

Healthy People 2010 Operational Definition

19-10. Increase the proportion of persons aged 2 years and older who consume 2,400 mg or less of sodium daily.

National Data Source	National Health and Nutrition Examination Survey (NHANES): CDC, NCHS; USDA, ARS.
State Data Source	Not identified.
Healthy People 2000 Objective	Adapted from 2.9 (Nutrition).
Changes since the 2000 Publication	Revised baseline.
Measure	Percent (age adjusted-see Comments).
Baseline (Year)	15 (1998-94)
Target	65
Target-Setting Method	Better than the best racial/ethnic subgroup. For a discussion of target-setting methods, see Part A, section 4.
Numerator	Number of persons aged 2 years and older who report consuming less than or equal to 2,400 mg of sodium daily.
Denominator	Number of persons aged 2 years and older.
Population Targeted	U.S. civilian, noninstitutionalized population.
Questions Used to Obtain the National Baseline Data	From the 1988-94 National Health and Nutrition Examination Survey: <u>Foods:</u> NHANES included the collection of 1 day of dietary data for all respondents through in-person 24-hour recalls ¹ and 2-day dietary data on a small subset through telephone 24-hour recalls. (Beginning in 2002, two 24-hour recalls were asked of everyone.) Each respondent was asked to recall the kinds and amounts of foods and beverages consumed at home and away from home during the previous day (midnight to midnight). Amounts of foods and beverages reported in household measures were then converted to gram amounts, and sodium intake from foods and beverages was estimated with the use of food composition files. Additional questions used to assess

total sodium intake include:

Dietary supplement use:

- *Has (Person) taken any vitamins or minerals in the past month? Please include those that are prescribed by a doctor or dentist and those that are not prescribed.*
- *Has (Person) taken or used any medicines for which a doctor's or dentist's prescription is needed, in the past month? This includes any products which cannot be obtained without a doctor's or dentist's prescription. Include those medicines which you may have already mentioned.*

[If yes:]

- *May I see the containers for all of the (vitamins and minerals/prescription medicines) (Person) took in the past month?*
 - Enter complete name of vitamin/mineral from label, or probe respondent:
 - Container seen
 - Container not seen
 - Product furnished by respondent
 - Product name not on container
 - Enter manufacturer's or distributor's name and address (city and State)
- *How often did (Person) take (product) in the past month?*
- *How much (product) did (Person) take each time (Person) took it?*
 - Number of capsules, tablet/pills; teaspoons; tablespoons; fluid ounces/ounces; drops/droppers; packets/packs/packages; ml.; wafers; other

Tap water:

- *How much plain drinking water do you usually drink in a 24-hour period? Include only plain tap water or spring water.*
 - Number of glasses or cups
 - Number of ounces per glass or cup.

Salt use at the table:

- *What type of salt (do you/does Person) usually add to (your/his/her) food at the table?*
 - None
 - Ordinary salt
 - Lite salt
 - Salt substitute
- *How often (do you/does Person) add (type of salt) to (your/his/her) food at the table? Is it rarely, occasionally, or very often?*

Expected Periodicity Periodic.

Comments

The baseline estimates include consideration of several sources of sodium intake: foods, dietary supplements, tap water, and salt use at the table. However, they do not include sodium intake from antacids and other medications. For the original baseline, a statistical procedure described in a 1986 report of the National Research Council was used to remove the within-person variation in daily sodium intakes from food,² and thus provide better estimates of usual intake of sodium with the use of dietary data per individual (that is, 1 day of dietary data for all NHANES respondents and 2-day dietary data for a subset). In 2008, the original baseline or 21 percent was revised to 15 percent using a modified procedure designed to remove some of the bias of the earlier procedure, and thus improve estimates of usual intake.³ In addition, the baseline revision excludes consideration of a higher sodium level of home drinking water with a water softening or conditioning system, because this could not be assessed for the update estimates.

The target of 65 percent did not change.

Regarding salt use at the table, sea salt, flavored salts such as garlic, onion, and celery salt, and seasoning salts were counted as ordinary salts. Lite salt was labeled as such and has a reduced sodium content. Salt substitutes do not contain sodium. To obtain a daily amount for each person, the amount of sodium depending on salt type was multiplied by the frequency value. (Sodium in type of salt x frequency amount of sodium from table salt added per day.)

Type of salt: A zero sodium value was assigned for “none” and “salt substitute.” For “ordinary salt,” 290 mg (for “very often” code) was assigned for persons aged 2 to 19 years, and 580 mg was assigned for persons aged 20 years and older. For “lite” salt, 145 mg was assigned for persons aged 2 to 19 years, and 290 mg was assigned for persons aged 20 years and older. For missing values, a default of “ordinary salt” was assigned.

Frequency of salt use: for “rarely” sodium value was multiplied by 0.25; for “occasionally,” sodium value was multiplied by 0.50; for “very often,” sodium

value was multiplied by 1; for missing values, “occasionally” was used as the default.

Drinking water: 1 mg per fluid ounce was used for “regular” tap water based on the USDA food composition database. To get daily sodium from drinking water, the amount of sodium per fluid ounce was multiplied by the number of fluid ounces of regular tap water consumed.

Dietary supplements: Sodium from dietary supplements reported in the survey was calculated. If supplement data were missing, then it was assumed that no sodium was provided by supplements but the individual was kept in the calculation.

Breast-feeding children aged 2 years and older were excluded from the analysis.

Data (except those for people with chronic conditions) are age adjusted to the 2000 standard population using the age groups 20-29, 30-39, 40-49, 50-59, 60-69, 70-79 and 80 years and over. Data for those with chronic conditions, e.g., arthritis, diabetes and high blood pressure, are age-adjusted using the age groups 20-49, 50-59, 60-69 70-79 and 80 years and over. Age-adjusted rates are weighted sums of age-specific rates. For a discussion of age adjustment, see Part A, section 7.

This objective differs from Healthy People 2000 objective 2.9, which also tracked individual behaviors associated with the reduction of salt and sodium intake. The measures include avoidance of salt use in food preparation at home, avoidance of salt use at the table, and regular purchase of foods modified in sodium, but did not measure actual sodium intake. The Healthy People 2000 tracking data were not age adjusted.

For some measures, data do not meet the criteria for statistical reliability, data quality, or confidentiality and have been suppressed. Information on suppression of data for the major Healthy People 2010 data systems has been published in a *Healthy People Statistical Note*.⁴

See Part C for a description of NHANES and

Appendix A for focus area contact information.

References

1. National Center for Health Statistics (NCHS). *National Health and Nutrition Examination Survey III: Data Collection Forms*. Hyattsville, MD: Public Health Service (PHS), 1990.
2. National Research Council. *Nutrient Adequacy: Assessment Using Food Consumption Surveys*. Washington, DC: National Academy Press, 1986.
3. Carriquiry, A.L. Estimation of usual intake distributions of nutrients and foods. *J Nutr* 133:601S-608S, 2003..
4. Klein, R.J.; Proctor, S.E.; Boudreault, M.A.; Turczyn, K.M. Healthy People 2010 Criteria for Data Suppression. *Statistical Notes* No. 24. Hyattsville, MD: National Center for Health Statistics. 2002.