



Designation: ~~D4910-99~~ Designation: D 4910 – 02

Standard Tables of Body Measurements for Infants, Sizes 0 to 24¹

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INTRODUCTION

These tables ~~are~~were developed from data published by the U.S. Department of Commerce. These data were based on original research conducted by the U.S. Department of Agriculture² in the 1930's. This standard takes into consideration children's growth patterns reflected in the 1980 charts for the National Center for Health Statistics³ and the 1977 Anthropometric Study of U.S. Infants and Children conducted by the University of Michigan.⁴ All sudden shifts of proportion have been eliminated so as to reflect the gradual growth and development of the infant. To verify the proposed body measurements, a limited sampling of children was measured and fitted with garments made as directed in these tables.

1. Scope

1.1 These tables list body measurements of infants from size 0 to 24. Although these measurements are body measurements, they can be used as a baseline in designing apparel for infants in this ~~agesize~~ range when taking into account such factors as fabric type, ease for body movement, styling, and fit.

1.2 Infants 0–24 designate sizes and do not refer to age.

1.3 The values stated in either acceptable metricSI units or in other inch-pound units shall be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall must be used independently of the other, without combining values in any way.

~~1.4~~ This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 *ASTM Standards:*

D 123 Terminology Relating to Textiles Terminology Relating to Textile Materials⁵

D 5219 Terminology Relating to Body Dimensions for Apparel Sizing⁶

2.2 *ISO Standard:*

ISO 3635 Size Designation of Clothes, Definitions, and Body Measurement Procedures⁷

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions relating to body dimensions, refer to Terminology D 5219.

3.1.2 For definitions of other textile ~~terms,~~terms used in ~~these tables,~~this standard, refer to Terminology D 123.

¹ These tables are under the jurisdiction of ASTM Committee ~~D-13~~D13 on Textiles and are the direct responsibility of Subcommittee D13.55 on Body Measurement for Apparel Sizing.

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² O'Brien, Ruth, et al., *Body Measurement to American Boys and Girls for Garment and Pattern Construction*, U.S. Department of Agriculture, Miscellaneous Publication No. 366, July 1941.

³ Available from National Center for Health Statistics.

⁴ Snyder, Lawrence, *Anthropometry of Infants, Children, and Youth to Age 18*, University of Michigan, May 1977.

⁵ *Annual Book of ASTM Standards*, Vol 07.01.

⁶ *Annual Book of ASTM Standards*, Vol 07.02.

⁷ Available from American National Standards Institute, Institute (ANSI), 25 W. 42nd St., 4th Floor, New York, NY 10036.

4. Significance and Use

4.1 The use of the body measurement information in Tables 1 and 2 will assist manufacturers to develop in developing patterns and garments that are consistent with the current anthropometric characteristics of the population of interest. This practice should in turn should reduce or minimize consumer confusion and dissatisfaction related to apparel sizing. (Also refer to ISO 3635 Size Designation Standard Procedures.)

5. Apparatus

5.1 ~~Tape measure that is dimensionally stable and approximately 15 mm (1/2 in.) wide and accurately graduated in millimetre (1/16 in.) increments.~~ Apparatus

5.1 Tape Measure, dimensionally stable and approximately 15-mm (1/2-in.) wide and accurately graduated in mm (1/16-in.) increments.

5.2 Plastic Goniometer, to measure the degree of shoulder slope.

5.3 Scale, standard calibrated, body weight type for infants, standard, calibrated body weight type for infants.

5.4 Plastic Ruler, dimensionally stable, flat and accurately graduated in mm (1/16-in.) increments.

6. Procedure

6.1 *General:*

6.1.1 For all vertical measurements, subject ~~should~~ is to be lying down on its back, on a flat surface, with legs extended.

6.1.2 For all horizontal measurements, hold subject in a vertical position.

6.1.3 ~~Measurements for infant body are taken over nude body.~~

6.1.3 Take measurements over nude body.

6.1.4 Take all measurements from the same side of the body for consistency.

6.1.5 Refer to Terminology D 5219 for the location of all points to be measured.

6.2 *Body Measurements:*

6.2.1 Height—Measure from the top of the head to the soles of the feet while subject is lying down flat with legs extended. Stature—Measure the straight distance from the top of the head to the soles of the feet while subject is lying down flat with legs extended and foot positioned at 1.57 rad (90° to the leg).

6.2.2 Body Weight—Weigh the nude infant on a calibrated infant scale.

6.2.3 Chest—Measure horizontally around the body under the arms and across the nipples so as to include the lower portion of the shoulder blades. Chest Girth—Measure the horizontal circumference around the body under the arms and across the fullest part of the chest apex including the lower portion of the shoulder blades.

6.2.4 Waist—Measure horizontally around the body at waist height. Waist Girth—Measure the minimum horizontal circumference around the body at waist height.

6.2.5 Hip/Seat—Measure horizontally around the body at hip height. Hip Girth—Measure horizontally the maximum circumference around the body at hip height.

6.2.6 Vertical Trunk—Measure from (1) a point on the shoulder, midway between the neck and the normal armhole line to (2) the bottom of the crotch and back up to the shoulder taking care to avoid constriction at the crotch. The measurement should be made over the nude body. Neck Base Girth—Measure the circumference of the neck over the cervicale at the back, and the top of the collarbone at the front.

6.2.7 Head Circumference—Measure the maximum circumference of the head above the ears. Armscye Girth—Measure the distance from the shoulder joint through the front break-point, the armpit, the back-break point, and to the starting point with the arms down.

6.2.8 Neck Base—Measure around the neck touching the cervical at the back and the upper borders of the collar bone at the front following the points that would be made by a fine-linked chain pressed over these points. Upper-Arm Girth—Measure the maximum circumference of the arm midway between the elbow and shoulder joints with the arm bent 1.57 rad (90°).

6.2.9 Armscye—With the arm hanging down, measure the distance from the shoulder joint through the front break point, the armpit, the back-break point, and the starting point. Elbow Girth—Measure the maximum circumference of the elbow over the prominence of the elbow bone with the arm bent 1.57 rad (90°).

6.2.10 Upper Arm—Measure the circumference of the arm midway between the elbow and shoulder joint. Wrist Girth—Measure the maximum circumference of the writ over the inner and outer prominence of the wrist bones.

6.2.11 Elbow—Measure the circumference of the elbow while the arm is straight. Thigh Girth—Measure the maximum circumference of the upper leg close to the crotch.

6.2.12 Wrist—Measure the circumference of the wrist over the inner and outer prominence at the lower end of the forearm. Ankle Girth—Measure the maximum circumference of the ankle over the greatest prominence of the ankle bones.

6.2.13 Thigh—Measure the circumference of the upper part of the leg (close to the crotch). Total Vertical Trunk—Measure the circumference from a point on the right shoulder midway between the neck base and shoulder joint down the back, through the crotch, and up over the prominence of the right chest apex to the starting point, avoiding constriction at the crotch.

6.2.14 Shoulder Length—Measure from the widest point of the neck base measurement at the shoulder to the armpit or armhole girth point of the shoulder. Total Crotch Length—Measure the distance from waist level at the center front through the crotch and

TABLE 2.1 Infants 0 to 24—Body Measurements Without Clothing, SI (Metric Units)

Size	0 to 3	3 to 6	6 to 9	9 to 12	12 to 18	18 to 24
Height, Centimetres	Up to 60	60 to 68	69 to 72	73 to 78	79 to 83	84 to 88
Stature, cm	Up to 60	60 to 68	69 to 72	73 to 78	79 to 83	84 to 88
Weight, Kilograms	Up to 6.5	6.6 to 7.4	7.5 to 8.2	8.3 to 9.2	9.3 to 11.0	11.1 to 12.6
Body Weight, kg	Up to 6.5	6.6 to 7.4	7.5 to 8.2	8.3 to 9.2	9.3 to 11.0	11.1 to 12.6
All Table Data is in Centimetres ^A						
<u>Girth Measurements, cm</u>						
Chest	41.8	44.5	45.7	47.0	49.5	52.1
Chest Girth	41.9	44.4	45.7	47.0	49.5	52.1
Waist	45.7	47.0	47.6	48.3	49.5	60.6
Waist Girth	45.7	47.0	47.6	48.3	49.5	50.8
Hip/Seat	43.2	45.7	47.0	48.3	50.8	53.3
Hip Girth	43.2	45.7	47.0	48.3	50.8	53.3
Vertical Trunk	63.6	68.6	71.1	73.7	76.7	63.8
Neck Base Girth	21.0	68.6	71.1	73.7	76.7	63.8
Head Circumference	41.9	43.2-44.5	46.4	48.3	50.8	
Neck Base	21.6	22.0	22.5	23.5	24.4	25.4
Neck Base	2.2	22.9	22.5	23.5	24.4	25.4
Armseye	15.2	16.6	17.6	18.4	20.0	21.6
Armseye Girth	15.2	16.8	17.6	18.4	20.0	21.6
Upper Arm	13.0	13.7	14.0	14.3	14.9	15.6
Upper Arm Girth	13.0	13.7	14.0	14.3	14.9	15.6
Elbow	14.8	16.2	15.8	15.9	16.5	17.1
Elbow Girth	14.6	15.2	15.6	15.9	16.5	17.1
Wrist	...	...	...	...	...	...
Wrist Girth	10.2	10.5	10.6	10.8	11.1	11.4
Thigh	23.5	25.1	25.9	26.7	28.2	29.5
Thigh Girth	23.5	25.1	25.9	26.7	28.3	29.8
Shoulder Length	7.1	7.3	7.3	7.5	7.6	7.9
Ankle Girth	11.4	12.1	12.4	12.7	13.3	14.0
Across Shoulder	21.0	21.6	21.9	22.2	22.9	23.5
Total Vertical Trunk Length	63.5	68.6	71.1	73.7	78.7	83.8
Total Crotch Length	26.3	31.1	32.5	34.0	35.9	39.7
Total Crotch Length	28.3	31.1	32.5	34.0	36.8	39.7
Arm Length	16.9	20.0	21.6	23.2	26.4	29.5
Head Girth	41.9	43.2	44.4	46.4	48.3	2.5
Cervical to Wrist ²⁷⁻³						39.8
Vertical Measurement ²⁷⁻³						39.8
Cervical to Knee	31.1	35.6	37.5	40.0	44.5	48.9
Cervical Height	43.8	35.6	37.5	40.0	44.5	48.9
Cervical Height	42.6	50.8	54.8	57.6	64.6	71.8
Cervical Height	42.6	50.8	54.3	57.8	64.8	71.8
Head and Neck Length	14.6	15.2	15.6	15.9	16.5	17.1
Cervical to Back Waist	15.2	16.5	17.1	17.8	19.1	20.3
Center Back Waist Length	15.2	16.5	17.1	17.8	19.0	20.3
Front Waist Length	14.6	15.9	16.5	17.1	19.4	19.7
Center Front Waist Length	14.6	15.9	16.5	17.1	18.4	19.7
Cervical to Knee Height	31.1	35.6	37.8	40.0	44.4	48.9
Seye Depth	8.8	9.6	9.8	10.2	10.8	11.4
Seye Depth	8.9	9.5	9.8	10.2	10.8	11.4
Waist Height	28.6	34.3	37.1	40.0	45.7	51.4
Waist to Knee	15.9	19.1	20.6	22.2	25.4	25.9
Hip Height	22.2	27.3	29.8	32.4	37.5	42.5
Hip Height	22.2	27.3	29.8	32.4	37.6	42.5
Waist to Knee Height	15.9	19.0	20.6	22.2	25.4	28.6
Crotch Height	18.1	23.5	25.7	27.9	32.4	36.8
Waist to Knee	19.0	23.5	25.7	27.9	32.4	36.8
Knee Height	12.7	15.2	16.5	17.6	20.8	22.9
Knee Height	12.7	15.2	16.5	17.8	20.3	22.9
Ankle Height	...	...	...	...	...	...
Ankle Height	3.5	3.8	4.0	4.1	4.4	4.8
<u>Width and Length Measurements, cm</u>						
Shoulder Length	6.7	7.0	7.1	7.3	7.6	7.9
Across Back Shoulder Width	18.4	19.7	20.3	21.0	22.2	23.5
Arm Length	17.8	20.6	22.1	23.5	26.4	29.2
Cervical to Wrist Length	27.0	30.5	32.2	34.0	37.5	41.0
Foot Length	...	...	...	...	...	...
Foot Length	9.5	10.8	11.4	12.1	13.3	14.6
Foot Width	...	...	...	...	...	...
Foot Width	4.4	4.8	5.1	5.4	5.7	6.0

^AThese measurements are for the nude body. No allowance has been given for clothing or diapers. Add approximately 8 cm to the vertical trunk measurement to accommodate the diaper.

to the waist level at the center back avoiding constriction at the crotch.

6.2.15 *Across Shoulder*—Measure across the back from the top of one shoulder joint to the top of the other shoulder joint. Head