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Garment construction and anthropometric surveys — Body dimensions

*Confection des vêtements et relevés anthropométriques — Mesures du corps
humain*



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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

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Garment construction and anthropometric surveys — Body dimensions

0 Introduction

A prerequisite for conducting anthropometric surveys and for preparing patterns for garment manufacturing purposes is a list of appropriate body dimensions which are adequately defined.

This International Standard is intended as a reference document comprising definitions for and the location of body dimensions used for garment construction.

1 Scope and field of application

This International Standard defines the location of body dimensions taken on anthropometric surveys and for the preparation of garment patterns and garment stands, and specifies a standard procedure for measuring the body.

The location and taking of body dimensions appropriate to all items of clothing and accessories for all population groups are covered in this International Standard.

The use of calipers and horizontally orientated anthropometers to determine width dimensions is excluded.

Not all the body dimensions defined in this International Standard are always necessary during anthropometric surveys or in the manufacture of clothes.

2 Definitions

For the purposes of this International Standard, the definitions are presented in a natural sequence of measurement comprising the following three elements:

- horizontal measurements (including girth);
- vertical measurements;
- other measurements.

The order of the vertical dimensions groups, firstly, those dimensions measured using the measuring stand and, secondly, those dimensions measured using a tape-measure held against the body.

NOTE — The apparatus and measurement methods referred to in the definitions are specified in clause 3.

2.1 Horizontal dimensions

2.1.1 head girth: The maximum horizontal girth of the head measured above the ears (see figure 1).

2.1.2 neck girth: The girth of the neck measured using the tape-measure passed round below the Adam's apple and at the level of the 7th cervical vertebra (see figure 1).

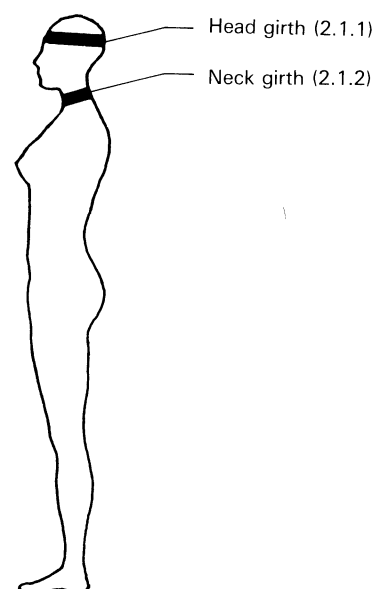


Figure 1

2.1.3 neck-base girth: The girth of the base of the neck measured using the chainette which passes over the base of the 7th cervical vertebra, the neck shoulder points and the medial superior borders of the left and right clavicles (see figure 2).

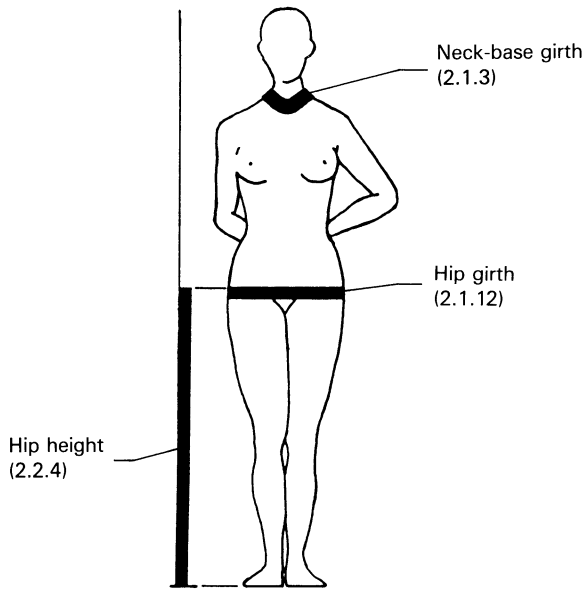


Figure 2

2.1.4 shoulder length: Distance from the base of the side of the neck (neck point) to the acromion extremity, measured with the arms hanging naturally (see figure 3).

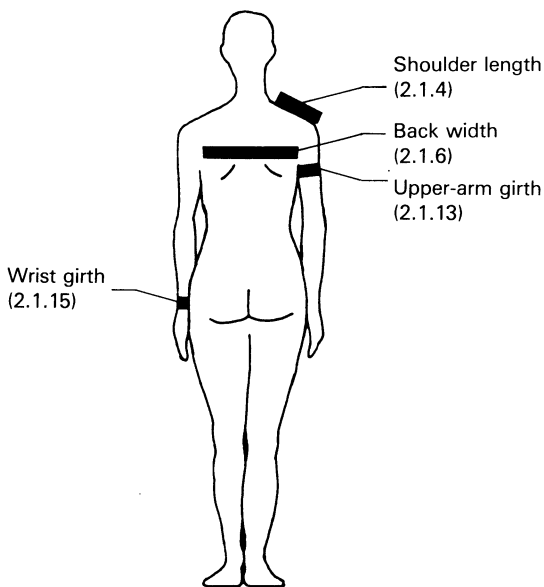


Figure 3

2.1.5 shoulder width: The horizontal distance between the acromion extremities, measured with the arms hanging naturally (see figure 4).

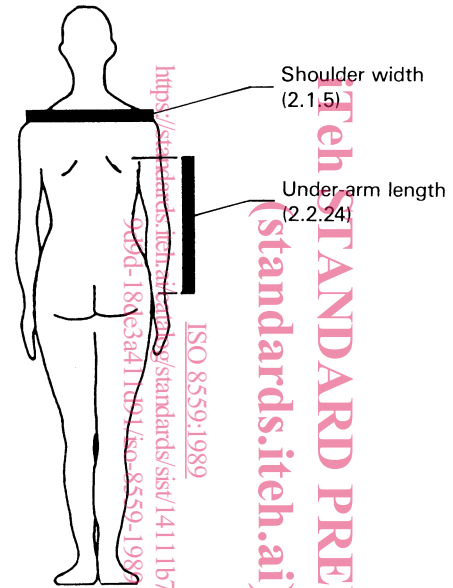


Figure 4

2.1.6 back width: The horizontal distance across the back measured half-way between the upper and lower scye levels (see figure 3).

2.1.7 chest girth: The maximum horizontal girth measured during normal breathing with the subject standing upright and the tape-measure passed over the shoulder blades (scapulae), under the armpits (axillae), and across the chest nipples (see figure 5).

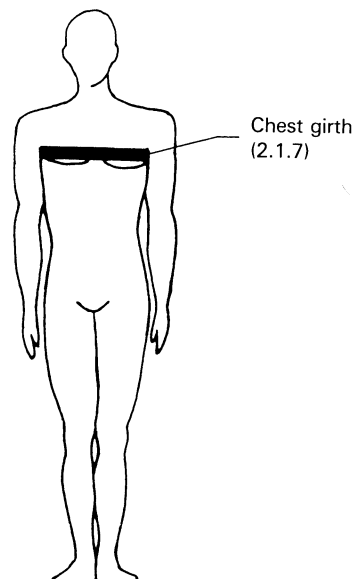


Figure 5

2.1.8 bust girth: The maximum horizontal girth measured during normal breathing with the subject standing upright and the tape-measure passed over the shoulder blades (scapulae), under the armpits (axillae), and across the nipples (see figure 6).

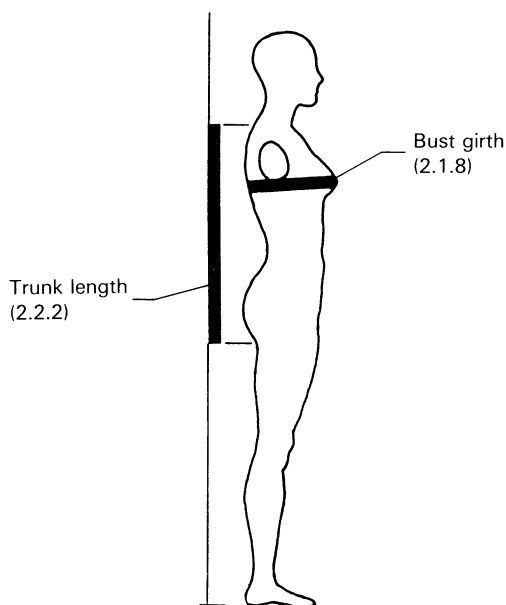


Figure 6

2.1.9 bust width: The horizontal distance between the nipples (see figure 7).

2.1.10 underbust girth: The horizontal girth of the body just below the breasts (see figure 7).

2.1.11 waist girth: The girth of the natural waistline between the top of the hip bones (iliac crests) and the lower ribs, measured with the subject breathing normally and standing upright with the abdomen relaxed (see figure 7).

2.1.12 hip girth: The horizontal girth measured round the buttocks at the level of the greatest lateral trochanteric projections, with the subject standing upright (see figure 7).

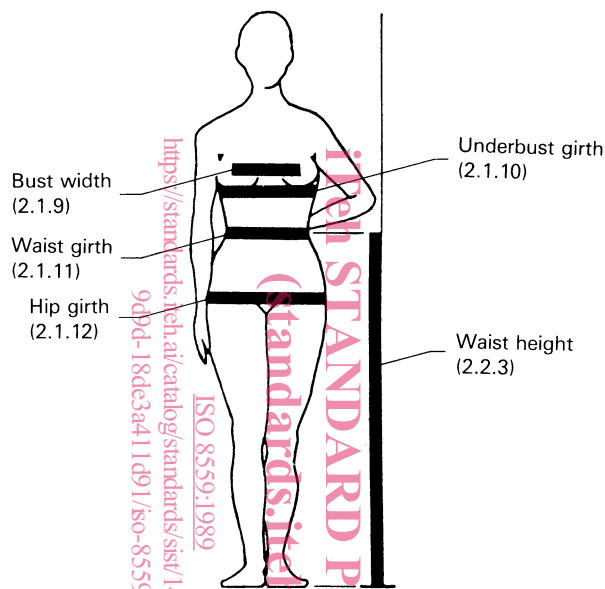


Figure 7

2.1.13 upper-arm girth: The maximum girth of the upper arm at lowest scye level, measured with the subject standing upright with arms hanging naturally (see figure 3).

2.1.14 elbow girth: The girth of the elbow measured with the subject standing upright, the arm bent at approximately 90°, and the hand and fingers facing forward (see figure 8).

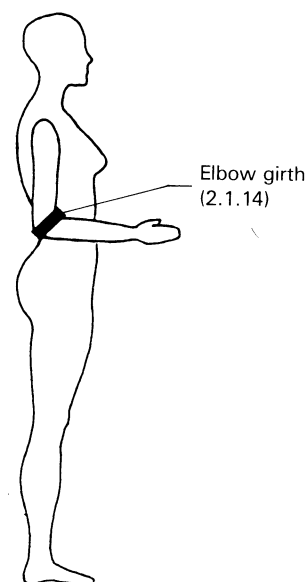


Figure 8

2.1.15 wrist girth: The girth over the wrist-bone measured with the arms hanging naturally (see figure 3).

2.1.16 hand girth: The maximum girth over the knuckles (metacarpals) of the open right hand, with the fingers together and the thumb excluded (see figure 9).

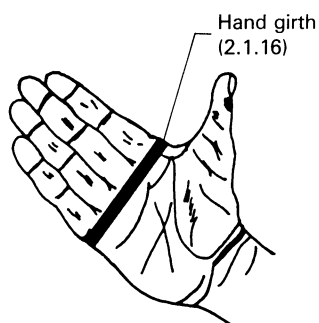


Figure 9

2.1.17 hand length: The distance, measured with the lower arm in line with the open hand, with the fingers together and the thumb extended, between the tip of the middle finger and the first crease at the base of the right hand (see figure 10).

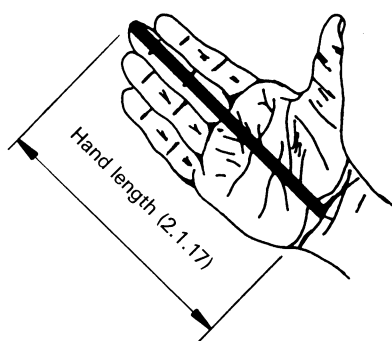


Figure 10

2.1.18 thigh girth: The horizontal girth measured, without constriction, at the highest thigh position, with the subject standing upright (see figure 11).

2.1.19 mid-thigh girth: The horizontal circumference of the thigh measured, without constriction, midway between the hip level and the knee, with the subject standing upright (see figure 11).

2.1.20 knee girth: The circumference of the knee measured with the subject standing upright and the upper border of the tape-measure at the tibial level (see figure 11).

2.1.21 lower knee girth: Girth measurement below the right knee-cap, measured horizontally, with the subject standing upright (see figure 11).

2.1.22 calf girth: The maximum girth of the calf measured with the subject standing upright, legs slightly apart, and with the body mass equally distributed on both legs (see figure 11).

2.1.23 minimum leg girth: The minimum girth of the lower leg measured horizontally just above the ankle with the subject standing upright (see figure 11).

2.1.24 ankle girth: The circumference of the leg measured at the level of the centre of the ankle bone with the subject standing upright (see figure 11).

2.1.25 foot length: The horizontal distance between perpendiculars in contact with the end of the most prominent toe and the most prominent part of the heel, measured with the subject barefoot and with sufficient pressure on the sole to straighten the foot (see figure 11).

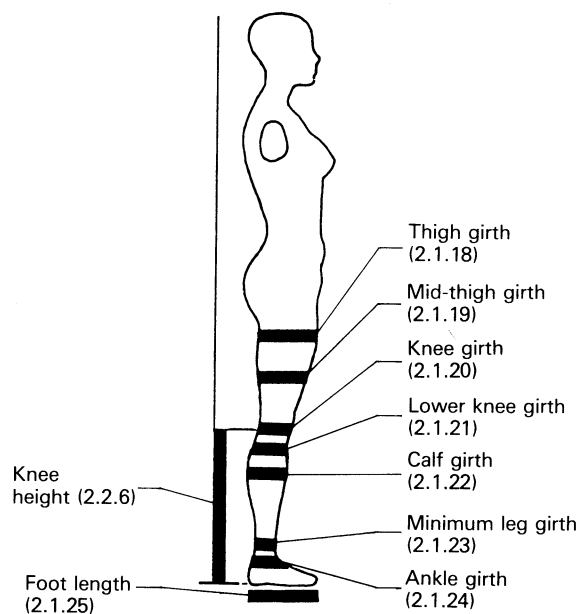


Figure 11

2.1.26 height (for infants not yet able to stand upright) : The length of the body measured in a straight line from the crown of the head to the heel, with the subject lying on a table.

2.2 Vertical dimensions

2.2.1 height (for subjects other than infants): The vertical distance between the crown of the head and the ground, measured using the measuring stand (anthropometer), with the subject standing upright without shoes and with the feet together (see figure 12).

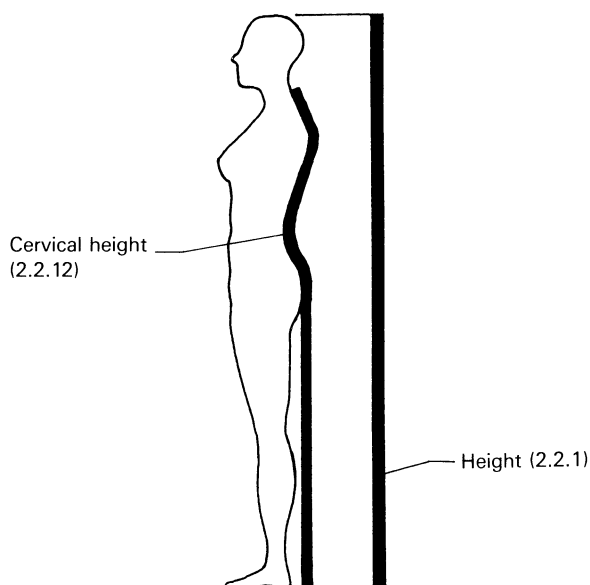


Figure 12

2.2.2 trunk length: The distance from the 7th cervical vertebra to the crotch level, measured using the measuring stand (anthropometer), with the subject standing upright (see figure 6).

2.2.3 waist height: The vertical distance from the natural waist level to the ground, measured using the measuring stand (anthropometer) at the side of the body, with the subject standing upright (see figure 7).

2.2.4 hip height: The vertical distance from the trochanteric projections to the ground, measured using the measuring stand (anthropometer) with the subject standing upright (see figure 2).

2.2.5 body rise: The vertical distance, measured using the measuring stand (anthropometer), between the waist level and the crotch level (see figure 13).

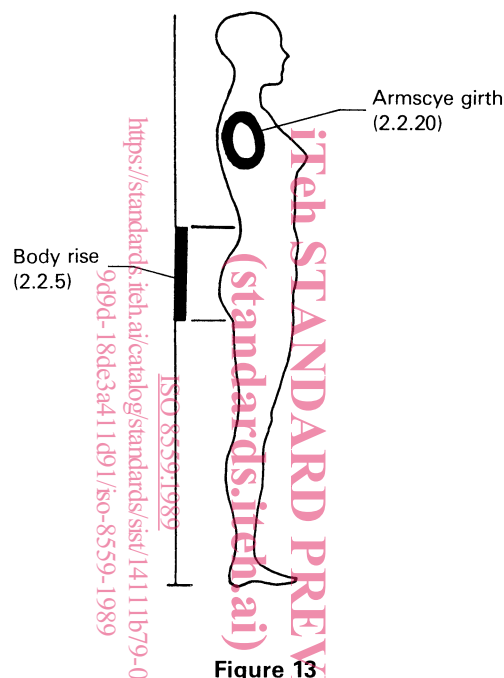


Figure 13

2.2.6 knee height: The vertical distance, measured using the measuring stand (anthropometer), from the knee (tibial) level to the ground (see figure 11).

2.2.7 ankle height: The vertical distance, measured using the measuring stand (anthropometer), from the outer ankle bone to the ground (see figure 14).

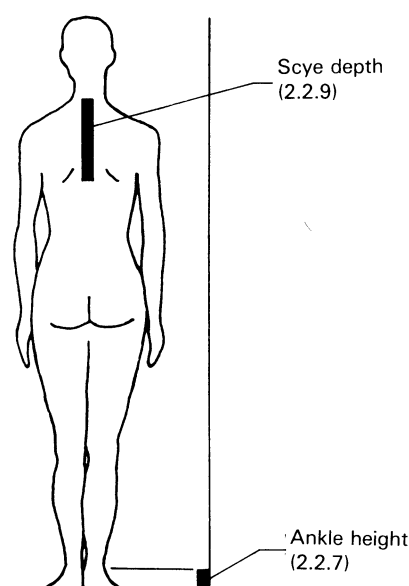


Figure 14

2.2.8 cervical height (sitting): The vertical distance, measured using the measuring stand (anthropometer), from the 7th cervical vertebra to the top of the table with the subject sitting erect on the table (see figure 15).

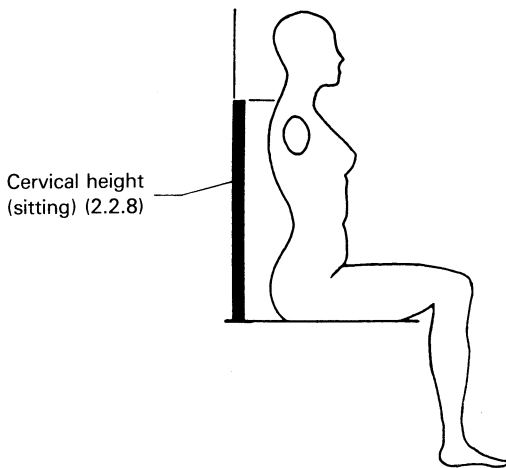


Figure 15

2.2.9 scye depth: The distance, measured vertically on the body using the tape-measure, from the 7th cervical vertebra to the upper edge of a tape passed horizontally under the armpits (see figure 14).

2.2.10 back waist length (cervical to waist): The distance, measured using the tape-measure, from the 7th cervical vertebra, following the contour of the spinal column, to the waist (see figure 16).

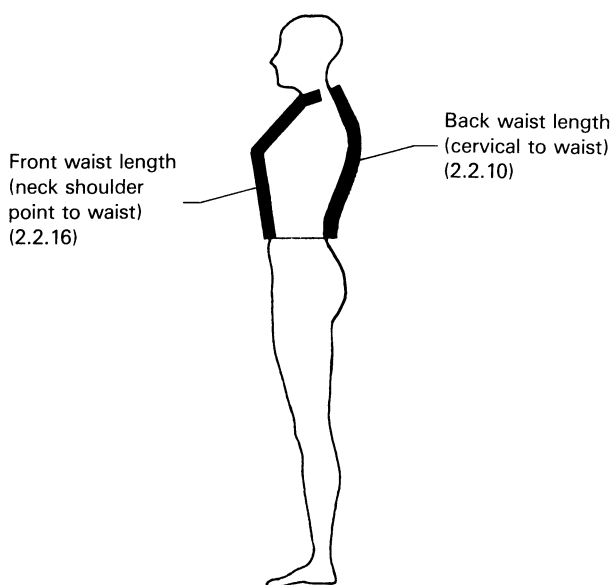


Figure 16

2.2.11 cervical to knee hollow: The distance from the 7th cervical vertebra following the rear contour of the spinal column to the level of the hips and ending vertically at the level of the knee hollow (see figure 17).

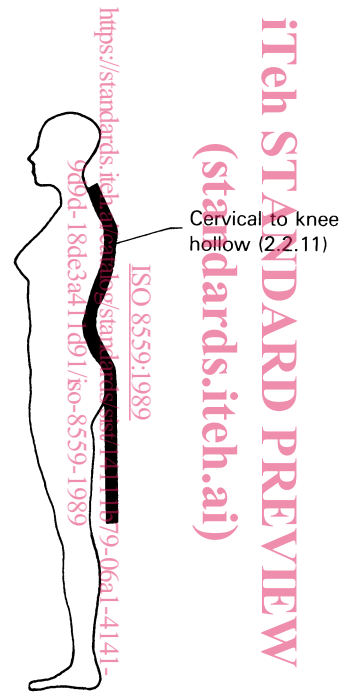


Figure 17

2.2.12 cervical height: The distance, measured using the tape-measure, from the 7th cervical vertebra, following the rear contour of the spinal column to the level of the hips, then vertically to the ground (see figure 12).

2.2.13 cervical to breast point: The distance from the 7th cervical vertebra, round the base of the neck, to the nipple (see figure 18).

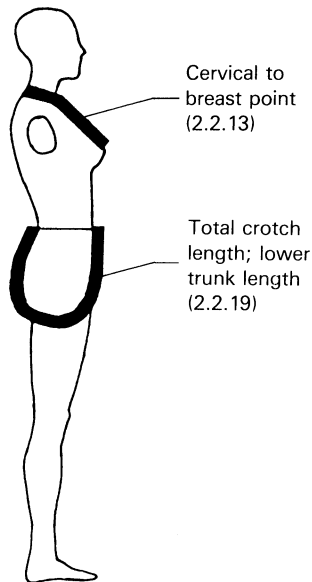


Figure 18

2.2.14 cervical to waist (anterior): The distance from the 7th cervical vertebra, around the base of the neck (neckpoint) and over the nipple, then vertically to the waist (see figure 19).

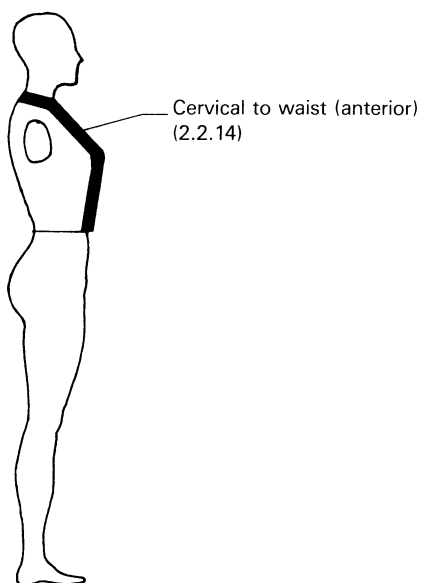


Figure 19

2.2.15 neck shoulder point to breast point: The distance from the neck shoulder point to the breast point (see figure 20).

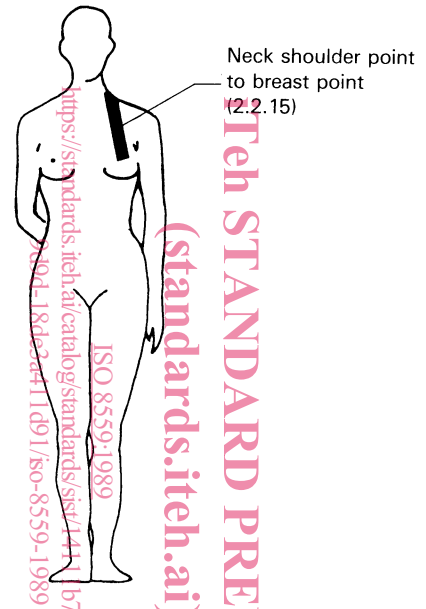


Figure 20

2.2.16 front waist length (neck shoulder point to waist): The distance from the neck shoulder point, over the nipple, then vertically straight to the front waist (see figure 16).

2.2.17 waist to hips: The distance along the side of the body from the natural waist level to the hips at the level of greatest lateral trochanteric projection following the hip contour (see figure 21).

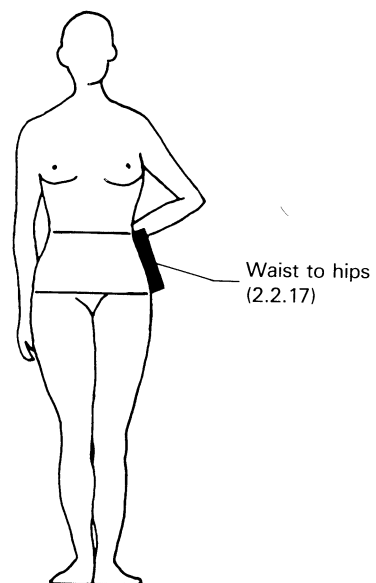


Figure 21