Coils Market in 2022. Ongoing research in the field of neurology, including the study of brain connectivity, neural pathways, and functional brain mapping, relies heavily on MRI technology. Neuroimaging using MRI is highly versatile. It can be employed for a wide range of neurological assessments, from identifying structural abnormalities to functional studies like functional MRI (fMRI) for mapping brain activity. Specialized neurovascular coils and head coils have been developed to optimize image quality and sensitivity for neurological applications. The broad spectrum of applications within neurology makes MRI coils tailored for this field in high demand. neurological conditions, require precise and early diagnosis for effective treatment and management. Neuroimaging is a cornerstone of diagnosing and monitoring neurological disorders, and MRI is a preferred modality due to its non-invasive nature and superior soft tissue contrast. The demand for advanced MRI technology, including specialized coils for neuroimaging, is continually rising to address these healthcare challenges.

Regional Insights

Mid-West emerged as the dominant region in the United States Magnetic Resonance Imaging Coils Market in 2023, holding the largest market share. The Midwest region has a significant and diverse patient population, requiring extensive healthcare services. Access to advanced diagnostic tools like MRI is crucial in providing quality healthcare. The demand for MRI coils in the Midwest is driven by the region's commitment to delivering comprehensive and accessible healthcare services. The Midwest region boasts a robust manufacturing and technological infrastructure. This infrastructure supports the production and development of MRI coils, enabling local manufacturers to meet the demand for high-quality coils efficiently. The presence of these manufacturing facilities in the region further cements the Midwest's dominant role in the MRI Coils Market.

Key Market Players

Siemens Healthineers AG

GE Healthcare Technologies, Inc.

Koninklijke Philips N.V.

Canon Medical Systems Corporation

ESAOTE SPA

MR Instruments, Inc.

RAPID MR INTERNATIONAL, LLC.

SCANMED, LLC.

Bruker Corporation

Hologic Inc.

Report Scope:

In this report, the United States Magnetic Resonance Imaging Coils Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

United States Magnetic Resonance Imaging Coils Market, By Product:

Radiofrequency Coil

Gradient Coil

United States Magnetic Resonance Imaging Coils Market, By Application:

Neurology

Cardiovascular

Spine & Musculoskeletal

Pediatric

Breast

Abdominal

Others

United States Magnetic Resonance Imaging Coils Market, By End-use:

Hospitals & Clinics

Ambulatory Surgical Centers

Other

United States Magnetic Resonance Imaging Coils Market, By Region:

North-East

Mid-west

West

South

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the United States Magnetic Resonance Imaging Coils Market.

Available Customizations:

United States Magnetic Resonance Imaging Coils Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

United States Magnetic Resonance Imaging Coils Market By Product (Radiofrequency Coil, Gradient Coil), By Appl...

Company Information

Detailed analysis and profiling of additional market players (up to five).

Contents

1. PRODUCT OVERVIEW

- 1.1. Market Definition
- 1.2. Scope of the Market
 - 1.2.1. Markets Covered
 - 1.2.2. Years Considered for Study
 - 1.2.3. Key Market Segmentations

2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Key Industry Partners
- 2.4. Major Association and Secondary Sources
- 2.5. Forecasting Methodology
- 2.6. Data Triangulation & Validation
- 2.7. Assumptions and Limitations

3. EXECUTIVE SUMMARY

- 3.1. Overview of the Market
- 3.2. Overview of Key Market Segmentations
- 3.3. Overview of Key Market Players
- 3.4. Overview of Key Regions/Countries
- 3.5. Overview of Market Drivers, Challenges, Trends

4. UNITED STATES MAGNETIC RESONANCE IMAGING COILS MARKET OUTLOOK

- 4.1. Market Size & Forecast
 - 4.1.1. By Value
- 4.2. Market Share & Forecast
 - 4.2.1. By Product (Radiofrequency Coil, Gradient Coil)
 - 4.2.2. By Application (Neurology, Cardiovascular, Spine & Musculoskeletal, Pediatric, Breast, Abdominal, Others)
 - 4.2.3. By End-use (Hospitals & Clinics, Ambulatory Surgical Centers, Other)
 - 4.2.4. By Region

4.2.5. By Company (2023)

4.3. Market Map

4.3.1. By Product

4.3.2. By Application

4.3.3. By End-use

4.3.4. By Region

5. NORTH-EAST MAGNETIC RESONANCE IMAGING COILS MARKET OUTLOOK

5.1. Market Size & Forecast

5.1.1. By Value

5.2. Market Share & Forecast

5.2.1. By Product

5.2.2. By Application

5.2.3. By End-use

6. MID-WEST MAGNETIC RESONANCE IMAGING COILS MARKET OUTLOOK

6.1. Market Size & Forecast

6.1.1. By Value

6.2. Market Share & Forecast

6.2.1. By Product

6.2.2. By Application

6.2.3. By End-use

7. WEST MAGNETIC RESONANCE IMAGING COILS MARKET OUTLOOK

7.1. Market Size & Forecast

7.1.1. By Value

7.2. Market Share & Forecast

7.2.1. By Product

7.2.2. By Application

7.2.3. By End-use

8. SOUTH MAGNETIC RESONANCE IMAGING COILS MARKET OUTLOOK

8.1. Market Size & Forecast

8.1.1. By Value

8.2. Market Share & Forecast

- 8.2.1. By Product
- 8.2.2. By Application
- 8.2.3. By End-use

9. MARKET DYNAMICS

- 9.1. Drivers
- 9.2. Challenges

10. MARKET TRENDS & DEVELOPMENTS

- 10.1. Recent Developments
- 10.2. Product Launches
- 10.3. Mergers & Acquisitions

11. UNITED STATES MAGNETIC RESONANCE IMAGING COILS MARKET: SWOT ANALYSIS

12. PORTER'S FIVE FORCES ANALYSIS

- 12.1. Competition in the Industry
- 12.2. Potential of New Entrants
- 12.3. Power of Suppliers
- 12.4. Power of Customers
- 12.5. Threat of Substitute Product

13. COMPETITIVE LANDSCAPE

- 13.1. Siemens Healthineers AG
 - 13.1.1. Business Overview
 - 13.1.2. Company Snapshot
 - 13.1.3. Products & Services
 - 13.1.4. Financials (In case of listed)
 - 13.1.5. Recent Developments
 - 13.1.6. SWOT Analysis
- 13.2. GE Healthcare Technologies, Inc.
- 13.3. Koninklijke Philips N.V.
- 13.4. Canon Medical Systems Corporation
- 13.5. ESAOTE SPA

- 13.6. MR Instruments, Inc.
- 13.7. RAPID MR INTERNATIONAL, LLC.
- 13.8. SCANMED, LLC.
- 13.9. Bruker Corporation
- 13.10. Hologic Inc.

14. STRATEGIC RECOMMENDATIONS

15. ABOUT US & DISCLAIMER

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