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Standard Tables of Body Measurements for Infants, Sizes 0 to 24 Body Measurements for Children, Infant Sizes—Premie to 24 Months¹

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^{ε1} NOTE—This standard was editorially corrected in December 2007.

^{ε2} NOTE—This standard was editorially corrected in March 2008.

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~~ 1930s. This standard takes into consideration ~~children's~~ infants' growth patterns reflected in the 1980 charts for the National Center for Health Statistics,³ and the 1977 Anthropometric Study of U.S. Infants and Children conducted by the University of Michigan~~Michigan~~,⁴ and the 2000 CDC Growth Charts for the United States.⁵ 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~~ infants 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~~ infants' sizes. 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~~ considering such factors as fabric type, ease for body movement, styling, and fit.

1.2 These tables list body measurements for the complete range of infant sizing.

1.3 The values stated in either acceptable ~~metric~~ SI 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.

~~1.3.1.4~~ *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:⁶

D 123 Terminology Relating to Textiles

D 5219 Terminology Relating to Body Dimensions for Apparel Sizing

2.2 ISO Standard:

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 U.S. Department of Commerce, *Voluntary Product Standard: Body Measurement for the Sizing of Children's Apparel*, NIST Publication No. PS 54-172, Washington, D.C.

⁴ Available from National Center for Health Statistics.

⁵ Snyder, Lawrence, *Anthropometry of Infants, Children, and Youth to Age 18*, University of Michigan, May 1977.

⁶ Annual Book of ASTM Standards, Vol 07.01.

⁷ 2000 CDC Growth Charts for the United States: Methods and Development, National Center for Health Statistics, *Vital Health Stat*, 11 (246), 2002.

⁸ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards*, Vol 07.02, volume information, refer to the standard's Document Summary page on the ASTM website.

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.

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~~ 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 1.5-cm (1/2-in.) wide and graduated accurately in cm (1/16-in.).

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

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

5.4 Metal Ruler.

6. Procedure

6.1 General:

6.1.1 ~~For all vertical measurements, subject should 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.~~

6.1.1 For all vertical measurements and most horizontal measurements, subject is to be lying down flat with legs extended and foot positioned at 1.57 rad (90°) to the leg.

6.1.2 Take measurements over regular undergarments normally worn.

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

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

6.2.2 ~~Weight—Weigh the nude infant on an calibrated infant scale. Body Weight—Weight as measured on a calibrated scale, taken with the subject in undergarments.~~

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/Bust Girth—Measure the horizontal circumference around the body, taken under the arms and across the fullest part of the chest/bust 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 the maximum horizontal 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. Head Girth—Measure the maximum horizontal circumference of the head above the ears.~~

6.2.7 ~~Head Circumference—Measure the maximum circumference of the head above the ears. Neck Base Girth—Measure the circumference of the neck, taken over the cervicale at the back and the top of the collarbone at the front.~~

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. Armscye Girth—Measure the circumference from the shoulder joint through the front break-point, the armpit, the back-break point, and to the starting point, taken with the arms down.~~

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. Upper-Arm Girth—Measure the maximum circumference of the arm, taken midway between the elbow and shoulder joints with the arm bent 1.57 rad (90°).~~

⁷ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

⁷ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

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	8M	24 to 88	
Preemie	Newborn	3M	6M	9M	12M	18M	24M	
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 17.7	17.7 to 24.4	24.4 to 32.0
Stature/Height, cm	Up to 45.72	46.99 to 55.88	57.15 to 60.96	62.23 to 68.58	69.85 to 73.66	74.93 to 77.47	78.74 to 83.82	85.6
All Table Data is in Centimetres ^A								
All Table Data to 90.17								
Chest	41.8	44.5	45.7	47.0	49.5	57.7-47	83.82	111.1
Stature for height calculations	45.72	55.88	60.96	68.58	73.66	77.47	83.82	88.90
Waist	45.7	47.0	47.6	48.3	49.5	60.21 to 11.34	115.7 to 12.70	12.93 to 13.6
Body Weight, kg	up to 2.49	2.72 to 4.31	4.54 to 6.58	6.80 to 8.16	8.39 to 9.98	10.21 to 11.34	115.7 to 12.70	12.93 to 13.61
Hip/Seasurements								
Girth Measurements								
Chest/Bust	43.2	45.7	47.0	48.3	50.8	48.26	53.317	52.07
Chest/Bust	36.83	40.64	43.18	45.72	46.99	48.26	50.17	52.07
Vertical Trunk	63.6	68.6	71.1	73.7	76.7	63	68.44	53.34
Waist	38.10	41.91	44.45	46.99	48.26	49.53	51.44	53.34
Head-Circumference	41.9	43.2	44.5	46.4	48.3	50.3	51.844	53.34
Hip/Seat	38.10	41.91	44.45	46.99	48.26	49.53	51.44	53.34
Head (circumference)	37.47	38.74	42.23	44.77	46.04	47.31	48.58	49.53
Neck-Base	21.6	22.0	22.5	23.5	24.4	25.0	24.45	25.40
Neck Base	20.32	20.64	20.96	22.23	22.86	23.50	24.45	25.40
Armscye	15.2	16.6	17.6	18.4	20.0	2.2	20.00	21.6
Armscye (circumference)	14.29	14.61	15.24	16.83	17.46	18.42	20.00	21.59
Upper Arm	13.0	13.7	14.0	14.3	14.9	14.29	14.92	15.6
Upper-Arm	12.38	12.70	13.02	13.65	13.97	14.29	14.92	15.56
Elbow	14.8	16.2	16.8	16.9	18.5	18.88	16.5	17.1
Elbow	13.97	14.29	14.61	15.24	15.56	15.88	16.5	17.15
Wrist	...	...	...	...	...	...	11.11	11.1
Wrist	9.53	9.84	10.16	10.48	10.64	10.80	11.11	11.43
Thigh	23.5	25.1	25.9	26.7	28.2	26.67	28.26	29.5
Thigh	22.23	22.86	23.50	25.09	25.72	26.67	28.26	29.85
Shoulder Length	7.1	7.3	7.3	7.5	7.6	7.3	20.932	24.27
Knee	10.80	11.11	11.43	16.51	17.78	18.73	20.32	21.27
Calf	10.80	11.11	11.43	16.51	17.78	18.73	20.32	21.27
Ankle	10.80	11.11	11.43	12.07	12.38	12.70	13.34	13.97
Across-Shoulder	21.0	21.6	21.9	22.2	22.9	23.566	78.74	83.82
Total Vertical Trunk Length	59.69	61.60	63.50	68.58	71.12	73.66	78.74	83.82
Total Crotch Length	26.3	31.1	32.5	34.0	35.9	39.7	36.83	39.69
Total Crotch Length	26.35	27.31	28.26	31.12	32.39	33.97	36.83	39.69
Vertical Measurements								
Arm Length	16.9	20.0	21.6	23.2	26.4	29.560	67.31	71.76
Cervical Height	31.75	41.59	46.36	53.34	58.10	61.60	67.31	71.76
Cervical to Wrist	27.3	39.8	32.8	34.3	37.8	41.88	46.51	47.15
Head and Neck Length	13.97	14.29	14.61	15.24	15.56	15.88	16.51	17.15
Cervical to Knee	31.1	35.6	37.5	40.0	44.5	48.05	20.32	20.9
Center Back Waist Length	13.65	14.61	15.24	16.51	18.42	19.05	20.32	20.96
Cervical Height	42.6	50.8	54.8	57.6	64.6	71.8.74	20.32	20.96
Center Front Waist Length	13.65	13.97	14.61	16.51	17.78	18.74	20.32	20.96
Head and Neck Length	14.6	15.2	15.6	15.9	16.5	17.16	10.80	11.43
Scye Depth	8.59	8.59	8.89	9.53	9.84	10.16	10.80	11.43
Cervical to Back Waist	15.2	16.5	17.1	17.8	19.1	2.55	46.99	50.3
Waist Height	18.10	26.99	31.12	36.83	39.68	42.55	46.99	50.80
Front Waist Length	14.6	15.9	16.5	17.1	19.4	19.3	38.74	42.55
Hip Height	13.02	21.27	24.77	29.85	32.07	34.93	38.74	42.55
Scye Depth	8.8	9.6	8.8	10.2	10.8	11.48	33.02	36.83
Crotch Height (inseam)	12.70	20.32	23.50	26.67	29.21	30.48	33.02	36.83
True Rise Height	5.40	6.67	7.62	10.16	10.48	12.07	13.97	13.97
Knee Height	8.89	13.34	13.97	15.88	17.78	19.05	20.32	22.86
Ankle Height	3.18	3.18	3.493	3.810	4.128	4.128	4.445	4.763
Cervical to Knee	22.86	28.26	32.29	37.47	40.32	42.55	46.99	48.90
Waist Height	28.6	34.3	37.1	40.0	45.7	51.0	26.67	27.94
Waist to Knee	9.21	13.65	17.15	20.96	21.91	23.50	26.67	27.94
Waist to Knee	15.9	19.1	28.6	22.2	25.4	20	8.255	8.9
Waist to Hip	5.08	5.72	6.350	6.99	7.620	7.620	8.255	8.255
Width and Length Measurements								
Hip Height	22.2	27.3	29.8	32.4	37.6	47.30	7.62	5
Shoulder Length	6.35	6.35	6.67	6.99	7.144	7.30	7.62	7.94
Crotch Height	18.1	23.5	25.7	27.9	32.4	36	23	23.8
Across Back Shoulder	15.24	17.15	18.42	19.69	20.32	20.96	22.23	23.82
Front Chest Width	13.97	15.88	17.15	18.42	19.05	19.69	20.64	21.28
Knee Height	12.7	15.2	16.5	17.6	29.8	23.50	2.04	29
Arm Length	13.34	15.88	18.42	20.32	22.23	23.50	26.04	29.21
Ankle Height	...	...	...	...	...	...	37.47	40.
Cervical to Wrist Length	21.91	24.45	26.99	30.48	32.07	33.97	37.47	40.96
Shoulder and Arm Length	19.72	22.26	25.12	27.35	29.26	30.85	33.71	37.21
Hand Length	6.03	6.35	7.30	7.94	8.89	8.89	9.21	9.21
Hand Width	3.18	3.49	3.81	4.13	4.45	4.45	4.45	4.77
Foot Length	...	...	...	...	...	...	13.34	14.
Foot Length	8.57	8.89	9.53	10.80	11.43	12.07	13.34	14.61
Foot Width	...	...	...	...	...	...	5.72	6.
Foot Width	3.81	4.13	4.45	4.76	5.08	5.40	5.72	6.03

TABLE 1 2 Infants 0 to 24—Body Measurements Without Clothing, (Inch-Pound Units)

Size—	0 to 3Premie	3 to 6Newbo-6m	6 to 93M	9 to 126M	12 to 189M	12M	18 to 24M	24M
Height, Inches	Up to 23½	24 to 26½	27 to 27½	28 to 30½	31 to 32½	33 to 34½ to 30½	31 to 33	33½ to 35½
Stature/Height, in.	up to 18	18½ to 22	22½ to 24	24½ to 27	27½ to 29	29½ to 30½	31 to 33	33½ to 35½
Stature for height calculations	18	22	24	27	29	30½	33	25
Weight, Pounds	Up to 12.0	12.5 to 16.0	16.5 to 18.0	18.5 to 20.0	20.5 to 24.0	24.5	to 27.6	
Body Weight, lb	up to 5½	6 to 9½	10 to 14½	15 to 18	18½ to 22	22½ to 25	25½ to 27.6	
		8					28½ to 30	
Girth Measurements	All-Table Data in Inches ^A							
Girth Measurements	in.							
Chest	16½	17½	18	18	19½	19	19¾	20½
Chest/Bust	14½	16	17	18	18½	19	19¾	20½
Waist	18	18½	18¾	19	19	19½	20¼	
Waist	15	16½	17½	18½	19	19½	20¼	21
Hip/Seat	17	18	18½	19	20	19½	20¼	21
Hip/Seat	15	16½	17½	18½	19	19½	20¼	21
Vertical Trunk	25	27	28	29	31	33		
Head (circumference)	14¾	15¼	16⅝	17⅝	18⅝	33		
Head Circumference	16.5	½						
Head Circumference 18½	19½	19½						
17	17.5	18.25½	19	20				
Neck Base	8	8½	8¼	20				
Neck Base	8½	8½	8½					
Neck Base 8¾	9	9¼	9½	10				
9¼	9½	10						
Armseye (circumference)	5½	10						
Armseye	6	6½	6⅞	7¼	7⅞	8½		
Armseye 5¾	6	6½	6⅞	7¼	7⅞	8½		
Upper Arm	6¾	5	5½	6¾	6½	6½	6¾	6¾
Upper Arm	4¾	5	5½	5½	5½	5½	5½	6½
Elbow	5½	5½	5¾	6	6½	6½	6½	6¾
Elbow	5½	5½	5¾	6	6½	6½	6½	6¾
Wrist	...	...	...	...	...	4¼	4¾	4¼
Wrist	3¾	3⅞	4	4⅞	4¾	4¼	4¾	4½
Thigh	8¾	9	9¼	9¾	10½	10½	11½	11¾
Thigh	8¾	9	9¼	9¾	10½	10½	11½	11¾
Shoulder Length	2¼	2¾	2¾	2¼	3	3¼	8	8¾
Knee	4¼	4¾	4½	4½	7	7¾	8	8¾
Across Shoulder	6¼	4¾	4½	6½	7	7¾	8	8¾
Calf	4¼	4¾	4½	6½	7	7¾	8	8¾
Ankle	4¼	4¾	4½	4¾	4¾	5	5¼	5½
Total Vertical Trunk Length	23½	24¼	25	27	28	29	31	33
Total Vertical Trunk Length	23½	24¼	25	27	28	29	31	33
Total Crotch Length	120¾	10¾	11½	12¼	12¾	13¾	14½	15¾
Total Crotch Length	10¾	10¾	11½	12¼	12¾	13¾	14½	15¾
Vertical Measurements	in.							
Arm Length	6½	7½	8¼	21	22¾	24¼	26½	¾
Cervical Height	12½	16¾	18¼	21	22¾	24¼	26½	28¼
8½	10¾	11½						
Head and Neck Length	5½	5½						
Cervical to Wrist	10¾	12½	12¾	136¼	6½	¾		
Cervical to Wrist	5¾	6	6½	6¼	6½	6¾		
14¾	16½							
Center Back Waist Length	16½							
5¾	Cervical to Knee	126	6½	7¼	14	8	8¼	
5¾	5¾	6	6½	7¼	7½	8	8¼	
14¾	15¾	5½	5¾	17½	17	7¾	8	8¼
Center Front Waist Length	5½	5½	5¾	6½	7	7¾	8	8¼
Cervical Height	17¼	20	21¾	22¾	25½	284	4¼	4½
Scye Depth	3¾	3¾	3½	3¾	3¾	4	4¼	4½
Head and Neck Length	5¾	6	6½	6¼	6½	15½	16¾	18½
Waist Height	7½	10½	6½	6½	14½	15½	16¾	18½
Cervical to Back Waist	6	6½	6¾	7	7½	8		
Hip Height	5½	8¾	9¾	11¾	12½	8		
Front Waist Length	15¼	16¾						
Front Waist Length 13¾	15¼	16¾						
Crotch Height (inseam)	65	8	9¼	6½	6½	12	13	14½
Crotch Height (inseam)	5	8	9¼	10½	11½	12	13	14½
True Rise Height	2½	2½	3	4	4½	4¾	75½	5½
True Rise Height	2½	2½	3	4	4½	4¾	5½	5½
Knee Height	3½	5¼	5½	6¼	7	7½	8	9
Knee Height	3½	5¼	5½	6¼	7	7½	8	9
Ankle Height	1¼	1¼	1¾	1½	1¾	1¾	1¾	1¾
Cervical to Knee	9	11½	12¾	14¾	15½	16¾	18½	19¼
Scye Depth	3½	35¾	6¾	3¾	4	4¼	4½	4½
Waist to Knee	3½	5¾	6¾	8¼	8½	9¼	10½	11
Waist Height	112	2¼	13½	14¾	15¾	16	203	3¼
Waist to Hip	2	2¼	2½	14¾	15¾	3	3	3¼
Width and Length Measurements	in.							
Waist to Knee	6¼	7½	8½	4	8¾	10	11¼	12¾
Shoulder Length	2½	2½	2½	2¾	2¾	2¾	3	3½
Hip Height	8¾	10¾	11¾	12¾	14¾	168¼	8¾	9¾
Across Back Shoulder	6	6¾	7¼	7¾	8	8¼	8¾	9¾