

BODY FAT & BODY MASS INDEX (BMI) SCREENING PROCEDURES WITH OMRON® BODY FAT ANALYZER

Supplies

- OMRON® Body Fat Analyzer
- Two AAA Batteries plus extra
- OMRON® Instruction Manual

Definition

Body Fat is a basic component of a healthy body. It plays an important role in providing the body with energy, in insulating and protecting it, in assisting in nerve impulse transmissions, and in supporting normal hormone activity.

Body Mass Index (BMI) is an internationally accepted calculation from a person's height and weight that is commonly used to identify unhealthy weight. It is generally considered to be a reliable indicator of body fat percentage. It is not a direct measure of body fat (like underwater weighing and skin-fold measurement), but research shows that BMI correlates with such measurements in most people. In the non-metric formula, BMI equals weight in pounds times 703, divided by height in inches, and again divided by height in inches.

BMI is not accurate for everyone. It does not take into account a person's muscle or bone mass, or if a woman is pregnant. It is generally assumed that being "overweight" means you have too much body fat, but that is not always true. For example, BMI may overestimate body fat in athletes and others with muscular builds although they have little body fat. On the other hand, BMI may underestimate body fat in the elderly or others who have lost muscle mass for some reason.

Purpose:

Having too much body fat, especially in the waist area, increases disease risk while having too little body fat is linked to problems with temperature regulation, hunger, fatigue, depression, fertility, etc.

Measurement:

The OMRON® Body Fat Analyzer calculates BMI, as well as estimates body fat percentage by the *Bioelectrical Impedance (BI) Method*. It sends a very weak electrical current that cannot be felt through the body to determine the amount of fat tissue. Since fat tissue has little electrical current conductivity while non-fat tissues, which have high water content, conduct electricity easily, the OMRON® can basically tell the difference. For best results, correct posture and consistent measuring conditions need to be maintained.

The OMRON® calculates body fat using a formula developed from research information on underwater weighing, which is considered to be the most accurate method of evaluating body composition. The formula considers gender, age, weight, height, and electric resistance.

OMRON® body fat results can be significantly inaccurate in people with consistently changing amounts of water and tissue density within their bodies, such as growing children, bodybuilders or professional athletes, the elderly, post-menopausal women, people with a fever, swelling, osteoporosis or very low bone density, and those undergoing dialysis.

Body fat is affected by the change of water content in the body in general. Fluctuations can be seen in relation to water and food intake (1 to 2 hours after meals), changes in blood circulation (after bathing/showering, exercising, being in extremely hot or cold environments, during illness or extreme fatigue), and change in posture (from standing to lying down) during measurement. Do not measure participants immediately after vigorous exercise, a bath or sauna, a meal, drinking alcohol or a large amount of water. **Dry, cold hands or cold electrodes might also cause inaccurate body fat results. The best time for body fat measurement is at least two hours after a meal and before doing anything that could change the water content in the body, such as the things mentioned above.**

KEY WARNINGS:

- DO NOT USE the OMRON® with persons who have medical electronic devices such as pacemakers, artificial hearts/lungs, electrocardiographs, etc.

- DO NOT USE the OMRON® with pregnant women, although it is unlikely to cause harm.
- KEEP the OMRON® AWAY from volatile substances, high humidity, excessive water, including wet fingers, as well as hot and cold temperatures, such as near fire or where sunshine or AC hits directly.
- DO NOT drop, vibrate, or apply strong shock to the OMRON®.

1. Turn on the power by pushing the On/Off button.

2. Set the personal data.

- Select the guest option by pushing the Set button while the display GUEST flashes. The display changes to flash NORMAL or ATHLETE mode.
- Push the Up/Down buttons to view NORMAL or ATHLETE and push the Set button to select the appropriate one. Choose ATHLETE if the participant does moderate-to-vigorous exercise at least 3-4 times per week, or light-to-moderate exercise daily or almost daily, for at least 30-45 minutes duration. Otherwise, choose NORMAL. The display changes to flash the height value 5'7".
- Push the Up/Down buttons to increase or decrease the height value and push the Set button to set the participant's height to the nearest ¼". The display changes to flash the weight value 135 lb.
- Push the Up/Down buttons to change the weight value and push the Set button to set the participant's weight to the nearest lb. The display changes to flash the age value 40.
- Push the Up/Down buttons to change the age and push the Set button to set the participant's age to the nearest year. The display changes to flash MALE or FEMALE.
- Push the Up/Down buttons to view MALE or FEMALE and push the Set button to select the appropriate one. All the set items are fixed and stored and READY is displayed. To change any values, push the Set button until the personal data you want to change flashes. If you push the Up and Down buttons at the same, the current blinking display will reset to the initial value. If you leave the set items in the setting screen without confirmation, the display will revert to the initial values in approximately one minute. After one minute, the OMRON® will turn off.

3. Start the measurement.

- Have participant **stand** with both feet slightly apart.
- Have participant firmly hold the grip electrodes by wrapping his middle fingers around the groove of the handles, placing the palms of his hands on the top and bottom electrodes, and putting his thumbs up to rest on top of the OMRON®. Do not squeeze or hold loosely.
- Have participant hold his **arms straight out, at a 90-degree angle** to his body, and instruct him to **do not move during the measurement**.
- Confirm that personal settings are accurate and READY is displayed.
- Push the Start button. START is displayed, the OMRON® automatically detects that it is held and begins measurement. The display flashes from left to right and shows results in approximately 7 seconds. Another measurement of the same participant can be started when READY is displayed.
- When finished with a participant, push the On/Off button to turn the power off.

Interpreting Results

Category	Underweight	Normal	Overweight	Obese
BMI	< 18.5	18.5 – 24.9	25 – 29.9	30 +

Generally Recommended Ranges of Body Fat:

Age	Males Body Fat	Females Body Fat
18-39 years	8-19%	21-32%
40-59 years	11-21%	23-33%
60-79 years	13-24%	24-35%

Important Tips

- Note the limitations of BMI and Body Fat measurement with and without the OMRON®.
- Note the correct positioning for measurement.
- Note the KEY WARNINGS.