## Public Use Data Tape Documentation

Anthropometry, Goniometry,
Skeletal Age, Bone Density, and Cortical Thickness
Ages 1-74
Tape Number 4111
National Health and Nutrition Examination Survey, 1971-75
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES • Public Health Service • Centers for Disease Control • National Center for Health Statistics


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Public Health Service
Centers for Disease Control
National Center for Health Statistics
Hyattsville, Maryland
May 1981

The data compilation and documentation necessary for the Anthropometry, Goniometry, Skeletal Age, Bone Density and Cortical Thickness Data Tape were done by Cliff Johnson, Robinson Fulwood, Clair Harvey, Everette Collins, Sidney Abraham, Jean Roberts, Evelyn S. Stanton and Dorothy Blodgett of the Division of Health Examination Statistics, National Center for Health Statistics. A special note of gratitude is due Eugene Sides and Carol Flaherty who patiently typed and retyped this material.

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ANTHROPOMETRY, GONIOMETRY, SKELETAL AGE, BONE DENSITY AND CORTICAL THICKNESS DATA TAPE

Health and Nutrition Examination Survey, HANES I, 1971-1975

Description of Survey: A detailed description of the design, content and operation of HANES $I$ is provided in the following reports: Plan and Operation of the Health and Nutrition Examination Survey, DHEW Pub. No. (HSM) 73-1310, Series 1, Nos. 10a and 10b, Public Health Service, Washington, D. C., U. S. Government Printing Office, February 1973. Also provided is a draft report on the augmentation survey of adults describing the relevant field work conducted between July 1974 and October 1975.

Target Population: HANES I was conducted on a nationwide probability sample of approximately 32,000 persons, ages $1-74$ years, from the civilian, noninstitutionalized population of the coterminous United States, excepting those persons residing on Indian reservations. The survey started in April 1971 and for many survey components was completed In June 1974. The HANES I sample was selected so that certain population groups thought to be at high risk of malnutrition (persons with low incomes, preschool children, women of childbearing age and the elderly) were oversampled at known rates. Adjusted sampling weights were then computed within 60 age, sex and race categories in order to inflate the sample in such a manner as to closely reflect the noninstitutionalized population, ages 1-74 years, of the United States at the time of the survey.

Although the main emphasis of HANES $I$ was on nutrition, a subset of those sample persons aged $25-74$ received a more detailed health examination which was continued through October 1975. No particular oversampling of subgroups of the population was done in this subsample (e:g., women of childbearing age were not oversampled as they were for the major nutrition component of HANES I). This subsample is also representative of the United States population aged 25-74 during the time of 'HANES I.

After the nutrition survey was completed, the detailed examination given to the 25-74 age group was continued until the total number of examined persons was approximately double the number of examinees who received the detailed examination during the nutrition survey.

In order to produce national estimates of the mutritional status of the U. S. population at an earlier date, a probability subsample of 35 of the 65 primary sampling units (PST's) was selected. This subsample also made it possible to produce national estimates of certain ocher aspects of health status in the population that were critically needed at an earlier date and examination components that for logistic reasons could not be continued for the remainder of the:65 PSTU's. Included among the 35 PSU 's were 10 of the 15 large certaincy metropolitan areas and I PSU from each of the 25 noncertainty superstrata. The reduction from 15 to 10 large metropolitan areas was accomplished by randomly selecting. one PSU from.mrltiple-PSU standard metropolitan statistical areas; e.g., selecting the southern half of the Chicago

SMSA to represent the entire SMSA. (This selection procedure was based on operational considerations, and although unbiased, is recognized as not being statistically optimal.)

Data Collection: Information for all examined sample persons in HANES I was obtained by means of a household interview, a general medical history, a 24-hour dietary intake recall interview, a food frequency interview, a food program questionnaire, a general medical examination, dental, dermatological and ophthalmological examinations, anthropometric measurement, hand-wrist x-rays (of those ages $1-17$ only) and 24 hematological, blood chemistry, and urological laboratory determinations.

In addition to the information received on all examined persons by means of the above questionnaires, procedures and measurements, the following data were gathered on the subsample of adults aged 25-74: a medical history supplement; supplementary questionnaires concerning arthritis, respiratory and cardiovascular conditions (when applicable); a health care needs questionnaire; a general well-being questionnaire; an extended medical examination; x-rays of the chest and hip and knee joints; audiometry; electrocardiography; goniometry; spirometry; pulmonary diffusion and tuberculin tests; along with additional laboratory determinations.

With the goal of mutual benefit, NCHS requests the cooperation of recipients of data tapes in certain actions related to their use:
A. Any published material derived from the data should acknowledge the National Center for Health Statistics as the original source. It should also include a disclaimer which credits any analyses, interpretations, or conclusions reached to the author (recipient of the tape) and not to NCHS, which is responsible only for the initial data.
B. Consumers who wish to publish a technical description of the data will make a reasonable effort to insure that the description is not inconsistent with that published by NCHS. This does not mean, however, that NCHS will review such descriptions.

## Errors in the Data Sets and Survey Differences

The data users' tapes have been subjected to a great deal of careful editing. However, due to the large volume of data in the series, it is likely that a small number of errors or discrepancies remain undetected. We would appreciate if any such errors are detected that they be brought to our attention so that new corrected copies of the tape can be created and errata sheets issued to previous purchasers.

Some of the continuous data items have extremely high or low values and we have verified that they do in fact appear that way on the hard documents; that is, we have verified that the values have not been incorrectly keyed.

In general, we have not attempted to resolve any differences that may exist between estimates derived from the various subsamples of HANES I. Nor have we made any comparisons between estimates from HANES I and previous surveys conducted by the Division of Health Examination Statistics.

## Missing Data

Examination surveys are subject to the loss of information not only through the failure to examine all sample persons but also from the failure to obtain and record all items of information for examined persons. Other information obtained from the examined persons may subsequently be determined to be of unacceptable quality and excluded from the final data.

In order to provide national probability estimates for selected anthropometric measurements from the first 65 locations of HANES, a procedure was developed to estimate the missing body measures for a sample person. Estimates for missing anthropometric data were generally made subjectively on the basis of a multiple regression type decision, substituting for the missing measurements, therefore, an individual who was of the same age, sex, and race, and who had other physical dimensions similar to those available for the examinee with incomplete data. For those with no anthropometric measurements available, a respondent of the same age-sex-race group was selected at random and his measurements were assigned to the nonexamined person. All measurements imputed using these methods have been so indicated by a special imputation code on the data tape.

## Variance Estimation

Because the Health and Nutrition Examination Survey is based upon a complex sample design, the assumptions of many statistical tests and routinely available statistical programs are not net. For this reason, when estimates of the variances of statistics from HANES are computed, the technique of estimation must be based upon complex sampling theory. In order to provide the user with the capability of estimating the complex sample variances, we have provided Strata and Primary Sampling Unit (PSU) codes on the HANES user tapes in tape positions 194-198. However, these codes are suitable for making variance estimates only for examination locations 1-65 and 1-100. To compute variance estimates for examination locations 1-35 or 66-100, it is necessary to recode the current Strata-PSU codes according to the specifications that follow. The resultant recoded Strata-PSU codes should be used only for locations 1-35 and 66-100.

One computer program that should be widely available sometime around the sumer of 1978 as part of the Statistical Analysis System (available from the SAS Institute, Inc., Post Office Box 10066, Raleigh, North Carolina 27605) is capable of using the Strata-PSU codes provided for HANES to compute complex sample variances. Other programs may also be available.

In those Strata, referred to as certainty or self-representing Strata, the PSU codes are actually the segment numbers. Neither the Strata codes nor the PSU codes are the original codes used in the formation of the HANES sample design, but are none-the-less a unique recoding of the original codes. For further discussion of the sample design of HANES, the user should consult the publications of the National Center for Health Statistics-Series 1-Nos. 10a and 14 and the detailed note for tape positions 158-193.

## Recode Specifications for Strata-PSU Codes

First.--Create a file with only those records in the file for examination locations 1-35.*

Second. --Retain the original Strata-PSU codes in Strata 7-10 and 13 in the original form as the recoded Strata-PSU codes.

Third. --Recode the remaining strata according to the chart below.
Fourth.--Repeat the process for examination locations 66-100.*

01d Strata \#
(tape positions 194-195) New Strata $\%$ New PSU \#

| 01 | 01 | 001 |
| :--- | :--- | :--- |
| 02 | 01 | 002 |
| 03 | 03 | 001 |
| 06 | 03 | 002 |
| 04 | 04 | 001 |
| 05 | 04 | 002 |
| 11 | 11 | 001 |
| 12 | 11 | 002 |
| 14 | 14 | 001 |
| 21 | 14 | 002 |
| 15 | 15 | 001 |
| 16 | 15 | 002 |
| 17 | 17 | 001 |
| 20 | 17 | 002 |
| 18 | 18 | 001 |
| 19 | 18 | 002 |
| 22 | 22 | 001 |
| 25 | 22 | 002 |
| 23 | 23 | 001 |
| 24 | 23 | 002 |
| 26 | 26 | 001 |
| 27 | 26 | 002 |
| 28 | 28 | 001 |
| 29 | 28 | 002 |
| 30 | 30 | 001 |
| 35 | 30 | 002 |
| 31 | 31 | 001 |
| 32 | 31 | 002 |
| 33 | 33 | 001 |
| 34 | 33 | 002 |

[^0]
## TAPE CHARACTERISTICS

Title: Anthropometry, Goniometry, Skeletal Agé, Bone Density andCortical Thickness Data Tape
Catalog Number: 4111
Data Set Name: HEHANESI.DU41110 2
Record Length: ..... 600
Blocksize: ..... 3600
Number of Records: ..... 23808
Number of Reels: ..... 1
Recording Mode: Fixed Block, EBCDIC
Channe1: 9 Track
Created by: Division of Health Examination StatisticsNational Center for Health StatisticsHyattsville, Maryland

## General Notes

Asterisks on the Tape Description: Some of the data items were obtained only for a particular subsample of HANES. Consequently some of these items appear to have a great deal of missing data (coded as BLANK) due to nonresponse, but in fact the data are missing because the design of HANES dictated that the item was to be obtained only for a particular subsample. (For further discussion of the various subsamples in HANES the user should see the detailed note for tape positions 158-193.)

To alert the user to this fact asterisks were put on the tape description. One asterisk denotes that the data item was obtained only on examinees at locations 1-65. Three asterisks denote that the data item was obtained only on examinees receiving the detailed examination, four asterisks denote that the data item was obtained only on detailed examinees from locations 1-35, and five asterisks refers to data items obtained only on sample persons aged 1-17 years.

Demographic Information: An advance letter, announcing the forthcoming arrival of an interviewer from the $U$. $S$. Bureau of the Census, was mailed to each household that fell into the sample area. The interviewer subsequently visited the household to ascertain its composition and to administer a questionnaire, the primary purpose of which was to obtain demographic information. The questionnaire was administered to each potential sample person that was available and competent enough to respond to questions. In the event that a potential sample person was not at home at the time of interview, any responsible adult in the household was asked to respond to the questions for the absent person.

Demographic information for each of the examinees appears in tape positions 1-200.

Anthropometry, Goniometry, Skeletal Age, Bone Density and Cortical
Thickness Examinations: In the mobile examination center, two health technicians obtained measurements of height and weight and a series of body and skinfold measurements for all examinees. In addition, x-rays of the hand and.wrist were taken of examinees $1-17$ years of: age. Goniometry data was collected for detailed examinees aged 25-74 years only at locations 1-35.

Anthropometry Data Editing: All anthropometric measurements :obtained in the mobile examination center were compiled and keyed by the $U . S$. Bureau of the Census and sent to the Division of Health Examination Statistics on tape. The data was edited for completeness and accuracy and certain consistency and range edits were performed to check for unusual or problematic data. When a question of accuracy arose', reference was made to microfilm records of the original recording documents.

## DEMOGRAPHIC DATA SUMMARY - HANES I

TapePositions
Sample sequence number ..... 1
Size of place ..... 10
SMSA-not SMSA ..... 11
Type of living quarters ..... 12
Land usage ..... 13
If rural, asked - How many acres of land are included ..... 14
If 10 acres or more asked - Sale of crops, etc. amount. to $\$ 50$ or more ..... 15
If 10 acres or less asked - Sale of crops, ete. amount to $\$ 250$ or more ..... 16
Age - head of household ..... 17
Sex - head of household ..... 19
Highest grade attended -"head of household ..... 20
Race - head of household ..... 22
Total number of persons in household ..... 23
Total sample persons in household ..... 25
Number of rooms in house ..... 27
Is there piped water ..... 28
If yes, is there hot and cold piped water ..... 29
If yes to piped water - Does house have a sink with piped water ..... 30
Does house have a range or cook stove ..... 31
Does house have a refrigerator ..... 32
Are kitchen facilities used by anyone not living in household ..... 33
Total family income group ..... 34
NOTE: The following income questions were asked only if "Total Family Income" was less than $\$ 7,000$
During Past Year Did you or Any Members of Your Family Receive Money From:
Wages or salaries ..... 36
If yes - How much altogether before deductions ..... 37
Social Security or Railroad Retirement ..... 41
If yes - How much altogether ..... 42
Welfare payments or other public assistance ..... 46
If yes - How much altogether ..... 47
Unemployment or Workman's Compensation ..... 51
If yes - How much altogether ..... 52
Government employee pensions or private pensions ..... 56
If yes - How much altogether ..... 57
Dividends, interest or rent ..... 61
If yes - How much altogether ..... 62
Net income from own non-farm business, professional practice or partzership ..... 66
If yes - How much altogether ..... 67
Net income from a farm ..... 71
If yes - How much altogether ..... 72
Veteran's payments ..... ? 6
If yes - How much altogether ..... 77
Alimony, child support or contributions from persons not living in household ..... 81
If yes - How much altogether ..... 82
Any other income ..... 86
If yes - How much al together ..... 87
Total amount ..... 91
Family unit code ..... 95
Relationship to head of household ..... 100
Age at interview ..... 101
Race of examined person ..... 103
Sex of examined person ..... 104
Marital status ..... 105
Date of birth (month and year) ..... 106
Place of birth ..... 110
Highest grade of regular school ever attended ..... 112
Did he finish the grade ..... 114
Is he attending school now ..... 115
Has he ever attended a school of any kind ..... 116
If yes - What kind of school ..... 117
Is any language other than English frequently spoken in the household ..... 118
If yes - What language ..... 119
What is your main ancestry or national origin ..... 120
What was he doing most of past.three months ..... 122
If "something else" - What was he doing ..... 123
If 'keeping house' or "something else" - Did he work at a job or business at any time during the past three months ..... 124
If "working" - Did he work full-time or part-time ..... 125
Did he work at any time last week or the week before (not around house) ..... 126
If no - Even though he did not work during that time, does he have a job or business ..... 127

Tape
Was he looking for work or on lay-off from a job ..... 128
If yes - Which ..... 129
Class of worker ..... 130
If self-employed in "own" business and not a farm, is the business incorporated ..... 131
Business or industry code ..... 132
Occupation code ..... 135
Date of examination ..... 138
Age at examination: ..... 144
Farm/non-farm ..... 146
Poverty index ..... 147
Region ..... 150
FOOD PROGRAMS APPLICABILITY ..... 151
Are you certified to participate in the food stamp program? ..... 152
Are you buying food stamps now? ..... 153
What is the main reason you aren't participating in the program? ..... 154
Are you certified to participate in the commodity distribution program? ..... 155
Are you receiving commodity foods now for your family? ..... 156
Why aren't you participating in the program? ..... 157
SAMPLE WEIGHTS ..... 158
STRATA - Primary Sampling Unit (PSU) ..... 194
ANTHROPOMETRY, GONIOMETRY, SKELETAL AGE, bone density and cortical thickness data summary - hanes i
Tape
Positions
CATALOG NUMBER - 4111 ..... 201
ANTHROPOMETRY
Examiner Number ..... 208
ELBOW BREADTH
Right side measurement ..... 210
Imputation code (right side) ..... 213
Left side measurement ..... 214
UPPER ARM GIRTH
Right side measurement ..... 217
Imputation code (right side) ..... 220
Left side measurement ..... 221
TRICEPS SKINFOLD
Right side measurement ..... 224
Imputation code (right side) ..... 227
Left side measurement ..... 228
SUBSCAPULAR SKINFOLD
Right side measurement ..... 231
Imputation code (right side) ..... 234
Left side measurement ..... 235
BITROCHANTERIC BREADTH ..... 238
Imputation code ..... 241
SITTING HEIGHT ..... 242
Imputation code ..... 246
HEAD CIRCUMFERENCE (ages l-17 only) ..... 247
Imputation code ..... 250

## ANTHROPOMETRY, GONIOMETRY, SKELETAL AGE, BONE DENSITY AND CORTICAL THICKNESS DATA SUMMARY - HANES I

TapePositions
CHEST CIRCUMFERENCE (Ages 1-7 only) ..... 251
Imputation code ..... 254
WEIGHT
In pounds ..... 255
In kilograms ..... 260
Imputation code ..... 265
HEIGHT
In centimeters ..... 266
In inches ..... 270
Imputation code ..... 273
HANDEDNESS ..... 274
CHEST CIRCUMFERENCE (detailed examinees only)
Full inspiration ..... 275
Full expiration ..... 279
GONIOMETRY
Examiner Number ..... 307
ON STOMACH
Extension of right hip ..... 325
Extension of left hip ..... 328
ON BACK
Extension of right knee ..... 331
Flexion of right knee ..... 333
Flexion of right hip ..... 336
Adduction of right hip ..... 339
Abduction of right hip ..... 341
Extension of left knee ..... 344
Flexion of left knee ..... 346
Flexion of left hip ..... 349
Adduction of left hip ..... 352
Abduction of left hip ..... 354

# ANTHROPOMETRY, GONIOMETRY, SKELETAL AGE, BONE DENSITY AND CORTICAL THICKNESS DATA SUMMARY - HANES I 

Tape Positions

## SITTING ON TABLE

Internal rotation of right hip ..... 357
External rotation of right hip ..... 359
Internal rotation of left hip ..... 362
External rotation of left hip ..... 365
HAND-WRIST X-RAYS (AGES 1-17)
Reader Number ..... 406
Quality of film ..... 408
BONE AGE
Distal end of radius ..... 409
Distal end of ulna ..... 412
Capitate ..... 415
Hamate ..... 418
Triquetral ..... 421
Lunate ..... 424
Scaphoid ..... 427
Trapezium ..... 430
Trapezoid ..... 433
Metacarpal I ..... 436
Metacarpal II ..... 439
Metacarpal III ..... 442
Metacarpal IV ..... 445
Metacarpal V ..... 448
Pisiform ..... 451
Adductor sesamoid ..... 454
Flexor sesamoid ..... 457
Proximal phalanx I ..... 460
Proximal phalanx II ..... 463
Proximal phalanx III ..... 466
Proximal phalanx IV ..... 469
Proximal phalanx V ..... 472
Middle phalanx II ..... 475
Middle phalanx III ..... 478
Middle phalanx IV ..... 481
Middle phalanx V ..... 484

## ANTHROPOMETRY, GONIOMETRY, SKELETAL AGE, BONE DENSITY AND CORTICAL THICKNESS DATA SUMMARY - HANES I

Tape
Positions
BONE AGE - continued
Distal phalanx I ..... 487
Distal phalanx II ..... 490
Distal phalanx III ..... 493
Distal phalanx IV ..... 496
Distal phalanx V ..... 499
Entry under individual differences ..... 502
Number of fields with bone age entry ..... 516
Sum of bone age entries ..... 518
Average bone age ..... 522
Number of adult bones per youth ..... 537
Number of unformed bones per youth ..... 539
Bone age range ..... 541
BONE DENSITY AND CORTICAL THICKNESS
ALUMINUM EQUIVALENCY
Phalanx V-2 ..... 551
Radium ..... 554
CORTICAL THICKNESS
III - 2D ..... 557
III - 2d ..... 560
III - 4D ..... 563
III - 4d ..... 566
II - 4D ..... 569
II - 4d ..... 572
WALL/TOTAL BONE RATIO
III - 2, D-d/D ..... 575
III - 4, D-d/D ..... 577
II - 4, D-d/D ..... 579

HEALTH AND NUTRITION EXAMINATION SURVEY (ILANES I)
all Sarple persons LOCATIONS 1-100
DEMOGRAPHIC DATA TAPE



HEALTH AND NUTRITION EXAMINATION SURVEY (HANES

health and nutrition examination survey (hanes i)


HEALTH AND NUTRITION EXAMINATION SURVEY (ILANES I


HEALTH AND NUTRITION EXAMINATION SURVEY (HANES I)


HEALTH AND NUTRITION EXAMINATION SUQRVEY (ILANES I)


HEALTH AND NUTRITION EXAMINATION SURVEY (HANES I)


HEALTH AND NUTRITION EXAMINATION SURVEY (ILANES I)

health and nutrition examination survey (hanes i)
I)

| Item $\xlongequal{i}$ | $\begin{aligned} & \text { Tape } \\ & \text { Loc. } \\ & \hline \end{aligned}$ | No. of Positions | ITEM DESCRIPTIO: \& CODES | Control Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 112-13 | 2 | Highest Grade of regular school ever attended? |  | Household Questionnaire |
|  |  |  | 10 - None 21 - 1st Grade | 252 444 |  |
|  |  |  | 22 - 2nd Grade | 457 |  |
|  |  |  | 23 - 3rd Grade | 586 |  |
|  |  |  | 24-4th Grade | 691 |  |
|  |  |  | 25 - 5th Grade | 687 |  |
|  |  |  | 26 - 6th Grade | '815 |  |
|  |  |  | 27 -' 7th Grade | 902 |  |
|  |  |  | 28 - 8th Grade | 2165 |  |
|  |  |  | 31 - 9th Grade | 1207 |  |
|  |  |  | 32 - 10th Graje | 1458 |  |
| 1 |  |  | 33 - 11th Grade | 1132 |  |
| N |  |  | 34 - 12th Grade | 5751 |  |
|  |  |  | 41 - First year of college | 852 |  |
|  |  |  | 42 - Second year of college | 1007 |  |
|  |  |  | 43 - Third year of college | 418 |  |
|  |  |  | 44 - Fourth year of college | 1134 .756 |  |
|  |  |  | 45 - Graduate | 756 |  |
|  |  |  | 77 - Special School | 18 |  |
|  |  |  | 88 -. Blank, but applicable | 110 |  |
|  |  |  | 99 - Not applicable | 2966 |  |
|  | 114 | 1 | Did he finish the grade? |  | Household Questionnaire |
|  |  |  | 1-Yes | 13787 |  |
|  |  |  | 2 - No | 6537 266 |  |
|  |  |  | 8 - Blank, but applicable <br> 9 - Not app1icable | 3218 |  |
|  | 115 | 1 | Is he attending school now? |  | Household Questionnaire |
|  |  |  | - - Yes | 3857 476 | \% |
|  |  |  | 2 - No | 476 0 |  |
|  |  |  | 8 - Blank, but applicable | 16416 |  |
|  |  |  | Blank | 3059 |  |

HEALTH AND NUTRITION EXAMINATION SURVEY (HANES I)


HEALTH AND NUTRITION EXAMINATION SURVEY (HANES I)

| $\begin{aligned} & \text { Item } \\ & n \end{aligned}$ | Tape Loc. | No. of Positions | ITEM DESCRIPTION \& CODES | Control Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| N | 120-21 | 2 | What is your main ancestry or national origin? |  | Household Questionnaire |
|  |  |  | 00-German | 4022 |  |
|  |  |  | 01 - Irish | 3021 |  |
|  |  |  | 02 - Italian | 777 |  |
|  |  |  | 03 - French | 1235 |  |
|  |  |  | 04 - Polish | 636 |  |
|  |  |  | 05 - Russian | 223 |  |
|  |  |  | 06 - English | 2979 |  |
|  |  |  | 07 -' Spanish | 483 |  |
|  |  |  | 08 - Mexican | 717 |  |
|  |  |  | 09 - Chinese | 53 |  |
|  |  |  | 11 - American Indian | 380 |  |
|  |  |  | 12 - Negro | 4428 |  |
|  |  |  | 13 - Jewish | 63 |  |
|  |  |  | 14 - American |  |  |
|  |  |  | 15 - Other | 67 |  |
|  |  |  | 88 - Blank, but applicable $99 \text { - Don't' know }$ | - 573 |  |
|  | 122 | 1 | What was he doing most of past three months? |  | Household Questionnaire |
|  |  |  | 1 - Working | 8058 |  |
|  |  |  | 2 - Keeping house | 5883 |  |
|  |  |  | 3 - Something else | 3069 28 |  |
|  |  |  | 8 - Blank, but applicable | 6770 |  |
|  | 123 | 1 | If "something else" from above, what was he doing? |  | Household Questionnaire |
|  |  |  | 0-Laid off' |  |  |
|  |  |  | 1 - Retired | +822 |  |
|  |  |  | 2 - Student | 141 |  |
|  |  |  | 3 - Other | 152 |  |
|  |  |  | 5-111. | 69 |  |
|  |  |  | 5 - Staying home | 71 |  |
|  |  |  | 6 - Looking for work | 285 |  |
|  |  |  | 7 - Unable to work | 27 |  |
|  |  |  | 8 - Blank, but applicable | 20711 |  |

health and nutrition examination survey (hanes i)

| Item il | Trape Loc. | $\begin{gathered} \text { No. of } \\ \text { Positions } \end{gathered}$ | ITEM DESCRIPTION \& CODES | Control Counts | hanes I Data <br> Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { ' } \\ & \underset{0}{\prime} \\ & \mathbf{1} \end{aligned}$ | 124 | 1 | If "keeping house" or "something else" from above, did he work at a job or business at any time during the past three manichs? <br> 1-Yes <br> 2 - No <br> 8 - Blank, but applicable <br> 9 - Not applicable | $\begin{array}{r} 1272 \\ 7675 \\ 37 \\ 14824 \end{array}$ | Household Questionnaire |
|  | 125 | 1 | If "Norking" from above, did he work full-time or part-time? <br> 1-Full-time <br> 2 - Part-time <br> 8 - Blank, but applicable <br> 9 - Not applicable | $\begin{array}{r} 7278 \\ 2046 \\ 39 \\ 14445 \end{array}$ | Household Questionnaire |
|  | 126 | 1 | Did he work at any time last week or the week before? (not around house) <br> 1-Yes. <br> 2 - No <br> 8- Blank;': but applicable <br> 9 - Not applicable | $\begin{array}{r} 8318 \\ 942 \\ .104 \\ 14444 \end{array}$ | Household Questionnaire |
|  | 127 | 1 | If "no" to above, even though he did not work during that time, does he have a job or business? <br> 1-Yes <br> 2 - No <br> 8 - Blank, but applicable <br> 9 - Not appliçable | $\begin{array}{r} 543 \\ 8072 \\ 105 \\ 15088 \end{array}$ | Household Questionnaire |
|  | 128 | 1 | If "no" in Position 126, was he looking for work or on lay-off from ```a job? 1-Yes 2 - No 8 - Blank, büt applicable 9 - Not applicable``` | $\begin{array}{r} 644 \\ 7971 \\ 105 \\ 15088 \end{array}$ | Household Questionnaire |

HEALTH AND NUTRITION EXAMINATION SURVEY (HANES I)

| $\begin{gathered} \text { Item } \\ \# \end{gathered}$ | Tape Loc. | No. of Positions | ITEM DESCRIPTION \& CODES | Control Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \mathbf{~} \\ \underset{\sim}{w} \\ 1 \end{gathered}$ | 129 | 1 | If yes to above - which? <br> 1-Looking <br> 2 - Lay-off <br> 3 - Both <br> 8 - Blank, but applicable <br> 9 - Not applicable | $\begin{array}{r} 467 \\ 144 \\ 34 \\ 105 \\ 23058 \end{array}$ | Household Questionnaire |
|  | 130 | 1 | Class of Worker <br> 1 - Private paid <br> 2 - Government-Federal <br> 3 - Government-Other <br> 4-0wn <br> 5 - Non-paid <br> 6 - Never worked <br> 8 - Blank, but applicable <br> 9 - Not applicable | $\begin{array}{r} 6776 \\ 335 \\ 1294 \\ 980 \\ 135 \\ 63 \\ 29 \\ 14196 \end{array}$ | Household Questionnaire |
|  | 131 | 1 | ```If self-employed in "own" business and not a farm, is the business incorporated? 1-Yes 2 - No 8 - Blank, but applicable 9 - Not applicable``` | $\begin{array}{r} 111 \\ 719 \\ 30 \\ 22948 \end{array}$ | Household Questionnaire |
|  | 132-34 | 3 | ```Business or Industry Code 000 - Blank, but applicable 017-999 - As given``` | $\begin{array}{r} 4 \\ 23804 \end{array}$ | Household Questionnaire See Detailed Notes |
|  | 135-37 | 3 | $\begin{aligned} & \text { Occupation Code } \\ & \text { O00-Blank, but applicable } \\ & \text { O01-996 - As given } \end{aligned}$ | $\begin{array}{r} 6 \\ 23802 \end{array}$ | Household Questionnaire <br> See Detalled Notes |
|  | 138-43 | 6 | Date of Examination <br> Month - 01-12 as given <br> Day - 01-31 as given <br> Year - 71-75 as given | $\begin{aligned} & 23808 \\ & 23808 \\ & 23808 \end{aligned}$ | Control Record |


| $\begin{gathered} \text { Item } \\ j \end{gathered}$ | Tape Loc. | No. of Positions | ITEM DESCRIPTION \& CODES | Control <br> Counts. | LLRES I Daca Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 1 \\ \underset{N}{\prime} \\ \mathbf{1} \end{gathered}$ | 144-45 | 2 | $\frac{\text { Age at Examination }}{01-75-\text { As given }}$ | 23808 | Computer generated |
|  | 146 | 1 | $\begin{aligned} & \frac{\text { Farm }}{1-\text { Farm }} \\ & 2-\text { Nonfarm } \end{aligned}$ | $\begin{array}{r} 1470 \\ 22338 \end{array}$ | Computer generated See Detailed Notes |
|  | 147-49 | 3 | $\begin{aligned} & \text { Poverty Index (X.XX) } \\ & \hline 001-997 \text { - As given } \\ & 998 \text { - Index computed } 998 \text { or greater } \\ & 999 \text { - Unknown } \\ & \text { Blank } \end{aligned}$ | $\begin{array}{r} 20002 \\ 25 \\ 722 \\ 3059 \end{array}$ | Computer generated See Detailed Notes * |
|  | 150 | 1 | Region <br> I - Northeast <br> 2 - Midwest <br> 3 - South <br> 4 - West | $\begin{aligned} & 5211 \\ & 5892 \\ & 6329 \\ & 6376 \end{aligned}$ | Computer generated See Detailed Notes |
|  | 151 | 1 | FOOD PROGRAMS APPLICABILITY <br> 1-Not applicable <br> 2 - No program available <br> 3 - Food stamps available <br> 4 - Commodities available <br> 8 - Blank, but applicable Blank | $\begin{array}{r} 14683 \\ 112 \\ 5142 \\ 760 \\ 52 \\ 3059 \end{array}$ | Food Programs Quest.长 |
|  | 152 | 1 | Are you certified to participate in the food stamp program? <br> - Yes <br> $9-$ No <br> - Don't know <br> Blank | $\begin{array}{r} 2374 \\ 1934 \\ 126 \\ 19374 \end{array}$ | Food Programs.Quest. 类 |



| $\begin{aligned} & \text { Icem } \\ & \text { if } \end{aligned}$ | Tape Lo:. | No. of Positicns | ITEM DESCRIPTION \& CODES | Control Counts | Llaves I <br> Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\stackrel{\omega}{\omega}$ | 153 | 1 | Are you buying stamps now? <br> 1-Yes, regularly <br> 2 - Yes, occasionally <br> 3 - No <br> 8 - Blank, but applicable <br> Blank | $\begin{array}{r} 1965 \\ 89 \\ 307 \\ 13 \\ 21434 \end{array}$ | Food Programs Quest.兴 |
|  | 154 | 1 | What is the main reason you aren't participating in the program? <br> l - No need <br> 2 - Not enough money at the time <br> 3 - No transportation <br> 4 - Pride <br> 5 - Other <br> 8 - Blank, but applicable <br> Blank | $\begin{array}{r} 33 \\ 121 \\ 16 \\ 8 \\ 111 . \\ 18 \\ 23501 \end{array}$ | Food Programs Quest. * |
|  | 155 | 1 | Are you certified to participate in the commodity distribution program? <br> - Yes <br> 2 - No <br> 9 - Don't know <br> Blank | $\begin{array}{r} 215 \\ 423 \\ 25 \\ 23145 \end{array}$ | Food Programs Quest. * |
|  | 156. | 1 | ```Are you receiving commodity foods now for your family? l - Yes, regularly 2 - Yes, occasionally 3-No 8 - Blank, but applicable B1ank``` | $\begin{array}{r} 159 \\ 14 \\ 39 \\ 3 \\ 23593 \end{array}$ | Food Programs Quest.米 |
|  | 157 | 1 | Why aren't you participating in the program? 1 - No need 2 - No transportation 3 - Pride 4 - Other 8 - Blank, but applicable Blank | $\begin{array}{r} 16 \\ 5 \\ 2 \\ 15 \\ 1 \\ 23769 \end{array}$ | Food Programs Quest. * |


| $\begin{gathered} \text { Item } \\ \# \end{gathered}$ | Tape Loc. | No. of Positions | ITEM DESCRIPTION \& CODES | Control Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Sample Weights |  |  |
|  | $\begin{aligned} & 158- \\ & 163 \end{aligned}$ | 6 | Detalled Persons - Locations 01-35 Blank | $\begin{array}{r} 1892 \\ 21916 \end{array}$ | See Detailed Notes |
|  | $\begin{aligned} & 164- \\ & 169 \end{aligned}$ | 6 | All Sample Persons - Locations 01-35 Blank | $\begin{aligned} & 10127 \\ & 13681 \end{aligned}$ | See Detailed Notes |
|  | $\begin{aligned} & 170- \\ & 175 \end{aligned}$ | 6 | Detailed Persons - Locations 01-65 Blank | $\begin{array}{r} 3854 \\ 19954 \end{array}$ | See Detailed Notes |
|  | $\begin{aligned} & 176- \\ & 181 \end{aligned}$ | 6 | All Sample Persons - Locations 01-65 Blank | $\begin{array}{r} 20749 \\ 3059 \end{array}$ | See Detailed Notes |
| $\stackrel{\sim}{F}$ | $\begin{aligned} & 182- \\ & 187 \end{aligned}$ | 6 | Detailed Persons - Locations 66-100 Blank | $\begin{array}{r} 3059 \\ 20749 \end{array}$ | See Detailed Notes |
|  | $\begin{aligned} & 188- \\ & 193 \end{aligned}$ | 6 | Detailed Persons - Locations 1-100 Blank | $\begin{array}{r} 6913 \\ 16895 \end{array}$ | See Detailed Notes |
|  | $\begin{aligned} & 194- \\ & 195 \end{aligned}$ | 2 | $\text { Strata }{ }^{1 /}$ |  |  |
|  | $\begin{aligned} & 196- \\ & 198 \end{aligned}$ | 3 | Primary Sampling Units ${ }^{1 /}$ |  |  |
|  | $\begin{aligned} & 199- \\ & 200 \end{aligned}$ | 2 | Data User Work Area <br> 1/ Use only for producing variance estimates for examination locations l-65 or 1-100. See the General Note titled "Variance Estimation" for producing variance estimates for examination locations 1-35 or 66-100. |  |  |


Anthropometry, Goniometry, Skeletal Age, Bone Density and Cortical Thickness ( $\mathrm{n}=23808$ )

| $\begin{gathered} \text { Item } \\ \text { if } \end{gathered}$ | Tape Loc. | $\begin{gathered} \text { No. of } \\ \text { Positions } \end{gathered}$ | ITEM DESCRIPTION \& CODES | Control <br> Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 1 \\ \omega \\ 1 \end{gathered}$ | $\begin{aligned} & 201- \\ & 204 \end{aligned}$ | 4 | $\frac{\text { Catalog Number }}{4111}$ |  | Body Measurements Recording Form |
|  | $\begin{aligned} & 205- \\ & 207 \end{aligned}$ | 3 | Blank - Data User Work Area <br> ANTHROPOMETRY |  |  |
|  | $\begin{aligned} & 208- \\ & 209 \end{aligned}$ | 2 | Examiner Number <br> 14-20, 69-75, 78, 81-87, 89-95, 98-99 - As given <br> 88 - Blank, but app1icab1e | $\begin{array}{r} 23787 \\ 21 \end{array}$ |  |
|  |  |  | ELBOW BREADTH (in cm. -xx.x-decimal not shown on tape) |  |  |
|  | $\begin{aligned} & 210- \\ & 212 \end{aligned}$ | 3 | $\begin{aligned} & \frac{\text { Right Side Measurement }}{030-097-A s \text { given }} \\ & \quad 888 \text { - Blank, but applicable } \end{aligned}$ | $\begin{array}{r} 23802 \\ 6 \end{array}$ |  |
|  | 213 | 1 | ```Imputation Code (right side) 0 - As observed l - Missing data - imputed B - Missing data - not imputed``` | $\begin{array}{r} 23740 \\ 62 \\ 6 \end{array}$ |  |
|  | $\begin{aligned} & 214- \\ & 216 \end{aligned}$ | 3 | ```Left Side Measurement (in cm.-xx.x-decimal not shown on tape) 032-090 - As given 888 - Blank, but applicable 999 - Not applicable``` | $\begin{array}{r} 4626 \\ 112 \\ 19070 \end{array}$ | See Detailed Notes |
|  |  |  |  |  |  |


| $\begin{gathered} \text { Item } \\ \# \end{gathered}$ | $\begin{aligned} & \text { Tape } \\ & \text { Loc. } \end{aligned}$ | No. of Positions | ITEM DESCRIPTION \& CODES | Control Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { ' } \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & 217- \\ & 219 \end{aligned}$ | 3 | UPPER ARM GIRTH (in cm.-xx.x-decimal not shown on tape) $\begin{aligned} & \frac{\text { Right Side Measurement }}{\text { 094-672-As given }} \\ & \quad 888-\text { Blank, but applicable } \end{aligned}$ | $\begin{array}{r} 23799 \\ 9 \end{array}$ | Body Measurements Recording Form |
|  | 220 | 1 | ```Imputation Code (right side) 0 - As observed 1 - Missing data - imputed 8 - Missing data - not imputed``` | $\begin{array}{r} 23735 \\ 64 \\ 9 \end{array}$ |  |
|  | $\begin{aligned} & 221- \\ & 223 \end{aligned}$ | 3 | $\begin{aligned} & \frac{\text { Left Side Measurement }}{\text { 107-599 - As given }} \\ & 888 \text { - Blank, but applicable } \\ & 999 \text { - Not applicable } \end{aligned}$ | $\begin{array}{r} 4622 \\ \cdot 116 \\ 19070 \end{array}$ | See Detailed Note |
|  | $\begin{aligned} & 224- \\ & 226 \end{aligned}$ | 3 | TRICEPS SKINFOLD (in mm.-xx.x-decimal not shown on tape) <br> Right Side Measurement <br> 020-650 - As given <br> 888 - Blank, but applicable | $\begin{array}{r} 23792 \\ 16 \end{array}$ |  |
|  | 227 | 1 | ```Imputation Code (right side) 0 - As observed l - Missing data - imputed 8 - Missing data - not imputed``` | $\begin{array}{r} 23656 \\ 136 \\ 16 \end{array}$ |  |
|  | $\begin{aligned} & 228- \\ & 230^{\circ} \end{aligned}$ | 3 | Left Side Measurement <br> 020-570 - As given <br> 888 - Blank, but applicable <br> 999 - Not applicable | $\begin{array}{r} 4599 \\ 139 \\ 19070 \end{array}$ | See Detailed Notes |


| Item <br> \# | Tape <br> Loc. | No. of Positions | ITEM DESCRIPTION \& CODES | Control Counts | HANES I <br> Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\stackrel{'}{\omega}$ | $\begin{aligned} & 231- \\ & 233 \end{aligned}$ | 3 | SUBSCAPULAR SKINFOLD (in mun.-xx.x-decimal not shown on tape) $\begin{aligned} & \frac{\text { Right Side Measurement }}{\text { 020-660-As given }} \\ & \quad 888 \text { - Blank, but app1icable } \end{aligned}$ | $\begin{array}{r} 23773 \\ 35 \end{array}$ | Body Measurements Recording Form |
|  | 234 | 1 | ```Imputation Code (right side) 0 - As observed 1 - Missing data - imputed 8 - Missing data - not imputed``` | $\begin{array}{r} 23576 \\ 197 \\ 35 \end{array}$ |  |
|  | $\begin{aligned} & 235- \\ & 237 \end{aligned}$ | 3 | $\begin{aligned} & \frac{\text { Left Side Measurement }}{\text { 020-590 - As given }} \\ & 888 \text { - Blank, but applicable } \\ & 999 \text { - Not applicab1e } \end{aligned}$ | $\begin{array}{r} 4580 \\ 158 \\ 19070 \end{array}$ | See Detailed Note. |
|  | $\begin{aligned} & 238- \\ & 240 \end{aligned}$ | 3 | BITROCHANTERIC BREADTH (in cm.-xx.x-decimal not shown on tape) 103-539 - As given <br> 888 - Blank, but applicable | $\begin{array}{r} 23794 \\ 14 \end{array}$ |  |
|  | 241 | 1 | ```Imputation Code 0 - As observed l - Missing data - imputed 8 - Missing data - not imputed``` | $\begin{array}{r} 23728 \\ 66 \\ 14 \end{array}$ |  |
|  | $\begin{aligned} & 242- \\ & 245 \end{aligned}$ | 4 | SITTING HEIGHT (in cm.-xxx.x-decimal not shown on tape) <br> 0428-1080-As given <br> 8888 - Blank, but applicab1e <br> 9999 - Not applicable - less than 2 years old | $\begin{array}{r} 22917 \\ 338 \\ 553 \end{array}$ | See Detailed Note. |
|  | 246 | 1 | ```Imputation Code 0 - As observed l - Missing data - imputed 8 - Missing data - not imputed 9 - Less than 2 years old``` | $\begin{array}{r} 22644 \\ \cdot 273 \\ 338 \\ 553 \end{array}$ |  |



HEALIH AND NUTRITION EXAUNATION SURVEY（KLNES I）

| $\begin{gathered} \text { Item } \\ \# \end{gathered}$ | Tape <br> Loc． | No．of Positions | ITEM DESCRIPTION \＆CODES | Control Counts | HANES I <br> Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 266- \\ & 269 \end{aligned}$ | 4 | HEIGHT（in centimeters－xxx．x－decimal not shown on tape） 0516－2050－As given <br> 8888 －Blank，but applicable | $\begin{array}{r} 23801 \\ 7 \end{array}$ | Body Measurements Recording Form |
|  | $\begin{aligned} & 270- \\ & 272 \end{aligned}$ | 3 | HEIGHT（in inches－xx．x－decimal not shown on tape） <br> 203－807－As given <br> 888 －Blank，but app1icable | $\begin{array}{r} 23801 \\ 7 \end{array}$ | Computer generated． |
|  | 273 | 1 | ```Imputation Code 0 - As observed 1 - Missing data - imputed 8 - Blank, but app1icable``` | $\begin{array}{r} 23741 \\ 60 \\ 7 \end{array}$ |  |
| 1 | 274 | 1 | HANDEDNESS <br> 1－Right <br> 2－Left <br> 3 －Uses both hands the same <br> 4 －Not sure <br> 8 －Blank，but app1icable <br> 9 －Not applicable | $\begin{array}{r} 4006 \\ 361 \\ 101 \\ 105 \\ 165 \\ 19070 \end{array}$ | See Detailed Note |
|  | $\begin{aligned} & 275- \\ & 278 \end{aligned}$ | 4 | ```CHEST CIRCUMFERENCE (In cm.-xxx.x-decimal not shown on tape) (detailed examinees only) Full Inspiration 0693-1580 - As given 8888 - Blank, but applicable 9999 - Not applicable``` | $\begin{array}{r} 6846 \\ 67 \\ 16895 \end{array}$ | 央东灰 |

HEALTH dND NUTRITION EXAIIINATION SURVEY (HANES I)

| Item <br> $\#$ | Tape <br> Loc. | No. of <br> Positions |  | Control <br> Counts | HANES I <br> Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | ITEM DESCRIPTION \& CODES |  |



| Item $\#$ | Tape Loc． | No．of Positions | ITEM DESCRIPTION \＆CODES | Control Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 333- \\ & 335 \end{aligned}$ | 3 | Flexion of Right Knee <br> 020－180－As given <br> 888 －Blank But applicable <br> Blank | $\begin{array}{r} 1814 \\ 78 \\ 21916 \end{array}$ | $\begin{gathered} \text { Goniometry Recording } \\ \text { Form } \\ \text { 为为为 } \end{gathered}$ |
|  | $\begin{aligned} & 336- \\ & 338 \end{aligned}$ | 3 | Flexion of Right Hip <br> 020－180－As given <br> 888 －Blank but applicable Blank | $\begin{array}{r} 1812 \\ 80 \\ 21916 \end{array}$ | 长本必束 |
| $\begin{aligned} & \mathbf{1} \\ & \text { N } \end{aligned}$ | $\begin{aligned} & 339- \\ & 340 \end{aligned}$ | 2 | Adduction of Right HIP 00－55－As given 88 －Blank but applicable： Blank | $\begin{array}{r} 1815 \\ 77 \\ 21916 \end{array}$ | See Detailed Notes米米来来 |
| － | $\begin{aligned} & 341- \\ & 343 \end{aligned}$ | 3 | ```Abduction of Right Hif 090-180 - Ag given 888 - Blank but applicable Blank``` | $\begin{array}{r} 1805 \\ 87 \\ 21916 \end{array}$ | 大小相 |
|  | $\begin{gathered} 344- \\ 345 \end{gathered}$ | 2 | Extension of Left Knee 00－50－As given 88 －Blank but applicable Blank | $\begin{array}{r} 1812 \\ 80 \\ 21916 \end{array}$ | See Detailed Notea米最米米 |
|  | $\begin{aligned} & 346- \\ & 348 \end{aligned}$ | 3 | Flexion of Left Knee <br> 025－180－As given <br> 888 －Blank but applicable <br> Blank | $\begin{array}{r} 1814 \\ 78 \\ 21916 \end{array}$ | ＊米米米 |
|  | $\begin{aligned} & 349- \\ & 351 \end{aligned}$ | 3 | Flexion of Left Hip <br> 015－180－As given <br> 888 －Blank but applicable <br> Blank | 1810 82 21916 | 米米必策 |


| $\begin{gathered} \text { Item } \\ \# \end{gathered}$ | Tape Loc． | No．of Positions | ITEM DESCRIPTION \＆CODES | Control Counts | HANES I <br> Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \mathbf{1} \\ & \stackrel{\rightharpoonup}{\omega} \\ & \mathbf{1} \end{aligned}$ | $\begin{aligned} & 352- \\ & 353 \end{aligned}$ | 2 | ```Adduction of Left Hip 00-60 - As given 8B - Blank but applicable Blank``` | $\begin{array}{r} 1813 \\ 79 \\ 21916 \end{array}$ | Goniometry Recording <br> Form <br> See Detailed Notes兴为米坐 |
|  | $\begin{aligned} & 354- \\ & 356 \end{aligned}$ | 3 | Abduction of Left Hip <br> 090－180－As given <br> 888 －Blank but applicable Blank | $\begin{array}{r} 1802 \\ 90 \\ 21916 \end{array}$ | 兴点米米 |
|  | $\begin{aligned} & 357- \\ & 358 \end{aligned}$ | 2 | SITTING ON TABLE <br> Internal Rotation of Right Hip <br> 30－90－As given <br> 99 －Blank but applicable <br> Blank | $\begin{array}{r} 1810 \\ 82 \\ 21916 \end{array}$ | 米爰为止 |
|  | $\begin{aligned} & 359- \\ & 361 \end{aligned}$ | 3 | External Rotation of Right Hip <br> 090－160－As given <br> 988 －Blank but applicable <br> Blank | $\begin{array}{r} 1808 \\ 84 \\ 21916 \end{array}$ |  |
|  | $\begin{aligned} & 362- \\ & \dot{3} 64 \end{aligned}$ | 3 | Internal Rotation of Left Hip <br> 090－155－As given <br> 888 －Blank but applicable <br> Blank | 1812 <br> 80 <br> 21916 |  |
|  | $\begin{aligned} & 365- \\ & 366 \end{aligned}$ | 2 | External Rotation of Left Hip <br> 025－090－As given <br> 99 －Blank but applicable Blank | $\begin{array}{r} 1807 \\ 85 \\ 21916 \end{array}$ |  |
|  | $\begin{aligned} & 367- \\ & 400 \end{aligned}$ | 34 | Blank－Data User Work Area |  |  |

HAND WRIST X-RAYS (AGES 1-17)
( $\mathrm{n}=23808$ )


| $\begin{gathered} \text { Item } \\ \# \end{gathered}$ | Tape Loc． | No．of Positions | ITEM DESCRIPTION \＆CODES | Control Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 415- \\ & 417 \end{aligned}$ | 3 | ```Capitate 002-192 - As given 888 - Blank, but app1icable 999 - Adu1t stage Blank``` | $\begin{array}{r} 5608 \\ 280 \\ 1190 \\ 16730 \end{array}$ | Hand Wrist X－Ray （Ages 1－17） <br> 米来兴米半 |
| 1 | $\begin{aligned} & 418- \\ & 420 \end{aligned}$ | 3 | ```Hamate 003-192 - As given 888 - Blank, but applicable 999 - Adult stage Blank``` | $\begin{array}{r} 5604 \\ 283 \\ 1191 \\ 16730 \end{array}$ | 兴米米米少 |
| F | $\begin{aligned} & 421- \\ & 423 \end{aligned}$ | 3 | ```Triquetral 88 - Blank, but applicable 999 - Adult stage Blank``` | $\begin{array}{r} 4794 \\ 1094 \\ 1190 \\ 16730 \end{array}$ |  |
|  | $\begin{aligned} & 424- \\ & 426 \end{aligned}$ | 3 | ```Lunate 022-192 - As given 888 - Blank, but applicable 999 - Adult stage Blank``` | $\begin{array}{r} 4189 \\ 1697 \\ 1192 \\ 16730 \end{array}$ |  |
|  | $427-$ 429 | 3 | ```Scaphoid 042-192 - As given 888 - Blank, but applicable 999 - Adult stage Blank``` | $\begin{array}{r} 3370 \\ 2520 \\ 1188 \\ 16730 \end{array}$ |  |

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| $\begin{gathered} \text { Item } \\ \# \end{gathered}$ | Tape Loc． | No．of Positions | ITEM DESCRIPTION \＆CODES | Control Counts | HANES I Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { ' } \\ & \text { 示 } \\ & \text { ' } \end{aligned}$ | $\begin{aligned} & 430- \\ & 432 \end{aligned}$ | 3 |  |  | ```Hand Wrist X-Ray (Ages 1-17)``` |
|  |  |  | Trapezium |  |  |
|  |  |  | 054－192－As given | 3333 |  |
|  |  |  | 888 －Blank，but applicable | 2558 |  |
|  |  |  | 999 －Adult stage | 1187 |  |
|  |  |  | Blank |  |  |
|  | $\begin{aligned} & 433- \\ & 435 \end{aligned}$ | 3 | Trapezoid |  |  |
|  |  |  | 060－192－As given | 3329 |  |
|  |  |  | 888 －Blank，but applicable | 2558 |  |
|  |  |  | 999 －Adult stage | 1191 |  |
|  |  |  | Blank |  | 米米爰米 |
|  | $\begin{aligned} & 436- \\ & 438 \end{aligned}$ | 3 | Metacarpal I |  |  |
|  |  |  | 022－186－As given | 5044 |  |
|  |  |  | 888 －Blank，but applicable | 873 |  |
|  |  |  | 999 －Adult stage | 1161 16730 |  |
|  |  |  | Blank |  | ＊＊＊＊＊＊ |
|  | $\begin{aligned} & 439- \\ & 441 \end{aligned}$ | 3 | Metacarpal II |  |  |
|  |  |  | 014－206－As given | 5863 |  |
|  |  |  | 888 －Blank，but applicable | 411 |  |
|  |  |  | 999 －Adult stage | 804 |  |
|  |  |  | Blank | 16730 | * 米桃米 |
|  | $\begin{aligned} & 442- \\ & 444 \end{aligned}$ | 3 | Metacarpal III |  |  |
|  |  |  | 014－204－As given | 5685 |  |
|  |  |  | 888 －Blank，but applicable | 648 |  |
|  |  |  | 999 －Adult stage | $745$ |  |
|  |  |  | Blank | 16730 | 员米米米米 |
|  | $445-$ | 3 | Metacarpal IV |  |  |
|  |  |  | 010－204－As given | 5650 |  |
|  |  |  | 888 －Blank，but applicable | ． 484 |  |
|  |  |  | 999 －Adult stage | $944$ |  |
|  |  |  | Blank | $16730$ |  |

heal.tll Aid wetrteton exsimation survey (hanes i)


| $\begin{gathered} \text { Item } \\ \# \\ \hline \end{gathered}$ | Tape Loc． | No．of Positions | ITEM DESCRIPTION \＆CODES | Control Counts | HANES I <br> Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 1 \\ +\infty \\ \text { ' } \end{gathered}$ | $\begin{aligned} & 463- \\ & 465 \end{aligned}$ | 3 |  |  | Hand Wrist X－Rays （Ages 1－17） |
|  |  |  | Proximal Phalanx II |  |  |
|  |  |  | 014－204－As given <br> 888 －Blank，but applicable | 5693 388 |  |
|  |  |  | 999 －Adult stage | 1017 |  |
|  |  |  | Blank | 16730 | 米来类米止 |
|  | $\begin{aligned} & 466- \\ & 468 \end{aligned}$ | 3 | Proximal Phalanx III |  |  |
|  |  |  | 014－204－As given | 5706 |  |
|  |  |  | 888 －Blank，but applicable | 354 |  |
|  |  |  | 999 －Adult stage | 1018 |  |
|  |  |  | Blank | 16730 | 兴米束束米 |
|  | $\begin{aligned} & 469- \\ & 471 \end{aligned}$ | 3 | Proximal Phalanx IV |  |  |
|  |  |  | 012－204－As given | 5674 |  |
|  |  |  | 888 －Blank，but applicable | 382 |  |
|  |  |  | 999 －Adult stage | 1022 |  |
|  |  |  | Blank | 16730 |  |
|  | $\begin{aligned} & 472- \\ & 474 \end{aligned}$ | 3 | $\frac{\text { Proximal Phalanx V }}{012-204-A s \text { given }}$ |  |  |
|  |  |  | 012－204－As given 888 －Blank，but applicable | 5551 502 |  |
|  |  |  | 999 －Adult stage | 1025 |  |
|  |  |  | Blank | 16730 | ＋ |
|  | $475-$ | 3 | Middle Phalanx II |  |  |
|  |  |  | 012－204－As given <br> 888 －Blank，but applicable | 5443 617 |  |
|  |  |  | 999 －Adult stage | 1018 |  |
|  |  |  | Blank | 16730 |  |


| Item it | Tape Loc． | $\begin{aligned} & \text { No. of } \\ & \text { Positions } \end{aligned}$ | ITEM DESCRIPTION \＆CODES | Control <br> Counts | HANES I <br> Data Source |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 1 \\ \stackrel{f}{\circ} \end{gathered}$ | $\begin{aligned} & 478- \\ & 480 \end{aligned}$ | 3 |  |  | Hand Wrist X－Rays （Ages 1－17） |
|  |  |  | Middle Phalanx III |  |  |
|  |  |  | 012－204－As given |  |  |
|  |  |  | 888 －Blank，but applicable <br> 999 －Adult stage | $\begin{aligned} & 571 \\ & 991 \end{aligned}$ |  |
|  |  |  | Blank | 16730 | 来为木束世 |
|  | $\begin{aligned} & 481- \\ & 483 \end{aligned}$ | 3 | Middle Phalanx IV |  |  |
|  |  |  | 012－204－As given | 5512 |  |
|  |  |  | 888 －Blank，but applicable | $573$ |  |
|  |  |  | 999 －Adult stage | $993$ |  |
|  |  |  | Blank | $16730$ |  |
|  | $\begin{aligned} & 484- \\ & 486 \end{aligned}$ | 3 | Middle Phalanx V |  |  |
|  |  |  |  |  |  |
|  |  |  | 888 －Blank，but applicable | $1068$ |  |
|  |  |  | 999 －Adult stage <br> Blank | 1012 16730 | 矢 |
|  |  |  |  |  | － |
|  | $\begin{aligned} & 487- \\ & 489 \end{aligned}$ | 3 | Distal Phalanx I |  |  |
|  |  |  | 015-186 - As given | $5376$ |  |
|  |  |  | 888 －Blank，but applicable <br> 999 －Adult stage | $\begin{array}{r} 446 \\ 1256 \end{array}$ |  |
|  |  |  | Blank | 16730 | 兴东来本 |
|  | $\begin{aligned} & 490= \\ & 492 \end{aligned}$ | 3 | Distal Phalanx II |  |  |
|  |  |  | 024－186－As given | 4790 |  |
|  |  |  | 888 －Blank，but applicable | 1039 |  |
|  |  |  | 999 －Adult stage <br> Blank | $\begin{array}{r} 1249 \\ 16730 \end{array}$ |  |
|  |  |  | Blank |  | 秋类类米 |




HEALTH AND NUTRITION EXiUNATION SURVEY (ILANES


health and nutiriton exilitnatio: survey (hanes i)


Size of place classification was derived from the 1960 census. According to the definition used in the 1960 census, the urban population was comprised of all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, villages and tows (except towns in New York, !lew Encland, and Wisconsin); (b) the densely settled urban fringe, whether incorporated or unincorporated, of urbanized areas; (c) towns in New England and townships in New Jersey and Pennsylvania which contained no incorporated municipalitics as subdivisions and had either 2,500 inhabitants or more, or a population of 2,500 to 25,000 and a densicy of 1,500 persons or more per square mile; (d) counties in states ocher than the New England states, New Jersey, and Pennsylvania, that had no incorporated municipalities within their boundaries and had a densicy of 1,500 persons per square mile; and (e) unincorporated places of 2,500 inhabitants or more not included in any urban fringe. The remaining population was classified as rural.

Urban areas are further classified by population size for places within urbanized areas and other places outside urbanized areas.

## TAPE POSITION 11

SMSA

A standard metropolitan statistical area is basically a county or a Eroup of contiguous counties which contains at least one city of 50,000 .inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county or counties containing such a city or cities, contiguous counties are included in an SMSA if, according to the 1960 Census, they are socially and economically integrated with the central city. Each SMSA must include at least one central city, and the complete title of an SMSA identifies the central city or cities.

## DETAILED NOTES

## TAPE POSITIONS 22 AND 103

## Race

The race of the respondent was marked by observation and it was assumed the race of all related persons was the same as the respondent unless otherwise learned. The race categories were "White", "Negro" or "other." If the appropriate category could not be marked by observation, then race was asked. Persons of races other than White or Negro, such as Japanese, Chinese, Americar Indian, Korean, Hindu, Eskimo, etc. were reported as "Other." Mexicans were included with "White" unless definitely known to be American Indian or of other nonwhite race.

DETAILED NOTES
TAPE POSITIONS 34-35

Total Family Income Group

The income group represents the total combined family income for the past twelve (12) months. It includes income from all sources such as wages, salaries, social security or retirement benefits, help from relatives, rent from property and so forth. The income groups were not reconciled to the component parts (tape positions 36-94). The income component parts were not asked when the gross income was greater than $\$ 6,999$ per annum. However, amounts greater than $\$ 6,999$ appear in tape positions $37-40$, 67-70, and 72-75. Some respondents reported a loss of income.from their nonfarm bustness, professional practice, partnership or farm and this explains why some data fields are greater than $\$ 6,999$, but the individual total in tape positions $91-94$ does not exceed this figure.

## TAPE POSITIONS 95-99

## Family Unit Code

All related sample persons in the same family unit have the same computer generated family unit code. This will enable detailed analysis of the individual family unit.

DETAILED NOTES
TAPE POSITIONS 110-111


## Industry and Occupation Codes

A person's occupation may be defined as his principal job or business. For this survey purpose, the principal job or business of a respondent is defined in one of the following ways: If the person worked during the two week interview period or had a job or business, the question concerning his occupation (or work) applies to his job during that period. If the respondent held more than one job, the question is directed to the one at which he spent the most time. It refers to the one he considers most Important when equal time is spent at each job. A person who has not begun work at a new job, is looking for work, or is on layoff from work is questioned about his last full-time civilian job. A full-time job is defined as one at which the person spent 35 or more hours per week and which lasted two consecutive weeks or more. A person who has a job to which he has not yet reported and has never had a previous job or business is classified as a "new worker."

The 1970 census of population Alphabetical Index of Industries and Occupations was used in the coding of both the industry and occupation.

Library of Congress Number 74-612012. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. \$3.00. Stock Number 0301-2283.

## DETAILED NOTES

## TAPE POSITION 146

Land used for farming purposes (Code 1 in Tape Position 146) was identified as being rural land (Code 2 in Tape Position 13) consisting of 10 or more acres (Code $I$ in Tape Position 14) with crop sales amounting to $\$ 50$ or more (Code 2 in Tape Position 15), or rural land (Code 2 in Tape Position 13) consisting of less than 10 acres (Code 2 in Tape Position 14) with crop sales amounting to $\$ 250$ or more (Code 3 in Tape Position 16). All Other land is classified as nonfarm (Code 2 in Tape Position 146).

## DETAILED NOTES

## TAPE POSITIONS 147-149

Poverty Index--Income status was determined by the Poverty Income Ratio (PIR). Poverty statistics published in the Census Bureau reports-were based on the poverty index developed by the Social Security Administration in 1964. (For a detailed discussion of the SSA poverty standards, see reference 2.) Modifications in the definition of poverty were adopted in 1969.3/ The standard data series in poverty for statistical use by all executive departments and establishments has been established.4/

The two components of the PIR are the total income of the household (numerator) and a multiple of the total income necessary to maintain a family with given characteristics on a nutritionally adequate food plan 3/ (denominator). The dollor value of the denominator of the PIR is constructed from a food plan (economy plan) necessary to maintain minimum recommended daily nutritional requirements. The economy plan is designated by the Department of Agriculture for "emergency or temporary use when funds are low."

For families of three or more persons, the poverty level was set at three times the cost of the economy food plan. For smaller families and persons living alone, the cost of the economy food plan was adjusted by the relatively higher fixed expenses of these smaller households.

The denominator or poverty income cutoff adjusts the family poverty income malntenance requirements by the family size, the sex of the family head, the age of the family head in families with one or two members, and the place of residence (farm, nonfarm). Annual revisions of the poverty income cutoffs are based on the changes in the average cost of living as reflected in the Consmer Price Index.

As shown in the table, the annual income considered to be the poverty level increases as the family size increases. A family with any combination of characteristics and with the same income as shown in the table has been designated as having a PIR or poverty level of 1.0 . The same family with twice the income found in the table would have a PIR of 2.0. Ratios of less than 1.0 can be described as "below poverty," ratios greater than or equal to 1.0 , as "at or above poverty?"

Poverty thresholds are computed on a national basis only. No attempt has been made to adjust these thresholds for regional, State, or other local variation in the cost of living (except for the farm, nonfarm difference). None of the noncash public welfare benefits such as food stamp bonuses or free food comodities are included in the income of the low income families receiving these benefits.
//Current Population Reports, "Consumer Income," Series P-60, No. 77, May 7, 1971 2/Orshansky, M.: "Counting the Poor: Another Look at the Poverty Profile," Social Security Bulletin, January 1965;"Who's Who Among the Poor: A Demographic View of Poverty," Social Security Bulletin, July 1965.
3/Current Population Reports, "Special Studies," Series P-23, No. 28, August 12, 1965
4/Circular No. A-46, Transmitted Memorandum No. 9, Executive Office of the President, Bureau of the Budget, August 29, 1969, and Exhibit L (rev.).

## DETAILED NOTES

TAPE POSITIONS 147－149

Veighted average thresholds at the low income level in 1971 by size of farily and aex of head，by fara－monfarm residence

| Size of family | Tocal | Nonfarm |  |  | Fart |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total | Male ${ }^{1}$ <br> bead | Femalel head | Tocal | $M ⿴ 囗 ⿰ 丿 ㇄$ hesd | $\begin{gathered} \text { Female } \\ \text { head } \end{gathered}$ |
| All unrelated individual | \＄2，033 | \＄2，040 | \＄2，136 | \＄1，978 | \＄1，727 | \＄1，783 | \＄1，669 |
| Uuder 65 years | 2，093 | 2，098 | 2，181 | 2，017 | 1，805 | 1，853 | 1，715 |
| 65 yeara and over－ | 1，931 | 1，940 | 1，959 | 1，934 | 1，652 | 1，666 | 1，643 |
| All familles－－－－－－－ | 3，700 | 3，724 | 3，764 | 3，428 | 3，235 | 3.242 | 3，079 |
| 2 persons－－－－－－－－－－ | 2.612 | 2.533 | 2，641 |  |  |  |  |
| Head under 65 years－ | 2，699 | 2,716 2,48 | 2，731 | 2．635 | 2,317 2,082 | 2，322 | 2，195 |
| 3 persons－－．－－－－ | 3，207 | 3， 229 | 3，246 | 3，127 | 2，745 | 2，749 | 2，627 |
| 4 persons－ | 4，113 | 4，137 | 4，139 | 4，116 | 3，527 | 3，528 | 3，513 |
| 5 persons | 4，845 | 4，880 | 4，884 | 4.837 | 4，159 | 4，159 | 4，148 |
| 6 persons－．－－－－－ | 5，441 | 5，489 | 5，492 | 5，460 | 4，688 | 4，689 | 4，656 |
| 7 persons or more－－－ | 6，678 | 6，751 | 6，771 | 6，583 | 5，736 | 5，749 | 5，516 |

${ }^{1}$ For inrelaced individuals，sex of the individual．
SOURCE：U．S．Department of Comerce，Social and Eeonomic Scatistics Administration，U．S．Bu－ reat of che Census＂Characteriacics of the Low Income Popularion：1971，＂Current Papularion Reporcs，Series P－60，No．86，p． 18.

## TAPE BOSITION 150

## Region

The United States was divided into four broad geographic regions of approximately equal population. Those regions, which deviate somewhat from the groups used by the Bureau of the Census, are as follows:

| Region | States Included |
| :---: | :---: |
| Northeast | Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania |
| South | Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Arkansas |
| Midwest | Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri |
| West | Washington, Oregon, California, Nevada, New Mexico, Arizona, Texas, Oklahoma, Kansas, Nebraska, North Dakota, South Dakota, Idaho, Utah, Colorado, Montana, and Wyoming. |

TAPE POSITIONS 158-193

HANES is a multistage, stratified, probability sample of loose clusters of persons in land-based segments. In addition, HANES is composed of two distinct examination components--a nutrition screening examination (taken by all examinees) and a more detadled examination taken by a pre-selected subsample of all examinees, ages 25-74. For the nutrition screening examination, locations 1-35 and 1-65 constituted national probability samples and for the detailed examination, locations 1-35, 1-65, 66-100 and 1-100 all constitute national probability samples. In other words, HANES is composed of six distinct subsamples of the U.S. population. For a more. detailed discussion of the sample design see Series 1 , No. 10a.

Since each of these six subsamples is a distinct subsample of the U.S. population, each subsample requires a different set of weights. The weights are based upon the probability of selection into the sample, adjustments for nonresponse and furcher adjustments to approximate the U.S. nominstitutionalized population as of the midpoint of each subsample.

In order to select all of those examinees in a particular subsample, i.e. received a particular exam component, it' is necessary to exclude all examinees with a weight of zero or blank. It is also necessary to exclude all zero or blank weights because that is the only way to differentate missing data due to nonresponse from data that is missing because the sample design dictated that a particular examinee was not supposed to receive a particular examination component.

It is suggested that any analyses that ale desired by the researcher be performed using the greatest number of examinees possible; that is, if the researcher is interested in an exam component of the nutrition screening examination he should use the weight and consequently the data from the 65 location subsaraple rather than the 35 location subsample. For the detailed examination, the researcher should use the 100 location subsample rather than one of the others. However, some exam components were only done in a particular subsample; for example, only at the first 35 locations. In that case, the researcher has no choice in selecting a particular subsample.

There may be occasions when a researcher may want to make comparisons of estimates obtained from various subsamples. For example, the prevalence of some disease condition as estimated from the first 35 locations could be compared with an estimate based upon locations 66-100. The researcher may also vant to formulate hypotheses using one subsample and test those hypotheses using another subsample.

## Detailed Notes

Tape Positions 214-216, 221-223, 228-230, 235-237, 274

Left side measurements of the triceps skinfold, subscapular skinfold, elbow breadth, and upper arm girth were randomly done on approximately 20 percent of the examined sample persons. Handedness was also recorded for these sample persons who had both right and left side measurements. These measures were collected for quality control purposes and are not a representative sample of the U. S. population. Therefore, none of the sample weights are applicable for analyses using these measurements.

## Detailed Notes

## Tape Positions 242-245

Sitting height was measured on all sample persons aged two years or more. Because of many procedural problems, many of the two year old children were not measured for sitting height. Since the number of missing values for this age was so large, no attempt was made to impute values for the missing measurements, as was done for ages three years and over. The sitting heights for two year old children that were recorded are included on the data tape but do not represent a national probability estimate for this age.

The extension of the knee is normally an observed measure of zero degrees. The examinee lies on his back with the back of his knee flat on a table. The small number of abnormal measurements (unable to extend a zero degree angle) is somewhat unusual for both the right and left extensions; nevertheless, the data have been verified and are in fact the actual measurements.

## DETAILED NOTES

TAPE POSITIONS 339-340 and 352-353

The adduction of the hip is normally an observed measure of zero degrees. It seems somewhat unusual that the data shows an incredibly small number of examinees who are unable to adduct their hips to zero degrees. Nevertheless, all data values have been verified and are in fact actual measurements.

## Detailed Notes

Tape Position 502

Individual differences
Codes one (1) and two (2) in tape position 502 indicate any developmental or pathological abnormalities on one or more of the hand-wrist bones identified by the x-ray assessors. Code three (3) indicates film quality or readability.

## Hand-Wrist X-rays

The hand-wrist x-rays were used to obtain a measurement of bone-specific skeletal age of sample persons ages 1-17 years. A description of the associated methodology with identification of the standards employed, may be foumd in the following reports based on similar data from two cycles of the earlier National Health Examination Survey:

National Center for Health Statistics: Skeletal maturity of children 6-11 years: United States, by A.F. Roche, J. Roberts, and P.V.V. Hamill. Vital and Health Statistics. Series 11- No. 140. DHEW Pub. No. (HRA) 75-1622. Health Resources Administration. Washington. U.S. Government Printing Office, Nov. 1974.

National Center for Health Statistics: Skeletal maturity of youths 12-17 years: United States, by A.F. Roche, J. Roberts, and P.V.V. Hamill. Vital and Health Statistics. Series 11- No. 160. DHEW Pub. No. (HRA) 77-1642. Health Resources Administration. Washington. U.S. Government Printing Office, Nov. 1976.

National Center for Health Statistics: Skeletal maturity of youths 12-17 years: Geographic area, and socioeconomic differentials, United States, by A.F. Roche, J. Roberts, and P.V.V. Hamill. Vital and Health Statistics. Series 11- No. 167. DHEN Pub. No. (PHS) 79-1654. Public Health Service. Washington. U.S. Government Printing Office, Oct. 1978.

Additional Detailed Notes on pages 71-77 of this documentation package discuss specific items umder the hand-wrist x-ray heading.

## Detailed Notes

Tape Positions 516-517

## Number of fields with bone age entry

After excluding eights (8), blanks and nines (9) from the high order positions $409,412,415,418,421,424,427,430,433,436,439,442$, $445,448,451,454,457,460,463,466,469,472,475,478,481,484$, 487, 490, 493, 496, and 499-- count the number of remaining fields with usable bone-age entries in columns 409-501 (Maximum $=31$ ).

## Detailed Notes

## Tape Positions <br> 518-521

Sum of bone-age entries
Exclusions as for columns 516-517. Then add the bone age entries in these three digit fields.

## Detailed Notes

## Tape Positions 522-526

## Average bone age

Average bone age is determined by dividing columns 518-521 by columns
516-517. Exclusions are the same as for columns 516-517.

## Detailed Notes

Tape Positions 537-538

## Number of adult bones per youth

The total number of adult hones per youth is determined by excluding $0-8$ and blanks in the high order positions 409, 412, 415, 418, 421, $424,427,430,433,436,439,442,445,448,451,454,457,460,463$, $466,469,472,475,478,481,484,487,490,493,496$, and 499 -- then count the number of fields with code 9 in the remainder of these high order positions (Maximum $=31$ ).

## Detailed Notes

Tape Positions 539-540

Number of unformed bones per youth
The number of unformed bones per youth is determined by adding the entries in columns 516-517 and columns 537-538 and subtracting this sum from 31. The maximum should be less than 30.

## Detailed Notes

## Tape Positions 541-543

## Bone age range

Excluding blanks, eights (8) and nines (9), the range for bone age is the maximum (largest) bone age entry in 3-digit field 409-501 minus minimum (smallest) bone age.

## Detailed Notes

## Tape Positions 551-556

## Bone Density

The method used for determining bone density measurements are described in the following two articles:

Vose, G.P. Estimation of Changes in Bone Calcium Content by Radiographic Densitometry. Radiology. 93:841-844, 1969.

Vose, G.P. Review of Toentgenographic Bone Demineralization Studies of the Gemini Space Flights. Am. J. Roentgenol., Rad. Therapy and Nuclear Med., 121(1):1-4, (May) 1974.

The measurements obtained are respectively, the aluminum equivalency of the middle bone of the little finger (Phalanx V-2) and of the large bone of the wrist (the radius).

## Cortical Thickness

In the cortical thickness measurements, $D$ represents the outer diameter and $d$ the inner diameter of the midddle bone-middle finger or middle phalān (III-2), middle bone in the hand Metacarpal III (III-4) and first bone in the hand immediately adjacent to the thumb or Metacarpal II (II-4). At present the following fields have impossible entries that should be deleted:

| Sample Sequence Number | Fields Involved |
| :---: | :--- |
| 22772 | $557-559,560-562,575-576$ |
| 22740 | $563-565,566-568,577-578$ |
| 04954 | $569-571,572-574,579-580$ |
| 15670 | $569-571,572-574,579-580$ |
| 20802 | $569-571,572-574,579-580$ |


[^0]:    *See detailed note for tape positions 158-193.

