Component Description

Users of the 2013-2014 dual-energy X-ray absorptiometry vertebral fracture assessment data (DXXVFA\_H) are encouraged to read the documentation before accessing the data file.

Vertebral Fracture Assessment (VFA) is obtained using dual energy x-ray absorptiometry (DXA) to perform a lateral scan of the thoraco-lumbar spine. The image resolution of lateral spine scans obtained with DXA is close to the image resolution of a standard radiograph, but the DXA scan produces much lower radiation exposure (Lewiecki 2006, Genant 2000). Several studies have found that the accuracy of detecting moderate-to-severe vertebral fracture (as defined by the semiquantitative criteria of Genant (1993), is similar between DXA VFA and standard radiographs (Schousboe 2006, Hospers 2009, Fuerst 2009, Damiano 2006, Ferrar 2008, Vokes 2008). In 2013-2014, lateral DXA scans of the thoraco-lumbar spine were administered in the NHANES mobile examination center (MEC).

The Instant Vertebral Assessment (IVA) lateral spine scans provide vertebral fracture information for 13 individual vertebrae from T4-L4.

Eligible Sample

DXA scans were administered to eligible survey participants 40 years of age and older. 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).
* Self-reported history of radiographic contrast material (barium) use in past 7 days.
* Self-reported weight over 450 pounds (DXA table limitation).

Participants were excluded from all spine scans if they reported a Harrington Rod in the spine for scoliosis.

The variable DXDLSPST indicates the examination status for the IVA lateral spine scan. The codes for DXDLSPST are as follows:

DXDLSPST – lateral spine scan examination status variable   
1 = IVA lateral spine scan completed, all vertebra are valid  
2 = IVA lateral spine scan completed, but one or more vertebrae is invalid  
3 = IVA lateral spine not scanned, pregnancy   
4 = IVA lateral spine not scanned, weight > 450 lbs   
5 = IVA lateral spine not scanned, other reason

The main reasons for completed, but invalid, IVA lateral spine scans (code 2) were an insufficient scan area or partial scan, degenerative disease/severe scoliosis, sclerotic spine/spinal fusion/laminectomy and poor image quality due to morbid obesity. The “Not scanned, other reason” (code 5) includes no time to complete the examination, pregnancy test not completed, and participant refusal, as well as exclusion for reasons other than pregnancy, such as a medical test.

Protocol and Procedure

The IVA lateral spine scans were acquired on Hologic Discovery model A densitometers (Hologic, Inc., Bedford, Massachusetts), using software version Apex 3.2. The radiation exposure from DXA for the IVA lateral spine scan is extremely low at less than 20 uSv. All scans in the DXXVFA\_H file were analyzed by Optasia Spinalizer software using Genant’s semiquantitative (SQ) technique (Genant 1993).

The DXA examinations were administered by trained and certified radiology technologists. Further details of the DXA examination protocol are documented in the Body Composition Procedures Manual located on the NHANES website: <https://www.cdc.gov/nchs/nhanes/index.htm>.

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 (Westat) 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 during review of participant scans. The codes documented when the technologist had deviated from acquisition procedures and where scan quality could have been improved. The performance codes were tracked for each technologist individually and a summary was reported to NCHS on a quarterly basis. Additional feedback on technologist performance was provided by the UCSF when problems were noted during review of the scans. Ongoing communication was maintained throughout the year among the UCSF, the 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 the UCSF when the scanners were serviced or repaired so any changes in measurement as a result of the work could be assessed.

**Scan Analysis**  
Each participant scan and phantom scan was reviewed and analyzed by the UCSF using standard radiologic techniques and study-specific protocols developed for NHANES. The IVA lateral spine images were analyzed using a semiquantitative scoring system to identify vertebral deformities. The IVA AP spine image were used with the lateral spine images to more accurately define the deformities. The deformities were assessed by Optasia Spinalizer software using Genant’s semiquantitative (SQ) technique (Genant 1993) which is the standard for vertebral facture assessment and is recommended by the International Society of Clinical Densitometry (Schousboe 2008).

VFA images were read by a single reader at the UCSF QC center, who was trained by Dr. Harry Genant. Scans of all participants, who were coded as having a vertebral deformity on any vertebrae by the UCSF reader, were re-read by Dr. Genant to confirm fracture status. Dr. Genant’s readings were assigned as the final scores for these participants.

**Invalidity Codes**   
Invalidity codes were applied by the UCSF to indicate the reasons spine regions of interest (ROI) could not be analyzed accurately. The invalidity codes are provided in the data file (see Data Processing and Editing section for a more detailed description of the invalidity codes).

**Quality Control Scans**  
The quality control phantoms were scanned according to a predetermined schedule. The Hologic Anthropomorphic Spine Phantom that traveled with each MEC was scanned daily as required by the manufacturer to ensure accurate calibration of the densitometer. A Hologic Spine (HSP-Q96) Phantom and a Hologic Block Phantom circulated among the MECs and were scanned at the start of operations at each survey site.

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

In 2013-2014, longitudinal monitoring was conducted through daily spine phantom scans as required by the manufacturer in order to correct any scanner-related changes in participant data. The circulating HSP-Q96 and block phantoms, which were scanned at the start of operations at each site, provided additional data for use in longitudinal monitoring and cross calibration, as well as to monitoring the vertebrae dimension measurement.

A number of data quality 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 helped to ensure that scan analysis was accurate and consistent.

Data Processing and Editing

During the editing process, data were reviewed for completeness, consistency, and outliers. Back-end edits of the data were performed when errors were identified.

**Invalidity Codes**  
Invalidity codes were included in the data file to indicate the reasons and spine regions of interest (ROI) could not be analyzed accurately. Invalidity codes were applicable to completed scans only (DXDLSPST = 1 or 2). If a participant was not scanned, all invalidity codes are missing.

The invalidity codes are provided in the data file as follows:

Values for invalidity codes DXXT4CC, DXXT5CC, DXXT6CC, DXXT7CC, DXXT8CC, DXXT9CC, DXXT10CC, DXXT11CC, DXXT12CC, DXXL1CC, DXXL2CC, DXXL3CC and DXXL4CC

* 0 = Valid data
* 1 = Objects not removed
* 2 = Non-removable objects such as implants
* 3 = Excessive x-ray noise due to morbid obesity
* 4 = Insufficient scan area
* 5 = Movement
* 6 = Other (degenerative diseases, spinal fusion, fractures)

Values for fracture scores (Genant semiquantitative criteria) DXXT4FX DXXT5FX DXXT6FX DXXT7FX DXXT8FX DXXT9FX DXXT10FX DXXT11FX DXXT12FX DXXL1FX DXXL2FX DXXL3FX and DXXL4FX

* 0= Normal (Grade 0)
* 1= Mild deformity (Grade 1)
* 2= Moderate deformity (Grade 2)
* 3= Severe deformity (Grade 3)

Analytic Notes

The NHANES examination sample weights should be used for any analyses using the DXXVFA\_H data. 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 <https://www.cdc.gov/nchs/nhanes/index.htm>.

References

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* Hospers IC, Van der Laan JG, Zeebregts CJ, Nieboer P, Wolfenbuttel BHR, Dierckx RA, Kreeftenberg HG, Jager PL, Slart RHJA. Vertebral fracture assessment in supine position: Comparison by using conventional semiquantitative radiography and visual radiography. Radiology 2009; 251: 822-8.
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* Schousboe JT, Debold CR. Reliability and accuracy of vertebral fracture assessment with densitometry compared to radiography in clinical practice. Osteoporos Int 2006; 17:281-289
* Schousboe JT, Vokes T, Broy SB, Ferrar L, McKiernan F, Roux C, Binkley N. Vertebral Fracture Assessment: the 2007 ISCD Official Positions. J Clin Densitom. 2008;11;92-108.
* Vokes TJ, Dixon LB, Favus MJ. Clinical utility of dual-energy vertebral assessment (DVA). Osteoporos Int 2003; 14:871-878

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 40 YEARS - 150 YEARS

DXDLSPST - IVA Lateral Spine scan status

**Variable Name:**

DXDLSPST

**SAS Label:**

IVA Lateral Spine scan status

**English Text:**

Instant Vertebral Assessment (IVA) Lateral Spine scan status

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 1 | IVA Lateral Spine scan completed, all vertebra are valid | 2875 | 2875 |  |
| 2 | IVA Lateral Spine scan completed, but one or more vertebrae are invalid | 455 | 3330 |  |
| 3 | IVA Lateral Spine not scanned, pregnancy | 3 | 3333 |  |
| 4 | IVA Lateral Spine not scanned, weight > 450 lbs | 1 | 3334 |  |
| 5 | IVA Lateral Spine not scanned, other reason | 374 | 3708 |  |
| . | Missing | 0 | 3708 |  |

DXXT4CC - T4 fracture invalidity code

**Variable Name:**

DXXT4CC

**SAS Label:**

T4 fracture invalidity code

**English Text:**

T4 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 2987 | 2987 |  |
| 1 | Objects not removed | 1 | 2988 |  |
| 2 | Non-removable objects such as implants | 0 | 2988 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 64 | 3052 |  |
| 4 | Insufficient scan area | 78 | 3130 |  |
| 5 | Movement | 0 | 3130 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 200 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT5CC - T5 fracture invalidity code

**Variable Name:**

DXXT5CC

**SAS Label:**

T5 fracture invalidity code

**English Text:**

T5 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3103 | 3103 |  |
| 1 | Objects not removed | 1 | 3104 |  |
| 2 | Non-removable objects such as implants | 0 | 3104 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 57 | 3161 |  |
| 4 | Insufficient scan area | 15 | 3176 |  |
| 5 | Movement | 0 | 3176 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 154 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT6CC - T6 fracture invalidity code

**Variable Name:**

DXXT6CC

**SAS Label:**

T6 fracture invalidity code

**English Text:**

T6 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3189 | 3189 |  |
| 1 | Objects not removed | 1 | 3190 |  |
| 2 | Non-removable objects such as implants | 0 | 3190 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 39 | 3229 |  |
| 4 | Insufficient scan area | 2 | 3231 |  |
| 5 | Movement | 0 | 3231 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 99 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT7CC - T7 fracture invalidity code

**Variable Name:**

DXXT7CC

**SAS Label:**

T7 fracture invalidity code

**English Text:**

T7 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3237 | 3237 |  |
| 1 | Objects not removed | 1 | 3238 |  |
| 2 | Non-removable objects such as implants | 0 | 3238 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 29 | 3267 |  |
| 4 | Insufficient scan area | 1 | 3268 |  |
| 5 | Movement | 0 | 3268 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 62 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT8CC - T8 fracture invalidity code

**Variable Name:**

DXXT8CC

**SAS Label:**

T8 fracture invalidity code

**English Text:**

T8 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3272 | 3272 |  |
| 1 | Objects not removed | 1 | 3273 |  |
| 2 | Non-removable objects such as implants | 0 | 3273 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 20 | 3293 |  |
| 4 | Insufficient scan area | 0 | 3293 |  |
| 5 | Movement | 0 | 3293 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 37 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT9CC - T9 fracture invalidity code

**Variable Name:**

DXXT9CC

**SAS Label:**

T9 fracture invalidity code

**English Text:**

T9 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3291 | 3291 |  |
| 1 | Objects not removed | 0 | 3291 |  |
| 2 | Non-removable objects such as implants | 3 | 3294 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 12 | 3306 |  |
| 4 | Insufficient scan area | 0 | 3306 |  |
| 5 | Movement | 0 | 3306 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 24 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT10CC - T10 fracture invalidity code

**Variable Name:**

DXXT10CC

**SAS Label:**

T10 fracture invalidity code

**English Text:**

T10 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3301 | 3301 |  |
| 1 | Objects not removed | 0 | 3301 |  |
| 2 | Non-removable objects such as implants | 0 | 3301 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 11 | 3312 |  |
| 4 | Insufficient scan area | 0 | 3312 |  |
| 5 | Movement | 0 | 3312 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 18 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT11CC - T11 fracture invalidity code

**Variable Name:**

DXXT11CC

**SAS Label:**

T11 fracture invalidity code

**English Text:**

T11 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3298 | 3298 |  |
| 1 | Objects not removed | 0 | 3298 |  |
| 2 | Non-removable objects such as implants | 0 | 3298 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 12 | 3310 |  |
| 4 | Insufficient scan area | 0 | 3310 |  |
| 5 | Movement | 0 | 3310 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 20 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT12CC - T12 fracture invalidity code

**Variable Name:**

DXXT12CC

**SAS Label:**

T12 fracture invalidity code

**English Text:**

T12 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3291 | 3291 |  |
| 1 | Objects not removed | 0 | 3291 |  |
| 2 | Non-removable objects such as implants | 1 | 3292 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 17 | 3309 |  |
| 4 | Insufficient scan area | 1 | 3310 |  |
| 5 | Movement | 1 | 3311 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 19 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXL1CC - L1 fracture invalidity code

**Variable Name:**

DXXL1CC

**SAS Label:**

L1 fracture invalidity code

**English Text:**

L1 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3291 | 3291 |  |
| 1 | Objects not removed | 0 | 3291 |  |
| 2 | Non-removable objects such as implants | 2 | 3293 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 20 | 3313 |  |
| 4 | Insufficient scan area | 3 | 3316 |  |
| 5 | Movement | 1 | 3317 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 13 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXL2CC - L2 fracture invalidity code

**Variable Name:**

DXXL2CC

**SAS Label:**

L2 fracture invalidity code

**English Text:**

L2 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3281 | 3281 |  |
| 1 | Objects not removed | 0 | 3281 |  |
| 2 | Non-removable objects such as implants | 2 | 3283 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 24 | 3307 |  |
| 4 | Insufficient scan area | 5 | 3312 |  |
| 5 | Movement | 1 | 3313 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 17 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXL3CC - L3 fracture invalidity code

**Variable Name:**

DXXL3CC

**SAS Label:**

L3 fracture invalidity code

**English Text:**

L3 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3263 | 3263 |  |
| 1 | Objects not removed | 0 | 3263 |  |
| 2 | Non-removable objects such as implants | 14 | 3277 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 26 | 3303 |  |
| 4 | Insufficient scan area | 6 | 3309 |  |
| 5 | Movement | 1 | 3310 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 20 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXL4CC - L4 fracture invalidity code

**Variable Name:**

DXXL4CC

**SAS Label:**

L4 fracture invalidity code

**English Text:**

L4 fracture invalidity code

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Valid data | 3241 | 3241 |  |
| 1 | Objects not removed | 0 | 3241 |  |
| 2 | Non-removable objects such as implants | 22 | 3263 |  |
| 3 | Excessive x-ray noise due to morbid obesity | 27 | 3290 |  |
| 4 | Insufficient scan area | 12 | 3302 |  |
| 5 | Movement | 1 | 3303 |  |
| 6 | Other (degenerative diseases, spinal fusion, fractures) | 27 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXVFAST - Vertebral fracture status summary

**Variable Name:**

DXXVFAST

**SAS Label:**

Vertebral fracture status summary

**English Text:**

Vertebral fracture status summary

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 1 | Normal (No fracture in T4-L4 and there are no more than one un-evaluable vertebrae in T7 to L4) | 3038 | 3038 |  |
| 2 | Fractured (Mild, moderate or severe fracture at any level inT4-L4) | 186 | 3224 |  |
| 3 | Un-interpretable (No fracture and more than one un-evaluable vertebrae in T7-L4) | 106 | 3330 |  |
| . | Missing | 378 | 3708 |  |

DXXT4FX - T4 fracture score

**Variable Name:**

DXXT4FX

**SAS Label:**

T4 fracture score

**English Text:**

T4 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 2981 | 2981 |  |
| 1 | Mild deformity (Grade 1) | 4 | 2985 |  |
| 2 | Moderate deformity (Grade 2) | 2 | 2987 |  |
| 3 | Severe deformity (Grade 3) | 0 | 2987 |  |
| . | Missing | 721 | 3708 |  |

DXXT5FX - T5 fracture score

**Variable Name:**

DXXT5FX

**SAS Label:**

T5 fracture score

**English Text:**

T5 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3093 | 3093 |  |
| 1 | Mild deformity (Grade 1) | 6 | 3099 |  |
| 2 | Moderate deformity (Grade 2) | 4 | 3103 |  |
| 3 | Severe deformity (Grade 3) | 0 | 3103 |  |
| . | Missing | 605 | 3708 |  |

DXXT6FX - T6 fracture score

**Variable Name:**

DXXT6FX

**SAS Label:**

T6 fracture score

**English Text:**

T6 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3168 | 3168 |  |
| 1 | Mild deformity (Grade 1) | 12 | 3180 |  |
| 2 | Moderate deformity (Grade 2) | 9 | 3189 |  |
| 3 | Severe deformity (Grade 3) | 0 | 3189 |  |
| . | Missing | 519 | 3708 |  |

DXXT7FX - T7 fracture score

**Variable Name:**

DXXT7FX

**SAS Label:**

T7 fracture score

**English Text:**

T7 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3209 | 3209 |  |
| 1 | Mild deformity (Grade 1) | 19 | 3228 |  |
| 2 | Moderate deformity (Grade 2) | 9 | 3237 |  |
| 3 | Severe deformity (Grade 3) | 0 | 3237 |  |
| . | Missing | 471 | 3708 |  |

DXXT8FX - T8 fracture score

**Variable Name:**

DXXT8FX

**SAS Label:**

T8 fracture score

**English Text:**

T8 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3244 | 3244 |  |
| 1 | Mild deformity (Grade 1) | 16 | 3260 |  |
| 2 | Moderate deformity (Grade 2) | 10 | 3270 |  |
| 3 | Severe deformity (Grade 3) | 2 | 3272 |  |
| . | Missing | 436 | 3708 |  |

DXXT9FX - T9 fracture score

**Variable Name:**

DXXT9FX

**SAS Label:**

T9 fracture score

**English Text:**

T9 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3276 | 3276 |  |
| 1 | Mild deformity (Grade 1) | 13 | 3289 |  |
| 2 | Moderate deformity (Grade 2) | 2 | 3291 |  |
| 3 | Severe deformity (Grade 3) | 0 | 3291 |  |
| . | Missing | 417 | 3708 |  |

DXXT10FX - T10 fracture score

**Variable Name:**

DXXT10FX

**SAS Label:**

T10 fracture score

**English Text:**

T10 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3287 | 3287 |  |
| 1 | Mild deformity (Grade 1) | 7 | 3294 |  |
| 2 | Moderate deformity (Grade 2) | 6 | 3300 |  |
| 3 | Severe deformity (Grade 3) | 1 | 3301 |  |
| . | Missing | 407 | 3708 |  |

DXXT11FX - T11 fracture score

**Variable Name:**

DXXT11FX

**SAS Label:**

T11 fracture score

**English Text:**

T11 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3257 | 3257 |  |
| 1 | Mild deformity (Grade 1) | 26 | 3283 |  |
| 2 | Moderate deformity (Grade 2) | 14 | 3297 |  |
| 3 | Severe deformity (Grade 3) | 1 | 3298 |  |
| . | Missing | 410 | 3708 |  |

DXXT12FX - T12 fracture score

**Variable Name:**

DXXT12FX

**SAS Label:**

T12 fracture score

**English Text:**

T12 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3247 | 3247 |  |
| 1 | Mild deformity (Grade 1) | 11 | 3258 |  |
| 2 | Moderate deformity (Grade 2) | 27 | 3285 |  |
| 3 | Severe deformity (Grade 3) | 7 | 3292 |  |
| . | Missing | 416 | 3708 |  |

DXXL1FX - L1 fracture score

**Variable Name:**

DXXL1FX

**SAS Label:**

L1 fracture score

**English Text:**

L1 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3257 | 3257 |  |
| 1 | Mild deformity (Grade 1) | 4 | 3261 |  |
| 2 | Moderate deformity (Grade 2) | 24 | 3285 |  |
| 3 | Severe deformity (Grade 3) | 6 | 3291 |  |
| . | Missing | 417 | 3708 |  |

DXXL2FX - L2 fracture score

**Variable Name:**

DXXL2FX

**SAS Label:**

L2 fracture score

**English Text:**

L2 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3265 | 3265 |  |
| 1 | Mild deformity (Grade 1) | 6 | 3271 |  |
| 2 | Moderate deformity (Grade 2) | 9 | 3280 |  |
| 3 | Severe deformity (Grade 3) | 1 | 3281 |  |
| . | Missing | 427 | 3708 |  |

DXXL3FX - L3 fracture score

**Variable Name:**

DXXL3FX

**SAS Label:**

L3 fracture score

**English Text:**

L3 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3252 | 3252 |  |
| 1 | Mild deformity (Grade 1) | 3 | 3255 |  |
| 2 | Moderate deformity (Grade 2) | 7 | 3262 |  |
| 3 | Severe deformity (Grade 3) | 1 | 3263 |  |
| . | Missing | 445 | 3708 |  |

DXXL4FX - L4 fracture score

**Variable Name:**

DXXL4FX

**SAS Label:**

L4 fracture score

**English Text:**

L4 fracture score

**Target:**

Both males and females 40 YEARS - 150 YEARS

| **Code or Value** | **Value Description** | **Count** | **Cumulative** | **Skip to Item** |
| --- | --- | --- | --- | --- |
| 0 | Normal (Grade 0) | 3228 | 3228 |  |
| 1 | Mild deformity (Grade 1) | 6 | 3234 |  |
| 2 | Moderate deformity (Grade 2) | 6 | 3240 |  |
| 3 | Severe deformity (Grade 3) | 1 | 3241 |  |
| . | Missing | 467 | 3708 |  |