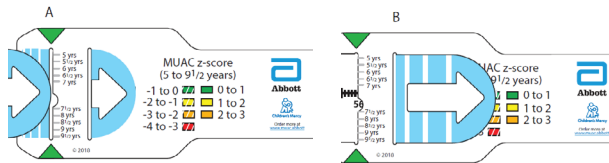# MUAC Z-SCORE TAPE
INSTRUCTIONS FOR HEALTHCARE PROFESSIONALS

Mid-Upper Arm Circumference (MUAC) measures muscle and fat mass and is an important indicator of nutritional status. The MUAC *z*-score tape is a valuable tool that helps healthcare providers assess nutritional status in both infants and children. You can measure MUAC in three simple steps.
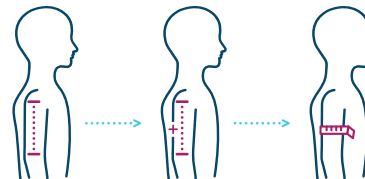
STEP 1: PREPARE YOUR EQUIPMENT AND CREATE A LOOP

Your MUAC z-score tapes may arrive individually or in a set containing one 2-sided infant tool and one 2-sided child tool. If it comes as a set, you'll want to separate the individual tapes. Locate the end of the tape and insert the end into slit "A" then through slit "B."

Note: Your MUAC z-score tapes are for multi-use. Discontinue use if degradation occurs.
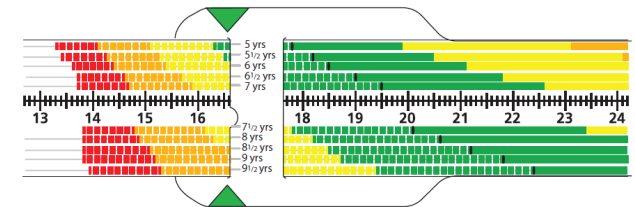

STEP 2: IDENTIFY THE MIDPOINT OF THE UPPER ARM

The selected arm should be straight and hanging down at the patient's side with the elbow fully extended before measuring. The midpoint of the arm is located between the acromion and the olecranon process (or between the shoulder cap and elbow). The centimeter markings on the z-score tape can be used as a ruler to assist with finding the midpoint. Once identified, slide the loop you created up to the midpoint of the extended arm. Pull the tail end of the tape until it is snug but does not compress the skin.

STEP 3: RECORD YOUR FINDINGS

Find and record the MUAC measurement in centimeters as found between the two green arrows while using the age of the child to select the proper measurement. Note both the color and the pattern of the line (solid or hashed).

REFERENCE TABLE FOR *Z*-SCORE RANGES ON TAPE

Color/Pattern Key		MUAC Z-score Range	Risk Classification
	Solid Orange	2 to 3	Moderate Overnutrition
	Solid Yellow	1 to 2	Mild Overnutrition
	Solid Green	0 to 1	Normal
	Hashed Green	-1 to 0	Normal
	Hashed Yellow	-2 to -1	Mild Undernutrition
	Hashed Orange	-3 to -2	Moderate Undernutrition
	Hashed Red	-4 to -3	Severe Undernutrition

PRACTICE USING THE *Z*-SCORE TOOL

In this example, the MUAC is 16.6 cm. The nutritional risk category is determined by using the age of the child to review the proper line. Here are three examples for this measurement.

Age (yrs.)	MUAC Z-score Range	Risk Classificaton
5	-1 to 0	Normal
7	-2 to -1	Mild Undernutrition
9	-3 to -2	Moderate Undernutrition

FOR MORE MUAC RELATED EDUCATION, VISIT ANHI.ORG/MUAC.

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