

Anthropometric Procedures Video: Limb Length

Music

To reliably measure circumferences and skinfolds on the limbs, the upper arm and leg lengths must first be measured and their respective midpoints located and marked.

For upper leg length, the subject sits on the measuring table. The lower part of the right leg hangs freely over the edge of the table and the right knee is positioned at a 90 degree angle.

The small sliding caliper is positioned firmly against the distal end of the femur on both sides of the patella as if one were to measure the breadth of the patella.

The horizontal bar of the caliper should be touching the anterior surface of the thigh.

It's at the lower border of the horizontal bar of the caliper, proximal to the patella, that a line is drawn with a wax-based cosmetic pencil.

The zero end of a steel measuring tape is placed at the inguinal crease, just below the anterior superior iliac spine.

The measuring tape is then extended along the anterior midline to the mark where the line was previously made just proximal to the patella.

To check for proper location of the zero end, the technician should firmly place the middle finger over the measuring tape at this site and instruct the subject to raise the thigh slightly.

If positioned correctly a tightening of the muscle tendon will be clearly felt.

To obtain the upper leg length, the reading is taken from the measuring tape to the nearest millimeter.

This distance is divided by two, which indicates the midpoint of the thigh.

A mark is made on the skin at this midpoint before the measuring tape is removed.

This mark is then crossed with another mark that extends on a line from the superior anterior iliac spine to the middle of the patella.

This point defines the site at which both the mid-thigh circumference and mid-thigh skinfold are measured.

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To locate the middle of the upper arm, the subject stands with the right arm flexed 90 degrees at the elbow.

The palm faces up and the fingertips point straight ahead.

The technician stands behind the subject.

The uppermost edge of the posterior border of the acromial process is located on the right scapula and a horizontal line is drawn at this point.

The zero end of a steel measuring tape is held on this mark.

The tape is extended down the midline on the posterior surface of the arm to the tip of the olecranon process at the elbow.

The distance between the mark at the acromion and the tip of the olecranon is divided by two.

A horizontal mark is made at the midpoint on the posterior aspect of the arm before the measuring tape is removed.

This mark is then crossed with another mark that lies in a plane extended from the acromion to the olecranon.

This point defines the site at which both the mid upper arm circumference and the triceps skinfold are measured.

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Knee height is measured only on adults aged 60 years or older.

The person sits upright on the measuring table with both legs hanging freely over the edge of the table.

The technician places the fixed blade of the large sliding caliper under the heel of the right foot just below the lateral malleolus of the fibula.

The right foot is held in the palm of the technician's right hand.

The technician raises the subject's leg slightly so the knee and the ankle are both positioned in a 90 degree angle.

The moveable blade of the caliper is placed on the anterior surface of the right thigh above the condyles of the femur approximately three to four centimeters proximal to the line previously marked on the upper border of the patella.

The shaft of the caliper is held parallel to the shaft of the tibia. The caliper shaft passes over the lateral malleolus of the fibula at the ankle and just posterior to the head of the fibula at the knee.

Firm but gentle pressure is applied to the caliper blades to compress the soft tissues on the heel and thigh.

The reading is recorded in centimeters to the nearest millimeter.