



NHANES 2003-2004

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2003-2004 National Health and Nutrition Examination Survey (NHANES)

Survey Operations Manuals, Brochures, Consent Documents

These manuals, brochures, and consent documents are part of the protocol for the National Health and Nutrition Examination Survey (NHANES), conducted by the National Center for Health Statistics.

Interview and Exam Manuals

Manuals listed below were developed for interviewer and examiner training. These are important references for NHANES as all correct procedures, policies, and standards are comprehensively detailed. Manuals were first produced in January 1999. Dates on the first page of each manual reflect the most recent revision.

Interviewer

- Interviewer Procedure Manuals
 - [Chapters 1-7 \[PDF - 4.9 MB\]](#)
([/nchs/data/nhanes/nhanes_03_04/Jan04IntProcManCh%201-7.pdf](#))
 - [Chapters 8-15 \[PDF - 11.9 MB\]](#)
([/nchs/data/nhanes/nhanes_03_04/Jan04IntProcManCh%208-15.pdf](#))
- [Interviewer Procedure Manuals Part II \[PDF - 602 KB\]](#)
([/nchs/data/nhanes/nhanes_03_04/Jan04IntProcManPartII.pdf](#))

Exam

- [Audiometry \[PDF - 4.3 MB\]](#) ([/nchs/data/nhanes/nhanes_03_04/AU.pdf](#))
- [Balance \[PDF - 369 KB\]](#) ([/nchs/data/nhanes/nhanes_03_04/BA.pdf](#))
- [Body Composition \[PDF - 1.8 MB\]](#) ([/nchs/data/nhanes/nhanes_03_04/BC.pdf](#))
- [Body Measurements \[PDF - 803 KB\]](#) ([/nchs/data/nhanes/nhanes_03_04/BM.pdf](#))
- [Cardiovascular Fitness \[PDF - 7 KB\]](#) ([/nchs/data/nhanes/nhanes_03_04/cv_99-04.pdf](#))
- [Dermatology \[PDF - 635 KB\]](#) ([/nchs/data/nhanes/nhanes_03_04/dermmanual_03_04.pdf](#))
- [Dietary Interviewer - In Person \[PDF - 8.8 MB\]](#)
([/nchs/data/nhanes/nhanes_03_04/DIETARY_MEC.pdf](#))
- [Dietary Interviewer - Phone Followup \[PDF - 11.2 MB\]](#)
([/nchs/data/nhanes/nhanes_03_04/DIETARY_PFU.pdf](#))
 - [Measuring Guides for the Dietary Recall Interview](#)
([/nchs/nhanes/measuring_guides_dri/measuringguides.htm](#))
- [Laboratory/Medical Technologists Procedures Manual \(LPM\) \[PDF - 19.9 MB\]](#)
([/nchs/data/nhanes/nhanes_03_04/lab_pm.pdf](#))
- [Lower Extremity Disease \[PDF - 2 MB\]](#) ([/nchs/data/nhanes/nhanes_03_04/LE.pdf](#))
- [MEC Interviewer \[PDF - 23.9 MB\]](#) ([/nchs/data/nhanes/nhanes_03_04/MECInterview.pdf](#))
- [Oral Health \(Dental Recorder\) \[PDF - 597 KB\]](#)
([/nchs/data/nhanes/nhanes_03_04/DentalRecorders-2003.pdf](#))
- [Oral Health \(Dental Examiner\) \[PDF - 5.4 MB\]](#)
([/nchs/data/nhanes/nhanes_03_04/DentalExaminers-2004.pdf](#))

- [Phone Followup Dietary Interviewer \[PDF - 7.8 MB\]](#)
([/nchs/data/nhanes/nhanes_01_02/phone_followup_year_3.pdf](#))
- [Physician \[PDF - 9.2 MB\]](#) ([/nchs/data/nhanes/nhanes_03_04/PE.pdf](#))
- [Vision \[PDF - 1.2 MB\]](#) ([/nchs/data/nhanes/nhanes_03_04/VI.pdf](#))

2003-2004 Brochures

Brochures listed below were designed to help participants understand the NHANES survey as well as some specific testing.

- [NHANES Overview \[PDF - 3.2 MB\]](#)
([/nchs/data/nhanes/nhanes_03_04/overviewbrochure_0304.pdf](#))
- [Sexually Transmitted Diseases \(STD\) Brochure \[PDF - 316 KB\]](#)
([/nchs/data/nhanes/nhanes_01_02/stdbrochure_0104.pdf](#))

2003-2004 Consent Documents

- [Household Interview Consent \[PDF - 44 KB\]](#)
([/nchs/data/nhanes/nhanes_03_04/householdinterviewconsent_0304.pdf](#))
- [Examination Consent \[PDF - 550 KB\]](#)
([/nchs/data/nhanes/nhanes_03_04/examinationconsent_0304.pdf](#))
- [Child Assent \[PDF - 407 KB\]](#) ([/nchs/data/nhanes/nhanes_03_04/childassent_0304.pdf](#))
- [Specimen Storage Consent \[PDF - 29 KB\]](#)
([/nchs/data/nhanes/nhanes_03_04/specimenstorageconsent_0304.pdf](#))

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Introduction

The National Health and Nutrition Examination Survey (NHANES) is a program of studies designed to assess the health and nutritional status of adults and children in the United States. The survey is unique in that it combines interviews and physical examinations.

NHANES is a major program of the National Center for Health Statistics (NCHS). NCHS is part of the Centers for Disease Control and Prevention (CDC), U.S. Public Health Service, and has the responsibility for producing vital and health statistics for the Nation.

The NHANES program began in the early 1960's and has been conducted as a series of surveys focusing on different population groups or health topics. In 1999, the survey became a continuous program that will have a changing focus on a variety of health and nutrition measurements to meet emerging needs. The survey examines a nationally representative sample of about 5,000 persons each year. These persons are located in counties across the country, 15 of which are visited each year.

The NHANES detailed interview includes demographic, socioeconomic, dietary, and health-related questions. The examination component consists of medical and dental examinations, physiological measurements, and laboratory tests administered by highly trained medical personnel.

Findings from this survey will be used to determine the prevalence of major diseases and risk factors for diseases. Information will be used to assess nutritional status and its association with health promotion and disease prevention. NHANES findings are also the basis for national standards for such measurements as height, weight, and blood pressure. Data from this survey will be used in epidemiological studies and health sciences research, which

help develop sound public health policy, direct and design health programs and services, and expand the health knowledge for the Nation.

Survey Content

As in past health examination surveys, data will be collected on the prevalence of chronic conditions in the population. Estimates for previously undiagnosed conditions, as well as those known to and reported by survey respondents, are produced through the survey. Such information is a particular strength of the NHANES program.

Risk factors, those aspects of a person's lifestyle, constitution, heredity, or environment that may increase the chances of developing a certain disease or condition, will be examined. Smoking, alcohol consumption, sexual practices, drug use, physical fitness and activity, weight, and dietary intake will be studied. Data on certain aspects of reproductive health, such as use of oral contraceptives and breastfeeding practices, also will be collected.

The diseases, medical conditions, and health indicators to be studied include:

- Anemia
- Cardiovascular disease
- Diabetes and lower extremity disease
- Environmental exposures
- Equilibrium
- Hearing loss
- Infectious diseases and immunization
- Kidney disease
- Mental health and cognitive functioning
- Nutrition
- Obesity

- Oral health
- Osteoporosis
- Physical fitness and physical functioning
- Reproductive history and sexual behavior
- Respiratory disease (asthma, chronic bronchitis, emphysema)
- Sexually transmitted diseases
- Skin diseases
- Vision

The sample for the survey is selected to represent the U.S. population of all ages. Special emphasis in the current NHANES will be on adolescent health and the health of older Americans. To produce reliable statistics for these groups, adolescents 15–19 and persons 60 and older are over-sampled for the survey. African Americans and Mexican Americans are also over-sampled to enable accurate estimates for these groups.

Several important areas in adolescent health, including nutrition and fitness and other aspects of growth and development, will be addressed. Since the United States has experienced dramatic growth in the number of older people during this century, the aging population has major implications for health care needs, public policy, and research priorities. NCHS is working with public health agencies to increase the knowledge of the health status of older Americans. NHANES has a primary role in this endeavor.

In the examination, all participants visit the physician who takes their pulse or blood pressure. Dietary interviews and body measurements are included for everyone. All but the very young have a blood sample taken and see the dentist. Depending upon the age of the participant, the rest of the examination includes tests and procedures to assess the various aspects of health listed above. Usually, the older the individual, the more extensive the examination.

Survey Operations

Health interviews are conducted in respondents' homes. Examinations are performed in specially-designed and equipped mobile examination centers, which travel to survey locations throughout the country. The survey team consists of a physician, dentist, medical and health technicians, dietary and health interviewers. A large staff of trained bilingual interviewers conducts the household interviews.

An advanced computer system using high-end servers, desktop PCs, and wide-area networking collects and processes all of the NHANES data, nearly eliminating the need for paper forms and manual coding operations. This system allows interviewers to use notebook computers with electronic pens. The staff at the mobile exam center can automatically transmit data into data bases through such devices as digital scales and stadiometers. Touch-sensitive computer screens let respondents enter their own responses to certain sensitive questions in complete privacy. Survey information is available to NCHS staff within 24 hours of collection, which will enhance the capability of collecting quality data and will increase the speed with which results are released to the public.

In each location, local health and government officials are notified of the upcoming survey. Households in the survey receive a letter from the NCHS Director to introduce the survey. Local media may feature stories about the survey.

NHANES is designed to facilitate and encourage participation. Transportation is provided to and from the examination center and participants receive compensation. A report of medical and dental findings is given to each participant. All information collected in the survey is kept strictly confidential. Privacy is protected by public laws.



Uses of the Data

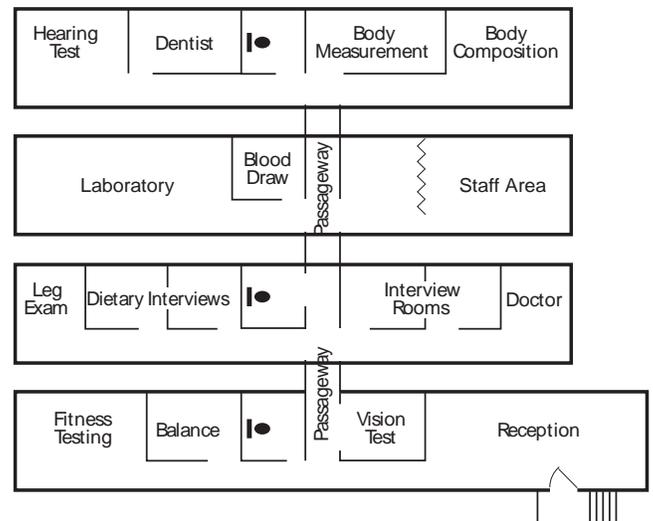
Information from NHANES is made available through an extensive series of publications and articles in scientific and technical journals. For data users and researchers throughout the world, survey data are available on easy-to-use CD-ROMS and personal computer diskettes. In the future, data will be widely distributed on the World Wide Web.

Research organizations, universities, health care providers, and educators will benefit from survey information. Primary data users are the U.S. Public Health Service agencies that collaborated in the design and development of the survey. The National Institutes of Health, the Food and Drug Administration, and CDC are among the agencies that rely upon NHANES to provide data essential for the implementation and evaluation of program activities. The U.S. Department of Agriculture and NCHS cooperate

in planning and reporting dietary and nutrition information from the survey.

NHANES' partnership with the U.S. Environmental Protection Agency allows continued study of the many important environmental influences on our health.

Mobile Examination Center (MEC) Diagram



NHANES' record of important accomplishments is made possible by the thousands of Americans who have participated.

- Past surveys have provided data to create the growth charts used nationally by pediatricians to evaluate children's growth. The charts have been adapted and adopted worldwide as a reference standard—and have recently been updated using the latest NHANES figures.
- Blood lead data were instrumental in developing policy to eliminate lead from gasoline and solder in food and soft drink cans. Recent survey data indicate the policy has been even more effective than originally envisioned, with a decline in elevated blood lead levels of more than 70% since the 1970's.
- Overweight prevalence figures have led to the proliferation of programs emphasizing diet and exercise, stimulated additional research, and provided a means to track trends in obesity.
- Data have continued to indicate that undiagnosed diabetes is a significant problem in the United States. Efforts by Government and private agencies to increase public awareness, especially among minority populations, have been intensified.

These are just a few examples of what survey findings have meant. The current program promises continuing contributions and some new initiatives.

- Information collected in this survey will help the Food and Drug Administration decide if there is a need to change vitamin and mineral fortification regulations for the Nation's food supply.
- The national programs to reduce hypertension and cholesterol levels continue to depend on NHANES data to steer education and preven-

tion programs toward those at risk and to measure success in curtailing risk factors associated with heart disease, the Nation's number one cause of death.

- New measures of physical fitness will further our understanding of its role in health and enhance the analysis of relationships between exercise and obesity and disease.

Because NHANES is now an ongoing program, the information collected will contribute to annual estimates in some topic areas included in the survey. For small population groups and less prevalent conditions and diseases, data must be accumulated over several years to provide adequate estimates. The new continuous design also allows increased flexibility in survey content.

Results of NHANES will benefit people in the United States in important ways. Facts about the distribution of health problems and risk factors in the population give researchers important clues to the causes of disease. Information collected from the current survey will be compared with information collected in previous surveys. This will allow health planners to detect the extent various health problems and risk factors have changed in the U.S. population over time. By identifying the health care needs of the population, government agencies and private sector organizations can establish policies and plan research, education, and health promotion programs that will help improve present health status and prevent future health problems.

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For more information about the National Health and Nutrition Examination Survey you may visit the NHANES web site at: www.cdc.gov/nhanes



National Health and Nutrition Examination Survey

1999–2010 Survey Content



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics



ACASI	Audio computer-assisted self-interview
ADHD	Attention deficit hyperactivity disorder
BV	Bacterial vaginosis
CAPI	Computer-assisted personal interview
CD4	T lymphocyte helper cells
CDISC	National Institute of Mental Health's Computerized Diagnostic Interview Schedule for Children
CIDI	World Health Organization's Composite International Diagnostic Interview
CV fitness	Cardiovascular fitness
FCBS	Flexible Consumer Behavior Survey module
FSH/LH	Follicle stimulating hormone/luteinizing hormone
HDL	High density lipoprotein
HLA-B27	Human leukocyte antigen B27
HPV	Human papillomavirus
LDL	Low density lipoprotein
Lp(a)	Lipoprotein (a)
MEC	Mobile examination center
MRSA	Methicillin resistant staphylococcus aureus
NTX	N-telopeptides of bone type I collagen
OGTT	Oral glucose tolerance test
PAH	Polyaromatic hydrocarbons
PSA	Prostate specific antigen
PTH	Parathyroid hormone
Qx	Questions
RBC	Red blood cell
SP	Survey participant
TH	Thyroxin
TIBC	Total iron binding capacity
TSH	Thyroid stimulating hormone
TTG-EMA	Anti-transglutaminase (tTG) and anti-endomysium (EMA) antibodies
VOC	Volatile organic compounds
WBC/DNA	White blood cells/deoxyribonucleic acid

Component or lab test conducted on original sample description.

Change from original sample description.

Component or lab test not conducted.

Table 1. Examination component matrix of the National Health and Nutrition Examination Survey, 1999–2010



Component	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Audiometry	1/2 sample 20–69 years ¹							12–19 and 70 years and older	12–19 years		12–19 and 70 years and older			
Balance	1/2 sample 40–69 years ¹			Note A										
Bioelectrical impedance analysis	8–49 years													
Body measurements	All SPs													
CV fitness	12–49 years ¹							p.m. SPs						
Dermatology	20–59 years													
Dietary	All SPs					Note B								
Dual energy x-ray absorptiometry														
Body composition	8 years and older ¹	Note C						8–69 years						
Bone density-hip and spine	8 years and older													
FCBS phone follow-up module	1 year and older											Note D		
Food frequency	2 years and older							Collected by mail						
Hair collection	1–5 years, females 16–49 years													
Lower extremity disease														
Peripheral neuropathy	40 years and older													
Peripheral vascular disease	40 years and older													
Mental health	8–39 years													
CDISC	8–19 years													
Anxiety	8–19 years													
Depression	8–19 years													
Eating disorders	8–19 years													
Panic disorder	8–19 years													
CIDI	1/2 sample 20–39 years													
Depression	1/2 sample 20–39 years													
Generalized anxiety	1/2 sample 20–39 years													
Panic disorder	1/2 sample 20–39 years													
Parent CDISC														
ADHD	Parent of 8–15 years													
Conduct disorders	Parent of 8–15 years													
Depression	Parent of 8–15 years													
Eating disorders	Parent of 8–15 years													
Elimination disorders	Parent of 8–11 years													

See footnotes at end of table. Acronyms and abbreviations and legend.

Table 1. Examination component matrix of the National Health and Nutrition Examination Survey, 1999–2010—Con.



Component	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Ophthalmology													
Retinal photo	40 years and older												
Visual fields	40 years and older												
Oral health													
Basic screening exam	5 years and older ¹												3–19 years
Coronal caries	2 years and older												
Dental sealants	2–34 years												
Denture questionnaire	25 years and older												
Exclusion Qx	13 years and older ¹												30 years and older
Fluorosis	6–49 years												6–19 years
Incisal trauma	10–29 years												
Orofacial pain exam	13–69 years												
Orofacial pain Qx	10–69 years												
Periodontitis													Note H
Gingival bleeding	12–49 years												
Loss of attachment	18 years and older ¹												30 years and older
Periodontal bleeding	13 years and older												
Referral/follow-up	2 years and older ¹												3 years and older
Root caries	18 years and older												
Saliva	40 years and older												
Tooth count	2 years and older ¹												3–19 and 30 years and older
Physical activity monitor	6 years and older												
Physical functioning													
8 ft. timed walk	50 years and older												
20 ft. timed walk	50 years and older												
Isokinetic	50 years and older												
Physician exam	All SPs												
Blood pressure	8 years and older												
Respiratory health													
Exhaled nitric oxide	6–79 years												
Spirometry	6–79 years												

See footnotes at end of table. Acronyms and abbreviations and legend.

Table 1. Examination component matrix of the National Health and Nutrition Examination Survey, 1999–2010—Con.



Component	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Spinal mobility	20–69 years												
Tuberculosis	1 year and older												
Vision	12 years and older												

¹Except where noted otherwise.

Note A: Increased to full sample, 40 years and older.

Note B: New interview system implemented; all SPs asked to complete a second recall by phone.

Note C: Age range for females was 18 years and older.

Note D: Ten additional questions added.

Note E: Oral health component changed from comprehensive dentist based exam to a simplified oral health screening for SPs 5 years and older.

Note F: Oral health component changed from a simplified health screening to a more comprehensive exam done by a dental hygienist.

Note G: Added identifying caries status on residual dental roots.

Note H: Comprehensive periodontal exam covering the full mouth.

Note I: Age range changed to 13 years and older; LOA measurement positions modified; a third site added.

Note J: Added recommendations to seek care for removable dental prosthetics.

Note K: Discontinued mid-year 2000.

Note L: Added counting residual dental roots.

[Acronyms and abbreviations and legend.](#)

Table 2. Laboratory component matrix of the National Health and Nutrition Examination Survey, 1999–2010



Lab test	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Acrylamide	3 years and older ¹										6 years and older		
Albumin (urine)	6 years and older											Note A	
Apolipoprotein (B)	1/2 sample 12 years and older									a.m. SPs			
Arsenic (urine)	1/3 sample 6 years and older												
Bone alkaline phosphatase	8 years and older ¹					8–49 years							
BV/trichomonas	Females 14–49 years												
Cadmium (blood)	1 year and older												
Caffeine exposure	6 years and older												
CD4/CD8	18–49 years/HIV+ and controls												
Chemistry panel	12 years and older												
Chlamydia (urine)	14–39 years												
Cholesterol (total)	3 years and older ¹									6 years and older			
HDL	3 years and older ¹									6 years and older			
LDL	Subsample 3 years and older ¹									a.m. SPs 12 years and older			
Complete blood count	1 year and older												
Cotinine	3 years and older												
C-reactive protein	3 years and older ¹						1 year and older			3 years and older			
Creatinine (urine)	6 years and older												
Cryptosporidium	6–49 years												
Dust allergens	1 year and older												
Environmental phenols	1/3 sample 6 years and older												
Erythrocyte protoporphyrin	1 year and older ¹					3–5 years and females 12–49 years							
Fatty acids	3–11 years, a.m. SPs 12 years and older												
Ferritin	1 year and older ¹					1–5 years and females 12–49 years							
Fibrinogen	40 years and older												
Folate (RBC)	3 years and older ¹									1 year and older			
Folate (serum)	3 years and older ¹									1 year and older			
FSH/LH	Females 35–60 years												
Fungicides	1/3 sample 6 years and older ¹	Note B											
Glucose (plasma)	Subsample 12 years and older												

See footnotes at end of table. Acronyms and abbreviations and legend.

Table 2. Laboratory component matrix of the National Health and Nutrition Examination Survey, 1999–2010—Con.



Lab test	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Glycohemoglobin	12 years and older	[Blue bar]												
Gonorrhea (urine)	14–39 years	[Blue bar]												
Halogenated phenolic compounds	1/3 sample 6 years and older ¹	Note B				[Blue bar]								
Helicobacter pylori	3 years and older	[Blue bar]				[Blue bar]								
Hepatitis antiHBs	2–5 years	[Blue bar]												
Hepatitis A, B, C, D	6 years and older	[Blue bar]									Note C			
Hepatitis C follow-up	SPs with Hep C	[Blue bar]												
Herbicides: substituted ureas and others	1/3 sample 6 years and older ¹	Note B				[Blue bar]								
Herpes 1 and 2 antibody	14–49 years	[Blue bar]												
HIV antibody	18–49 years ¹	[Blue bar]											18–59 years	
HLA-B27 (inflammatory arthritis)	20–69 years	[Blue bar]												
Homocysteine	3 years and older ¹	[Blue bar]							20 years and older					
HPV (oral rinse)	14–69 years	[Blue bar]												
HPV (serum)	14–59 years	[Blue bar]												
HPV (swab)	Females 14–59 years	[Blue bar]												
Hydroxylated polychlorinated biphenyls	1/3 sample 12 years and older	[Blue bar]							[Blue bar]					
Immunoglobulin E-allergens	1 year and older	[Blue bar]							[Blue bar]					
Insulin/C-peptide	Subsample 12 years and older	[Blue bar]							Insulin only					
Iodine (urine)	1/3 sample 6 years and older	[Blue bar]												
Iron	1 year and older ¹	[Blue bar]				Note D				[Blue bar]				
Latex	12–59 years	[Blue bar]												
Lead (blood)	1 year and older	[Blue bar]												
Lead dust	Households with 1–5 years	[Blue bar]												
Lp(a)	Subsample 12 years and older	[Blue bar]							[Blue bar]					
Measles/varicella/rubella	6–49 years	[Blue bar]										Mumps added		
Metals (urine)	1/3 sample 6 years and older	[Blue bar]												
Mercury (blood)	1–5 years, females 16–49 years ¹	[Blue bar]				1 year and older								
Mercury (hair)	1–5 years, females 16–49 years	[Blue bar]												
Mercury (urine)	Females 16–49 years ¹	[Blue bar]							1/3 sample 6 years and older					
Methylmalonic acid	3 years and older	[Blue bar]												

See footnotes at end of table. Acronyms and abbreviations and legend.

Table 2. Laboratory component matrix of the National Health and Nutrition Examination Survey, 1999–2010—Con.



Lab test	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
MRSA	1 year and older												
Non-dioxin-like polychlorinated biphenyls	1/3 sample 12 years and older												
NTX	8 years and older												
OGTT	Subsample 12 years and older									a.m. SPs			
Omega fatty acids	3–11 years, a.m. SPs 12 years and older												
Organophosphate insecticides	1/3 sample 6 years and older ¹		Note B										
Osmolality	6 years and older												
PAH	1/3 sample 6 years and older												
Perchlorate (urine)	6 years and older ¹			Note E						Note F			
Perchlorate (water)	1/2 sample 12 years and older												
Perfluorinated compounds	1/3 sample 12 years and older ¹	Note G											
Pesticides													
Organochlorine	1/3 sample 12 years and older												
Other	1/3 sample 6 years and older ¹		Note B										
Pyrethroid	1/3 sample 6 years and older ¹			Note H									
Phthalates	1/3 sample 6 years and older												
Phytoestrogens	1/3 sample 6 years and older												
Polybrominated diphenyl ethers	1/3 sample 12 years and older												
Polychlorinated and polybrominated dibenzo-p-dioxins, dibenzofurans, coplanar and mono-ortho-substituted biphenyls	1/3 sample 12 years and older												
Polychlorinated naphthalene	1/3 sample 12 years and older												
PSA	Males 40 years and older												
PSA follow-up	Males 40 years and older with high results ¹							Males 40–70 years					
PTH	6 years and older												
Selenium	3–11 years ¹					40 years and older							
Surplus sera	6 years and older									Reduced number of vials			
Syphilis	18–49 years												
Thyroid function testing	1/3 sample 12 years and older ¹										Note I		

See footnotes at end of table. Acronyms and abbreviations and legend.

Table 2. Laboratory component matrix of the National Health and Nutrition Examination Survey, 1999–2010—Con.



Lab test	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
TIBC	1 year and older ¹					Note D								
Toxaphenes	1/3 sample 12 years and older													
Toxoplasma	6–49 years	Note G												
Transferrin receptor	1–5 years, females 12–49 years													
Triglycerides	Subsample 3 years and older ¹								a.m. SPs 12 years and older					
TTG-EMA (celiac disease)	6 years and older													
Urine flow rate calculation	6 years and older													
Vitamin A/E/carotenoids	3 years and older ¹					6 years and older								
Vitamin B6	1 year and older													
Vitamin B12	3 years and older ¹					1 year and older								
Vitamin C	6 years and older													
Vitamin D	6 years and older ¹							1 year and older						
VOC (blood)	Subsample 20–59 years ¹								1/2 sample 12 years and older					
VOC exposure monitor	Subsample 20–59 years													
VOC (water)	Subsample 20–59 years ¹								1/2 sample 12 years and older					
WBC/DNA	20 years and older													

¹Except where noted otherwise.

Note A: Second specimen is collected in home.

Note B: In 1999, subsample was one-fourth of those aged 12–59 years; in 1999–2002, subsample was one-half of those aged 6–11 years.

Note C: Age range changed to 6–19 years for hepatitis A only.

Note D: Age range changed to 3–5 years and females 12–59 years.

Note E: Analyzed retrospectively from surplus sera, 2001–2004.

Note F: In 2009–2010, subsample was one-third of those 6 years and older.

Note G: Analyzed retrospectively from surplus sera, 1999–2000.

Note H: In 2001–2002, subsample was one-half of those aged 6–11 years.

Note I: In 2007–2008, full sample; in 2009–2010, one-third sample.

[Acronyms and abbreviations and legend.](#)

Table 3. Questionnaire component matrix of the National Health and Nutrition Examination Survey, 1999–2010



Component	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
SP questionnaire															
Acculturation (ACQ)	12 years and older														
Allergy (ARQ)	1 year and older														
Audiometry (AUQ)	20 years and older ¹								1 year and older						
Balance (BAQ)	40 years and older														
Blood pressure (BPQ)	16 years and older														
Cardiovascular disease (CDQ)	40 years and older														
Demographics (DMQ)	Birth and older														
Dermatology (DEQ)	6 years and older ¹								20–59 years						
Diabetes (DIQ)	1 year and older														
Diet behavior and nutrition (DBQ)	Birth and older														
Dietary screener module (DTQ)	2–69 years														
Dietary supplements and medications (DSQ)	Birth and older														
Digit symbol substitution test (CFQ)	60 years and older														
Early childhood (ECQ)	Birth–15 years														
Health insurance (HIQ)	Birth and older	Found in family questionnaire													
Hospital utilization and access to care (HUQ)	Birth and older														
Immunization (IMQ)	Birth and older														
Inflammatory back pain (ARQ)	20–69 years														
Introduction and verification (IVQ)	Birth and older														
Kidney conditions (KIQ)	20 years and older														
Medical conditions (MCQ)	1 year and older														
Miscellaneous pain (MPQ)	20 years and older														
Occupation (OCQ)	12 years and older ¹								16 years and older						
Oral health (OHQ)	2 years and older ¹								18 years and older				30 years and older		
Osteoporosis (OSQ)	20 years and older														
Physical activity and physical fitness (PAQ)	2 years and older														
Physical functioning (PFQ)	1 year and older ¹											5 years and older			
Respiratory health and disease (RDQ)	1 year and older														

See footnotes at end of table. Acronyms and abbreviations and legend.

Table 3. Questionnaire component matrix of the National Health and Nutrition Examination Survey, 1999–2010—Con.



Component	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sleep disorders (SLQ)	16 years and older												
Smoking and tobacco use (SMQ)	20 years and older												
Social support (SSQ)	60 years and older ¹								40 years and older				
Tuberculosis (TBQ)	1 year and older												
Vision (VIQ)	20 years and older ¹								12 years and older				
Weight history (WHQ)	16 years and older												
Family questionnaire													
Consumer behavior (CBQ)	Birth and older												
Demographic background/ occupation (DMQ)	Birth and older												
Food security (FSQ) ²	Birth and older												
Health insurance (HIQ)	Birth and older									Found in SP questionnaire			
Housing characteristics (HOQ)	Birth and older												
Income (INQ)	Birth and older												
Pesticide use (PUQ)	Birth and older									Found in MEC interview			
Smoking (SMQ)	Birth and older												
MEC questionnaire													
ACASI	12 years and older												
Alcohol use	12–19 years												
Conduct disorders	12–19 years												
Drug use	12–59 years ¹										12–69 years		
Food security	12–15 years												
Prostate conditions	Males 20 years and older									Moved to CAPI			
Sexual behavior	14–59 years												
Tobacco use	12–19 years												
CAPI	12 years and older												
Alcohol use	20 years and older												
Bowel health	20 years and older												
Current health status	12 years and older												
Depression screener	12 years and older												

See footnotes at end of table. Acronyms and abbreviations and legend.

Table 3. Questionnaire component matrix of the National Health and Nutrition Examination Survey, 1999–2010—Con.



Component	Sample description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Kidney conditions-urology	20 years and older	[Data present]											
Pesticide exposure	8 years and older	[Data present]											
Physical activity	12–15 years	[Data present]											
Prostate conditions	Males 20 years and older	[Data present]											
Reproductive health	Females 12 years and older	[Data present]											
Tobacco use	20 years and older	[Data present]											
Volatile toxicants	1/3 sample 12 years and older	[Data present]											
Weight history	8–15 years	[Data present]											

¹Except where noted otherwise.

²Adult and child person-level food security data collected after the dietary recall.

[Acronyms and abbreviations and legend.](#)

2003-04 Questionnaire

DIET BEHAVIOR AND NUTRITION - DBQ

BOX 1

CHECK ITEM DBQ.005:

IF SP AGE <= 6, CONTINUE.

OTHERWISE, GO TO BOX 2.

DBQ.010 Now I'm going to ask you some general questions about {SP's} eating habits.

Was {SP} ever breastfed or fed breastmilk?

YES	1
NO	2 (DBQ.040)
REFUSED	7 (DBQ.040)
DON'T KNOW	9 (DBQ.040)

DBQ.020 How old was {SP} when {he/she} was **first** fed something other than breastmilk or water?

INCLUDE FORMULA, JUICE, SOLID FOODS

|_|_|_|

ENTER AGE IN DAYS, WEEKS, MONTHS OR YEARS

NEVER	0 (BOX 2)
REFUSED	777 (BOX 2)
DON'T KNOW	999 (BOX 2)

ENTER UNIT

DAYS.....	1
WEEKS	2
MONTHS.....	3
YEARS	4
REFUSED	7
DON'T KNOW	9

DBQ.030 How old was {SP} when {he/she} **completely stopped** breastfeeding or being fed breastmilk?

|_|_|_|_|
ENTER AGE IN DAYS, WEEKS, MONTHS OR YEARS

STILL BREASTFEEDING..... 6666
REFUSED 7777
DON'T KNOW 9999

ENTER UNIT

DAYS..... 1
WEEKS 2
MONTHS..... 3
YEARS 4
REFUSED 7
DON'T KNOW 9

DBQ.040 How old was {SP} when {he/she} was **first** fed formula on a **daily basis**?

INCLUDE CHILDREN RECEIVING FORMULA **AND** THOSE RECEIVING FORMULA AND BREASTMILK AT THE SAME TIME

|_|_|_|_|
ENTER AGE IN DAYS, WEEKS, MONTHS OR YEARS

NEVER ON A DAILY BASIS..... 0 (DBQ.060)
REFUSED 7777
DON'T KNOW 9999

ENTER UNIT

DAYS..... 1
WEEKS 2
MONTHS..... 3
YEARS 4
REFUSED 7
DON'T KNOW 9

DBQ.050 How old was {SP} when {he/she} **completely stopped** drinking formula?

|_|_|_|_|
ENTER AGE IN DAYS, WEEKS, MONTHS OR YEARS

STILL DRINKING FORMULA..... 6666
REFUSED 7777
DON'T KNOW 9999

ENTER UNIT

DAYS..... 1
WEEKS 2
MONTHS..... 3
YEARS 4
REFUSED 7
DON'T KNOW 9

DBQ.060 How old was {SP} when {he/she} was first fed **milk** on a daily basis?

INCLUDE LACTAID AS MILK
DO NOT INCLUDE BREASTMILK OR FORMULA

|_|_|_|_|

ENTER AGE IN DAYS, WEEKS, MONTHS OR YEARS

NEVER ON A DAILY BASIS..... 0 (DBQ.080)
REFUSED 7777
DON'T KNOW 9999

ENTER UNIT

DAYS..... 1
WEEKS 2
MONTHS..... 3
YEARS 4
REFUSED 7
DON'T KNOW 9

DBQ.071 What type of milk was {SP} **first** fed on a daily basis? Was it . . .

CODE ALL THAT APPLY

whole or regular,..... 10
2% fat milk (includes "low fat milk" not
further specified),..... 11
1% fat milk, 12
skim, nonfat, or 0.5% fat milk (includes
liquid or reconstituted from dry), or 13
another type?..... 30
REFUSED 77
DON'T KNOW 99

DBQ.080 How old was {SP} when {he/she} **started** eating solid foods [such as strained foods like baby food or any other non-liquid foods] on a daily basis?

|_|_|_|_|

ENTER AGE IN DAYS, WEEKS, MONTHS OR YEARS

NEVER ON A DAILY BASIS..... 0
REFUSED 7777
DON'T KNOW 9999

ENTER UNIT

DAYS..... 1
WEEKS 2
MONTHS..... 3
YEARS 4
REFUSED 7
DON'T KNOW 9

BOX 2

CHECK ITEM DBQ.085:

IF SP AGE >= 1, CONTINUE.
OTHERWISE, GO TO FSQ.651.

DBQ.090 {Next I have some general questions about {your/SP's} eating habits.}

{First/Next} are questions about the **kinds** of food {you eat/SP eats}.

On average, how many times **per week** {do you/does SP} eat meals that were prepared in a restaurant?
Please include eat-in restaurants, carry out restaurants and restaurants that deliver food to your house.

'MEALS' MEAN MORE THAN A BEVERAGE OR SNACK FOOD LIKE CANDY BARS OR BAG OF CHIPS

CAPI INSTRUCTION:

DISPLAY "NEXT ..." AND "FIRST" IF SP AGE IS > 6.

CREATE HELP FOR "RESTAURANT MEALS".

|_|_|

ENTER NUMBER

NEVER 0
LESS THAN WEEKLY 66
REFUSED 77
DON'T KNOW 99

DBQ.197 Now I'm going to ask a few questions about **milk products**. Do not include their use in cooking.

In the **past 30 days**, how often did {you/SP} have milk to drink or on {your/his/her} cereal? Please include chocolate and other flavored milks as well as hot cocoa made with milk. Do not count small amounts of milk added to coffee or tea. Would you say . . .

HAND CARD DBQ3

CAPI INSTRUCTION:

THIS SHOULD **NOT** BE A GATE QUESTION ANYMORE.

CREATE HELP FOR "HOT COCOA".

never, 0 (BOX 6)
rarely – less than once a week, 1
sometimes – once a week or more, but
less than once a day, or 2
often – once a day or more? 3
VARIED 4
REFUSED 7 (BOX 6)
DON'T KNOW 9 (BOX 6)

DBQ.221 What type of milk was it? Was it usually . . .

IF RESPONDENT CANNOT PROVIDE USUAL TYPE, CODE ALL THAT APPLY

- whole or regular,..... 1
- 2% fat milk (includes "low fat milk" not further specified),..... 2
- 1% fat milk, 3
- skim, nonfat, or 0.5% fat milk (includes liquid or reconstituted from dry), or 4
- another type?..... 30
- REFUSED 77
- DON'T KNOW 99

BOX 6

CHECK ITEM DBQ.225:
IF SP AGE >= 20, CONTINUE.
OTHERWISE, GO TO BOX 9.

DBQ.229 The next question is about **regular** milk use.

A regular milk drinker is someone who uses any type of milk at **least 5 times a week**. Using this definition, which statement best describes {you/SP}? . . .

HAND CARD DBQ4

- {I've/He's/She's} been a **regular** milk drinker for **most** or **all** of {my/his/her} life, including {my/his/her} childhood;..... 1
- {I've/He's/She's} **never** been a **regular** milk drinker; 2 (BOX 8A)
- {My/His/Her} milk drinking has **varied** over {my/his/her} life – sometimes {I've/he's/she's} been a **regular** milk drinker and sometimes {I have/he has/she has} **not** been a regular milk drinker 3
- REFUSED 7 (BOX 8A)
- DON'T KNOW 9 (BOX 8A)

DBQ.235 Now, I'm going to ask you how often {you/SP} drank **milk** at different times in {your/his/her} **life**.

How often did {you/SP} drink any type of milk, including milk added to cereal when {you were/s/he was} . . .

HAND CARD DBQ5

IF NECESSARY, PROBE FOR USUAL OR MOST COMMON AMOUNT FOR THIS TIME PERIOD

CAPI INSTRUCTION:

THESE (A-C) SHOULD **NOT** BE GATE QUESTIONS ANYMORE.

a. **a child between the ages of 5 and 12 years old? Would you say. . .**

- never, 0
- rarely – less than once a week, 1
- sometimes – once a week or more, but
less than once a day, or 2
- often – once a day or more? 3
- VARIED 4
- REFUSED 7
- DON'T KNOW 9

b. **a teenager between the ages of 13 and 17 years old? Would you say . . .**

- never, 0
- rarely – less than once a week, 1
- sometimes – once a week or more, but
less than once a day, or 2
- often – once a day or more? 3
- VARIED 4
- REFUSED 7
- DON'T KNOW 9

c. **a young adult between the ages of 18 and 35 years old? Would you say . . .**

- never, 0
- rarely – less than once a week, 1
- sometimes – once a week or more, but
less than once a day, or 2
- often – once a day or more? 3
- VARIED 4
- REFUSED 7
- DON'T KNOW 9

BOX 8A

CHECK ITEM DBQ.265A:
IF SP AGE >= 60, CONTINUE.
OTHERWISE, GO TO END OF SECTION.

DBQ.301 The next questions are about meals provided by community or government programs.

In the **past 12 months**, did {you/SP} receive any meals **delivered** to {your/his/her} home from community programs, "Meals on Wheels", or any other programs?

- YES 1
- NO 2
- REFUSED 7
- DON'T KNOW 9

DBQ.330 In the **past 12 months**, did {you/SP} go to a community program or senior center to eat prepared meals?

INCLUDE ADULT DAY CARE

- YES 1
- NO 2
- REFUSED 7
- DON'T KNOW 9

BOX 8B

CHECK ITEM DBQ.335:
GO TO END OF SECTION.

BOX 9

CHECK ITEM DBQ.355:
IF SP AGE 4-19, CONTINUE.
OTHERWISE, GO TO END OF SECTION.

DBQ.360 During the **school year**, {do you/does SP} attend a kindergarten, grade school, junior or high school?

- YES 1
- NO 2 (END OF SECTION)
- REFUSED 7 (END OF SECTION)
- DON'T KNOW 9 (END OF SECTION)

DBQ.370 Does {your/SP's} school serve school lunches? These are **complete** lunches that cost **the same every day**.

- YES 1
- NO 2 (DBQ.400)
- REFUSED 7 (DBQ.400)
- DON'T KNOW 9 (DBQ.400)

DBQ.381 During the **school year**, about how many times a week {do you/does SP} usually get a complete school lunch?

- ENTER NUMBER OF TIMES
- NONE 0 (DBQ.400)
 - REFUSED 7 (DBQ.400)
 - DON'T KNOW 9 (DBQ.400)

DBQ.390 {Do you/Does SP} get these lunches free, at a reduced price, or {do you/does he/she} pay full price?

- FREE 1
- REDUCED PRICE 2
- FULL PRICE 3
- REFUSED 7
- DON'T KNOW 9

DBQ.400 Does {your/SP's} school serve a **complete** breakfast that costs **the same every day**?

- YES 1
- NO 2 (END OF SECTION)
- REFUSED 7 (END OF SECTION)
- DON'T KNOW 9 (END OF SECTION)

DBQ.411 During the **school year**, about how many times a week {do you/does SP} usually get a complete breakfast at school?

- ENTER NUMBER OF TIMES
- NONE 0 (END OF SECTION)
 - REFUSED 7 (END OF SECTION)
 - DON'T KNOW 9 (END OF SECTION)

DBQ.421 {Do you/Does SP} get these breakfasts free, at a reduced price, or {do you/does he/she} pay full price?

- FREE 1
- REDUCED PRICE 2
- FULL PRICE 3
- REFUSED 7
- DON'T KNOW 9

BOX 9A

CHECK ITEM DBQ.422:

IF DBQ.390 = CODE 1 OR CODE 2 OR DBQ.421 = CODE 1 OR CODE 2,
CONTINUE.
OTHERWISE, GO TO END OF SECTION.

DBQ.424 {Do you/Does SP} get a free or reduced price meal at any summer program {he/she} attends?

- YES 1
- NO 2
- DID NOT ATTEND SUMMER PROGRAM 3
- REFUSED 7
- DON'T KNOW 9