HEALTH CHARACTERISTICS OF HONEY CONSUMERS IN THE U.S.

National Honey Board®

Health characteristics of honey consumers in the U.S.

Based on The NPD Group/ National Eating Trends® (NET ®)

- **General reference** to results may be cited with the following suggested source attribution: *The NPD Group/National Eating Trends® report to the National Honey Board, May 2018*
- **Specific data** may be cited as follows: *The NPD Group/National Eating Trends® [insert time period corresponding to specific data being cited as shown on each data slide.]*

This report was commissioned by the National Honey Board. Permission to use charts or figures can be requested by writing to **honey@nhb.org**.

Background

The NPD Group/ National Eating Trends® survey describes honey users dietary intake patterns over 7 days as they relate to honey use, overall diet quality, and health attitudes and priorities.

Overview of approach

- 7-day food records on a rolling basis on approximately 13,000 individuals annually.
- Time periods end May 2018 but the range of years covered varies (as indicated on each slide) as needed to achieve reliable sample sizes, particularly for age/gender breakouts. This report primarily focuses on the demographic group of 25 to 45 year-olds. Some baseline data are provided for ages 1+ (total population) and for 55+ year-olds.
- In-home and away-from-home use of retail honey by consumers.
- Data are weighted to be nationally representative.
- Data capture frequency of eating (not amount eaten at each occasion).
- Honey of all varieties, except manuka.

Objectives

1. Establish baseline honey use in a national sample for total population and selected age/gender groups emphasizing 25-45 year-olds.
2. Characterize honey users by health and diet concerns.
3. Qualitatively characterize overall diet quality of honey users to develop hypotheses for potential future research.

National Eating Trends® (NET ®)

NET ® is the only nationally representative source of data on individual food intakes that collects a full week of food records to reflect typical use and it is updated on a rolling basis with approximately 13,000 individuals reporting annually. Since it provides more current data with more days of intake, NET ® data complements government dietary intake data collected as part of the National Nutrition and Health Examination Survey (NHANES).

Strengths: NET ® data are the best available data for assessing intake penetration in the U.S. and estimating how frequently a food is eaten when it is an infrequently consumed food.

Limitations: NET ® does not measure actual amounts per serving and health indices are self-reported.

The bottom line is that NET ® is an up-to-date indicator of population penetration and frequency of use for a food, like honey, that is consumed relatively infrequently my many users.

Method details provided in appendix.

BASELINE HONEY CONSUMPTION

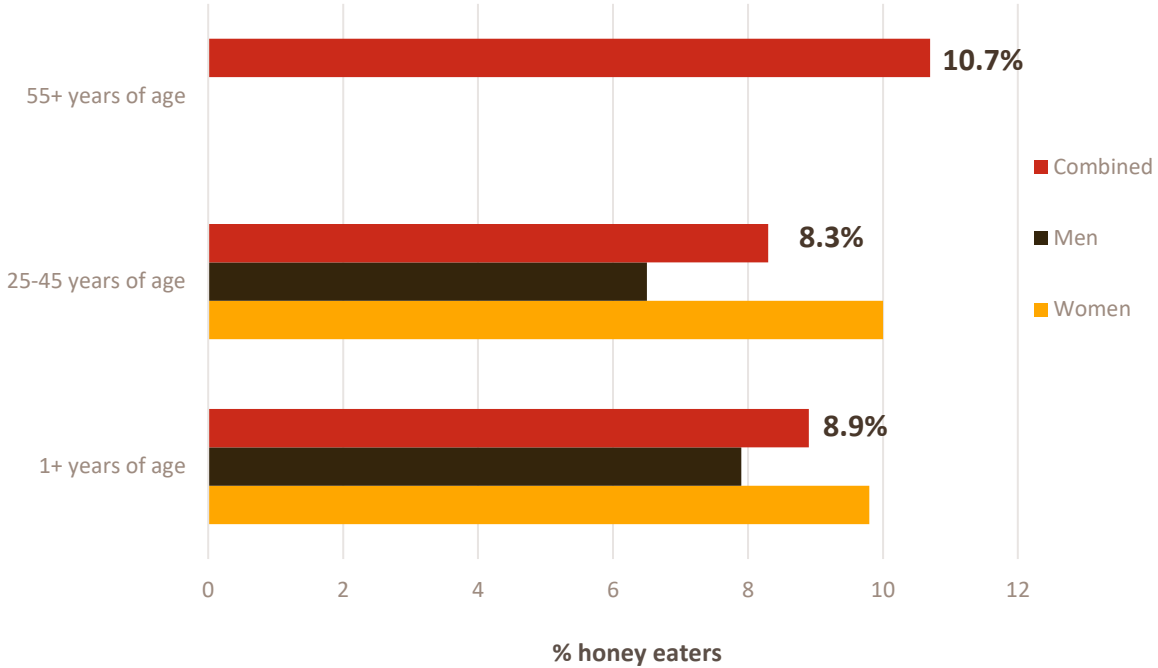
1. Baseline honey consumption

- 9% of Americans reported consuming honey during the 1-week period of time they recorded their food intakes.
- 60% of those who reported eating honey, reported eating honey once during the week and some ate honey 7 times or more a week.
- Generally, women were more likely than men to consume honey, despite the fact that men typically need to consume more food than women due to higher energy needs.

Source: The NPD Group/National Eating Trends®, June 2016–May 2018

Over the course of 1 week, 9% of Americans consumed honey one or more times.

June 2016–May 2018



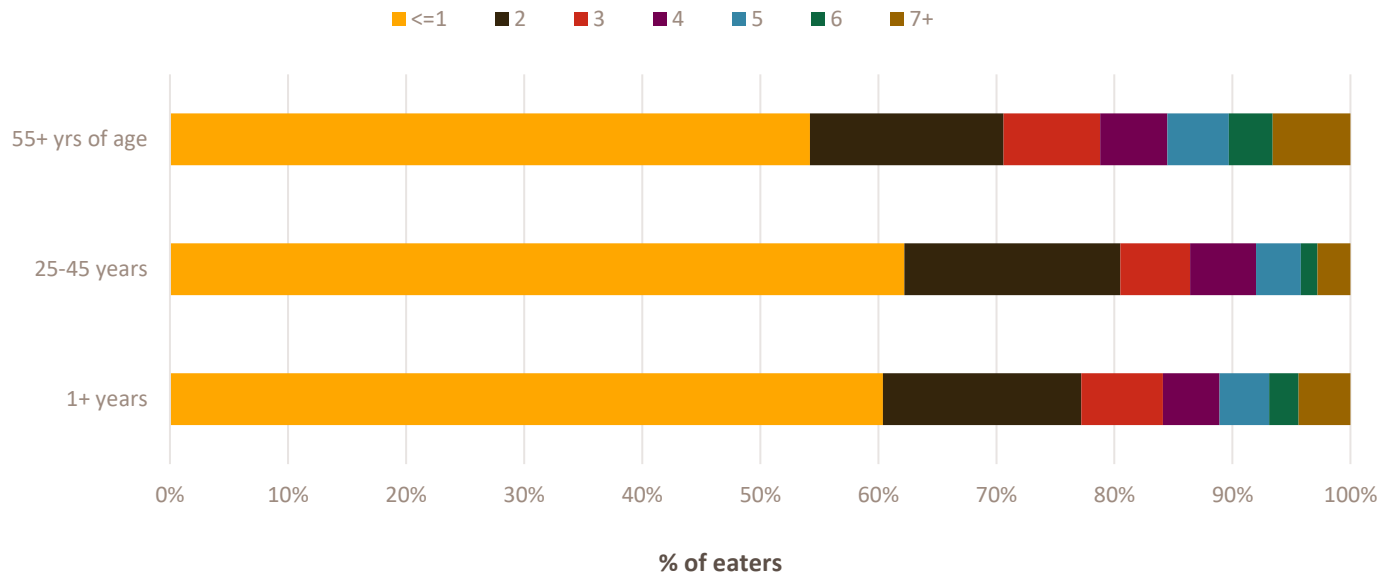
Source: The NPD Group/National Eating Trends®, June 2016–May 2018

Generally, women are more likely to consume honey than men.

This is despite the fact that men consume more food than women due to higher energy needs.

Most honey users eat it once/week but some eat honey 7+ times/week.

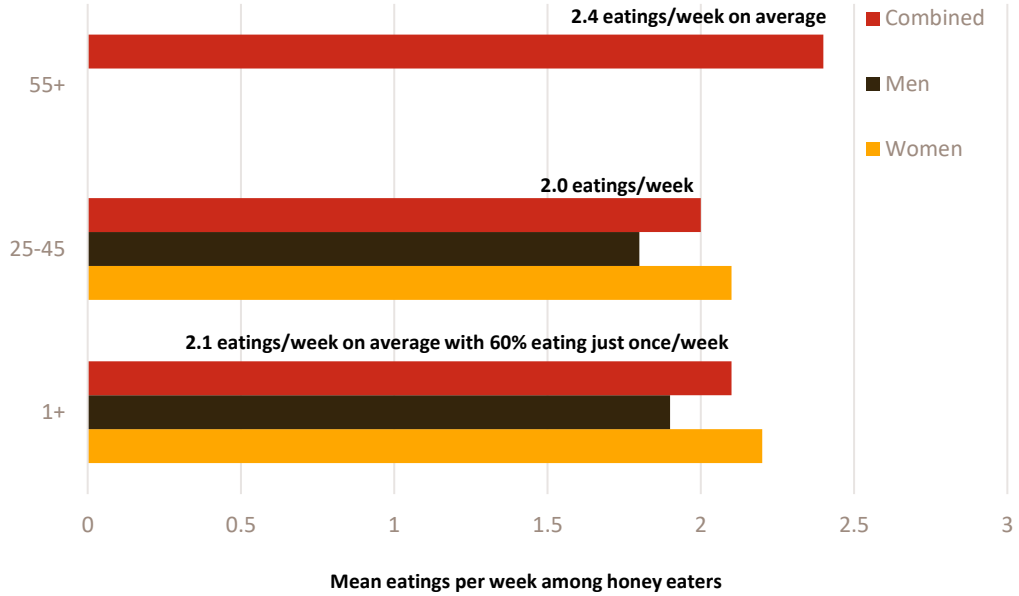
June 2013–May 2018



Source: The NPD Group/National Eating Trends®, June 2013–May 2018

55+ year-old honey users eat it at a relatively higher frequency (average eatings/week).

June 2016–May 2018



Source: The NPD Group/National Eating Trends®, June 2016–May 2018

Generally, women are more likely to consume honey than men.

This is despite the fact that men consume more food than women due to higher energy needs.

CHARACTERIZE HONEY USERS BY HEALTH & DIET CONCERNS

2. Characterize honey users by health & diet concerns.

- Weight loss is the top dietary concern among honey users.
- Honey users are less likely to be extremely underweight or obese according to BMI calculations, using self-reported weight and height.
- Honey users are more likely than non-users to report being on a diet to lower calories or sugar, even though they are relatively less likely to have type 2 diabetes or be obese.
- Gastrointenstinal issues occur among honey users more so than non-users, with men reporting relatively more acid reflux and women generally digestive orders and lactose intolerance.
- Honey users report eating diets low in sodium, sugar, gluten and cholesterol and higher in fiber and protein.

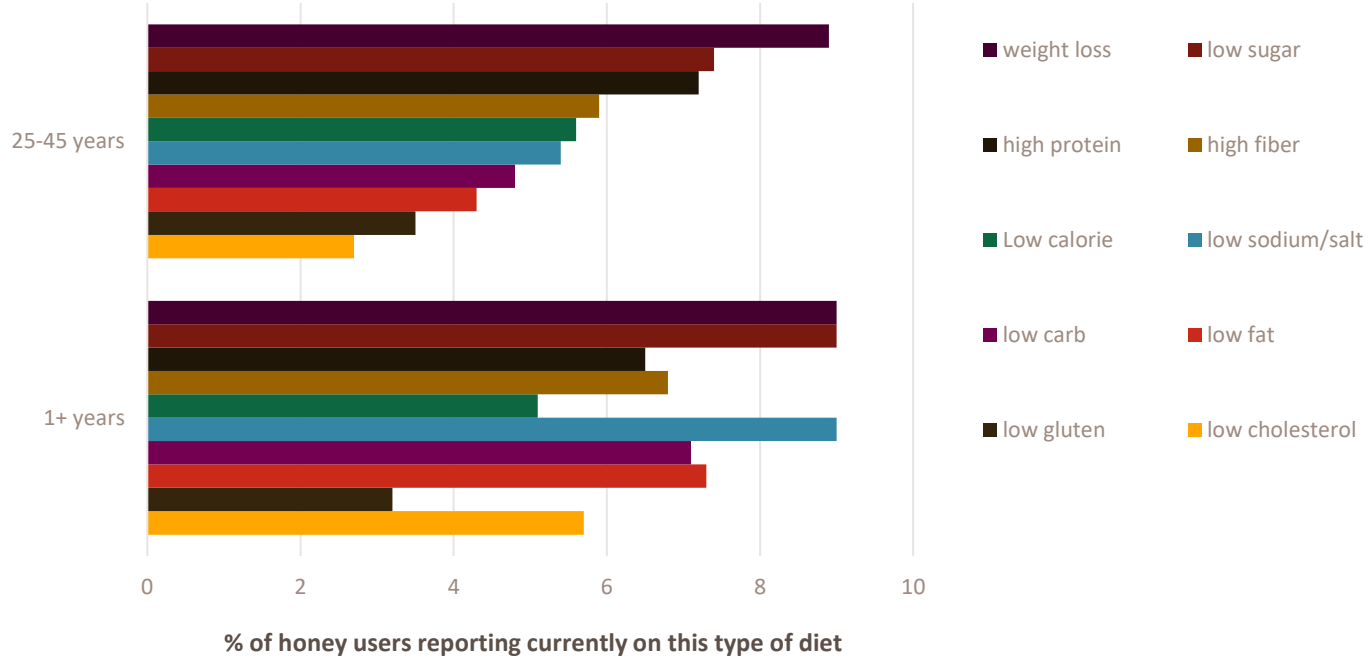
Keep in mind…

- Health conditions are self-reported.
- Self-reported body weight and height are used to calculate body mass index (BMI) as an indicator of underweight, normal range, overweight and obese.

Source: The NPD Group/National Eating Trends®, June 2013–May 2018

Weight loss is the top diet among honey users (at 9%) in general population as well as 25-45 year age cohort (skewing higher for women).

June 2013–May 2018



Source: The NPD Group/National Eating Trends®, June 2013–May 2018

Nearly a quarter of honey users 25-45 years of age report being on a diet.

June 2013–May 2018

24% of 25-45 year-old honey users report currently being on a diet of any type compared to 21% among non-users.

Honey users in this age cohort differ in the type of diet they are on

They are more likely to report aiming for a diet that is…

- Low in salt/sodium (5.4% compared to 3.3%)
- Low calorie (5.6% compared to 4.6%)
- High protein (7.2% compared to 4.5%)
- Low cholesterol (2.7% compared to 2.4%)

The percent of honey users in this age cohort on a low carbohydrate diet was similar to non-users (4.8% and 5.0%, respectively), but they are more likely to be seeking specific carbohydrate attributes.

- High fiber (5.9% compared to 3.4%)
- Low gluten (3.5% compared to 1.9%)
- Low sugar (7.4% compared to 5.1%)

Source: The NPD Group/National Eating Trends®, June 2013–May 2018

Honey users in the 25-45 year age cohort compared to non-users are less likely to follow a doctor prescribed diet.

June 2013–May 2018

33% of 25-45 year olds report having a medical condition (both honey users and non-users).

Honey eaters differ from non-users in that:

They are **less likely** to report being on a doctor-prescribed diet (2.7% compared to 5.2%)

They are **less likely** to report having

- High cholesterol (3.5% compared to 8.1%)
- Type 2 diabetes (1.8% compared to 3.5%)

Source: The NPD Group/National Eating Trends®, June 2013–May 2018

Self-reported gastrointestinal issues occur in this age cohort of honey users, but differ for men and women by type of concern.

June 2013–May 2018

Men honey users 25-34 years:

- 13.4% report acid reflux or GERD (compared to 7.5% among non-users)
- 3.1% report GI/digestive disorders (compared to 1.8% among non-users)
- 5.9% report lactose intolerance (compared to 4.5% among non-users)
- 2.4% report irritable bowel syndrome (similar to 2.6% among non-users)

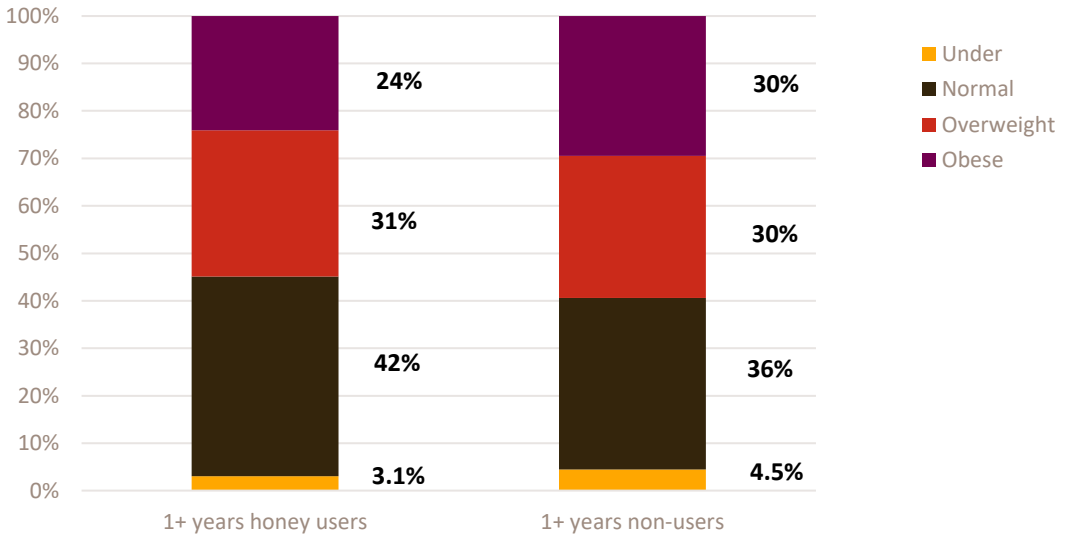
Women honey users 25-34 years:

- 11.4% report acid reflux or GERD (compared to 11.9% among non-users)
- 6.7% report GI/digestive disorders (compared to 4.9% among non-users)
- 9.1% report lactose intolerance (compared to 6.5% among non-users)
- 5.2% report irritable bowel syndrome (similar to 6.2% among non-users)

Source: The NPD Group/National Eating Trends®, June 2013–May 2018

Honey users are more likely normal weight, similar in overweight, and less likely to be at the extremes (either underweight or obese).*

June 2013–May 2018



Source: The NPD Group/National Eating Trends®, June 2013–May 2018

*Body mass index calculated using self-reported weight and height.

<18.5 = underweight

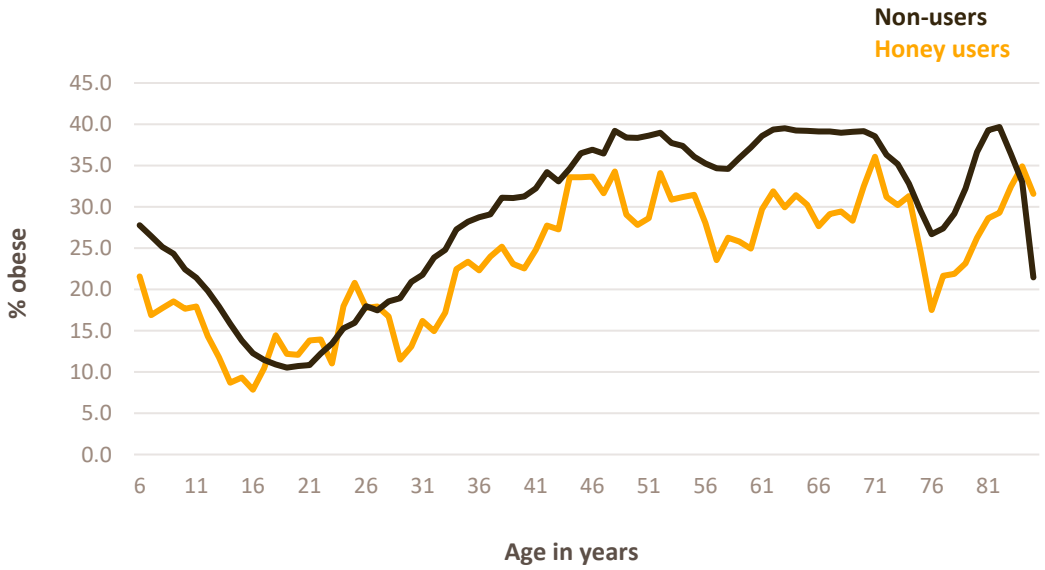
25-29 = overweight

>29 = obese

Age as a confounder is not adjusted for.

Percent of honey users who are obese is generally lower than among non-users.

June 2012–May 2018



Source: The NPD Group/National Eating Trends®, June 2012–May 2018

Because these are cross-sectional associations, it cannot be determined whether people with higher body weight avoid honey or whether eating honey plays any role in body weight management.

Data points are 5-year rolling age groupings, e.g. average for ages 1-6 is shown as 6 on the axis.

CHARACTERIZE OVERALL DIET QUALITY OF HONEY USERS

3. Characterize overall diet quality of honey users.

- Honey eaters in the U.S. eat several foods associated with overall better diet quality relatively more often than non-eaters, while balancing sweets.
- People who eat honey eat relatively more of several foods associated with Mediterranean diet patterns, like nuts, seeds, whole grains and olive oil.
- People who eat honey also eat relatively more sweet foods, including candy/desserts, as well as fruits, so making their sweet choices count nutritionally is important.

Keep in mind…

- Qualitative assessment of overall diet quality among honey users compared to non-users is based on selected foods as indicators related to the USDA Healthy Eating Index and foods uniquely characteristic of a Mediterranean style eating pattern (i.e. olive oil and nuts/seeds).
- Data describe directional comparisons based on eatings per capita/week (i.e. frequency, not amounts per week).

Source: The NPD Group/National Eating Trends®, June 2013–May 2018

The Healthy Eating Index (HEI) is a measure of diet quality used to assess how well a set of foods aligns with key recommendations of the *Dietary Guidelines for Americans*. The *Dietary Guidelines for Americans* is designed for nutrition and health professionals to help individuals (ages 2 years and older) and families to consume a healthful and nutritionally adequate diet.

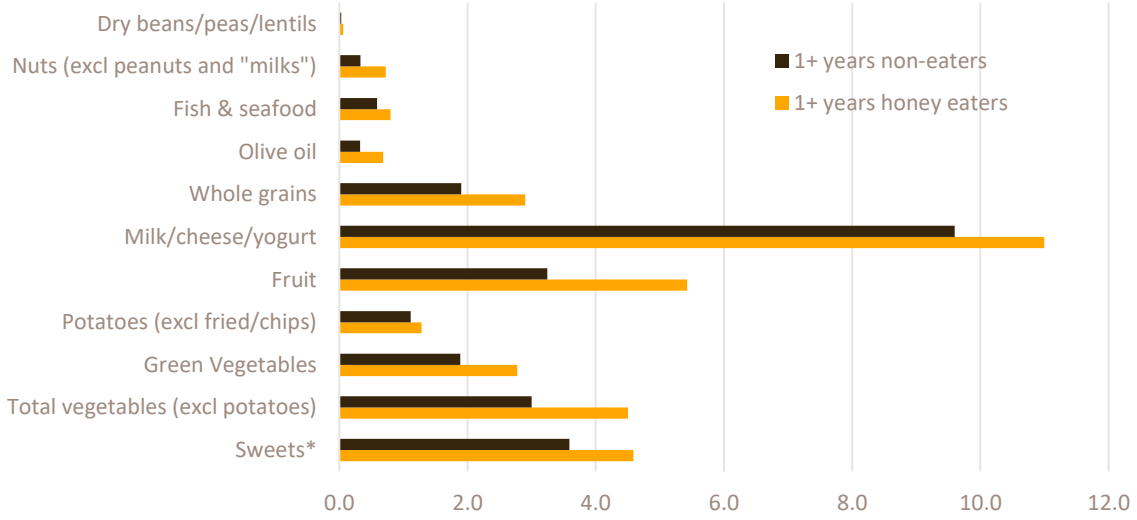
7 food categories from the USDA Healthy Eating Index and sweets were assessed using NET ® data based on per capita eatings/week.

HEI-2015[1] Components and Scoring Standards

Component	Maximum points	Standard for maximum score	Standard for minimum score of zero
Adequacy:			
Total Fruits[2]	5	≥0.8 cup equivalent per 1,000 kcal	No Fruit
Whole Fruits[3]	5	≥0.4 cup equivalent per 1,000 kcal	No Whole Fruit
Total Vegetables[4]	5	≥1.1 cup equivalent per 1,000 kcal	No Vegetables
Greens and Beans[4]	5	≥0.2 cup equivalent per 1,000 kcal	No Dark-Green Vegetables or Legumes
Whole Grains	10	≥1.5 ounce equivalent per 1,000 kcal	No Whole Grains
Dairy[5]	10	≥1.3 cup equivalent per 1,000 kcal	No Dairy
Total Protein Foods[4]	5	≥2.5 ounce equivalent per 1,000 kcal	No Protein Foods
Seafood and Plant Proteins[4,6]	5	≥0.8 ounce equivalent per 1,000 kcal	No Seafood or Plant Proteins
Fatty Acids[7]	10	(PUFAs + MUFAs) / SFAs ≥2.5	(PUFAs + MUFAs)/SFAs ≤1.2
Moderation:			
Refined Grains	10	≤1.8 ounce equivalent per 1,000 kcal	≥4.3 ounce equivalent per 1,000 kcal
Sodium	10	≤1.1 grams per 1,000 kcal	≥2.0 grams per 1,000 kcal
Added Sugars	10	≤6.5% of energy	≥26% of energy
Saturated Fats	10	≤8% of energy	≥16% of energy

Among the general population 1+ years of age, honey users consumed recommended foods at a relatively higher frequency but also ate more sweets

June 2013–May 2018



Eatings per capita/week

Reflects eater penetration and frequency of use

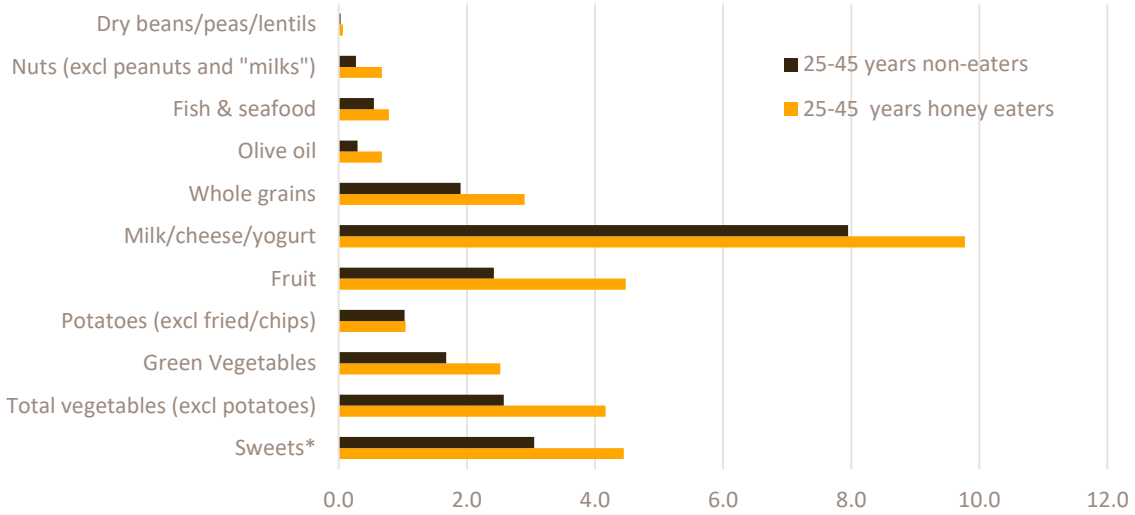
Source: The NPD Group/National Eating Trends®, June 2013–May 2018

Trends are similar for women and men.

**Sweets = cookies, brownies, pie, cake, candy, desserts, ice cream, pudding, sweet muffins, donuts, coffee cake, quick bread.*

Among the 25 to 45 year old cohorts, honey users consumed recommended foods at a relatively higher frequency but also ate more sweets

June 2013–May 2018



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APPENDIX

What is NET ®?

National Eating Trends® (NET ®) is the only nationally representative source of data on individual food intakes of adults and children that collects a full week of food records to reflect typical use. This survey, conducted by The NPD Group, is updated on a rolling basis with continuous reporting among about 13,000 individuals annually. Since the NET ® surevey is more current and provides more days of intake, NET ® complements government intake data that is collected as part of NHANES. NET ® offers the advantages of providing more timely updates on data and better typical use compared to other surveys. However, NET ® does not measure actual amounts per serving and health indices are self-reported. NET ® data is collected via a web-based journal and a post-journal survey that asks about attitudes and personal characteristics of individuals who participate. The reporting scope includes all meals and between meal occasions, in and away from home, for all foods and beverages including water, and for all uses (i.e., end dish, additions, ingredients, cooking aids, marinades). The data reported here are primarily from the 5-year period, May 2013 through May 2018.

NPD Group/National Eating Trends®

Methodology

Data Collection	• Web-based Journal • Post Journal survey (attitudes, personal characteristics)
Reporting Period	• Up to 7 days • Continuous daily reporting; every day a new wave begins their reporting period
Sample Design	• Individual sample; children and adults (all ages)
Reporting Scope	• All meals and between meal occasions • In and away from home • All foods, beverages including water • All uses (end dish, additions, ingredients, cooking aids, marinades)
Annual Yield	• ~13,000 individuals • 250,000+ occasions • 800,000+ food & beverage transactions
Weighting	• Weighted to U.S. Census targets for age, gender, and other key demos

Key Measures

Eatings	• Represents one instance of one person eating one item • Measures frequency; does not reflect the amount consumed at the occasion
Annual Eatings per Capita	• Average number of times an item is consumed in a given year, across users & non-users
Occasions	• Reflects reported 'occasions' on a given day by an individual (meals and snacks)
Annual Occasions per Capita	• Average number of annual occasions by an individual
Sample Individuals	• The number of people in the data set regardless of whether or not they ate or drank a particular item
Index	Relative measure indicating if a group is well developed or underdeveloped compared to the rest of the population: • Index ≤ 80 is below average • Index ≥120 is above average

Sample size of honey eaters (from a survey of approx. 13,000 individuals annually) for 2 years ending May 2018 is:

1+ years of age:

N=1760 honey eaters (669 men; 1091 women)

25-45 years of age:

N=288 honey eaters (101 men; 187 women)

Up to 6 years of data were combined as needed to achieve stable sub-group analyses.

How consumers report using honey*

In-home
categories and potential examples

Eaten as such	Added to	Used in a recipe
Spoon of honey or slice of comb	On carriers, like breads or cereal	Home made cereal, like granola
From a honey stick	Stirred into a beverage, like tea	In homemade baked goods, like bread
	As a dip, like an accompaniment to chicken nuggets	In a homemade sauce

Away from home
categories and potential examples

Eaten as such	Added to
Spoon of honey or slice of comb	On carriers, like breads or cereal
From a honey stick	Stirred into a beverage, like tea
	As a dip, like an accompaniment to chicken nuggets

*Focus is on **consumer** honey consumption behavior, not honey used in commercially prepared foods. So, honey used by the consumer to make homemade granola is reported, but honey used in a commercially boxed ready to eat cold cereal is not reported as honey used by the consumer.