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The Impact of GLP-1 Drugs on the Agri-Food System

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Introduction

GLP-1 drugs are a class of medications that were originally designed to treat type 2 diabetes but are increasingly being used to treat obesity (Cleveland Clinic). These drugs have only been approved by the FDA since 2005 and are becoming more popular every year. In a 2025 survey conducted by Gallup, 12.4 percent of the respondents used a GLP-1 drug, up from 5.8 percent in 2024 (Noguchi). If the survey accurately reflects the U.S. population, one in eight adults uses a GLP-1 medication. From 2022 through 2025, the obesity rate declined from 39.9 percent of the population to 37.0 percent (Noguchi). According to Sonar, a freight rate and market data platform, the reduction in food demand has led to 850,000 to 1 million fewer truckloads of food and could be as high as 2.5 million to 3 million fewer truckloads per year by 2031.

Most of these drugs are injected by the patient, but pills are being developed. A GLP-1 pill called Foundayo is available through Amazon (Beaton). It is estimated that pharmaceutical firms have more than 80 drugs in trials (Fisher). GLP-1 drugs increase the amount of insulin production and reduces blood sugar levels. These drugs also slow stomach emptying and affects areas of the brain that trigger hunger (Cleveland Clinic, Mullally). As a result, these drugs reduce hunger and cravings and reduce the amount of food a person using these drugs consumes. This, in turn, allows a typical user of these drugs to lose weight. However, most people gain weight when they stop taking the medication, therefore these medications are long-term medications (Mullally) that may require a lifetime of treatment.

As a result of this, the FDA has approved the use of these drugs to treat obesity. This improves the user's health in a number of ways including lower blood pressure, lower cholesterol, improved liver function, and reducing the risk of heart and kidney disease (Cleveland Clinic). The most common negative side effects are nausea, vomiting, and diarrhea although these effects usually decrease over time as the body adjusts to the GLP-1 medication (Cleveland Clinic).

Other rarer but more serious side effects are pancreatitis, medullary thyroid cancer, sudden kidney disease, and worsening diabetes-related retinopathy (Cleveland Clinic). There is also some evidence that these drugs could cause pancreatic cancer although a link has not been established (Filippatos, Pagaiotopoulou, and Elisaf). Hypoglycemia (low blood sugar levels) can also occur especially if a patient takes other medications that are designed to reduce blood sugar (Cleveland Clinic).

The size of the market for these medications was $50 billion by the end of 2024, and might reach $100 billion by 2030 (Hristakeva, Liaukonyte, and Feler). Self-reported average weight loss for users of these drugs is 47 pounds. Those using them for weight loss report an average weight loss of 52 pounds, and those using the drugs to manage their diabetes report an average weight loss 45 pounds (Hristakeva, Liaukonyte, and Feler).

The success of these drugs will continue to drive the demand for GLP-1 drugs. The potential demand for these drugs is very large, approximately 14.7 percent of U.S. adults have diabetes, about 40 percent are obese (Hristakeva, Liaukonyte, and Feler), and 31 percent are considered overweight (Dilley et al). The biggest barrier to wider adoption is the cost, and this could decline as pills replace injections and patents expire, and if insurance companies determine that the costs savings from fewer obese patients are greater

than the cost of the medication. Currently, most health insurance plans do not cover GLP-1 medications for weight loss, but if the cost of the medication is less than the treatment of health issues caused by obesity, these drugs may be covered by more health insurers in the future.

Widespread adoption of these medications will have a significant impact on the agri-food system. Within the first six months of starting a GLP-1 medication, households reduce grocery spending by 5.3 percent, it is 8.0 percent for high income households (Reiley). It appears that if one person starts treatment, other family members may also reduce their food consumption, at least in the short term. If the treatment stops, food purchasing behavior quickly revert to patterns similar to before the treatment with the GLP-1 drug (Reiley).

This brief study analyzes the impact of these drugs on the agri-food system. It is estimated that users of GLP-1 drugs consume up to 21 percent fewer calories; furthermore, the food system could see sales decline by $30 to $55 billion (Lucas). The farm sector, food manufacturing and restaurant sectors will be the focus of this study. The impacts are likely to be strongest in the food manufacturing and restaurant sectors. Although the decline in the demand for food will also impact the farm sector and make export markets even more important.

Impacts on the Farm Sector

A reduction in food consumption will eventually be passed down to farmers in the form of lower prices for most agricultural commodities. Corn, soybeans, sugar, and perhaps potatoes are probably most threatened by an increase in the use of GLP-1 drugs. These commodities tend to be used in food products that are high in sugar and salt. Wheat growers in Michigan may also face difficulties as the types of wheat grown in the state are primarily used in baked products such as cakes and snacks. This can be offset somewhat if food processors focus more on whole grain products.

There may or may not be an adverse impact on dairy products, a decline in pizza consumption and a movement away from high calorie foods might reduce the demand for milk used for cheese, as would a reduction in butter and ice cream consumption. However, an increase in yogurt consumption and possibly cottage cheese is positive for milk demand.

The outlook for livestock products is also mixed. The demand for eggs might increase as eggs are a good, inexpensive source of protein, although current demand for eggs appears to be declining for those on GLP-1 medications. The demand for lean cuts of beef and poultry might remain steady or improve slightly. However, on net the demand for beef and pork is likely to decline as consumers look for lower fat foods. This will put downward pressure on beef and pork prices.

Specialty crop farmers are likely to benefit from the increase in the number of people using GLP-1 drugs. Fruit and green vegetable farmers will see an increase in demand for their products. Cherry growers could benefit from the increased use of cherries for unsweetened or minimally sweetened products. This trend could also be profitable for apple and blueberry producers. Grapes grown for wine are an exception, users of these drugs cut back on their consumption of alcohol.

If this trend continues, exports will need to expand in order to offset the decline in demand for agricultural products. This is especially important for feedgrains, oilseeds, and wheat. Increased use of corn starch and soybean oil for fuels could offset the decline in demand for corn and soybeans for food and feed.

Impact on Food Manufacturing

The decline in spending on food is widespread, most food categories face a decline in demand (Hristakeva, Liaukoyte, and Feler). The foods that have seen the biggest declines are those that are high in salt and sugar and are high calorie foods. This might be due to a change in the taste of the food by users. Sweet foods may taste sweeter and salty foods may taste saltier (Kinder). Savory snacks, sweets baked good, and cookies have seen the biggest declines, although bread, meat, and eggs have also seen a decline in consumption (Reiley). One report indicates that spending on savory snack consumption declined by 10.1 percent among users of these drugs (Hristakeva, Liaukoyte, and Feler

Dairy products that see a decline in purchases include cheese, butter, ice cream, and milk. Wheat based products that see a decline in purchases are bread, pasta, frozen pizza, crackers, and breakfast cereal. Starchy vegetable products purchases also decline, as does purchases of meat and eggs (Hristakeva, Liaukoyte, and Feler; Dilley et al).

There have also been some food items that have seen an increase in demand. Yogurt, fresh fruit, nutrition bars, and meat snacks saw a minor increase in demand (Reiley), as did the consumption of leafy greens (Dilley et al). However, these increases are comparatively small. Only yogurt has increases that even approach 5 percent (Hristakeva, Liaukoyte, and Feler). The demand for sauces and spices that are low in salt, or sugar may also see an increase in demand (Kinder). Consumers may look for alternatives to salt or sugar that provide flavor.

Moving forward, food manufacturers will need to formulate products that use less sugar and have fewer calories. Smaller packages may also need to be developed, although this was occurring before the widespread use of GLP-1 drugs. Demand for high protein products may rebound as consumers adjust to the medication. This is not likely to be the case for products high in sugar or starch.

Impact on Restaurants

These drugs have also impacted restaurants as well. Particularly impacted have been fast food restaurants and coffee shops (Reiley). Spending at these restaurants declined by 8.0 percent in one study (Hristakeva, Liaukonyte, and Feler). These types of restaurants have traditionally focused on those foods that consumers are cutting back on, and in the case of coffee shops, high calorie drinks and baked goods. Coffee shops and fast food restaurants will face difficulty going forward. Their profit centers have traditionally been high calorie indulgent items.

Full service restaurants also face difficulty especially those that serve alcohol. Alcohol consumption is down among users of GLP-1 drugs (Lucas), and alcohol is traditionally a profit center at restaurants. Restaurants can develop nonalcoholic alternatives like mocktails to address the decline in alcohol consumption. Smaller serving sizes and fruit based desserts are another strategy.

Opportunities for Food Entrepreneurs

While the overall impact for the food sector is negative, the widespread use of GFLP-1 drugs does present opportunities. One aspect of these drugs is that the taste preferences of consumers is moving towards healthier foods, this includes foods with a lower sugar content, higher protein, and higher fiber (Lucas). Whole grain foods are likely to become more popular.

Given the side effects of using GLP-1 drugs dehydration is a problem. This creates an opportunity for beverages that offset the impacts of dehydration, drinks with less sugar have potential. Conversely, drink products that are high in protein may benefit. Drink products that are targeted explicitly to GLP-1 users have a potential to be successful.

Product innovation in restaurants may be more difficult. The most obvious solution is to offer smaller portions, especially if this is coupled with a lower price. However, even this strategy will put pressure on profit margins. This will be easier to do for full service restaurants than fast food restaurants.

Summary

GLP-1 medications are a class of drugs that are used to manage type 2 diabetes and obesity. More than 50 percent of the U.S. population could conceivably be eligible for these drugs. The drugs are likely to fundamentally change the agri-food system, especially if the price of these drugs decline or more insurance companies cover these treatments for obesity. The entire supply chain in the agri-food system will be impacted. Conceivably, one adult in eight is already on these drugs according to the Gallup survey.

Most food products will see a reduction in demand. The greatest decline will be in foods that are high in calories and sugar. Alcohol consumption will also decline. Chips and snacks manufacturers will need to find a way for their products to be healthier. The same is true for owners of fast food restaurants and coffee shops.

The demand for fruits and most vegetables are likely to increase, but for the most part the widespread adoption of GLP-1 drugs will reduce the demand for farm commodities. Major field crops are likely to face the greatest decline in demand. This will make exports even more important to maintain the price of these commodities. The demand for dairy products and most meat products will also decline which will put pressure on most livestock producers. Poultry producers may see less of decline in demand, especially egg producers. Poultry and eggs are a good source of protein relative to their fat content.

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