Opportunities in Biotechnology Will Follow Advancements in the Science

Published November 25, 2024

Christopher Gannatti, CFA
Global Head of Research

Key Takeaways

- Recent advancements in GLP-1 drugs, such as Ozempic and Wegovy, underscore their potential to transform health care by addressing obesity, cardiovascular diseases and even neurodegenerative conditions.
- Regenerative medicine, including breakthroughs in heart and lung regeneration, is paving the way for innovative treatments that go beyond symptom management to repair and restore damaged tissues.
- The WisdomTree BioRevolution Fund (WDNA) is showing signs of recovery, with rolling one-year returns improving significantly, reflecting renewed investor confidence in biotechnology innovation.

Listen to the blog post below:

In November 2024, it isn't difficult to find all sorts of perspectives on the so-called Magnificent 7.1 These companies have been largely driving equity market returns for the better part of the past two years.

Biotechnology, on the other hand, has had a very different experience.

A Big Headline in The Economist

On October 24, 2024, we saw the following headline in *The Economist*2:

GLP-1s like Ozempic Are among the Most Important Drug Breakthroughs Ever

Given everything going on in the world, it was noticeable to see a large proportion of the issue focused on this topic with a superlative language not always used in the publication.

The article explores how GLP-1 drugs, such as Ozempic, Wegovy and Mounjaro, have emerged as some of the most impactful medical breakthroughs due to their wide-ranging effects on various aspects of human health. Originally, they were developed to manage type 2 diabetes. These drugs activate receptors for GLP-1, a hormone that regulates insulin and blood sugar levels. However, researchers have discovered that these medications do far more than control blood glucose—they also influence appetite, metabolism, cardiovascular health and even neurodegenerative conditions. This breadth of impact positions GLP-1

drugs as potential solutions for several widespread health issues, extending beyond diabetes management.

Weight Loss and Obesity Management

One of the most significant effects of GLP-1 drugs is their ability to promote substantial weight loss, making them effective in treating obesity, a condition linked to numerous health problems. These drugs act on the brain's appetite centers, reducing hunger and leading to lower calorie intake. Unlike other weight-loss medications, which often have limited efficacy and adverse effects, GLP-1 drugs offer a safer and more sustainable way to achieve weight loss. By reducing obesity, GLP-1 drugs can indirectly decrease the risk of associated conditions such as hypertension, sleep apnea, joint problems and certain types of cancer. Their success in this area has led to an increased interest in prescribing these medications as part of a comprehensive weight-management strategy, opening up possibilities for better health outcomes on a broad scale.

Cardiovascular Benefits

GLP-1 drugs have also demonstrated cardiovascular benefits, which could make a considerable difference in treating heart disease, the leading cause of death worldwide. In clinical trials, GLP-1 drugs have shown the ability to reduce cardiovascular events, such as heart attacks and strokes, among patients with diabetes and obesity. They help lower blood pressure, reduce inflammation and improve lipid profiles, all of which contribute to better heart health.

Potential in Treating Neurodegenerative Diseases

Another promising area for GLP-1 drugs is in the treatment of neurodegenerative diseases like Alzheimer's and Parkinson's. Emerging research suggests that GLP-1 drugs may have neuroprotective effects, possibly due to their ability to reduce inflammation and enhance cellular health in the brain. Animal studies have shown that these drugs can improve cognitive function and reduce the accumulation of amyloid plaques, a hallmark of Alzheimer's disease. While more research is needed to confirm these effects in humans, the potential for GLP-1 drugs to address neurodegeneration opens a new frontier in treating diseases that currently have limited therapeutic options.

Metabolic and Inflammatory Disorders

Beyond diabetes and obesity, GLP-1 drugs may be useful in treating other metabolic and inflammatory disorders, including non-alcoholic fatty liver disease (NAFLD) and metabolic syndrome. These conditions are often related to obesity and insulin resistance, and they increase the risk of severe liver damage and cardiovascular disease. By enhancing insulin sensitivity and reducing inflammation, GLP-1 drugs have shown promise in managing these disorders. For example, clinical trials indicate that GLP-1 drugs may reduce liver fat, potentially reversing NAFLD and lowering the risk of liver-related complications. This versatility in addressing metabolic dysfunction suggests that GLP-1 drugs could have widespread applicability across multiple chronic conditions.

Roughly one week later, on October 30, we then saw the following headline in the *Wall Street Journal*3:

Science Is Finding Ways to Regenerate Your Heart

This field, known as regenerative medicine, encompasses various approaches including stem cell therapy, gene editing and bioengineering, and it has immense potential to treat chronic health issues, enhance patient outcomes, and reduce healthcare costs by addressing the root causes of disease rather than merely managing symptoms.

Heart Regeneration: Targeting Cardiovascular Health

Conventional treatments for heart disease often rely on managing symptoms or invasive surgical interventions, which may not fully address the underlying damage. This is where regenerative medicine offers a promising alternative, with researchers developing methods to repair damaged heart tissue using patients' own cells. For example, stem cell therapy is being explored to regenerate heart tissue, potentially improving heart function in patients with heart disease or after a heart attack.

Stem cells are known for their ability to differentiate into various cell types, and scientists are using this property to develop methods to grow cardiac cells that can replace or repair damaged tissue. This could drastically reduce the need for heart transplants, which are limited by donor availability and often come with a high risk of rejection.

Lung Regeneration: Addressing Chronic Respiratory Diseases

Chronic respiratory diseases, such as chronic obstructive pulmonary disease (COPD) and pulmonary fibrosis, are similarly pervasive and challenging to treat. Current treatments largely focus on symptom management and delaying disease progression, but there is no cure for many chronic respiratory conditions. Researchers are now exploring the use of stem cells and gene editing to repair damaged lung tissue, aiming to restore lung function and provide long-term relief to patients.

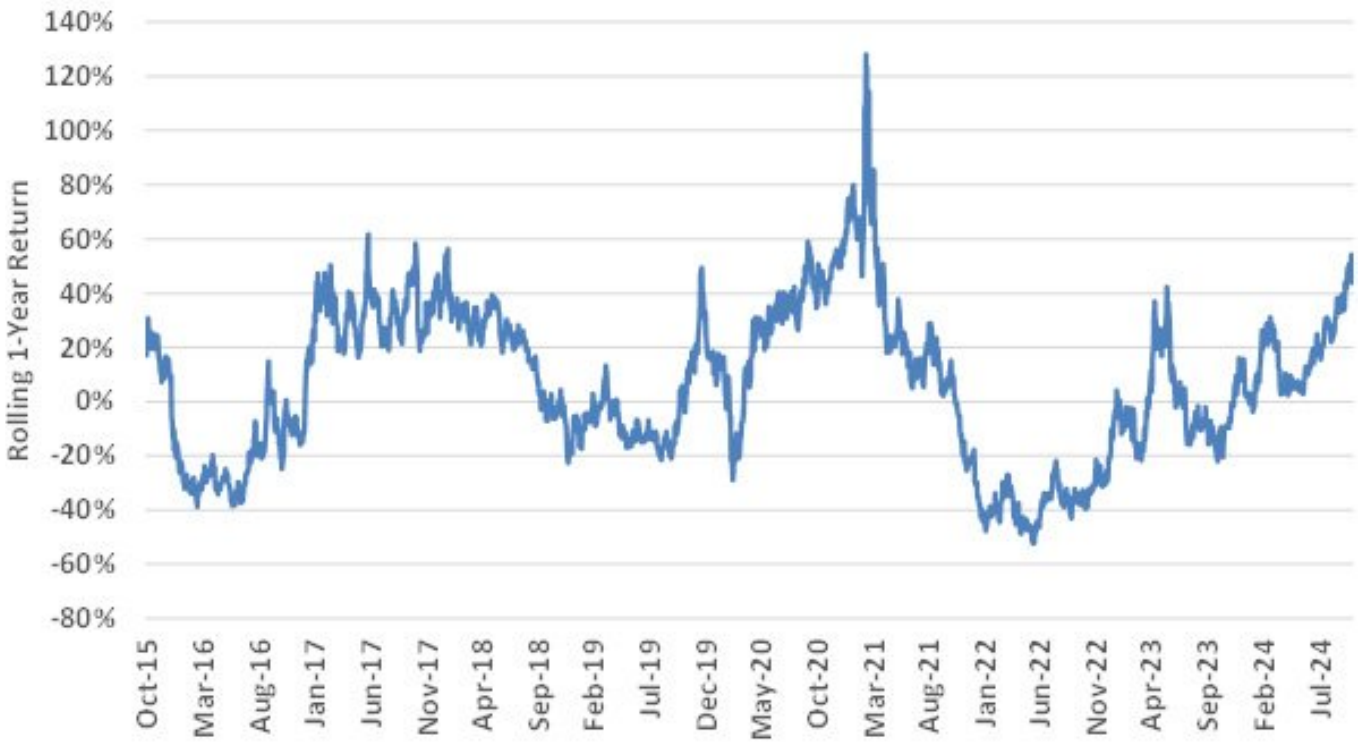
A key advantage of regenerative treatments is that they aim to restore the body's natural healing mechanisms rather than merely controlling symptoms. For patients with severe lung damage, such treatments could potentially allow for partial or even full lung regeneration, transforming the lives of those who currently rely on oxygen support or face life-threatening complications.

Conclusion: After An Extended Market, a Bit of Equity Performance Recovery

There are many measures of the performance of biotechnology stocks. In figure 1, we look to the S&P Biotechnology Select Industry Index. Specifically, we looked at the rolling one-year return to see how the most recent period, the year ended on October 31, 2024, looked relative to other one-year periods over the past 10 years.4

- The very noticeable peak in the chart was for the one-year period ended March 15, 2021, 128%. This included the recovery from the Covid-19 equity market lows as well as any impact from extremely low interest rates and expansionary fiscal policy.
- The trough was for the one-year period ended June 14, 2022, 52%. Here, we have the impact of fears of inflation, rising interest rates, and expectations of the removal of the expansionary fiscal and monetary policy.
- This chart, using daily index levels of the S&P Biotechnology Select Industry Index, allows us to see 2,267 rolling one-year periods. The average was 6.8%, but the standard deviation of these observations was over 28%! Using history as a guide, this data is saying "good luck" to anyone trying to forecast a given one-year return in this space.

Figure 1: Rolling 1-Year Returns for the S&P Biotechnology Select Industry Index



Source: S&P Global, as of 10/31/24. You cannot invest directly within an index. Past performance is not indicative of future returns.

At WisdomTree, we often use our Fund Comparison Tool within our PATH platform. We posed the following question:

If the index returns shown in figure 1 are indicating that the rolling one-year returns have been inflecting in the positive direction, can we test and see if the picture of the WisdomTree BioRevolution Fund (WDNA) is showing something similar?

WDNA is designed to track the total return performance , before fees and expenses, of the WisdomTree BioRevolution Index. Looking back—and this happens sometimes with ETF launches—WDNA was launched June 3, 2021, which happened to be close to the peak of the market for speculative stocks that had yet to generate profits. The consequence: as the market corrected from this peak it was directly visible within the performance track record of WDNA, shown in figure 2.

Figure 2: Standardized Returns

Fund Name	Fund Ticker	Fund Inception Date	Fund Expense Ratio	Year-to-Date	1-Year	3-Year	Since Fund Inception
WisdomTree BioRevolution Fund (NAV)	WDNA	6/3/21	0.45%	-1.84%	10.33%	-13.02%	-11.35%
WisdomTree BioRevolution Fund (MP)	WDNA	6/3/21	0.45%	-1.96%	10.26%	-13.07%	-11.38%

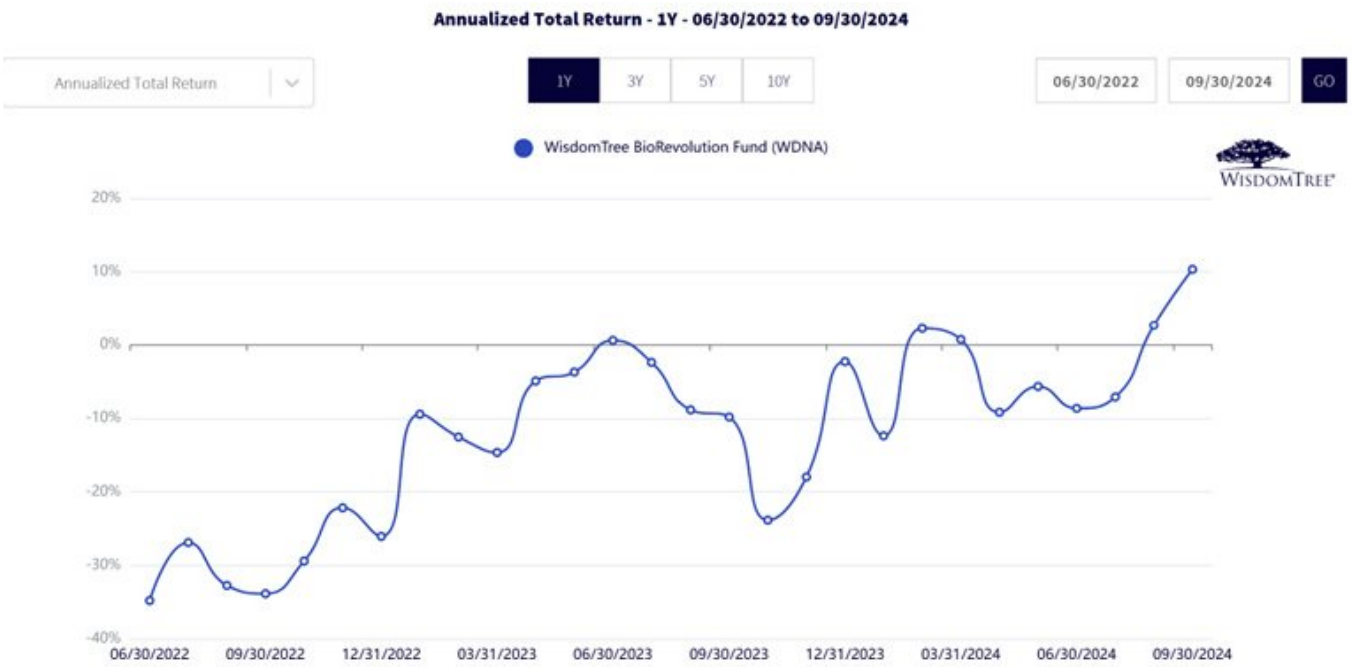
Sources: LSEG, FactSet and WisdomTree, specifically data is from the PATH Fund Comparison Tool, as of 9/30/24. NAV denotes total return performance at net asset value. MP denotes market price performance. Past performance is not indicative of future results. Investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted. For the most recent month-end and standardized performance and to download the respective Fund prospectuses, click here.

But as we can see in figure 3—with our new Rolling Returns feature—WDNA's picture of rolling one-year returns has been improving.

- The worst period, on the order of 35%, was from June 30, 2021, to June 30, 2022, was the first data point in the chart from left to right.
- The best period, slightly more than 10%, was from September 30, 2023, to September 30, 2024.

While there is no guarantee that the trend keeps up the positive trajectory, we do find it notable that WDNA weathered what was a very difficult 2022 return period and is showing signs of improvement.

Figure 3: An Analysis of Rolling 1-Year Returns for WDNA



Sources: LSEG, FactSet and WisdomTree, specifically data is from the PATH Fund Comparison Tool, as of 11/1/24. The rolling one-year periods are calculated on a monthly basis, such that the starting date, 6/30/16, represents the first month-end after WDNA inception. NAV denotes total return performance at net asset value. MP denotes market price performance. Past performance is not indicative of future results. Investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted. For the most recent month-end and standardized performance and to download the respective Fund prospectuses, click here.

Still, the environment is getting better, and we emphasize that as we continue to follow the science and the advancements, the market is so significant in many of these areas that we believe the returns will ultimately follow.

1 The Magnificent 7 refers to Amazon, Alphabet, Apple, Microsoft, Meta Platforms, Nvidia and Tesla.

2 Source: "GLP-1s like Ozempic Are among the Most Important Drug Breakthroughs Ever," The Economist, 10/24/24. Summation includes text generated using ChatGPT. Until otherwise cited, all facts are from this article.

3 Source: Betsy McKay, "Science Is Finding Ways to Regenerate Your Heart," Wall Street Journal, 10/30/24, The summary generated includes text from ChatGPT. All following facts are from this article unless otherwise cited.

4 Source: https://www.spglobal.com/spdji/en/indices/equity/sp-biotechnology-select-industry-index/?currency=USD&returntype=T-#overview

Important Risks Related to this Article

There are risks associated with investing, including the possible loss of principal. The Fund invests in BioRevolution companies, which are companies significantly transformed by advancements in genetics and biotechnology. BioRevolution companies face intense competition and potentially rapid product obsolescence. These companies may be adversely affected by the loss or impairment of intellectual property rights and other proprietary information or changes in government regulations or policies. Additionally, BioRevolution companies may be subject to risks associated with genetic analysis. The Fund invests in the securities included in, or representative of, its Index regardless of their investment merit and the Fund does not attempt to outperform its Index or take defensive positions in declining markets. The composition of the Index is governed by an Index Committee and the Index may not perform as intended. Please read the Fund's prospectus for specific details regarding the Fund's risk profile.