

# National Health and Nutrition Examination Survey 1999–2016 Survey Content Brochure













# The Survey Content Brochure is a summary of the available 1999–2016 NHANES data.

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 with physical and laboratory examinations.

The NHANES program began in the early 1960s and has been conducted as a series of surveys focusing on different population groups or health topics. The historical surveys are referred to as NHANES I, NHANES II, and NHANES III.

In 1999, the survey became a continuous program that has adaptable components 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.

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## Table 1. Questionnaire topic areas of the National Health and Nutrition Examination Survey, 1999–2016



	Component or lab to	est conducted or	n original sampl	e description	Change fro	m original samp	ole description	Compone	ent or lab test n	ot conducted
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016
Survey participant (SP) questionnaire										
Acculturation (ACQ)	12 years and over								Note T	
Allergy (AGQ)	1 year and over									
Air quality (AQQ)	16 years and over									
Balance (BAQ)	40 years and over									
Blood pressure and cholesterol (BPQ)	16 years and over									
Cardiovascular disease (CDQ)	40 years and over									
Cognitive functioning (CFQ)	60 years and over							Not	te A	
Demographic background (DMQ)	Birth and over									
Dermatology (DEQ)	6 years and over <sup>1</sup>						Not	e B		
Diabetes (DIQ)	1 year and over									
Diet behavior and nutrition (DBQ)	Birth and over									
Dietary screener module (DTQ)	2–11 years									
Dietary supplements (DSQ) and medications (RXQ)	Birth and over									
Disability status (DLQ)	1 year and over									Note U
Early childhood (ECQ)	Birth-15 years									
Health insurance (HIQ)	Birth and over		Note C							
Hearing/audiometry (AUQ)	1 year and over									
Hepatitis (HEQ)	6 years and over									
Hospital utilization and access to care (HUQ)	Birth and over									
Immunization (IMQ)	Birth and over									
Inflammatory arthritis pain (ARQ)	20–69 years									
Kidney conditions (KIQ)	20 years and over									
Medical conditions (MCQ)	1 year and over									
Miscellaneous pain (MPQ)	20 years and over									
Occupation (OCQ)	12 years and over <sup>1</sup>						Note	e D		
Oral health (OHQ)	2 years and over <sup>1</sup>				No	te E	No	te F	No	te S
Osteoporosis (OSQ)	20 years and over								Note H	
Physical activity and physical fitness (PAQ)	2 years and over									
Physical functioning (PFQ)	1 year and over <sup>1</sup>							Not	e G	
Respiratory health and disease (RDQ)	1 year and over									
Sleep disorders (SLQ)	16 years and over									

See footnotes at end of table.

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## Table 1. Questionnaire topic areas of the National Health and Nutrition Examination Survey, 1999–2016 (Continued)



	Component or lab to	est conducted or	original sample	e description	Change fro	m original sam	ole description	Compone	ent or lab test n	ot conducted
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016
Smoking and tobacco use (SMQ)	20 years and over								No	te E
Social support (SSQ)	60 years and over <sup>1</sup>				Not	te H				
Taste and smell (CSQ)	40 years and over							Not	te I	
Tuberculosis (TBQ)	1 year and over <sup>1</sup>							Note J		
Vision (VIQ)	20 years and over <sup>1</sup>				Not	te K				
Weight history (WHQ)	16 years and over									
Family questionnaire										
Demographic background (DMQ)	Birth and over									
Consumer behavior (CBQ)	Birth and over									
Food security (FSQ) <sup>2</sup>	Birth and over									
Health insurance (HIQ)	Birth and over					Note L				
Housing characteristics (HOQ)	Birth and over									
Income (INQ)	Birth and over									
Pesticide use (PUQ)	Birth and over					Note M	'			
Smoking-household (SMQ)	Birth and over									
Mobile examination center (MEC) questionnaire	2									
Audio computer-assisted self-interview (ACASI)	8 years and over									
Alcohol use (ALQ)	12–19 years <sup>1</sup>								Note N	
Conduct disorders (CDQ)	12–19 years									
Drug use (DUQ)	12–59 years <sup>1</sup>							Note O		
Food security (FSQ)	12–15 years									
Prostate conditions (PSQ)	Males 20 years and over	Note P				Note Q				
Pubertal maturation (PMQ)	8–19 years									
Sexual behavior (SXQ)	14–59 years <sup>1</sup>							Note R		
Smoking and tobacco use (SMQ)—Youth	12–19 years <sup>1</sup>								No	te N
Computer-assisted personal interview (CAPI)	8 years and over									
Alcohol use (ALQ)	20 years and over <sup>1</sup>								Note E	
Bowel health (BHQ)	20 years and over									
Current health status (HSQ)	12 years and over									
Dietary screener module (DTQ)	12–69 years									
Muscle pain/creatine kinase (CKQ)	12 years and over									

#### Table 1. Questionnaire topic areas of the National Health and Nutrition Examination Survey, 1999–2016 (Continued)



	Component or lab te	st conducted or	n original sampl	e description	Change from original sample description Component or lab test not conducte						
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016	
Pesticide exposure (PUQ)	8 years and over										
Physical activity (PAQ)	12–15 years										
Prostate conditions (KIQ)	Males 20 years and over										
Reproductive health (RHQ)	Females 12 years and over										
Smoking and tobacco use (SMQ)—Adult	20 years and over								No	te K	
Urology (KIQ)	20 years and over										
Volatile toxicants (VTQ)	1/3 sample 12 years and over										
Weight history (WHQ)	8–15 years										

<sup>\*</sup>Upcoming survey cycle.

<sup>2</sup>In 2001–2010, adult and child person-level food security data was collected after the dietary recall.

Note A: Moved to MEC questionnaire and expanded.

Note B: Aged 20–59 years.

Note C: Asked in family questionnaire.

Note D: Aged 16 years and over.

Note E: Aged 18 years and over.

Note F: Aged 30 years and over from 2009–2010 and 1 year and over from 2011–2014.

Note G: Aged 5 years and over.

Note H: Aged 40 years and over.

Note I: Started in 2012.

Note J: Aged 6 years and over.

Note K: Aged 12 years and over.

Note L: Found in SP questionnaire.

Note M: Found in MEC interview.

Note N: Aged 12–17 years.

Note O: Aged 12–69 years.

Note P: Found in SP questionnaire KIQ component.

Note Q: Moved to CAPI.

Note R: Aged 14-69 years.

Note S: Added questions related to the enhanced fluorosis examination.

Note T: Aged 3 years and over.

Note U: Added questions related to anxiety and depression.

<sup>&</sup>lt;sup>1</sup>Except where noted otherwise.

# Table 2. Post-examination follow-up questionnaire components of the National Health and Nutrition Examination Survey, 1999–2016



	Component or lab tes	st conducted on	original sample	e description	Change fro	m original samp	ole description	Compone	ent or lab test n	ot conducted
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016
Flexible consumer behavior survey module (FCBS) phone follow-up (CBQ)	1 year and over									
Food frequency	2 years and over			No	te A					
Hepatitis C follow-up (HCQ)	SPs with Hep C									
Prostate-specific antigen (PSA) follow-up	Men 40 years and over with high results <sup>1</sup>				Note B					

<sup>\*</sup>Upcoming survey cycle.

Note B: Conducted with men aged 40–70 years.

<sup>&</sup>lt;sup>1</sup>Except where noted otherwise.

Note A: Data collected by mail.

## Table 3. Examination components of the National Health and Nutrition Examination Survey, 1999–2016



	Component or lab te	st conducted or	n original sample	e description	Change fro	m original sam	ple description	Compon	ent or lab test n	ot conducted
Component	Sample description	1999–2000	2001–2002	2003-2004	2005-2006	2007-2008	2009–2010	2011–2012	2013-2014	2015–2016
Arthritis body measures	20–69 years									
Audiometry	1/2 sample 20–69 years <sup>1</sup>					No	te A	'		Note A
Balance	1/2 sample 40–69 years <sup>1</sup>		Not	te B						
Bioelectrical impedance analysis	8–49 years									
Blood pressure	8 years and over									
Body measurements	Birth and over								Note C	
Cardiovascular (CV) fitness	12–49 years <sup>1</sup>				Note D					
Dermatology	20–59 years									
Dietary	Birth and over					No	te E			
Dietary supplement	Birth and over							Note F		
Dual energy x-ray absorptiometry										
Abdominal aortic calcification	40 years and over									
Body composition	8 years and over <sup>1</sup>	Note G			Note H				Note I	
Bone density—hip and spine	8 years and over								Note S	
Vertebral fracture assessment	40 years and over									
Grip strength test	6 years and over									
Lower extremity disease										
Peripheral neuropathy	40 years and over									
Peripheral vascular disease	40 years and over									
Mental health	8–39 years									
Attention deficit hyperactivity disorder (ADHD)—Youth	Parent of 8–15 years	Note K								
Anxiety—Youth	8–19 years									
Conduct disorders—Youth	Parent of 8–15 years	Note K								
Depression—Youth	8–19 years	Note K								
Eating disorders—Youth	8–19 years	Note K								
Elimination disorders—Youth	Parent of 8–11 years	Note K								
Panic disorder—Youth	8–19 years									
Depression—Adult	1/2 sample 20–39 years <sup>1</sup>						Not	te L		



	Component or lab to	est conducted or	n original sample	e description	Change fro	om original sam	ple description	Component or lab test not conducted		
Component	Sample description	1999–2000	2001–2002	2003-2004	2005–2006	2007–2008	2009–2010	2011–2012	2013-2014	2015–2016
Generalized anxiety—Adult	1/2 sample 20–39 years									
Panic disorder—Adult	1/2 sample 20–39 years									
Ophthalmology										
Retinal photo	40 years and over									
Visual fields	40 years and over									
Oral health	2 years and over				No	te M	Note N		Note O	
Dental flurosis imaging	2 years and over									
Physical activity monitor	6 years and over							No	te P	
Physical functioning										
8-foot timed walk	50 years and over	Note K								
20-foot timed walk	50 years and over									
Isokinetic	50 years and over									
Physician exam	Birth and over									
Respiratory health										
Exhaled nitric oxide	6–79 years									
Spirometry	6–79 years									
Taste and smell	40 years and over								Note Q	
Tuberculin skin test	1 year and over <sup>1</sup>							Note R		
Vision	12 years and over									

<sup>\*</sup>Upcoming survey cycle.

<sup>1</sup>Except where noted otherwise.

Note A: Target ages are varied by year.

Note B: Increased to full sample, 40 years and over.

Note C: Sagittal abdominal diameter was added for SPs 8 aged years and over; skinfolds were dropped in 2011 and added in 2012 for children aged 3–15 years.

Note D: Conducted with the afternoon and evening SPs.

Note E: In 2002, new interview system implemented; all SPs asked to complete a second recall by phone.

Note F: A second recall by phone.

Note G: Age range for women was 18 years and over.

Note H: Aged 8-69 years.

Note I: Aged 8–59 years.

Note K: Data collection started in 2000.

Note L: Ages 12 years and over with full sample using PHQ-9 screener.

Note M: Changed from comprehensive dentist based exam to a simplified oral health screening for SPs aged 5 years and over.

hygienist.

Note O: Conducted by a dentist; sample is aged 1 year and over.

Note P: Ages 3 years and over.

Note Q: Data collection started in 2012.

Note R: Aged 6 years and over.

Note S: Aged 40 years and over.



	Component or lab te	st conducted or	n original sample	e description	Change fro	om original sam	ole description	Compon	ent or lab test n	ot conducted		
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016		
Acrylamide	3 years and over <sup>1</sup>					No	te A		Not	e A		
Albumin <sup>2</sup>	6 years and over									Note LL		
Albumin (home urine) <sup>2</sup>							No	te B				
Aldehydes	1/3 sample (12 years and over) and all adult smokers											
Apolipoprotein (B)	1/2 sample 12 years and over						Note C					
Aromatic amines <sup>2</sup>	1/3 sample (6 years and over) and all adult smokers									Note NN		
Arsenic <sup>2</sup>	1/3 sample 6 years and over							Note	e MM	Note MM NN		
Bone alkaline phosphatase	8 years and over <sup>1</sup>			Note D								
BV/trichomonas	Females 14–49 years											
Cadmium	1 year and over								Not	e JJ		
Caffeine exposure <sup>2</sup>	1/3 sample (6 years and over)											
CD4/CD8	18–49 years, HIV+, and controls											
Celiac disease (tTG-EMA)	6 years and over											
Chemistry panel	12 years and over											
Chlamydia <sup>2</sup>	14–39 years											
Cholesterol (total)	3 years and over <sup>1</sup>						Not	e A				
High density lipoprotein (HDL)	3 years and over <sup>1</sup>						Not	e A				
Low density lipoprotein (LDL)	Subsample 3 years and over <sup>1</sup>						Not	e E				
Chromium/Cobalt	40 years and over											
Complete blood count	1 year and over											
Cotinine	3 years and over											
C-reactive protein (CRP)	3 years and over <sup>1</sup>			No	te F	No	te G			Note F		
Creatine phosphokinase	12 years and over						Note H					
Creatinine <sup>2</sup>	6 years and over									Note LL		
Creatinine (home urine) <sup>2</sup>	6 years and over							Note B				



	Component or lab test conducted on original sample description Change from original sample description							Compon	ent or lab test n	ot conducted
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016
Cryptosporidium	6–49 years		Note I							
Cytomegalovirus	1–5 years									
Diisocyanates	3–5 years and 1/3 sample 6 years and over									
Dust allergens	1 year and over									
Environmental phenols	1/3 sample 6 years and over									
Erythrocyte protoporphyrin	1 year and over <sup>1</sup>			No	te J					
Estradiol	6 years and over									
Ferritin	1 year and over <sup>1</sup>				No	te K				Note K
Fibrinogen	40 years and over									
Fluoride (plasma)	6–19 years									
Fluoride (water)	Birth–19 years									
Fluoride <sup>2</sup>	6–19 years									
Folate (RBC)	3 years and over <sup>1</sup>						Note F			
Folate (serum)	3 years and over <sup>1</sup>						Note F			
Follicle stimulating hormone/luteinizing hormone (FSH/LH)	Females 35–60 years									
Fungicides <sup>2</sup>	1/3 sample 6 years and over <sup>1</sup>	No	te L							
Glucose	12 years and over									
Glycohemoglobin	12 years and over									
Gonorrhea <sup>2</sup>	14–39 years									
Halogenated phenolic compounds/environmental pesticides <sup>2</sup>	1/3 sample 6 years and over <sup>1</sup>	No	te L							
Helicobacter pylori	3 years and over		Note I							
Hepatitis (antiHBs)	2–5 years									
Hepatitis A, B, C, D, E	6 years and over							Not	e M	
Herbicides—substituted ureas and others	1/3 sample 6 years and over <sup>1</sup>	No	te L							
Herpes 1 and 2 antibody	14–49 years									



					on Change from original sample description Component or lab test n						
	Component or lab te	st conducted on	original sample	edescription	Change fro	m original samp	ole description	Compon	ent or lab test n	ot conducted	
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016	
Heterocylic aromatic amines <sup>2</sup> (Tobacco Markers)	1/3 sample (6 years and over) and all adult smokers										
HLA-B27 (inflammatory arthritis)	20–69 years						Note N				
Homocysteine	3 years and over <sup>1</sup>				Note O						
Human immunodeficiency virus (HIV) antibody	18–49 years							Not	e P		
Human papillomavirus (HPV) (oral rinse)	14–69 years										
Human papillomavirus (HPV) (serum)	14–59 years		Note Q								
Human papillomavirus (HPV) (swab)	Females 14–59 years		Note Q								
Human papillomavirus (HPV) (male)	14–59 years										
Hydroxylated polychlorinated biphenyls	1/3 sample 12 years and over										
Immunoglobulin E-allergens	1 year and over										
Insulin/C-peptide	Subsample 12 years and over		Note C				Note R,	Note C			
lodine <sup>2</sup>	1/3 sample 6 years and over <sup>1</sup>	Note S				Note S				Note NN	
Iron	1 year and over			No	te T						
Latex	12–59 years		Note I								
Lead	1 year and over								Not	e JJ	
Lead dust	Households with 1–5 years										
Lp(a) (Lipoprotein(a))	Subsample 12 years and over				Note U						
Manganese <sup>2</sup>	1/3 sample 6 years and over										
Measles/varicella/rubella	6–49 years						Note V				
Mercury	1–5 years, females 16–49 years <sup>1</sup>			Note F							
Mercury (hair)	1–5 years, females 16–49 years		Note I								
Mercury <sup>2</sup>	Females 16–49 years <sup>1</sup>					Not	e W			Note NN	



	Component or lab te	st conducted or	original sampl	e description	Change fro	m original samp	ole description	Compon	ent or lab test n	ot conducted
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016
Metals <sup>2</sup>	1/3 sample 6 years and over							Note	e MM	Note MM, NN
Methicillin resistant staphlococcus aureus (MRSA)	1 year and over									
Methylmalonic acid	3 years and over <sup>1</sup>							No	te O	
NAL <sup>2</sup>	6 years and over									Note W, MM, NN
Nicotine analogs <sup>2</sup>	1/3 sample (6 years and over) and all adult smokers									Note NN
Nondioxin-like polychlorinated biphenyls	1/3 sample 12 years and over				Note II			Not	te II	
N-teleopeptide <sup>2</sup> (NTX)	8 years and over									
Oral glucose tolerance (OGTT)	Subsample 12 years and over						Not	e C		
Organophosphate insecticides <sup>2</sup>	1/3 sample 6 years and over <sup>1</sup>	No	te L							Note NN
Osmolality <sup>2</sup>	6 years and over									
Parathyroid hormone	6 years and over									
Perchlorate/thiocynate/nitrates <sup>2</sup>	6 years and over <sup>1</sup>					Note X				Note MM, NN
Perchlorate (water)	1/2 sample 12 years and over									
Pesticides <sup>2</sup>	1/3 sample 6 years and over									Note NN
• Organochlorine <sup>2</sup>	1/3 sample 12 years and over									
• Other <sup>2</sup>	1/3 sample 6 years and over <sup>1</sup>	No	te L							
• Pyrethroid <sup>2</sup>	1/3 sample 6 years and over <sup>1</sup>		Note Y							
Phthalates <sup>2</sup>	1/3 sample 6 years and over									Note NN
Phytoestrogens <sup>2</sup>	1/3 sample 6 years and over									



	Component or lab te	st conducted or	n original sampl	e description	Change fro	m original samp	ole description	Compon	ent or lab test r	ot conducted	
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016	
Polyaromatic hydrocarbons <sup>2</sup> (PAH)	1/3 sample 6 years and over							Note	e MM	Note MM, NN	
Polybrominated diphenyl ethers	1/3 sample 12 years and over						Not	e II			
Polychlorinated and polybrominated dibenzo- p-dioxins, dibenzo-furans, coplanar and mono- ortho-substituted biphenyls	1/3 sample 12 years and over						Note II			Note OO	
Polyfluorinated compounds	1/3 sample 12 years and over <sup>1</sup>	Note Z									
Polyunsaturated fatty acids	3–11 years, a.m. SPs 12 years and over			Not	e AA	NA CONTRACTOR OF THE CONTRACTO					
Prostate specific antigen (PSA)	Males 40 years and over										
Selenium/copper/zinc	3–11 years <sup>1</sup>		Note BB	Not	ote CC Note DD						
Sex hormone binding globulin	6 years and over										
Stored sera	6 years and over						Note EE				
Stored urine	6 years and over									Note NN	
Syphillis	18–49 years										
Testosterone	6 years and over										
Thyroid function testing	1/3 sample 12 years and over <sup>1</sup>					Note FF					
Tobacco-specific nitrosamines <sup>2</sup>	1/3 sample (6 years and over) and all adult smokers									Note NN	
Total iron binding capacity (TIBC)/transferrin saturation	1 year and over <sup>1</sup>			No	te T						
Toxaphenes	1/3 sample 12 years and over										
Toxoplasma	6–49 years	Note Z									
Trans fatty acids	3–11 years, a.m. SPs 12 years and over										
Transferrin receptor	1–5 years, females 12–49 years										



	Component or lab test conducted on original sample description Change from original sample description Component or lab test not conducted									
Component	Sample description	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014	2015–2016
Trichomonas	14–59 years									
Triglycerides	Subsample 3 years and over <sup>1</sup>				Note E					
Tuberculosis	6 years and over									
Urine flow rate calculation <sup>2</sup>	6 years and over									
Vitamin A/E/carotenoids	3 years and over <sup>1</sup>			No	te A					
Vitamin B6	1 year and over									
Vitamin B12	3 years and over <sup>1</sup>			No	te F			Not	te O	
Vitamin C	6 years and over									
Vitamin D	6 years and over <sup>1</sup>	Note GG								
Volatile nitrosamines <sup>2</sup>	1/3 sample (6 years and over) and all adult smokers									
Volatile organic compounds (VOCs)	Subsample 20–59 years <sup>1</sup>				Note HH					
Volatile organic compounds (VOC) exposure monitor	Subsample 20–59 years		Note I							
Volatile organic compounds (VOC) (urine)	Subsample (6 years and over) and all adult smokers									Note NN
Volatile organic compounds (VOC) (water)	Subsample 20–59 years <sup>1</sup>					Note HH				
White blood cells/deoxyribonucleic acid (WBC/DNA)	20 years and over									

<sup>\*</sup>Upcoming survey cycle.

Note A: Aged 6 years and over. Beginning in 2013, Acrylamide test was conducted on one-third sample 6 years and over.

Note B: Second specimen is collected in home.

Note C: Morning SPs only.

Note D: Aged 8-49 years.

Note E: Aged 12 years and over; morning SPs only.

Note F: Aged 1 year and over.

Note G: In 2007–2008, for ages 20 and over; for ages 3 years and over in 2009–2010.

Note H: Data collection started in 2010.

Note I: Data collection ended in 2001.

Note J: Aged 3–5 years and females aged 12–49 years.

Note K: Aged 1-5 years and females aged 12-49 years.

<sup>&</sup>lt;sup>1</sup>Except where noted otherwise.

<sup>&</sup>lt;sup>2</sup>Urine sample.



Note L: 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 M: Started hepatitis E in 2009.

Note N: Conducted in 2009 only.

Note O: Aged 20 years and over.

Note P: Aged 18–59 years.

Note Q: Data collection began in 2002.

Note R: Insulin only.

Note S: Data collection began in 2000 and was a full sample in 2007–2008 only.

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

Note U: Conducted in 2005 only.

Note V: Mumps added.

Note W: Conducted on a one-third sample of SPs aged 6 years and over.

Note X: Analyzed retrospectively from surplus sera, 2001–2004; in 2005–2012, subsample was one-third of those aged 6 years and over.

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

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

Note AA: Analyzed retrospectively from surplus sera, 2003–2006.

Note BB: Selenium ended in 2001.

Note CC: In 2003–2004, selenium was conducted on SPs aged 40 years and over.

Note DD: Copper and zinc added. conducted on one-third sample on SPs aged 6 years and over.

Note EE: Reduced number of vials.

Note FF: In 2007-2008, full sample.

Note GG: Vitamin D began in 2000; in 2003–2012, vitamin D was conducted on SPs aged 1 year and over.

Note HH: Conducted on a one-half sample of SPs aged 12 years and over.

Note II: The individual serum samples were assigned by age, race and ethnicity, and gender groups; then the serum was pooled and tested by each group.

Note JJ: All SPs aged 1–11 years; one-half sample aged 12 years and over.

Note KK: Aged 40 years and over.

Note LL: Aged 3 years and over.

Note MM: Smokers aged 20 years and over added.

Note NN: Ages 3-5 added.

Note OO: Remove polybrominated dioxins and polybrominated furans.

## Appendix. Acronyms and abbreviations used in the National Health and Nutrition Examination Survey



ADHD Attention deficit hyperactivity disorder  BV Bacterial vaginosis  CAPI Computer-assisted personal interview  CBQ Consumer behavior questionnaire  CD4/CD8 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  CRP C-reactive protein  CV fitness Cardiovascular fitness  FCBS Flexible Consumer Behavior Survey module	
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FSH/LH Follicle stimulating hormone/luteinizing hormone	
HBs Hepatitis B surface antibody	
HDL High density lipoprotein	
HIV Human immunodeficiency virus	
HLA-B27 Human leukocyte antigen B27	
HPV Human papillomavirus	
LDL Low density lipoprotein	
Lp(a) Lipoprotein (a)	
MEC Mobile examination center	
MRSA Methicillin resistant staphlococcus aureus	
NTX N-telopeptides of bone type I collagen	
OGTT Oral glucose tolerance test	
PAH Polyaromatic hydrocarbons	
PSA Prostate specific antigen	
PTH Parathyroid hormone	
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	

#### **NHANES Data Tutorials**

NHANES data tutorials provide relevant background data; tips and explanations for SAS and SUDAAN programs; downloadable sample program code; and analytic guidance. Tutorials are organized and integrated into modules and tasks to facilitate this learning process.

#### **Continuous NHANES Tutorial**

Everything you want and need to know about analyzing continuous (1999 and later) NHANES data is now available in a web-based product. The Continuous NHANES Tutorial is designed to help users navigate through the data set. Users can browse through different modules to gain insight into NHANES data.

#### **Historical NHANES Tutorials**

These tutorials will familiarise users with NHANES I, NHANES II, and NHANES III data, guide users through preparing an analytic data set, and explain distinctions of each survey design. New users of NHANES data should complete the continuous NHANES tutorial before using these tutorials.

#### **Special -topic Tutorials**

■ NHANES Dietary Tutorial

This tutorial guides users through the steps of conducting an analytical project from beginning to end, with examples of many common analytic procedures.

NHANES Environmental Chemical Data Tutorial

This tutorial will familiarize users with Continuous NHANES environmental chemical data, guide users through preparing an environmental chemical analytic data set, and explain the critical issues for the analysis of environmental chemical data. Users already familiar with Continuous NHANES data and interested in using NHANES environmental chemical data should use this tutorial. New users of NHANES data should complete the Continuous NHANES tutorial before beginning this tutorial.

- NHANES Physical Activity and Cardiovascular Fitness Data Tutorial

  This tutorial simulates a real life experience of how to conduct an analytical project from beginning to end, with a step-by-step logical flow through typical analytic procedures.
- NHANES-CMS (Centers for Medicare and Medicaid Services) Linked Data Tutorial

This tutorial walks you through the steps for conducting an analytic project using the continuous NHANES-CMS linked data, with examples of common analytic applications and procedures.