



STUDENT RECREATION & WELLNESS CENTER

LONG BEACH STATE UNIVERSITY

Beach Balance Self-assessment Tools

Updated: April 19, 2019

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Blood Pressure Monitor

Understanding Blood Pressure Readings

There are two numbers that are written as a ratio, such as 117/76 mm Hg.

Systolic

This is the top number, which is usually larger. This number measures the pressure in the arteries when the heart beats or contracts.

Diastolic

This is the bottom number, which is usually smaller. This number measures the pressure in the arteries between heartbeats or when the heart muscle is at rest and refilling the chambers with blood.

117
76 mm Hg

Read as "117 over 76 millimeters of mercury"

Categories of Blood Pressure by the American Heart Association

| Blood Pressure Category | Systolic mm Hg (upper #) | | Diastolic mm Hg (lower #) |
|--|--------------------------|-----|---------------------------|
| Normal | less than 120 | and | less than 80 |
| Prehypertension | 120 – 139 | or | 80 – 89 |
| High Blood Pressure (Hypertension) Stage 1 | 140 – 159 | or | 90 – 99 |
| High Blood Pressure (Hypertension) Stage 2 | 160 or higher | or | 100 or higher |
| Hypertensive Crisis (Emergency care needed) | Higher than 180 | or | Higher than 110 |

A single high reading does not conclude that you have high blood pressure. A diagnosis is made by a physician, and the physician may take several readings over time before diagnosis.

While monitoring your blood pressure, if you get a **systolic reading of 180 mm Hg or higher** or a **diastolic reading of 110 mm Hg or higher**, wait a couple of minutes and retake your blood pressure again.

If the reading is still at that level, you should seek immediate emergency medical treatment.

Body Composition Monitor And Scale

With Seven Fitness Indicators

Description: The HBF-516B provides full body sensing – a comprehensive understanding of your body composition to help you reach and/or maintain your fitness goals. Full body sensing is more accurate than measuring with feet alone. Easy to use, this Body Composition Monitor and Scale measures 7 fitness indicators including 1) body fat percentage, 2) body mass index (BMI), 3) skeletal muscle, 4) resting metabolism, 5) visceral fat, 6) body age and 7) body weight.

Body Fat Percentage

Body fat serves a vital role in storing energy and protecting internal organs. We carry two types of fat in our bodies: 1) essential fat, which is stored in small amounts to protect the body, and 2) stored fat, which is stocked for energy during physical activity.

| Body Fat Rating | Men* | Women* |
|-----------------------|--------|--------|
| Risky (High Body Fat) | >30% | >40% |
| Excess Fat | 21-30% | 31-40% |
| Moderately Lean | 13-20% | 23-30% |
| Lean | 9-12% | 19-22% |
| Ultra Lean | 5-8% | 15-18% |
| Risky (Low Body Fat) | <5% | <15 |

Body Mass Index (BMI)

Body Mass Index (BMI) is a number calculated from a person's weight and height. BMI is used as a screening tool to identify possible weight problems for adults; however, it is not necessarily a measurement of health of an individual.

| BODY MASS INDEX (BMI) | | | |
|-----------------------|-----------|-----------|-----------|
| Low | Normal | High | Very high |
| <18.5 | 18.5-24.9 | 25.0-29.9 | ≥30 |

Skeletal Muscle

Skeletal muscle is the type of muscle that we can see and feel. When you work out to increase muscle mass, skeletal muscle is being exercised. Increasing skeletal muscle will increase your body's energy requirements. The more muscle you have, the more calories your body will burn. The maintenance and increase of skeletal muscle is closely linked to resting metabolism rate.

| SKELETAL MUSCLE PERCENTAGE | | | | | |
|----------------------------|-------|---------|------------|-----------|----------------|
| Gender | Age | Low (-) | Normal (0) | High (+) | Very High (++) |
| Female | 18-39 | <24.3 | 24.3-30.3 | 30.4-35.3 | ≥35.4 |
| | 40-59 | <24.1 | 24.1-30.1 | 30.2-35.1 | ≥35.2 |
| | 60-80 | <23.9 | 23.9-29.9 | 30.0-34.9 | ≥35.0 |
| Male | 18-39 | <33.3 | 33.3-39.3 | 39.4-44.0 | ≥44.1 |
| | 40-59 | <31.1 | 33.1-39.1 | 39.2-43.8 | ≥43.9 |
| | 60-80 | <32.9 | 32.9-38.9 | 39.0-43.6 | ≥43.7 |

Resting Metabolism

Regardless of your activity level, a minimum level of caloric intake is required to sustain the body's everyday functions. Known as the resting metabolism, this indicates how many calories you need to ingest in order to provide enough energy for your body to function.

Visceral Fat

Visceral fat is found in the abdomen and surrounding vital organs. It is different from fat found directly underneath the skin, which is referred to as subcutaneous fat. Visceral fat can go largely unnoticed because it's not visible to the naked eye. Too much visceral fat is thought to be closely linked to increased levels of fat in the bloodstream, which may lead to conditions such as high cholesterol, heart disease and type 2 diabetes.

| VISCERAL FAT | |
|--------------------|-----------------------------------|
| Visceral Fat Level | Visceral Fat Level Classification |
| <9 | 0 (Normal) |
| 10-14 | + (High) |
| >15 | ++ (Very High) |

Body Age

Body age is based and calculated by using your resting metabolism, weight, body fat percentage and skeletal muscle percentage. This produces a guide to whether your body age is above or below the average for your actual age.



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Omron Body Mass Index (BMI) & Body Fat Percentage Scale

The Omron Fat Loss Monitor estimates body fat percentage by using Bioelectrical Impedance (BI) to calculate the Body Mass Index (BMI) range.

Bioelectrical Impedance: Muscles, blood vessels and bones are body tissues with high water content that conduct electricity easily.

Body fat tissue has lower electric conductivity. The Omron Fat Loss Monitor sends an extremely low-level electrical current of 50kHz and 500µA through your body to determine the amount of fat tissue.

This weak electrical current is safe and not felt while operating the Fat Loss Monitor.

Body fat percentage refers to the amount of body fat mass as part of the total body weight described as a percentage:

$$\frac{\text{Body fat mass (lbs)}}{\text{Body weight (lbs)}} \times 100\%$$

| *BODY MASS INDEX (BMI) | | | |
|------------------------|----------------------------|--------------------------|-------------------------|
| Low <18.5 | Normal 18.5-24.9 | High 25.0-29.9 | Very high ≥30 |

*Based on NIH/WHO guidelines for BMI

| BODY FAT PERCENTAGE | | | | | |
|---------------------|-------|-------|-----------|-----------|-----------|
| Gender | Age | Low | Normal | High | Very High |
| Female | 20-39 | <21.0 | 21.0-32.9 | 33.0-38.9 | ≥39.0 |
| | 40-59 | <23.0 | 23.0-33.9 | 34.0-39.9 | ≥40.0 |
| | 60-79 | <24.0 | 24.0-35.9 | 36.0-41.9 | ≥42.0 |
| Male | 20-39 | <8.0 | 8.0-19.9 | 20.0-24.9 | ≥25.0 |
| | 40-59 | <11.0 | 11.0-21.9 | 22.0-27.9 | ≥28.0 |
| | 60-79 | <13.0 | 13.0-24.9 | 25.0-29.9 | ≥30.0 |

Results are ± 3-5% accurate and may be skewed due to the following activities:

- After eating or drinking fluids (allow 1-2 hours for food to digest)
- After vigorous exercise
- After a bath or sauna
- After drinking alcohol

Pulse Oximetry



Tips to

Achieve a Lower Resting Heart Rate & Increase Heart Health:

1. **Increase exercise frequency.** When you take a brisk walk, swim, or ride a bicycle, your heart beats faster during the activity and for a short time afterward. But exercising every day gradually slows the resting heart rate.
2. **Reduce stress.** Performing the relaxation response, meditation, tai chi and other stress-busting techniques lowers the heart rate over time.
3. **Avoid tobacco products.** Smokers have higher resting heart rates. Quitting brings it back down.
4. **Monitor weight** if necessary. The larger the body, the more the heart must work to supply it with blood. Losing weight can help slow an elevated heart rate. See below

Student Recreation and Wellness Center

1401 Palo Verde Ave.
Long Beach, CA 90815
Office: (562) 985-0763

Beach Balance

Hours of Operation:

Mon-Thu 10:00 a.m. – 8:00 p.m.
Fri 10:00 a.m. – 6:00 p.m.
Sat-Sun CLOSED

How does a pulse oximeter work?

A finger pulse oximeter functions by shining light through your finger. The sensors detect how much oxygen is in your blood based on the way the light passes through your finger. This helps **measure pulse rate, oxygen delivery and saturation (SpO2) to the peripheral tissues and blood.**

Oxygen Delivery & Blood Saturation (SpO2):

| | |
|--------------------|---------|
| Healthy | 95-100% |
| Critical Emergency | <90%* |

*May be caused by problems including lung diseases such as COPD, breathing difficulties, cigarette smoking, or circulatory problems such as excessive bleeding or blood vessel problems.

Resting Pulse:

| AGE | 18 - 25 | 26 - 35 | 36 - 45 | 46 - 55 | 56 - 65 | 65+ |
|-----------|---------|---------|---------|---------|---------|-------|
| ATHLETE | 54-60 | 54-59 | 54-59 | 54-60 | 54-59 | 54-59 |
| EXCELLENT | 61-65 | 60-64 | 60-64 | 61-65 | 60-64 | 60-64 |
| GOOD | 66-69 | 65-68 | 65-69 | 66-69 | 65-68 | 65-68 |
| ABOVE AV | 70-73 | 69-72 | 70-73 | 70-73 | 69-73 | 69-72 |
| AVERAGE | 74-78 | 73-76 | 74-78 | 74-77 | 74-77 | 73-76 |
| BELOW AV | 79-84 | 77-82 | 79-84 | 78-83 | 78-83 | 77-84 |
| POOR | 85+ | 83+ | 85+ | 84+ | 84+ | 84+ |

| AGE | 18 - 25 | 26 - 35 | 36 - 45 | 46 - 55 | 56 - 65 | 65+ |
|-----------|---------|---------|---------|---------|---------|-------|
| ATHLETE | 49-55 | 49-54 | 50-56 | 50-57 | 51-56 | 50-55 |
| EXCELLENT | 56-61 | 55-61 | 57-62 | 58-63 | 57-61 | 56-61 |
| GOOD | 62-65 | 62-65 | 63-66 | 64-67 | 62-67 | 62-65 |
| ABOVE AV | 66-69 | 66-70 | 67-70 | 68-71 | 68-71 | 66-69 |
| AVERAGE | 70-73 | 71-74 | 71-75 | 72-76 | 72-75 | 70-73 |
| BELOW AV | 74-81 | 75-81 | 76-82 | 77-83 | 76-81 | 74-79 |
| POOR | 82+ | 82+ | 83+ | 84+ | 82+ | 80+ |



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***It is highly recommended to work with certified professionals to determine what life changes work best for you. Tips have been curated from Harvard Health Publications' *Increase in resting heart rate is a signal worth watching* by Howard LeWine, M.D.

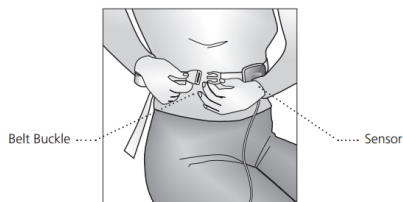


What is RESPeRATE? A clinically proven portable computerized device that guides you through sessions of therapeutic breathing, powerful enough to lower blood pressure.

Using RESPeRATE for the first time

1. Put the sensor belt around your upper abdomen

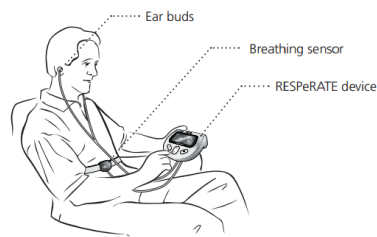
Wrap the belt around your upper abdomen, halfway between your navel and chest, and buckle. Buckling the belt in front, as illustrated, will be more convenient.



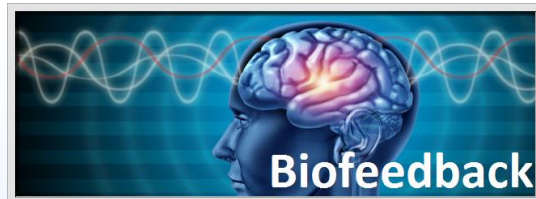
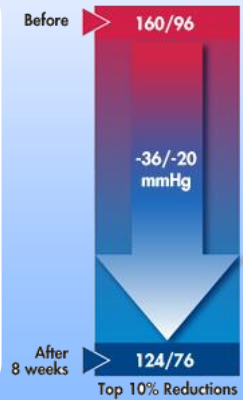
Make sure the label of the sensor is placed against your body and that the sensor cable hangs downward. Slide the sensor slightly to the left and right to ensure that it can move freely.

2. Put in the ear buds and lean back

It is important to make sure that your breathing is not being limited in any way. Loosen restrictive clothing (tight pants, belt, etc) and place the device in a comfortable position such as on your lap or on a nearby table. It's important to avoid leaning forward which may limit the breathing movement of the abdomen or chest.



Breathing exercise with RESPeRATE



What is Biofeedback? A computer training program that tracks your heart rate while guiding you through a relaxation sequence. Biofeedback helps with **stress relief, relaxation and an increase in positive emotions.**

Emotions are Reflected in Heart Rhythm Patterns (HRV)

