

Particle Therapy Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Proton therapy, Heavy-ion therapy), By System (Multi-room systems, Single-room systems), By Application (Treatment application, Research application), By Cancer-type (Pediatric Cancer, Lung Cancer, Breast cancer, Other cancers), By Region and Competition, 2019-2029F

<https://marketpublishers.com/r/PF7BE1F154FBEN.html>

Date: May 2024

Pages: 184

Price: US\$ 4,900.00 (Single User License)

ID: PF7BE1F154FBEN

Abstracts

Global Particle Therapy Market was valued at USD 982.52 Million in 2023 and is anticipated to project steady growth in the forecast period with a CAGR of 5.25% through 2029. Particle therapy, a cutting-edge form of cancer treatment, has been gaining significant traction in the global healthcare landscape. This innovative approach utilizes charged particles, such as protons and heavy ions, to target and destroy cancer cells with precision, minimizing damage to surrounding healthy tissues. The global particle therapy market is witnessing remarkable growth, driven by technological advancements, increasing cancer incidences, and a growing demand for more effective and targeted cancer treatments. The global particle therapy market has experienced substantial growth in recent years and is expected to continue its upward trajectory. According to industry reports, the market is projected to reach significant valuation by the end of the forecast period. Several factors contribute to this growth, including a rise in cancer cases, advancements in particle therapy technology, and an increasing awareness of the benefits associated with this form of treatment.

The global rise in cancer incidences has fueled the demand for advanced and effective treatment options. Particle therapy offers a promising solution, particularly for treating

certain types of cancers that are challenging to address with conventional radiation therapy. The ability of particle therapy to deliver targeted radiation to tumors, even in complex and sensitive areas, has positioned it as a preferred choice for both patients and healthcare professionals.

Key Market Drivers

Increasing Cancer Incidence is Driving the Global Particle Therapy Market

Cancer, a complex and pervasive disease, continues to affect millions of lives worldwide. The escalating incidence of various types of cancer has spurred advancements in medical technology and treatment modalities. One such groundbreaking innovation is particle therapy, a cutting-edge approach that has gained traction in the global healthcare landscape. As cancer rates rise, the demand for more effective and targeted therapies has driven the growth of the Global Particle Therapy Market. The World Health Organization (WHO) estimates that cancer is the second leading cause of death globally, with nearly 10 million deaths reported in 2020. The incidence of cancer is expected to rise further due to various factors, including an aging population, lifestyle changes, and environmental factors. As cancer becomes more prevalent, the demand for advanced and efficient treatment options has intensified.

Particle therapy's ability to precisely target cancer cells while sparing healthy tissues minimizes the risk of side effects commonly associated with traditional radiation therapy. This aspect is particularly attractive for patients seeking treatments that optimize both efficacy and quality of life during and after therapy. As awareness of particle therapy grows among patients and healthcare professionals, there is a growing acceptance of this advanced treatment modality. Patients are increasingly seeking therapies that offer improved outcomes and reduced long-term complications, driving the demand for particle therapy. Ongoing research and technological advancements in particle therapy have contributed to its wider applicability. Continuous refinements in treatment planning, imaging techniques, and delivery systems have enhanced the effectiveness of particle therapy across various cancer types. Governments and healthcare organizations worldwide are recognizing the potential of particle therapy in revolutionizing cancer treatment. This has led to increased investments in research and infrastructure, making particle therapy more accessible to a larger population.

Rising Investments in Healthcare Infrastructure is Driving the Global Particle Therapy Market

In recent years, the global healthcare sector has witnessed a significant surge in investments, particularly in healthcare infrastructure. This influx of capital has not only improved access to medical facilities but has also fueled advancements in cutting-edge technologies. One notable beneficiary of this trend is the particle therapy market, a revolutionary approach to cancer treatment. As countries around the world bolster their healthcare infrastructure, the global particle therapy market is experiencing unprecedented growth. The surge in healthcare infrastructure investments can be attributed to several factors, including the growing prevalence of cancer, an aging population, and an increasing awareness of advanced treatment options.

Governments, private investors, and healthcare organizations are recognizing the importance of upgrading medical facilities to provide state-of-the-art treatments and improve patient outcomes. The establishment of particle therapy centres requires substantial financial investments. Governments and private investors are recognizing the potential of these centers to provide cutting-edge cancer treatment. Particle therapy centers are equipped with advanced technology, including cyclotrons or synchrotrons, which accelerate particles to high speeds for precise cancer targeting.

Key Market Challenges

High Initial Costs

While the benefits of particle therapy are evident, the implementation of this advanced technology comes with a substantial price tag. The high initial costs associated with establishing particle therapy facilities pose a major challenge for healthcare providers, institutions, and governments looking to integrate these cutting-edge treatments into their cancer care regimens. Establishing a particle therapy center requires a significant investment in infrastructure. Specialized equipment, including cyclotrons or synchrotrons to generate the particle beams, as well as advanced imaging and treatment planning systems, contribute to the overall expense. The need for well-designed treatment rooms with advanced shielding further adds to the infrastructure costs. Beyond the initial setup, particle therapy facilities incur substantial operational costs. Skilled personnel, maintenance of complex equipment, and ongoing research and development to improve treatment techniques contribute to the financial burden. These ongoing expenses can strain the financial resources of healthcare providers.

The high initial costs are exacerbated by limited insurance coverage for particle therapy.

Many insurance providers may be hesitant to cover these treatments due to the perceived experimental nature or lack of sufficient data supporting their cost-effectiveness. As a result, patients and healthcare providers often face challenges in securing reimbursement for particle therapy. High initial costs create economic barriers for both developed and developing nations. In resource-limited settings, the financial burden of establishing and maintaining particle therapy facilities may be insurmountable. This exacerbates global healthcare disparities, limiting access to advanced cancer treatments for a significant portion of the population.

Key Market Trends

Technological Advancements

In the realm of medical innovation, technological advancements have been a driving force, transforming the landscape of healthcare and treatment modalities. One such revolutionary development is witnessed in the field of particle therapy, a cutting-edge approach to cancer treatment. The Global Particle Therapy Market is experiencing unprecedented growth, propelled by a wave of technological breakthroughs that promise more precise and effective cancer treatment options.

State-of-the-art particle accelerators lie at the heart of particle therapy. Recent technological advancements have led to the development of more compact, efficient, and cost-effective accelerators, making particle therapy more accessible. This has contributed to the establishment of new treatment centers globally. Integrating advanced imaging technologies with particle therapy has significantly improved treatment accuracy. Real-time imaging during treatment sessions allows for adjustments to the treatment plan based on the patient's anatomy, ensuring optimal targeting of cancer cells while sparing healthy tissues. IMPT is a refinement of particle therapy that enables the precise modulation of radiation intensity, matching the shape and size of the tumor.

This level of customization maximizes the therapeutic effect on the cancerous cells while minimizing damage to surrounding structures, reducing side effects for patients. Computational advancements have led to the development of sophisticated biological optimization algorithms. These algorithms take into account the unique biological characteristics of tumors and normal tissues, allowing for personalized treatment plans that optimize the therapeutic ratio and enhance treatment outcomes.

Growing Recognition Of Its Efficacy And Precision In Cancer Treatment

Particle therapy, including proton therapy and carbon-ion therapy, has gained traction due to its ability to precisely target tumors while minimizing damage to surrounding healthy tissues. As the medical community gains a deeper understanding of the advantages of particle therapy, there's been a surge in awareness and acceptance among both healthcare professionals and patients. Studies highlighting its efficacy in treating various types of cancer, particularly those located near critical organs or in pediatric patients, have contributed to its growing adoption.

Technological advancements have played a pivotal role in enhancing the accessibility and effectiveness of particle therapy. Innovations in accelerator technology, treatment planning software, and imaging techniques have improved treatment precision, reduced treatment times, and expanded the range of treatable conditions. These advancements have made particle therapy more viable and attractive for healthcare providers and patients alike.

The global burden of cancer continues to rise, necessitating more effective and targeted treatment options. Particle therapy offers a promising solution, especially for cases where conventional treatments like surgery, chemotherapy, or conventional radiation therapy may pose higher risks of complications or long-term side effects. As cancer incidence rates increase, there is a corresponding increase in demand for advanced treatment modalities like particle therapy.

Favorable regulatory frameworks and reimbursement policies in various regions have encouraged investment in particle therapy facilities and facilitated patient access to these treatments. Governments and regulatory bodies recognize the potential of particle therapy to improve patient outcomes and are taking steps to support its integration into mainstream cancer care.

Segmental Insights

Cancer-type Insights

Based on the category of Cancer-type, Pediatric Cancer emerged as the dominant player in the global market for Particle Therapy in 2023. Pediatric cancer remains a formidable challenge, both in terms of prevalence and the complexity of treatment. The emotional toll on families and the young patients themselves is immeasurable. Traditional cancer treatments, such as chemotherapy and radiation therapy, while effective, often come with severe side effects, especially for children whose bodies are

still developing. This has led to an increasing focus on more targeted and less invasive treatment options, giving rise to the prominence of particle therapy. One of the primary advantages of particle therapy in pediatric oncology is the reduced risk of long-term side effects. As children are still growing, their organs and tissues are more susceptible to damage from traditional treatments. Particle therapy's precision minimizes this risk, offering a more promising outlook for the quality of life after treatment.

Type Insights

The Proton therapy segment is projected to experience rapid growth during the forecast period. Proton therapy's chief advantage lies in its ability to precisely target tumors with minimal impact on surrounding healthy tissues. This precision is especially crucial when treating tumors located near critical structures or in pediatric cases where minimizing radiation exposure to healthy tissues is paramount. The precise targeting of tumors results in reduced side effects compared to traditional radiation therapies. Patients undergoing proton therapy often experience fewer complications and a better quality of life during and after treatment. Protons have a unique physical property known as the Bragg peak, which allows them to deposit the majority of their energy at a specific depth within the tissue. This characteristic enables oncologists to control the dose distribution more effectively, sparing healthy tissues beyond the tumor.

Regional Insights

North America emerged as the dominant player in the global Particle Therapy market in 2023, holding the largest market share in terms of value. North America's dominance in the global particle therapy market can be attributed to its continuous focus on technological innovations. The region has witnessed the development of state-of-the-art particle therapy facilities equipped with the latest accelerators, imaging systems, and treatment planning software. Proton therapy centers, in particular, have seen substantial growth, providing patients with access to advanced cancer treatments. Several key players in the particle therapy market have their roots in North America, contributing significantly to the region's dominance. These companies have played a pivotal role in developing and commercializing particle therapy solutions, making them accessible to a broader patient population. Strategic collaborations between research institutions, healthcare providers, and industry players in North America have accelerated advancements in particle therapy technology.

Key Market Players

Advanced Oncotherapy plc

Danfysik A/S

Hitachi, Ltd

IBA LLC

Mevion Medical Systems, Inc.

Optivus Proton Therapy, Inc.

ProTom International, Inc.

Provision Healthcare Ltd

Sumitom%li%Heavy Industries, Ltd.

Varian Medical Systems, Inc.

Report Scope:

In this report, the Global Particle Therapy Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Particle Therapy Market, By Type:

Proton therapy

Heavy-Ion therapy

Particle Therapy Market, By System:

Multi-room systems

Single-room systems

Particle Therapy Market, By Application:

Treatment application

Research application

Particle Therapy Market, By Cancer-type:

Pediatric Cancer

Lung Cancer

Breast cancer

Other cancers

Particle Therapy Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia-Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Particle Therapy Market.

Available Customizations:

Global Particle Therapy 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:

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 System 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. GLOBAL PARTICLE THERAPY MARKET OUTLOOK

- 4.1. Market Size & Forecast
 - 4.1.1. By Value
- 4.2. Market Share & Forecast
 - 4.2.1. By Type (Proton therapy, Heavy-Ion therapy)
 - 4.2.2. By System (Multi-room systems, Single-room systems)
 - 4.2.3. By Application (Treatment application, Research application)
 - 4.2.4. By Cancer-type (Pediatric Cancer, Lung Cancer, Breast cancer, Other cancers)
 - 4.2.5. By Region
 - 4.2.6. By Company (2023)

4.3. Market Map

5. ASIA PACIFIC PARTICLE THERAPY MARKET OUTLOOK

5.1. Market Size & Forecast

5.1.1. By Value

5.2. Market Share & Forecast

5.2.1. By Type

5.2.2. By System

5.2.3. By Application

5.2.4. By Cancer-type

5.2.5. By Country

5.3. Asia Pacific: Country Analysis

5.3.1. China Particle Therapy Market Outlook

5.3.1.1. Market Size & Forecast

5.3.1.1.1. By Value

5.3.1.2. Market Share & Forecast

5.3.1.2.1. By Type

5.3.1.2.2. By System

5.3.1.2.3. By Application

5.3.1.2.4. By Cancer-type

5.3.2. India Particle Therapy Market Outlook

5.3.2.1. Market Size & Forecast

5.3.2.1.1. By Value

5.3.2.2. Market Share & Forecast

5.3.2.2.1. By Type

5.3.2.2.2. By System

5.3.2.2.3. By Application

5.3.2.2.4. By Cancer-type

5.3.3. Australia Particle Therapy Market Outlook

5.3.3.1. Market Size & Forecast

5.3.3.1.1. By Value

5.3.3.2. Market Share & Forecast

5.3.3.2.1. By Type

5.3.3.2.2. By System

5.3.3.2.3. By Application

5.3.3.2.4. By Cancer-type

5.3.4. Japan Particle Therapy Market Outlook

5.3.4.1. Market Size & Forecast

- 5.3.4.1.1. By Value
- 5.3.4.2. Market Share & Forecast
 - 5.3.4.2.1. By Type
 - 5.3.4.2.2. By System
 - 5.3.4.2.3. By Application
 - 5.3.4.2.4. By Cancer-type
- 5.3.5. South Korea Particle Therapy Market Outlook
 - 5.3.5.1. Market Size & Forecast
 - 5.3.5.1.1. By Value
 - 5.3.5.2. Market Share & Forecast
 - 5.3.5.2.1. By Type
 - 5.3.5.2.2. By System
 - 5.3.5.2.3. By Application
 - 5.3.5.2.4. By Cancer-type

6. EUROPE PARTICLE THERAPY MARKET OUTLOOK

- 6.1. Market Size & Forecast
 - 6.1.1. By Value
- 6.2. Market Share & Forecast
 - 6.2.1. By Type
 - 6.2.2. By System
 - 6.2.3. By Application
 - 6.2.4. By Cancer-type
 - 6.2.5. By Country
- 6.3. Europe: Country Analysis
 - 6.3.1. France Particle Therapy Market Outlook
 - 6.3.1.1. Market Size & Forecast
 - 6.3.1.1.1. By Value
 - 6.3.1.2. Market Share & Forecast
 - 6.3.1.2.1. By Type
 - 6.3.1.2.2. By System
 - 6.3.1.2.3. By Application
 - 6.3.1.2.4. By Cancer-type
 - 6.3.2. Germany Particle Therapy Market Outlook
 - 6.3.2.1. Market Size & Forecast
 - 6.3.2.1.1. By Value
 - 6.3.2.2. Market Share & Forecast
 - 6.3.2.2.1. By Type

- 6.3.2.2.2. By System
- 6.3.2.2.3. By Application
- 6.3.2.2.4. By Cancer-type
- 6.3.3. Spain Particle Therapy Market Outlook
 - 6.3.3.1. Market Size & Forecast
 - 6.3.3.1.1. By Value
 - 6.3.3.2. Market Share & Forecast
 - 6.3.3.2.1. By Type
 - 6.3.3.2.2. By System
 - 6.3.3.2.3. By Application
 - 6.3.3.2.4. By Cancer-type
- 6.3.4. Italy Particle Therapy Market Outlook
 - 6.3.4.1. Market Size & Forecast
 - 6.3.4.1.1. By Value
 - 6.3.4.2. Market Share & Forecast
 - 6.3.4.2.1. By Type
 - 6.3.4.2.2. By System
 - 6.3.4.2.3. By Application
 - 6.3.4.2.4. By Cancer-type
- 6.3.5. United Kingdom Particle Therapy Market Outlook
 - 6.3.5.1. Market Size & Forecast
 - 6.3.5.1.1. By Value
 - 6.3.5.2. Market Share & Forecast
 - 6.3.5.2.1. By Type
 - 6.3.5.2.2. By System
 - 6.3.5.2.3. By Application
 - 6.3.5.2.4. By Cancer-type

7. NORTH AMERICA PARTICLE THERAPY MARKET OUTLOOK

- 7.1. Market Size & Forecast
 - 7.1.1. By Value
- 7.2. Market Share & Forecast
 - 7.2.1. By Type
 - 7.2.2. By System
 - 7.2.3. By Application
 - 7.2.4. By Cancer-type
 - 7.2.5. By Country
- 7.3. North America: Country Analysis

7.3.1. United States Particle Therapy Market Outlook

7.3.1.1. Market Size & Forecast

7.3.1.1.1. By Value

7.3.1.2. Market Share & Forecast

7.3.1.2.1. By Type

7.3.1.2.2. By System

7.3.1.2.3. By Application

7.3.1.2.4. By Cancer-type

7.3.2. Mexico Particle Therapy Market Outlook

7.3.2.1. Market Size & Forecast

7.3.2.1.1. By Value

7.3.2.2. Market Share & Forecast

7.3.2.2.1. By Type

7.3.2.2.2. By System

7.3.2.2.3. By Application

7.3.2.2.4. By Cancer-type

7.3.3. Canada Particle Therapy Market Outlook

7.3.3.1. Market Size & Forecast

7.3.3.1.1. By Value

7.3.3.2. Market Share & Forecast

7.3.3.2.1. By Type

7.3.3.2.2. By System

7.3.3.2.3. By Application

7.3.3.2.4. By Cancer-type

8. SOUTH AMERICA PARTICLE THERAPY MARKET OUTLOOK

8.1. Market Size & Forecast

8.1.1. By Value

8.2. Market Share & Forecast

8.2.1. By Type

8.2.2. By System

8.2.3. By Application

8.2.4. By Cancer-type

8.2.5. By Country

8.3. South America: Country Analysis

8.3.1. Brazil Particle Therapy Market Outlook

8.3.1.1. Market Size & Forecast

8.3.1.1.1. By Value

- 8.3.1.2. Market Share & Forecast
 - 8.3.1.2.1. By Type
 - 8.3.1.2.2. By System
 - 8.3.1.2.3. By Application
 - 8.3.1.2.4. By Cancer-type
- 8.3.2. Argentina Particle Therapy Market Outlook
 - 8.3.2.1. Market Size & Forecast
 - 8.3.2.1.1. By Value
 - 8.3.2.2. Market Share & Forecast
 - 8.3.2.2.1. By Type
 - 8.3.2.2.2. By System
 - 8.3.2.2.3. By Application
 - 8.3.2.2.4. By Cancer-type
- 8.3.3. Colombia Particle Therapy Market Outlook
 - 8.3.3.1. Market Size & Forecast
 - 8.3.3.1.1. By Value
 - 8.3.3.2. Market Share & Forecast
 - 8.3.3.2.1. By Type
 - 8.3.3.2.2. By System
 - 8.3.3.2.3. By Application
 - 8.3.3.2.4. By Cancer-type

9. MIDDLE EAST AND AFRICA PARTICLE THERAPY MARKET OUTLOOK

- 9.1. Market Size & Forecast
 - 9.1.1. By Value
- 9.2. Market Share & Forecast
 - 9.2.1. By Type
 - 9.2.2. By System
 - 9.2.3. By Application
 - 9.2.4. By Cancer-type
 - 9.2.5. By Country
- 9.3. MEA: Country Analysis
 - 9.3.1. South Africa Particle Therapy Market Outlook
 - 9.3.1.1. Market Size & Forecast
 - 9.3.1.1.1. By Value
 - 9.3.1.2. Market Share & Forecast
 - 9.3.1.2.1. By Type
 - 9.3.1.2.2. By System

- 9.3.1.2.3. By Application
- 9.3.1.2.4. By Cancer-type
- 9.3.2. Saudi Arabia Particle Therapy Market Outlook
 - 9.3.2.1. Market Size & Forecast
 - 9.3.2.1.1. By Value
 - 9.3.2.2. Market Share & Forecast
 - 9.3.2.2.1. By Type
 - 9.3.2.2.2. By System
 - 9.3.2.2.3. By Application
 - 9.3.2.2.4. By Cancer-type
- 9.3.3. UAE Particle Therapy Market Outlook
 - 9.3.3.1. Market Size & Forecast
 - 9.3.3.1.1. By Value
 - 9.3.3.2. Market Share & Forecast
 - 9.3.3.2.1. By Type
 - 9.3.3.2.2. By System
 - 9.3.3.2.3. By Application
 - 9.3.3.2.4. By Cancer-type

10. MARKET DYNAMICS

- 10.1. Drivers
- 10.2. Challenges

11. MARKET TRENDS & DEVELOPMENTS

- 11.1. Recent Developments
- 11.2. Product Launches
- 11.3. Mergers & Acquisitions

12. GLOBAL PARTICLE THERAPY MARKET: SWOT ANALYSIS

13. PORTER'S FIVE FORCES ANALYSIS

- 13.1. Competition in the System
- 13.2. Potential of New Entrants
- 13.3. Power of Suppliers
- 13.4. Power of Customers

13.5. Threat of Substitute Product

14. COMPETITIVE LANDSCAPE

14.1. Advanced Oncotherapy plc

14.1.1. Company Snapshot

14.1.2. Product & Services

14.1.4. Financials (In case of listed)

14.1.5. Recent Developments

14.1.6. SWOT Analysis

14.2. Danfysik A/S

14.3. Hitachi, Ltd

14.4. IBA LLC

14.5. Mevion Medical Systems, Inc.

14.6. Optivus Proton Therapy, Inc.

14.7. ProTom International, Inc.

14.8. Provision Healthcare Ltd

14.9. Sumitomo Heavy Industries, Ltd.

14.10. Varian Medical Systems, Inc.

15. STRATEGIC RECOMMENDATIONS

16. ABOUT US & DISCLAIMER

I would like to order

Product name: Particle Therapy Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Proton therapy, Heavy-ion therapy), By System (Multi-room systems, Single-room systems), By Application (Treatment application, Research application), By Cancer-type (Pediatric Cancer, Lung Cancer, Breast cancer, Other cancers), By Region and Competition, 2019-2029F

Product link: <https://marketpublishers.com/r/PF7BE1F154FBEN.html>

Price: US\$ 4,900.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/PF7BE1F154FBEN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below
and fax the completed form to +44 20 7900 3970