

Annex A

Implementing Guidance for Waist to Height Ratio Measurement Procedures for the ABCP

A. General

This guidance provides the standard method for measuring the waist to height ratio.

Standard Methods for using the Waist to Height Ratio (WHtR) Health Risk Assessment Tool Measurement for the ABCP

B-1. General Measurement Procedures

- a. Height:* The height will be measured with the Soldier in socks without shoes. The Soldier will stand on a flat surface with the head held horizontal, looking directly forward with the line of vision horizontal and the chin parallel to the floor. The body will be straight but not rigid, similar to the position of attention. When measuring, the Soldier's height is rounded to the nearest half inch.
- b. Waist Circumference:* Although circumferences may be looked upon by untrained personnel as easy measures, they can give erroneous results if proper technique is not followed. The individual taking the measurements must have a thorough understanding of the appropriate body landmarks and measurement techniques. Unit commanders will require that personnel taking the measurements have read the instructions regarding technique and location and obtained adequate practice before official WHtR measurement determinations are made. Individuals taking the measurements will be Army non-commissioned officers (NCO) or higher, or DA civilians trained in waist circumference methodology. Two members will be utilized in the taking of measurements; one to place the tape measure and determine measurements and the other to assure proper placement and tension of the tape, as well as to record the measurement on the DA Form 5500. The member recording the measurements is responsible for signing the DA Form 5500 in the "prepared by" block. Soldiers should be measured by trained individuals of the same sex. If a trained individual of the same sex is not available to conduct the measurements, a female Soldier will be present when a male measures a female, and a male Soldier will be present when a female measures a male. The two will work with the Soldier between them so the tape is clearly visible from all sides. Take waist circumference measurements three times and record down to the nearest half inch. If any one of the three closest measurements differs by more than 1 inch from the other two, take an additional measurement and compute a mathematical average of the three measurements with the least difference to the nearest half inch and record this value.
- c. Uniform:* Soldiers will be measured for WHtR in socks and standard Army physical fitness uniform trunks and T-shirt. Undergarments that may serve to bind the abdomen, are not authorized for wear when a Soldier is being measured for the WHtR. This includes but is not limited to girdle-like undergarments.
- d. Measurement:* When measuring waist circumference, compression of the soft tissue requires constant attention. The tape will be applied so it makes contact with the skin and conforms to the body surface being measured. It will not compress the underlying soft tissues. All measurements are made in the horizontal plane (parallel to the floor), unless indicated otherwise. Measurements of the waist will always be rounded down to the nearest 0.5 inch.

- (1) Measurements will be conducted by a Soldier of the same sex. In the event a same-sex Soldier is unavailable to conduct the measurement, an opposite-sex Soldier may take the measurement, provided a same-sex Soldier is present to observe and verify correct procedural standards.
 - (2) During the measurement, the Soldier will stand with their arms hanging naturally at their sides. Removal of the shirt is at the Soldier's discretion.
 - (3) Female Soldiers may fold the bottom of the t-shirt upward and tuck it securely into the lower band of their undergarment (bra).
 - (4) All Soldiers may expose the abdomen for waist measurement by lifting the shirt and securing it at the neckline/ t-shirt collar. The Soldier may gather the bottom of the t-shirt, pull it upward toward the neck, and secure the fabric inside the collar. This ensures the material will not interfere with the tape measure.
- e. **Equipment:*** The tape measure will be made of a non-stretchable material, preferably fiberglass; cloth or steel tapes are unacceptable. Cloth measuring tapes will stretch with usage and most steel tapes do not conform to body surfaces. The tape measure will be verified, that is, compared with a yardstick or a metal ruler to ensure validity. This is done by aligning the fiberglass tape measure with the quarter-inch markings on the ruler. The markings will match those on the ruler; if not, do not use that tape measure. The tape will be one-quarter to one-half inch wide (not exceeding one-half inch) and a minimum of 5 feet in length. A retractable fiberglass tape is the best type for measuring all areas. *Note.* Tapes are currently available through the Army Supply System (Federal stock number 5210-01-238-8103 or national stock number 8315-01-238-8103). The current Army supply system or any other fiberglass tape (not to exceed one-half inch) may be used if retractable tapes cannot be purchased by unit budget funds available and if approved by installation commanders.
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Height	Max Waist Allowed	Resulting Ratio		Height	Max Waist Allowed	Resulting Ratio
48	26	0.541		66	36	0.545
48.5	26.5	0.546		66.5	36.5	0.548
49	26.5	0.540		67	36.5	0.544
49.5	27	0.545		67.5	37	0.548
50	27	0.540		68	37	0.544
50.5	27.5	0.544		68.5	37.5	0.547
51	28	0.549		69	37.5	0.543
51.5	28	0.543		69.5	38	0.546
52	28.5	0.548		70	38	0.542
52.5	28.5	0.542		70.5	38.5	0.546
53	29	0.547		71	39	0.549
53.5	29	0.542		71.5	39	0.545
54	29.5	0.546		72	39.5	0.548
54.5	29.5	0.541		72.5	39.5	0.544
55	30	0.545		73	40	0.547
55.5	30.5	0.549		73.5	40	0.544
56	30.5	0.544		74	40.5	0.547
56.5	31	0.548		74.5	40.5	0.543
57	31	0.543		75	41	0.546
57.5	31.5	0.547		75.5	41.5	0.549
58	31.5	0.543		76	41.5	0.546
58.5	32	0.547		76.5	42	0.549
59	32	0.542		77	42	0.545
59.5	32.5	0.546		77.5	42.5	0.548
60	32.5	0.541		78	42.5	0.544
60.5	33	0.545		78.5	43	0.547
61	33.5	0.549		79	43	0.544
61.5	33.5	0.544		79.5	43.5	0.547
62	34	0.548		80	43.5	0.543
62.5	34	0.544		80.5	44	0.546
63	34.5	0.547		81	44.5	0.549
63.5	34.5	0.543		81.5	44.5	0.546
64	35	0.546		82	45	0.548
64.5	35	0.5426		82.5	45	0.545
65	35.5	0.5462		83	45.5	0.548
65.5	36	0.5496		83.5	45.5	0.544

Figure B–1. Maximum Waist Height Ratio Screening Table

B-2. Description of the waist to height ratio screening landmarks and technique

- a.* Divide average waist circumference in inches by height in inches.
 - b.* Waist circumference should be measured with measuring tape parallel to the floor beginning on the Soldier's right side. Measure the Soldier's waist at the navel (belly button).
 - c.* Height should be measured from the bottom of the soles of the feet to the apex (top) of the skull.
 - d.* Measurements will be recorded as follows: in inches and rounded down to the nearest ½ inch for waist and rounded to the nearest ½ inch for height.
 - e.* Unidentified navel (belly button) marker due to skin fold. Attempt to identify the direct location of the navel on the outer skin (or fold) as accurately as possible and make a small "x" with a pen or permanent marker on the skin fold (a tape measurer can be used to assist). Tape the outer most circumference of the abdomen across this "x" mark (as if the navel were visual). Taking a measure under the skin fold would be underestimating the actual circumference/size of the Soldier at this location. The fat/skin fold is part of the measurement because it is metabolically active tissue and plays a role in health-related outcomes (e.g., obesity link to cardiovascular health).
 - f.* No identified navel (belly button). In the event no navel is anatomically present, locate the Soldier's hip bone (anterior superior iliac spine) and mark 2 inches above with a pen or permanent marker. Use this as the reference point to measure an alternative waist circumference.
 - g.* For males and females, complete three waist circumference measurements.
 - h.* Illustrations of each tape measurement are at figures B-2, B-3 (male and female).
 - i.* Soldiers who have WHtR of 0.55 or above will be enrolled in the Army Body Composition Program.
 - j.* If it is determined that the Soldier's WHtR does not meet the standard, a confirmation assessment will be completed. The process will be completed by a team other than the one that took the initial set of measurements. This must occur before any actions are taken by the commander.
 - k.* All waist to height measurement information will be recorded on DA Form 5500 for both male and female.
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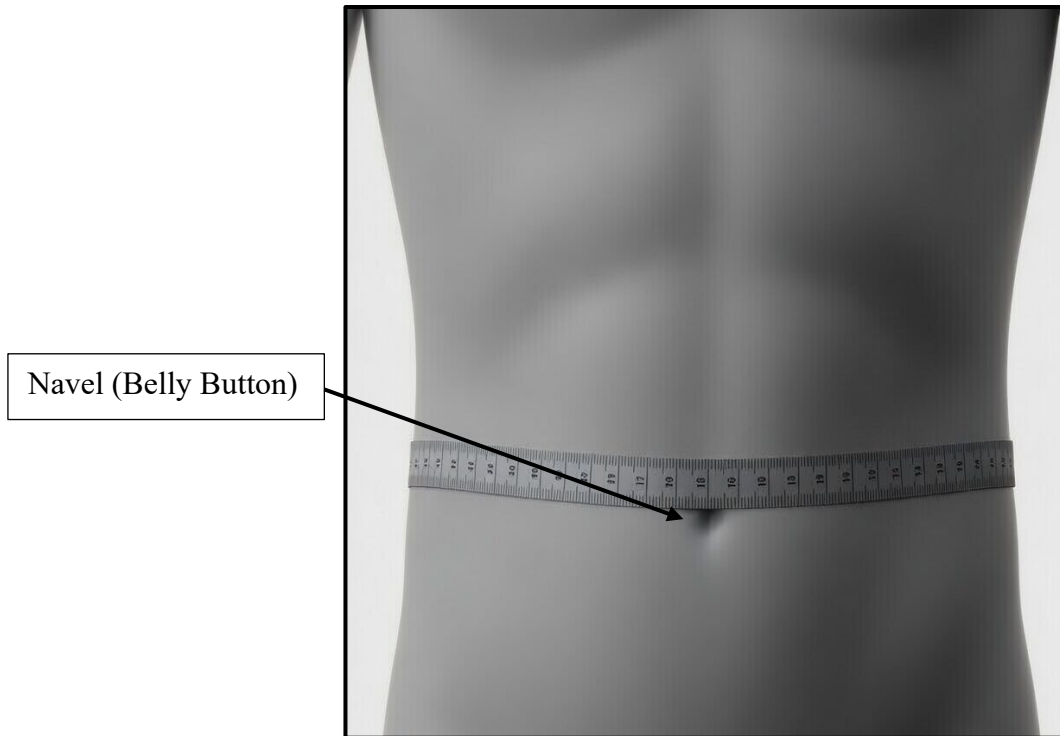


Figure B–2. Male and Female Waist Measurement for the WHtR Assessment

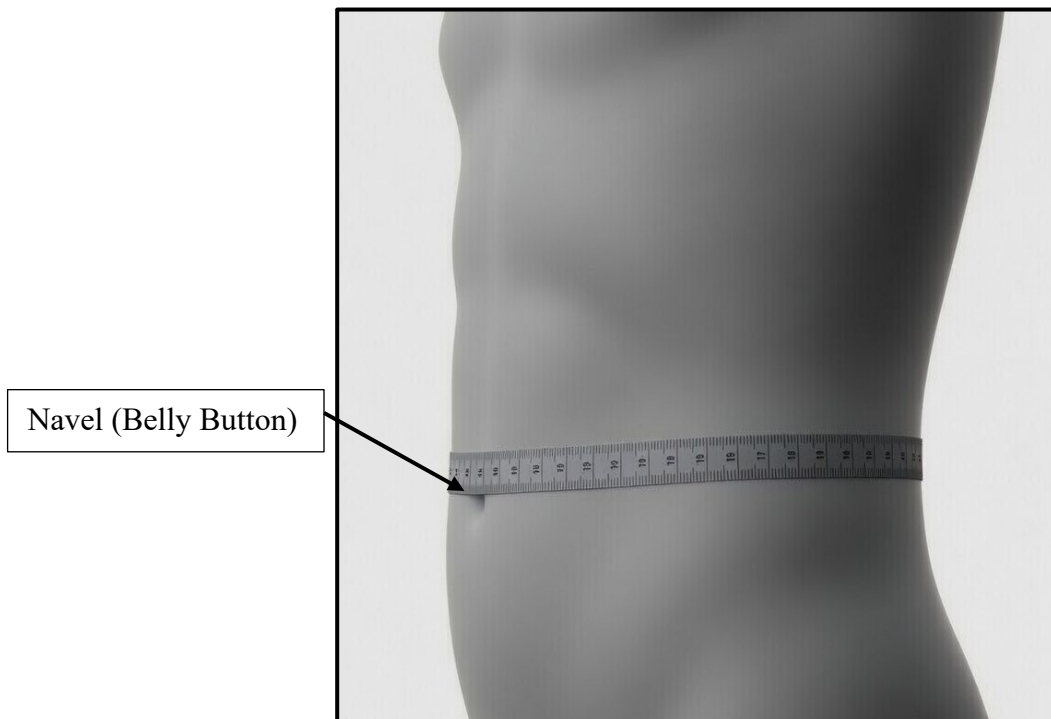


Figure B–3. Male and Female Waist Measurement for the WHtR Assessment (Side view)

Table B–1
Instructions for completing DA Form 5500 (male and female)

NAME	Print the Soldier's last name, first name, and middle initial in NAME block.
RANK	Print rank in the RANK box.
HEIGHT	Measure the Soldier's height as described in this annex, rounding to the nearest half inch and record the measurement in HEIGHT block.
AGE	Print age in years in AGE block.
SEX	Circle whether the Soldier is a male or female under the SEX block.
WAIST	Measure the Soldier's waist at the navel (belly button). Measurements will be rounded down to the nearest ½ inch and recorded three times.
WHtR RATIO	Divide the average waist circumference measurement by height. All WHtR calculations must be recorded to a precision of three decimal places. The WHtR value will not be rounded, and any subsequent digits after the third decimal place will be disregarded. Example: A calculated result of 0.549888 will be recorded as 0.549. WHtR of .549 meets the standard. WHtR of 0.550 does not meet the standard.

Note: Follow the rounding rules for rounding waist and height measurement as described

B–3. Preparation of DA Form 5500

It is extremely important that the following instructions are read before attempting to complete DA Form 5500. Have a copy of the form available when reading these instructions.

- a. Table B–1 and Figures B–1 through B–3 will provide information needed to prepare DA Form 5500. The instructions for the form are written in a stepwise fashion.
- b. A DA Form 5500 must be completed for all Soldiers. The purpose of this form is to help determine the Soldier's WHtR using a circumference technique described in this regulation.
- c. Before starting, have a thorough understanding of the measurements to be made as outlined in this guidance. A device for measuring height, and a measuring tape.
- d. The DA Form 5500 requires two signatures. The first signature is the “prepared by” which is the member serving to assure proper placement and tension of the tape, as well as to record the measurement on the DA Form 5500. The second signature, “approved by supervisor,” should be signed by the commander/supervisor of the Soldier being measured.