



## National Health and Nutrition Examination Survey

# 2021 NHANES Health Measurements

Below is a list of tests you may receive on the day of your examination. You will only have the test if your age falls within the ages shown in parentheses. You will receive the results of health measures shown with a black diamond (◆). Two diamonds (◆◆) means you will receive a result only if positive, or abnormal.

### Before you enter the NHANES Mobile Examination Center

#### Health Measurements

You will be weighed and measured (all) ◆

We will take your blood pressure (8+) ◆

You will have a body composition test that involves low-dosage x-rays

*(Pregnant women will not have this test)*

Total body scan (8-59) ◆

You will have a liver ultrasound transient elastography test (12+) ◆

*(Pregnant women will not have this test)*

You will have your balance tested (20-69)◆

#### Private Interviews

You will be asked to answer questions about:

Reproductive history (females 12+)

Drug use (12-59)

Alcohol and tobacco use (12+)

Sexual history (14-69)

*(You will do these by yourself using a touch screen computer for privacy)*

#### Lab Tests on Urine

You will be given a clean empty cup when you arrive at the exam center. When you change into the exam clothes in a private rest room, you will provide a urine sample. The urine will be tested for:

Exposure to environmental chemicals and metals

Arsenic (3+) ◆◆

Nickel (3+) ◆

Kidney function tests: (3+)

Albumin/ creatinine ratio ◆

Sexually transmitted diseases:

Chlamydia (14-39) ◆

Trichomonas (14-59)

*(NHANES does not test for illicit drug use)*

**Please turn over to see the next page**



Centers for Disease  
Control and Prevention  
National Center for  
Health Statistics

July 15, 2022

## Lab Tests on Blood

You will have your blood drawn. The blood will be tested for:

- Anemia (1+) ♦
- Cholesterol (6+) ♦
- Exposure to certain environmental chemicals (selected participants 6+)
- Exposures to environmental metals, such as lead and mercury (1+) ♦
- Glucose (12+) ♦
- Steroid hormones (3+) ♦
- Infectious diseases
  - Cytomegalovirus (CMV) (1-5)
  - Hepatitis A and E virus (6+)
  - Hepatitis B virus (2+) ♦♦
  - Hepatitis C virus (6+) ♦♦
  - Hepatitis D virus (6+)
  - Herpes simplex virus type 1 (12-49) ♦
  - Herpes simplex virus type 2 (14-49) ♦
  - Human immunodeficiency virus (HIV) (18-59) ♦
  - Human papillomavirus (HPV) (6-59)
  - COVID-19 antibody (1+)
- Inherited hemoglobin traits, such as Sickle cell (12+) ♦♦
- Kidney and liver function (12+) ♦
- Nutrition status (1+) ♦

## Women and girls only:

Females 12-59 years old will have a urine pregnancy test, as well as girls 8-11 who have started their menstrual periods. Our medical staff will tell you if you are pregnant if you did not already know it. Parents of girls younger than 14 years of age who are pregnant will also be informed of the result. ♦♦

## After your visit to the NHANES mobile center:

You will be asked to participate in two dietary interviews by phone 3-7 days after your visit to the mobile center. All survey participants will be asked take part in the interviews. An adult will answer questions for children less than 5 years old and will assist children 6-11 years old. Participants 12 years and older will respond for themselves.

You, or an adult in your family (if you are between 1-15 years old), will also be asked about food shopping habits in a separate interview.

For each of these interviews you will receive a token of thanks for your time and effort.

**Taking part in these interviews and health measures after your visit to the mobile center is voluntary. If you have questions about getting your results, please call 1-800-452-6115.**

**Please see the following pages for more detailed list of lab tests.**

## Detailed list of NHANES Blood or Urine Laboratory Tests

### Biochemical Profile (12+) ♦

- Alanine aminotransferase (ALT)
- Albumin
- Alkaline phosphatase (ALP)
- Aspartate aminotransferase (AST)
- Bicarbonate
- Blood urea nitrogen (BUN)
- Calcium
- Chloride
- Creatinine
- Creatine phosphokinase (CPK)
- Gamma glutamyl transaminase (GGT)
- Glucose
- Lactate dehydrogenase (LDH)
- Phosphorus
- Potassium
- Sodium
- Total bilirubin
- Total protein
- Uric acid

### Diabetes Profile

- Fasting glucose (all morning participants 12+) ♦
- Insulin (all morning participants 12+)
- Hemoglobin A1c (12+) ♦

### Environmental Health Profile

- Acetylcholinesterase (6+)
- Butyrylcholinesterase (6+) ♦♦
- Acrylonitrile (1/3 participants 6+)
- Aromatic amines (urine) (3-5, 1/3 participants 6+)
- Flame retardant metabolites (blood – 12+, urine – 3-5, 1/3 participants 6+)
- Insecticides, pesticides, herbicides, fungicides and metabolites (blood - 1/3 participants 12+, urine – 3-5, 1/3 participants 6+)
- Metals/elements in blood
  - Cadmium (1+) ♦
  - Lead (1+) ♦
  - Manganese (all) ♦
  - Mercury/mercury speciation (1+)♦
  - Selenium (1+) ♦
- Trace metals/elements in urine (3-5, 1/3 participants 6+)

- Arsenic ♦♦
- Antimony
- Barium
- Cadmium
- Cesium
- Chromium ♦
- Cobalt
- Iodine
- Lead
- Manganese
- Mercury
- Molybdenum
- Nickel ♦
- Strontium
- Thallium
- Tin
- Tungsten
- Uranium

- Perchlorate, thiocyanate, and nitrates (3-5, 1/3 participants 6+)
- Perfluoroalkyl and polyfluoroalkyl Substances (1/3 participants 12+)
- Phthalates and personal care and consumer product chemicals and metabolites (3-5, 1/3 participants 6+)
- Polychlorinated Biphenyls (PCBs) and Dioxins (1/3 participants 12+)
- Polycyclic aromatic hydrocarbons (PAH) (3-5, 1/3 participants 6+)
- Serum terpenes (1/3 participants 6+)
- Tobacco biomarkers (3-5, 1/3 participants 6+)
- Volatile organic compounds (blood) (1/2 participants 12+)
- Volatile organic compounds (urine) (3-5 and 1/3 participants 6+)

### **Infectious Disease Profile**

- Chlamydia trachomatis (14-39) ♦
- COVID-19 antibody (1+)
- Cytomegalovirus (CMV) antibodies (1-5)
- Enterovirus D68 antibody (1-11)
- Hepatitis A virus (6+)
- Hepatitis B virus (6+) ♦♦ antibody (2-5)
- Hepatitis C virus (6+) ♦♦
- Hepatitis D virus (6+)
- Hepatitis E virus (6+)
- Herpes simplex virus type 1 (12-49) ♦
- Herpes simplex virus type 2 (14-49) ♦
- Human immunodeficiency virus (HIV) (18-59) ♦
- Human papillomavirus (HPV) (6-59)
- Mycoplasma genitalium (14-59)
- Trichomonas (14-59)

### **Inflammatory Disease Profile**

- High-sensitivity C-reactive protein (hs-CRP) (1+)

### **Kidney Disease Profile** (+ creatinine, BUN in biochemical profile ♦)

- Urine albumin (3+)
- Urine albumin creatinine ratio (ACR) (3+) ♦
- Urine creatinine (3+)

### **Lipid Profile** ♦

- Total cholesterol (6+)
- High density lipoprotein (HDL)-cholesterol (6+)
- Low density lipoprotein (LDL)-cholesterol (12+)
- Triglycerides (12+)

### **Liver Disease Profile** (+ ALT ALP, AST, GGT, total bilirubin in biochemical profile ♦)

- Genetic variants for susceptibility to liver related diseases (18+)

### **Nutritional Laboratory Tests**

- Alpha-1-acid glycoprotein (AGP) (1-5, females 12-49)
- Complete blood count (1+) ♦
- Fatty acids (RBC) (6+)
- Ferritin (1-5 and 12+) ♦
- Folate (1+) ♦
- Folate (RBC) (1+) ♦
- Folate forms (RBC) (6+)

- Hemoglobin variants traits, for example hemoglobin S (sickle cell disease) (12+) ♦♦
- Iron (12+) ♦
- Magnesium (12+) ♦
- Soluble transferrin receptor (0-5, 12-49)
- Total iron binding capacity (TIBC) (12+) ♦
- Trans fatty acids (3-12 and all morning participants 20+)
- Transferrin receptor (1-5, females 12+) ♦
- Unsaturated iron binding capacity (UIBC) (12+) ♦
- Vitamin D (1+) ♦

### **Steroid Hormones** ♦

- 17 $\alpha$ -Hydroxyprogesterone (17-OHP) (3+)
- Androstenedione (3+)
- Anti-Mullerian hormone (AMH) (females 6+)
- Dehydroepiandrosterone sulfate (DHEAS) (3+)
- Estradiol (3+)
- Estrone (3+)
- Estrone sulfate (3+)
- Follicle stimulating hormone (FSH) (6+)
- Luteinizing hormone (LH) (6+)
- Progesterone (3+)
- Steroid hormone binding globulin (SHBG) (3+)
- Testosterone (3+)

### **Thyroid Disease Profile** (all participants 3-5, 1/3 participants 6+) ♦

- Thyroid stimulating hormone
- Triiodothyronine (T3), total and free
- Thyroxine (T4), total and free
- Thyroglobulin
- Thyroglobulin antibodies
- Thyroid peroxidase (TPO) antibody