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The path toward a metabolic health revolution

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The advent of weight management drugs such as GLP-1s have brought the treatment of obesity to the forefront of public attention, provoking a larger opportunity to work toward metabolic health for all.

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At a glance

- Nearly 900 million adults around the world are living with obesity, which is a substantial risk factor for at least 20 diseases or conditions that include diabetes, cardiovascular conditions, and brain health disorders. The McKinsey Health Institute (MHI) estimates that obesity will be linked to $2.76 trillion in lost gross domestic product in 2050 due to its effects on labor force participation and productivity.
- The rise of GLP-1s is shifting the discussion of obesity from an intractable issue to a treatable medical condition—a change that is inspiring investment and innovation across industries, including healthcare, medtech, food, and retail.
- Society has two possible paths forward. It can react to obesity by emphasizing medical treatment and weight management drugs, or it can also pursue a broader vision that prioritizes prevention, societal shifts, and metabolic health for all. MHI estimates that the health impact of taking the latter path could be three to four times that of the first path and lead to a $5.65 trillion annual GDP uplift in 2050 (3 percent of total GDP).
- Achieving metabolic health for all requires five major shifts: (1) advancing scientific understanding of metabolic health, (2) improving transparency through better measurement and tracking, (3) using technology for personalized interventions, (4) aligning economic incentives to make metabolic health more investable, thereby making healthy choices easier and more affordable, and (5) driving societal change through education and community engagement.
- As a first step, MHI proposes that metabolic health be elevated in priority to emphasize preventing chronic disease before it takes hold, enabling better health for all and advancing economies.

Widespread obesity has become a significant public health issue over the past 50 years, with nearly 900 million adults today living with obesity around the world. Obesity increases the risk of diseases like type 2 diabetes, cardiovascular disease, cancers, dementia, and depression. Its root causes are complex and interconnected—including sedentary lifestyles, high-calorie diets, genetics, socioeconomic conditions, and environmental influences. The health and economic impacts of obesity are significant. Six and a half billion years of life will likely be lost globally due to premature deaths caused by obesity's health effects. The annual obesity-attributable disease burden is 132 million disability-adjusted life years (DALYs), comparable to the burden of all chronic respiratory diseases. Economically, it could be linked to $2.76 trillion in lost GDP each year in 2050.

New weight management drugs, such as GLP-1 receptor agonists, offer new opportunities but also many uncertainties. While data has shown that these medications can be effective at helping individuals lose weight, questions remain about the long-term sustainability, broader benefits, side effects, and behavioral changes associated with these drugs.

This report first explores the issue of obesity, including its prevalence, causes, and health and economic impacts, as well as the emerging role of new weight management drugs. "Section 2: Impact of GLP-1s on healthcare and other sectors" provides an analysis of the potential impacts of new weight management drugs on different industries. Section 3 challenges stakeholders to think beyond obesity, broadening the lens to metabolic health for all. Decision makers face a choice between path 1 (which focuses on treating obesity without addressing root causes) and path 2 (which focuses on a holistic approach to metabolic health, including prevention and treatment).

Enabling path 2 will require changes across industries that include food, environmental, and social systems. Achieving it demands investment and innovation in five key areas: advancing metabolic health science, improving transparency through better measurement, developing supportive technologies, aligning economic incentives to make metabolic health investable, and empowering communities equitably.

The McKinsey Health Institute invites leaders to consider whether the bold, collective effort of path 2 is worth the investment and risk to achieve a healthier, more equitable future for all.

Section 1

Obesity and weight management drugs: Between promise and uncertainty

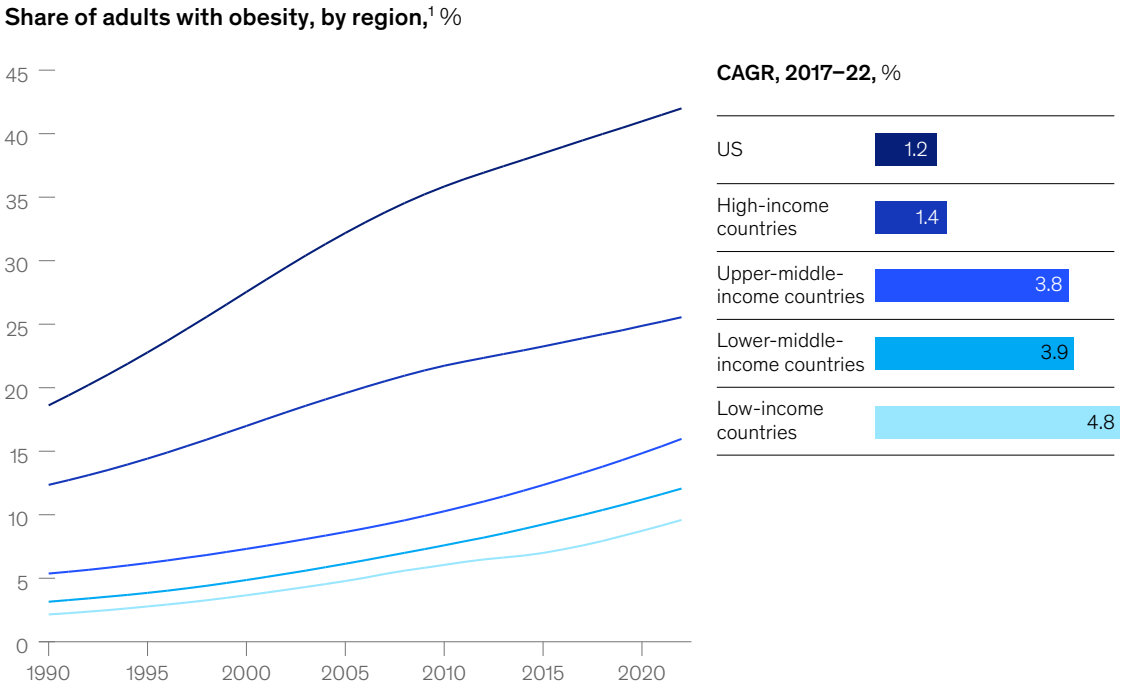
The approval of weight management drugs such as glucagon-like peptide-1 receptor agonists (GLP-1s) and glucose-dependent insulinotropic polypeptide receptor agonists (GIPs) has expanded the discussion around obesity beyond public health, positioning it as a key economic, societal, and technological priority[1] (see sidebar, "Terminology"). Obesity is one of the largest human-made epidemics in history. Widespread obesity at a population level has been a relatively recent phenomenon, emerging as a significant public health concern during the last 50 years. As of 2022, one in eight people worldwide was considered to have obesity, totaling 890 million adults.[2] Global prevalence is trending upward; it has more than doubled in high-income countries and more than tripled in middle-income countries since 1990. Obesity rates are growing unequally worldwide, with lower-income countries demonstrating the highest growth rates in obesity between 2017 and 2022 (Exhibit 1).[3] Furthermore, childhood and adolescent obesity is also on the rise, with the prevalence of obesity in children and adolescents tripling between 1990 and 2021.[4]

With nearly 900 million adults living with obesity worldwide, the world's population is effectively carrying an excess 25 billion kilograms[5]—the equivalent of 700 times the gold reserves in central banks, 75 times the mass of the Empire State Building, or four times the mass of the Great Pyramid of Giza[6]—as a liability for future physical, mental, social, and spiritual health.

The causes of obesity are complex and still being studied, but recent GLP-1 clinical trials show promising outcomes for weight loss, as well as reduced risks of major cardiovascular events[7] or kidney issues[8] in patients living with obesity. The unprecedented attention to obesity across

Exhibit 1

While obesity prevalence is increasing globally, the burden is growing unequally, with the fastest growth in lower-income countries.



[1]The World Bank's income level classifications are updated each year on July 1, based on the gross national income (GNI) per capita of the previous calendar year.
Source: Global Health Observatory Database; World Bank DataBank, World Bank Group; World Health Organization; McKinsey Health Institute analysis

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industries invites a broad question: Are global upward trends in obesity prevalence as inevitable as they seem, and if so, what factors could change that?[9]

Obesity is complex and associated with other conditions and diseases

Obesity is an extraordinarily complex condition or disease,[10] with many interrelated causes and risk factors. The condition develops from an interplay of biological, environmental, socioeconomic, psychological, and behavioral factors.[11] Some factors can be considered modifiable, including physical inactivity, use of some medications, and food/caloric intake. However, many factors that contribute to obesity are not easily modifiable, including genetic predisposition and socioeconomic and environmental factors that affect the availability and quality or type of food.[12] Some research highlights that maternal health plays a critical role in shaping obesity risk later in life. Poor maternal nutrition or obesity can program metabolic dysfunction in offspring through epigenetic mechanisms, influencing lifelong susceptibility to obesity, diabetes, and cardiovascular disease.[13] Obesity has often—and inaccurately—been considered a result of individual life choices. This narrow characterization is harmful and impedes effective treatment of the condition. People of all backgrounds and health statuses can experience obesity, driven by a unique combination of factors. While a new class of drugs may make the condition more treatable, these medications are not panaceas that will work for every individual. They need to be used in combination with other interventions to effectively shift obesity rates.

Obesity has impacts on an individual's physical health across multiple organ systems and is a known risk factor for at least 20 diseases or conditions.[14] Elevated body mass index (BMI)[15] was associated with an estimated 3.7 million deaths from noncommunicable diseases (NCDs) globally in 2021,[16] two-thirds of which were due to cardiovascular disease.[17] High BMI is also an important modifiable risk factor for cancer,[18] and it substantially increases the chance of developing type 2 diabetes.[19] Ongoing clinical research is exploring the relationship between obesity and brain health (mental and neurological conditions) and women's health.[20] Notably, obesity affects men and women differently, with variations in fat distribution, metabolic consequences, and treatment responses. For instance, women tend to have higher obesity-related risks for conditions like type 2 diabetes[21] and cardiovascular disease,[22] while men may experience greater visceral fat

Terminology

- *Body mass index (BMI).* Body mass index (BMI) is a common measure used to screen for excess body weight and is calculated by dividing an individual's weight in kilograms by their height in meters squared (kg/m^2).[1] Although BMI categorizes individuals into different weight ranges that could pose health risks, it has limitations and does not directly measure a person's body fat or overall health condition.[2] Furthermore, while BMI is the most common metric used to identify overweight and obesity, it has often been criticized for its limitations in factoring in sex or gender, age, or ethnicity.[3]
- *Disability-adjusted life years (DALYs).* DALY is a metric for assessing the overall burden of disease. It is calculated using the years of life lost due to premature mortality (YLLs) with the years lost due to living with disability or in less than full health (YLDs). One DALY reflects the loss of a year's worth of complete health. DALYs facilitate the comparison of diseases by accounting for varying degrees of disability and early mortality.[4]
- *Glucagon-like peptide 1 (GLP-1) drugs.* GLP-1 receptor agonists are drugs that bind to the GLP-1 receptor.[5] These medications, initially approved for type 2 diabetes treatment, are now also prescribed for weight management, as well as the prevention of cardiovascular disease.[6] In this report, the term also includes other novel combination therapies involving GLP-1s, such as dual GLP-1 and glucose-dependent insulinotropic polypeptide (GIP) drugs. Also, new modalities of drugs may emerge in the future.
- *Obesity.* Obesity is a chronic and multifactorial condition characterized by excessive body fat, which can lead to adverse health outcomes. Obesity is typically defined by a BMI of 30 kg/m^2 or higher.[7]
- *Overweight.* Overweight is a condition characterized by excessive body fat. Overweight is typically defined by a BMI of 25 kg/m^2 or higher.[8]
- *YLLs.* A single YLL reflects the loss of one year of life. YLLs are determined by multiplying the number of deaths by the standard life expectancy at the age of death. YLLs assess premature mortality by factoring in the number of deaths and the age at which these deaths occur.[9]
- *YLDs.* One YLD equates to the loss of one entire year of good health because of illness or disability.[10]

1 "Body mass index (BMI)," Centers for Disease Control, March 14, 2024.
2 "Body mass index (BMI)," Centers for Disease Control, March 14, 2024; Sara Berg, "AMA: Use of BMI alone is an imperfect clinical measure," American Medical Association, June 14, 2023.
3 Alan S. Go et al., "Racial and ethnic differences in the relationship between obesity and cardiovascular risk," *Circulation*, April 15, 2014, Volume 129, Number 15; "Obesity and cardiovascular disease: A scientific statement from the American Heart Association," *Circulation*, April 22, 2021, Volume 143, Number 21.
4 "Disability-adjusted life years (DALYs)," World Health Organization, Global Health Observatory, 2019.
5 "GLP-1 agonists," Cleveland Clinic, July 3, 2023.
6 "GLP-1 agonists," Cleveland Clinic, July 3, 2023; "FDA approves first treatment to reduce risk of serious heart problems specifically in adults with obesity or overweight," FDA, March 8, 2024.
7 "Obesity and overweight," World Health Organization (WHO), March 1, 2024.
8 "Obesity and overweight," World Health Organization (WHO), March 1, 2024.
9 "Years of life lost from mortality (YLL)," World Health Organization (WHO), Global Health Observatory, 2019.
10 "Years of healthy life lost due to disability (YLD)," World Health Organization (WHO), Global Health Observatory, 2019.

accumulation, which is linked to higher mortality risk.[23] Further research is needed to understand how the impacts of obesity may differ across other individual factors that may include gender, genetics, or age.

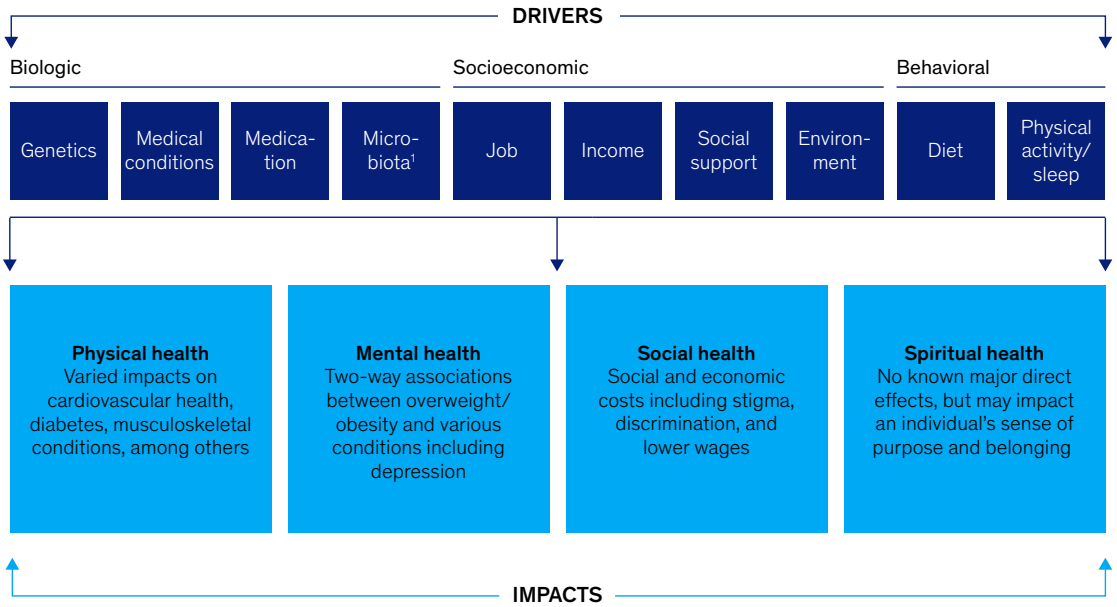
Obesity can also affect an individual's mental, social, and spiritual health, as it often leads to stigma and discrimination in many cultures. Obesity has long been considered a "choice," wherein individuals "lack control" with food consumption or are "too lazy" to exercise. Studies have shown that people with obesity are discriminated against in both healthcare and workplace settings, with tangible effects. People with obesity are more likely to receive lower-quality care than people without obesity, due to strong negative provider perceptions.[24] This leads to individuals with obesity being less likely to seek care and less likely to trust and adhere to the care they receive.[25] Discrimination in the workplace manifests as people with obesity being less likely to be hired and promoted,[26] which can then affect their socioeconomic status. In turn, the stress resulting from stigma and discrimination can further increase an individual's risk of obesity, reinforcing the cycle[27] (Exhibit 2).

The disease burden of obesity on individuals with the condition and on society at large is substantial. A typical adult living with obesity today can expect to live approximately 35 years with the condition,[28] in addition to common comorbidities. In total, more than 132 million DALYs annually are attributable to high BMI, equivalent to the annual burden of all chronic respiratory diseases (108 million DALYs)[29] and about half of the annual burden for all cancers (252 million DALYs)[30] (Exhibit 3). For context, this is equivalent to three times the estimated DALYs burden of the global COVID-19 pandemic (43 million DALYs between January 2020 and April 2021).[31] If obesity were to be eliminated as a global public health concern, an extra 6.5 billion years of life could be gained globally.[32]

Exhibit 2

Obesity has complex causes with multiple impacts.

Drivers and impacts of obesity



[1]Microbiota is a combination of microorganisms that exist in a specific environment, such as bacteria.

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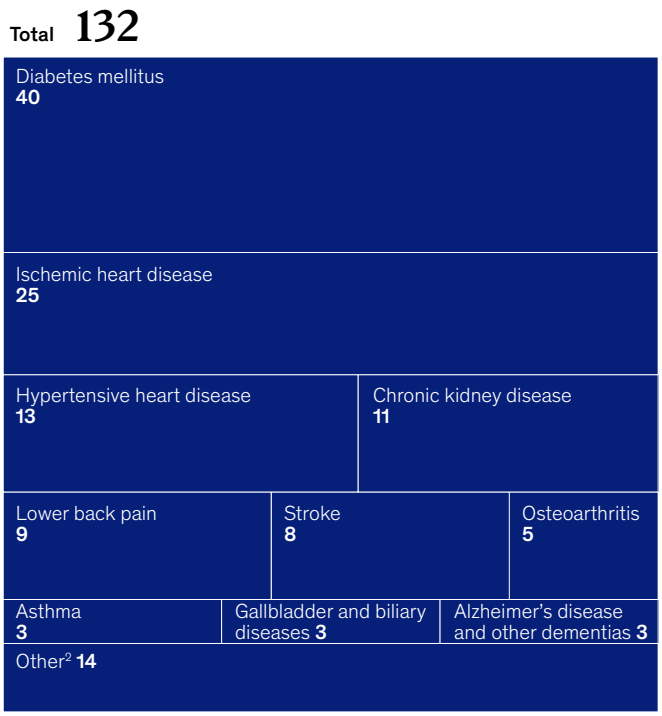
Exhibit 3

Obesity is a known risk factor for many diseases.

Annual disability-adjusted life years (DALYs) attributable to high body mass index, global, 2022, million DALYs[1]



Note: Figures do not sum to listed total, because of rounding.
[1]DALYs is a metric for assessing the overall burden of disease. It is calculated using the years of life lost due to premature mortality and the years lost due to living with disability or in less than full health. DALYs attributed to high body mass index and metabolic risks were among those aged older than 15.
[2]Includes 18 additional diseases with lower attribution to modifiable risk factors; these are colon and rectum cancer, tuberculosis, breast cancer, liver cancer, uterine cancer, kidney cancer, leukemia, atrial fibrillation and flutter, gout, ovarian cancer, gallbladder and biliary tract cancer, non-Hodgkin lymphoma, peripheral artery disease, blindness and vision loss, aortic aneurysm, pancreatic cancer, multiple myeloma, and thyroid cancer.
Source: IHME Global Burden of Disease, 2022, used with permission

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At an individual level, moderate obesity can reduce one's life expectancy by about three years, while severe obesity can reduce life expectancy by about ten years.[33] For comparison, cigarette smoking reduces life expectancy by seven to ten years.[34]

Beyond the impact on quality of life and the disease burden, obesity also has an economic impact. Addressing the obesity-related disease burden could lead to an estimated GDP impact of $2.76 trillion every year globally in 2050,[35] roughly equivalent to the current GDP of Switzerland or Poland, primarily driven by increased labor force participation and productivity.

Data shows that novel weight management drugs are effective, but many aspects need clarification through further research

GLP-1s are a class of drugs that were originally developed for type 2 diabetes and have now demonstrated effectiveness in clinical trials to help individuals living with obesity lose weight. While effectiveness varies, individuals have typically experienced greater than 10 percent weight loss, with some losing more than 20 percent from their baseline weight.[36]

GLP-1 drugs mimic the action of the natural GLP-1 hormone, which is produced in the gut in response to eating. GLP-1 normally functions to slow gastric emptying, increase insulin production, and increase satiety, that is, the feeling of fullness (for further details, see sidebar "More about GLP-1 drugs").[37] Therefore, GLP-1 and drugs that mimic the effect of GLP-1 in the body increase the feeling of fullness and slow the processing of food, contributing to weight loss.

Beginning in the mid-2000s, the insulin-stimulating properties of GLP-1 drugs—including brand names such as Byetta (exenatide), Victoza (liraglutide), Ozempic (semaglutide), and Mounjaro (tirzepatide)—led to their approval for type 2 diabetes management. More recently, GLP-1 drugs have also been approved for weight loss. The drugs approved for weight loss, including the brand names Saxenda, Wegovy, and Zepbound, use the same active ingredients as those for diabetes management, with some at different dosages.[38] While effective for weight loss, GLP-1 drugs can have multiple adverse effects, including severe nausea and dizziness, which have resulted in some people being unable to continue treatment.[39] In addition, the rapid weight loss can be associated with other physical consequences, such as loss of muscle mass.[40]

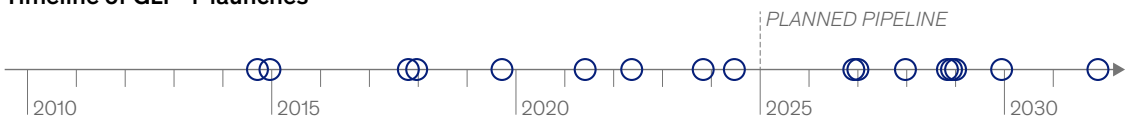
As of February 2025, the number of GLP-1 drugs has increased, with 11 on the market for diabetes and weight loss combined and over 40 in the pipeline.[41] While only Wegovy (semaglutide), Saxenda (liraglutide), and Zepbound (tirzepatide) have been approved for weight loss, the entrance of multiple new drugs, particularly generic versions, and new modes of delivery will pave the way to a rapidly growing treatment landscape (Exhibit 4).

GLP-1 drugs are still a relatively new drug class, especially when used for weight loss, so evidence on long-term effectiveness, secondary effects, and side effects is still emerging. Also still evolving is our understanding of the potential impacts of GLP-1 drugs on other body systems or for treatment of other diseases (for example, cardiovascular disease, kidney disease). Further research will be required to clarify the true, longer-term impacts and risks of GLP-1s. Moreover, questions of access and equity are important considerations that will affect their potential adoption and population-level health impacts.

Exhibit 4

There are 19 launches of GLP-1 medications expected by 2030.

Timeline of GLP-1[1] launches



[1]GLP-1s are glucagon-like peptide-1 receptor agonists that can treat obesity and conditions such as diabetes.
Source: Evaluate Pharma

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More about GLP-1 drugs

The following overview lays out what experts already know about glucagon-like peptide 1 drugs (GLP-1s) and what researchers and clinicians have yet to learn.

How do GLP-1 drugs work?

What we do know. GLP-1 is a hormone produced naturally in response to eating,[1] with some variation based on diet. A diet high in fiber and protein stimulates greater GLP-1 production.[2] GLP-1 is produced in the intestine, from which it then enters the bloodstream throughout the body. Known effects of GLP-1 include the slowing of gastric emptying, the production of insulin, and the stimulation of satiety, thought to act through the intestine, pancreas, and hypothalamus, respectively.[3]

Naturally occurring GLP-1 has a short half-life in the body (under five minutes).[4] To create an effective drug that mimics the endogenous hormone, two main drug classes have been developed: dipeptidyl peptidase 4 (DPP-4) inhibitors, which stop the breakdown of natural GLP-1, and GLP-1 receptor agonists, which perform the same action as GLP-1 but do not break down as quickly.[5]

GLP-1 drugs currently approved for weight loss are typically GLP-1 receptor agonists, such as semaglutide (sold under the brand name Wegovy) and liraglutide (sold under the brand name Saxenda). Novel dual-acting drugs are also available or in development. These drugs act on the GLP-1 receptor and other related receptors, such as glucose-dependent insulinotropic polypeptide (GIP) receptors, for enhanced effect. For example, tirzepatide (sold under the brand name Zepbound) is a dual GLP-1/GIP receptor agonist.[6] GIP, like GLP-1, is an incretin peptide released in the gut in response to eating, playing a role in blood glucose management.[7]

GLP-1 receptor agonists are currently available in subcutaneous (injectable) and oral formulations.

What we don't know. Importantly, while many aspects of the mechanism of action of GLP-1 from the gut to the pancreas and brain have been studied, the research is by no means comprehensive across all physiological systems. There are GLP-1 receptors in the kidney, in the lung, and throughout the immune and cardiovascular systems, meaning any of these organs could be affected by GLP-1, but the effects are not yet well understood. As oral GLP-1 formulations gain approval for weight loss, it will be critical to assess how real-world effectiveness,[8] patient adherence, and side effects compare between oral and subcutaneous administration. Moreover, besides diabetes and obesity, other indications are being explored as use cases for GLP-1s. These include chronic kidney disease, non-alcoholic fatty liver disease (NAFLD), and cardiovascular indications.[9] Further research will be required to ascertain how much of the effect of GLP-1 on disease progression is attributable to weight loss alone, versus other distinct mechanisms of action. There is also ongoing research on the impact of GLP-1s on other areas of health, such as substance use.[10]

How effective are GLP-1s?

What we do know. GLP-1 drugs are effective at helping people lose weight. While there is substantial variation between people, across four studies of more than 3,000 participants over two years, one-third experienced weight loss of over 20 percent of their baseline. The majority (70 percent) of participants experienced at least 10 percent weight loss.[11] Across 14 studies, females lost more weight than males but also discontinued

1 Jens Juul Holst, "The physiology of glucagon-like peptide 1." *Physiological Reviews*, October 2007, Volume 4.
2 Raylene A. Reimer and James C. Russell, "Glucose tolerance, lipids, and GLP-1 secretion in JCR:LA-cp rats fed a high protein fiber diet," *Obesity*, January 2008, Volume 16.
3 Cendrine Cabou and Remy Burcelin, "GLP-1, the gut-brain, and brain-periphery axes," *The Review of Diabetic Studies*, November 2011, Volume 8, Issue 3; D. J. Drucker and S. Asa, "Glucagon gene expression in vertebrate brain," *Journal of Biological Chemistry*, September 1988, Volume 263, Issue 27; Anne Flint et al., "Glucagon-like peptide 1 promotes satiety and suppresses energy intake in humans," *The Journal of Clinical Investigation*, February 1998, Volume 101, Number 3.
4 Hongxiang Hui et al., "The short half-life of glucagon-like peptide-1 in plasma does not reflect its long-lasting beneficial effects," *European Journal of Endocrinology*, June 2002, Volume 146, Issue 6.
5 Jens Juul Holst, "From the incretin concept and the discovery of GLP-1 to today's diabetes therapy," *Frontiers in Endocrinology*, April 2019, Volume 10.
6 Michael A. Nauck and David A. D'Alessio, "Tirzepatide, a dual GIP/GLP-1 receptor co-agonist for the treatment of type 2 diabetes with unmatched effectiveness regarding glycaemic control and body weight reduction," *Cardiovascular Diabetology*, September 2022, Volume 21.
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8 Recent research on the real-world effectiveness of oral vs. subcutaneous GLP-1 for weight loss has yielded mixed results. Jimmy Kwon, Diana Thiara, and Jonathan H. Watanabe, "Oral versus subcutaneous semaglutide weight loss outcomes after two years among patients with type 2 diabetes in a real-world database," *Expert Review of Endocrinology & Metabolism*, February 2025, Volume 20, Issue 2; Sharmistha Roy Chowdhury et al., "Real-world use of oral and subcutaneous semaglutide in routine clinical practice in the UK: A single-centre, retrospective observational study," *Diabetes Therapy*, April 2024, Volume 15, Issue 4.
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11 Areesha Moiz et al., "Long-term efficacy and safety of once-weekly semaglutide for weight loss in patients without diabetes: A systematic review and meta-analysis of randomized controlled trials," *American Journal of Cardiology*, July 1, 2024, Volume 222.

More about GLP-1 drugs (continued)

treatment more frequently.[12] As expected, in a real-world setting, weight loss is lower, with just below 40 percent of individuals experiencing a weight loss of at least 10 percent.[13]

What we don't know. While GLP-1 drugs have been used for nearly 20 years for diabetes management, there are limited long-term studies for their usage in obesity. During weight loss, complex biological changes take place: Resting energy expenditure goes down, and hormonal secretion is altered, causing dysregulation in appetite and metabolism.[14] After discontinuation, evidence has pointed to weight regain, with one study indicating two-thirds of prior weight loss was regained in the year after treatment.[15] Further study is required to understand weight regain after discontinuation of GLP-1 drugs to identify a path forward for former GLP-1 users to maintain weight loss,[16] especially considering that some studies report high discontinuation rates.[17] Additionally, given that the majority of GLP-1 users are women, more sex-disaggregated data is needed to understand long-term biological differences in efficacy and uptake.[18]

What are the side effects?

What we do know. By slowing gastric emptying, GLP-1 drugs are expected to cause gastrointestinal symptoms. The most common side effects of these drugs are nausea, abdominal pain, and vomiting. Other, less common but more severe side effects include pancreatitis and stomach paralysis.[19] Many people stop taking GLP-1 drugs due to side effects. Up to two-thirds of patients stop taking GLP-1 drugs within a year of starting.[20]

In addition, clinical trial data shows that GLP-1s cause weight loss of both fat mass and lean body mass (which includes muscle mass).[21] This could have implications, as muscle plays several important functions in the body, including strength, endurance, energy regulation, and metabolism. Loss of muscle mass would mean impaired muscular strength and increased frailty, including risk of falls.[22] In response, many companies are beginning to develop solutions to preserve skeletal muscle as a complement to drug use.[23]

What we don't know. Finally, there are unexpected effects emerging from the use of GLP-1s. There are many GLP-1 receptors throughout the body. It is possible that they could be affected in ways that are not yet understood. Further research will be required to understand the full impact of GLP-1 drugs on the body. There is inconclusive evidence on several secondary effects, such as psychiatric issues,[24] thyroid cancer,[25] and infertility.[26] Despite a long period of follow-up in clinical settings, there is not yet strong evidence that substantiates these secondary effects.[27] Population-level real-world data over an extended period will be required to fully ascertain the side-effect profile and long-term safety of GLP-1 drugs.

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12 Yucheng Yang et al., "Sex differences in the efficacy of glucagon-like peptide-1 receptor agonists for weight reduction: A systematic review and meta-analysis," *Journal of Diabetes*, March 2025, Volume 17, Issue 3; Stina Börchers and Karolina P. Skibicka, "GLP-1 and its analogs: Does sex matter?" *Endocrinology*, February 2, 2025, Volume 166, Issue 2.

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Section 2

Impacts of GLP-1s on healthcare and other sectors

A new class of weight management drugs not only offers individuals a path to lead healthier lives but also gives all stakeholders a chance to create financially viable solutions, encouraging greater economic activity and investment in health. Since 2021, leading pharmaceutical companies involved in the production of GLP-1s targeting obesity have experienced between 135 and 250 percent increases in market capitalization, partly reflecting the market's response to the anticipated impact of GLP-1s.[42] Additionally, GLP-1s are attracting interest outside of pharmaceutical companies. Analysis of fourth-quarter 2024 earnings transcripts of 30 US and EU pharmaceutical and consumer staples companies showed 144 mentions of "GLP-1," "obesity," or "weight loss product"—10 percent more than in the previous year.[43]

This section explores the relevance of obesity for and potential impacts of GLP-1s on key stakeholder groups: individuals, pharmaceutical companies, primary and secondary healthcare providers, medtech companies, payers, employers, wellness companies, and food and consumer companies. Obesity and its health effects, as well as the increasing adoption of GLP-1s, are highly relevant to each group of stakeholders. The potential impact of GLP-1s is based on analysis of current consensus scenarios for GLP-1 uptake and effectiveness from leading financial analysts at major banks (see sidebar "Calculation of stakeholder impact").[44]

Calculation of stakeholder impact

The analysis of stakeholder impact trends is based on a scenario that assumes 30 percent uptake of GLP-1s among the eligible populations with obesity and overweight in the United States and 30 percent real-life effectiveness of treatment. In this scenario, an estimated 30 million people in the United States would be receiving medical treatment for weight management.[1] These individuals would have obesity or be overweight with at least one weight-related comorbidity such as high blood pressure, type 2 diabetes, or high cholesterol. The average weight loss would be five body mass index (BMI) points.

The global uptake rate for GLP-1s will likely be lower (estimated at approximately 15 to 20 percent by 2030[2]), but the United States is used as a basis for further calculations because that is where GLP-1 medications were first approved for weight loss. Adoption of these medications is currently fastest in the United States, so impacts there are most evident. The prevalence of adults with obesity in the United States is approximately 40 percent.[3]

Assumptions: Calculating the 30 percent uptake figure

The 30 percent uptake figure is based on analyst reports making the following projections:

- Eighteen million individuals in the United States (17 percent of the US population with obesity) could be using GLP-1s by 2029.[4]
- Thirty million to seventy million individuals in the United States (28 to 65 percent of the US population with obesity) could be using GLP-1s by 2028.[5]
- Thirty million individuals in the United States (28 percent of the US population with obesity) could be using GLP-1s by 2030.[6]

The 30 percent figure represents an approximate midpoint between these projections.[7]

Assumptions: Calculating the 30 percent effectiveness figure

The estimated effectiveness figure of 30 percent is based on data from real-life effectiveness of GLP-1 agonists.

It is assumed that approximately 30 percent of patients will lose at least 15 percent of their body weight while using GLP-1s. This rate is derived from the average proportion of participants in real-world studies who experienced at least 15 percent baseline body weight loss, a proportion corresponding to a decrease of one BMI category (for example, from obese to overweight). When evaluating tirzepatide and semaglutide together, this average proportion was around 30 percent, based on findings from real-world studies.[8]

1 Assuming approximately 40 percent of the adult US population is living with obesity (approximately 108 million people).
2 Based on calculations from Evaluate sales data projections and analyst reports.
3 "Adult obesity facts," Centers for Disease Control and Prevention, May 14, 2024.
4 "GLP-1: A medication worth $126 billion in sales by 2029?," UBS, November 19, 2024.
5 "Obesity drugs are among health breakthroughs forecast to boost GDP," Goldman Sachs, March 7, 2024.
6 "Scaling up the impact of obesity drugs," Morgan Stanley, May 7, 2024; "The increase in appetite for obesity drugs," JP Morgan, November 29, 2023.
7 A potential limitation of these projections is the use of GLP-1s for both diabetes and weight management, which may affect the actual uptake rate among eligible patients with obesity or overweight.
8 Patricia J. Rodriguez et al., "Semaglutide vs Tirzepatide for Weight Loss in Adults With Overweight or Obesity," *JAMA Internal Medicine*, July 8, 2024, Volume 184, Issue 9; Hamlet Gasoyan et al., "One-year weight reduction with semaglutide or liraglutide in clinical practice," *JAMA Network Open*, September 13, 2024, Volume 7, Issue 9; Wissam Ghusn et al., "Weight loss and cardiovascular disease risk outcomes of semaglutide: A one-year multicentered study," *International Journal of Obesity*, May 2024, Volume 48, Issue 5; Khaled Alabduljabbar et al., "Weight loss response in patients with obesity treated with injectable semaglutide in a real-world setting," Endocrine, February 2024, Volume 83; Aleksandrina Ruseva et al., "Semaglutide 2.4 mg clinical outcomes in patients with obesity or overweight in a real-world setting: A 6-month retrospective study in the United States (SCOPE)," Obesity Science & Practice, February 8, 2024, Volume 10.

Many industries are affected by obesity, its causes, or its consequences (Table 1). Every chief executive officer or public-sector leader needs to consider the implications of new weight management drugs on their business and portfolios.

Table 1

New obesity treatments such as GLP-1s are likely to affect diverse stakeholders.

Stakeholders	Relevance of obesity	Potential impact of glucagon-like peptide 1 drugs (GLP-1s)
Individuals	*~890 million* individuals globally live with obesity	*Reshape obesity as a treatable condition,* with exact impact influenced by side effects and access
Pharma companies	*GLP-1s may renew focus on large-population diseases,* including cardiovascular disease	*Major market potential* (eg, 25 million–50 million US users by 2030); *reinvigorate R&D for large-population diseases*
Primary-care providers	Weight-related conditions *account for 30% of the time spent in primary care visits in the US*	Short-term increased demand for obesity care; *long-term reduction in obesity-related disease burden*
Secondary-care providers	*High demand for obesity-related secondary care* (eg, patients living with obesity account for 60% of all knee and hip arthroplasties)	*Drop in obesity-related procedures* (eg, 26% in bariatric surgery), with *temporary rise in eligibility for other procedures* due to reduced risks
Medtech companies	*High demand for obesity-related devices* (eg, 20% of individuals living with obesity have sleep apnea, driving demand for CPAP machines)	*Less demand for obesity-related products* (eg, projected 4% decrease in CPAP utilization); *rising demand for monitoring devices*
Payers	*Payers face a heavy burden:* US healthcare costs are 41% higher for individuals with obesity than for those without	*Short-term rise in GLP-1 costs vs long-term obesity-related savings*
Employers	*Potential annual $2.76 trillion GDP loss* from obesity-driven productivity loss in 2050	*Cost burden* for employers (eg, North Carolina government projected $102 million per year in coverage), but could *boost retention and productivity*
Wellness companies	*Weight management fuels more than 30% of wellness market* (eg, fitness training and wearables)	*Rising demand for GLP-1 companion solutions* (eg, nutrient-dense meals and strength training)
Food and consumer companies	*Bidirectional influence between obesity and consumer preferences*	*Estimated 3% sales reduction in calorie-dense foods,* driving growth in healthier options and lifestyle goods

Section 3

Can the focus on obesity usher in a 'metabolic health revolution,' leading to greater health for all?

The arrival of GLP-1s as an effective tool for weight loss has pushed societal discourse toward recognizing that obesity is a treatable chronic condition. A much larger question follows: Could society muster the leadership, energy, and resources to reverse—and even eventually eliminate—obesity as a global public health concern? Can we capture the full health and economic benefits to individuals, societies, and businesses?

Two alternative paths: Reduce obesity or achieve metabolic health for all

Assuming that the global attention on obesity is not a passing fad, society is at a fork in the road, with two paths to choose from. Both will improve human health, but at very different scales. Path 1 is to *follow the trail* of innovation initiated by weight management drugs with a promise to help improve the health and lives of people currently living with obesity. Path 2 is *the big climb* toward a metabolic health revolution. Rather than reacting to obesity on a case-by-case basis, stakeholders on this path work together to prevent obesity and its related health problems at a societal level. On this path, society tackles metabolic health comprehensively by addressing obesity along with multiple, interconnected systems (such as cardiovascular health and kidney function) and markers (such as cholesterol and blood sugar). The health improvements at play on the second path are much larger, requiring significant cross-sector action (Table 2).

Table 2

There are two potential paths: Reducing obesity or achieving metabolic health for all through proactive and systemic shifts.

	Path 1: Reduce obesity and improve health	Path 2: Achieve metabolic health for all and end obesity as a human-made epidemic
Target population	*People living with obesity* and those at high risk of developing it	*Entire population*
Priority interventions	Additional innovation in medicine, technology, and healthcare to *strengthen reactive-treatment approaches to obesity* (eg, weight loss drugs, surgeries, and clinical weight management programs)	*Substantial changes across many domains* (eg, health, food, consumer products, the built environment, and civil society), creating *proactive prevention and treatment approaches* that address obesity and improve metabolic health
Health impact at stake	*132 million healthy life years uplift from addressing high body mass index*	*469 million healthy life years uplift from addressing metabolic health risk factors* (3.5× path 1)
Economic impact at stake	*$2.76 trillion potential annual GDP impact, in 2050*	*$5.65 trillion potential annual GDP impact, in 2050*
Stakeholder mobilization	*Lower need* for cross-sector mobilization	*Very high need* for cross-sector mobilization

Research suggests that path 2 could generate up to 3.5 times the health impact of path 1, with the global disease burden associated with metabolic risk factors being 469 million DALYs annually (Exhibit 5).[45] It could also eventually lead to a $5.65 trillion GDP uplift in 2050, representing about 3 percent of global GDP. On both paths, equity and access considerations are crucial to ensure that the benefits of these advancements are accessible to all, as groups from lower socioeconomic backgrounds often face greater barriers to both pharmacological treatment and preventive interventions. Addressing disparities through equitable policies that expand access to treatment while investing in systemic changes like improved food environments and public health initiatives is essential for achieving true metabolic health for all.

Path 1: Follow the trail of emerging innovation to reduce obesity

The advent of weight management drugs is already sparking additional innovation in medicine, technology, healthcare, and more. Effective investments would yield ever-better tools to support individuals with obesity and capture the benefits of weight loss. Innovation may improve the management of obesity but fail to sufficiently address the underlying drivers of obesity. On this path, society would continue to respond to obesity after it occurs and focus on treating its symptoms, rather than preventing it and its broader impacts. There would likely be additional generations of weight management drugs with new accompanying interventions to curtail obesity globally. Making this happen would require only limited structural changes.

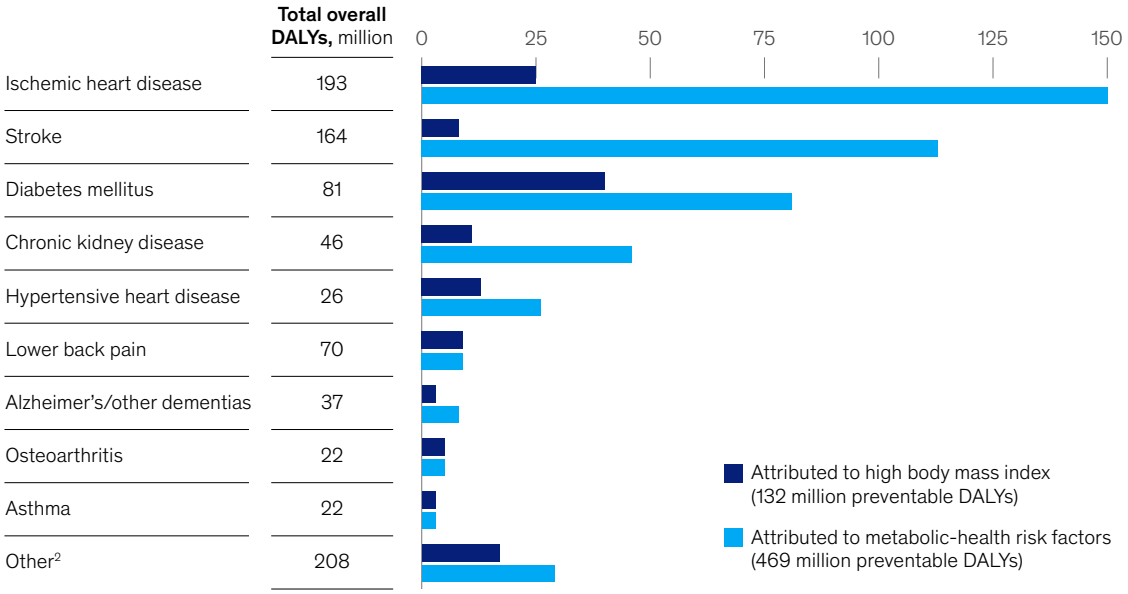
Path 2: The big climb to metabolic health for all

On path 2, the lens is broadened from obesity response to obesity prevention and improvement of overall metabolic health. Society would move beyond therapeutics to imagine economies and communities that tackle the root causes of obesity and where better metabolic health is embedded into all aspects of how people live and work. While weight management drugs would play a role, coordinated action across all aspects of industrial, environmental, and social systems

Exhibit 5

Promoting metabolic health could yield 3.5 times more healthy life years than addressing obesity alone.

Potentially preventable disability-adjusted life years (DALYs), by attributed source, global, 2022, million DALYs[1]



[1]DALYs is a metric for assessing the overall burden of disease. It is calculated using the years of life lost due to premature mortality and the years lost due to living with disability or in less than full health. DALYs attributed to high body mass index and metabolic risks were among those aged older than 15.
[2]Includes 18 additional diseases with lower attribution to modifiable risk factors; these are colon and rectum cancer, tuberculosis, breast cancer, liver cancer, uterine cancer, kidney cancer, leukemia, atrial fibrillation and flutter, gout, ovarian cancer, gallbladder and biliary tract cancer, non-Hodgkin lymphoma, peripheral artery disease, blindness and vision loss, aortic aneurysm, pancreatic cancer, multiple myeloma, and thyroid cancer.
Source: IHME Global Burden of Disease, 2022, used with permission

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would enable individuals to preserve and optimize metabolic health, capturing up to 6.5 billion additional years of life. It would also make metabolic health, beyond obesity alone, an area more tangible and investable as an opportunity. The aspiration of path 2 is greater, but taking it would not require abandoning path 1, which will lay the groundwork for future progress.

Envision a metabolic health revolution where metabolic health is accessible to everyone, irrespective of geography, age, gender, or weight. This would require a much broader perspective than the current focus on BMI or waist circumference, incorporating new research into body composition, biomarkers, relationships between the environment and the microbiome, and other factors.

Path 2 is more ambitious, more complex, and more challenging but would allow societies to capture even larger health and economic benefits. This would involve a fundamental shift in the choices available for everybody, providing everyone with health literacy and precise understanding of their own metabolic condition to optimize health.

Within health systems, this would mean shifting from biomedical to behavioral interventions and from reactive treatment to prevention at three levels—preventing the onset of metabolic conditions like obesity, diabetes, and cardiovascular disease; preventing the progression of these conditions; and preventing complications—maximizing health for all, rather than just

managing disease. Success would require increased training of medical professionals and systematic changes to how metabolic health is addressed.

On an individual level, changes on path 2 would make it easier for individuals to enjoy lives anchored in good metabolic health. They would receive appropriate education about metabolic health and healthy lifestyles and would have access to health-promoting products and services. With healthier nutrition and lifestyle choices becoming the default, individuals would experience improved physical, mental, social, and spiritual health.

Adding 6.5 billion years of additional life from obesity reduction would be an enormous boon to populations, societies, and economies. The scale of the opportunity in metabolic health is even greater: between three and four times the gain in healthy years lived that would result from addressing obesity alone, and a potential $5.65 trillion annual GDP uplift. This represents 3 percent of total GDP in 2050. Achieving this vision is on par with the boldest collective efforts to address complex global challenges. Using climate change as an analogy, path 1 is akin to addressing climate change by funding specific technologies around carbon capture and energy production, while path 2 is analogous to wholesale societal mobilization needed to curb carbon emissions.

Five shifts toward greater metabolic health for all

What does metabolic health for all look like in practice? Path 2 goes far beyond implementing the existing evidence-based interventions to address obesity—for example, those published by the McKinsey Global Institute ten years ago,[46] which are still largely valid today, such as promoting active transport, improving food labeling, and executing public health campaigns. While the basics of improving metabolic health would remain the same, succeeding on path 2 would require genuine innovation in order to create broad, societal-level change, shifting incentives for all stakeholders. This would mean expanding beyond obesity response and prevention into improving the metabolic health of all (including health conditions such as obesity, cardiovascular disease, kidney disease, and diabetes). It would require leaders of the private, public, and social sectors and organizations to all play their part to achieve five shifts that would jointly amount to a genuine metabolic health revolution (Exhibit 6). Through these shifts, stakeholders can be challenged and encouraged to advance the health of populations and societies to a new level beyond what we know today.

Exhibit 6

Five shifts enable the big climb to metabolic health for all.

Science
Advancing our understanding and definition of metabolic health

Transparency
Rigorously measuring and tracking metabolic health for individuals and populations

Technology
Developing new tools or innovations to enable individuals to understand and optimize their metabolic health

Economy
Making healthy choices affordable, available, and desirable through innovation and structural change

Society
Empowering individuals and communities in an equitable way, tailoring interventions to the needs and preferences of communities

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Science: Advancing our understanding and definition of metabolic health

There is an opportunity for the scientific and medical communities to better understand and define metabolic health. BMI is not only an imperfect measure of obesity but also an incomplete indicator of an individual's metabolic health.[47] There is not yet consensus on a broadly accepted definition of metabolic health, but components could include body composition (including visceral fat, bone, and muscle), blood sugar, blood lipids, blood pressure, kidney function, and others, such as insulin resistance, inflammatory markers, and liver function (Table 3).[48]

Table 3

Metabolic health extends beyond obesity and can range from poor to optimal along a spectrum.

Examples of metabolic health profiles by indicator (illustrative)

	Poor	Emerging risks	Average	Optimal[1]
Body composition	*Clinical obesity,* impairing organ function and mobility; body mass index (BMI) and waist circumference (WC) far exceeding healthy limits	*Overweight,* with preserved organ function; elevated BMI and WC	*Healthy weight with slight fat accumulation;* healthy BMI, with potentially elevated WC	*Ideal body fat;* healthy WC; elevated BMI is possible with high muscle mass; DEXA scans for precise assessment
Blood sugar	*High blood sugar,* linked to insulin resistance and diabetes	*Prediabetic* levels, causing some tiredness or frequent urination	*Mostly normal* blood sugar, with occasional inefficiencies	*Stable and appropriately low* blood sugar
Blood lipids	*High ApoB,*[2] *LDL,*[3] *triglycerides,*[4] and *low HDL,*[5] increasing risk of artery blockage	*Mild imbalances* in blood lipids but without known risks given background	*Normal cholesterol levels,* with potential minor imbalances in lipids	*Appropriate lipid balance, with low LDL and high HDL,* supporting good cardiovascular health
Blood pressure	*Consistently high,* increasing risk of heart disease or stroke	*Elevated* blood pressure, adding cardiovascular strain	*Occasional excursions* outside of normal range	*Stable and appropriately low* blood pressure
Kidney function	*Chronic kidney disease,* with impaired filtration rate or evidence of protein in urine	*Signs of reduced kidney function* (eg, impaired filtration or borderline creatinine levels)	*Normal function,* with subtle inefficiencies	*Optimal kidney function,* with efficient filtration and no signs of stress or protein loss
History of cardiovascular diseases	*Heart disease,* with previous heart attack or stroke	*Mild heart issues*, like occasional chest pain during exertion	*Mild risk factors* or familial predisposition but no disease	*No history or risk factors* for heart problems

Note: There are many other novel markers (eg, gut microbiomes, inflammation, circadian disruptions, VO_2 max, genetic factors).

[1] Without taking any medication for related conditions (eg, diabetes, cholesterol, blood pressure); an appropriate balance is crucial for most of these indicators, as values too low could be detrimental. [2]Apolipoprotein B; recent research (eg, Sniderman et al., 2022) has suggested it is a more accurate measure of cardiovascular risk than LDL. [3]LDL = low-density lipoprotein. [4]A type of blood lipid that could contribute to hardening of arteries or thickening of artery walls. [5]HDL = high-density lipoprotein.

Source: Allan D. Sniderman et al., "Apolipoprotein B vs low-density lipoprotein cholesterol and non-high-density lipoprotein cholesterol as the primary measure of apolipoprotein B lipoprotein-related risk," *JAMA Cardiology*, 2022, Volume 7, Number 3; Aleix Ribas-Latre and Kristin Eckel-Mahan, "Interdependence of nutrient metabolism and the circadian clock system: Importance for metabolic health," *Molecular Metabolism*, 2016, Volume 5, Number 3; Chiadi E. Ndumele et al., "Cardiovascular-kidney-metabolic health: A residential advisory from the American Heart Association," *Circulation*, 2023, Volume 148, Number 20; "Diabetes: Chronic disease," NHS, Mar 22, 2023; Francesco Rubino et al., "Definition and diagnostic criteria of clinical obesity," *Lancet Diabetes & Endocrinology Commission*, 2025; Joana Araújo et al., "Prevalence of optimal metabolic health in American adults: National health and nutrition examination survey 2009–2016," *Metabolic Syndrome and Related Disorders*, 2019, Volume 17, Number 1; Meghan O'Hearn et al., "Trends and disparities in cardiometabolic health among U.S. adults, 1999–2018," *Journal of the American College of Cardiology*, 2022, Volume 80, Number 2.

In the future, metabolic health will not be defined solely as "the absence of metabolic syndrome" or "the absence of obesity." Health exists on a spectrum with a negative and a positive or optimal end. Optimal metabolic health could represent a balance between a multitude of biological factors that are well regulated, in a system that supports a person's energy, mobility, and overall well-being. Further research will be required to uncover new biomarkers, potential mechanisms of metabolic processes, and variability from person to person.

Ways to get started on this aspirational journey:

— Medical researchers and scientists can drive investigation of metabolic health and work toward a consensus on its measurement, spanning endocrinology, nutrition, genetics, and behavioral science, with a shared sense of urgency and broad support.

— Medical societies and patient groups can define metabolic health in a standardized way that expands the definition beyond BMI.

— Innovators and policymakers can support research on metabolic health (and its drivers) through funding, policies, and other mechanisms to advance discovery and implementation.

Transparency: Rigorously measuring and tracking metabolic health for individuals and populations

Measuring and tracking metabolic health indicators across individuals and populations can help identify progress and areas of need. Unlike weight loss (which has a unidirectional focus applicable to individuals with overweight and obesity), metabolic health is a goal that can be meaningfully improved for everyone at any weight. While a large share of the population may have a "normal" BMI, they may not be metabolically healthy. Conversely, a share of the population may have an "overweight" BMI but be in good metabolic health.[49] Aiming for improved metabolic health across multiple dimensions is a meaningful health aspiration for everyone. What would that look like on an individual and population level?

On an individual level, better access to personal health information can offer valuable insights and promote adherence to medical advice. For example, there is evidence that continuous biofeedback (individualized data that a person can access about their bodily systems) can improve health outcomes for some individuals.[50] For example, continuous glucose monitoring (CGM) can lead to personal metabolic health improvements for some individuals as they realize which foods lead to large spikes in their blood glucose levels. More stable blood glucose is crucial for metabolic health.[51] Similarly, emerging technologies such as continuous cortisol monitoring offer real-time insights into stress levels, helping individuals manage chronic stress,[52] which is closely linked to metabolic dysfunction, weight gain,[53] and insulin resistance.[54] Continuous gut microbiome monitoring can provide ongoing feedback on digestion, nutrient absorption, and inflammation, allowing users to optimize their diet for better digestive and metabolic health.[55] While the broader impact and applicability of these technologies is an open question,[56] it is nonetheless an instructive example of how individuals can keep track of their metabolic health.

On a population level, improved measurement and tracking of metabolic health can be integrated into routine primary care touchpoints, employee health checks, and insights drawn from individual health-tracking solutions. For example, the UK's National Health Service (NHS) is introducing metabolic health screenings, including blood pressure, BMI, and cholesterol, for middle-aged employees in high-risk industries to detect early signs of cardiovascular diseases and diabetes.[57] The NHS also has plans to enhance its app with exercise tracking, allowing doctors to leverage smartphone data for personalized therapy and preventive care.[58] Additionally, the All of Us research program by the US National Institutes of Health (NIH) is utilizing Fitbit data to study how lifestyle factors like activity levels, sleep, and heart rate affect metabolic health at a population level.[59] Emerging methods of monitoring population-level health—such as wastewater analysis, large-scale consumer purchasing analysis through store data, and data from "smart" city infrastructure that can transmit information about movement—

can also provide breakthrough insights as technologies mature. By responsibly aggregating and analyzing population-level data, decision makers can gain insight into metabolic trends over time and allocate interventions and resources effectively to address the areas of highest need.

Ways to get started on this aspirational journey:

— Healthcare providers can consider including a more comprehensive status of metabolic health assessment in standard physical exams.

— Researchers can create more robust evidence on the opportunity of continuous biofeedback and the conditions to achieve positive outcomes for different population segments.

— Innovators have an opportunity to develop an intuitive and evidence-backed approach to measuring metabolic health that becomes integrated into daily small talk, similar to today's conversations about steps counted.

Technology: Developing new tools or innovations to enable individuals to understand and optimize precision metabolic health

The typical advice to keep or improve metabolic health is one-size-fits-all: at least 150 minutes of exercise per week,[60] five portions of fruits and vegetables per day.[61] The only factors typically addressed in a BMI calculation are height and weight. This is a tremendous simplification of factors underlying metabolic health. Research suggests that a myriad of individual and ecosystem factors influence what interventions are best to improve metabolic health: microbiome archetypes,[62] genetics,[63] culturally coded dietary and activity habits,[64] sleep patterns,[65] household structures,[66] food availability,[67] occupation categories, personality types,[68] education levels, and more. People digest differently and have different default behaviors, detractors, budgets, support, and capabilities. Even a simple cup of coffee is digested differently by different individuals (with a half-life ranging between 1.5 and nine hours), affected by their genetics, gender, and medications.[69]

Technological innovations could offer significant potential to personalize and improve health information, provided that appropriate and equitable access to these innovations is available to all. For example, advances in precision medicine (such as genetic, metabolic, and proteomic profiles) could enable people to receive specific diagnoses and targeted information to manage their metabolic health.[70] There is increasing innovation in the field, with two times as many publications on novel biomarkers for metabolic disease in 2024 as in 2010.[71] Moreover, the cost of "omics" testing has significantly fallen in recent years, increasing accessibility.[72] More specific diagnoses could allow individuals to tailor their subsequent treatment.

On the product and intervention side, an increasing array of technological innovations is emerging with the potential to enhance individuals' health outcomes. Examples include monitoring and tracking technologies like wearables, home testing kits, and monitoring devices; personalized nutrition and exercise services; and digital health platforms that increase transparency or access between individuals and their healthcare providers. While these solutions hold immediate promise, technology and science are constantly evolving, and new innovations are likely to transform how metabolic health is managed on a day-to-day basis. The future will offer many possibilities we have yet to imagine. Will AI-powered assistants assess our nutrition and exercise? Could there be products that instantly calculate and analyze our body composition? Could fitness centers or gym equipment provide data to healthcare providers to monitor every person's metabolic health indicators?

The horizon of potential advancements is vast and holds the promise of making metabolic health more accessible and achievable. However, for broad adoption, innovations need to be affordable and user-friendly. New technologies need to fit seamlessly into an individual's life, not complicate it. Currently, a relatively limited group of individuals (mostly in high-income countries) is at the forefront of adoptions of new technologies to manage metabolic health. The financial investment

required and the mental effort needed to use these technologies effectively are barriers to broader adoption. Future innovation will need to address affordability and user-friendliness.

Ways to get started on this aspirational journey:

— Researchers across disciplines have an opportunity to further the understanding of different metabolic phenotypes or profiles and how they impact health (via different reactions to food and the environment).

— Investors and funders have an opportunity to accelerate progress toward precision metabolic health by funding more new innovations in the area, especially as new business models emerge.

— Innovators across research and industry can explore new collaborations with a goal of fast-tracking accessible, personalized metabolic health solutions.

Economy: Making healthy choices affordable, available, and desirable through innovation and structural change

Most people know that vegetables are healthy and that excessive amounts of sugar, salt, and fat are not. The challenge is that unhealthy choices are often the most attractive. These foods might be cheaper, easier, or less time-consuming to access, or more physically or emotionally appealing. This not only is true of food and beverages but also applies to many day-to-day situations, like transport and physical activity.[73]

Food choices in a metabolically healthier future illustrate what is needed to appeal to individuals across several dimensions, striking a balance between consumers' needs and wants:

— *Affordability.* An individual's limited budget does not direct them to less healthy alternatives.

— *Availability.* The healthy alternative does not take extra time to prepare or purchase. It is easily available.

— *Desirability (and tastiness).* The healthy alternative is tasty and therefore psychologically alluring and desirable.

These three dimensions do not apply only to food and nutrition. Any service to enhance physical activity needs to be as attractive as streaming the latest TV series. Any active or public transport option needs to be as easy as taking a car or a taxi.

Private-sector innovation can play a crucial role in developing novel, attractive choices that embody these attributes. For example, the food offered by workplace or school canteens or food vendors determines whether freshly prepared meals are available to employees and commuters. Food companies know how to make products that stimulate and satisfy people's taste buds. Achieving a balance between producing healthier foods that appeal to consumers and managing potential cost impacts across the value chain is essential for driving meaningful change. Finally, marketing is a powerful tool to make any option, healthy or unhealthy, more appealing in people's minds. Therefore, companies that engage in advertising can play a role in promoting healthier choices. Harnessing the full potential of the private sector in the pursuit of greater metabolic health is a critical success factor.

Ways to get started on this aspirational journey:

— Food and consumer companies can reserve a part of the R&D budget to develop attractive choices with clear health benefits supported by evidence. They can also target and progressively increase the share of healthy products in the portfolio.

— Philanthropists can set up competitions and prizes to raise visibility for the best healthy-living interventions.

— Regulators, researchers, and industries can make the healthiness of various choices more transparent, based on the best available evidence.

Society: Empowering individuals and communities in an equitable way

To achieve large-scale health improvements, it is essential to improve understanding and access to healthier ways of living, starting with building blocks in local communities to ensure that individuals can actively participate in health-improving activities within their own neighborhoods. All stakeholders can come together around this issue to build sustainable and accessible solutions. For example, safe physical spaces can allow people to engage in physical exercise. School education programs can improve health education and health literacy for children and adolescents, especially given the importance of tackling youth obesity and overweight. Community activities and organizations can improve knowledge and access to healthier foods. Public discourse and institutional choices can heavily influence the role that food plays in individuals' lives. Although some of these developments may already be occurring in certain areas, barriers to access, implementation, or adoption often remain. Broader success will depend on multistakeholder collaboration, including the public sector (across national, regional, and community governments), private sector, employers, nongovernmental organizations (NGOs), academia, charities or philanthropies, and many others.

Understanding the unique context and challenges of each community is vital for tailoring solutions to the local needs and context. This approach would enable all members of each community, regardless of their background, to have equitable opportunities to achieve and maintain metabolic health, fostering a more inclusive and sustainable health movement.

Ways to get started on this aspirational journey:

— Every school can offer education programs focused on healthy lifestyles and evidence-based habits for food and nutrition and physical activity.

— The government or the private sector can launch initiatives to improve access to every community's public spaces, such as parks or urban green spaces, community centers, gyms, pools, biking and hiking trails and paths, beaches and waterfronts, and playgrounds.

— Community activities and programs can shift attitudes about metabolic health at a grassroots level and enable sustainable ways for all community members to incorporate healthier choices.

This is truly a big climb to accomplish, but it can lead to metabolic health for all and the benefits that come with it. Is it worth the effort? Public health achievements in the past, such as increased seat belt usage and reduced rates of smoking, can serve as a source of inspiration because they show that large-scale change is possible.

Who will lead the metabolic health revolution?

Every organization needs to determine what it means to be a leader in metabolic health within their industry and find creative ways to work with others to bring about real change. Metabolic health for all will not happen without a concerted effort energized by a unified sense of urgency. The current scenario may yield some meaningful reduction of obesity but will stop far short of delivering the 6.5 billion additional years of life and population-wide metabolic health. Achieving this goal will require coordinated collective action with novel collaborations across sectors. The private and public sectors, philanthropists, and society have an opportunity to come together and create a new reality in which everyone can be metabolically healthy.

This cross-sector mobilization will not be without its challenges. Every stakeholder brings their own shorter-term motivations. The private and public sectors respond to different market or constituent needs, while individuals are generally focused on their direct benefit. These motivations may not change, but that does not mean we are stuck. We can still work together across all sectors to achieve meaningful, large-scale societal change.

As a first step, the McKinsey Health Institute proposes to raise the issues of obesity and metabolic health for all to the top of the agenda of large global forums, bringing it to the attention of decision makers at the World Economic Forum, the World Health Assembly, the United Nations General Assembly, the G7, the G20, and several other formats that are civil-society led or regional.

Metabolic health for all is more than reducing obesity. While that is an ambitious vision, the larger goal is for individuals to flourish with physical, mental, social, and spiritual health. Achieving this vision will require substantial leadership attention and investment. But that future—one in where every person has an opportunity to add "years to life and life to years"—is possible.

Appendix

Industry highlights

Individuals
Pharmaceutical companies
Primary-care providers
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Individuals

Relevance of obesity

Approximately 890 million individuals are estimated to be living with obesity around the world,[74] with many experiencing daily impacts on their health and quality of life. A typical person with obesity could spend 35 years of their life with the condition and its comorbidities, which can impair capacity to perform activities of daily living and to enjoy the highest possible quality of life. Beyond quality of life, moderate obesity and its comorbidities are linked to premature death by approximately three years. Finding effective ways to treat and prevent obesity can therefore increase individual quality of life and length of life itself.

Potential impact of GLP-1s

In the short term, GLP-1s could help individuals lose weight. Existing literature indicates that only one in five patients with obesity is likely to achieve substantial weight loss from behavior changes alone.[75] In combination with lifestyle and nutritional modification support, GLP-1s could prove effective tools in treating obesity, which could accelerate public acknowledgment of obesity as a treatable condition. Research suggests that obesity in an individual can be influenced by obesity prevalence in their close friends (57 percent) and siblings (40 percent).[76] The inverse could then potentially apply, with a ripple effect in networks of individuals as people witness the effect of GLP-1s through their friends or families.

A reshaped narrative of obesity as a modifiable but complex condition challenges traditional perspectives centered around personal responsibility. This could reduce stigma and empower individuals to access more options to address their health.[77] However, one unknown is individuals' willingness to engage in these conversations, especially given the preexisting stigma and negative discourse around obesity.

GLP-1s have received extensive media coverage and provoked discussion among individuals. Recently, social media platforms have played a considerable role in sharing the experience of using GLP-1s, with tags such as #Wegovy garnering over 120,000 Instagram posts.[78] The spike in social media discussion around GLP-1s also raises concerns, however, that consumers interested in using the drugs are not receiving complete

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information about the drugs' on-label use and side effects.[79]

Not all individuals will have the same access to GLP-1s, creating further divides between groups. In the United States, people with lower incomes, as well as Asian, Black, and Hispanic individuals, are less likely than others to receive GLP-1 treatment.[80] Disparities in treatment access could lead to a cycle of reinforcing obesity discrimination, such as the wage penalty associated with obesity. People with obesity earn 8 to 10 percent less than their counterparts with healthy BMIs.[81] Historically vulnerable populations—in the United States, for example, Black and Hispanic women[82]—may experience an exacerbated gap, assuming they have limited access to obesity treatment. Avoiding this will require due care and consideration to ensure that populations are provided with equitable access to treatment options.

Also, side effects can have an impact on individuals' adherence to GLP-1 treatments (see sidebar "More about GLP-1 drugs"). The most common GLP-1 side effects are gastrointestinal, including nausea, vomiting, and diarrhea or constipation.[83] Some GLP-1 users experiencing the discomfort and negative impacts of these side effects might discontinue the treatment. Additionally, GLP-1s induce weight loss across both fatty tissue and muscle tissue, changing individuals' metabolic profiles and increasing the potential to regain weight after discontinuing treatment.[84] Muscle loss is not specifically listed on some GLP-1 brands' labels as an official side effect,[85] but it is emerging as an important consideration in managing the side effects of GLP-1s.

Emerging questions

- How will increasing GLP-1 usage change perceptions of obesity? Will varying access to this treatment option exacerbate existing health and social disparities?
- How will GLP-1s affect the holistic approach to improving metabolic health, including primary prevention? How will GLP-1s affect individuals' long-term personal agency with regard to their metabolic health?
- How should the side effects and effects of weight loss be communicated and managed to reduce unexpected negative experiences with GLP-1s?

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Pharmaceutical companies

Relevance of obesity

Cardiometabolic diseases (including diabetes, cardiovascular diseases, and obesity) have long represented a large proportion of the pharmaceutical market. In the 1990s, cardiovascular diseases and cholesterol management drugs made up approximately 20 percent of overall drug expenditure.[86] In recent years, however, the spend share has fallen to approximately 5 percent, in part due to genericization and limited effective innovation. Meanwhile, drug spending in oncology and immunology has surged, reaching 30 percent of protected drug spend in 2020.[87] The arrival of GLP-1s for diabetes and obesity may signal the start of a new "metabolic era," in which the focus shifts to diseases with higher population prevalence.

Potential impact of GLP-1s

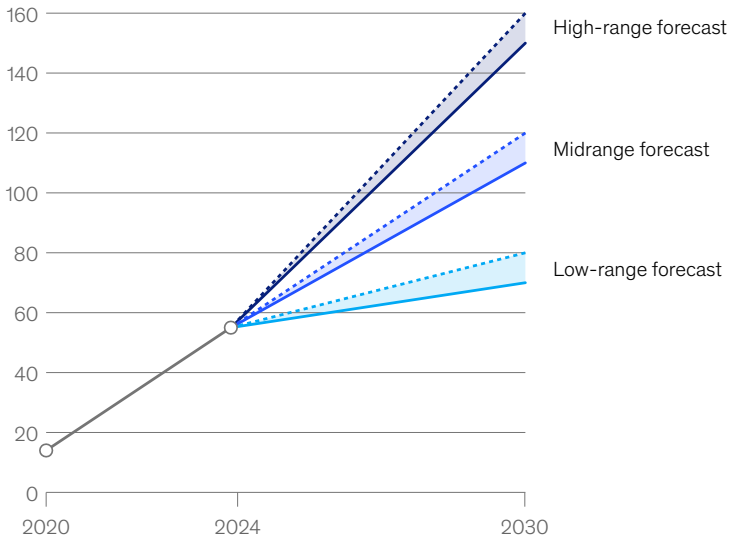
The number of patients who can be affected by GLP-1s has brought most analysts to a consensus that GLP-1s and their combination products will be a major drug class by 2030. Between 25 million and 50 million individuals are projected to be using the drug in the United States by 2030 (23 to 46 percent of the US population with obesity),[88] and experts estimate the global GLP-1 market could reach $150 billion by 2030 (Exhibit 7).[89] The scale of GLP-1 adoption has the potential to be comparable to that of other major historical drug classes, such as statins for the treatment of high cholesterol.[90] In 2008–09, an estimated 31 million people in the US used statins.[91] This figure jumped substantially after the 2013 release of new cholesterol management guidelines from the American College of Cardiology and American Heart Association, which broadened the eligible population to an estimated 92 million in 2018–19.[92]

As a second-order effect, the rise of GLP-1s could reinvigorate R&D attention paid to large-population diseases such as cardiovascular disease, diabetes, and obesity, which have in the past quarter century been sidelined in favor

Exhibit 7

Forecasts expect the GLP-1 market to hit at least $50 billion in the next five years.

Global GLP-1 market,[1] $ billion



[1]GLP-1s are glucagon-like peptide-1 receptor agonists that can treat obesity and conditions such as diabetes.
Source: Evaluate Pharma, 2024; McKinsey Health Institute analysis

McKinsey & Company

of smaller-population diseases in oncology and immunology. In 2023, more than 40 percent of the R&D pipeline was focused on oncology, with 2 percent focused on cardiovascular disease.[93] At the same time, a new era for obesity treatment has begun. There are now over 120 drug candidates for weight loss in the pipeline and many more in clinical development.[94] Moreover, more than 70 unique mechanisms of action are currently in the pipeline beyond GLP-1s and GLP-1 combos for the obesity indication.[95]

This reinvigorated attention to the cardiometabolic disease space could play out across three areas:

1. *Innovation within the GLP-1 drug class.* Pharmaceutical companies may seek to develop GLP-1s or related drugs that are more effective, are easier to take (for example, oral dosing versus injection), have fewer side effects, or improve body composition during weight loss. The degree of innovation seen in the drug class will likely depend on what evidence emerges about various factors such as the safety profiles and long-term effects of current GLP-1s.
2. *Deeper research into the pathogenesis of obesity.* Pharmaceutical companies may direct more R&D investment into understanding the biological subtypes of obesity within the broader context of metabolic health, to open the opportunity to manufacture more individualized treatments.
3. *Investment in large-population diseases.* The momentum surrounding GLP-1s could inspire more investment in drugs for large-population diseases (for example, arthritis or neurodegeneration) as companies recognize potential for impact.

The landscape and demand for obesity-treating drugs could shift even more dramatically with the entry of generic drugs. The GLP-1 drug Saxenda (liraglutide) lost exclusivity at the end of 2024, and generic entry began in 2025.[96] Further generics are expected to follow as other drugs lose exclusivity. For example, generics companies have already announced the development of a generic version of semaglutide, aiming for market entry in selected countries as early as 2026.[97]

The size and complexity of the obesity market also offers an opportunity for pharmaceutical companies to innovate, test, and scale new partnership models with increased integration into healthcare delivery. These models could be tailored to prioritize managing access to address equity challenges, ensuring optimal adherence, and anticipating long-term uncertainties.

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Emerging questions

- What portfolio of innovative products and services (for example, new combination therapies, new medications, novel wraparound services) might leading companies in the market develop?
- What are the implications of weight management drugs on pharma companies' commercial models? How will the development of new drugs evolve over time?
- What role can pharmaceutical companies play within the integrated care ecosystem for weight loss and metabolic health more broadly? What role can pharmaceutical companies play in improving access to medications?
- What role can pharmaceutical companies play to ensure the sharing of sex-disaggregated trial results and equitable access of GLP-1 drugs across social and geographical borders?
- What role do pharmaceutical companies have in tackling off-label usage of GLP-1 drugs?
- Will metabolic health or obesity become the next "it" therapeutic area in which every pharma company aims to be involved or have a presence? How should companies already involved in this area reflect on their growth expectations?
- Given the market potential for new weight management drugs, what are the right business models to optimize the impact for patients as well as society as a whole?

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Primary-care providers

The rise of GLP-1s will have impact on primary- and secondary-care providers. Primary care providers are typically the initial point of contact between a patient and the healthcare system (for example, general practitioners or family physicians).[98]

Relevance of obesity

In the United States, during primary-care visits, complications related to obesity or weight management can take up to 30 percent of the time.[99] Clinicians in primary care (physicians, nurse practitioners, physician associates) play important roles in managing obesity, as they are mainly responsible for the medication management and counseling of patients undergoing obesity treatments. Other primary-care clinicians (such as nurses, medical assistants, pharmacists, and case managers) help by monitoring patient data, providing education, and following up with patients being treated for obesity.

Potential impact of GLP-1s

Healthcare practitioners in primary care may be directly affected by two opposing trends: a short-term increase in care needs, due to support for obesity treatment and attraction of traditionally excluded patients, and a long-term shift in chronic-condition care needs.

In the short term, obesity-related services provided in primary-care settings (for example, GLP-1 medication management, nutrition counseling, and lifestyle counseling) could require increased capacity. While some of these medications have direct-to-consumer options that bypass the traditional patient-physician relationship, our analysis estimates that an additional 112 million primary-care touchpoints alone may be needed to support new patients undergoing obesity treatment in the United States in 2030.[100] Most of these provider touchpoints involve medication management, especially in the first year of GLP-1 treatment. This could be particularly challenging to absorb in a context of global shortages of health professionals.[101] For instance,

the Association of American Medical Colleges projects that the United States will have a deficit of 13,500 to 86,800 primary-care physicians by 2036. This could be up to two times greater than the 2021 shortage of 37,000 physicians.[102] Beyond provider touchpoints, additional touchpoints with other primary-care clinicians (dieticians, nurses, exercise physiologists) will likely be necessary for many GLP-1 users to see effect.

While projections of increased demand may sound daunting, the capacity challenge could be mitigated as GLP-1 treatment guidelines become more codified and as the primary-care health system adapts with new care delivery models (see "Note on evolution of care delivery models" at the end of this section). These models could include involving a broader range of healthcare providers (for example, nurse practitioners and physician associates), deploying telehealth and AI-based services, reviewing current delivery strategies to involve pharmacies, and using specialized or mobile primary-care clinics (Exhibit 8). While this is already the norm in many regions, the increasing shortage of healthcare workers globally—with a particular strain on some lower-middle-income countries—may lead to a broader reassessment of how to improve metabolic health at scale.[103]

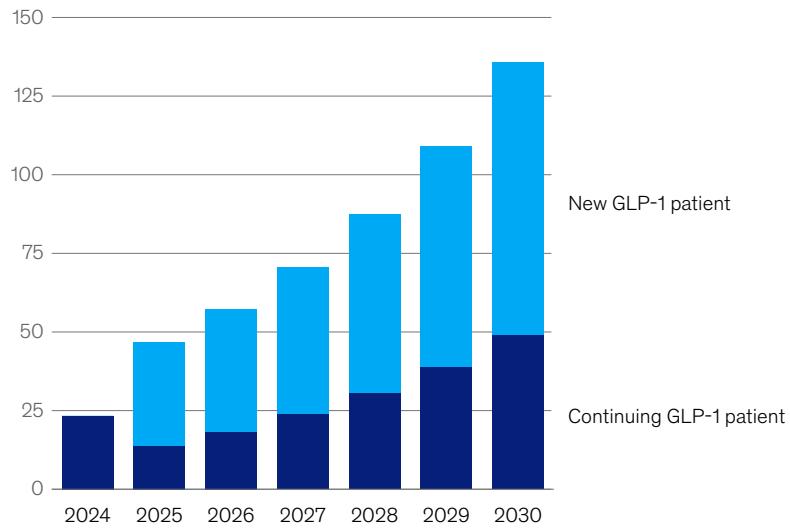
These new delivery models could address major challenges in the healthcare system, particularly those with impacts on access-constrained and minority populations affected by obesity:

— *Improving access for traditionally excluded groups.* Research demonstrates that important inequities exist in healthcare access for lower-income people[104] and/or people who experience stigma.[105] For instance, twice as many Black and Latino adults in the United States, compared with White adults, report having no regular source of care and using the emergency room as their usual source of care.[106] Access constraints deepen further with the presence of obesity: many individuals with obesity avoid care because of weight stigma.[107] Additionally, the average commute time to an obesity-specialized physician is 43 minutes for low-income and rural populations, versus just

Exhibit 8

GLP-1 visits are likely to strain primary-care providers under current care delivery models.

Estimated US primary-care-provider patient visits related to GLP-1,[1] by patient type,[2] millions of visits



[1]GLP-1s are glucagon-like peptide-1 receptor agonists that can treat obesity and conditions such as diabetes.
[2]Primary care defined as visit with a provider for preventative care and chronic-condition care in stable outpatient settings. Continuing patient defined as using GLP-1s for obesity for >1 year continuously; new patient defined as using GLP-1s for obesity for <1 year continuously.
Source: McKinsey Health Institute analysis

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nine minutes for high-income populations. In the United States, these dynamics are most prevalent among Black and Hispanic adults with obesity, further compounding inequity.[108] Even in the United Kingdom, where healthcare is free at the point of use, low-income populations struggle with access. Delaying services leads to accident and emergency visits being nearly twice as high in the most deprived groups, and emergency admissions at 68 percent higher.[109] New models of care could make healthcare more accessible for these vulnerable populations.

— *Improving access to providers.* An increase in obesity treatment touchpoints for GLP-1 users could be an opportunity to deliver best-in-class prevention and primary care for patients with or at risk for obesity. In the United Kingdom, obesity is associated with a worse healthcare experience. For example, patients with obesity reported slower access to reliable health advice compared with those without obesity.[110] Improved primary care for this population could improve screening and prevention for other health conditions as well. For instance, more interaction with the primary-care system could aid in closing the 10 percentage point gap between diagnosed and undiagnosed type 2 diabetes.[111] Providers may also take patients' sex/gender, age, ethnicity, or socioeconomic factors into account for obesity management conversations, as they may influence, for instance, the risk of negative psychiatric outcomes on GLP-1 medications (liraglutide and semaglutide).[112]

In the longer term, a reduction in patients with obesity could also lead to a decrease of the chronic disease burden attributable to obesity. The impact on primary-care volumes is uncertain, but a reduced focus on treating obesity specifically could in principle allow more time to be dedicated to disease prevention and health promotion for other diseases and conditions.

Emerging questions

— What are the optimal care provision models to address GLP-1-related care needs (such as nutritional advice and exercise requirements), and how can care delivery be improved to increase ease of access to obesity treatment options?

— How can primary-care providers stay up-to-date on the evolving landscape of obesity treatments in order to provide the best care for patients, particularly in terms of effectiveness and adverse effects?

— What is the best way to leverage the expected additional primary-care touchpoints to improve health more broadly, for chronic diseases and general metabolic health?

— How can primary-care providers effectively respond to changing care models (see "Note on evolution of care delivery models" at the end of this section).

— How can primary-care providers stay abreast of the latest research and the pace of innovation, given the rapid evolution of care delivery?

Note on evolution of care delivery models

The advent of GLP-1s has the potential to accelerate the growth of nontraditional healthcare approaches that may affect patient convenience, privacy, and accessibility. Pharmaceutical and medtech companies are increasingly forming direct relationships with patients to provide more personalized care experiences. For example, drug manufacturers are embracing direct-to-patient models that deliver comprehensive, end-to-end healthcare solutions tailored to individual needs (for example, digital healthcare products that offer medicines, telehealth services). Health providers are looking to offer GLP-1 products coupled with customized weight loss programs, lifestyle companies are beginning to incorporate medical treatments into their services, including GLP-1 support programs, and direct-to-consumer telemedicine platforms may offer GLP-1s or other medications and related services.

The precise impact of GLP-1 medications on these companies will be influenced by many factors, including manufacturing and supply chain regulations, GLP-1 care guidelines, consumer attitudes, and health awareness. The trend toward the medicalization of lifestyle offerings and growth of nontraditional healthcare approaches reflects a broader shift toward holistic, patient-centric care models. It remains to be seen how changing models of healthcare delivery will affect individual and population health and how they might change attitudes and awareness around obesity and metabolic health.

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Secondary-care providers

Secondary-care providers are specialists in specific areas of medicine, typically treating more complex health issues.

Relevance of obesity

Secondary care includes treatment for the many complex chronic conditions associated with high body mass, such as arthritis, cardiovascular diseases, and type 2 diabetes. For example, obesity is a risk factor for the development of osteoarthritis, driving up the frequency of joint surgeries.[113] Today, about 745,000 annual total knee and hip replacements in the United States are performed on populations with obesity, accounting for 60 percent of all knee and hip arthroplasties.[114] Obesity also contributes to the development of cardiovascular diseases such as atherosclerosis and coronary artery disease, accelerating onset through insulin resistance and inflammation.[115] Women with obesity are at higher risk for complications during pregnancy, such as preeclampsia and gestational diabetes, conditions that increase the need for monitoring.[116]

Potential impact of GLP-1s

In the short term, obesity treatments could be particularly influential in certain areas, such as orthopedics (specifically joint replacements), fertility treatments, bariatric surgery, cardiovascular and kidney disease interventions, and maternal and fetal care, and clinical trials have already reported positive outcomes in cardiovascular disease[117]:

— *Orthopedic surgeries.* GLP-1s will be relevant for knee and hip replacements, which are performed more often on patients with obesity (745,000 patients per year, on average in the United States). As of 2019, the US knee replacement market represented a total annual procedure cost of $5.05 billion.[118] There may be a short-term increase in surgeries as patients losing weight with GLP-1s reduce their risk for surgery and

therefore become eligible for procedures. In some scenarios, there is around a 1.7 percent annual decrease in the number of knee joint replacement surgeries in the United States[119] because patients are putting less weight on their knees as a result of GLP-1s.[120] Other outlooks, however, predict that the patients would delay surgery due to lower weights and living longer, thereby having knee surgeries later but not eliminating the long-term surgical volume. Joint damage from excess weight may be severe enough to warrant surgery even if the person no longer has obesity.[121] Further research will be required to discern the true impacts of GLP-1 drugs on orthopedic surgeries.

- *Fertility treatment.* In the United States, fertility treatments make up a market of more than $8 billion per year, with year-over-year growth of about 10 percent.[122] GLP-1s are being explored as options for polycystic ovary syndrome and other conditions that can impede women's fertility.[123] There is also emerging evidence that GLP-1s are correlated with improvements in sperm count, concentration, and motility, which could address male infertility.[124]
- *Bariatric surgeries.* GLP-1s could be seen as a precursor to bariatric surgery or an alternative to surgery. They may also be used as a complementary treatment to address post-surgery weight regain.[125] The treatment decision between GLP-1s and surgery could be affected by several factors, including adverse effects, coverage of and access to GLP-1s versus surgery, cost-benefit determinations of long-term GLP-1 use versus other obesity treatments, the eligible patient pool size, and the impact of patient adherence to GLP-1 dosing regimens on the drug's viability as an obesity treatment. A recent cross-sectional study of privately insured patients in the United States found that the use of GLP-1s as weight management medications more than doubled from 2022 to 2023, while the rate of metabolic bariatric surgery in the study group decreased by 8.7 percent during the same period.[126] While the research method used does not imply a causal relationship, the research highlights the need for further investigation into the impact of GLP-1 use on bariatric surgery, as well as the long-term patient outcomes.
- *Cardiovascular disease (CVD).* Interventions and device use could evolve, given the existing positive correlation between obesity and CVD prevalence. Recent studies have shown that semaglutide can reduce the incidence of death from cardiovascular causes, nonfatal myocardial infarction, and nonfatal stroke in patients living with obesity and overweight (nondiabetic) with preexisting cardiovascular disease.[127] Semaglutide may also deliver cardiovascular benefits irrespective of weight, although the exact mechanisms are yet to be determined.[128] The magnitude and rate of GLP-1 impact on CVD treatment is unclear and will be influenced by many other factors, such as all-cause morbidity after GLP-1 treatment, stage of disease course, and intervention rate.
- *Chronic kidney disease.* There is emerging evidence to suggest GLP-1s are effective for the treatment of chronic kidney disease,[129] potentially through counteracting the risk factors (body weight and blood glucose levels).[130] This demonstrates the connection of conditions within metabolic health and emphasizes the need to treat the patient holistically, rather than one disease at a time.
- *Maternal and fetal health.* Obesity and maternal and fetal health outcomes are strongly linked. A reduction in BMI for prospective mothers could result in pregnancy complications decreasing by 0.8 percent.[131] While research of this possibility is still in early stages, some studies show that preconception use of GLP-1s may reduce the chance of developing gestational diabetes mellitus, developing hypertensive disorders, experiencing preterm delivery, and undergoing cesarean delivery.[132] However, further research will be required to better understand the impact of GLP-1 medications on maternal and fetal outcomes.

In the longer term, the overall impact of GLP-1s on secondary care remains to be seen. Many of the open questions around GLP-1s, their side effects, and potential impacts will become even more relevant for secondary-care providers over time:

- *Emerging research on GLP-1's other effects.* The full impacts and mechanisms of GLP-1 drugs are still being researched. Studies are investigating the potential effectiveness of GLP-1 drugs in treating or reducing the occurrence of other conditions, such as non-alcoholic fatty liver disease (NAFLD).[133] The results may have an impact

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on secondary-care providers over time.

— *Uncertainty around the long-term impacts of obesity following weight loss.* One known effect for those who have lost substantial amounts of weight is excess skin, which can lead to rashes and yeast infections.[134] But it is still unclear how much other long-term effects of obesity persist after individuals lose weight. For example, for other health risks, such as smoking, it is possible to return to health for most physiological markers,[135] but lifetime risk of lung cancer remains elevated.[136]

— *New treatment possibilities.* New treatment possibilities may also arise for patients who previously had less access to certain procedures due to their weight or overall health. Surgeons could increasingly turn to GLP-1s as part of a preoperative regimen, recommending that patients not only improve their nutrition and exercise but also use the medications before cardiovascular, orthopedic, or renal surgery. For example, current National Health Service guidelines in England may delay access to joint replacement procedures for individuals with obesity, in the hope they can engage in a program to lower their BMI prior to surgery to reduce risk.[137] These changes could complicate impact calculations of GLP-1 drugs on secondary care, as individuals losing weight and therefore qualifying for new procedures introduce an unknown element to capacity and operational planning.

Emerging questions

— How should providers ensure that their clinical portfolio is robust enough to absorb the impact of GLP-1s, especially for specialty clinics or practices?

— With potentially substantial but uncertain impacts in many areas, how can providers stay ahead of innovations, identify key trends early, and act swiftly? How can the secondary-care system envision opportunities earlier in the care journey (for example, in prevention and promotion) to improve health outcomes for patients with obesity?

— How can secondary-care providers ensure that factors such as sex, genetics, or ethnicity are considered during the care journey, especially for specialty clinics or practices?

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Medtech companies

Relevance of obesity

Different segments of medtech have different roles to play in the treatment and prevention of obesity and related conditions. For some products, obesity is strongly correlated with the segment at hand. For example, prevalence rates of obstructive sleep apnea (OSA) are approximately 20 percent for the population living with obesity, compared with only 3 percent for the population not living with obesity, potentially impacting the demand for continuous positive airway pressure (CPAP) machines.[138] Similarly, in the United States, almost 60 percent of hip and knee replacements are performed on patients with obesity.[139] That is a large share of a large market; the global joint reconstruction device market was $19.6 billion in 2023.[140] Other obesity-related segments within medtech include cardiovascular devices, such as pacemakers, and diabetes devices, such as continuous glucose monitors (CGMs). Other categories of medtech are affected by obesity and other metabolic health conditions because they may lead to other health impacts. For example, diabetes may result in eye complications, impacting ophthalmology.

Potential impact of GLP-1s

In the short term, the most likely impact of GLP-1s will be to decrease the demand for certain obesity-related medtech segments where the presence or absence of obesity has a well-correlated impact on the treated condition. For example, CPAP devices (global market size of $3.7 billion in 2023[141]) are used to treat obstructive sleep apnea, which has a linear correlation with obesity.[142] With increased weight loss, CPAP manufacturers could see a shift in eligible patient demand; CPAP utilization could decrease an estimated 4 percent in the case of GLP-1-related obesity reduction.[143] Other affected segments could include injectables and drug delivery products.

In the longer term, medical devices for other areas of medtech, like cardiovascular health (for example, pacemakers), may not experience as direct of a correlative impact due to GLP-1s. While obstructive sleep apnea is likely to resolve with weight loss, it is not clear how quickly cardiovascular risk drops following weight loss. Emerging evidence supports beneficial effects of GLP-1s on cardiovascular health,

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but further research will be required to clarify the impacts on this medtech category.[144]

However, the arrival of GLP-1s may also lead to new areas of opportunity for medtech companies. For example, more individuals may be prompted to engage in tracking health data, including food intake, exercise, menstrual cycles, water consumption, or medication. This may offer new market segments to wearable-device or biometric-monitoring companies.[145] For instance, continuous glucose monitoring devices for nondiabetic users could see a boost in users, given the increased interest in biomonitoring.[146] Furthermore, obesity is a contraindication for certain medical procedures such as arthroplasty. Reducing obesity via GLP-1s may make more patients eligible for these procedures.

Medtech companies' stock prices—which fluctuated widely in 2023 (shares in obesity-related medtech categories initially declined by 17 percent amid concerns of reduced demand at year-end[147])—stabilized in 2024. The true impacts of GLP-1 drugs on the medtech sector remain to be seen over the long term and are likely to have varying impacts across different segments of products.

Emerging questions

- To what degree will medtech segments be differentially impacted by obesity reduction related to GLP-1s?
- How should medtech companies manage their portfolios as more weight management drugs hit the market? What additional offerings should medtech companies consider?
- As awareness about obesity treatment and metabolic health increases, how will the demand change for devices that help consumers engage with health monitoring?

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Payers

Relevance of obesity

Obesity and the increased disease burden associated with it (for example, cardiovascular disease, type 2 diabetes) present substantial costs to payers. The Centers for Disease Control and Prevention (CDC) estimates that obesity costs the US healthcare system nearly $173 billion annually.[148] The annual surplus healthcare costs in the United States are $1,861 for each person living with obesity and $3,097 for each person living with severe obesity.[149] This means the annual healthcare cost for individuals living with obesity is 41 percent higher than for those who are not—and 68 percent higher for those with severe obesity. And beyond the direct medical costs of obesity are indirect societal costs associated with obesity, such as productivity losses and absenteeism,[150] emphasizing the comprehensive economic impact. Reducing obesity would materially reduce costs to payers, including private payers, public healthcare payers, and pension and unemployment insurance funds.

Potential impact of GLP-1s

In the immediate term, payers are balancing GLP-1 drugs' potential to reduce expenses arising from chronic disease against the cost of the drugs themselves. If the overall burden of obesity declines with the use of GLP-1s, payers could see a reduction in the additional cost attributed to individuals with obesity versus those with lower BMIs. The rollout of GLP-1s, however, also presents challenges to payers. At current prices, independent analyses have suggested that GLP-1s as a treatment for obesity may not meet commonly accepted thresholds for cost-effectiveness.[151] Even so, questions of cost effectiveness have made some payers cautious about providing coverage of the medication class for obesity as its primary indication. Current estimates of the potential financial impacts of GLP-1s are uncertain. For example, in October 2024, the US Congressional Budget Office (CBO) estimated the potential financial impacts of expanding Medicare coverage of weight management medications to all eligible beneficiaries. Notably, the CBO emphasized that the budgetary impacts of these medications are highly uncertain and depend on costs and adoption rates (which are influenced by evidence on eligibility,

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use, price, clinical benefits, and policy changes).[152]

US payers have established various requirements for access to GLP-1s for people with elevated BMIs, and coverage varies widely across both public and private payers. Approximately 52.2 million Americans have access to GLP-1s via government-funded health plans (for example, state Medicaid programs or insurance for government employees).[153] However, as of August 2024, Medicaid coverage of GLP-1s for weight loss is available in only 13 states.[154] Private plans, though more challenging to assess, likely offer significantly reduced coverage, with an estimated 24.4 million covered.[155] Short-term costs to payers remain an ongoing issue, as some payers have reported losses linked to increased prescription of GLP-1s.[156] Where plans do cover GLP-1s, extensive coverage criteria exist, including prior authorizations, weight thresholds, enrollment in a formal behavioral change program, diet and exercise requirements, or a limited approval duration with continuation criteria, such as therapy progress.[157] Many private plans are also implementing programs to monitor and manage patient experience, as well as the costs of GLP-1 drugs.

In Europe, coverage for these drugs is equally inconsistent, as each country has its own approach. For example, Wegovy (semaglutide) is classified in Germany by the Joint Federal Institute (G-BA) as a "lifestyle product" due to its weight management indication. However, Germany's public insurance scheme could reimburse the drug for certain patients who are at a greater risk of heart disease or stroke,[158] and German private health insurance companies reimburse Wegovy if the drug is prescribed by a physician, it is medically indicated, and there are no relevant exclusions.[159] In contrast, Ozempic, which has the same active agent as Wegovy (semaglutide) but is indicated for diabetes, is reimbursed in Germany by all public and private payers as long as it is prescribed by a physician.[160] In France, GLP-1s for weight loss are reimbursable through National Health Insurance at a rate of 65 percent but only in adults with a BMI of at least 35 kg/m^2 and following unsuccessful nutritional management in combination with physical activity.[161] The United Kingdom's National Institute for Health and Care Excellence (NICE) recently published guidelines on delivering a phased, national roll-out of GLP-1s for obesity and weight loss with the goal of reaching all eligible patients over a 12-year period.[162] Initial roll-out is expected to start by mid-2025, aiming to reach 220,000 people (6 percent of the 3.4 million estimated to be eligible). The guidance recommends the use of tirzepatide for weight loss in obesity alongside a reduced-calorie diet and increased physical activity. It is recommended for adults with at least one weight-related comorbidity (for example, high blood pressure) and a body mass index (BMI) of at least 35 kg/m^2. NICE also explicitly states to "use lower BMI thresholds (usually 27.0 kg/m^2) for people from South Asian, Chinese, other Asian, Middle Eastern, Black African or African-Caribbean family backgrounds."[163]

In other high-income countries, government-funded coverage for GLP-1s for weight loss management may be similarly limited, although many individuals have a higher willingness to pay.

The restrictive nature of coverage may change as GLP-1 agonists have begun to receive approvals for broader indications. In early 2024, the FDA expanded its approval for Wegovy to include risk reduction for cardiovascular events, in addition to weight loss in patients with high BMIs. This has led to Medicare coverage of the drug for cardiovascular disease and type 2 diabetes. Large payers who participate in Medicare Part D are following suit, with Kaiser, CVS Health through Aetna, and Elevance Health announcing coverage of Wegovy for some individuals.[164] These large payers use Medicare guidance for GLP-1 agonist coverage, including cardiovascular disease diagnosis, body weight criteria, and Medicare Part D enrollment. In some cases, both private and public payers require prior authorizations.[165] Medicaid may also be increasing coverage of GLP-1s, with some surveys showing approximately half of state programs currently covering or considering some level of coverage for weight loss medications.[166] (For more details on Medicare and Medicaid, see "Note on Medicare, Medicaid, and weight management drugs in the United States" at the end of this section). The extended label for Wegovy for cardiovascular risk reduction has received approval in Europe,[167] which opens new possibilities for GLP-1 coverage in cardiovascular indication by further European payers.

Payer coverage of GLP-1s is influenced by multiple factors. Expanding indications for GLP-1s into high-priority public-health areas (for example, cardiovascular disease or sleep apnea) may open discussions among public stakeholders about how the drugs could be publicly funded to help increase coverage. Coverage could also be influenced by costs for payers and price negotiations. In the United States, rebates are negotiated by payers and pharmacy benefit managers (PBMs)

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working with drug or discount card companies to reduce costs to consumers at the point of pharmacy sale. However, costs for payers remains an ongoing issue. Beyond these dynamics, price transparency reform and innovative payment models such as value-based care arrangements, subscription models, or net price models between payers and drug manufacturers may influence coverage of GLP-1s.

Emerging questions

- What are the right requirements for payers—particularly public healthcare payers that set the "standard" for coverage—to cover weight management drugs for different user segments?
- How might payers assess the ROI of GLP-1s on short- and long-term horizons as new data about GLP-1 continues to emerge, particularly on its longer-term impacts? In countries with many private payers like the US, how might this ROI be assessed, given member churn?
- What agreements could be made with pharmaceutical companies and/or healthcare providers to provide novel obesity treatments to the patients with the highest need at a sustainable cost?
- What longer-term evolution of price levels should payers expect? What would that mean for coverage, particularly with the entry of generics?

Note on Medicare, Medicaid, and weight management drugs in the United States

Medicare *is a federal health insurance program in the United States that provides coverage for individuals aged 65 and older, as well as certain younger individuals with disabilities and those with end-stage renal disease.*[168] *It consists of different parts that cover hospital insurance, medical insurance, and prescription drugs and can be offered by original Medicare or by private payers (Medicare Advantage).*[169] *As of March 2025, approximately 68 million individuals were enrolled in Medicare.*[170]

Medicaid *is a program jointly funded by the US federal government and states, aimed at assisting individuals with limited income and resources in covering their medical costs.*[171] *Medicaid offers benefits that are not typically covered by Medicare, such as nursing home care and personal care services.*[172] *As of November 2024, it was estimated that around 79 million individuals had access to medical coverage through Medicaid.*[173]

One US study found that around 44 percent of those covered by Medicare or Medicaid had obesity, compared with 36 percent of the population covered by commercial insurance.[174] *Medicare or Medicaid beneficiaries were also more likely to have obesity than those who had commercial insurance (26 percent for Medicare and 27 percent for Medicaid beneficiaries).*[175]

Reimbursement methods

The reimbursement methods for Medicare and Medicaid vary, depending on state and federal regulations, because Medicare is run at the federal level while Medicaid is managed at the state level. When the Food and Drug Administration (FDA) approves a drug or medical device based on clinical evidence, the Centers for Medicare and Medicaid Services (CMS) must determine whether the treatment is "reasonable and necessary" for coverage among Medicare beneficiaries.[176]

In 1990, within the framework of the Medicaid Drug Rebate Program, legislation was passed that instituted restrictions on Medicaid's reimbursement for certain drug categories.[177] *This statute made optional the coverage for drugs aimed at weight management and a narrow range of other medications, including those addressing erectile dysfunction, hair loss, and fertility issues.*[178] *Subsequently, in 2003, these provisions were used as a basis for implementing comparable limitations within Medicare, explicitly prohibiting the coverage of weight management drugs.*[179] *These restrictions reflect the cultural and clinical perceptions of obesity prevalent at that time.*[180]

Coverage of GLP-1 drugs

At present, Medicare Part D covers GLP-1 drugs only for the treatment of diabetes and for some recipients with cardiovascular disease risk but not for obesity.[181] *Only a few states' Medicaid programs currently cover the drugs, with 13 state Medicaid programs covering GLP-1 for obesity treatment as of August 2024.*[182] *Many of these have limitations for coverage, to ensure that only individuals with the highest needs have access to the therapies.*[183]

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Employers

Relevance of obesity

Obesity rates have direct and indirect effects on employers. All employers are subject to the indirect costs of obesity, which may include higher rates of absenteeism and presenteeism and lower productivity. The expected GDP impact of obesity could be $2.76 trillion annually in 2050, primarily driven by its effects on labor force participation and productivity. On average, absenteeism is three days per year greater for employees with obesity than for the rest of the US population,[184] totaling 250 million days of lost productivity per year.[185] Reducing obesity rates could potentially lead to increased productivity and reduced absenteeism, especially in heavily affected sectors, such as food and entertainment services, technology, and government or education services, where obesity-related absenteeism and disability costs are higher.[186]

Employers that pay for direct medical costs are also paying for the direct costs of obesity when employees have preventive, diagnostic, and treatment services related to obesity.[187] Employers in the United States account for approximately 65 to 80 percent of medical care premiums,[188] which means they have an interest in promoting a healthy workforce. Beyond addressing obesity symptoms, employers are encouraged to foster environments that promote overall well-being, recognizing that factors like work-related stress,[189] inadequate sleep,[190] and sedentary lifestyles[191] contribute to obesity. Previous research from McKinsey Health Institute (MHI) suggests that implementing comprehensive wellness programs that encompass flexible working policies, leadership training, job redesign, and digital health initiatives can enhance employees' physical, mental, social, and spiritual health.[192] Such programs not only have the potential to mitigate obesity rates but also improve productivity, reduce absenteeism, and lower healthcare costs.[193]

Potential impact of GLP-1s

Coverage of GLP-1 by employers, particularly in the United States, is a pressing topic. Approximately one-third of US employers currently cover GLP-1s for diabetes and weight loss, while an additional 57 percent of them provide GLP-1

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coverage for diabetes only.[194] However, employers may hesitate because of the cost of covering the treatment. In early 2024, the North Carolina state workers' health plan decided to end coverage for GLP-1s, citing potential costs of $102 million a year on weight loss drugs.[195] Employers may also need to consider how coverage of GLP-1s and other weight loss medications may play a role in retention and recruitment of staff. These calculations will likely need to be ongoing, as GLP-1s also demonstrate benefit in the management of other conditions.

Aside from direct GLP-1 coverage, employers—particularly those that also act as healthcare plan payers—are also considering other health support via workplace health promotion programs, which have been found to achieve modest improvements in employee weight status.[196] These programs can be either individually focused (for example, focused on nutrition, counseling, physical activity), or organizationally focused (for example, on-site exercise programs, healthy food provision at the workplace). However, according to MHI research, for these initiatives to be effective, they must go beyond one-off interventions and be embedded into a comprehensive, sustainable workplace well-being strategy that promotes skill building, behavioral change, and long-term lifestyle improvements.[197] Also, employers designing a program need to be careful to ensure they fully support all employees. For example, all wellness programs in the United States must follow the Equal Employment Opportunity Commission guidance. Unless height and weight are related to the job, questions or requirements around weight should be avoided.[198]

Emerging questions

- How can employers design effective and inclusive health promotion programs that support employees' overall health, including metabolic health?
- How can employers strike a balance between managing costs, providing care, and (in a US context) offering competitive coverage for their employees?

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Wellness companies

The wellness industry is experiencing robust growth, with the US market valued at $503 billion and projected to grow at an annual rate of 4 to 5 percent, according to McKinsey's Future of Wellness research.[199] Much of the growth is related to weight management, and the impact of GLP-1s varies by type of service (nutritional products, gyms, or digital health solutions).

Relevance of obesity

Over 30 percent of the wellness market's size comes from consumer spending related to weight management. In the United States, this includes $70 billion in fitness training and equipment, $8 billion in vitamins and supplements related to weight management, $26 billion in wearables and tech, and $50 billion in other nutrition offerings (for example, sports nutrition, juice cleanses, superfoods).[200] Despite economic uncertainties, consumer sentiment for weight management remains strong, with fitness and wellness being the only nonessential category where spending is expected to increase.[201] Notably, 49 percent of consumers surveyed by McKinsey in 2024 report a desire to manage or lose weight.[202]

However, the prevalence of traditional weight management methods may be declining because of the rising efficacy and popularity of weight loss medications. This trend underscores the need for the wellness industry to adapt and integrate these medical advancements into their offerings to remain relevant and effective in addressing obesity.

Potential impact of GLP-1s

Nutrition and supplements. The rise of GLP-1s is creating two competing forces for fitness nutrition, meal replacement, and supplement players. On one hand, the appetite-suppressing effects of GLP-1s could reduce overall food consumption, and demand for traditional diet and weight loss products might decline due to the efficacy of GLP-1s. For example, this is reflected by the share price of major global diet and nutrition companies plummeting in the past year.[203] On the other hand, GLP-1 treatments are driving greater consumer focus on overall nutrition and health; the net effect of these forces is yet to be seen. Many nutrition players are already capitalizing on this shift by innovating products that complement GLP-1 treatments,

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such as probiotics to support natural GLP-1 production, supplements that promote lean muscle maintenance,[204] or high-quality, nutrient-dense meal replacements or kits that complement the appetite-suppressing effects of GLP-1s, as well as personalized nutrition services.[205]

Gyms. Fitness centers are increasingly becoming a core part of consumers' identities, with fitness now a central element for 50 percent of Americans.[206] The introduction of GLP-1 drugs is expected to further shape the role of gyms. On the positive side, these medications may encourage more individuals who were previously deterred by obesity-related mobility constraints or stigma to engage in fitness. This is critical because fitness is essential to counteract muscle loss associated with GLP-1 therapy.[207] However, challenges remain, as some gym members tend to be disengaged, with 63 percent of new members abandoning activities within three months.[208]

To capture and retain users, gyms could focus on two strategies. First, they could lean into the growing emphasis on strength and community. While the shift toward strength training has already begun,[209] GLP-1s are accelerating this trend, making it even more crucial for gyms to highlight their role as inclusive and empowering spaces. Second, product innovation is key. For example, gyms could introduce membership tiers tailored to GLP-1 users, offering personalized training, diet plans, educational talks, and social activities that complement medication regimens.[210] Additionally, some gyms could explore partnerships with or acquisitions of clinics that can prescribe weight management drugs,[211] creating an integrated and holistic experience for members.

Digital health solutions. The digital health products and services market, including wearables and health apps, is expected to grow from $26 billion in 2023 to $55 billion by 2030 in the United States,[212] fueling much of the growth in the weight loss market. As users of GLP-1 drugs shift their focus from weight loss to broader health goals, wearables players could innovate with new use cases and orient themselves as a companion to weight management drugs, including developing capabilities for tracking muscle mass, progress of strength training, and other health markers, such as glucose level, heart rate variability, and sleep quality. Integrating these functionalities to monitor physiological response to GLP-1 can also enhance the efficacy of weight loss treatments by providing real-time data to both users and healthcare providers.[213] In addition, complementary digital platforms are evolving to offer tailored fitness programs, nutrition tools, and medication tracking to support GLP-1 users by enhancing adherence to and effectiveness of treatment.[214]

Emerging questions

- What is the future trajectory of GLP-1 adoption and how can wellness players effectively monitor and track consumer behavior shifts driven by GLP-1 use? Will GLP-1 users require a new category of wellness solutions to address their unique metabolic and dietary needs?
- How can the wellness industry adapt to the growing demand for complementary tools to support GLP-1s by fostering behavioral changes, enhancing effectiveness, mitigating side effects, and sustaining long-term results?
- What will be the next relevant trends as sustainable weight loss becomes potentially more attainable?

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Food and consumer companies

Relevance of obesity

Obesity and consumption patterns have a bidirectional relationship. Consumers who have obesity may make different choices and have different preferences, not only in their purchase and consumption of food, but also for sports, travel, and other lifestyle activities. Conversely, consumer companies tailor products to different populations and subgroups to match changing tastes and preferences. Furthermore, a growing body of research has found associations between different types of foods, including ultraprocessed foods, and health.[215] Food and consumer companies are increasingly under pressure to discuss what role they play in addressing obesity.[216]

Potential impact of GLP-1s

GLP-1s are of particular interest to food and beverage companies, which will likely be affected by changes in consumer preferences and habits. GLP-1s directly influence appetite and indirectly affect health/nutrition literacy, as people using GLP-1s have an increased need to adjust their diet to account for their new appetite. Users of GLP-1s exhibit a considerable (16 to 39 percent) decrease in calorie intake,[217] attributed to shifts in food volume and type. Beyond altering how much food users consume, GLP-1s may increase users' nutritional awareness and shift which foods users demand. GLP-1 usage may lead to demand for specific types of food items. For example, GLP-1 usage is associated with both reduced appetite and loss of lean muscle mass. Accordingly, there may be increased demand for low-volume, high-protein foods, including meal replacement bars or drinks. Changes in demand for types of products consumed extends to the supplement market as well. Supplement manufacturers may see new demand for GLP-1 diet-specific multivitamins, to ensure adequate micronutrient intake, and increased demand for supplements such as iron and protein powders, to help GLP-1 users maintain muscle mass.

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Further, GLP-1 treatment can also alter taste sensitivity[218] and some food-related behaviors. These changes may lead to individuals increasing their control over the ingredients and portion sizes they consume, thereby affecting food consumption habits.[219] It may also change the types of products consumers desire, with recent observations of GLP-1 users favoring different food and beverage products while using the medications.[220] Given the average age of GLP-1 users (approximately 50 years old),[221] treatments are also likely to have an influence on budget and consumption decisions at the household level, in addition to having an overall influence on eating behaviors, grocery choices, and restaurant visits. For example, recent research suggests that households with at least one GLP-1 user reduced grocery spending by around 6 percent within six months of adoption, with reductions reaching nearly 9 percent among higher-income households, primarily because of declines in the purchase of calorie-dense processed foods. However, questions remain whether this behavioral change will persist over a longer period of time.[222]

Overall, while calorie reduction in the United States is expected to be only 1 to 2 percent, the dynamics may affect some segments differently. Some of the most affected segments may experience sales reductions of up to 3 percent for products such as calorie-dense snacks or high-calorie beverages.[223]

If these trends reverberate through distribution channels, food retailers will also be affected. Convenience stores could be expected to bear a greater burden than large supermarket chains. In convenience stores, typical purchase behaviors address cravings for high-calorie snacks more often than demand for healthy products. However, the increase in food awareness and the potential shift in budget allocation toward more nutritious foods and beverages may create new opportunities in the healthy food market.

The altering landscape of consumer behavior may extend beyond the food and beverage industries, reaching into various consumer sectors as consumers shift budget allocations and change consumption patterns. Industries such as travel, apparel, cosmetics, and beauty are anticipated to experience consequences when consumers change their habits, interests, and needs during and after weight loss.

Emerging questions

- How should food and beverage companies strategically innovate their product portfolios in response to changing consumer preferences and behaviors? For example, companies might shift to offering healthier options, “premiumize” the portfolio, and address emerging consumer needs as GLP-1 usage patterns change.
- What will the long-term consumer journey look like? What are new consumer needs that could emerge at various stages of this journey?
- How should food retailers, including stores and restaurants, adapt their strategies to respond to changing consumer needs and shifting awareness of obesity and metabolic health?
- With increased weight loss due to GLP-1s, how might consumer behaviors evolve to affect other sectors, such as travel, beauty, and apparel?

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Endnotes

[1] In this report, the abbreviation "GLP-1s" includes GLP-1 receptor agonist drugs, as well as other combination therapies such as dual GLP-1/GIP (glucose-dependent insulinotropic polypeptide) drugs, recognizing that new modalities of drugs may emerge in the future.

[2] "Obesity and overweight," World Health Organization (WHO), March 1, 2024.

[3] In lower-income countries, the double burden of malnutrition is also a serious concern, characterized by the coexistence of undernutrition alongside overweight or obesity.

[4] Jessica Kerr et al., "Global, regional, and national prevalence of child and adolescent overweight and obesity, 1990–2021, with forecasts to 2050: A forecasting study for the Global Burden of Disease Study 2021," *The Lancet*, March 2025, Volume 405, Issue 10481.

[5] Calculated by multiplying the average excess weight per person by the number of people in each class of obesity/overweight. Number of people in each class estimated from WHO obesity prevalence rates.

[6] Gold reserves weighed 35,939 tons as of February 2025. Gold Reserves by Country, World Gold Council, 2025. The Empire State Building weighs 365,000 tons. "Facts & figures," Empire State Building website. The Great Pyramid of Giza weighs about 12 billion pounds, or more than five billion kilograms. "Frequently asked questions about the Great Pyramid and Giza," Mused.

[7] Hamza Irfan, "Obesity, cardiovascular disease, and the promising role of semaglutide: Insights from the SELECT trial," *Current Problems in Cardiology*, January 2024, Volume 49, Issue 1.

[8] Helen M. Colhoun et al., "Long-term kidney outcomes of semaglutide in obesity and cardiovascular disease in the SELECT trial," *Nature Medicine*, May 25, 2024, Volume 30.

[9] This report focuses on global trends in obesity and the potential impact of new medications. The authors recognize the evolving nature of GLP-1s and sensitive discussion around weight loss at an individual and population level, including around body mass index as a metric (see sidebar "Terminology"). McKinsey and the McKinsey Health Institute do not provide clinical or medical advice about obesity treatment.

[10] This report refers to obesity as a condition, recognizing that international discussion on the classification of obesity is contentious. Leading groups such as the World Health Organization and World Obesity Federation classify obesity as a disease, while numerous health systems do not (or do not yet). For an important contribution to this debate, see Francesco Rubino et al., "Definition and diagnostic criteria of clinical obesity," *The Lancet Diabetes and Endocrinology*, January 2025, Volume 13, Issue 3.

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[12] Kristen Cooksey-Stowers, Marlene B. Schwartz, and Kelly D. Brownell, "Food swamps predict obesity rates better than food deserts in the United States," *International Journal of Environmental Research and Public Health*, November 2017, Volume 14, Number 11; Alexandra Lee, Michelle Cardel, William T. Donahoo, "Social and environmental factors influencing obesity," *Endotext*, October 12, 2019.

[13] Ezgi Şanlı and, Seray Kabaran, "Maternal obesity, maternal overnutrition and fetal programming: effects of epigenetic mechanisms on the development of metabolic disorders," *Current Genomics*, September 2019, Volume 20, Issue 6.

[14] Approximately 20 known health risks of overweight and obesity are officially noted by the NIH in the US and the NHS in the UK. Some resources have noted that obesity can be associated with over 200 diseases or comorbidities (for example, the American Medical Association). Further research is required to quantify this figure.

[15] While body mass index (BMI) is the common metric used to measure overweight and obesity, it has limitations. For details, see sidebar "Terminology."

[16] "Obesity and overweight," World Health Organization (WHO), March 1, 2024.

[17] The GBD 2015 Obesity Collaborators, "Health effects of overweight and obesity in 195 countries over 25 years," *New England Journal of Medicine*, 2017, Volume 377, Number 1.

[18] Hyuna Sung et al., "Global patterns in excess body weight and the associated cancer burden," *CA: A Cancer Journal for Clinicians*, March 2019, Volume 69, Issue 2.

[19] "Obesity," Cleveland Clinic, June 13, 2022.

[20] Gregor Alexander Rindler, Anna Gries, and Wolfgang Freidl, "Associations between overweight, obesity, and mental health: A retrospective study among European adults aged 50," *Frontiers in Public Health*, July 2023, Volume 11; Cornelia Leontine van Vuurenet al., "Associations between overweight and mental health problems among adolescents, and the mediating role of victimization," *BMC Public Health*, May 2019, Volume 19; Christine Emmer, Michael Bosnjak, and Jutta Matta, "The association between weight stigma and mental health: A meta-analysis," *Obesity Reviews*, September 2019, Volume 21, Number 1; Phillipe O'Brien et al., "Neurological consequences of obesity," *The Lancet Neurology*, June 2017, Volume 16, Number 6; "Obesity and cancer," Centers for Disease Control, November 7, 2023; Sukanya Pati et al., "Obesity and cancer: A current overview of epidemiology, pathogenesis, outcomes, and management," *Cancers (Basel)*, January 2023, Volume 15, Number 2; Thomas Barber and Stephen Franks, "Obesity and polycystic ovary syndrome," *Clinical Endocrinology*, January 2021, Volume 95, Number 4; Liu Yong, Zhang Weiyuan, "Association between body mass index and endometriosis risk: A meta-analysis," *Oncotarget*, January 2017, Volume 8, Number 29.

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[23] Andromeda Nauli and Sahar Matin, "Why do men accumulate abdominal visceral fat?" *Frontiers in Physiology*, December 2019, Volume 10.

[24] S. M. Phelan et al., "Impact of weight bias and stigma on quality of care and outcomes for patients with obesity," *Obesity Reviews*, March 2015, Volume 16, Number 4.

[25] S. M. Phelan et al., "Impact of weight bias and stigma on quality of care and outcomes for patients with obesity," *Obesity Reviews*, March 2015, Volume 16, Number 4.

[26] Stuart W. Flint et al., "Obesity discrimination in the recruitment process: 'You're not hired!'" *Frontiers in Psychology*, May 2016, Volume 7, Number 647; Jay Bhattacharya and M. Kate Bundorf, "The incidence of the healthcare costs of obesity," *Journal of Health Economics*, May 2009, Volume 28, Issue 3.

[27] Melody Fulton, Sriharsha Dadana, and Vijay N. Srinivasan, "Obesity, stigma and discrimination," *StatPearls*, October 26, 2023.

[28] Calculated by dividing the total expected years that the global adult population with obesity would live with the condition by the total population with obesity (2019 data).

[29] IHME Global Burden of Disease, 2021 data.

[30] IHME Global Burden of Disease, 2021 data.

[31] Chiao-Yun Fan et al., "Estimating global burden of COVID-19 with disability-adjusted life years and value of statistical life metrics," *Journal of the Formosan Medical Association*, June 2021, Volume 120, Issue 1. Data collected until April 2021.

[32] IHME Global Burden of Disease 2021 data was used to calculate the expected individual average life expectancy difference for individuals with high BMI and individuals without (per five-year age category). The potential to gain 6.5 billion years is the sum-product of the life expectancy difference per age category, multiplied by the total population per age category. Calculations assumed the 2021 population.

[33] Prospective Studies Collaboration, "Body-mass index and cause-specific mortality in 900,000 adults: collaborative analyses of 57 prospective studies," *The Lancet*, March 2009, Volume 373, Issue 9669. Moderate obesity is defined as BMI of 30 to 35. Severe obesity is defined as BMI of 40 to 50.

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