



## Standard Terminology Relating to Body Dimensions for Apparel Sizing<sup>1</sup>

This standard is issued under the fixed designation D5219; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This standard is a compilation of terminology related to the body dimensions for apparel sizing.

1.2 For definitions of other textile terms, refer to Terminology **D123**.

1.3 The terms are listed in alphabetical order regardless of whether they are horizontal or vertical measurements. The three dimensional Avatars were created by Alvanon Inc. See **Figs. 1-19**.

1.4 The term “height” has been designated for vertical measurements.

1.5 The term “length” has been designated for contour measurements.

### 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

**D123 Terminology Relating to Textiles**

2.2 *ISO Standards*:<sup>3</sup>

**ISO 3635 Size Designation of Clothes, Definitions and Body Measurement Procedures**

**ISO 8559 Garment Construction and Anthropometric Surveys—Body Dimensions**

### 3. Terminology

3.1 *Anatomy*:

**acromion**, *n*—that part of the shoulder blade located at the end of the spine, which articulates with the collarbone. (See also **shoulder joint**.) (See **Fig. 2**.)

**ankle**, *n*—the joint between the foot and the lower leg. (See **Fig. 1**.)

<sup>1</sup> This terminology is under the jurisdiction of ASTM Committee **D13** on Textiles and is the direct responsibility of Subcommittee **D13.55** on Body Measurement for Apparel Sizing.

Current edition approved Feb. 15, 2015. Published April 2015. Originally approved in 1992. Last previous edition approved in 2009 as D5219 – 09<sup>e1</sup>. DOI: 10.1520/D5219-15.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

**apex**, *n*—the greatest protrusion of the breast as seen from the side.

**armpit**, *n*—the hollow under the junction of the arm and the shoulder. (See **Fig. 1**.)

**back-break point**, *n*—the location on the back of the torso where the arm separates from the body (See **Fig. 2**.)

**cervicale**, *n*—the prominent point of the seventh or lowest neck vertebra at the back of the torso.

DISCUSSION—The cervicale is identified by being more prominent when the head is bent forward. However, cervicale height measurements are made only when the head is erect. (See **Fig. 2**.)

**crotch**, *n*—the lowest point of the torso where the legs separate. (See **Fig. 1**.)

**crown**, *n*—the top of the head. (See **Fig. 1**.)

**elbow**, *n*—the joint that articulates between the upper arm and the lower arm. (See **Fig. 1**.)

**forearm**, *n*—The distal region of the arm between the elbow and the wrist. (See **Fig. 1**.)

**front-break point**, *n*—the location on the front of the torso where the arm separates from the torso. (See **Fig. 1**.)

**hip**, *n*—the laterally projecting region formed by the lateral parts of the pelvis and the upper part of the femur together with the flesh covering them. (See **Fig. 1**.)

**knee**, *n*—the joint between the lower and upper leg. (See **Fig. 1**.)

**shoulder joint**, *n*—the juncture of the collarbone and the shoulder blade.

DISCUSSION—The outer end of the collarbone or clavicle pivots against the acromion that in turn pivots against the humerus or upper arm bone in the arm. These bones form the shoulder girdle. (See also **acromion**.) (See **Fig. 2**.)

**waist**, *n*—the part of the torso at the location between the lowest rib and hip identified by bending the torso to the side. (See **Fig. 1**.)

*preferred waist*, *n*—the part of the torso as identified as the waist by the wearer as applicable to bottom garments. (See **Fig. 1**.)

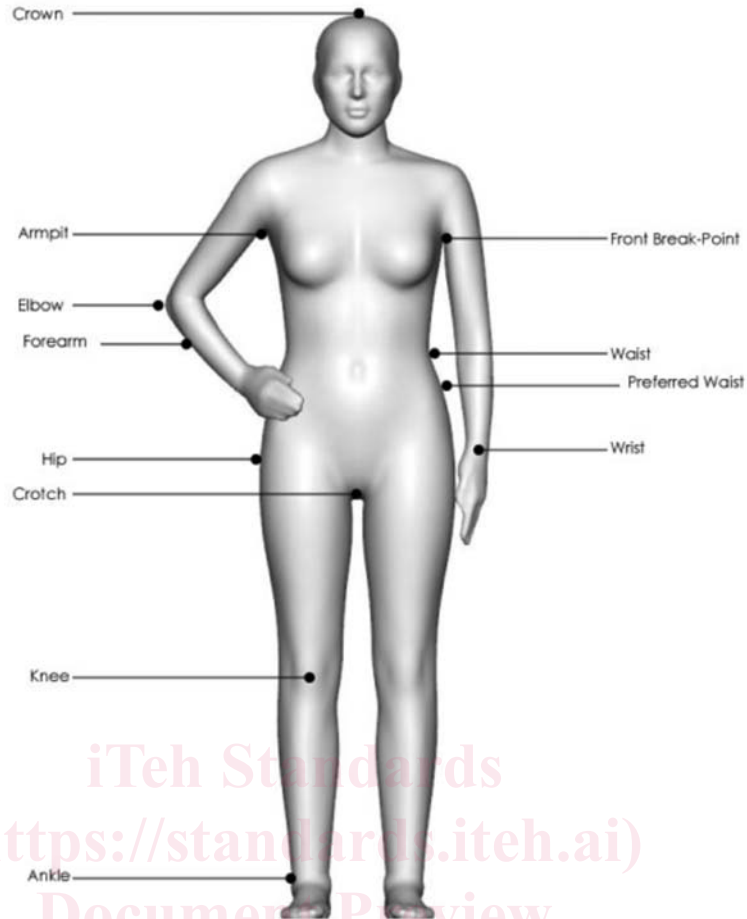


FIG. 1 Anatomy

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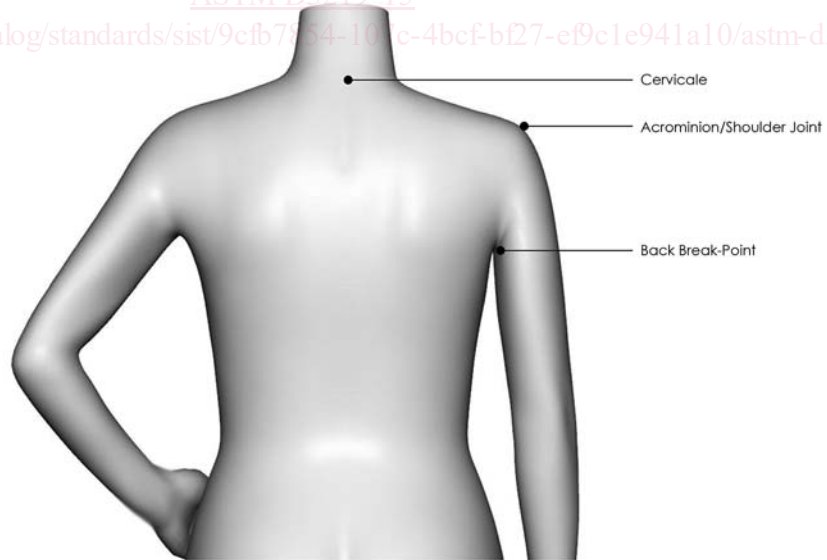


FIG. 2 Upper Back Anatomy

**wrist, n**—the joint that articulates between the end of the lower arm and the hand. (See Fig. 1.)

3.2 Anthropometry:

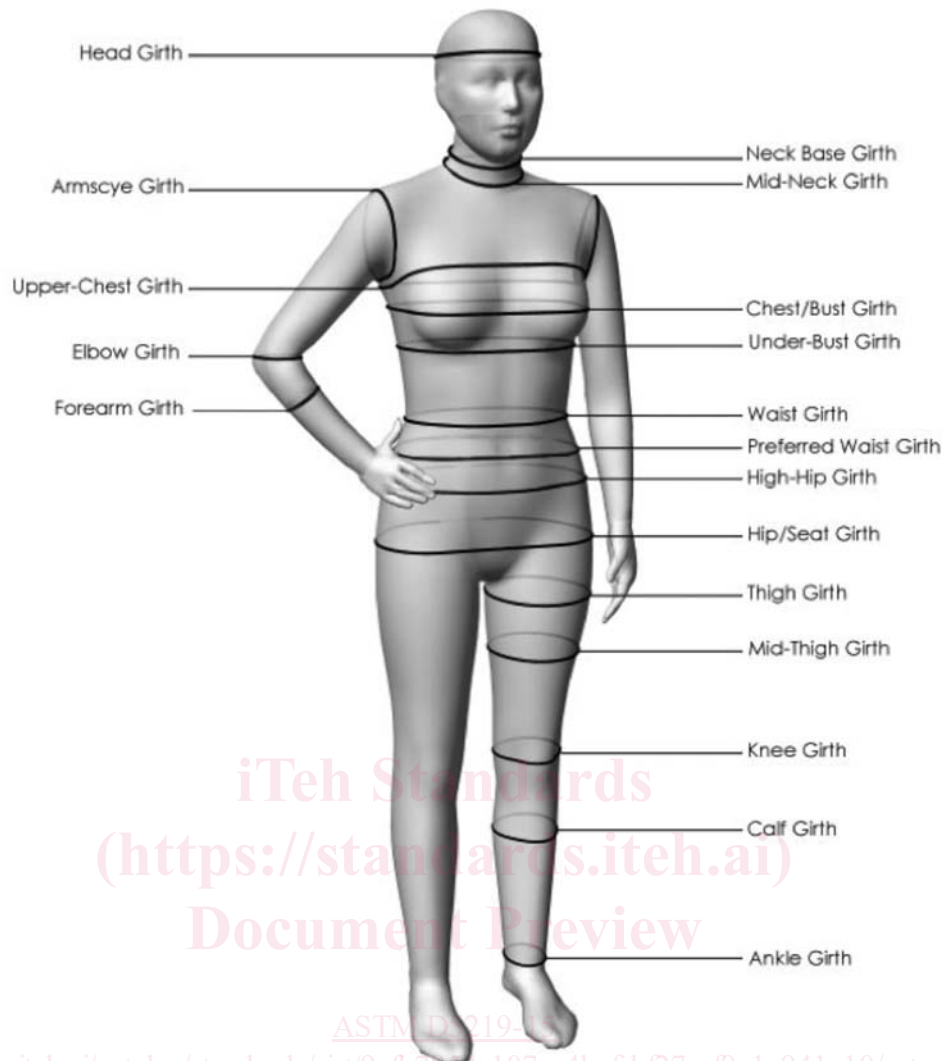


FIG. 3 Body Measurements

**body measurements, *n***—a standardized distance between two specified points on the human anatomy.

DISCUSSION—Body measurements generally are based on standardized values from statistical studies of large populations.

### 3.3 Body Measurements:

**across back shoulder width, *n***—the horizontal distance across the back from the top of one shoulder joint to the top of the other shoulder joint, taken with the arms down. (See Fig. 11.)

**across front shoulder width, *n***—the horizontal distance across the front from the top of one shoulder joint to the top of the other shoulder joint, taken with the arms down. (See Fig. 12.)

**ankle girth, *n***—the maximum horizontal circumference of the ankle, taken over the greatest prominence of the anklebones. (See Fig. 3.)

**ankle height, *n***—the vertical distance from the prominence of the outer ankle bone to the floor, taken with subject standing and without shoes. (See Fig. 7.)

*ankle height (infant special case), *n**— the straight distance from the prominence of the outer ankle bone to the soles of the feet, taken with subject lying down flat with legs extended and the foot positioned at 1.57 rad (90°) to the leg.

**arm length, *n***—the distance from the top of the shoulder joint along the outside of the arm over the elbow to the prominent wrist bone, taken with the arm bent (1.57 rad or 90°) and the hand placed on the hip. (See Fig. 15.)

**armscye girth, *n***—the circumference taken 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. (See Fig. 3.)

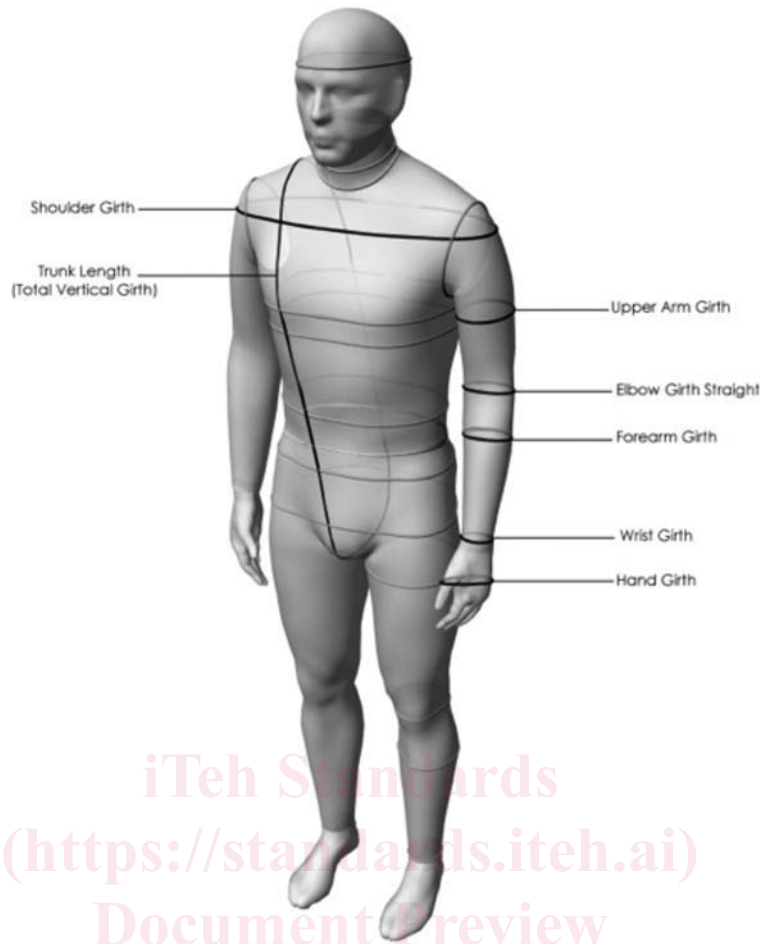


FIG. 4 Upper Body Measurements

[ASTM D5219-15](https://standards.iteh.ai/catalog/standards/sist/9c-7854-107c-4bc5b27-0c1c-941a10/astm-d5219-15)

**back width,  $n$** —the horizontal distance across the back from back break-point to back break-point over the shoulder blades, taken with the arms down. (See Fig. 11.)

**body weight,  $n$** —the weight as measured on a calibrated scale taken with the subject in undergarments.

**calf girth,  $n$** —the maximum horizontal circumference of the lower leg, taken between the knee and the ankle. (See Fig. 3.)

**center back waist length,  $n$** —the distance from the cervicale to the center back waist level, taken along the spine (contour). (See Fig. 9.)

**center front waist length,  $n$** —the distance from the center front neck base line to the center front waist level (contour). (See Fig. 8.)

**cervicale height,  $n$** —the vertical distance from the cervicale to the floor, taken with subject standing and without shoes. (See Fig. 7.)

*cervicale height (infant special case),  $n$* —the straight distance from the cervicale to the soles of the feet, taken with subject lying down flat with legs extended and foot positioned at 1.57 rad (90°) to the leg.

**cervicale to crotch height,  $n$** —the vertical distance from the prominent point of the seventh or lowest neck vertebra at the back of the torso to the lowest point of the torso where the legs separate. (See Fig. 7.)

**cervicale to knee height,  $n$** —the vertical distance from the cervicale to a point level with the midpoint of the back of the knee (or crease). (See Fig. 7.)

*cervicale to knee height (infant special case),  $n$* —the straight distance from the cervicale to a point level with the midpoint of the back of the knee (or crease), taken with subject lying down flat with legs extended.

**cervicale to wrist length,  $n$** —the distance from the cervicale over the top of the shoulder joint, along the outside of the arm, over the elbow to the prominent wrist bone, taken with the arm bent 1.57 rad (90°) and the hand placed on the hip. (See Fig. 13.)

**chest/bust point to bust point (halter),  $n$** —the horizontal distance from chest/bust apex around the back of the neck to bust apex, taken with the arms down. (See Fig. 10.)

**chest/bust point to bust point,  $n$** —the horizontal distance from chest/bust apex to chest/bust apex, taken with the arms down. (See Fig. 10.)

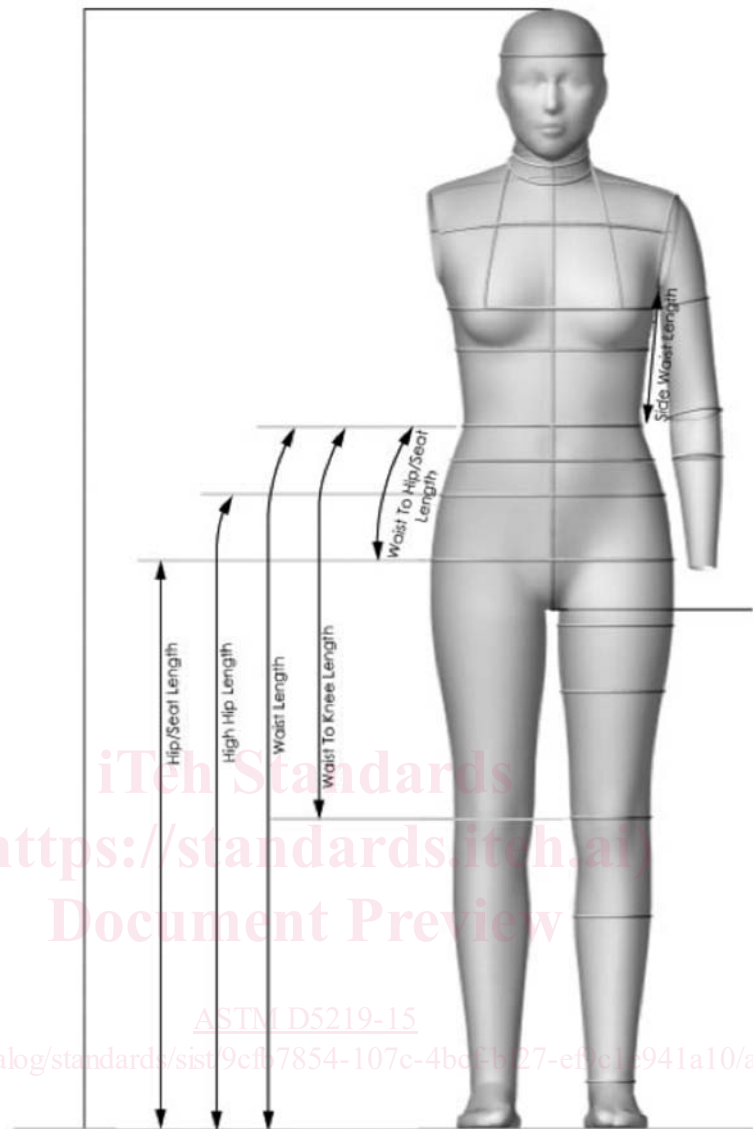


FIG. 5 Contour Body Measurements

**chest/bust girth**,  $n$ —the horizontal circumference around the torso, taken under the arms and across the fullest part of the chest/bust apex including the lower portion of the shoulder blades. (See Fig. 3.)

**crotch height**,  $n$ —the vertical distance from the midpoint of the crotch to the floor, taken with the subject standing and without shoes. (See Fig. 6.)

*crotch height (infant special case)*,  $n$ —the straight distance from the midpoint of the crotch to the soles of the feet, taken with subject lying down flat with legs extended and foot positioned at 1.57 rad (90°) to the leg.

**crotch length (total)**,  $n$ —the distance from waist level at the center front, through the crotch and to the waist level at the center back, avoiding constriction at the crotch. (See Fig. 16.)

**elbow girth**,  $n$ —the maximum circumference of the elbow, taken over the outer prominence of the elbow bone with the arm bent 1.57 rad (90°). (See Fig. 3.)

**foot length**,  $n$ —the straight distance from the prominence of the back of the heel to the prominence of the longest toe, taken with the foot on a flat surface without shoes (use stable, flat ruler). (See Fig. 19.)

**foot width**,  $n$ —the straight distance from one side of the foot to the other side at the widest part, taken with the subject standing and without shoes (use stable, flat ruler). (See Fig. 19.)

**forearm girth**,  $n$ —the maximum circumference of the arm, taken between the elbow and the wrist. (See Fig. 3.)

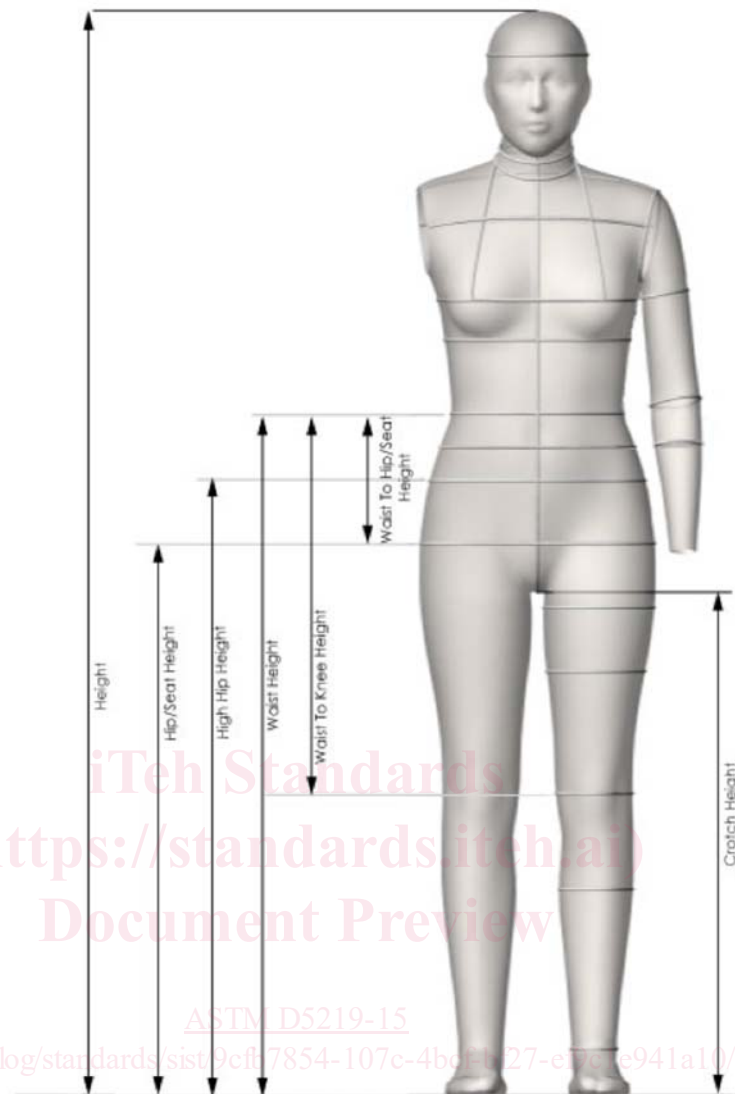


FIG. 6 Vertical Body Measurements

**front chest width,  $n$** —the horizontal distance across the chest from front break-point to front break-point, taken with the arms down. (See Fig. 10.)

**hand girth,  $n$** —the maximum circumference of the hand around the knuckles excluding the thumb, taken with the fingers together. (See Fig. 18.)

**hand length,  $n$** —the straight distance from the prominence of the longest finger to the inner wrist bone, taken across the palm of the hand with fingers together and palm flat (use a stable, flat ruler). (See Fig. 17.)

**hand width,  $n$** —the maximum width across the palm of the hand excluding the thumb, taken with fingers together and palm flat (use a stable, flat ruler). (See Fig. 17.)

**head and neck height,  $n$** —the vertical distance from the crown of the head to the cervicale taken with the head erect and the neck unbent. (See Fig. 7.)

**head and neck length (infant special case),  $n$** —the distance from the crown of the head to the cervicale (contour), taken with the head erect and the neck unbent, with subject lying down flat with legs extended.

**head girth,  $n$** —the maximum horizontal circumference of the head above the ears. (See Fig. 3.)

**height,  $n$** —the vertical distance from the crown of the head to the floor, taken with subject standing and without shoes. (See Fig. 6.)

**height (infant special case),  $n$** —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.

**high-hip girth,  $n$** —the maximum horizontal circumference around the torso, taken at a specified distance below the waist level including the abdominal extension. (See Fig. 3.)