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 / Wearable Robotic Exoskeleton Market

## Wearable Robotic Exoskeleton Market Size, Share, Growth Report 2030



**Wearable Robotic Exoskeleton Market Size - By Type (Passive And Powered), By Application (Industrial, Military, Healthcare, Aerospace, And Others), And By Region - Global And Regional Industry Overview, Market Intelligence, Comprehensive Analysis, Historical Data, And Forecasts 2022 – 2028**

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<b>Market Size in 2021</b>	<b>Market Forecast in 2028</b>	<b>CAGR (in %)</b>	<b>Base Year</b>
USD 665 Billion	USD 11.86 Billion	44.37%	2021

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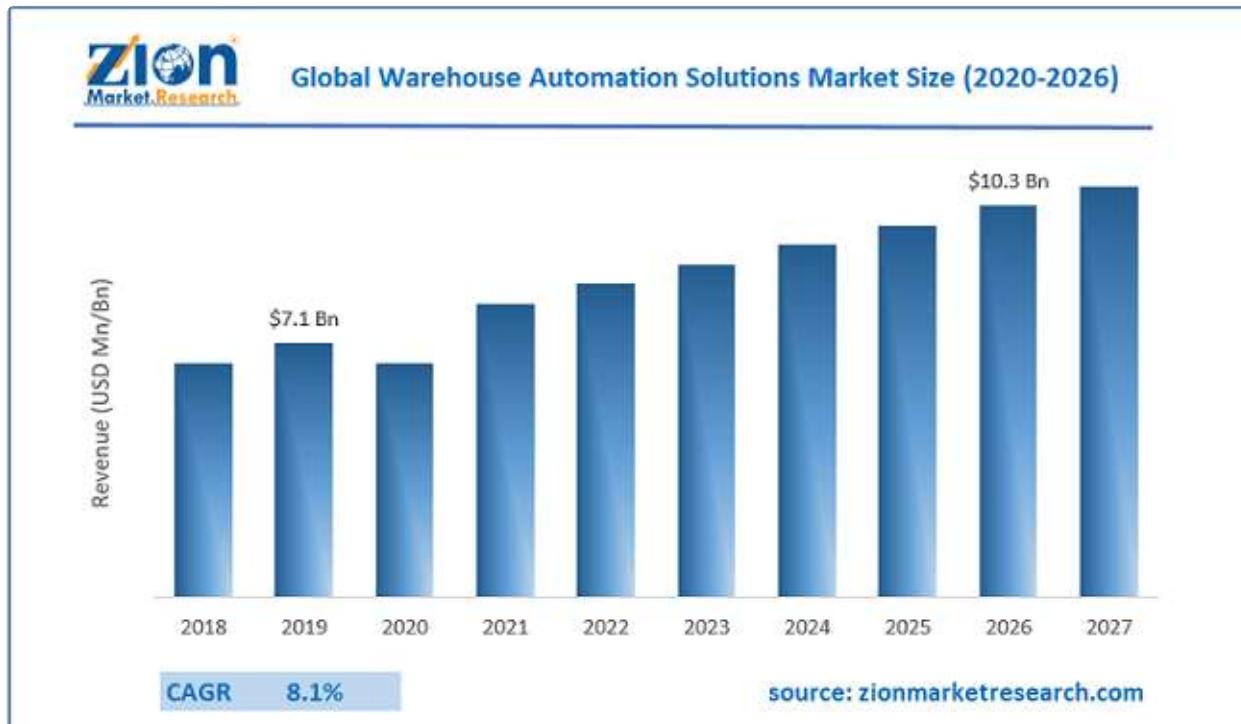
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## Industry Prospective:

The global wearable robotic exoskeleton market size (<https://www.zionmarketresearch.com/news/global-wearable-robotic-exoskeleton-market>) was worth around **USD 665 Billion** in 2021 and is predicted to grow to around **USD 11.86 Billion** by 2028 with a compound annual growth rate (**CAGR**) of roughly **44.37%** between 2022 and 2028.



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The report analyzes the global wearable robotic exoskeleton market's drivers, restraints/challenges, and the effect they have on the demands during the projection period. In addition, the report explores emerging opportunities in the wearable robotic exoskeleton market.

## **Wearable Robotic Exoskeleton Market: Overview**

A robotic exoskeleton is a wearable device that runs on electromechanics and augments the wearer's physical motion abilities like walking, arm movements, bending, etc. The general principle behind wearable robotic exoskeletons is the involvement of hardware substances to aid human motion.

These technologies can be used post-surgery or for rehab purposes. Since they can be programmed depending on the requirement, the wearable robotic exoskeleton has wide applications across industrial sectors. With recent advancements, robotic wearables can take up behavioral, verbal, or other forms of input and deliver the desired outcome.

The main aim of any robotic device is to enhance human capabilities and capacities. In the same way, wearable electromagnetic-run systems are capable of enhancing various human motions in different scenarios. The applications range from use in trauma and rehabilitation centers to personal care (<https://www.zionmarketresearch.com/report/personal-care-appliances-market>) robots, movement assistance for disabled people, and raising security standards to name a few.

The immense potential of the technology has aided the rising trend of developing more efficient and affordable robotic exoskeletons; however, there are several designs, control, and modeling-related challenges involved that utilize the technology to its full potential.

Some of the potential benefits of wearable robotic exoskeletons include increased independence amongst users, reduced energy requirement amongst users for joining the movement, and the ability to provide long, repetitive, and exhaustive therapy sessions without increasing the burden on therapists and the patient.

The device is also capable of providing scalable information about the dynamic and kinematic parameters of users' limb movement that act as performance indicators like smoothness, velocity, and range of motion.

Secondary benefits of using robotic technology are that it provides improved bladder control, reduced spasticity, decreases chronic pain (<https://www.zionmarketresearch.com/report/chronic-disease-management-market>), and also aids in increased bone marrow density



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## Key Insights

- As per the analysis shared by our research analyst, the global wearable robotic exoskeleton market is estimated to grow annually at a CAGR of around 44.37% over the forecast period (2022-2028).
- In terms of revenue, the global wearable robotic exoskeleton market size was valued at around USD 665 million in 2021 and is projected to reach USD 11.86 billion, by 2028. Due to a variety of driving factors, the market is predicted to rise at a significant rate.
- Based on type segmentation, powered wearable robotic exoskeletons were predicted to show maximum market share in the year 2021

- Based on application segmentation, healthcare had the leading revenue-generating applications in 2021.
- On the basis of region, North America was the leading revenue generator in 2021

## Covid-19 Impact

The global market cap suffered losses due to the restrictions laid down as precautionary measures during the initial phase of Covid-19. Owing to various transportation regulations, the global market faced issues with the availability of raw materials and the supply chain. The demand for the products also took a dip owing to the various financial uncertainties that arose as a consequence of the virus.

## Wearable Robotic Exoskeleton Market: Growth Drivers

### Technological advancements to aid market growth during the projection period

The global wearable robotic exoskeleton market is anticipated to grow owing to the various research & development activities carried out in the field of robotic processes (<https://www.zionmarketresearch.com/report/robotic-process-automation-in-bfsi-market>) and artificial intelligence. Since the world is moving towards further technological growth, every sector is moving towards innovation and adopting innovative technologies. Not until long ago, robotic exoskeletons existed only as prototypes or seemed impossible for actual use.

However, the technology has already entered multiple segments especially, the healthcare and military services where it is showing exceptional outcomes. For instance, in military services, the device can be used to increase the endurance level, strength, mobility, and load-carrying capacity of military men. Every country is investing heavily in upgrading its military structure for future protection.

The US military spending was around USD 801 billion in 2021, and as per the latest reports by the Stockholm International Peace Research Institute, the global value of military spending has crossed USD 2 trillion as of 2022. These high numbers indicate the intensive

measures undertaken by various military services to stay ahead in the game and upgrade the protection quotient.

The global market cap is expected to benefit from the rising trend and popularity of industrial body parts owing to the programming flexibility offered by the product. Since wearable robotic exoskeleton can be manufactured with varying types of raw materials like fiberglass, carbon fiber, aluminum, etc., and can be custom-made as per the industrial requirement, their demand in the global industrial market is skyrocketing especially in manufacturing units where there is a constant need for heavy-loads pick-up facilities.

## **Wearable Robotic Exoskeleton Market: Restraints**

### **Initial high-cost step-up to restrict the market growth**

Even though there are numerous advancements in technology, they come with a high initial price tag rendering them unaffordable for many business units since it may affect the budgeting of the organizations. As of 2021, the price range of some of the wearable robotic exoskeletons in the medical sector was around USD 80,000 whereas the ones with the lower price bracket cost as much as USD 30,000.

There are numerous efforts being made in the line of reducing the cost but there is still a long way to go and until then, the global market is expected to witness restricted growth owing to the high expenses associated with the initial cost along with the maintenance of the technology in the long run

## **Wearable Robotic Exoskeleton Market: Opportunities**

### **High-quality deliverables to provide market growth opportunities.**

Wearable robotic exoskeletons have proven to be effective in many scenarios across industries. The outputs delivered by the technology are of exceptional quality and hence it has managed to generate the interest of many business organizations to invest in the technology and make it more affordable in order to increase the consumer database.

Many governments are also funding these developments for economic growth which is anticipated to provide ample growth opportunities for the global market during the projection period.

## **Wearable Robotic Exoskeleton Market: Challenges**

### **Stringent government regulations in the healthcare sector challenge the market expansion**

For any product to be used in the medicinal or healthcare sector, it requires multiple approvals from regulatory bodies that determine if the product leads to any unwanted repercussions while being used. Since wearable robotic exoskeletons are hardware machines, there are stringent government regulations in place approving the monitoring of the use of this technology.

These factors may challenge global market expansion since approvals may take years before the product can be used for practical purposes discouraging many businesses willing to invest in the technology unless regulatory authorities create systems that can smoothen the approval process.

## **Wearable Robotic Exoskeleton Market: Segmentation**

**The global wearable robotic exoskeleton market is segmented based on type, application, and region.**

Based on type, the global market segments are passive and powered. The global market is expected to be dominated by the powered wearable robotic exoskeleton since they have higher applications in the military, industrial, and healthcare sectors. Even though the technology is fairly new, it has already been extensively used to help patients suffering from extreme weakness to walk on their own.

The segmental growth may be attributed to the rising number of stroke patients. Almost 30 to 40% of stroke survivors lose their movement ability and in such cases, robotic technology can be used to assist the survivors with body movements.

Based on application, the global market is segmented into industrial, military, healthcare, aerospace, and others. The leading user of the technology is the healthcare sector because of the increasing number of strokes and other neurological disorders rendering patient immobility in many cases.

As per the World Health Organization, more than 1 billion people are affected by disorders like Alzheimer's (<https://www.zionmarketresearch.com/report/alzheimers-drugs-market>), epilepsy, stroke, and others every year. More than 15 million people suffered from neurological cases in 2019 which is the equivalent of 1 in every 6 people.

## Recent Developments:

- In June 2022, scholars at the Italian Worker's Compensation Authority (INAIL), and the IIT-Istituto Italiano di Tecnologia were successful in designing and realizing innovative prototypes of wearable robotic exoskeletons to be used in industrial set-ups. The prototypes are expected to enhance safety at industrial and manufacturing centers. The product works on artificial intelligence algorithms and motors and will help workers continue doing the most labor-intensive work with absolute ease.
- In March 2021, engineers were able to combine wearable cameras and AI (<https://www.zionmarketresearch.com/report/trail-camera-market>) in self-walking robotic exoskeletons. The system works by combining AI algorithms and computer vision to replicate how an able-bodied person walks by analyzing the surrounding environment. The product is expected to eliminate the need for manual control of robotic exoskeletons thus empowering patients and taking a step further toward higher independence.

## Wearable Robotic Exoskeleton Market Report Scope:

Report Attributes	Report Details
Report Name	Wearable Robotic Exoskeleton Market Research Report

<b>Market Size in 2021</b>	USD 665 million
<b>Market Forecast in 2028</b>	USD 11.86 billion
<b>Compound Annual Growth Rate</b>	CAGR of 44.37%
<b>Number of Pages</b>	269
<b>Forecast Units</b>	<b>Value (USD Billion), and Volume (Units)</b>
<b>Key Companies Covered</b>	Myomo Inc., Bionik Laboratories Corp., ATOUN Inc, Cyberdyne Inc., Lockheed Martin Corporation, Parker Hannifin Corporation, Mitsubishi Heavy Industries, Ltd., Ekso Bionics Holdings, Inc., Daiya Industry Co., Ltd., B-Temia Inc., and P&S Mechanics Co. Ltd.
<b>Segments Covered</b>	By Type, By Application, And By Region
<b>Regions Covered</b>	North America, Europe, Asia Pacific (APAC), Latin America, Middle East, and Africa (MEA)

Countries Covered	North America: U.S and Canada Europe: Germany, Italy, Russia, U.K, Spain, France, Rest of Europe APAC: China, Australia, Japan, India, South Korea, South East Asia, Rest of Asia Pacific Latin America: Brazil, Argentina, Chile The Middle East And Africa: South Africa, GCC, Rest of MEA
Base Year	2021
Historical Year	2016 to 2020
Forecast Year	2022 - 2030
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## Wearable Robotic Exoskeleton Market: Regional Analysis

North America to lead the global market by 2028 in terms of expansion

The global wearable robotic exoskeleton market is anticipated to be dominated by North America during the forecast period owing to the fact that the USA has the presence of multiple billion-dollar organizations working towards developing and upgrading the already existing market of wearable robotic exoskeletons.

The increased number of R & D activities aided by rising resource support by private and government institutes is expected to propel regional growth. US-based organizations are constantly focusing on innovations and eliminating restrictions in various technical fields.

The forward-thinking approach is what aids the region in staying ahead in the game. For instance, California-based Ekso Bionics managed to raise over USD 34 million, in 2017, for funding the development and commercialization of robotic skeletons designed for industrial

use.

In Europe, the global market is anticipated to grow owing to the increasing construction, aeronautical, industrial, and healthcare sectors that have wide applications of the technology. Asia Pacific is steadily growing towards a higher CAGR because of innovations in countries like China, South Korea, India, and Japan.

## **Wearable Robotic Exoskeleton Market: Competitive Analysis**

The global wearable robotic exoskeleton market is led by players like

- Myomo Inc.
- Bionik Laboratories Corp.
- ATOUN Inc
- Cyberdyne Inc.
- Lockheed Martin Corporation
- Parker Hannifin Corporation
- Mitsubishi Heavy Industries, Ltd.
- Ekso Bionics Holdings, Inc.
- Daiya Industry Co., Ltd.
- B-Temia Inc.
- P&S Mechanics Co. Ltd.

**The global wearable robotic exoskeleton market is segmented as follows:**

### **By Type**

- Passive
- Powered

### **By Application**

- Industrial
- Military
- Healthcare

- Aerospace
- Others

## By Region

- North America
  - The U.S.
  - Canada
- Europe
  - France
  - The UK
  - Spain
  - Germany
  - Italy
  - Rest of Europe
- Asia Pacific
  - China
  - Japan
  - India
  - South Korea
  - Southeast Asia
  - Rest of Asia Pacific
- Latin America
  - Brazil
  - Mexico
  - Rest of Latin America
- Middle East & Africa
  - GCC
  - South Africa
  - Rest of Middle East & Africa

## Frequently Asked Questions

- Which key factors will influence wearable robotic exoskeleton market growth over 2022-2028? +
- What will be the value of the wearable robotic exoskeleton market during 2022-2028? +
- Which region will contribute notably towards the wearable robotic exoskeleton market value? +
- Which are the major players leveraging the wearable robotic exoskeleton market growth? +
- What is a wearable robotic exoskeleton? +

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