

2019

---

## Guide 4

# The Body Composition Assessment (BCA)

# Table of Contents

## Section I - Navy Body Composition Assessment (BCA) Standard Page

1. BCA Requirements.....	4
2. Height Measurement.....	5
3. Weight Measurement.....	5
4. Maximum Weight Determination.....	5
5. Single Site Abdominal Circumference Measurement (AC).....	6
6. BCA Guidelines.....	6
7. Same Gender BCA.....	6
8. Altering BCA .....	6
9. Tape Measure Specifications.....	7

## Section 2 - Single Site Abdominal Circumference

1. Measurement Guideline.....	8
2. AC Measurement Procedure.....	8

## Section 3 - BC Measurement Techniques

1. Measurement Guidelines.....	10
2. BC Procedures for Men.....	10
3. Body Fat Calculation for Men.....	11
4. BC Procedures for Women.....	11
5. Body Fat Calculation for Women.....	12

## Section 4 - Tables

1. Table 1 - Maximum Weight for Height Screening Table.....	15
2. Table 2 - Percent Body Fat Estimation for Men.....	16
3. Table 3 -Percent Body Fat Estimation for Women.....	18

## Section I - Navy Body Composition Assessment (BCA)

### 1. BCA Requirements

This outlines the method to determine a member's BCA: 1) maximum weight for height 2) single site abdominal circumference (AC) measurement 3) body composition assessment (BCA) measurements. No substitute methods (e.g., underwater weighing, skin fold calipers, body mass index, bio-impedance, etc.) of assessment are permitted. All BCA measurements are to be conducted in the blue and gold Navy Physical Training Uniform (PTU).

The official BCA is final and will not be reversed by a subsequent medical waiver for BCA. Members must address any potential medical issues prior to the official BCA. Standards are determined by established maximum weight for height standards.

Per OPNAVINST 6110.1 series only certified Command Fitness Leaders (CFL) or trained Assistant CFLs (ACFL) are authorized to conduct official BCA measurements. BCA measurements conducted by Medical and/or Morale Welfare and Recreation personnel cannot be used for official reporting nor do they override measurements taken by the CFL or ACFL.

See enclosure (3) of OPNAVINST 6110.1 series and Table 1 of this guide for the official Maximum Weight for Height Screening Table. If a member exceeds the weight for height screen, the AC measurement technique will be used. If the member's AC exceeds 39 inches for males and 35.5 inches for females, they will complete BC measurements. The member fails the PFA if they exceed the maximum allowable body fat limits of 26 percent for males and 36 percent for females.

Members who pass the BCA but are not within the graduated BCA standards will be placed on FEP until within the graduated standards.

The graduated BCA standards are:

Gender	Age (years)			
	17-21	22-29	30-39	40+
Male	22%	23%	24%	26%
Female	33%	34%	35%	36%

## 2. Height Measurement

Members are authorized to conduct the weight for height assessment in the uniform of the day, if a BCA circumference measurement will not be required. Shoes will not be worn.

The member will stand on flat surface, at attention, with head held horizontal, looking directly forward, with the line of vision horizontal, and the chin parallel to the deck. The body should be straight, but not rigid.

Measurement will be rounded up to nearest inch. The results will be used to determine the member's maximum allowable weight. If a BCA circumference measurement is required a slightly different procedure will be used.

## 3. Weight Measurement

The weight measurement will be taken with the member in Navy PTU or in the uniform of the day, on calibrated scales (balance beam or digital), shoes removed and socks worn. Measurement will be recorded to the nearest pound. If the weight fraction is less than  $\frac{1}{2}$  pound, round down to the nearest pound. If the weight fraction is  $\frac{1}{2}$  pound or greater, round up to the nearest pound. No deduction for clothing is permitted.

If member's weight is less than or equal to the maximum weight listed for their gender, they are considered to be within BCA standards and percentage body fat determination is not required.

If member's weight is greater than the maximum weight listed for their gender, the BCA circumference measurement must be performed. When performing the circumference measurement, the results from the height screening are to be used. If the member's height is  $67 \frac{1}{4}$  inches, 68 inches will be used to obtain the height measurement but 67.5 inches will be used for the circumference measurement if required.

*Height measurements are rounded up to the nearest inch but the height for the BCA circumference measurement will only be rounded up to the nearest  $\frac{1}{2}$  inch.*

## 4. Maximum Weight Determination

In the center column of the Maximum Weight for Height Screening Tables, (see Table 1, page 15) locate the member's height (with fractions rounded up to the nearest whole inch). The maximum weight (in pounds) for men is located in the left column and the maximum weight (in pounds) for women is located in the right column.

*The official determination is made by entering measurement data into Physical Readiness Information Management System (PRIMS).*

## 5. Single Site Abdominal Circumference Measurement (AC)

Members are to be measured immediately above the uppermost hip bone (superior border of the iliac crest) at the side of the body vertically in line with the armpit (mid-axillary line).

## 6. BCA Guidelines

Males are to be measured at the neck and abdomen and females are to be measured at the neck, waist, and hips.

If a member is not within maximum weight for height standards, the BCA circumference measurement is required. *The “Bad Day” does NOT apply to the AC and BCA, only Physical Readiness Test (PRT).*

A minimum of two CFLs or ACFLs are required to be present for conducting official AC and BCAs. No “single person”, “behind closed doors,” or “private” BCA measurements can occur.

Commands are encouraged to assign a CPO or officer as a monitor to ensure the integrity of the process.

## 7. Same Gender BCAs

BCA measurement techniques are designed to ensure there is no inappropriate exposure of personnel or violation of privacy, therefore NO ONE IS ENTITLED to private or “Same Gender” CFLs/ACFLs. However, commands are encouraged to have qualified male and female CFL/ACFLs whenever possible.

## 8. Altering BCA

Members are to be discouraged from using extreme body fat reducing tricks to meet BCA standards. Dehydration methods are dangerous and Sailors put themselves at risk during the PRT if they have not reduced fat through a proper diet and exercise program.

CFLs are required to keep their eyes out for members who attempt to alter their BCA measurements. Using body wraps, starvation, and sauna suits is prohibited. If temporary altering is detected by the command, the CFL or ACFL, the member will be required to wait at least 72 hours before attempting the official BCA measurement. Any attempt to influence the BCA measurement through intimidation, coercion or other means may result in disciplinary action under the Uniform Code of Military Justice.

## 9. Tape Measure Specifications

Use a tape measure made of non-stretchable material, preferably fiberglass. Do not use cloth or steel tape measures. The preferred tape is one that is self-retracting, with locking capability, which can accurately measure circumference in both 1/16" inch and millimeter increments.

The tape measure width should be ¼ inch – 3/8 inch and calibrated (i.e., compared with a yardstick or metal ruler). This is done by aligning the tape measure with the quarter inch markings on the ruler.

## Section 2 – Single Site Abdominal Circumference

### 1. Measurement Guidelines

Measurement for both male and female will be conducted with the same procedure. All measurements for men and women are to be taken on the right side of the body with the tape parallel to the deck.

When measuring circumferences, apply the tape measure so that it makes contact with the skin, conforms to the body surface being measured, and does not compress the underlying soft tissues.

All circumference measurements are to be taken two times, sequentially and rounded down to the nearest 1/2 inch. If one of the two measurements differs by more than one-inch, take an additional measurement and compute a mathematical average of the two closest measurements to the nearest 1/2 inch and record this value.

Male	
Example:	<u>Rounding</u>
AC 1 = 39.25	39
AC 2 = 37.5	37.5
AC 3 = 38.75	38.5
Average AC:	
1. Add 39 and 38.5 (the two closest rounded measurements); then	
2. Divide the sum by 2; then	
3. $(39 + 38.5) / 2 = 38.75$ and the male member is passes.	

### 2. AC Measurement Procedure

The CFL will locate the measurement landmark immediately above the right uppermost hip bone (superior border of the iliac crest) at the side of the body vertically in line with the right armpit (mid-axillary line). If desired, the Sailor may assist the CFL in locating the measurement landmark by resting the right hand on the hip, using rearward facing right thumb to locate the iliac crest. The CFL will determine final horizontal - vertical intersection point for landmark confirmation. The Sailor will stand on a flat surface with feet no more than shoulder width apart. The head should be horizontal, looking directly forward with the chin parallel to the floor. The Sailor may use one hand to initially assist



the CFL in anchoring the tape measure to the body, but must remove the hand from the tape measure before the official measurement is recorded. Measurement will be taken on bare skin. The free hand may be used to hold the shirt out of the way, but no part of the hands or arms may extend above the shoulders. The Sailor will remain stationary while the CFL conducts the measurement by initially moving around the Sailor to place the tape in a horizontal plane around the abdomen. The CFL will ensure tape is parallel to the floor at the level of the landmark (bottom edge of the tape just contacts landmark), is snug, but does not compress the bare skin. The CFL will take the measurement at the end of the Sailor's normal respiration. If redness and lines in the skin are observed, turn the member away for 72 hours.

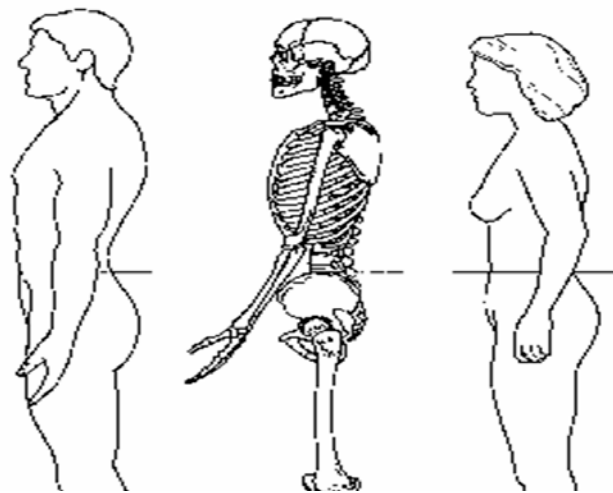


Photo: Abdominal Circumference (AC) Measurement: the landmark for obtaining the AC measurement is the Superior border of the iliac crest at the side of the body vertically in line with the armpit (mid-axillary line).

\*\* Amplifying information and video can be found on the Navy Personnel Command (NPC) 21<sup>st</sup> Century Sailor web page [http://www.npc.navy.mil/bupers-npc/support/21st\\_Century\\_Sailor/physical/Pages/default2.aspx](http://www.npc.navy.mil/bupers-npc/support/21st_Century_Sailor/physical/Pages/default2.aspx).

## Section 3- BC Measurement Technique

### 1. Measurement Guidelines

All measurements for men and women are to be taken on the right side of the body with the tape parallel to the deck.

When measuring circumferences, apply the tape measure so that it makes contact with the skin, conforms to the body surface being measured, and does not compress the underlying soft tissues.

All circumference measurements are to be taken two times, sequentially and recorded to the nearest  $\frac{1}{2}$  inch. If one of the two measurements differs by more than one-inch, take an additional measurement and compute a mathematical average of the two closest measurements to the nearest  $\frac{1}{2}$  inch and record this value.

Each set of measurements will be completed sequentially to discourage assumption of repeated measurement readings. Do not, for example, complete two neck circumferences followed by two abdomen circumferences. Continue the process until both sets of measurements have been taken.

### 2. BC Procedures for Men

BC circumference measurements for men are to be taken at the neck and abdomen. Neck measurements shall be taken on bare skin, at the point just below the larynx (Adam's Apple) and perpendicular to the long axis of the neck. Do not place the tape measure over the larynx. Member looks straight ahead during measurement with shoulders down and relaxed (not hunched).

The tape will be as close to horizontal as anatomically feasible (the tape line in the front of the neck should be at the same height as the tape line in the back of the neck).

Care should be taken so as not to involve the shoulder/neck muscles (trapezius) in the measurement.

Round the neck measurement up to the nearest  $\frac{1}{2}$  inch and record (e.g., round 16  $\frac{1}{4}$  inches to 16  $\frac{1}{2}$  inches).

**Abdomen** measurements shall be taken on bare skin, across the naval (belly button) and with the member's arms down on the sides. If redness and lines in the skin are observed, turn the member away for 72 hours. This is an indication that member has attempted to alter the BC circumference measurement.

Take measurements at the end of member's normal, relaxed exhalation. Discourage the member from holding their breath by taking the measurement after several exhales.

Round the abdominal measurement down to nearest  $\frac{1}{2}$  inch and record (e.g., round  $34\frac{3}{4}$  inches to  $34\frac{1}{2}$  inches).

### 3. Body Fat Calculation for Men

*Subtract neck circumference from abdominal circumference to obtain the circumference value (CV). (Abdominal-Neck=Circumference Value)*

Use the Percent Body Fat Estimation for the men's table to locate the column which matches the member's height (rounded up to nearest half inch) and the appropriate row in the table which matches the member's cumulative circumference value (rounded down to nearest half inch).

Follow applicable column down and row across until they intersect; this number represents member's estimated percent body fat. NOTE: This is only an estimate the official BCA determination is made by PRIMIS data entry.

For circumference values less than the value in table, body fat percentage is less than or equal to smallest body fat percentage in the column. For circumference values greater than value in table, body fat percentage is greater than or equal to largest body fat percentage in the column.

### 4. BC Procedures for Women

BC circumference measurements for women are to be taken at the neck, natural waist, and hips. Neck measurements are to be taken on bare skin, at a point just below the larynx and perpendicular to the long axis of the neck.

Member looks straight ahead during measurement, with shoulders down and relaxed (not hunched).

*Round neck measurement up to the nearest  $\frac{1}{2}$  inch and record (e.g., round  $13\frac{3}{8}$  inches to  $13\frac{1}{2}$  inches).*

**Natural Waist** measurements are to be taken on bare skin, at point of minimal abdominal circumference, usually located about halfway between the navel and the lower end of the sternum (breastbone). When this site is not easily observed, take several measurements at probable sites and use smallest value.

Ensure the tape is level and parallel to the deck and make sure the member's arms are at their sides. Take measurements at the end of member's normal, relaxed exhalation. Round natural waist measurement down and record to nearest  $\frac{1}{2}$  inch and record (e.g., round  $28\frac{5}{8}$  inches to  $28\frac{1}{2}$  inches).

**Hip measurements** are to be taken over the Navy PTU shorts only. Control-top panty hose, spandex tights, and other "shaping" garments are not allowed to be worn during measurements. Tight-fitting rubberized foundation garments or exercise belts are also prohibited at least 30 minutes prior to measurement.

Measure hip circumference while facing member's right side by placing the tape around the hips so that it passes over the greatest protrusion of the gluteus muscles (buttocks) as viewed from the side.

Make sure the tape is level and parallel to deck. Apply sufficient tension on the tape to minimize effect of clothing.

*Round hip measurement down to nearest ½ inch and record (e.g., round 44 3/8 inches to 44 inches).*

Example:  
Neck 1 = 13.0  
Neck 2 = 14.5  
Neck 3 = 13.5  
Average Neck: 13.5  
1. Adding 13.0 and 13.5 (the two closest measurements); then  
2. Dividing the sum by 2; then  
3. Rounding the quotient; so  
(13.0 + 13.5) / 2 = 13.25 which is rounded to 13.5

## 5. Body Fat Calculation for Women

Add waist and hip circumferences, then subtract neck circumference to obtain member's circumference value (CV). (Waist + Hips - Neck = CV)

Use the Percent Body Fat Estimation for Women Table (Table 3) to locate the column which matches the member's height (rounded up to nearest half inch) and the row which matches the member's cumulative circumference value (rounded down to nearest half inch).

Follow applicable column down and row across until they intersect; this number represents member's estimated percent body fat (BCA). NOTE: This is only an estimate the official BCA determination is made by PRIMS after entry.

MAY 2019

For circumference values less than the value in table, body fat percentage is less than or equal to smallest body fat percentage in the column. For circumference values greater than the value in the table, body fat percentage is greater than or equal to largest body fat percentage in column.

## Section 4 - Tables

Maximum Weight for Height

Percent Body Fat Estimation for Men

Percent Body Fat Estimation for Women

**TABLE 1**  
**MAXIMUM WEIGHT FOR HEIGHT SCREENING TABLE**

<b>Men Maximum Weight (pounds)</b>	<b>Member's Height (inches) (fractions rounded up to nearest whole inch)</b>	<b>Women Maximum Weight (pounds)</b>
97	51	102
102	52	106
107	53	110
112	54	114
117	55	118
122	56	123
127	57	127
131	58	131
136	59	136
141	60	141
145	61	145
150	62	149
155	63	152
160	64	156
165	65	160
170	66	163
175	67	167
181	68	170
186	69	174
191	70	177
196	71	181
201	72	185
206	73	189
211	74	194
216	75	200
221	76	205
226	77	211
231	78	216
236	79	222
241	80	227
246	81	233
251	82	239
256	83	245
261	84	251
266	85	257
271	86	263

MAY 2019

PERCENT BODY FAT ESTIMATION FOR MEN

Circumference Value*	Height (inches)																			
	60	60.5	61	61.5	62	62.5	63	63.5	64	64.5	65	65.5	66	66.5	67	67.5	68	68.5	69	69.5
13	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9
13.5	9	9	9	9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9
14	11	11	10	10	10	10	9	9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9
14.5	12	12	12	11	11	11	11	10	10	10	10	9	9	<9	<9	<9	<9	<9	<9	<9
15	13	13	13	13	12	12	12	12	11	11	11	11	10	10	10	10	10	9	9	<10
15.5	15	14	14	14	14	13	13	13	13	12	12	12	12	11	11	11	11	11	10	10
16	16	16	15	15	15	15	14	14	14	14	13	13	13	13	12	12	12	12	12	11
16.5	17	17	16	16	16	16	15	15	15	15	14	14	14	14	14	13	13	13	13	12
17	18	18	18	17	17	17	17	16	16	16	16	15	15	15	15	14	14	14	14	14
17.5	19	19	19	18	18	18	18	17	17	17	17	16	16	16	16	16	15	15	15	15
18	20	20	20	19	19	19	19	18	18	18	18	17	17	17	17	17	16	16	16	16
18.5	21	21	21	20	20	20	20	19	19	19	19	19	18	18	18	18	17	17	17	17
19	22	22	22	21	21	21	21	20	20	20	20	20	19	19	19	19	18	18	18	18
19.5	23	23	23	22	22	22	22	21	21	21	21	21	20	20	20	20	19	19	19	19
20	24	24	24	23	23	23	23	22	22	22	22	21	21	21	21	21	20	20	20	20
20.5	25	25	25	24	24	24	24	23	23	23	23	22	22	22	22	21	21	21	21	21
21	26	26	25	25	25	25	24	24	24	24	24	23	23	23	23	22	22	22	22	21
21.5	27	27	26	26	26	26	25	25	25	25	24	24	24	24	23	23	23	23	23	22
22	28	27	27	27	27	26	26	26	26	25	25	25	25	25	24	24	24	24	23	23
22.5	29	28	28	28	28	27	27	27	27	26	26	26	26	25	25	25	25	24	24	24
23	29	29	29	29	28	28	28	28	27	27	27	27	26	26	26	26	26	25	25	25
23.5	30	30	30	29	29	29	29	28	28	28	28	27	27	27	27	27	26	26	26	26
24	31	31	30	30	30	30	29	29	29	29	28	28	28	28	28	27	27	27	27	26
24.5	32	31	31	31	31	30	30	30	30	29	29	29	29	29	28	28	28	28	27	27

\*Circumference value = abdomen circumference - neck circumference (in inches)



MAY 2019

PERCENT BODY FAT ESTIMATION MEN (CONT'D)

Circumference Value*	Height (inches)																			
	70	70.5	71	71.5	72	72.5	73	73.5	74	74.5	75	75.5	76	76.5	77	77.5	78	78.5	79	79.5
15	9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9
15.5	10	10	9	9	9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9
16	11	11	11	10	10	10	10	10	9	9	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9
16.5	12	12	12	12	11	11	11	11	11	10	10	10	10	10	9	9	<9	<9	<9	<9
17	13	13	13	13	13	12	12	12	12	11	11	11	11	11	10	10	10	10	10	9
17.5	14	14	14	14	14	13	13	13	13	13	12	12	12	12	12	11	11	11	11	11
18	15	15	15	15	15	14	14	14	14	14	13	13	13	13	13	12	12	12	12	12
18.5	17	16	16	16	16	15	15	15	15	15	14	14	14	14	14	13	13	13	13	13
19	18	17	17	17	17	16	16	16	16	16	15	15	15	15	15	14	14	14	14	14
19.5	18	18	18	18	18	17	17	17	17	17	16	16	16	16	16	15	15	15	15	15
20	19	19	19	19	19	18	18	18	18	18	17	17	17	17	17	16	16	16	16	16
20.5	20	20	20	20	19	19	19	19	19	18	18	18	18	18	17	17	17	17	17	16
21	21	21	21	21	20	20	20	20	20	19	19	19	19	19	18	18	18	18	18	17
21.5	22	22	22	21	21	21	21	21	20	20	20	20	20	19	19	19	19	19	18	18
22	23	23	23	22	22	22	22	22	21	21	21	21	20	20	20	20	20	20	19	19
22.5	24	24	23	23	23	23	23	22	22	22	22	22	21	21	21	21	21	20	20	20
23	25	24	24	24	24	24	23	23	23	23	23	22	22	22	22	22	21	21	21	21
23.5	25	25	25	25	25	24	24	24	24	24	23	23	23	23	23	22	22	22	22	22
24	26	26	26	26	25	25	25	25	25	24	24	24	24	24	23	23	23	23	23	22
24.5	27	27	27	26	26	26	26	26	25	25	25	25	25	24	24	24	24	24	23	23
25	28	28	27	27	27	27	26	26	26	26	26	25	25	25	25	25	24	24	24	24
25.5	29	28	28	28	28	27	27	27	27	27	26	26	26	26	26	25	25	25	25	25
26	29	29	29	29	28	28	28	28	28	27	27	27	27	27	26	26	26	26	26	25
26.5	30	30	30	29	29	29	29	28	28	28	28	28	27	27	27	27	27	26	26	26
27	31	30	30	30	30	30	29	29	29	29	29	29	28	28	28	28	27	27	27	27
27.5	31	31	31	31	30	30	30	30	30	29	29	29	29	29	28	28	28	28	28	27
28	32	32	32	31	31	31	31	31	30	30	30	30	29	29	29	29	29	29	28	28

\*Circumference value = abdomen circumference - neck circumference (in inches)

MAY 2019

PERCENT BODY FAT ESTIMATION FOR WOMEN

Circumference Value*	Height (Inches)																			
	58	58.5	59	59.5	60	60.5	61	61.5	62	62.5	63	63.5	64	64.5	65	65.5	66	66.5	67	67.5
50.5	27	27	27	26	26	26	25	25	25	24	24	23	23	23	23	22	22	22	21	21
51	28	28	27	27	27	26	26	26	25	25	25	24	24	24	23	23	23	22	22	22
51.5	29	28	28	28	27	27	27	26	26	26	25	25	25	24	24	24	23	23	23	22
52	29	29	29	28	28	28	27	27	27	26	26	26	25	25	25	24	24	24	23	23
52.5	30	30	29	29	29	28	28	28	27	27	27	26	26	26	25	25	25	24	24	24
53	31	30	30	30	29	29	29	28	28	28	27	27	27	26	26	26	25	25	25	24
53.5	31	31	31	30	30	30	29	29	29	28	28	28	27	27	27	26	26	26	25	25
54	32	32	31	31	31	30	30	30	29	29	29	28	28	28	27	27	27	26	26	26
54.5	33	32	32	32	31	31	31	30	30	30	29	29	29	28	28	28	27	27	27	26
55	33	33	33	32	32	32	31	31	31	30	30	30	29	29	29	28	28	28	27	27
55.5	34	34	33	33	33	32	32	32	31	31	31	30	30	30	29	29	29	28	28	28
56	35	34	34	34	33	33	33	32	32	31	31	31	30	30	30	30	29	29	29	28
56.5	35	35	35	34	34	34	33	33	32	32	32	31	31	31	30	30	30	29	29	29
57	36	36	35	35	34	34	34	33	33	33	32	32	32	31	31	31	30	30	30	29
57.5	37	36	36	35	35	35	34	34	34	33	33	33	32	32	32	31	31	31	30	30
58	37	37	36	36	36	35	35	35	34	34	34	33	33	33	32	32	32	31	31	31
58.5	38	37	37	37	36	36	36	35	35	35	34	34	34	33	33	33	32	32	32	31
59	38	38	38	37	37	37	36	36	36	35	35	35	34	34	34	33	33	33	32	32
59.5	39	39	38	38	38	37	37	36	36	36	35	35	35	34	34	34	33	33	33	33
60	40	39	39	38	38	38	37	37	37	36	36	36	35	35	35	34	34	34	33	33
60.5	40	40	39	39	39	38	38	38	37	37	37	36	36	36	35	35	35	34	34	34
61	41	40	40	40	39	39	39	38	38	38	37	37	37	36	36	36	35	35	35	34
61.5	41	41	41	40	40	40	39	39	38	38	38	37	37	37	36	36	36	35	35	35
62	42	42	41	41	40	40	40	39	39	39	38	38	38	37	37	37	36	36	36	35
62.5	>42	>42	>41	>41	>40	>40	>40	>39	>39	>39	39	39	38	38	38	37	37	37	36	36
63	>42	>42	>41	>41	>40	>40	>40	>39	>39	>39	40	39	39	39	38	38	38	37	37	37
63.5	>42	>42	>41	>41	>40	>40	>40	>39	>39	>39	40	40	39	39	39	38	38	38	37	37
64	>42	>42	>41	>41	>40	>40	>40	>39	>39	>39	41	40	40	40	39	39	39	38	38	38

\* Circumference value = natural waist + hip - neck circumference (in inches)

MAY 2019

PERCENT BODY FAT ESTIMATION FOR WOMEN (CONT'D)																				
Circumference Value*	Height (inches)																			
	68	68.5	69	69.5	70	70.5	71	71.5	72	72.5	73	73.5	74	74.5	75	75.5	76	76.5	77	77.5
56	28	28	27	27	27	26	26	26	25	25	25	25	24	24	24	23	23	23	23	22
56.5	29	28	28	28	27	27	27	26	26	26	26	25	25	25	24	24	24	24	23	23
57	29	29	29	28	28	28	27	27	27	26	26	26	26	25	25	25	24	24	24	24
57.5	30	29	29	29	29	28	28	28	27	27	27	26	26	26	26	25	25	25	25	24
58	30	30	30	29	29	29	29	28	28	28	27	27	27	27	26	26	26	25	25	25
58.5	31	31	30	30	30	29	29	29	29	28	28	28	27	27	27	27	26	26	26	25
59	32	31	31	31	30	30	30	29	29	29	29	28	28	28	27	27	27	27	26	26
59.5	32	32	32	31	31	31	30	30	30	29	29	29	29	28	28	28	27	27	27	27
60	33	32	32	32	32	31	31	31	30	30	30	30	29	29	29	28	28	28	28	27
60.5	33	33	33	32	32	32	32	31	31	31	30	30	30	30	29	29	29	28	28	28
61	34	34	33	33	33	32	32	32	32	31	31	31	30	30	30	30	29	29	29	28
61.5	35	34	34	34	33	33	33	32	32	32	32	31	31	31	30	30	30	30	29	29
62	35	35	35	34	34	34	33	33	33	32	32	32	32	31	31	31	30	30	30	30
62.5	36	35	35	35	34	34	34	34	33	33	33	32	32	32	32	31	31	31	30	30
63	36	36	36	35	35	35	34	34	34	34	33	33	33	32	32	32	32	31	31	31
63.5	37	37	36	36	36	35	35	35	34	34	34	34	33	33	33	32	32	32	32	31
64	37	37	37	36	36	36	36	35	35	35	34	34	34	34	33	33	33	32	32	32
64.5	38	38	37	37	37	36	36	36	36	35	35	35	34	34	34	33	33	33	33	32
65	38	38	38	38	37	37	37	36	36	36	35	35	35	35	34	34	34	33	33	33
65.5	39	39	38	38	38	37	37	37	37	36	36	36	35	35	35	35	34	34	34	33
66	40	39	39	39	38	38	38	37	37	37	37	36	36	36	35	35	35	35	34	34
66.5	40	40	39	39	39	39	38	38	38	37	37	37	37	36	36	36	35	35	35	35
67	41	40	40	40	39	39	39	39	38	38	38	37	37	37	36	36	36	36	35	35
67.5	41	41	41	40	40	40	39	39	39	38	38	38	38	37	37	37	36	36	36	36
68	42	41	41	41	40	40	40	40	39	39	39	38	38	38	38	37	37	37	36	36
68.5	42	42	42	41	41	41	40	40	40	39	39	39	39	38	38	38	37	37	37	37
69	43	42	42	42	41	41	41	41	40	40	40	39	39	39	39	38	38	38	37	37
69.5	43	43	43	42	42	42	41	41	41	41	40	40	40	39	39	39	39	38	38	38

\* Circumference value = natural waist + hip - neck circumference (in inches)