National Health and Nutrition Examination Survey

1963-1994 Data Documentation, Codebook, and Frequencies

Growth Chart (GROWTHCH)

Data File: GROWTHCH.xpt

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Component Description

The GROWTHCH file contains the public release data from three NHANES and two NHES surveys used in the development of the 2000 CDC growth charts for the United States. It does not include other data that were used to create the growth charts, such as the length data from the Pediatric Nutrition Surveillance System (PedNSS), national birth weight from the National Birth Certificate Data, Wisconsin and Missouri Birth Length, and head circumference data from the Fels Longitudinal Study (http://www.med.wright.edu/lhrc/fels.html). The GROWTHCH file includes body measures data on weight, length, height, and head circumference. The only other omission is the variable "Age in Days." This variable was omitted from the file even though it was used in the construction of the growth charts. This was done to ensure survey participant confidentiality.

Eligible Sample

Below is a summary table of the number of sample persons and age ranges selected from each of the NHES and NHANES surveys used to develop the growth charts. The different surveys covered different age groups in the population so the age ranges vary by survey. Sample persons were not excluded from the surveys based on any medical, safety, or other exclusion criteria.

Survey years, sample size and age ranges in each survey

Survey	HES2	HES3	NHANES1	NHANES2	NHANES3
Survey years	1963-65	1966-70	1971-74	1976-80	1988-94
Number of sample persons	7119	6768	9690	10102	16397
Age in months of sample persons	72 – 145.9	144 – 217.9	12 – 305.9	6 – 305.9	2 – 305.9

Protocol and Procedure

Body measures were collected by trained health technicians. The health technicians were assisted by a recorder during the body measurement examination. These anthropometric procedures were developed based on published recommendations for standardized anthropometric techniques (for general guidelines on the body measurement procedures, please refer to the Anthropometric Standardization Reference Manual, Lohman et al, 1988).

The NHANES III measurement techniques for weight, recumbent length, stature, and head circumferences were based on procedures used in the previous NHES surveys; and either the same or comparable measuring equipment was used across the five surveys.

NHANES III Anthropometric Procedures Video (Centers for Disease Control and Prevention) illustrates the NHANES III anthropometry methodology. The NHANES III video is available in VHS and DVD format upon request and may also be viewed on the NHANES website.

Quality Assurance & Quality Control

All NHES and NHANES surveys had strict quality assurance protocols although there was some variation between surveys. See documentation for specific surveys for more information.

https://wwwn.cdc.gov/nchs/nhanes/nhes2/default.aspx

https://wwwn.cdc.gov/nchs/nhanes/nhes3/default.aspx

https://wwwn.cdc.gov/nchs/nhanes/nhanes1/default.aspx

https://wwwn.cdc.gov/nchs/nhanes/nhanes2/default.aspx

https://wwwn.cdc.gov/nchs/nhanes/nhanes3/default.aspx

Analytic Notes

Flags

Two different flags exist for low birth weight (LBW) with SAS names LBWFLAG1 and LBWFLAG2. Of the five NCHS surveys, birth certificate information existed only for NHANES III. All observations where the birth certificate indicated the birth weight was below 2500 grams were flagged in LBWFLAG1. All three NHANES surveys contained reported birth weight of the child. For these surveys, all subjects where the reported birth weight was less than 2500 grams were flagged in LBWFLAG2. For NHANES III, these two indicators differed in about 2% of the cases.

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[1]It is possible that a subject's measurements could be extreme for more than one body measure (say weight and BMI). We created a flag if the subject was indicated on any of the three body measures.

Modified Recumbent Lengths for NHANES III

We modified the final NHANES III variables to correct the recumbent lengths of 15 of the subjects by subtracting 23.1 centimeters to correct for incorrect procedures of one technician. The sequence numbers (SEQN) of these 15 subjects are (17350, 1936, 18423, 6939, 1133, 15844, 1768, 13630, 13510, 3327, 6672, 8517, 20377, 13749, and 18556).

Survey Weights

The user needs to be aware that the statistical weights, pseudo-PSU, and pseudo-strata are those from the five original surveys. Any analysis needs to take this into account.

References

- Centers for Disease Control and Prevention, National Center for Health Statistics. NHANES III Anthropometric Procedures Video. https://wwwn.cdc.gov/nchs/nhanes/nhanes3/anthropometricvideos.aspx [Accessed on: 10/8/2012]
- 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.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS

SURVEY - Survey number 1 to 5

Variable Name:	SURVEY
SAS Label:	Survey number 1 to 5
English Text:	Survey number.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	HES II (1963 - 1965)	7119	7119	
2	HES III (1966 - 1970)	6768	13887	
3	NHANES I (1971 - 1974)	9690	23577	
4	NHANES II (1976 - 1980)	10102	33679	
5	NHANES III (1988 - 1994)	16397	50076	
.	Missing	0	50076	

PSU - Pseudo-PSU

Variable Name:	PSU
SAS Label:	Pseudo-PSU
English Text:	Pseudo-PSU.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1 to 210	Range of Values	50076	50076	
.	Missing	0	50076	

STRATA - Pseudo-strata

Variable Name:	STRATA
SAS Label:	Pseudo-strata
English Text:	Pseudo-strata.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1 to 49	Range of Values	50076	50076	
.	Missing	0	50076	

STATWT - Exam statistical weight

Variable Name:	STATWT
SAS Label:	Exam statistical weight
English Text:	Exam statistical weight.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
214.25 to 103345.55	Range of Values	50076	50076	
.	Missing	0	50076	

AGE_EXAM - Age at examination in years

Variable Name:	AGE_EXAM
SAS Label:	Age at examination in years
English Text:	Age at examination in years.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS
Hard Edits:	0 to 25

Code or Value	Value Description	Count	Cumulative	Skip to Item
0 to 25	Range of Values	50076	50076	
.	Missing	0	50076	

AGEMOS - Age at examination in total months

Variable Name:	AGEMOS
SAS Label:	Age at examination in total months
English Text:	Age at examination in total months.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
2 to 311	Range of Values	50076	50076	
.	Missing	0	50076	

AGEMOS - Age at examination in total months

SEX - Gender

Variable Name:	SEX
SAS Label:	Gender
English Text:	Gender.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	Male	24799	24799	
2	Female	25277	50076	
.	Missing	0	50076	

HT_CM - Standing height (cm)

Variable Name:	HT_CM
SAS Label:	Standing height (cm)
English Text:	Standing height in centimeters.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 2 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
68.9 to 200	Range of Values	45120	45120	
.	Missing	4956	50076	

WT_KG - Weight (kg)

Variable Name:	WT_KG
SAS Label:	Weight (kg)
English Text:	Weight in kilograms.
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
2.8 to 218.9	Range of Values	49945	49945	
.	Missing	131	50076	

BMI - Body mass index (kg/m**2)

Variable Name:	BMI
SAS Label:	Body mass index (kg/m**2)
English Text:	Body mass index (kg/m**2).
English Instructions:	HES II, HES III, NHANES I, NHANES II, NHANES III
Target:	Both males and females 2 YEARS - 25 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
7.3 to 67.3	Range of Values	45035	45035	
.	Missing	5041	50076	

RELATION - Respondents relationship to child

Variable Name:	RELATION
SAS Label:	Respondents relationship to child
English Text:	Respondent's relationship to sample child.
English Instructions:	NHANES I, NHANES II, NHANES III
Target:	Both males and females 2 MONTHS - 35 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	Mother	6612	6612	
2	Other	656	7268	
.	Missing	42808	50076	

BWTREPT - Reported birth weight (gm)

Variable Name:	BWTREPT
SAS Label:	Reported birth weight (gm)
English Text:	Reported birth weight in gramms.
English Instructions:	NHANES I, NHANES II, NHANES III
Target:	Both males and females 2 MONTHS - 146 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
396.89 to 5896.59	Range of Values	18970	18970	
.	Missing	31106	50076	

LBWFLAG2 - Low birth weight flag based on report

Variable Name:	LBWFLAG2
SAS Label:	Low birth weight flag based on report
English Text:	Low birth weight flag based on report.
English Instructions:	NHANES I, NHANES II, NHANES III
Target:	Both males and females 2 MONTHS - 35 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Greater or equal 2500 g	6596	6596	
1	Less than 2500 g	541	7137	
.	Missing	42939	50076	

HEADCIR - Head circumference (cm)

Variable Name:	HEADCIR
SAS Label:	Head circumference (cm)
English Text:	Head circumference in centimeters.
English Instructions:	NHANES I, NHANES II, NHANES III
Target:	Both males and females 2 MONTHS - 97 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
34.4 to 65.2	Range of Values	16817	16817	
.	Missing	33259	50076	

LENGTH - Recumbent length (cm)

Variable Name:	LENGTH
SAS Label:	Recumbent length (cm)
English Text:	Recumbent length in centimeters.
English Instructions:	NHANES I, NHANES II, NHANES III
Target:	Both males and females 0 MONTHS - 48 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
39.1 to 125.1	Range of Values	8589	8589	
.	Missing	41487	50076	

BIRTHWT - Birth weight from Certificates (gm)

Variable Name:	BIRTHWT
SAS Label:	Birth weight from Certificates (gm)
English Text:	Birth weight in grams from Birth Certificates.
English Instructions:	NHANES III
Target:	Both males and females 2 MONTHS - 85 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
624 to 6081	Range of Values	7539	7539	
.	Missing	42537	50076	

VLBWFLGB - Very low birth wgt flag (Certificate)

Variable Name:	VLBWFLGB
SAS Label:	Very low birth wgt flag (Certificate)
English Text:	Very low birth weight flag based on Birth Certificates.
English Instructions:	NHANES III
Target:	Both males and females 2 MONTHS - 35 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Greater then 1500 g	4083	4083	
1	Less or equal 1500 g	33	4116	
.	Missing	45960	50076	

LBWFLAG1 - Low birth wgt flag (Certificate)

Variable Name:	LBWFLAG1
SAS Label:	Low birth wgt flag (Certificate)
English Text:	Low birth weight flag based ob Birth Certificate.
English Instructions:	NHANES III
Target:	Both males and females 2 MONTHS - 35 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Greater or equal 2500 g	3862	3862	
1	Less than 2500 g	254	4116	
.	Missing	45960	50076	

DIF_FLAG - Height/recumbent length diff flag

Variable Name:	DIF_FLAG
SAS Label:	Height/recumbent length diff flag
English Text:	Indicates more than 5 cm difference between height and length.
English Instructions:	NHANES II, NHANES III
Target:	Both males and females 24 MONTHS - 48 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	No, difference <= 5 cm	3701	3701	
1	Yes, difference > 5 cm	46	3747	
.	Missing	46329	50076	

VLBWFLGR - Very low birth wgt flag (reported)

Variable Name:	VLBWFLGR
SAS Label:	Very low birth wgt flag (reported)
English Text:	Very low birth weight flag based on reported weight.
English Instructions:	NHANES I, NHANES II, NHANES III
Target:	Both males and females 2 MONTHS - 35 MONTHS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Greater than 1500 g	7074	7074	
1	Less or equal 1500 g	63	7137	
.	Missing	42939	50076	