

Medical Exoskeleton - Market Insights, Competitive Landscape and Market Forecast–2027

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Abstracts

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Medical Exoskeletons Market By Product Type (Upper Extremity And Lower Extremity), By Technology (Passive And Powered), By Mobility (Fixed/Stationary And Mobile), By Age Group (Adults And Pediatric), And By End User (Hospitals, Rehabilitation Centers, And Others), and by geography is estimated to register appreciable CAGR forecast till 2027 owing to the growing prevalence of neurological disorders and the rising prevalence of spinal cord injury

Global medical exoskeletons market was valued at USD 295.58 million in 2021, growing at a CAGR of 18.23% during the forecast period from 2022 to 2027 to reach USD 807.30 million by 2027. The demand for medical exoskeletons is primarily being boosted by increasing prevalence of neurological disorders, rising prevalence of spinal cord injury, increasing number of brain injuries and technological advancements in product development pertaining to medical exoskeletons contributing in the overall growth of the medical exoskeletons market during the forecast period.

Medical Exoskeletons Market Dynamics:

The medical exoskeletons market is experiencing increasing product demand due to a variety of factors. One of the important factors is the growing prevalence of neurological disorders. This is evident from the data provided by the World Health Organization (2021), over 1 billion people live with some form of disability across the globe. In addition to the above-mentioned source, the National Health Portal of India (2021) cited that in 2021, more than 17 million people across the globe were living with cerebral palsy. Furthermore, as per the data presented by the MS International Federation, in

2020, near about 2.8 million people across the globe were suffering from multiple sclerosis. Indications such as cerebral palsy causes impaired muscle tone and movement, leading to spastic or flaccid muscles, impaired reflexes, poor coordination, involuntary movements, poor posture, and impaired balance. All of these issues impact how a person moves and is able to get from one place to another. Crouch gait, the excessive bending of the knees while walking, is a common and debilitating condition in children with cerebral palsy. Exoskeletons offer the ability to augment human locomotion by applying appropriately timed and scaled torques to lower-extremity joint. Furthermore, many studies have reported benefits of employing medical exoskeletons is other neurological diseases as the use of a robotic exoskeleton can influence walking recovery in patients with a serious neurological disease. Therefore, owing to the rising prevalence of neurological disorders there will be a rise in the demand for medical exoskeletons, thereby contributing in the growth of the medical exoskeletons market during the forecast period.

Moreover, another key factor responsible for driving the demand for medical exoskeletons is the increasing prevalence of spinal cord injury. According to the National Spinal Cord Injury Statistical Center 2021, in the year 2020 the estimated number of people suffering from spinal cord injury were approximately 296,000 patients, with a range from 252,000 to 373,000 patients.

Report Metrics

Details

Study Period

2019 to 2027

Base Year

2021

Forecast Period

2022 to 2027

CAGR

18.23%

Market Size

USD 807.30 million by 2027

Key Companies

ReWalks Robotics Ltd, Wearable Robotics srl, Ekso Bionics, CYBERDYNE INC, ExoAtlet, Hocoma, MARSI BIONICS, SL, Ottobock, Gogoa, Gloreha IDROGENET s.r.l., Fourier Intelligence, Shanghai Siyi Intelligent Technology Co.,Ltd, BAMA Teknoloji, and others

Furthermore, the rising number of brain injuries is also a rising factor for driving the medical exoskeleton market during the forecasting period. As per the Centers for Disease Control and Prevention 2021, in the year 2020, approximately 61,000 TBI-related deaths had occurred in the United States in the year 2019, which accounts to about 166 TBI-related deaths every day.

However, several technology-related limitations and the higher cost associated with the devices may restrict the medical exoskeletons market growth.

The medical exoskeletons market has experienced a period of temporary recession as lockdown restrictions have been enforced as a necessary step to curb the spread of COVID-19 infections. One of the major impacts of lockdowns were observed in the disruption of production process and supply chains across the globe. Along with this, the significant decrease in the medical procedures due to prioritizing of COVID-19 infection-associated patient load, there was a striking decrease in the product demand because of that. However, the medical exoskeletons market is in the recovery stage, with numerous COVID-19 vaccines being approved and administered worldwide, and activities have begun in various areas such as medical services thereby presenting a positive growth environment for the medical exoskeletons market.

Medical Exoskeletons Market Segment Analysis:

Medical Exoskeletons Market By Product Type (Upper Extremity and Lower Extremity), By Technology (Passive and Powered), By Mobility (Fixed/Stationary and Mobile), By Age Group (Adults and Pediatric), and By End User (Hospitals, Rehabilitation Centers, and Others), and by Geography (North America, Europe, Asia-Pacific, and Rest of the

World)

In the product segment of the medical exoskeletons market, the lower extremity devices category is expected to amass a significant share in the market revenue during the forecast period. This can be ascribed to their advantages such as the increase in neurological injuries such as cerebral palsy, stroke, infectious diseases (e.g. polio), and spinal cord injury may result in significant muscle weakness and impaired motor control which severely impact the gait and motion abilities of individuals.

Another key aspect contributing in the growing demand for lower extremity medical exoskeletons is the orthopedic rehabilitation training which generally involves performing specific movements to provoke motor plasticity and ultimately improve motor recovery. It is crucial for patients to improve their musculoskeletal strength and motor control and to minimize functional deficits. An exoskeleton allows people with mobility disorders to regain the ability to stand and to walk over the ground, upstairs, and downstairs. Compared to traditional physical therapy, exoskeleton assistive rehabilitation has the advantages of reducing the work of therapists, allowing intensive and repetitive training, and it is more convenient to use for quantitatively assessing the recovery level by measuring force and movement patterns. Considering the advantages associated with these systems, there has been a growing acceptance among end users which has resulted in more products reaching the market.

For instance, in May 2019, ReWalk Robotics received the CE Mark for ReStore™ Exo-Suit Stroke Rehabilitation Device.

North America is expected to dominate the overall Medical Exoskeletons Market:

Among all the regions, North America is estimated to account for the largest share in the medical exoskeletons market. Owing to the significance of key growth factors such as rising prevalence of geriatric population, increasing prevalence of strokes and traumatic brain injuries, growing prevalence of neurological disorders coupled with increasing focus of the government in terms of providing access to healthcare services catering to such indications also helped the market growth in this region.

One of the major factors responsible for driving the growth of medical exoskeletons in the North American region is the rising prevalence of spinal cord injury. For instance, according to the National Spinal Cord Injury Association (2021), as many as 450,000 people in the United States were living with a spinal cord injury (SCI) in 2021. In another dataset presented by the Centers for Disease Control and Prevention, in 2019, 166

people lost their lives to a traumatic brain injury each day in 2019. The CDC (2020) further mentions that about 1 in 345 children (3 per 1,000 8-year-old children) in the United States have been identified with cerebral palsy.

All these indications affect the nervous system in varying degrees with different etiologies involved and ultimately affect a person's motor control. Therefore, the presence of large patient population suffering from neurological indications point towards the growing need for these devices in the country. This further acts as a motivating factor for manufacturers operating in the domain in gaining market access on a country level as the United States also has a reputation of availability of the best healthcare facilities in the world. For instance, in November 2021, the US Food and Drug Administration awarded the breakthrough device designation to ReWalk Robotics, Ltd's ReWalk ReBoot Soft Exo-Suit. The active involvement of the regulatory body in identifying and approving such devices to expedite the product approval process also proves beneficial to both the manufacturers and end users.

Medical Exoskeletons Market Key Players:

Some of the key market players operating in the medical exoskeletons market includes ReWalks Robotics Ltd, Wearable Robotics srl, Ekso Bionics, CYBERDYNE INC, ExoAtlet, Hocoma, MARSII BIONICS, SL, Ottobock, Gogoa, Gloreha IDROGENET s.r.l., Fourier Intelligence, Shanghai Siyi Intelligent Technology Co.,Ltd, BAMA Teknoloji, BIONIK and others.

Recent Developmental Activities In Medical Exoskeletons Market:

On June 25, 2020, Ekso Bionics had received Food and Drug Administration Clearance to market the EksoNR™ Robotic Exoskeleton for use with acquired brain injury patients.

On January 23, 2018, Cyberdyne had received FDA approval to begin offering the HAL (Hybrid Assistive Limb) lower-body exoskeleton to users in the United States through licensed medical facilities.

On November 01, 2018, Gogoa Mobility Robots had won the CE Mark for Hank exoskeleton.

On May 29, 2019, ReWalk Robotics had received the CE Mark for ReStore™ Exo-Suit Stroke Rehabilitation Device.

Key Takeaways from the Medical Exoskeletons Market Report Study

Market size analysis for current medical exoskeletons market size (2021), and market forecast for 5 years (2022-2027)

The effect of the COVID-19 pandemic on this market is significant. To capture and analyze suitable indicators, our experts are closely watching the medical exoskeletons market.

Top key product/services/technology developments, merger, acquisition, partnership, joint venture happened for last 3 years

Key companies dominating the Global Medical Exoskeletons Market.

Various opportunities available for the other competitor in the Medical Exoskeletons Market space.

What are the top performing segments in 2021? How these segments will perform in 2027.

Which is the top-performing regions and countries in the current medical exoskeletons market scenario?

Which are the regions and countries where companies should have concentrated on opportunities for medical exoskeletons market growth in the coming future?

Target Audience who can be benefited from this Medical Exoskeletons Market Report Study

Medical Exoskeletons products providers

Research organizations and consulting companies

Medical Exoskeletons -related organizations, associations, forums, and other alliances

Government and corporate offices

Start-up companies, venture capitalists, and private equity firms

Distributors and Traders dealing in medical exoskeletons

Various End-users who want to know more about the Medical Exoskeletons market and latest technological developments in the Medical Exoskeletons market.

Frequently Asked Questions for Medical Exoskeletons Market:

1. What are Medical Exoskeletons?

Medical exoskeletons are medical electrical equipment which is used to provide mobility to physically disabled, injured or weak persons, who are unable to walk due to a variety of medical reasons such as SCI, neurological disorders, major trauma like stroke, cerebral palsy and so on.

2. What is the market for Global Medical Exoskeletons?

Global medical exoskeletons market was valued at USD 295.58 million in 2021, growing at a CAGR of 18.23% during the forecast period from 2022 to 2027 to reach USD 807.30 million by 2027.

3. What are the drivers for Global Medical Exoskeletons Market?

The demand for medical exoskeletons is primarily being boosted by rising prevalence of neurological disorders, growing prevalence of spinal cord injury, increasing number of brain injuries and technological advancements in the product development, thereby contributing in the overall growth of the medical exoskeletons market during the forecast period.

4. Who are the key players operating in Global Medical Exoskeletons Market?

Some of the key market players operating in the medical exoskeletons market includes ReWalks Robotics Ltd, Wearable Robotics srl, Ekso Bionics, CYBERDYNE INC,

ExoAtlet, Hocoma, MARSI BIONICS, SL, Ottobock, Gogoa, Gloreha IDROGENET s.r.l., Fourier Intelligence, Shanghai Siyi Intelligent Technology Co.,Ltd, BAMA Teknoloji, BIONIK and others.

5. Which region has the highest share in Medical Exoskeletons market?

North America is expected to dominate the overall Medical Exoskeletons market during the forecast period, 2022 to 2027. Owing to significance of key growth factors such as rising prevalence of geriatric population, growing prevalence of strokes and traumatic brain injuries, rising prevalence of neurological disorders coupled with the rising focus of the government in terms of providing access to healthcare solutions catering to such indications, the North America medical exoskeletons market is expected to witness positive growth. Furthermore, higher traumatic brain injuries, sophisticated healthcare infrastructure, new product approvals, and high awareness also helped the market growth in this region.

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