

National Health and Nutrition Examination Survey 2005–2006

Documentation, Codebook, and Frequencies

Prostate Specific Antigen

Laboratory

Survey Years:
2005 to 2006

SAS Transport File:
PSA_D.XPT



December 2007

NHANES 2005–2006 Data Documentation

Laboratory Assessment: Prostate specific antigen (PSA _D)

First Published: December 2007

Last Revised: N/A

Component Description Prostate cancer is the most common non-skin malignancy among men with approximately 180,000 new cases diagnosed and 37,000 deaths in 1999. The total and free PSA tests have been recognized as tumor markers for the screening, diagnosis and management of prostate cancer.

Total and free prostate specific antigens (PSA) were measured among men age 40 years and older. PSA exclusion questions (KIQ115, KIQ185, KIQ191, KIQ195, KIQ201, KIQ241, KIQ282, KIQ301, and KIQ311) were asked during the physician's examination. PSA immunoassays were performed on blood specimens using the Hybritech tests (Beckman Coulter, Fullerton, CA).

Eligible Sample Male participants aged 40 years and older were tested for PSA. Those who reported having any of the following conditions were not eligible for PSA testing:

- Current infection or inflammation of the prostate gland (KIQ115)
- Rectal exam in the past week (KIQ185)
- Prostate biopsy in the past month (KIQ191)
- Cystoscopy in the past month (KIQ195)
- History of prostate cancer (KIQ201)

Description of Laboratory Methodology **Free prostate specific antigen**

The Access Hybritech free PSA assay is a two-site immunoenzymatic "sandwich" assay. A sample was added to a reaction vessel with mouse monoclonal anti-free PSA alkaline phosphatase conjugate, and paramagnetic particles coated with a second mouse monoclonal anti-free PSA antibody. The free PSA in the sample bound to the immobilized monoclonal anti-free PSA on the solid phase while, at the same time, the monoclonal anti-PSA conjugate reacted with a different antigenic site on the sample free PSA. Separation in a magnetic field and washing removes material not bound to the solid phase. A chemiluminescent substrate, Lumi-Phostm 530 was added to the reaction vessel and light generated by the reaction was measured with a luminometer. The light production was proportional to the concentration of free PSA in the sample. The amount of analyte in the

sample was determined by means of a stored, multi-point calibration curve.

Total prostate specific antigen

Total PSA values were obtained using the Hybritech PSA method on the Beckman Access. A second sample was added to a reaction vessel with mouse monoclonal anti-PSA alkaline phosphatase conjugate and paramagnetic particles coated with a second mouse monoclonal anti-PSA antibody. The PSA in the sample bound to the immobilized monoclonal anti-PSA on the solid phase while, at the same time, the monoclonal anti-PSA conjugate reacted with a different antigenic site on the sample PSA. The light production was proportional to the concentration of PSA in the sample.

Prostate specific antigen ratio

This ratio was calculated by dividing the free PSA by the total PSA:
 $LBDP3 = \text{round}((LBXP2/LBXP1)*100)$ (whole number)

There were no changes to the equipment, lab method, or lab site from the previous two years.

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

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 quality assurance and quality control procedures can be found at NHANES web page.

Data Processing and Editing

Blood specimens are processed, stored and shipped to University of Washington, Seattle, Washington. Detailed specimen collection and processing instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM). Read the LABDOC file for detailed data processing and editing protocols. The

analytical methods are described in the Analytic methodology section.

Because of the confidentiality of the data any male participant 86 years and older was recoded to "greater than 85". See the NHANES web page link to determine "below detectable limit fill values" for this data.

Analytic Notes

The analysis of NHANES 2005-2006 laboratory data must be conducted with the key survey design and basic demographic variables. The NHANES 2005-2006 Questionnaire Data Files contain demographic data, health indicators, and other related information collected during household interview and MEC examination. They also contain sample weights 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.

Data on health conditions that would make a sample person ineligible for PSA testing are missing for some people with non-missing PSA lab data. This happened mainly because some sample persons did not attend the physician's examination component of the MEC examination where such data were collected. It is advisable to exclude these observations for PSA analyses.

References

N/A

Locator Fields

Title: Prostate specific antigen (PSA)

Contact Number: 1-866-441-NCHS

Years of Content: 2005–2006

First Published: December 2007

Last Revised: N/A

Access Constraints: None

Use Constraints: None

Geographic Coverage: National

Subject: Prostate specific antigen (PSA)

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)**

**Laboratory Section:
Prostate Specific Antigen (PSA_D)**

December 2007



SEQN	Target
	M(40 Yrs. to 150 Yrs.)
Hard Edits	SAS Label
	Respondent sequence number
English Text: Respondent sequence number.	
English Instructions:	

KIQ110	Target
	M(40 Yrs. to 150 Yrs.)
Hard Edits	SAS Label
	Willing to have blood tested for PSA
English Text: Are you willing to have your blood tested for PSA?	
English Instructions:	

Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	1315	1315	
2	No	27	1342	
7	Refused	0	1342	
9	Don't know	0	1342	
.	Missing	139	1481	

KIQ115		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Infection or inflammation of prostate		
English Text: {Do you/does SP} have an infection or inflammation of the prostate gland at the present time?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	16	16	
2	No	1404	1420	
7	Refused	0	1420	
9	Don't know	7	1427	
.	Missing	54	1481	

KIQ185		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Rectal exam in the last 7 days		
English Text: {Have you/Has SP} had a rectal exam in the last 7 days?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	13	13	
2	No	1414	1427	
7	Refused	0	1427	
9	Don't know	0	1427	
.	Missing	54	1481	

KIQ191		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		prostate biopsy or surgery in last 4 wks		
English Text: {Have you/Has SP} had a prostate biopsy or other prostate surgery in the last 4 weeks?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	4	4	
2	No	1423	1427	
7	Refused	0	1427	
9	Don't know	0	1427	
.	Missing	54	1481	

KIQ195		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Cystoscopy in the last 4 weeks		
English Text: {Have you/Has SP} had a cystoscopy in the last 4 weeks? (Cystoscopy is an internal examination of the prostate and bladder using a flexible tube-like instrument with a lens inserted through the penis.)				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	5	5	
2	No	1422	1427	
7	Refused	0	1427	
9	Don't know	0	1427	
.	Missing	54	1481	

KIQ201	Target			
	M(40 Yrs. to 150 Yrs.)			
Hard Edits	SAS Label			
	Diagnosed with prostate cancer			
English Text: {Have you/Has SP} ever been told by a doctor or health professional that {you/he} had prostate cancer?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	59	59	
2	No	1367	1426	
7	Refused	0	1426	
9	Don't know	1	1427	
.	Missing	54	1481	

KID221		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label			
	Age at diagnosis of prostate cancer			
English Text: How old {were you/was SP} when {you were/he was} first told that {you/he} had prostate cancer?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
.	.	0	0	
54	54	0	0	
58	58	0	0	
59	59	0	0	
60	60	0	0	
61	61	0	0	
62	62	0	0	
63	63	0	0	
64	64	0	0	
65	65	0	0	
66	66	0	0	
67	67	0	0	
68	68	0	0	
69	69	0	0	
70	70	0	0	
71	71	0	0	
72	72	0	0	
73	73	0	0	
75	75	0	0	
76	76	0	0	
77	77	0	0	
78	78	0	0	
79	79	0	0	
80	80	0	0	
81	81	0	0	
85 or greater	85 or greater	3	3	
< blank >	Missing	0	3	

KIQ241		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Ever had prostate surgery		
English Text: {Have you/Has SP} ever had surgery on {your/his} prostate?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	24	24	
2	No	35	59	
7	Refused	0	59	
9	Don't know	0	59	
.	Missing	1422	1481	

KIQ282		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Surgery for prostate cancer?		
English Text: {Have you/Has SP} had surgery for prostate cancer?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	19	19	
2	No	4	23	
7	Refused	0	23	
9	Don't know	1	24	
.	Missing	1457	1481	

KIQ301		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Radiation treatment for prostate cancer		
English Text: {Have you/Has SP} ever had radiation treatments for prostate cancer?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	33	33	
2	No	26	59	
7	Refused	0	59	
9	Don't know	0	59	
.	Missing	1422	1481	

KIQ311		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Taken medicines for prostate cancer		
English Text: {Have you/Has SP} ever taken prescribed medicines for prostate cancer?				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
1	Yes	18	18	
2	No	40	58	
7	Refused	0	58	
9	Don't know	1	59	
.	Missing	1422	1481	

LBXP1		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Total prostate specific antigen (ng/mL)		
English Text: Total prostate specific antigen (ng/mL)				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
0.1 to 72.54	Range of Values	1317	1317	
0.07	At or below detection limit fill value	4	1321	
.	Missing	160	1481	

LBXP2		Target		
		M(40 Yrs. to 150 Yrs.)		
Hard Edits		SAS Label		
		Free prostate specific antigen (ng/mL)		
English Text: Free prostate specific antigen (ng/mL)				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
0.05 to 7.65	Range of Values	1308	1308	
0.04	At or below detection limit fill value	13	1321	
.	Missing	160	1481	

LBDP3	Target			
	M(40 Yrs. to 150 Yrs.)			
Hard Edits	SAS Label			
	Prostate specific antigen ratio (%)			
English Text: Prostate specific antigen ratio (%)				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
4 to 95	Range of Values	1321	1321	
.	Missing	160	1481	