

OECD Health Statistics 2019

Definitions, Sources and Methods

Consumption of vegetables and fruits, daily – Survey data

Proportion of the population aged 15+ eating **vegetables** (excluding potatoes and juice) at least once per day.

Proportion of the population aged 15+ eating **fruits** (excluding juice) at least once per day.

The main data sources are national health surveys. A number of European countries have implemented the relevant module recommended in the European Health Interview Survey.

Although most countries ask questions of the type “How often do you eat fruits/vegetables”, which provide information on **frequency of consumption**, some countries (such as Australia, Korea and New Zealand) ask question of the type “How many serves of fruit/vegetables do you usually eat each day”, which provide information on **quantity of consumption**. Data derived from quantity-type questions are indicated as “d”, and data may be overestimated when compared with other countries.

Sources and Methods

Australia

Source:

2017: Australian Bureau of Statistics. National Health Survey: First Results, 2017-18 - Australia. ABS Cat. No. 4364. Canberra: ABS. Customised data report.

2014: Australian Bureau of Statistics. National Health Survey: First Results, 2014-15 - Australia. ABS Cat. No. 4364. Canberra: ABS.

2011: Australian Bureau of Statistics. Australian Health Survey: Updated Results, 2011-12 - Australia. ABS Cat. No. 4364.0.55.001. Canberra: ABS.

Until 2007: Australian Bureau of Statistics. National Health Survey, 2007-08: Summary of results. ABS Cat. No. 4364.0 (re-issue). Canberra: ABS (and previous surveys in 2004-05 and 2001).

Coverage: Data refer to the population aged 15 years old and over.

Methodology:

- Data are self-reported and based on the question ‘How many servings of vegetables [or fruit] do you usually eat each day?’ The options for the respondent include ‘1 serve’, ‘2 serves’, ‘3 serves’, ‘4 serves’, ‘5 serves’, ‘6 serves or more’, ‘Less than one serve’ or ‘Does not eat vegetables’. Consumption of fruits or vegetables is based on all persons who reported eating any fruits or vegetables (‘Less than one serve’ and ‘1 serve’ or more).

i Data are derived from quantity-type questions, and may thus be overestimated when compared with other countries.

- Data indicate all persons who report eating fresh, frozen or tinned vegetables or fruit.

- Data do not include fruit or vegetable juices.

- The year reported is the financial year 1 July to 30 June (e.g. 2014-15 is reported as 2014).

i **Deviation from the OECD definition:** Data do not match the definition as vegetables may include potatoes.

Further information: <http://www.abs.gov.au/>.

Austria

Source: Statistics Austria, Austrian Health Interview Survey 2014.

Coverage: Population aged 15 years old and over in private households.

Methodology: “How often do you eat fruits, excluding juice? / How often do you eat vegetables or salad, excluding juice and potatoes?” Response categories include: 1. Once or more a day; 2. 4 to 6 times a week; 3. 1 to 3 times a week; 4. Less than once a week; 5. Never.

Further information: http://www.statistik.at/web_en/.

Belgium

Source: Scientific Institute of Public Health, Direction Public Health and Surveillance, Health Interview Survey.

Coverage: Population aged 15 years old and over.

Methodology:

Fruits:

The question is self-assessed:

2001: “How many times do you eat or drink fruit?”

2004: “How many times do you eat fresh fruit?”

2008: “How often do you eat fruits?”

2013: “How often do you eat fruits, excluding juice?”

Vegetables:

The question is self-assessed:

2004: “How many times do you eat prepared or raw vegetables (no dried pulse)?”

2008 and 2013: “How often do you eat vegetables or salad (excluding juice and potatoes)?”

- Data not available for 2001.

Further information: <https://www.wiv-isp.be/epidemiologie/hisia/index.htm>.

Canada

Source: Statistics Canada, Canadian Community Health Survey (CCHS), custom tabulation.

Coverage: Population aged 15 years old and over.

Methodology:

- As of 2007, the CCHS became an annual survey (prior to this date it was a biennial survey) of persons aged 12 years old and over, living in private dwellings, half of whom are interviewed in person, and the other half by telephone. It excludes persons living on Indian Reserves or Crown lands, residents of institutions, full-time members of the Canadian Armed Forces and residents of certain remote regions. The CCHS covers approximately 98% of the Canadian population aged 12 years old and over. Data are collected directly from respondents.

- Prior to 2015, there were a series of questions using the “How often do you eat” format, except for the last question on other vegetables which uses the “How many servings” format. They are as follows (note that the responses to the first and fourth questions are not included in the calculations):


1. How often do you usually drink fruit juices such as orange, grapefruit or tomato? (For example: once a day, three times a week, twice a month).
2. Not counting juice, how often do you usually eat fruit?
3. How often do you usually eat green salad?
4. How often do you usually eat potatoes, not including french fries, fried potatoes, or potato chips?
5. How often do you usually eat carrots?
6. Not counting carrots, potatoes, or salad, how many servings of other vegetables do you usually eat?

- From 2015, all questions follow a “How many times” format and deal with consumption within the past month. Other aspects of the questions were also changed. They are as follows (note that responses to the first and fifth question are not included in the calculation):

1. In the last month, how many times per day, per week or per month did you drink 100% PURE fruit juices, such as pure orange juice, apple juice or pure juice blends? Do not include fruit-flavoured drinks with added sugar or fruit punch.
2. In the last month, not counting juice, how many times did you eat fruit? Please remember to include frozen, dried or canned fruit.
3. In the last month, how many times did you eat dark green vegetables such as broccoli, green beans, peas and green peppers or dark leafy greens including romaine or spinach? Please remember to include frozen or canned vegetables and vegetables that were cooked in soups or mixed in salad.
4. In the last month, how many times did you eat orange-coloured vegetables such as carrots, orange bell pepper, sweet potatoes, pumpkin or squash? (Please remember to include frozen or canned vegetables and vegetables that were cooked in soups or mixed in salad).

5. In the last month, how many times per day, per week or per month did you eat potatoes that are not deep-fried?
6. Excluding the green and orange vegetables as well as the potatoes you have already reported, in the last month, how many times did you eat OTHER vegetables? Examples include cucumber, celery, corn, cabbage and vegetable juice.

- Non-responses were removed from the calculation for all years.

 **Break in time series in 2015:** As a result of the 2015 redesign, the Canadian Community Health Survey (CCHS) has a new collection strategy, a new sample design, and has undergone major content revisions. With all these factors taken together, caution should be taken when comparing data from previous cycles to data released for the 2015 cycle onwards.

Further information: Canadian Community Health Survey, <http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&lang=en&db=imdb&adm=8&dis=2&SDDS=3226>

Chile

Source: Ministry of Health (MINSAL).

2016-2017: **Ministry of Health, National Health Survey** (“Encuesta Nacional de Salud”) ENS 2016-2017.

2009: **Ministry of Health, National Health Survey** (“Encuesta Nacional de Salud”) ENS 2009-2010 - Final Report.

2006: **National Survey of Quality of Life 2006** (“Encuesta Nacional de Calidad de Vida 2006”) - Final Report (“Informe Final Encuesta Calidad de Vida y Salud 2006, Julio 2007”).


Coverage: Nationwide.

Methodology:

2016-2017: The question was self-assessed: “In a typical/ordinary week, how many days do you eat fruit?” and “In a typical/ordinary week, how many days do you eat vegetables or vegetable salads? (Do not consider potato and beans”).

2009: The question was self-assessed: “In a typical/ordinary week, how many days do you eat fruit?” and “In a typical/ordinary week, how many days do you eat vegetables?”.

2006: The question was self-assessed: “In the last week, how often did you eat fruits?” and “In the last week, how often did you eat vegetables?”.

 **Break in time series in 2009** due to a change in source and methodology.

Further information:

2009: <http://www.redsalud.gov.cl/portal/url/item/99c12b89738d80d5e04001011e0113f8.pdf>.

2006: <http://epi.minsal.cl/epi/html/sdesalud/calidaddevida2006/index.htm> (in Spanish).

Czech Republic

Source: Eurostat EHIS 2014 survey.

Coverage: Population aged 15 years old and over.

Methodology:

Fruits: Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. “How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

Vegetables: Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. “How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

Denmark

Sources:

2017: “Den Nationale Sundhedsprofil”, The Danish Health Authority.

2014: Eurostat EHIS 2014 survey.

Before 2014: National Institute of Public Health (NIPH/SIF), Denmark's Health Interview Survey (SUSY).

Coverage:

2014: Population aged 15 years old and over.

Before 2014: Population aged 16 years old and over.

Methodology:

2017:

- **Fruits:** Questions for 2010, 2013 and 2017 are as follows: “How many portions of fruit do you usually eat? 1 portion= 1 piece or 1 dl – include fruit-porridge. 5-6 times a day, 3-4 times a day, 1-2 times a day, 5-6 times a week, 3-4 times a week, 1-2 times a week, none.”

- **Vegetables:** Data are not available.

2014:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. “How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

- **Vegetables:** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. “How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

Before 2014:

- **Fruits:**

- The increase observed in the proportion of people who eat fruit daily in 2010 may be due both to real increases and a change in question wording.

- The questions asked in 2010 and 2013 were: “How many portions of fruits do you usually eat?” 1 portion = 1 piece or 1 dl – include fruit compote and fruit porridge. Replies include: “More than 6 a day/ 5-6 a day / 3-4 a day / 1-2 a day / 5-6 a week/ 3-4 a week/ 1-2 a week/ none”.

- The question asked in 2000 and 2005 were: “How often do you usually eat the following: Fruit, such as apples, bananas, oranges, etc. Replies include: Every day - Several times a day / Almost every day / A few times a week / Once a week / Less than once a week / Never - Very rarely/ Do not know. ”

- **Vegetables:**

❗ 2010 and 2013 results are not comparable to results from previous studies. This is due to a shift in the data collection method from interview to paper and some differences in the question and response categories. Therefore, it is not possible to say anything about developments in the period 2005-2010.

- The question asked in 2000 and 2005 was: “How often do you eat salad / raw vegetables? Every day – Several times a day / Almost every day / A couple of times a week / Once a week / Less than once a week / Never – Very rarely. ” and “How often do you eat cooked vegetables? Every day - Several times a day / Almost every day / A couple of times a week / Once a week / Less than once a week / Never - Very rarely. ”

- The figures for 2000 and 2005 correspond to the proportion of respondents who daily or almost daily eat salad/raw vegetables or cooked vegetables.

- The questions asked in 2010 and 2013 were: “How often do you eat the following kinds of vegetables? (mixed lettuce salad, raw vegetables / Other raw vegetables / Prepared vegetables (boiled, baked, fried, boiled together or wok dishes).” Replies include: “More than once a day/ 5-7 times a week / 3-4 times a week / 1-2 times a week / Never - Very rarely.”

- The figures in 2010 and 2013 correspond to the proportion of respondents who daily or almost daily eat one of the three types of vegetables.

🔪 **Break in time series:** Break in 2010 due to a change in the phrasing of the question.

Further information: <http://www.danskernessundhed.dk>.

Estonia

Source: Eurostat, National Institute for Health Development - Estonian Health Interview Survey (EstHIS), European Health Interview Survey 1st wave (2006) and 2nd wave (2014).

Coverage: Data refer to the population aged 15 to 84 years old.

Further information: <https://www.tai.ee/en/>, in the Health Statistics and Health Research Database available at <http://pxweb.tai.ee/PXWeb2015/pxweb/en/05Uuringud>.

Finland

Source: National Institute for Health and Welfare (THL).

2015-2017: “Regional Health and Wellbeing study”, Jukka Murto.

Up until 2014: “Health Behaviour and Health among the Finnish Adult Population”, Satu Helakorpi.

Coverage:

- **2015 onwards:** Population aged 20 to 64 years old.

- Up until 2014: Population aged 15 to 64 years old.

Methodology:

 **Break in time series in 2015:**

2015 onwards:

- A random sample of 38000 of the population aged 20 years or older. The average response rate is 54%.
- Question: "How often have you eaten and drunk the following types of food or drink over the past 7 days? Fresh vegetables or green salad/fruit or berries."

Up until 2014:

- Annual postal survey for a random sample of the population of Finnish adults aged 15-64 years old.
- The sample size is 5000. The average response rate was 72%.
- Question: "In the past week, how often have you used the following foods and drinks? Fresh vegetables/root crops; fruits/berries."

Further information: http://www.thl.fi/en_US/web/en.

France

Sources:

2014: Eurostat EHS 2014 survey.

2012: Institut de recherche et documentation en économie de la santé (Irdes). Health, Care, and Social Protection survey (ESPS).

Coverage: Population aged 15 years old and over.

Methodology:

2014:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHS question FV1. "How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never."

- **Vegetables:** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHS question FV3. "How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never."

2012:

- "How often do you eat fruits (excluding juices): once or more a day (how many portions per day?); between 4 and 6 times a week; between 1 and 3 times a week; less than once a week; never."

- "How often do you eat vegetables or salad (excluding juices and potatoes): once or more a day (how many portions per day?); between 4 and 6 times a week; between 1 and 3 times a week; less than once a week; never."

Further information:

2014: <http://ec.europa.eu/eurostat/documents/3859598/5926729/KS-RA-13-018-EN.PDF/26c7ea80-01d8-420ebdc6-e9d5f6578e7c>.

2012: <http://www.irdes.fr/recherche/enquetes/esps-enquete-sur-la-sante-et-la-protection-sociale/questionnaires.html>.

Germany

Sources:

2014: Eurostat EHS 2014 survey.

2012: Robert Koch-Institute (RKI), GEDA Telephone Health Survey 2012; Robert Koch-Institute 2014, *Beiträge zur Gesundheitsberichterstattung des Bundes: Daten und Fakten: Ergebnisse der Studie „Gesundheit in Deutschland aktuell 2012“*, Berlin, p. 103-109.

2010: GEDA Telephone Health Survey 2010; Robert Koch-Institute 2012, *Beiträge zur Gesundheitsberichterstattung des Bundes: Daten und Fakten: Ergebnisse der Studie „Gesundheit in Deutschland aktuell 2010“*, Berlin, p. 126-133.

2009: GEDA Telephone Health Survey 2009; Robert Koch-Institute 2011, *Beiträge zur Gesundheitsberichterstattung des Bundes: Daten und Fakten: Ergebnisse der Studie „Gesundheit in Deutschland aktuell 2009“*, Berlin, p. 109-115.

Coverage:

2014: Population aged 15 years old and over.

Before 2014: Population aged 18 years old and over.

Methodology:

2014:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. "How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never."

- **Vegetables:** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. "How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never."

Before 2014: GEDA is a telephone health survey, conducted by the Robert Koch-Institute, which is representative of the German-speaking adult population in private households provided with fixed phone lines.

- In GEDA 2009, more than 21200 persons were interviewed from July 2008 to June 2009. In GEDA 2010, 22000 persons were interviewed from September 2009 to July 2010. In GEDA 2012, 26000 persons were interviewed from February 2012 to March 2013.

- The information on the consumption of fruits and vegetables is self-assessed.

- Fruit consumption: Question: "How often do you eat fruits? Every day / At least once a week / Less than once a week / Never-Do not know."

- Vegetable consumption: Question "How often do you eat vegetables? Excluding potatoes. Every day / At least once a week / Less than once a week / Never-Do not know."

- GEDA 2009: In the question for vegetable consumption it is not explicitly mentioned that the potatoes should be excluded. However, this does not seem to be problematic, as in general the German population does not consider potatoes as vegetables.

Further information: <http://www.rki.de> and <http://www.geda-studie.de>.

Greece

Sources:

2014: Health Survey conducted by the **Hellenic Statistical Authority - ELSTAT**.

2009: National Health Interview Survey conducted by the **Hellenic Statistical Authority – ELSTAT**.

Methodology:

- In 2009 and 2014, Health Surveys' samples were 6172 and 8223 individuals aged 15+, respectively.

- The frequency of the survey is every five years. The type of interview is PAPI.

Coverage: Population aged 15 years old and over.

Deviation from the OECD definition: Data include fresh fruit juice for fruits consumption (excluded are juices prepared from concentrated or processed fruits or juices artificially sweetened), as well as vegetable juice for vegetable consumption (included are vegetable soups and legume. Excluded are potatoes and juices prepared from concentrated or processed vegetables).

Further information:

2014: <http://www.statistics.gr/el/statistics/-/publication/SHE22/2014>.

2009: <http://www.statistics.gr/el/statistics/-/publication/SHE22/2009>.

Hungary

Sources:

2014: **Hungarian Central Statistical Office (KSH)**, EHIS 2014 (ELEF2014 in Hungarian).

2009: **Hungarian Central Statistical Office (KSH)**, EHIS 2009 (ELEF2009 in Hungarian).

Coverage: Population aged 15 years old and over.

Methodology:

- Question asked in the survey: How often do you eat fruits? Twice or more a day/once a day/ Less than once a day but at least four times a week/ Less than four times a week, but at least once a week/ Less than once a week/ Never

- Same question for the consumption of vegetables.

Further information: <http://www.ksh.hu/elef/index.html> (in Hungarian).

Iceland

Sources:

As of 2014: **The Directorate of Health in Iceland:** Yearly internet survey.

2010: **The Directorate of Health in Iceland:** *National Dietary Survey 2010-2011*.

2002: **The Icelandic Nutrition Council:** *National Dietary Survey 2002*.

Methodology:

As of 2014: A yearly internet survey of individuals aged 18+ conducted for the Directorate of Health.


- Sample sizes: 2014: 2876, response rate 58,9%; 2015: sample size 2819, response rate 60,9%.

- Question (unofficial translation): How often do you consume the following food? a) Fruits or berries? b) Vegetables (fresh, frozen, boiled or prepared)? Response options: Once a day; twice a day; three times a day or more often; once per week; 2-3 times per week; 4-6 times per week; less than once a week; never.

2010: A random sample of the Icelandic population aged 18-80 years old was taken into account.

- Sample size: 2000, response rate 68.6%. There were a few food frequency questions, including frequency of fruit and vegetable consumption, following a 2x24-hour dietary recall in a telephone interview.

2002: The same question was asked "Can you estimate how often you have usually eaten the following foods? Keep the last three months in mind. Fruit: per day, per week, per month, never. Vegetables: per day, per week, per month, never." The questions were part of a dietary survey, a 24-hour dietary recall in a telephone interview.

 **Break in time series in 2014**: Previously submitted data covered the years 2002 and 2010. These data came from the National Dietary Survey. This survey has not been carried out since then and is not foreseen in the near future. Therefore, it was decided to start using data from the abovementioned yearly surveillance on determinants of health, which started in 2014. Since the questions are not exactly the same, and the method of carrying out the survey is different, it was decided that a break in series should be indicated.

Ireland

Source: Annual Healthy Ireland Survey, commissioned by the **Department of Health** as part of the Healthy Ireland initiative. The questions used were standard EHIS questions.


Coverage:

2015: Data refer to adults aged 15 years and over.

Methodology:

- The Healthy Ireland Survey is an interviewer-administered survey with interviews conducted on a face-to-face basis with individuals aged 15 and over. This survey uses a multi-stage probability sampling process and achieved a response rate of 61%. The overall sample size for the 2015 survey was 7,539.

- The information for fruit /vegetable intake is taken from respondents' replies to the standard EHIS questions on food and vegetable intake.

 **Deviation from the definition**: Data for 2017 differ from the standard definition as juice consumption was included.

Further information:

- Healthy Ireland Survey 2015: The results of the first Healthy Ireland Survey were published in 2015 and are available at <http://health.gov.ie/wp-content/uploads/2015/10/Healthy-Ireland-Survey-2015-Summary-of-Findings.pdf>.

Israel

Sources:

2017: **Israel Center for Disease Control (ICDC), Ministry of Health. National KAP survey** (Knowledge, Attitudes and Practices) conducted periodically since 2002 by the **Israel Center for Disease Control (ICDC)** and the Department of Health Education and Promotion, **Ministry of Health**.

2016: **Israel Center for Disease Control (ICDC), Ministry of Health and Ministry of Culture and Sport. National Survey of Physical Activity in Adults 2016**.

2014: **Israel Center for Disease Control (ICDC), Ministry of Health. Israel National Health Interview Survey INHIS 2014**.

2008: **Israel Center for Disease Control (ICDC)** and the Department of Health Education and Promotion, **Ministry of Health. National KAP survey** (Knowledge, Attitudes and Practices) conducted biannually since 2002.

1999: **Israel Center for Disease Control (ICDC)** and the **Ministry of Health**, Department of Food and Nutrition Services, The First Israeli National Health and Nutrition (MABAT) Survey.

Coverage:

2017: The National KAP Survey (Knowledge, Attitudes and Practices) is based on a nationally-representative population sample of the non-institutionalised civilian population aged 21 and above.

2016: The National Survey of Physical Activity is based on representative population sample aged 18 and over. However, the data presented for 2016 are for persons aged 21 and over, in order to be consistent with previous data from INHIS 2014.

2014: INHIS survey based on representative population sample aged 21 and over.

2008: Surveys based on national representative samples of non-institutionalised civilian population. Until (and including) KAP 2008, survey samples included ages 18 years old and above.

1999: Data based on national survey of adults aged 25-64 years old.


Methodology:

2017: The KAP 2017 survey, a population-based telephone survey, was carried out on a sample of 3,214 (only for the first section of the survey) Israelis aged 21 years and over.

- Note: The KAP surveys in previous years were based on samples of land-line telephones only. In the KAP 2017 survey, the sample included both land-lines and mobile telephones. This needs to be taken into account when drawing comparisons or monitoring trends over time.

- Fruit and vegetable consumption was based on frequency of consumption.

2016: The National Physical Activity Survey was a population-based telephone survey conducted on a representative sample of 3,368 Israelis aged 18 and over.

 **Break in time series in 2016**: The survey sample included both landlines and mobile telephone for the first time in 2016. This needs to be taken into account when drawing comparisons or measuring trends over time.

The data reported in the OECD database are based on 3,241 Israelis aged 21 and over, in order to be consistent with data reported in previous years from other surveys.

2014: The INHIS 2014 survey is the third in a series of population-based National Health Interview Surveys. Previous surveys were conducted in 2003-2004 and 2007-2010. The INHIS 2014 survey is a telephone survey on a representative sample of 6,000 Israelis aged 21 and above. Fruit and vegetable intake was based on quantity, i.e. number of fruits/vegetables consumed per day.

2008: The KAP survey is a series of national, population-based telephone surveys generally conducted biannually on representative samples of the population. Samples include at least 3,000 residents. The KAP 2010 survey was carried out on a sample of 4,395 Israelis aged 21 years old and above. Vegetable and fruit intake was based on quantity - number of fruits/vegetables consumed per day.

1999: The survey was conducted through face-to-face interviews in 1999-2000 on a population sample of 3,246 residents (non-institutionalised civilians). The survey includes questionnaire (demographic, health, nutrition, health behaviors) and anthropometric measurements. Food intake data based on 24 hour dietary recalls. Fruit and vegetable intake is derived from the 24-hour recall.

Further information: https://www.health.gov.il/English/MinistryUnits/ICDC/Health_Surveys/Pages/KAP.aspx.

Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Italy

Source: ISTAT, Istituto Nazionale di Statistica (National Institute of Statistics). Survey “Aspect of daily living.”

Coverage: Population aged 15 years old and over.

Methodology:

- Survey question: How often do you eat the following types of food? (one answer for each line):

- Raw and cooked greens (spinach, lettuce, chicory, cabbage, broccoli).

pumpkin, cauliflower, peas and other fresh legumes.

- Fruit.

- Possible responses: More than once a day, once a day, sometimes during the week, less than once a week, never.

Further information: <http://en.istat.it/>.

Japan

Data not available.

Korea

Sources: Ministry of Health and Welfare and Korea Centers for Disease control and Prevention, Report on the National Health and Nutrition Examination Survey.

Methodology:

- The survey used the 24-hour recall method asking for the quantity of all food eaten the previous day.

- Questionnaire: “How much did you eat the previous day? Please indicate all kinds of food you have eaten and the quantity for each kind of food.”

i Data are derived from quantity-type questions, and may thus be overestimated when compared with other countries.

Further information: <http://www.mohw.go.kr/eng/index.jsp>, and <http://knhanes.cdc.go.kr/knhanes/index.do>.

Latvia

Source: Centre for Disease Prevention and Control of Latvia, Health Behaviour Survey among Latvian Adult Population.

i **Deviation from the definition:** Data for 1998-2014 are for the age group 15-64 years old, data for 2016 are for the age group 15-74 years old.

Lithuania

Source: Statistics Lithuania, Health Interview Survey, 2014.

Coverage: Daily consumption of fruits and vegetables by the population aged 15+.

Luxembourg

Source: Eurostat EHIS 2014 survey.

Coverage: Population aged 15 years old and over.

Methodology:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. "How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never."
- **Vegetables:** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. "How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never."

Mexico

Source: Ministry of Health. National Institute of Public Health. National Health and Nutrition Survey (ENSANUT 2006, 2012).

Coverage: Data cover the population aged 15-59.

Methodology:

- Results are from the NHNS-2012 with a household response rate of 87%, with complete data from 50528 households, where 96031 individuals selected by age were interviewed. The survey is a probabilistic population-based survey with a multi-stage and stratified sampling and representative of the national and state level.
- Dietary data from the ENSANUT-2012 were obtained in a sub-population sample of 5081 individuals interviewed. The survey population is representative of adults.
- **Dietary data:** The dietary information was obtained through the application of a semi-quantitative food frequency questionnaire (FFQ) which collected information about food for the 7 days prior to taking the questionnaire in order to obtain data on the current diet of the population. The FFQ was designed to evaluate the diet of each age group in the Mexican population. It asked questions related to the consumption of 12 food groups, among them, the group for vegetables and fruits. This category was composed of a total of 16 types of fruit and 18 types of vegetables. Plants that have edible parts are considered to be vegetables. The following are examples: leaves (cabbage, lettuce, spinach, etc.), stems (celery, etc.), shoots (asparagus, etc.), flowers (cauliflower, artichoke, etc.), pods (green beans, etc.), roots (carrots, beets, etc.), bulbs (onions, garlic, etc.), fruits (especially those fruits in Mexico that culturally are considered vegetables, such as tomatoes, cucumbers, avocados, etc.) and green beans (peas, beans). The main exceptions are mature seeds of plants with stems or grasses (such as maize, wheat, rice, oats, etc.) and nuts from pods-like beans, lentils, chickpeas and soy which are known as legumes, and their protein intake is very high. **i** At present, the daily consumption of vegetables in Mexico is overestimated, as the intake of onion and chili in food is classified as vegetable consumption.
- Fruits are considered to be food that are botanically defined as the fleshy parts of trees or edible plants that contain fresh seeds, except those classified as vegetables (as is the case of avocado and tomato). Potatoes are not included as part of the vegetable group because of their high starch content, low dietary fibre and other micronutrients.
- To estimate the consumption of at least one fruit or vegetable at least once a day, we first calculate a frequency of consumption. However, there are two constraints to obtain the exact frequency of the total number of days each food

is consumed. The first constraint is that we cannot identify whether the consumption of foods in each group overlap in a day, so we will assume that the days are independent. The second is that the variable that reports the number of days each food is consumed is grouped into a count variable with the following frequencies: takes the value of 1 if never consumed; the value of 2 if you consume one day a week; 3 if you consume 2 to 4 days; 4 if you consume 5 to 6 days; and finally the value of 5 if you consume every day of the week. This does not allow the exact count of the number of days of the week that each food is consumed. To overcome this, we conducted two scenarios taking into account the lower and upper limits of the categories 2-4 days and 5-6 days. The average value of both scenarios is the one reported in the tables. The results are:

1. Proportion of the Mexican population between 15 and 59 years old who consumed fruits at least once a day.
 2. Proportion of the Mexican population between 15 and 59 years old who consumed vegetables at least once a day.
- Results for 2012 are estimates developed by the Economic Analysis Unit of the Mexican Ministry of Health to fulfil OECD definition of consumption of fruits and vegetables.
 - Results for 2006 are registered as been based upon ENSANUT 2006 but no official publication was found where the numbers were published.

Further information: http://ensanut.insp.mx/analisis_publicados.php#.VuxGZOLhCUI (in Spanish).

Netherlands

Sources: Statistics Netherlands, Annual Health Interview Survey.

2014: Eurostat EHIS 2014 survey.

Coverage: Population aged 15 years old and over for all years.

Methodology:

- **Fruits (for all years):** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. "How often do you eat fruits, excluding juice made from concentrate?"
 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never."
- **Vegetables (for all years):** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. "How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate?"
 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never."

New Zealand

Source: Ministry of Health.

2012 onwards: New Zealand Health Survey 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-17 and 2017-18.

2009: Adult Nutrition Survey (ANS) 2008-09.

2007: New Zealand Health Survey (NZHS) 2006-07.

2003: NZHS 2002-03.

Methodology:

- Interviews are carried out from July to June (of the following year), collecting information on 13869 individuals in 2017-18, through face-to-face interviews (see the indicator on "Perceived health status" for further details on previous surveys' dates and samples).
- **Fruit question:** "On average how many servings of fruit do you eat per day? Please include all fresh, frozen, canned and stewed fruit. Do not include fruit juice or dried fruit." A serving equals 1 medium piece or two small pieces of fruit or half a cup of stewed fruit. For example, 1 apple and 2 small apricots = 2 servings. Response categories were: "I don't eat fruit, less than 1 per day, 1 serving per day, 2 servings per day, 3 servings per day, 4 or more servings per day, Don't know."
- **Vegetables question:** "On average how many servings of vegetables do you eat per day? Please include fresh, frozen and canned vegetables. Do not include vegetable juices." A serving equals one potato/kumara, or half a cup of cooked vegetables or 1 cup of salad vegetables. For example, 2 medium potatoes + ½ cup of peas = 3 servings. Response categories were: "I don't eat vegetables, less than 1 per day, 1 serving per day, 2 servings per day, 3 servings per day, 4 or more servings per day, Don't know."

i Data are derived from quantity-type questions, and may thus be overestimated when compared with other countries.

2009: The 2008-2009 Adult Nutrition Survey was carried out from October 2008 to October 2009, collecting information on 4721 adults through face to face interviews.

2007: The 2006-2007 survey was carried out from October 2006 to November 2007, collecting information on 12488 adults.

2003: Data were collected from September 2002 to January 2004 (approximately 13000 adults in 2002-2003).

Deviation from the OECD definition: Data do not match the definition as the NZHS/ANS definition for vegetables consumption includes consumption of potatoes.

Further information: <http://www.health.govt.nz/nz-health-statistics/national-collections-and-surveys/surveys/current-recent-surveys/new-zealand-health-survey>

Norway

Source: Statistics Norway. European Health Interview Survey, EHIS.

Coverage: Population aged 16 years old and over.

Methodology:

- The surveys are conducted as personal interviews with a random sample from the population (excluding the institutionalised population). Approximately 8150 persons are interviewed. The survey runs every three years. Data are collected through telephone interviews (CATI).

- 2005: “How often do you usually eat fresh fruit and berries? How often do you usually eat vegetables? Include all types of vegetables, fresh, boiled, fried, etc.”

- 2008 and 2012: “How often do you usually eat fresh fruit and berries? Do not include juice. How often do you usually eat vegetables? Do not include potatoes and vegetable juice. Include all types of vegetables - fresh, boiled, fried, etc.”

- Answer categories for all surveys include: “Would you say 3 or more times a day, 2 times a day, once a day, 5-6 times a week, 2-4 times a week, once a week, less than once a week? More than one vegetable in a meal counts as once.”

- 2015: ‘How often do you usually eat vegetables or salad? Do not include potatoes.’ ‘How often do you eat fruit and/or berries? Do not include juice.’

Deviation from the OECD definition: Juice and potatoes are included in the 2005 question but excluded in the 2008 and 2012 question.

Further information: <http://www.ssb.no/en/helse/statistikker/helseforhold/hvert-3-aar/2016-06-20?fane=om#conten>.

Poland

Sources:

2014: Eurostat EHIS 2014 survey.

2009: Statistics Poland, European Health Interview Survey 2009.

Coverage:

2014: Population aged 15 years old and over.

2009: Persons aged 15 years old or older eating fruit (excluding juice) or vegetables (excluding potatoes and juice) at least once per day.

Methodology:

2014:

- Fruits: Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. “How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

- Vegetables: Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. “How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

2009:

- How often do you eat fruits?

- How often do you eat vegetables (excluding potatoes)?

Portugal

Source: Eurostat EHIS 2014 survey.

Coverage: Population aged 15 years old and over.

Methodology:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. “How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”
- **Vegetables:** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. “How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

Slovak Republic

Source: Statistical Office of the Slovak Republic, European Interview Survey 2014.

Coverage: Population aged 15 years old and over.

Methodology:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. “How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”
- **Vegetables:** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. “How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

Slovenia

Source: National Institute of Public Health. Anketa o zdravju in zdravstvenem varstvu 2014 (Questionnaire of the European Health Interview Survey, EHIS, 2nd round).

Coverage: Population living in private households (persons living in institutions are excluded), aged 15+.

Methodology:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. “How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”
- **Vegetables:** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. “How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

Further information: <http://ec.europa.eu/eurostat/documents/3859598/5926729/KS-RA-13-018-EN.PDF/26c7ea80-01d8-420ebdc6-e9d5f6578e7c>.

Spain

Sources:

Ministerio de Sanidad, Consumo y Bienestar Social (Ministry of Health, Consumer Affairs and Social Welfare) and National Statistics Institute:

Sources:

2003, 2006, 2011 and 2017: Encuesta Nacional de Salud de España - ENSE (National Health Interview Survey).

2014: Eurostat EHIS 2014 survey.

Encuesta Europea de Salud en España EESE (European Health Interview Survey EHIS),

<http://www.msssi.gob.es/estadEstudios/estadisticas/sisInfSanSNS/nivelSalud.htm>.

Before 2014: Ministerio de Sanidad, Servicios Sociales e Igualdad (Ministry of Health, Social Services and Equality), and National Statistics Institute (INE).

Coverage:

From 2011: Population aged 15 years old and over.

2003 to 2006: Population aged 16 years old and over.

Methodology:

2017:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) or reporting to eat fresh fruit or vegetable juice at least once a day derived from the population who answered “Daily” to the survey question: “How often do you eat fruits (excluding juice)?”

- **Vegetables:** Percentage of people reporting to eat vegetables or salad at least once a day, derived from the population who answered “Daily” to the survey question “How often do you eat vegetables or salad?”

2014:

- **Fruits:** Percentage of people reporting to eat fruits (excluding juice made from concentrate) at least once a day, derived from EHIS question FV1. “How often do you eat fruits, excluding juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

- **Vegetables:** Percentage of people reporting to eat vegetables or salad (excluding potatoes and juice made from concentrate) at least once a day, derived from EHIS question FV3. “How often do you eat vegetables or salad, excluding potatoes and juice made from concentrate? 1. Once or more a day, 2. 4 to 6 times a week, 3. 1 to 3 times a week, 4. Less than once a week, 5. Never.”

- From 2003 to 2006, the survey question was “How often do you eat fresh fruit?” and “How often do you eat vegetables?”

- In 2011, proportion of the population who answered “Daily” to the survey question: “How often do you eat fruits (excluding juice)?” and “How often do you eat vegetables or salad (excluding juice and potatoes)?”

- Probabilistic sample since 2003.

- Weighted results.

- Percentages computed excluding missing values.

Further information: <https://www.mscbs.gob.es/>.

Sweden

Source: Public Health Agency of Sweden, Sweden’s national public health survey: “Health on equal terms”.

Methodology:

- The questions in the national public health survey cover physical and mental health, dental health, living habits, financial conditions, work and occupation, work environment, safety and social relationships.

- From 2018 and onwards, the random sample is 40,000 individuals aged 16-84 years old.

- For the years 2004 to 2016, the survey was conducted annually (every second year starting from 2016), and the sample was 20,000 individuals aged 16-84 years old.

- Survey questions: “How often do you eat vegetables and root vegetables? This means all kinds of vegetables, leguminous plants and root vegetables (but not potatoes). Includes fresh, frozen, preserved, cooked, vegetable juice, vegetable soups etc. This may vary during the year, but try to give some kind of average. Choose one alternative.”

“How often do you eat fruit and berries? Applies to all types of fruit and berries (fresh, frozen, preserved, juice, compote etc.) This may vary during the year, but try to give some kind of average. Choose one alternative.”

Note: From 2016, the survey is conducted every other year, which means data are not available for 2017.

Further information: <http://www.folkhalsomyndigheten.se/>, <http://www.folkhalsomyndigheten.se/about-folkhalsomyndigheten-the-public-health-agency-of-sweden/>, and <http://www.folkhalsomyndigheten.se/amnesomraden/statistik-och-undersokningar/enkater-och-undersokningar/nationella-folkhalsoenkaten/>.

Switzerland

Source: Federal Statistical Office, Neuchâtel, Swiss Health Survey 2007, 2012 and 2017.

Coverage: Population aged 15 years old and over.


Methodology:

- The questions included in the 2007 survey are as follows:

- “How many portions of fruit and fruit juice do you consume per day on average? Never/ Less than 1 portion per day / 1 to 2 portions per day / 3 to 4 portions per day / 5 or more portions per day / Don’t know / No answer. One portion corresponds to the size of your fist (approximately 120 grams). For juice it's about a medium-sized glass.”
- “How many portions of vegetables and vegetable juice (without potatoes or maize) do you consume per day on average? Never/ Less than 1 portion per day / 1 to 2 portions per day / 3 to 4 portions per day / 5 or more portions per day / Don’t know / No answer. One portion is about the size of your fist (approximately 120 grams). For juice it's about a medium-sized glass.”

- The questions included in the 2012 and 2017 surveys are as follows:

- “How many days a week do you eat vegetables or salad, excluding potatoes, or drink vegetable juices?”
- “How many days a week do you eat fruits or drink fruit juices?”

 **Deviation from the definition:**

- Data do not match the definition as they include fruit juice as well as vegetable juice (potatoes and maize excluded).
- In 2007, data provide information on the *quantity* of consumption, whereas in 2012 and 2017 they provide information on the *frequency* of consumption.

✂ **Break in time series** due to change in the questions in 2012.

Further information:

http://www.bfs.admin.ch/bfs/portal/fr/index/infothek/erhebungen_quellen/blank/blank/ess/04.html.

Turkey

Source: Turkish Statistical Institute (TURKSTAT).

2008, 2010, 2012, 2014 and 2016: Turkey Health Interview Survey.

Methodology:

- The survey questions were as follows:
- “How often do you eat fruits (excluding juice)? Twice or more a day / Once a day / Less than once a day but at least 4 times a week / Less than 4 times a week but at least once a week / Less than once a week / Never / Don’t know / Refusal.”
- “How often do you eat vegetables or salad (excluding juice and potatoes)? Twice or more a day / Once a day / Less than once a day but at least 4 times a week / Less than 4 times a week but at least once a week / Less than once a week / Never / Do not know / Refusal.” People who answer “Twice or more a day + Once a day” are regarded as consuming vegetable/fruit every day.

Further information: <http://www.turkstat.gov.tr/>.

United Kingdom

Source:

2014: Eurostat EHIS 2014 survey.

United States

Source: U.S. Department of Health and Human Services/Centres for Disease control and Prevention/National Centre for Health Statistics. The National Health and Nutritional Examination Survey (NHANES), see

<http://www.cdc.gov/nchs/nhanes.htm>.

Coverage: Nationally representative sample of non-institutionalised U.S. civilian population 18 years of age and older.

Methodology:

🔴 Data present the weighted percentage/ proportion of the selected population who consume fruits or vegetables. Data do not represent frequency or quantity, and may thus be overestimated when compared with other countries.

Vegetable: includes juice and exclude potatoes consumption.

Fruit: excludes juice consumption.

- The National Health and Nutrition Examination Survey (NHANES) collects dietary intake information using 24-hour dietary recall interviews. The survey combines an in-home interview and a standardised physical examination at a mobile examination center (MEC). Data on juice consumption were collected via an in-person 24-hour dietary recall interview in the MEC.

Percent estimates were weighted to represent the U.S. Civilian Non-Institutionalised Population for each respective year.

- The Fruit Group consists of three components: citrus, melons, and berries, other fruits; and fruit juice. A thorough detail of the NHANES fruits component can be found at (<http://www.cdc.gov/nchs/data/databriefs/db156.htm>).

- The Vegetables Group consists of four components: dark green, red and orange, starchy, and others. A thorough detail of the NHANES vegetable component can be found at (<http://www.cdc.gov/nchs/data/databriefs/db156.htm>).

- Beginning in 1999, the National Health and Nutrition Examination Survey (NHANES) became a continuous, annual survey rather than the periodic survey it had been in the past. The midpoint is considered the first part of the second year (2-year data cycle). Hence 1999-2000 is 2000, and 2001-2002 is 2002.

- The results are presented for the midpoint of the survey period.