Documentation, Codebook, and Frequencies

Two-hour Oral Glucose Tolerance Test (OGTT)

Laboratory

**Survey Years:
2005 to 2006**

**SAS Transport File:
OGTT_D.XPT**

nhanes

NHANES 2005–2006 Data Documentation

Laboratory Assessment: Two-hour Oral Glucose Tolerance Test (OGTT) (OGTT_D)

First Published: January 2008   **Last Revised:** N/A

Component Description

Diabetes mellitus was assessed by measures of fasting plasma glucose, two-hour glucose (OGTT) and serum insulin in participants aged 12 years and over in the morning (AM) examination session only. Glycohemoglobin measures are also available for a full sample.

Diabetes is a leading cause of disease and death in the United States. Eight million Americans are known to have diabetes, and an approximately equal number have undiagnosed diabetes. In 1993, nearly 18 percent of all deaths for persons over the age of 25 were among people with diabetes. The prevalence of diabetes and overweight (one of the major risk factors for diabetes) continue to increase. Substantial new efforts to prevent or control diabetes have begun, including the Diabetes Prevention Trial and the National Diabetes Education Program.

Diabetes testing provides population data to: 1) determine a national estimate of diabetes disease prevalence (diagnosed and undiagnosed), 2) identify the risk factors of diabetes disease; 3) permit a national cohort to be established for follow-up studies of this condition; and 4) provide critical information to clinicians and public health officials for the development of preventive care and community-based interventions.

Eligible Sample

Participants aged 12 years and older who were examined in the morning session were tested. This is a subsample of the NHANES and requires the use of special weights (See Analytic notes below).

Description of Laboratory Methodology

Glucose

Glucose concentration was determined by a hexokinase method. It is an endpoint enzymatic method with a sample blank correction.

There were changes to the equipment and laboratory from NHANES 2003-2004. For NHANES 2005-2006, glucose and insulin measurements were performed by the Fairview Medical Center

Laboratory at the University of Minnesota and for NHANES 2003-2004 glucose and insulin measurements were performed by the Diabetes Diagnostic Laboratory at the University of Missouri-Columbia.

The following is a listing of instruments and methods used for glucose and insulin for NHANES 2003-2006:

Year	Analyte	Instrument	Method
2005-2006	Glucose	Roche/Hitachi 911	Hexokinase
2003-2004	Glucose	Roche Cobas Mira	Hexokinase

Beginning in 2005, an oral glucose tolerance test (OGTT) was added to the laboratory protocol. A fasting glucose blood test was performed on all participants 12 years and older who were examined in the morning session after a 9 hour fast. After the initial venipuncture, participants were asked to drink a calibrated dose (generally 75 grams of glucose) of Trutol[TM] and had a second venipuncture 2 hours (plus or minus 15 minutes) after drinking the Trutol.

There are seven exclusion criteria including hemophilia and chemotherapy safety exclusions, fasting < 9 hours, taking insulin or oral medications for diabetes, refusing phlebotomy, and not drinking all the entire Trutol solution within the allotted time.

A detailed description of the laboratory methods for OGTT can be found in the Laboratory Procedures Manual.

Laboratory Quality Control and Monitoring

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

Data Processing and Editing

Blood specimens were processed, stored and shipped to Fairview Medical Center Laboratory at the University of Minnesota, Minneapolis Minnesota for analysis. Detailed specimen collection and processing instructions are discussed in the NHANES LPM. Read the LABDOC file for detailed data processing and editing protocols.

Three derived variables were created in this data file. The formula for their derivation is as follows:

LBXGLT and LBDGLTSI:
The fasting glucose value in mg/dL (LBXGLT) was converted to mmol/L (LBDGLTSI) by multiplying by 0.05551 (rounded to 3 decimals).

Detailed instructions on specimen collection and processing can be found on the NHANES website.

Analytic Notes

Glucose regression equation to compare 2005-2006 data to 2003-2004 data:

A crossover study was performed to compare the 2005-2006 Roche/Hitachi 911 glucose method to the 2003-2004 Roche Cobas Mira glucose method. A linear regression analysis was done and the following regression was obtained for glucose (mg/dL):

Y (Cobas Mira) = 0.9835*X (Hitachi 911), n=92, r=0.9993, intercept not significant.

This regression may be used to trend the glucose data.

NHANES 2005-2006 Survey Design:

The analysis of NHANES 2005–2006 laboratory data must be conducted with the key survey design and basic demographic variables. The NHANES 2005–2006 Household Questionnaire Data Files contain demographic data, health indicators, and other related information collected during household interviews. They also contain all survey design variables for these age groups. The phlebotomy file includes auxiliary information such as the conditions precluding venipuncture. The household questionnaire and phlebotomy files may be linked to the laboratory data file using the unique survey participant identifier SEQN.

Sampling Weights
The analyst is strongly encouraged to use the fasting sampling weights in this file to analyze 2005–2006 glucose and insulin levels.

There will be two weight files associated with the subsample for the

diabetes data. Use the fasting sample weights (WTSFA2YR) when analyzing the fasting glucose and insulin levels only. Use the OGTT sample weights(WTSOG2YR) when analyzing the insulin, fasting AND OGTT glucose levels or when analyzing ONLY OGTT glucose levels. NOTE: the OGTT weights and data are in a separate file (OGTT_D).

References   None

NCHS Locator Fields

Title: Two-hour Oral Glucose Tolerance Test

Contact Number: 1-866-441-NCHS

Years of Content: 2005–2006

First Published: January 2008

Last Revised: N/A

Access Constraints: None

Use Constraints: None

Geographic Coverage: National

Subject: Two-hour Oral Glucose Tolerance Test

Record Source: NHANES 2005–2006

Survey Methodology: NHANES 2005–2006 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 (2005-2006)

Two-hour Oral Glucose Tolerance Test (OGTT) (OGTT_D)

January 2008

SEQN	Target
	B(12 Yrs. to 150 Yrs.)
Hard Edits	**SAS Label**
	Respondent sequence number

English Text: Respondent sequence number.

English Instructions:

WTSOG2YR	Target
	B(12 Yrs. to 150 Yrs.)
Hard Edits	**SAS Label**
	OGTT Subsample 2 Year MEC Weight

English Text: OGTT Subsample 2 Year MEC Weight

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
0 to 389074.997	Range of Values	2723	2723	
.	Missing	629	3352	

LBXGLT	Target
	B(12 Yrs. to 150 Yrs.)
Hard Edits	**SAS Label**
	Two Hour Glucose(OGTT) (mg/dL)

English Text: Two hour oral glucose tolerance (OGTT) (mg/dL)

English Instructions:

Code or Value	Description	Count	Cumulative	Skip to Item
31 to 490	Range of Values	2319	2319	
.	Missing	1033	3352	

LBDGLTSI	Target			
	B(12 Yrs. to 150 Yrs.)			
Hard Edits	**SAS Label**			
	Two Hour Glucose(OGTT) (mmol/L)			
English Text: Two Hour Glucose(OGTT) (mmol/L)				
English Instructions:				

Code or Value	Description	Count	Cumulative	Skip to Item
1.721 to 27.2	Range of Values	2319	2319	
.	Missing	1033	3352	

PHAFSTHR	Target			
	B(12 Yrs. to 150 Yrs.)			
Hard Edits	**SAS Label**			
	Total length of 'food fast', hours			
English Text: Total length of 'food fast', hours				
English Instructions:				

Code or Value	Description	Count	Cumulative	Skip to Item
0 to 64	Range of Values	3251	3251	
.	Missing	101	3352	

PHAFSTMN	Target			
	B(12 Yrs. to 150 Yrs.)			
Hard Edits	**SAS Label**			
	Total length of 'food fast', minutes			
English Text: Total length of 'food fast', minutes				
English Instructions:				

Code or Value	Description	Count	Cumulative	Skip to Item
0 to 59	Range of Values	3251	3251	
.	Missing	101	3352	