

National Health and Nutrition Examination Survey

2011-2012 Data Documentation, Codebook, and Frequencies

Tuberculosis (TBX_G)

Data File: TBX_G.xpt

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Component Description

TB skin testing was added to the NHANES 2011–2012 to provide comprehensive data about the extent of tuberculosis infection in the United States. To determine the prevalence of TB infection, NHANES participants aged 6 years and older, who consented to this component, were skin tested with a tuberculin-purified protein derivative (PPD) product, Tubersol, a commercially available antigen. Additionally, NHANES participants were secondarily screened with an FDA-approved blood test, QuantiFERON®-TB Gold In Tube test (QFT-GIT), for TB infection.

To aid in risk factor analysis, participants were asked questions about TB skin testing, disease, exposure to and treatment for *Mycobacterium tuberculosis*. These questions were asked in the household interview prior to laboratory screening

Eligible Sample

Eligibility

Sample persons aged 6 years and older, who do not meet the exclusion criteria, were eligible.

Exclusion Criteria

- Participant reports he/she had a severe reaction (i.e., anaphylactic shock or acute hypersensitivity reaction) to a tuberculin skin test (TST), or severe skin conditions, such as burns or active eczema over both arms.
- If the participant is unable to return for reading of results 46 and 76 hours after placement of the TST

Survey Staff

The staff included certified phlebotomists, to place the TST, and TB technicians, to read the skin tests.

Protocol and Procedure

For each participant, trained NHANES phlebotomists or physicians administered the tuberculin antigen in the volar surface of the right arm (or left arm, if the participant preferred). Survey staff documented which arm was used for the test. In rare instances

where neither arm was available, the TST may have been placed on the back of the shoulder area. For the test, 0.1 ml (5 international units) of the designated PPD was used. Reactions were measured 46–76 hours later by trained NHANES technicians who were not aware of the participant's medical history or any history of contact with TB. To improve return rates for TST reaction measurement, extra remuneration was offered and readings were performed in homes or workplaces, as necessary.

TST measurements were performed for each participant by at least one trained technician. Training and supervision was conducted by two experienced "gold standard" TST readers.

Study protocol dictated that at least two separate readers, blinded to each other's measurements, would measure TST reactions of > 25% of participants. Readers worked in separate rooms and recorded measurements in a computer database; measurements recorded on the first screen were not accessible to subsequent readers. The induration, if any, was palpated using a standardized method. Using a non-smearing eyebrow makeup pencil, a dot was made on either side of the widest point of the induration margin transverse to the long axis of the forearm. Measurements between the dots were made with a transparent millimeter ruler. Markings were removed with baby oil.

Among participants who had at least one TST result, 46.8% had measurements recorded separately by two or more readers who remained unaware of one another's measurements.

Inspection of the Volar Surface of Each Forearm for Adverse Reactions

- Note and record the presence or absence of other skin reactions such as vesiculation and bullae or ulceration and necrosis anywhere on the volar surface of the arm being examined.
- Identify and record the presence or absence of vesiculations and/or bullae.

Vesiculation refers to small, fluid-filled, blister-like lesions.

Bullae are similar to vesiculations but they are larger. When blisters are broken, no measurement was taken.

Ulceration refers to sloughing of damaged skin or a raw, open sore. Necrosis is the death of cells because of damage or disease.

Measurement of Induration

- Results of the measurement were recorded in millimeters

Data Processing and Editing

The sequence number links these data to all other data collected during 2011-2012 survey years.

The following variable was derived.

TBDRUIND: induration in mm. Calculated as the average of up to 3 recorded TST results; if only one TST result was recorded, the single result is used.

The following variable, TBQ070 (not derived), is also included in this file:

Have you ever had a severe reaction to a tuberculosis (TB) skin test?

1 = Yes

2 = No

Analytic Notes

The basic definition of TB infection (TBI) used in NHANES is a TB skin test reaction >10 mm. This is the definition used most frequently in U.S. and international surveys. Alternatively, TBI can be defined as a TST reaction >15 mm (the clinical definition of TBI most commonly used for adults in the US, except for individuals with special risks, e.g. contacts, children, immunosuppressed persons, etc.)

A distinction could not be made in NHANES 2011–2012 between latent TB infection (LTBI) and active TB disease. No chest x-ray component was included to distinguish LTBI from TB; therefore, no evaluation of relevant signs and symptoms was performed.

Please refer to the NHANES Analytic Guidelines and the on-line NHANES Tutorial for further details on the use of sample weights and other analytic issues. Both of these are available on the NHANES website.

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 6 YEARS - 150 YEARS

TBQ070 - Had a reaction to a TB skin test?

Variable Name: TBQ070

SAS Label: Had a reaction to a TB skin test?

English Text: Have you ever had a severe reaction to a tuberculosis (TB) skin test?

English Instructions: We are going to do two tests to determine if you have been exposed to the bacteria that causes tuberculosis or TB: the tuberculin skin test and a blood test for TB infection.

Target: Both males and females 6 YEARS - 150 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	Yes	87	87	
2	No	6350	6437	
.	Missing	1384	7821	

TBDRUIND - Induration in mm

Variable Name: TBDRUIND

SAS Label: Induration in mm

English Text: Induration in mm

Target: Both males and females 6 YEARS - 150 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0 to 30	Range of Values	6128	6128	
.	Missing	1693	7821	

TBXRUVES - PPDS vesiculation

Variable Name: TBXRUVES**SAS Label:** PPDS vesiculation**English Text:** PPDS vesiculation**Target:** Both males and females 6 YEARS - 150 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	Present	10	10	
2	Absent	6068	6078	
8	Could not obtain	49	6127	
.	Missing	1694	7821	

TBXRUULC - PPDS ulceration

Variable Name: TBXRUULC**SAS Label:** PPDS ulceration**English Text:** PPDS ulceration**Target:** Both males and females 6 YEARS - 150 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	Present	3	3	
2	Absent	6089	6092	
8	Could not obtain	35	6127	
.	Missing	1694	7821	