



Data Collection Worksheet

Please Note: The Data Collection Worksheet (DCW) is a tool to aid integration of a PhenX protocol into a study. The PhenX DCW is not designed to be a data collection instrument. Investigators will need to decide the best way to collect data for the PhenX protocol in their study. Variables captured in the DCW, along with variable names and unique PhenX variable identifiers, are included in the PhenX Data Dictionary (DD) files.

Body Composition - Triceps Skinfold Thickness

Triceps Skinfold: The triceps skinfold is measured at the mid-point of the upper arm. The procedures for making this mark are explained in Upper Arm Length. Follow the procedures after that to perform the triceps skinfold measure.

Upper Arm Length

1. Position the participant: Direct the participant to turn away from you. Ask him or her to stand upright with weight evenly distributed on both feet, the right arm bent 90° at the elbow, and the right palm facing up. Demonstrate the correct position if necessary.
2. Mark the measurement site: Locate the end of the spine of the right scapula by following the scapula out to the arm until it makes a sharp V-turn to the front of the body. Using the cosmetic pencil, make a horizontal line on the uppermost edge of the posterior border of the spine extending from the acromion process (see Exhibit 1).
3. Take the measurement: Hold the zero end of the measuring tape at this mark and extend the tape down the center of the posterior surface of the arm to the tip of the olecranon process, the bony part of the mid-elbow (Exhibit 2). Take the measurement to the nearest 0.1 cm.
4. Divide the measure in half to calculate the mid-point of the measured length. Make a horizontal mark at the mid-point and cross this mark with a perpendicular line (Exhibit 4). **IMPORTANT:** The vertical line must be centered on the posterior surface of the arm.
5. After marking the arm, the participant can relax his or her arm.

Exhibit 1.

Marking spine extending from acromion process



Exhibit 2.

Correct tape placement for upper arm length



Exhibit 3.

Incorrect tape placement for upper arm length



Exhibit 4.

Marking upper arm length midpoint



1. Position the participant: Ask the participant to turn so that you stand behind his or her right side. Have the participant stand upright with weight evenly distributed on both feet, the shoulders relaxed, and the arms hanging loosely at the sides. Flexing or tightening the arm muscles when the measurement is made will yield an inaccurate measurement.
2. Grasp the skinfold: Using your thumb and index finger, grasp a fold of skin and subcutaneous adipose tissue approximately 2.0 cm above the mid-arm circumference mark. If you have difficulty separating the skinfold from the triceps muscle, start at the elbow where the tissue tends to be looser and work your way up to the mark. Ensure that the skinfold consists of a double thickness and sits parallel to the long axis of the arm.
3. Position the caliper: Holding the skinfold 2.0 cm above the circumference mark, place the tips of the caliper jaws over the complete skinfold. Ensure that the mark remains centered between the tips and that the jaws sit perpendicular to the length of the skinfold. Exhibit 5 demonstrates the correct placement of the caliper for this measurement.
4. Take the measurement: Continue to hold the skinfold in place and release the caliper handle to exert full tension on the skinfold. Wait 3 seconds for the needle on the caliper dial to settle

on an accurate measurement. Read the thickness to the nearest 0.1 mm.

5. Record the result. Remove the caliper jaws first and then release the skinfold.

Exhibit 5. Location of triceps skinfold



Protocol source: <https://www.phenxtoolkit.org/protocols/view/20306>