

Human Insulin Market Expected to Grow at a CAGR of 5.1% by 2031 | Persistence Market Research Analysis

The global human insulin market is set to grow from US\$ 19.8 Bn in 2024 to US\$ 26.9 Bn by 2031, registering a CAGR of 5.1% during the forecast period.

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The [human insulin market](#) is experiencing significant growth, driven by the increasing prevalence of diabetes worldwide and the advancements in insulin production technologies. According to a recent report from Persistence Market Research, the global human insulin market is expected to grow substantially, increasing from a value of US\$ 19.8 billion in 2024 to US\$ 26.9 billion by 2031, representing a Compound Annual Growth Rate (CAGR) of 5.1% during the forecast period from 2024 to 2031. This steady growth is indicative of the crucial role that insulin plays in managing diabetes, a condition that affects millions of individuals worldwide.



Rising Global Diabetes Prevalence

Diabetes, both Type 1 and Type 2, is a chronic condition that affects the body's ability to produce or respond to insulin, leading to elevated blood glucose levels. According to the World Health Organization (WHO), the number of individuals with diabetes has been rising steadily in recent decades, and it is expected to continue growing. By 2030, the global prevalence of diabetes is projected to reach over 10% of the adult population, further fueling the demand for human insulin.

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The increase in diabetes cases can be attributed to several factors, including lifestyle changes, poor dietary habits, a rise in obesity rates, and an aging population. As the incidence of diabetes

continues to rise, so too does the need for effective treatment options, which include insulin therapy. Human insulin, which is synthesized through biotechnology or extracted from animal sources, is one of the primary treatments for managing diabetes and regulating blood sugar levels.

The Role of Human Insulin in Diabetes Management

Human insulin is essential for individuals who are unable to produce sufficient insulin on their own. It is administered to help control blood glucose levels in individuals with diabetes. The global human insulin market consists of both rapid-acting and long-acting insulin formulations, each tailored to meet the specific needs of patients.

Rapid-Acting Insulin: This type of insulin begins to work quickly after injection, helping to control blood sugar spikes after meals. It is widely used by people with Type 1 diabetes, as well as individuals with Type 2 diabetes who require insulin to manage their blood glucose levels.

Long-Acting Insulin: This insulin type is designed to release slowly over an extended period, offering continuous blood sugar control throughout the day and night. It is often used to manage basal insulin needs in both Type 1 and Type 2 diabetes patients.

The market for human insulin includes both branded and generic formulations, with major pharmaceutical companies being the primary manufacturers of insulin products. However, with the rise in the demand for affordable medications, the generic insulin segment has gained traction in several markets, contributing to the growth of the human insulin market.

Technological Advancements in Insulin Production

One of the significant drivers of the human insulin market's growth is the continued advancements in insulin production technologies. In the past, insulin was primarily derived from animal sources, such as pigs and cows. However, over the years, biotechnology has revolutionized insulin production. Recombinant DNA technology now allows the production of human insulin through genetic engineering, ensuring a safer, more efficient, and more reliable source of insulin.

The production of insulin using recombinant DNA technology involves inserting the gene responsible for insulin production into bacteria or yeast cells, which then produce the insulin in large quantities. This process has drastically reduced the cost of production and improved the accessibility of insulin. Moreover, the development of new insulin delivery systems, such as insulin pens, pumps, and even inhalable insulin, has made diabetes management more convenient for patients.

In addition, the growing demand for insulin analogs, which are modified forms of human insulin designed to work more efficiently, is expanding the market. These analogs offer improved flexibility and control for patients and are being increasingly adopted in clinical practice.

Competitive Landscape and Market Trends

The global human insulin market is highly competitive, with several prominent players dominating the industry. These include well-established pharmaceutical companies such as Novo Nordisk, Sanofi, Eli Lilly, and Boehringer Ingelheim, which account for a significant share of the market. These companies have invested heavily in research and development (R&D) to develop advanced insulin products and technologies.

Novo Nordisk, for example, is a leader in the global insulin market, offering a wide range of insulin products, including its popular long-acting insulin, Levemir, and its rapid-acting insulin, Novolog. Similarly, Sanofi has developed its own insulin analogs, including Lantus and Toujeo, which are widely used for diabetes management.

The entry of biosimilar insulin products is also contributing to the market's expansion. These biosimilars, which are highly similar to the reference biologic insulin products, offer a more affordable alternative to patients, particularly in developing regions where access to expensive branded insulin can be a challenge. Biosimilar insulin products are gaining popularity as they provide cost-effective options for patients without compromising on safety or efficacy.

Furthermore, the increasing availability of insulin in emerging markets is expected to drive the growth of the human insulin market. As healthcare infrastructure improves and more individuals gain access to insulin, particularly in countries such as India, China, and other parts of Asia-Pacific, the market is expected to witness significant growth.

The Impact of Government Initiatives and Healthcare Policies

Government policies and initiatives are playing a pivotal role in shaping the future of the human insulin market. Many countries are focusing on improving access to diabetes care, including insulin, through national health programs and policies. For instance, in some countries, insulin is made available at subsidized prices, making it more affordable for patients. Additionally, healthcare systems are being redesigned to address the increasing burden of diabetes, which in turn boosts the demand for insulin.

The rise in healthcare insurance coverage is another factor contributing to market growth. As more individuals gain access to healthcare insurance that covers diabetes management, the demand for insulin is expected to increase, particularly in developed countries.

Challenges in the Human Insulin Market

Despite the promising growth, the human insulin market faces several challenges. One of the main issues is the high cost of insulin, particularly in developed countries. Although the advent of biosimilars has reduced prices, insulin remains prohibitively expensive for some patients, leading to concerns about affordability and accessibility. This has resulted in calls for price

reductions and more affordable insulin options worldwide.

Moreover, the distribution and availability of insulin in low-income regions remain a significant challenge. In many parts of the world, insulin shortages and supply chain issues have made it difficult for patients to access the medication they need. This is exacerbated by logistical barriers, regulatory hurdles, and a lack of adequate healthcare infrastructure.

Future Outlook

The future of the global human insulin market appears bright, with sustained growth expected over the next decade. The rising prevalence of diabetes, combined with advancements in insulin production technologies and improved access to healthcare, will continue to drive the demand for insulin. Additionally, the increasing availability of biosimilars and the introduction of new insulin delivery methods will make it easier for patients to manage their condition.

With a projected market value of US\$ 26.9 billion by 2031, the global human insulin market is set to expand at a healthy CAGR of 5.1% from 2024 to 2031. This growth presents significant opportunities for both established players and new entrants in the market to meet the evolving needs of diabetic patients worldwide.

In conclusion, as the global diabetes epidemic continues to rise, the demand for human insulin will remain strong, driving innovation in both insulin products and delivery systems. Despite challenges related to affordability and access, the future of the human insulin market remains promising, with significant growth expected in the coming years.

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