

# Meat Demand Monitor: Protein in the GLP-1 Era

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## Background

In past quarters we have provided overviews of how protein consumption frequency and package size purchases vary by consumer characteristics.<sup>2</sup> Since July 2024, the Meat Demand Monitor (MDM) has tracked a new consumer characteristic that is increasingly prevalent in the U.S.—the use of glucagon-like peptide-1 receptor agonists (GLP-1s). GLP-1s are a class of medications (e.g., Ozempic) that are used to treat type 2 diabetes by boosting the amount of insulin released by the body when eating (Mayo Clinic, 2024). The medications also suppress appetite and improve satiety (Latif et al., 2024; Mayo Clinic, 2024), making them an attractive method for individuals to lose weight. Prior public polling efforts have found that between six and twelve percent of U.S. adults have at one point used a GLP-1 medication (Montero et al., 2024; The Economist, 2024; Witters and Maese, 2024).

The U.S. food industry has been responding to the medications by offering new products tailored to GLP-1 users and marketing existing products as “GLP-1 friendly.” Notable examples include Nestlé’s launch of their *Vital Pursuit* products that are high in protein and portion-aligned to GLP-1 users’ appetites (Nestlé, 2024) and Conagra Brands adding “On Track” badges to select items that are high in protein and low in calories (Conagra Brands, Inc., 2024). The common theme in these responses and broader media discussion is that GLP-1 users should seek higher protein and nutrient content in their food as they restrict calories. In that context, we leverage ongoing MDM data collection to assess how U.S. consumers’ protein consumption and purchasing behavior varies by GLP-1 use.

## Data

This report utilizes MDM responses from July through December 2024. Survey responses were weighted to be representative of the U.S. population in terms of sex, age, income, education, race, and region of residence. To ensure the quality of MDM data used, responses were filtered according to the MDM project methodology statement (Tonsor, 2020). Specific to this report, responses were additionally filtered if 1) respondents did not provide a complete prior day recall of their protein consumption, 2) they did not provide the package size of their most recent beef and pork purchases, or 3) they did not provide complete information on their GLP-1 use. In all, this report reflects 16,064 MDM respondents. Roughly 14.8 percent of respondents (2,384 out of 16,064) indicated that they currently use a GLP-1 medication to aid in weight loss or treat diabetes. This being on the higher end of existing GLP-1 use

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<sup>2</sup> Prior reports are available on AgManager.info at <https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data>.

estimates likely reflects the evolving and increasing trend of use in the U.S., further motivating this assessment. Table 1 illustrates the characteristics of GLP-1 users and non-users.

**Table 1. Summary Statistics of MDM Respondents by GLP-1 Use**

Characteristic		GLP-1 Users	Non-Users
Sex	Female	38%	53%
	Male	62%	47%
Age	18-24	19%	10%
	25-34	25%	17%
	35-44	22%	16%
	45-54	14%	17%
	55-64	12%	18%
	65+	8%	23%
Annual Household Income	Less than \$20,000	11%	16%
	\$20,000 to \$99,999	46%	57%
	\$100,000 and over	43%	28%
Household Size	1 person	19%	22%
	2 people	22%	37%
	3 people	19%	18%
	4 people	30%	15%
	5 or more people	10%	8%

To interpret Table 1, 38 percent of GLP-1 users are female while 62 percent are male. Conversely, 53 percent of non-users are female while 47 percent are male. The relevant takeaway here is that GLP-1 users are more frequently male, under the age of 45, higher earners, and have larger household sizes.

### Prior Day Protein Consumption

In the MDM survey, respondents are asked to provide the number of yesterday's meals (from one to three) that contained beef, pork, chicken, seafood, and alternative proteins.<sup>3</sup> Importantly, this measure of protein consumption accounts for meal-inclusion frequency but not for volume. Table 2 displays the average number of meals containing the respective protein sources.

**Table 2. Prior Day Protein Consumption by GLP-1 Use (meals per day)**

	Beef	Pork	Chicken	Seafood	Alternative	None
All	0.71	0.50	0.84	0.31	0.42	0.72
GLP-1 Users	0.95	0.68	0.99	0.52	0.47	0.37
Non-Users	0.67	0.47	0.81	0.28	0.41	0.78

<sup>3</sup> The most commonly consumed food item in the "alternative proteins" category is eggs.

In total, U.S. adults consume beef, pork, chicken, seafood, and alternative proteins in an average of 0.71, 0.50, 0.84, 0.31, and 0.42 meals per day, respectively. However, notable differences exist in consumption frequency between GLP-1 users and non-users. On average, individuals who are currently using a GLP-1 medication indicate that they consume beef, pork, chicken, and seafood in 0.28, 0.21, 0.18, and 0.24 more meals per day than non-users, respectively. They also elect not to consume any source of protein at a comparatively lower frequency (0.37 meals per day for GLP-1 users compared to 0.78 for non-users). Because their food consumption is necessarily lower, these results suggest a proclivity among GLP-1 users to shift consumption into protein and out of other sources (i.e., grain products, sugars, etc.), though we do not assess protein consumption volume or the consumption frequency of other food groups. Regardless, these findings are broadly aligned with the observed industry response of offering high protein foods and media discussion on the importance of protein in maintaining muscle mass while losing weight.

While Table 2 speaks to consumption frequencies across aggregate protein sources, it masks consumption trends within a category. This is important because GLP-1 users may be more or less willing to consume products from the same broad source based on differences in those products' fat, calorie, or lean protein content. For instance, bacon typically has a lower calorie content per gram than do pork chops.<sup>4</sup> As such, we display in Table 3 the same consumption frequency measure across several popular products.

**Table 3. Prior Day Product Consumption by GLP-1 Use (meals per day)**

Product	GLP-1 Users	Non-Users
Beef Roast	0.19	0.05
Ground Beef	0.30	0.29
Ribeye Steak	0.16	0.05
Bacon	0.24	0.15
Pork Chop	0.16	0.06
Pork Sausage	0.25	0.16
Chicken Breast	0.33	0.24
Chicken Wings	0.25	0.10
Eggs	0.29	0.21
Plant-Based Patty	0.13	0.04

Note: Respondents can indicate consuming multiple protein products in a single meal.

GLP-1 users report consuming protein products at a higher frequency than non-users. Only ground beef had a similar consumption frequency between the two groups at 0.29 to 0.30 meals per day.<sup>5</sup> Notably, GLP-1 users consume bacon and chicken wings at rates of 0.11 and 0.15 meals per day higher, respectively, than non-users. This is an interesting finding as those products are generally higher

<sup>4</sup> See the USDA's FoodData Central for food composition data (<https://fdc.nal.usda.gov/>).

<sup>5</sup> Given the wide range in lean-fat content ratios available in ground beef products, it is possible that GLP-1 users more often consume higher lean ground beef products and less frequently consume lower lean products, leading to a "net zero" effect here.

in calorie content than other products from the same broad protein source (e.g., pork chops and chicken breast).

As a final note on prior day consumption frequency, we emphasize that these results do not reflect *causal* effects of GLP-1 use on consumption. That is, we present correlations between GLP-1 use and consumption. These correlations can be driven by the underlying characteristics of GLP-1 users. For instance, two previous MDM reports have indicated that younger males more frequently consume beef and pork products. These are also the consumers that are more likely to report being GLP-1 users (as seen in Table 1).

### Package Size Purchases

In addition to prior day consumption frequencies, we compare package sizes bought of various beef and pork products, which serves as a measure of product volume. Briefly, respondents are asked in the MDM survey to provide the package size of their last purchase of beef steak, ground beef, beef roast, bacon, pork chops, and pork sausage. Options range from “Under 5 oz.” to “Over 2 lb.” Prior MDM reports have overviewed the share of respondents who purchase various package sizes (see footnote 2 for those reports).

To determine the association of package size purchases with GLP-1 use, we used interval-censored regression analyses. For those interested, this involved fitting parametric survival regression models using interval-censored package sizes as the dependent variable and sex, age, income, household size, and GLP-1 use as the independent variables. Respondents who reported not purchasing the respective products were omitted from the analyses, reported package sizes of “Over 2 lb.” were treated as right censored, Gaussian distributions were assumed, and the models were estimated via maximum likelihood techniques.

Putting the minutiae aside, Table 4 depicts the associations of package size with GLP-1 use. To interpret, using a GLP-1 medication was associated with increases in package sizes purchased of beef steak of 0.99 ounces. These associations are smallest for pork chops (0.48 ounce increase) and largest for pork sausage (1.31 ounce increase). There was not statistical evidence of a relationship between GLP-1 use and package size purchases of beef roast. Paired with results related to consumption frequency, it appears that GLP-1 users are not only consuming protein more frequently than non-users, but are generally purchasing larger package sizes. Taken collectively, this speaks to the continued importance of the U.S. protein sector even as consumers increasingly attempt to lose weight through GLP-1 medications.

**Table 4. Association of Package Sizes with GLP-1 Use**

Beef Steak	Ground Beef	Beef Roast	Bacon	Pork Chops	Pork Sausage
0.99*	0.70*	0.28	1.01*	0.48*	1.31*

Note: Asterisks (\*) are associations that are statistically significant at the five percent level.

## Other GLP-1 Findings

Beyond simple GLP-1 use, the MDM project provides various other findings related to the medications. Among respondents who reported not currently using GLP-1 medications:

- 3 percent had previously used them but stopped
- 41 percent were not trying to lose weight
- 34 percent were not trying to treat diabetes
- 13 percent thought that the medications were too expensive or their insurance would not cover them
- 20 percent were concerned about the safety of the medications
- 22 percent wanted to lose weight using other approaches
- 5 percent wanted to treat diabetes using other approaches<sup>6</sup>

Additionally, among respondents who reported currently using GLP-1 medications:

- 23 percent spend between \$1 and \$50 monthly on the medications
- 24 percent spend between \$51 and \$150 monthly
- 19 percent spend between \$151 and \$250 monthly
- 9 percent spend between \$251 and \$350 monthly
- 3 percent spend between \$351 and \$450 monthly
- 3 percent spent over \$450 monthly
- 19 percent spend nothing or their insurance covers the cost

## Conclusions

Noting the increasing prevalence of GLP-1 use, protein-related media discussion, and industry response, we provide an overview of U.S. adults' protein consumption and purchasing behavior, leveraging MDM data to assess differences between those who use GLP-1 medications and those who do not. Animal protein consumption frequency is notably higher among GLP-1 users, as is disaggregate product consumption frequency. Since GLP-1 users are more often younger males, this aligns with prior MDM findings that that demographic group consumes beef and pork more frequently than others. Given uncertainty on the duration of GLP-1 use going forward, this presents an important opportunity for meat suppliers to establish positive experiences that may enhance future demand regardless of aggregate GLP-1 patterns. Additionally, the package sizes of various beef and pork product purchases is positively associated with GLP-1 use, suggesting that both frequency *and* volume of protein consumption is related to taking the medications.

Beyond our protein focus, it is likely that GLP-1 medications are affecting other sectors in the U.S. food system. Changing consumer preferences and diet compositions are an opportunity for food manufacturers and retailers to tailor to a new market segment. However, continued research and discussion is needed among all players in the food supply chain to meet changing demand-side needs while ensuring positive economic outcomes for all involved in food production.

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<sup>6</sup> Respondents could select multiple reasons for not using GLP-1 medications, so values do not sum to 100 percent.

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