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- DXDRAPF - Right Arm Percent Fat
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- DXARLBV - Right Leg Bone Invalidity Code
- DXXRLBMC - Right Leg BMC (g)
- DXXRLBMD - Right Leg BMD(g/cm^2)
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- DXXRLFAT - Right Leg Fat (g)
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- DXXRLLI - Right Leg Lean incl BMC (g)
- DXDRLTOT - Right Leg Total (g)

- DXDRLPF - Right Leg Percent Fat
- DXILR - Left Ribs Imputation Indicator
- DXXLRA - Left Ribs Area (cm^2)
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- DXDTRA - Trunk Bone area (cm^2)
- DXATRBV - Trunk Bone Invalidity Code
- DXDTRBMC - Trunk BMC (g)
- DXDTRBMD - Trunk Bone BMD (g/cm^2)
- DXATRTV - Trunk Tissue Invalidity Code
- DXXTRFAT - Trunk Fat (g)
- DXDTRLE - Trunk Lean excl BMC (g)
- DXXTRLI - Trunk Lean incl BMC (g)
- DXDTRTOT - Trunk Total (g)
- DXDTRPF - Trunk Percent Fat
- DXDSTA - Subtotal Area (cm^2)
- DXDSTBMC - Subtotal BMC (g)

- DXDSTBMD - Subtotal BMD (g/cm^2)
- DXDSTFAT - Subtotal Fat (g)
- DXDSTLE - Subtotal Lean excl BMC (g)
- DXDSTLI - Subtotal Lean incl BMC (g)
- DXDSTTOT - Subtotal (Total excl Head) (g)
- DXDSTPF - Subtotal Percent Fat
- DXDTOA - Total Area (cm^2)
- DXDTOBMC - Total Bone Mineral Content (g)
- DXDTOBMD - Total Bone Mineral Density (g/cm^2)
- DXDTOFAT - Total Fat (g)
- DXDTOLE - Total Lean excl BMC (g)
- DXDTOLI - Total Lean incl BMC (g)
- DXDTOTOT - Total Lean+Fat (g)
- DXDTOPF - Total Percent Fat

National Health and Nutrition Examination Survey

2005-2006 Data Documentation, Codebook, and Frequencies

Dual-Energy X-ray Absorptiometry - Whole Body (DXX_D)

Data File: DXX_D.xpt

First Published: February 2013

Last Revised: December 2016

Component Description

Users of the 2005-2006 Dual-Energy X-ray Absorptiometry data (variable name prefix DXX_D) are strongly encouraged to read the documentation before accessing the data file.

Because missing or invalid data have been multiply imputed, the DXX_D data release file contains 5 records for each survey participant, 8-69 years of age, who was interviewed and examined. Only 1 record should be used in calculating sample sizes. However, all 5 records must be used in analyses in order to obtain more accurate variance estimates. The records for some survey participants, such as pregnant females, are blank; pregnant females were not eligible for the DXA scan.

Dual-energy x-ray absorptiometry (DXA) has become one of the most widely accepted methods of measuring body composition due in part to its speed, ease of use, and low radiation exposure (Genant, 1996, Njeh, 1999, Heymsfield, 1989, Tothill, 1996). Whole body DXA scans were administered from 1999-2006. The NHANES DXA examination provides nationally representative data on body composition (bone and soft tissue), overall, and for age, gender, and racial/ethnic groups, to study the association between body composition and other health conditions and risk factors, such as cardiovascular disease, diabetes, hypertension, and physical activity and dietary intake patterns.

The DXA scans provide bone and soft tissue measurements for the total body, for both arms and both legs, the trunk, and the head. Bone measurements also were obtained for the pelvis, left and right ribs, thoracic spine, and lumbar spine. Values for the total body and regions include:

- Total mass (gm)
- Bone mineral content (BMC) (gm)
- Bone area (cm^2)
- Bone mineral density (BMD) (gm/cm^2)
- Fat mass (gm)
- Lean mass excluding BMC (gm)
- Lean mass including BMC (gm)
- Percent body fat (%)

Eligible Sample

DXA scans were administered to eligible survey participants aged 8-69. Pregnant females were ineligible for the DXA examination. Participants who were excluded from the DXA examination for reasons other than pregnancy were considered to be eligible nonrespondents. Reasons for exclusion from the DXA examination were as follows:

- Pregnancy (positive urine pregnancy test and/or self-report at the time of the DXA examination). Females between the ages of 12–59 years and menstruating 8–11 year olds were not permitted to take the DXA examination without a negative MEC pregnancy test result. In addition, females aged 12–59 years were excluded from the examination if they said they were pregnant at the time of the exam, even if the pregnancy test was negative.
- Self-reported history of radiographic contrast material (barium) use in past 7 days.
- Self-reported weight over 300 pounds or height over 6’5” (DXA table limitations).

The variable DXAEXSTS indicates examination status. Equipment failure was the main reason for a completed, but invalid scan. The "Not scanned, other reason" code includes no time to complete the examination, pregnancy test not completed, and participant refusal, as well as exclusion for reasons other than pregnancy.

DXAEXSTS – examination status variable
1 = Scan completed
2 = Scan completed, but invalid
3 = Not scanned, pregnant
4 = Not scanned, weight > 300 lbs
5 = Not scanned, height > 6'5"
6 = Not scanned, other reason

Protocol and Procedure

Whole body DXA scans were taken with a Hologic QDR-4500A fan-beam densitometer (Hologic, Inc., Bedford, Massachusetts). Hologic software version 8.26:a3* was used to administer all scans through mid-2005. In 2005, the acquisition software was updated to Hologic Discovery v12.4. The densitometer scanned participants with an x-ray source using fan-beam scan geometry in three passes (1 minute per pass). The participants were positioned supine on the tabletop with their feet in a neutral position and hands flat by their side. A Velcro strap was used to keep the feet stationary and together. The DXA technique acquires two low-dose x-ray images at different average energies. The ratio of the attenuation of these two average energies, called an R-factor, is used to distinguish both bone from soft tissue, and the percent fat in soft tissue when bone isn't present. The radiation exposure from DXA whole body scans is extremely low at less than 10 uSv.

The DXA examinations were administered at the mobile examination center (MEC), by certified radiology technologists. Further details of the DXA examination protocol are documented in the Body Composition Procedures Manual located on the NHANES website.

Quality Assurance & Quality Control

A high level of quality control was maintained throughout the DXA data collection and scan analysis, including a rigorous phantom scanning schedule.

Monitoring of Field Staff and Densitometers
Staff from the National Center for Health Statistics (NCHS) and the NHANES data collection contractor monitored technologist acquisition performance through in-person observations in the field. Retraining sessions were conducted with the technologists annually and as needed to reinforce correct techniques and

appropriate protocol. In addition, technologist performance codes were recorded by the NHANES quality control center at the University of California, San Francisco (UCSF), Department of Radiology as part of the participants' scan review. The codes documented when the technologist had deviated from acquisition procedures and scan quality could have been improved. The performance codes were tracked for each technologist individually and a summary report was provided to NCHS on a quarterly basis. Constant communication was maintained throughout the year among UCSF, NCHS, and the data collection contractor regarding any issues that arose.

Hologic service engineers performed all routine densitometer maintenance and repairs. Copies of all reports completed by the manufacturer's service engineers were sent to UCSF when the scanners were serviced or repaired so any changes in measurement as a result of the work could be assessed. While some minor mechanical repairs were made during 2005-2006 survey operations, replacement or realignment of the detectors, apertures, or other major hardware was not required for any of the three densitometers.

Scan Analysis

Each participant and phantom scan was reviewed and analyzed by UCSF using standard radiologic techniques and study-specific protocols developed for the NHANES. Hologic Discovery software, version 12.4, was used to analyze the scans. The Discovery analysis software incorporates the Auto WB application, which was developed to improve bone detection in children participating in NHANES and other studies of children (Kelly, 2002, Fan, 2004). The Discovery analysis algorithms automatically detect and measure very low-density bone in children weighing 40 kg or less.

Expert review was conducted by UCSF on 100% of analyzed participant scans to verify the accuracy and consistency of the results.

Invalidity Codes

Invalidity codes were applied by UCSF to indicate the reasons that regions of the body could not be analyzed accurately. The invalidity codes are provided in the data file (see Analytic Notes for a description of the invalidity codes).

Quality Control Scans

The quality control phantoms were scanned according to a predetermined schedule. The Hologic Anthropomorphic Spine Phantom associated with each MEC was scanned daily as required by the manufacturer to ensure accurate calibration of the densitometer. Other MEC-specific phantoms, such as the Hologic Whole Body Slim-line Phantom and Hologic Tissue Step Phantom, were scanned 1 to 3 times weekly. Another set of phantoms, the Hologic Spine (HSP-Q96), Hologic

Block, and Hologic Whole Body Phantoms, circulated among the MECs and were scanned at the start of operations at each survey site.

Air scans, phantom-less scans using the whole body scan mode, were used to describe and monitor the systems' radiographic uniformity across the entire scan field. Poor uniformity could be caused by poor aperture alignment, incorrect gantry rotation, non-uniform gain in detectors, etc., that result in localized inaccuracies in the attenuation values.

The complete phantom scanning schedule is described in the Body Composition Procedures Manual located on the NHANES website.

Cross-Calibration and Longitudinal Monitoring

In multi-site studies such as NHANES, verification that all DXA systems are performing within the expected limits is critical since data collected at the multiple sites are pooled for analysis. A cross-calibration study was conducted prior to the start of NHANES 1999 to identify the relationships among the densitometers in the three MECS. Since all three densitometers in NHANES were the identical make and model, cross-calibration was simplified. However, in 1999, no standard existed for phantom cross-calibration for whole body BMD and soft tissue and new procedures were developed for the survey. At the time, the NHANES cross-calibration study was unique in that it included three scanners and in-vivo subjects and in-vitro phantoms.

In 2005-2006, longitudinal monitoring was conducted through the daily spine phantom scans as required by the manufacturer, 3 times weekly whole body slim-line phantom scans, and weekly air scans in order to correct any scanner-related changes in participant data. The circulating HSP-Q96, block, and whole body phantoms, which were scanned at the start of operations at each site, provided additional data for use in longitudinal monitoring and cross calibration. The cross-comparability of the data from each MEC was critical so the data could be pooled for analysis.

The UCSF used the Cumulative Statistics method (CUSUM) and the MEC-specific phantom data to determine breaks in the calibration of the densitometers over the course of the survey (Lu, 1996). Multiplicative correction factors were used to correct the phantom data back to the baseline calibration. The type, frequency, and magnitude of calibration problems detected in the NHANES data were similar to those in other studies using stationary densitometers that were being monitored by UCSF.

After applying the correction factors developed by UCSF from the cross-calibration and longitudinal phantom data to the NHANES participant data, the adjusted participant data were compared to unadjusted data. The magnitude of the changes

and reduction in standard errors between the adjusted and unadjusted data were found to be small and correction of the participant data not required.

A number of issues were addressed through the quality control program. Direct feedback given to the technologists regarding acquisition problems affecting the quality of the scans and yearly refresher training resulted in improved technologist performance. The rigorous schedule of quality control scans provided continuous monitoring of machine performance. The expert review procedures assured that scan analysis was accurate and consistent. The air scan quality assurance tool used to evaluate whole body performance was first used in the NHANES and was subsequently adopted by Hologic as a mandatory scan mode for all whole body scanners.

Data Processing and Editing

Several steps were taken to produce the DXX_D data files.

5% Adjustment of Lean Mass and Fat Mass

The NHANES lean soft tissue mass and fat mass for the total body and regions were adjusted based on the results of an analysis of QDR- 4500A DXA data from seven research laboratories indicating that the QDR-4500A algorithm underestimated fat mass and overestimated lean mass (Schoeller, 2005). The analysis utilized six data sets provided by study investigators and one published data set. The analytic data included fat mass and lean mass measured on Hologic QDR-4500A densitometers and criteria measurements of body composition from total body water by dilution, underwater weighing, and four-compartment analysis. The QDR-4500A was determined to overestimate lean mass ($p < 0.05$) in the cohort of 1,198 subjects. A statistically significant difference was observed in all 7 data sets with a mean ± SE of 5 ± 1%. Based on the results of the analysis, the NHANES DXA lean mass was decreased by 5% and an equivalent kilogram weight added to the fat mass so the total mass did not change.

Multiple Imputation

The percentage of eligible survey participants in 2005-2006 with 100% valid data (all analyzed regions were valid) is shown by age group in Table 1. The percentage of participants with valid data decreases with increasing age. The decrease in valid data with age was due primarily to an increase in the number of participants with implants such as pacemakers, stents, and hip replacements and higher rates of obesity resulting in invalid truncal data from "obesity noise." The percentage of participants with 100% valid data also decreases with increasing BMI (Table 2).

SAS-callable imputation and variance estimation software developed by the Survey Methodology Program at the University of Michigan's Institute of Survey Research (ISR), IVEware, was used to impute the NHANES DXA data (Raghunathan, 2002).

The IVEware module IMPUTE performs multiple imputations of missing values using the sequential regression imputation method (Raghunathan, 2001). A detailed description of the imputation procedures is provided in the Documentation for Multiple Imputation of National Health and Nutrition Examination Survey 1999-2004 Dual Energy X-Ray Absorptiometry Data on the NHANES website and in Schenker, 2011.

Five complete records containing valid and/or imputed values were created for each survey participant to allow the assessment of variability due to imputation. The DXX data file contains all 5 records. The variable "_multi_" has values 1-5, which can be used to identify the records. For participants with multiply imputed data, each of the 5 records contains a different set of imputed values. Participants who have 100% valid data have 5 identical records, since no data were imputed.

Use of the imputed data sets will provide complete DXA data for all participants and ensure a more accurate standard error of the estimate.

The data file contains two overall imputation indicator variables that indicate whether bone (DXITOTBN) or soft tissue data (DXITOTST) were imputed for at least one body subregion. The values for these overall imputation variables are 0 = data not imputed, 1 = data imputed, and 2 = highly variable imputed data: The data file also contains imputation indicator variables for different body subregions as listed below:
DXIHE = head
DXILA = left arm
DXILL = left leg
DXIRA = right arm
DXIRL = right leg
DXILR = left rib
DXIRR = right rib
DXITS = thoracic spine
DXILS = lumbar spine
DXIPE = pelvis
DXITR = trunk
The values for each variable are:
0=Not imputed
1= Only soft tissue imputed
2=Only bone imputed
3=Both soft tissue and bone imputed
4= Highly variable imputation

A subset of participants with highly variable imputed data, fat mass in particular, has blank records in the 2005-2006 DXX file. The data for these participants can

be found in the DXX_D_S data file. Participants with highly variable imputed data (all imputation indicator variables = 4) had no valid DXA data and were missing measured weight and waist circumference, which were critical predictor variables in the imputation model. The data in DXX_D_ S should be reviewed carefully before inclusion in any analysis.

Analytic Notes

The DXX_D data file contains 5 records for each survey participant. The multiple records must be taken into account when calculating sample sizes. The following SAS example can be used to select a single record in order to calculate sample sizes:

```
data alldxx_d;
merge dexa.dxx_d (where =(_mult_ = 1)) work.demo;
by seqn;
run;
```

The frequency counts in the codebook are the total number of observations from all 5 records. The counts must be divided by 5 to calculate the actual number of participants with the code or value. Frequency counts are not provided for the DXX_D_S data file.

Analysts should read the Documentation for Multiple Imputation of National Health and Nutrition Examination Survey 1999-2004 Dual Energy X-Ray Absorptiometry Data on the NHANES website. The same model and procedures used in multiply imputing the 1999-2004 DXA data were used in imputing the 2005-2006 data. Additional information on the multiple imputation of the 1999-2004 DXA data can be found in Schenker, 2011. The documentation provides sample code for analysis of the multiply imputed data using SAS-callable SUDAAN. Other statistical packages, including Stata, R and SAS Survey, can be used in the analysis of multiply imputed complex survey data.

The NHANES examination sample weights should be used for all DXX_D analyses. 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.

Relationship among examination status codes and imputation indicator codes

DXAEXSTS	DXITOT	DXITOTBN	Data	Body subregion Imputation Indicator Codes
1	0	0	All data were valid and none were imputed.	All codes = 0.
1	0	1	Bone Data for at least 1 subregion were invalid and imputed.	Code(s) for the subregion(s) that were imputed= 2.
1	1	0	Soft tissue Data for at least 1 subregion were invalid and imputed	Code(s) for the subregion(s) that were imputed = 1.
1	1	1	Bone and soft tissue data for at least 1 subregion were invalid and imputed.	Code(s) for the subregion(s) that were imputed= 1, 2 or 3.
2	1	1	All data were invalid and all were imputed.	All codes = 1, 2 or 3.
3	Missing	Missing	Participant was pregnant and excluded from the DXA exam. All data are missing and none were imputed. There are 371 pregnant females in the DXX_D data file.	All codes =Missing

DXAEXSTS	DXITOT	DXITOTBN	Data	Body subregion Imputation Indicator Codes
4, 5, or 6	1	1	Participant was excluded from the exam for a reason other than pregnancy. All data were imputed.	All codes = 1, 2 or 3.
4 or 6	2	2	The participant was excluded from the exam. All data were imputed, but were considered to be highly variable and placed in DXX_D_S. There are 48 participants with highly variable data in the DXX_D_S file.	All codes = 4.
6	Missing	Missing	The participant was excluded from the exam, but the data could not be imputed .All data are missing. There are 6 such participants in the DXX_D data file.	All codes =Missing

Invalidity Codes

Invalidity codes were applicable to completed scans only (DXAEXSTS=1). Valid regions were coded 0. Codes 1-7 indicate the reasons regions could not be analyzed accurately. If a participant was not scanned, all invalidity codes will be missing.

Invalidity codes

DXAHEBV = head bone

DXAHETV = head tissue

DXALABV = left arm bone

DXALATV = left arm tissue

DXALLBV = left leg bone
DXALLTV = left leg tissue
DXARABV = right arm bone
DXARATV = right arm tissue
DXARLBV = right leg bone
DXARLTV = right leg tissue
DXATRBV = trunk bone, includes thoracic and lumbar spine, left and right ribs, and pelvis
DXATRTV = trunk tissue

Values for invalidity codes
0 = Valid data
1 = Jewelry and other objects not removed
2 = Non-removable objects (includes prostheses, implants, casts)
3 = Excessive x-ray "noise" due to obesity, i.e., the DXA beam could not penetrate the layers of abdominal fat to provide an analyzable scan image (applied to the trunk region only)
4 = Arm/leg overlap
5 = Body parts out of scan region
6 = Positioning problem (head, arms/hands or feet turned)
7 = Other (includes participant motion, unknown artifacts, deformities)

Table 1. Percentages of interviewed and examined participants 8-69 years of age with valid DXA data by age group, NHANES 2005-2006.

Gender-age group (Years)	Interviewed and examined (N) *	Eligible for DXA (N) †	Eligible for DXA (%) †	100% valid DXA data (N) ‡	100% valid DXA data (%) ‡
8-11	740	740	100	663	90
12-15	1,089	1,085	100	916	84
16-19	1,118	1,076	96	857	80
20-29	1,021	792	78	574	72
30-39	818	725	89	539	74
40-49	815	812	100	604	74

Gender-age group (Years)	Interviewed and examined (N) *	Eligible for DXA (N) †	Eligible for DXA (%) †	100% valid DXA data (N) ‡	100% valid DXA data (%) ‡
50-59	631	631	100	463	73
60-69	661	661	100	464	70
Total	6,893	6,522	95	5,080	78

* The number interviewed and examined is the total number of participants in the data file with a SEQN variable. This number includes pregnant females (n = 344).

† The total number eligible for DXA includes participants with both valid and imputed data (n = 7,621), participants with highly variable data in DXX_D_S (n = 252), and participants for whom data could not be imputed (n = 25). This number does not include pregnant females.

‡ Of those eligible for DXA who successfully completed a scan.

Table 2. Percentages of participants 20 years and older with valid DXA data by body mass index (BMI)* category, NHANES 2005-2006.

BMI Category	Eligible for DXA †	100% Valid Data (N) †	100% Valid Data (%) ‡
< 18	60	47	78
18-24.9	997	797	80
25-29.9	1,193	956	80
30-34.9	738	559	76
35.0-39.9	346	216	62
≥ 40	238	60	25
Total	3,572	2,635	74

* Measured weight in kilograms divided by measured height in meters squared.

† Does not include pregnant females

‡ Of those eligible for DXA.

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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 8 YEARS - 69 YEARS

MULT - Imputation Version

Variable Name:
MULT
SAS Label:
Imputation Version
English Text:
Imputation version
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1 to 5	Range of Values	34465	34465	
.	Missing	0	34465	

DXAEXSTS - Exam Status

Variable Name:
DXAEXSTS
SAS Label:
Exam Status
English Text:
Exam Status
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	Scan completed	28565	28565	
2	Scan completed, but invalid	20	28585	
3	Not scanned, pregnancy	1855	30440	

Code or Value	Value Description	Count	Cumulative	Skip to Item
4	Not scanned, weight > 300 lbs	435	30875	
5	Not scanned, height > 6'5	25	30900	
6	Not scanned, other reason	3565	34465	
.	Missing	0	34465	

DXITOTST - Soft Tissue Imputation Indicator

Variable Name:
DXITOTST
SAS Label:
Soft Tissue Imputation Indicator
English Text:
Soft Tissue Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	24425	24425	
1	Imputed	7920	32345	
2	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXITOTBN - Bone Imputation Indicator

Variable Name:
DXITOTBN
SAS Label:
Bone Imputation Indicator
English Text:

Bone Imputation Indicator

Target:

Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	25400	25400	
1	Imputed	6945	32345	
2	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXIHE - Head Imputation Indicator

Variable Name:

DXIHE

SAS Label:

Head Imputation Indicator

English Text:

Head Imputation Indicator

Target:

Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	28430	28430	
1	Imputed	0	28430	
2	Highly Variable Imputation	0	28430	
3	Both soft tissue and bone imputed	3915	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXHEA - Head Area (cm^2)

Variable Name:
DXXHEA
SAS Label:
Head Area (cm^2)
English Text:
Head Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
158.97 to 302.58	Range of Values	32345	32345	
.	Missing	2120	34465	

DXAHEBV - Head Bone Invalidity Code

Variable Name:
DXAHEBV
SAS Label:
Head Bone Invalidity Code
English Text:
Head Bone Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	28450	28450	
1	Jewelry or other objects not removed	45	28495	
2	Non-removable objects	5	28500	
5	Body parts out of scan region	40	28540	
6	Positioning problem	5	28545	

Code or Value	Value Description	Count	Cumulative	Skip to Item
7	Other	25	28570	
.	Missing	5895	34465	

DXXHEBMC - Head Bone Mineral Content (g)

Variable Name:
DXXHEBMC
SAS Label:
Head Bone Mineral Content (g)
English Text:
Head Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
186.72 to 1124.12	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXHEBMD - Head Bone Mineral Density (g/cm^2)

Variable Name:
DXXHEBMD
SAS Label:
Head Bone Mineral Density (g/cm^2)
English Text:
Head Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.954 to 4.358	Range of Values	32345	32345	
.	Missing	2120	34465	

DXAHETV - Head Tissue Invalidity Code

Variable Name:
DXAHETV
SAS Label:
Head Tissue Invalidity Code
English Text:
Head Tissue Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	28450	28450	
1	Jewelry or other objects not removed	45	28495	
2	Non-removable objects	5	28500	
5	Body parts out of scan region	40	28540	
6	Positioning problem	5	28545	
7	Other	25	28570	
.	Missing	5895	34465	

DXXHEFAT - Head Fat (g)

Variable Name:
DXXHEFAT
SAS Label:
Head Fat (g)
English Text:
Head Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
675.9 to 3469.5	Range of Values	32345	32345	

Code or Value	Value Description	Count	Cumulative	Skip to Item
.	Missing	2120	34465	

DXDHELE - Head Lean excl BMC (g)

Variable Name:
DXDHELE
SAS Label:
Head Lean excl BMC (g)
English Text:
Head Lean excl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1904.7 to 7074.5	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXHELI - Head Lean incl BMC (g)

Variable Name:
DXXHELI
SAS Label:
Head Lean incl BMC (g)
English Text:
Head Lean incl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
2168.8 to 7995.5	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDHETOT - Head Total (g)

Variable Name:

DXDHETOT
SAS Label:
Head Total (g)
English Text:
Head Total (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
2849 to 10830.3	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDHEPF - Head Percent Fat

Variable Name:
DXDHEPF
SAS Label:
Head Percent Fat
English Text:
Head Percent Fat
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
20.5 to 32.8	Range of Values	32345	32345	
.	Missing	2120	34465	

DXILA - Left Arm Imputation Indicator

Variable Name:
DXILA
SAS Label:
Left Arm Imputation Indicator
English Text:
Left Arm Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	26860	26860	

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	Only soft tissue imputed	920	27780	
2	Only bone imputed	35	27815	
3	Both soft tissue and bone imputed	4530	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXLAA - Left Arm Area (cm^2)

Variable Name:
DXXLAA
SAS Label:
Left Arm Area (cm^2)
English Text:
Left Arm Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
55.22 to 419.43	Range of Values	32345	32345	
.	Missing	2120	34465	

DXALABV - Left Arm Bone Invalidity Code

Variable Name:
DXALABV
SAS Label:
Left Arm Bone Invalidity Code
English Text:
Left Arm Bone Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	27780	27780	
1	Jewelry or other objects not removed	55	27835	
2	Non-removable objects	65	27900	
4	Arm/leg overlap	180	28080	
5	Body parts out of scan region	365	28445	
6	Positioning problem	5	28450	
7	Other	120	28570	
.	Missing	5895	34465	

DXXLABMC - Left Arm BMC (g)

Variable Name:
DXXLABMC
SAS Label:
Left Arm BMC (g)
English Text:
Left Arm Body Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
27.71 to 472.84	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXLABMD - Left Arm BMD (g/cm^2)

Variable Name:
DXXLABMD
SAS Label:
Left Arm BMD (g/cm^2)
English Text:
Left Arm Body Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.361 to 1.284	Range of Values	32345	32345	
.	Missing	2120	34465	

DXALATV - Left Arm Tissue Invalidity Code

Variable Name:
DXALATV
SAS Label:
Left Arm Tissue Invalidity Code
English Text:
Left Arm Tissue Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	26895	26895	
1	Jewelry or other objects not removed	50	26945	
2	Non-removable objects	65	27010	
4	Arm/leg overlap	995	28005	
5	Body parts out of scan region	410	28415	
6	Positioning problem	5	28420	
7	Other	150	28570	

Code or Value	Value Description	Count	Cumulative	Skip to Item
.	Missing	5895	34465	

DXXLAFAT - Left Arm Fat (g)

Variable Name:
DXXLAFAT
SAS Label:
Left Arm Fat (g)
English Text:
Left Arm Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
134.5 to 7904.5	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDLALE - Left Arm Lean excl BMC (g)

Variable Name:
DXDLALE
SAS Label:
Left Arm Lean excl BMC (g)
English Text:
Left Arm Lean excl Body Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
586.1 to 9229.4	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXLALI - Left Arm Lean incl BMC (g)

Variable Name:

DXXLALI
SAS Label:
Left Arm Lean incl BMC (g)
English Text:
Left Arm Lean incl BMC (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
627.4 to 9664.4	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDLATOT - Left Arm Total (g)

Variable Name:
DXDLATOT
SAS Label:
Left Arm Total (g)
English Text:
Left Arm Total (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
967.6 to 15770.4	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDLAPF - Left Arm Percent Fat

Variable Name:
DXDLAPF
SAS Label:
Left Arm Percent Fat
English Text:
Left Arm Percent Fat
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
7.6 to 69	Range of Values	32345	32345	
.	Missing	2120	34465	

DXILL - Left Leg Imputation Indicator

Variable Name:
DXILL
SAS Label:
Left Leg Imputation Indicator
English Text:
Left Leg Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	26500	26500	
1	Only soft tissue imputed	910	27410	
2	Only bone imputed	70	27480	
3	Both soft tissue and bone imputed	4865	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXLLA - Left Leg Area (cm^2)

Variable Name:
DXXLLA
SAS Label:
Left Leg Area (cm^2)
English Text:
Left Leg Area(cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
126.96 to 659.52	Range of Values	32345	32345	
.	Missing	2120	34465	

DXALLBV - Left Leg Bone Invalidity Code

Variable Name:
DXALLBV
SAS Label:
Left Leg Bone Invalidity Code
English Text:
Left Leg Bone Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	27415	27415	
1	Jewelry or other objects not removed	20	27435	
2	Non-removable objects	250	27685	
4	Arm/leg overlap	345	28030	
5	Body parts out of scan region	425	28455	
6	Positioning problem	5	28460	
7	Other	110	28570	
.	Missing	5895	34465	

DXXLLBMC - Left Leg BMC (g)

Variable Name:
DXXLLBMC
SAS Label:
Left Leg BMC (g)
English Text:
Left Leg Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
93.61 to 1300.9	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXLLBMD - Left Leg BMD (g/cm^2)

Variable Name:
DXXLLBMD
SAS Label:
Left Leg BMD (g/cm^2)
English Text:
Left Leg Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.571 to 2.21	Range of Values	32345	32345	
.	Missing	2120	34465	

DXALLTV - Left Leg Tissue Invalidity Code

Variable Name:
DXALLTV
SAS Label:
Left Leg Tissue Invalidity Code
English Text:
Left Leg Tissue Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	26575	26575	
1	Jewelry or other objects not removed	20	26595	
2	Non-removable objects	250	26845	
4	Arm/leg overlap	1200	28045	
5	Body parts out of scan region	415	28460	
6	Positioning problem	5	28465	
7	Other	105	28570	
.	Missing	5895	34465	

DXXLLFAT - Left Leg Fat (g)

Variable Name:
DXXLLFAT
SAS Label:
Left Leg Fat (g)
English Text:
Left Leg Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
579 to 20986.6	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDLLLE - Left Leg Lean excl BMC (g)

Variable Name:
DXDLLLE

SAS Label:
Left Leg Lean excl BMC (g)
English Text:
Left Leg Lean excl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1734.9 to 25712.8	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXLLLI - Left Leg Lean incl BMC (g)

Variable Name:
DXXLLLI
SAS Label:
Left Leg Lean incl BMC (g)
English Text:
Left Leg Lean incl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1863.2 to 26841.9	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDLLTOT - Left Leg Total (g)

Variable Name:
DXDLLTOT
SAS Label:
Left Leg Total (g)
English Text:
Left Leg Total (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
3028.9 to 43171	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDLLPF - Left Leg Percent Fat

Variable Name:
DXDLLPF
SAS Label:
Left Leg Percent Fat
English Text:
Left Leg Percent Fat
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
6.4 to 69.1	Range of Values	32345	32345	
.	Missing	2120	34465	

DXIRA - Right Arm Imputation Indicator

Variable Name:
DXIRA
SAS Label:
Right Arm Imputation Indicator
English Text:
Right Arm Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	26490	26490	
1	Imputed	1120	27610	
2	Only bone imputed	35	27645	

Code or Value	Value Description	Count	Cumulative	Skip to Item
3	Both soft tissue and bone imputed	4700	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXRAA - Right Arm Area (cm^2)

Variable Name:
DXXRAA
SAS Label:
Right Arm Area (cm^2)
English Text:
Right Arm Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
59.97 to 403.38	Range of Values	32345	32345	
.	Missing	2120	34465	

DXARABV - Right Arm Bone Invalidity Code

Variable Name:
DXARABV
SAS Label:
Right Arm Bone Invalidity Code
English Text:
Right Arm Bone Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	27610	27610	

Code or Value	Value Description	Count	Cumulative	Skip to Item
1	Jewelry or other objects not removed	45	27655	
2	Non-removable objects	85	27740	
4	Arm/leg overlap	165	27905	
5	Body parts out of scan region	570	28475	
6	Positioning problem	5	28480	
7	Other	90	28570	
.	Missing	5895	34465	

DXXRABMC - Right Arm BMC (g)

Variable Name:
DXXRABMC
SAS Label:
Right Arm BMC (g)
English Text:
Right Arm Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
33.11 to 464.87	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXRABMD - Right Arm BMD (g/cm^2)

Variable Name:
DXXRABMD

SAS Label:
Right Arm BMD (g/cm^2)
English Text:
Right Arm Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.377 to 1.367	Range of Values	32345	32345	
.	Missing	2120	34465	

DXARATV - Right Arm Tissue Invalidity Code

Variable Name:
DXARATV
SAS Label:
Right Arm Tissue Invalidity Code
English Text:
Right Arm Tissue Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	26525	26525	
1	Jewelry or other objects not removed.	40	26565	
2	Non-removable objects	85	26650	
4	Arm/leg overlap	1190	27840	
5	Body parts out of scan region	605	28445	
6	Positioning problem	5	28450	
7	Other	120	28570	
.	Missing	5895	34465	

DXXRAFAT - Right Arm Fat (g)

Variable Name:
DXXRAFAT
SAS Label:
Right Arm Fat (g)
English Text:
Right Arm Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
128.2 to 8033.6	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDRALE - Right Arm Lean excl BMC (g)

Variable Name:
DXDRALE
SAS Label:
Right Arm Lean excl BMC (g)
English Text:
Right Arm Lean excl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
606.8 to 9004.1	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXRALI - Right Arm Lean incl BMC (g)

Variable Name:
DXXRALI
SAS Label:
Right Arm Lean incl BMC (g)
English Text:
Right Arm Lean incl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
648.7 to 9466.4	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDRATOT - Right Arm Total (g)

Variable Name:
DXDRATOT
SAS Label:
Right Arm Total (g)
English Text:
Right Arm Total (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
953.9 to 15503.9	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDRAPF - Right Arm Percent Fat

Variable Name:
DXDRAPF
SAS Label:
Right Arm Percent Fat
English Text:
Right Arm Percent Fat
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
8.3 to 69.5	Range of Values	32345	32345	
.	Missing	2120	34465	

DXIRL - Right Leg Imputation Indicator

Variable Name:
DXIRL
SAS Label:
Right Leg Imputation Indicator
English Text:
Right Leg Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	26250	26250	
1	Only soft tissue imputed	1145	27395	
2	Only bone imputed	80	27475	
3	Both soft tissue and bone imputed	4870	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXRLA - Right Leg Area (cm^2)

Variable Name:
DXXRLA
SAS Label:
Right Leg Area (cm^2)
English Text:
Right Leg Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
128.79 to 642.38	Range of Values	32345	32345	
.	Missing	2120	34465	

DXARLBV - Right Leg Bone Invalidity Code

Variable Name:
DXARLBV
SAS Label:
Right Leg Bone Invalidity Code
English Text:
Right Leg Bone Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	27400	27400	
1	Jewelry or other objects not removed	20	27420	
2	Non-removable objects	265	27685	
4	Arm/leg overlap	365	28050	
5	Body parts out of scan region	415	28465	
6	Positioning problem	0	28465	
7	Other	105	28570	
.	Missing	5895	34465	

DXXRLBMC - Right Leg BMC (g)

Variable Name:
DXXRLBMC
SAS Label:
Right Leg BMC (g)
English Text:
Right Leg Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
98.76 to 1236.7	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXRLBMD - Right Leg BMD(g/cm^2)

Variable Name:
DXXRLBMD
SAS Label:
Right Leg BMD(g/cm^2)
English Text:
Right Leg Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.575 to 2.101	Range of Values	32345	32345	
.	Missing	2120	34465	

DXARLTV - Right Leg Tissue Invalidity Code

Variable Name:
DXARLTV
SAS Label:
Right Leg Tissue Invalidity Code
English Text:
Right Leg Tissue Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	26335	26335	
1	Jewelry or other objects not removed	20	26355	

Code or Value	Value Description	Count	Cumulative	Skip to Item
2	Non-removable objects	260	26615	
4	Arm/leg overlap	1450	28065	
5	Body parts out of scan region	405	28470	
6	Positioning problem	0	28470	
7	Other	100	28570	
.	Missing	5895	34465	

DXXRLFAT - Right Leg Fat (g)

Variable Name:
DXXRLFAT
SAS Label:
Right Leg Fat (g)
English Text:
Right Leg Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
554.8 to 22082	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDRLLE - Right Leg Lean excl BMC (g)

Variable Name:
DXDRLLE
SAS Label:
Right Leg Lean excl BMC (g)
English Text:
Right Leg Lean excl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1760.3 to 25844.9	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXRLLI - Right Leg Lean incl BMC (g)

Variable Name:
DXXRLLI
SAS Label:
Right Leg Lean incl BMC (g)
English Text:
Right Leg Lean incl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
1895.9 to 26934.8	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDRLTOT - Right Leg Total (g)

Variable Name:
DXDRLTOT
SAS Label:
Right Leg Total (g)
English Text:
Right Leg Total (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
3213.7 to 43467	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDRLPF - Right Leg Percent Fat

Variable Name:
DXDRLPF
SAS Label:
Right Leg Percent Fat
English Text:
Right Leg Percent Fat
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
6.3 to 66.3	Range of Values	32345	32345	
.	Missing	2120	34465	

DXILR - Left Ribs Imputation Indicator

Variable Name:
DXILR
SAS Label:
Left Ribs Imputation Indicator
English Text:
Left Ribs Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	27675	27675	
1	Only soft tissue imputed	0	27675	
2	Only bone imputed	4670	32345	
3	Both soft tissue and bone imputed	0	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXLRA - Left Ribs Area (cm^2)

Variable Name:
DXXLRA
SAS Label:
Left Ribs Area (cm^2)
English Text:
Left Ribs Area(cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
50.87 to 273.56	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXLRBMC - Left Ribs BMC (g)

Variable Name:
DXXLRBMC
SAS Label:
Left Ribs BMC (g)
English Text:
Left Ribs Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
23.98 to 286.1	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXLRBMD - Left Ribs BMD (g/cm^2)

Variable Name:
DXXLRBMD
SAS Label:
Left Ribs BMD (g/cm^2)
English Text:
Left Ribs Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.359 to 1.218	Range of Values	32345	32345	

Code or Value	Value Description	Count	Cumulative	Skip to Item
.	Missing	2120	34465	

DXIRR - Right Ribs Imputation Indicator

Variable Name:
DXIRR
SAS Label:
Right Ribs Imputation Indicator
English Text:
Right Ribs Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	27675	27675	
1	Only soft tissue imputed	0	27675	
2	Only bone imputed	4670	32345	
3	Both soft tissue and bone imputed	0	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXRRA - Right Ribs Area (cm^2)

Variable Name:
DXXRRA
SAS Label:
Right Ribs Area (cm^2)
English Text:
Right Ribs Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
46.47 to 364.75	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXRRBMC - Right Ribs BMC (g)

Variable Name:
DXXRRBMC
SAS Label:
Right Ribs BMC (g)
English Text:
Right Ribs Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
21.54 to 322.42	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXRRBMD - Right Ribs BMD (g/cm^2)

Variable Name:
DXXRRBMD
SAS Label:
Right Ribs BMD (g/cm^2)
English Text:
Right Ribs Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.337 to 1.193	Range of Values	32345	32345	
.	Missing	2120	34465	

DXITS - Thoracic Spine Imputation Indicator

Variable Name:
DXITS
SAS Label:
Thoracic Spine Imputation Indicator
English Text:
Thoracic Spine Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	27675	27675	
1	Only soft tissue imputed	0	27675	
2	Only bone imputed	4670	32345	
3	Both soft tissue and bone imputed	0	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXTSA - Thoracic Spine Area (cm^2)

Variable Name:
DXXTSA
SAS Label:
Thoracic Spine Area (cm^2)
English Text:
Thoracic Spine Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
44.81 to 283.14	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXTSBMC - Thoracic Spine BMC (g)

Variable Name:
DXXTSBMC
SAS Label:
Thoracic Spine BMC (g)
English Text:
Thoracic Spine Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
21.64 to 364.11	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXTSBMD - Thoracic Spine BMD (g/cm^2)

Variable Name:
DXXTSBMD
SAS Label:
Thoracic Spine BMD (g/cm^2)
English Text:
Thoracic Spine Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.385 to 1.534	Range of Values	32345	32345	
.	Missing	2120	34465	

DXILS - Lumbar Spine Imputation Indicator

Variable Name:
DXILS
SAS Label:
Lumbar Spine Imputation Indicator
English Text:
Lumbar Spine Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	27675	27675	
1	Only soft tissue imputed	0	27675	
2	Only bone imputed	4670	32345	
3	Both soft tissue and bone imputed	0	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXLSA - Lumbar Spine Area (cm^2)

Variable Name:
DXXLSA
SAS Label:
Lumbar Spine Area (cm^2)
English Text:
Lumbar Spine Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
9.66 to 96.06	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXLSBMC - Lumbar Spine BMC (g)

Variable Name:
DXXLSBMC
SAS Label:
Lumbar Spine BMC (g)
English Text:
Lumbar Spine Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
5.81 to 148.27	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXLSBMD - Lumbar Spine BMD (g/cm^2)

Variable Name:
DXXLSBMD
SAS Label:
Lumbar Spine BMD (g/cm^2)
English Text:
Lumbar Spine Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.431 to 2.132	Range of Values	32345	32345	
.	Missing	2120	34465	

DXIPE - Pelvis Imputation Indicator

Variable Name:
DXIPE
SAS Label:
Pelvis Imputation Indicator
English Text:
Pelvis Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	27665	27665	
1	Only soft tissue imputed	0	27665	
2	Only bone imputed	4680	32345	

Code or Value	Value Description	Count	Cumulative	Skip to Item
3	Both soft tissue and bone imputed	0	32345	
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXXPEA - Pelvis Area (cm^2)

Variable Name:
DXXPEA
SAS Label:
Pelvis Area (cm^2)
English Text:
Pelvis Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
64.69 to 428.03	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXPEBMC - Pelvis BMC (g)

Variable Name:
DXXPEBMC
SAS Label:
Pelvis BMC (g)
English Text:
Pelvis Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
48.41 to 1304.15	Range of Values	32345	32345	

Code or Value	Value Description	Count	Cumulative	Skip to Item
.	Missing	2120	34465	

DXXPEBMD - Pelvis BMD (g/cm^2)

Variable Name:
DXXPEBMD
SAS Label:
Pelvis BMD (g/cm^2)
English Text:
Pelvis Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.528 to 3.162	Range of Values	32345	32345	
.	Missing	2120	34465	

DXITR - Trunk Imputation Indicator

Variable Name:
DXITR
SAS Label:
Trunk Imputation Indicator
English Text:
Trunk Imputation Indicator
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Not imputed	27680	27680	
1	Only soft tissue imputed	4665	32345	
2	Only bone imputed	0	32345	
3	Both soft tissue and bone imputed	0	32345	

Code or Value	Value Description	Count	Cumulative	Skip to Item
4	Highly variable imputation	235	32580	
.	Missing	1885	34465	

DXDTRA - Trunk Bone area (cm^2)

Variable Name:
DXDTRA
SAS Label:
Trunk Bone area (cm^2)
English Text:
Trunk Bone area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
273.29 to 1222	Range of Values	32345	32345	
.	Missing	2120	34465	

DXATRBV - Trunk Bone Invalidity Code

Variable Name:
DXATRBV
SAS Label:
Trunk Bone Invalidity Code
English Text:
Trunk Bone Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	27675	27675	
1	Jewelry or other objects not removed	160	27835	
2	Non-removable objects	425	28260	

Code or Value	Value Description	Count	Cumulative	Skip to Item
3	Excessive X-ray noise	220	28480	
4	Arm/leg overlap	10	28490	
5	Body parts out of scan region	0	28490	
6	Positioning problem	0	28490	
7	Other	80	28570	
.	Missing	5895	34465	

DXDTRBMC - Trunk BMC (g)

Variable Name:
DXDTRBMC
SAS Label:
Trunk BMC (g)
English Text:
Trunk Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
148.23 to 2120.49	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTRBMD - Trunk Bone BMD (g/cm^2)

Variable Name:
DXDTRBMD
SAS Label:
Trunk Bone BMD (g/cm^2)
English Text:
Trunk Bone BMD (g/cm^2)
Target:

Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.471 to 2.028	Range of Values	32345	32345	
.	Missing	2120	34465	

DXATRTV - Trunk Tissue Invalidity Code

Variable Name:
DXATRTV
SAS Label:
Trunk Tissue Invalidity Code
English Text:
Trunk Tissue Invalidity Code
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0	Valid data	27680	27680	
1	Jewelry or other objects not removed	155	27835	
2	Non-removable objects	420	28255	
3	Excessive X-ray noise	220	28475	
4	Arm/leg overlap	15	28490	
5	Body parts out of scan region	0	28490	
6	Positioning problem	0	28490	
7	Other	80	28570	
.	Missing	5895	34465	

DXXTRFAT - Trunk Fat (g)

Variable Name:
DXXTRFAT
SAS Label:
Trunk Fat (g)
English Text:
Trunk Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
853.3 to 53908.8	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTRLE - Trunk Lean excl BMC (g)

Variable Name:
DXDTRLE
SAS Label:
Trunk Lean excl BMC (g)
English Text:
Trunk Lean excl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
6505.4 to 62210.7	Range of Values	32345	32345	
.	Missing	2120	34465	

DXXTRLI - Trunk Lean incl BMC (g)

Variable Name:
DXXTRLI
SAS Label:
Trunk Lean incl BMC (g)
English Text:
Trunk Lean incl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
6697.7 to 63613.9	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTRTOT - Trunk Total (g)

Variable Name:
DXDTRTOT
SAS Label:
Trunk Total (g)
English Text:
Trunk Total (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
8324.1 to 113516.2	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTRPF - Trunk Percent Fat

Variable Name:
DXDTRPF
SAS Label:
Trunk Percent Fat
English Text:
Trunk Percent Fat
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
5.4 to 58.9	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDSTA - Subtotal Area (cm^2)

Variable Name:
DXDSTA
SAS Label:
Subtotal Area (cm^2)
English Text:
Subtotal Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
661.25 to 3237.16	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDSTBMC - Subtotal BMC (g)

Variable Name:
DXDSTBMC
SAS Label:
Subtotal BMC (g)
English Text:
Subtotal Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
420.71 to 5443.55	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDSTBMD - Subtotal BMD (g/cm^2)

Variable Name:
DXDSTBMD
SAS Label:
Subtotal BMD (g/cm^2)
English Text:
Subtotal Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.508 to 1.863	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDSTFAT - Subtotal Fat (g)

Variable Name:
DXDSTFAT
SAS Label:
Subtotal Fat (g)
English Text:
Subtotal Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
2727.4 to 110102.4	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDSTLE - Subtotal Lean excl BMC (g)

Variable Name:
DXDSTLE
SAS Label:
Subtotal Lean excl BMC (g)
English Text:
Subtotal Lean excl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
11394.3 to 128824.4	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDSTLI - Subtotal Lean incl BMC (g)

Variable Name:
DXDSTLI
SAS Label:
Subtotal Lean incl BMC (g)
English Text:
Subtotal Lean incl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
11932.9 to 134040.9	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDSTTOT - Subtotal (Total excl Head) (g)

Variable Name:
DXDSTTOT
SAS Label:
Subtotal (Total excl Head) (g)
English Text:
Subtotal (Total excl Head) (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
16959.3 to 222946.2	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDSTPF - Subtotal Percent Fat

Variable Name:
DXDSTPF
SAS Label:
Subtotal Percent Fat
English Text:
Subtotal Percent Fat
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
7.8 to 60.7	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTOA - Total Area (cm^2)

Variable Name:
DXDTOA
SAS Label:
Total Area (cm^2)
English Text:
Total Area (cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
862.48 to 3502.93	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTOBMC - Total Bone Mineral Content (g)

Variable Name:
DXDTOBMC
SAS Label:
Total Bone Mineral Content (g)
English Text:
Total Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
633.57 to 6101.17	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTOBMD - Total Bone Mineral Density (g/cm^2)

Variable Name:
DXDTOBMD
SAS Label:
Total Bone Mineral Density (g/cm^2)
English Text:
Total Bone Mineral Density (grams/cm^2)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
0.599 to 1.927	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTOFAT - Total Fat (g)

Variable Name:
DXDTOFAT
SAS Label:
Total Fat (g)
English Text:
Total Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
3488.6 to 112132.1	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTOLE - Total Lean excl BMC (g)

Variable Name:
DXDTOLE
SAS Label:
Total Lean excl BMC (g)
English Text:
Total Lean excl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
13492.7 to 133745.3	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTOLI - Total Lean incl BMC (g)

Variable Name:
DXDTOLI
SAS Label:
Total Lean incl BMC (g)
English Text:
Total Lean incl Bone Mineral Content (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
14339.4 to 139707.2	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTOTOT - Total Lean+Fat (g)

Variable Name:
DXDTOTOT
SAS Label:
Total Lean+Fat (g)
English Text:
Total Lean incl BMC and Fat (grams)
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
20191.2 to 231062.4	Range of Values	32345	32345	
.	Missing	2120	34465	

DXDTOPF - Total Percent Fat

Variable Name:
DXDTOPF
SAS Label:
Total Percent Fat
English Text:
Total Percent Fat
Target:
Both males and females 8 YEARS - 69 YEARS

Code or Value	Value Description	Count	Cumulative	Skip to Item
8.8 to 58	Range of Values	32345	32345	
.	Missing	2120	34465	