

National Health and Nutrition Examination Survey 2003-2004

Documentation, Codebook, and Frequencies

Laboratory Component:
Vitamin D

Survey Years:
2003 to 2004

SAS Export File:
L06VID_C.XPT



First Published: September 2007
Last Revised: N/A

NHANES 2003–2004 Data Documentation

Laboratory Assessment: Laboratory 6 – Vitamin D

Years of Coverage: 2003–2004

First Published: September 2007

Last Revised: N/A

Component Description

Vitamin D

The objectives of this component are: 1) to provide data for monitoring secular trends in measures of nutritional status in the U.S. population; 2) to evaluate the effect of people's habits and behaviors such as physical activity and the use of alcohol, tobacco, and dietary supplements on people's nutritional status; and 3) to evaluate the effect of changes in nutrition and public health policies including welfare reform legislation, food fortification policy, and child nutrition programs on the nutritional status of the U.S. population. These data will be used to estimate deficiencies and toxicities of specific nutrients in the population and subgroups, to provide population reference data, and to estimate the contribution of diet, supplements, and other factors to serum levels of nutrients. Data will be used for research to further define nutrient requirements as well as optimal levels for disease prevention and health promotion.

Eligible Sample

Participants aged 1 year and older who do not meet any of the exclusion criteria are eligible

Description of Laboratory Methodology

The Diasorin (formerly Incstar) 25-OH-Vitamin D assay consists of a two-step procedure. The first procedure involves an extraction of 25-OH-D and other hydroxylated metabolites from serum with acetonitrile. Following extraction, the treated sample is assayed by using an equilibrium RIA procedure. The RIA method is based on an antibody with specificity to 25-OH-D. The sample, antibody, and tracer are incubated for 90 min at 20-25 °C. Phase separation is accomplished after a 20-minute incubation at 20-25 °C with a second antibody-precipitating complex. A NSB buffer is added after this incubation and prior to centrifugation to aid in reducing non-specific binding. More detailed information about the Diasorin RIA method can be found on the NHANES Web site in the Laboratory Procedures Manuals.

There was no change to the equipment, method, or laboratory site from NHANES 2001-2002.

A detailed description of the laboratory method used can be found at NHANES web page in the Laboratory Procedures Manuals.

Laboratory Quality Control and Monitoring

The NHANES quality control and quality assurance protocols (QA/QC) meet the 1988 Clinical Laboratory Improvement Act mandates. Detailed quality control and quality assurance instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM). Read the LABDOC file for detailed QA/QC protocols.

A detailed description of the laboratory method used can be found at NHANES web page..

Data Processing and Editing

Serum specimens are processed, stored, and shipped to the Division of Laboratory Sciences, National Center for Environmental Health, Centers for Disease Control and Prevention for analysis.

Detailed specimen collection and processing instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM). Vials are stored under appropriate frozen (-20°C) conditions until they are shipped to National Center for Environmental Health for testing.

This file contains no top coding.

Detailed instructions on specimen collection and processing can be found at the NHANES web page.

Analytic Notes

The analysis of NHANES 2003–2004 laboratory data must be conducted with the key survey design and basic demographic variables. The NHANES 2003–2004 Household Questionnaire Data Files contain demographic data, health indicators, and other related information collected during household interviews. The Household Questionnaire Data Files also contain all survey design variables and sample weights required to analyze these data. The Phlebotomy Examination file includes auxiliary information on duration of fasting, the time of day of the venipuncture, and the conditions precluding venipuncture. The Household Questionnaire and Phlebotomy Exam files may be linked to the laboratory data file using the unique survey participant identifier SEQN.

References

1. Instruction Manual, Diasorin (formerly Incstar) 25-Hydroxyvitamin D ¹²⁵I RIA kit. Stillwater, (MN): Diasorin (formerly Incstar) Corporation, 1994.
2. Chesney RW. Current Clinical applications of vitamin D metabolite research. *Clin Orthop Rel Res* 1981;161:285.
3. DeLuca HF, Schnoes HK. Metabolism and mechanism of action of vitamin D. *Annu Rev Biochem* 1976;45:631.
4. Clemens TE. Vitamin D: Recent advances in basic research and clinical assay methodology. *J Clin Immunoass* 1986;9(4):183.
5. Preece MA, Tomlenson S, Ribot CA. Studies of vitamin D deficiency in man. *Q J Med* 1975;45:575.
6. Kruger DW, Lee J, Raines A, Lyne ED. Vitamin D metabolism and skeletal disease in pediatric populations. *J Clin Immunoass* 1986;9(4):200.
7. Hollis BW, Pittard WB. Relative concentrations of 25-hydroxyvitamin D₂/D₃ and 1,25-dihydroxyvitamin D₂/D₃ in maternal plasma at delivery. *Nutr Res* 1984;4:27.
8. Hollis BW, Pittard WB. Evaluation of the total fetomaternal vitamin D relationships at term: evidence for racial differences. *J Clin Endocrin Metab* 1984;59(4):652.
9. Lore F, DiCairano, Signorini AM, Caniggia A. Serum levels of 25-hydroxyvitamin D in postmenopausal osteoporosis. *Calcif Tissue Int* 1981;33:467.
10. Parfitt AM, Gallagher JC, Heaney RP, et al. Vitamin D and bone health in the elderly. *Am J Clin Nutr* 1982;36:101.
11. Zerwehk JE, Sakhee K, Glass K, Pak C. Long term 25-hydroxyvitamin D₃ therapy in postmenopausal osteoporosis: demonstration of responsive and non-responsive subgroups. *J Clin Endocrinol Metab* 1983;56(2):410.
12. Decontamination of laboratory sink drains to remove azide salts. In: the manual guide-safety management, No. CDC-22. Atlanta: Centers for Disease Control, 1976.
13. Hollis BW, Kamerud JQ, Selvaag SR, Lorenz JD, Napoli JL.

Determination of vitamin D status by radioimmunoassay with an ¹²⁵I-labeled tracer. Clin Chem 1993;39(3):529-33.

14. Adams JS, Clemens TL, Parrish JA, Holick MF. Vitamin D synthesis and metabolism after ultraviolet radiation of normal and vitamin d-deficient subjects. N Eng J Med 1982;306(12):722.
15. Beadle PC, Burton JL, Leach JF. Correction of seasonal variation of 25-hydroxycalciferol with U.V. radiation dose. Br J Dermatol 1980;102:289.
16. Jacob AI, Sallman A, Santiz S, Hollis BW. Defective photoproduction of cholecalciferol in normal and uremic humans. J Nutr 1984;114:1313.

Locator Fields

Title: Vitamin D

Contact Number: 1-866-441-NCHS

Years of Content: 2003–2004

First Published: September 2007

Revised: N/A

Access Constraints: None

Use Constraints: None

Geographic Coverage: National

Subject: Vitamin D

Record Source: NHANES 2003–2004

Survey Methodology: NHANES 2003–2004 is a stratified multistage probability sample of the civilian non-institutionalized population of the U.S.

Medium: NHANES Web site; SAS transport files

**National Health and Nutrition Examination Survey
Codebook for Data Production (2003-2004)**

**Vitamin D (L06VID_C)
Person Level Data**

First Published: September 2007

Last Revised: N/A



SEQN	Target
	B(1 Yrs. to 150 Yrs.)
Hard Edits	SAS Label
	Respondent sequence number
English Text: Respondent sequence number.	
English Instructions:	

LBXVID	Target
	B(1 Yrs. to 150 Yrs.)
Hard Edits	SAS Label
	Vitamin D (ng/mL)
English Text: Vitamin D (ng/mL)	
English Instructions:	

Code or Value	Description	Count	Cumulative	Skip to Item
3 to 80	Range of Values	8294	8294	
.	Missing	885	9179	