National Health and Nutrition Examination Survey

2005-2006 Data Documentation, Codebook, and Frequencies

Body Measures (BMX_D)

Data File: BMX_D.xpt

First Published: November 2007

Last Revised: NA

Component Description

NHANES body measurement data are used to monitor trends in infant and child growth, to estimate the prevalence of overweight and obesity in the U.S. population, and to examine the associations between body weight and the health and nutritional status of the U.S. population. The target age groups for the NHANES 2005-2006 body measurement component are as follows:

Head circumference: birth through 6 months of age
Maximal calf circumference: 8 years of age and older
Mid-thigh circumference: 8 years of age and older
Mid-upper arm circumference: 2 months of age and older
Recumbent length: birth through 47 months
Standing height: 2 years and older
Subscapular skin fold: 2 months of age and older
Triceps skin fold: 2 months of age and older
Upper arm length: 2 months of age and older
Upper leg length: 8 years and older
Waist circumference: 2 years of age and older
Weight: All ages

Eligible Sample

All survey participants were eligible for the body measurement component. There were no medical, safety, or other exclusions for the body measurements protocol. The health technicians used their discretion to obtain as many measures as practical for persons who used a wheelchair. No changes have been made to the NHANES body measurement protocol since the continuous NHANES began in1999.

Protocol and Procedure

The body measurement data were collected by trained health technicians. The health technician was accompanied by a recorder during each body measurement examination. The respondent's age, at the time of the screening interview, determined the body measurement examination protocol for survey participants. In some instances, several weeks elapsed between the initial screening interview and the health examination. The Demographics data file includes variables for age at screening (RIDAGEYR and RIDAGEMN) and age at examination (RIDAGEEX).

Arm and leg measurements were made on the right side of the body. If an examinee had an amputation, medical condition, or medical appliance such as a cast that prevented measurements from being taken on the right side of the body, the examiner took measurements on the left side. The body measurements file does not identify persons who had amputations because the information might be considered identifiable and pose a disclosure concern. Therefore, body weight data for individuals who had limb amputations were set to missing.

This data file includes body measurements for women who were pregnant at the time of their health examination. Pregnancy status at the time of the health examination is indicated by the Demographic file variable, RIDEXPRG - pregnancy status at the time of the health examination.
For general guidelines on the body measurement procedures, please refer to the Anthropometric Standardization Reference Manual (Lohman, 1988).

The NHANES body measurement techniques are illustrated in the NHANES III Anthropometric Procedures Video (Centers for Disease Control and Prevention, NHANES III Anthropometric Procedures Video). The NHANES III body measurement protocol included more measurements than the protocol that was used in NHANES 2005-2006. The maximal calf circumference measurement was added to NHANES in 1999 and is not shown in the NHANES III video.

The NHANES 2005-2006 Body Measurement Procedures Manual is posted on the NHANES 2005-2006 website. The manual provides descriptions of the NHANES protocol, survey equipment, and quality control procedures.

Quality Assurance & Quality Control

The NHANES health technicians completed a 2-day training program with survey staff and an expert anthropometrist. The training included an overview of the component using the NHANES III anthropometry video and demonstrations conducted by the expert examiner with volunteer subjects. The expert examiner

reviewed and demonstrated the proper technique to use for each measurement. Supervised practice exercises followed with several volunteer subjects, including infants, children, and adults. New technicians were monitored closely by the chief health technician when they started working in the field.

Health technician performance in the field was monitored continuously using direct observation, data reviews, and periodic expert examiner (gold standard comparison) evaluations. All of the body measurement rooms in the mobile examination centers (MECs) were identical with respect to the arrangement and type of equipment. Scheduled equipment calibration was performed by the health technicians and verified by supervisory staff. Please refer to the Body Measures Procedures Manual for a detailed description of the quality assurance and control measures used in NHANES.

Data Processing and Editing

Data were reviewed for unusual and erroneous values. The initial checks used range criteria that were based on the NHANES III and NHANES 1999–2004 body measures data. Range checks for infants under 2 months of age and maximal calf circumference were based on NHANES 1999–2004 data. During the data review, values that were above the 99th percentile or below the 1st percentile for a particular age or age-gender group were flagged for review. When records were flagged, the entire body measurements record was reviewed for reasonableness. Subject characteristics such as height, weight, age and gender were taken into consideration. Values that were unrealistic were deleted from the file. None of the original body measures data were changed and there are no imputed values in this file.

Analytic Notes

Component status code: A final body measures component status code (BMDSTAT) provides analysts with a quick method of determining complete and partial body measures examination records.

Unusual values: Unusual body measurement values were noted during the review of the data. Typically, unusual values occurred when a subject was extremely short, tall, overweight or underweight. Analysts should examine the distributions of the body measurements carefully. In particular, the upper arm length (BMXARML) and upper leg length (BMXLEG) values are affected by extreme amounts of adipose tissue. Skinfold measurements were not obtained for many obese subjects because the amount of adipose tissue exceeded the limits of the caliper, or the technician was not able to grasp a double thickness of tissue.

Comment Codes: Comment codes were noted by the health technicians during data collection to document problems or situations that arose during the body measurement examination. For example, the variable BMIWT is a comment code for the body weight measurement. If a subject did not change into the NHANES exam gown, a code of BMIWT of '3' denoting 'clothing worn' was made in the record. Analysts should review the comment code information prior to analyzing the data and selecting the subjects to include in their analytic samples.

Sample Weights: The examination sample weights should be used to analyze the body measurement data. Please refer to the Analytic Guidelines for further details on the use of sample weights and other analytic issues. The Analytic Guidelines are available on the NHANES website.

References

- Centers for Disease Control and Prevention, National Center for Health Statistics. NHANES III Anthropometric Procedures Video. . Available from: http://www.cdc.gov/nchs/products/elec_prods/subject/video.htm
- Lohman TG, Roche AF, Martorell R, editors. Anthropometric Standardization Reference Manual. Abridged ed. Champaign, IL: Human Kinetics Books; 1988. .

Codebook and Frequencies

SEQN - Respondent sequence number

Variable Name:	SEQN
SAS Label:	Respondent sequence number
English Text:	Respondent sequence number.
Target:	Both males and females 0 YEARS - 150 YEARS

BMXBMI - Body Mass Index (kg/m**2)

Variable Name: BMXBMI

SAS Label: Body Mass Index (kg/m**2)

English Text: Body Mass Index (kg/m**2)

Target: Both males and females 2 YEARS - 150 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
11.74 to 130.21	Range of Values	8949	8949	
.	Missing	1001	9950	