




Hello! My name is Tim Garrett, and I am excited to talk to you about Health and Wellness. I am a graduate student finishing up my last semester toward a master's degree in Nutrition and Dietetics with the goal of becoming a Registered Dietician Nutritionist. I own Snap Fitness in Manchester and Transformation Wellness and Martial Arts. All right, let's get going.

Registered Dietician Nutritionist



What is a Registered Dietician Nutritionist?
Simply, RDNs are food and nutrition experts.

Every RDN is considered a nutritionist but not every nutritionist is an RDN.

In accordance with state regulations, RDNs treat specific health conditions, such as diabetes and eating disorders, through nutrition interventions and medical nutrition therapy, as well as operating in a broader scope of wellness that includes not only the treatment but the prevention of health conditions.

What is a Registered Dietician Nutritionist?


- Simply, RDNs are food and nutrition experts.
- Every RDN is considered a nutritionist but not every nutritionist is an RDN.
- In accordance with state regulations, RDNs treat specific health conditions, such as diabetes and eating disorders, through nutrition interventions and medical nutrition therapy, as well as operating in a broader scope of wellness that includes not only the treatment but the prevention of health conditions.

Additionally, RDNs must:

- Complete a minimum bachelor's degree, soon to be a master's degree, program approved by ACEND of the Academy of Nutrition and Dietetics
- Complete an ACEND-accredited supervised practice program, like an internship of no less than 900 hours.
- Must pass a national examination administered by the Commission on Dietetic Registration (CDR) and meet state requirements.
- Complete continuing professional educational requirements to maintain registration.

Now, all that aside, let's talk about Wellness, Disease risk, the Inbody 570, and Nutrition.

What is Wellness?



In simple terms, the National Institute for Wellness (NWI) defines **Wellness** as an active process through which people become aware of, and make choices toward, a more successful existence.

What's your risk?

What is wellness?

In simple terms, the National Institute for Wellness (NWI) defines wellness as an active process through which people become aware of, and make choices toward, a more successful existence.

The six dimensions of wellness include the emotional, occupational, physical, social, intellectual, and spiritual dimensions. While addressing all six dimensions of wellness in our lives builds a holistic sense of wellness and fulfillment, I will be focusing primarily on the physical dimension and, in particular, health & disease risk.

CHRONIC DISEASES IN AMERICA





Heart Disease and Stroke

Cancer

Diabetes

Major Risk Factors






Tobacco Use

Poor Nutrition

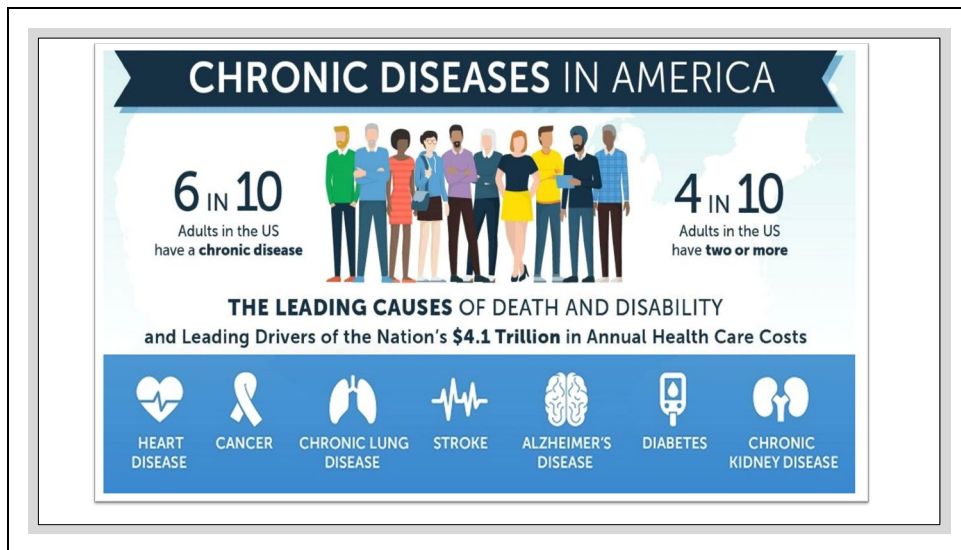
Physical Inactivity

Excessive Alcohol Use

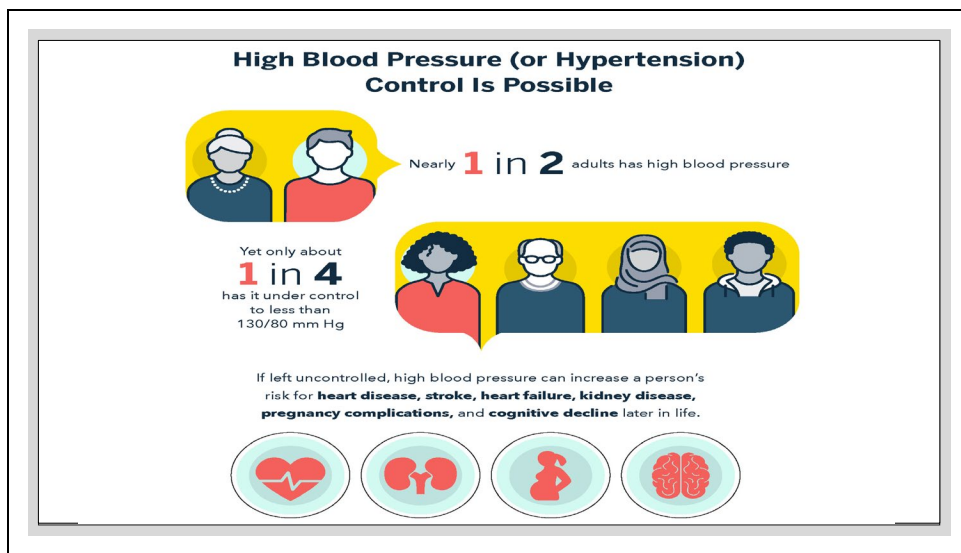
According to the Centers for Disease Control and Prevention, Chronic diseases are defined broadly as conditions that last one year or more and require ongoing medical attention or limit activities of daily living or both. Chronic diseases such as heart disease, cancer, and diabetes are the leading causes of death and disability in the United States. They are also leading drivers of the nation's \$4.1 trillion in annual healthcare costs.

Many chronic diseases are caused by a short list of risk behaviors:

- Tobacco use and exposure to secondhand smoke.
- Poor nutrition, including diets low in fruits and vegetables and high in sodium and saturated fats.
- Physical inactivity.
- Excessive alcohol use.



6 in ten adults in the US have a chronic disease, and four in ten adults in the US have two or more. The leading causes of death and disability and leading drivers of the nation's 4.1 \$trillion in annual healthcare costs include heart disease, cancer, chronic lung disease, stroke, Alzheimer's disease, diabetes, and chronic kidney disease.



Nearly one in two adults have high blood pressure, yet only one in four has in under control to less than 130 / 80 mmHg.

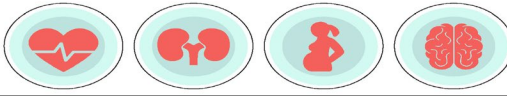
Unfortunately, if left uncontrolled high blood pressure can increase a person's risk for heart disease, stroke, heart failure, kidney disease, pregnancy complications, and cognitive decline later in life.

**High Blood Pressure (or Hypertension)
Control Is Possible**

Nearly **1 in 2** adults has high blood pressure.

Controlling High Blood Pressure and Reducing Chronic Disease Risk is Possible!

If left uncontrolled, high blood pressure can increase a person's risk for **heart disease, stroke, heart failure, kidney disease, pregnancy complications, and cognitive decline** later in life.



Controlling High Blood Pressure and Reducing Chronic Disease Risk is Possible!

7 Strategies to Live a Heart-Healthy Lifestyle
When you choose healthy behaviors, you can lower your heart disease risk while also preventing other **serious chronic conditions** like **type 2 diabetes** and some kinds of **cancer**.



- 1**
Learn Your Health History
Know your risks and talk to your family and doctor about your health history.
- 2**
Eat a Healthy Diet
Make healthy food choices like more fruits, vegetables, whole grains, lean meats, and low-fat dairy products. Eat less salt, saturated fat, and added sugar.
- 3**
Move More, Sit Less
Get at least 150 minutes of moderate-intensity aerobic activity every week, plus muscle-strengthening activities at least 2 days a week.

Here are seven strategies to live a heart-healthy lifestyle that can lower the risk of heart disease and prevent other serious chronic conditions like type 2 diabetes and some types of cancer.

- Learn your health history and your risk. See your doctor for regular health and wellness check.
- Eat a healthy diet with more fruits, vegetables, whole grains, lean meats, and low-fat dairy products. Be sure to eat less salt, saturated fat, and added sugar.
- Move more and sit less by getting at least 150 minutes of moderate-intensity aerobic activity each week, plus muscle-strengthening activities at least two days per week. Maybe start with a few 20 to 30-minute walks through the park each week. The main point is to get started moving.

4 Quit Smoking!
Call 1-800-QUIT-NOW for free help and take the first step on your journey to quit.

5 Take Medicines as Directed
If you take medicine to treat high cholesterol, high blood pressure, or diabetes, follow your doctor's instructions carefully. Always ask questions if you don't understand something. Never stop taking your medicine without talking to your doctor, nurse, or pharmacist.

6 Choose Your Drinks Wisely
Substitute water for sugary drinks to reduce calories. If you drink alcohol, do so in moderation by limiting consumption to no more than 1 drink a day for women (2 for men) on days that alcohol is consumed.

7 Monitor Your Blood Pressure at Home
Self-measured blood pressure monitors are easy and safe to use, and your doctor can show you how to use one if you need help.

Learn more about keeping your heart healthy by visiting www.cdc.gov/heartdisease/prevention.htm.

Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
@CDCChronic | www.cdc.gov/chronicdisease

Visit cdc.gov/heartmonth for tools and resources to help reach blood pressure control.

- Quit smoking! Call 1- 800-quit-now for free help.
- Take your medication as directed.
- Choose your drinks wisely and substitute water for sugary drinks to reduce calories. If it is better not to drink alcohol, but if you do, drink in moderation by limiting consumption to no more than one drink a day for women and no more than two drinks a day for men.
- Monitor your blood pressure at home.

DIABETES IN THE U.S.

A SNAPSHOT

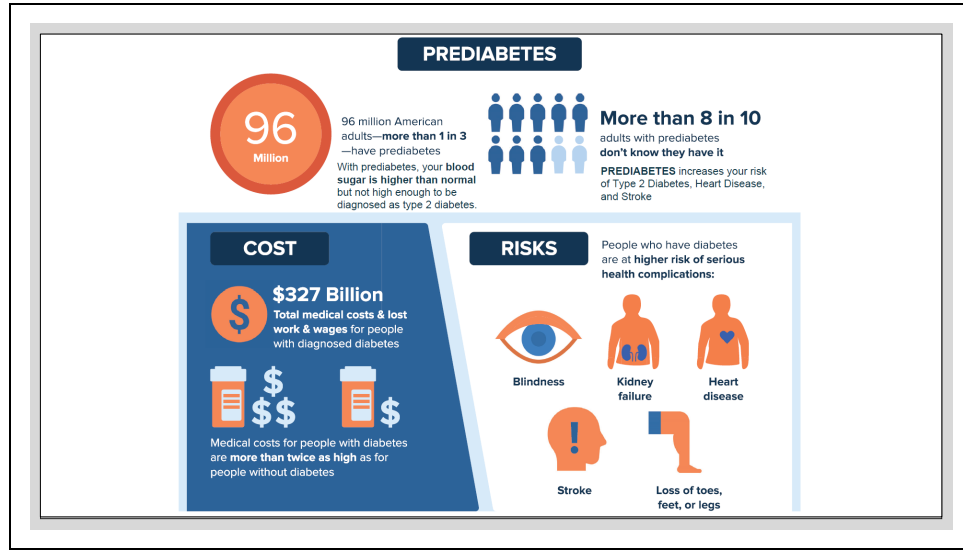
37 Million
37 million people have diabetes

DIABETES

That's about **1 in every 10** people

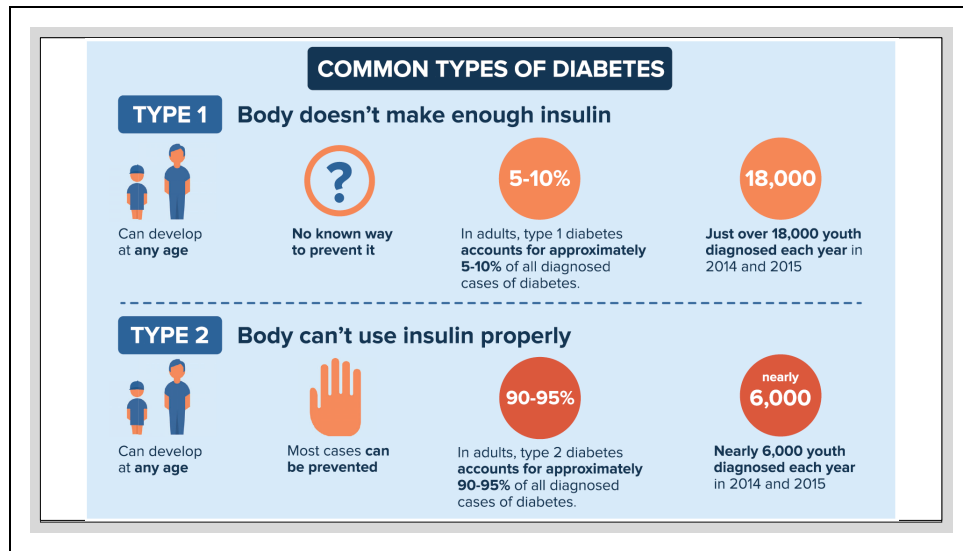
1 in 5 people don't know they have it

Diabetes is a significant chronic disease in the United States. Over 37 million people have diabetes that's about one in every ten people. Of the people that have diabetes, one in five don't know it.



Over 96 million American adults, more than one in three, have prediabetes. In the case of prediabetes, your blood sugar is higher than normal but not high enough to be diagnosed as type 2 diabetes. Of those with prediabetes, 8 in 10 don't know they have it. Pre-diabetes increases your risk of type 2 diabetes, heart disease, and stroke.

Diabetes accounts for about 20% of our total healthcare costs, at \$327 billion dollars. People with diabetes have a higher risk of serious health complications such as blindness, kidney failure, heart disease, stroke, and loss of toes, feet, or legs.



The most common types of diabetes are type 1 and type 2 diabetes.

In the case of type one diabetes, your body doesn't make enough insulin. Unfortunately, there's no known way to prevent type 1 diabetes. Type one diabetes accounts for five to 10% of diabetes cases.

With type 2 diabetes, your body cannot use insulin properly. Fortunately, in most cases, type 2 diabetes can be prevented or delayed. It makes up approximately 90 to 95% of diabetes cases.

Risk factors for type 2 diabetes:

- Being overweight
- Having a family history
- Being physically inactive
- Being 45 or older

1.4 Million
People 18 years or older diagnosed with diabetes in 2019

WHAT CAN YOU DO?

You can prevent or delay type 2 diabetes

- ✓ Eat healthy
- ✓ Be more active
- ✓ Lose weight

Learn more at www.cdc.gov/diabetes/prevention or speak to your doctor

You can manage diabetes

- ✓ Work with a health professional
- ✓ Eat healthy
- ✓ Stay active

Learn more at www.cdc.gov/diabetes/managing or speak to your doctor

©2019 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. All rights reserved. CDC's Division of Diabetes Translation works toward a world free of the devastation of diabetes. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

Risk factors for type 2 diabetes include being overweight, having a family history of type 2 diabetes, being physically inactive, and being over 45 years of age.

You can prevent or delay type 2 diabetes by eating healthy, being more active, and losing weight. You can manage diabetes by working with a health professional, eating healthy, and staying active.

Prediabetes Risk Test

NATIONAL DIABETES PREVENTION PROGRAM

1. How old are you? Write your score in the boxes below

Younger than 40 years (0 points)

40–49 years (1 point)

50–59 years (2 points)

60 years or older (3 points)

2. Are you a man or a woman?

Man (1 point) Woman (0 points)

3. If you are a woman, have you ever been diagnosed with gestational diabetes?

Yes (1 point) No (0 points)

Height	Weight (lbs.)		
4'10"	119-142	143-190	191+
4'11"	124-147	148-197	198+
5'0"	128-152	153-203	204+
5'1"	132-157	158-210	211+
5'2"	136-163	164-217	218+
5'3"	141-168	169-224	225+
5'4"	145-173	174-231	232+
5'5"	150-179	180-239	240+
5'6"	155-185	186-246	247+

(Centers for Disease Control and Prevention, n.d.c.)

The CDC has a pre-diabetes risk test that is online or that you can print off to assess your own prediabetes risk.

The risk test consists of seven questions.

- The 1st question asks how old you are and adds points based on your age.
- The 2nd question adds a point based on gender.
- The 3rd question adds a point based on a woman's previous diagnosis of gestational diabetes.

4. Do you have a mother, father, sister, or brother with diabetes?				
Yes (1 point) No (0 points)	<input type="checkbox"/>			
5. Have you ever been diagnosed with high blood pressure?				
Yes (1 point) No (0 points)	<input type="checkbox"/>			
6. Are you physically active?				
Yes (0 points) No (1 point)	<input type="checkbox"/>			
7. What is your weight category?				
(See chart at right)	<input type="checkbox"/>			
Total score:	<input type="checkbox"/>			

	164-196	197-261	262+
5'8"	169-202	203-269	270+
5'9"	174-208	209-277	278+
5'10"	179-214	215-285	286+
5'11"	184-220	221-293	294+
6'0"	189-226	227-301	302+
6'1"	194-232	233-310	311+
6'2"	200-239	240-318	319+
6'3"	205-245	246-327	328+
6'4"			
	1 Point	2 Points	3 Points
	You weigh less than the 1 Point column (0 points)		

Adapted from Bang et al., Ann Intern Med 151:775-783, 2009. Original algorithm was validated without gestational diabetes as part of the model.

(Centers for Disease Control and Prevention, n.d.c.)

- The 4th question adds a point based on a family history of diabetes.
- The 5th question adds a point based on the diagnosis of high blood pressure.
- The 6th question adds a point based on the rating of physical activity. Do you get more than 150 minutes per week of moderate-intensity exercise and muscle-strengthening activities two days per week?
- The 7th question assigns up to three points based on the person’s weight category. If someone is 5 foot 8 inches and 197 pounds, they will get two points.

If you scored 5 or higher


You are at increased risk for having prediabetes and are at high risk for type 2 diabetes. However, only your doctor can tell for sure if you have type 2 diabetes or prediabetes, a condition in which blood sugar levels are higher than normal but not high enough yet to be diagnosed as type 2 diabetes. **Talk to your doctor to see if additional testing is needed.**

If you are African American, Hispanic/Latino American, American Indian/Alaska Native, Asian American, or Pacific Islander, you are at higher risk for prediabetes and type 2 diabetes. Also, if you are Asian American, you are at increased risk for type 2 diabetes at a lower weight (about 15 pounds lower than weights in the 1 Point column). Talk to your doctor to see if you should have your blood sugar tested.

You can reduce your risk for type 2 diabetes

Find out how you can reverse prediabetes and prevent or delay type 2 diabetes through a **CDC-recognized lifestyle change program** at <https://www.cdc.gov/diabetes/prevention/lifestyle-program>.

Risk Test provided by the American Diabetes Association and the Centers for Disease Control and Prevention.



(Centers for Disease Control and Prevention, n.d.c.)

If you accumulate more than five points, you are at an increased risk for having pre-diabetes and are at high risk for type 2 diabetes. However, only a doctor can tell you for sure if you have type 2 diabetes or prediabetes. You should talk to your doctor to see if additional testing is needed.

Prediabetes Risk Assessment Body Composition Addendum

The risk analysis tools developed by the Centers for Disease Control and Prevention (n.d.b.) as well as criteria established by the American Diabetes Association (2019) to determine prediabetes risk and suggested screening use body mass index (BMI) as an anthropometric measurement and significant risk factor for prediabetes and diabetes risk.

According to an article in BMJ Journal by Jo and Mainous III (2018):

1. Some people with a normal BMI (18.5–24.9 kg/m²) and high body fat % (in men $\geq 25\%$ and women $\geq 35\%$) are more prone to have abnormal blood glucose than those with a high BMI but a lower body fat %.
2. Abnormal blood glucose leads to prediabetes, diabetes, and other complications.
3. In the study, 64% of the population with normal BMI had a high % B.F. The study indicated the prevalence of ABG in a normal-weight group with a high % B.F. was significantly higher than in the overweight group with a low % B.F. (Jo & Mainous III, 2018).

If your BMI is in range but your body fat % is high, then your body composition should be considered a risk factor. If you are uncertain about your risk, seek advice from a health care professional qualified to assess your risk or get screened for prediabetes to confirm your prediabetes status.

As a side note, I would like to point out that BMI may not always accurately assess risk.

- Some people may have a normal BMI, higher body fat %, and higher risk.
- Some people may have a higher BMI, lower body fat %, and lower risk.
- It is best to talk to your doctor.

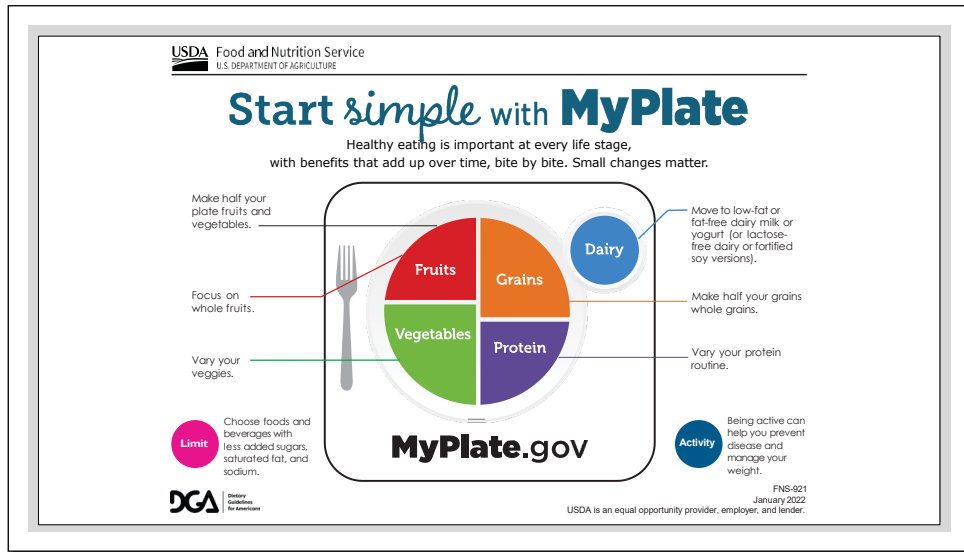
Prediabetes Risk Assessment Body Composition Addendum

Normal biceps is healthier but weighs more.

(a)

(Nelms & Sucher, 2020)

The BMI of the normal biceps would be higher than the BMI of the biceps with reduced muscle mass. Muscle mass weighs more than the same volume of fat mass.



Some simple My Plate nutrition tips include:

- Make half your plate fruits and vegetables.
- Focus on whole fruits.
- Vary your vegetables.
- Choose foods and beverages with less added sugar, saturated fat, and sodium.
- Being active can help you prevent disease and manage your weight.
- Choose low-fat or fat-free Dairy Milk or yogurt (or lactose-free dairy or fortified soy versions.)
- Make half your grains whole grains.
- Vary your protein routine.

Fruits	Vegetables	Grains	Protein	Dairy
<p>Focus on whole fruits like fresh, frozen, canned, or dried.</p> <p>Buy fruits to have them available to add to your meal or eat as a snack. If you buy juice, select 100% fruit juice.</p>	<p>Eat a variety of vegetables and add them to mixed dishes like casseroles, sandwiches, and wraps.</p> <p>Fresh, frozen, and canned count, too. Look for "reduced sodium" or "no-salt-added" on the label.</p>	<p>Choose whole-grain versions of common foods such as bread, pasta, and tortillas.</p> <p>Not sure if it's whole grain? Check the ingredients list for the words "whole" or "whole grain."</p>	<p>Eat a variety of protein foods such as beans, soy, seafood, lean meats, poultry, and unsalted nuts and seeds.</p> <p>Select seafood twice a week. Choose lean cuts of meat and ground beef that is at least 93% lean.</p>	<p>Choose low-fat (1%) or fat-free (skim) dairy. Get the same amount of calcium and other nutrients as whole milk, but with less saturated fat and calories.</p> <p>Lactose intolerant? Try lactose-free milk or a fortified soy beverage.</p>
<p>Daily Food Group Targets — Based on a 2,000 Calorie Plan Visit MyPlate.gov/MyPlatePlan for a personalized plan.</p>				
<p>2 cups</p> <p>1 cup counts as: 1 small apple 1 large banana 1 cup grapes 1 cup sliced mango ½ cup raisins 1 cup 100% fruit juice</p>	<p>2½ cups</p> <p>1 cup counts as: 2 cups raw spinach 1 cup cooked collard, kale, or turnip greens 1 small avocado 1 large sweet potato 1 cup cooked beans, peas, or lentils 1 cup cut cauliflower</p>	<p>6 ounces</p> <p>1 ounce counts as: 1 slice of bread ½ cup cooked oatmeal 1 small tortilla ½ cup cooked brown rice ½ cup cooked couscous ½ cup cooked grits</p>	<p>5½ ounces</p> <p>1 ounce counts as: 1 ounce cooked lean chicken, pork, or beef 1 ounce tuna fish ½ cup cooked beans, peas, or lentils 1 tbsp peanut butter 2 Tbsp hummus 1 egg</p>	<p>3 cups</p> <p>1 cup counts as: 1 cup dairy milk or yogurt 1 cup lactose-free dairy milk or yogurt 1 cup fortified soy milk or yogurt 1½ ounces hard cheese 1 cup kefir</p>
<p>Limit</p> <p>Choose foods and beverages with less added sugars, saturated fat, and sodium.</p> <p>Limit: • Added sugars to <50 grams a day. • Saturated fat to <22 grams a day. • Sodium to <2,300 milligrams a day.</p>	<p>Activity</p> <p>Don't forget physical activity! Being active can help you prevent disease and manage your weight.</p> <p>Kids ≥ 60 min/day Adults ≥ 150 min/week</p>			

This is a sample 2000-calorie-per-day plan that includes the number of portions or servings for each food group.

- This includes 2 cups of fruits, 2 1/2 cups of vegetables, 6 ounces of grains, 5 1/2 ounces of protein, and three cups of dairy.
- Some key points Based on a 2000-calorie-per-day diet include keeping added sugars to less than 50 grams a day or less than 10% of your total daily caloric intake.
- Consume 28 grams of fiber per day.
- Saturated fats should be less than 22 grams a day.
- Sodium should be less than 2300 milligrams today.

It's important not to forget physical activity, as we discussed previously, to achieve 150 minutes per week of moderate-intensity activity combined with two days a week of muscle-strengthening activities.

The Nutrition Facts Label

Look for It and Use It!

Information you need to make healthy choices throughout your day

Check the serving size and servings per container. The nutrition information listed on the Nutrition Facts label is usually based on one serving of the food.

Packages can—and often do—contain more than one serving! If you eat multiple servings, you're getting "multiplier" on calories and nutrients, too.

2 SERVINGS = CALORIES & NUTRIENTS x2

Calories from food provide the energy your body needs to function and grow. Balance the number of calories you eat and drink with the number of calories you burn during physical activity. Curious about calorie needs? Check out www.choosemyplate.gov/CalorieNeeds.

TIP: 100 calories per serving of an individual food is considered a moderate amount and 400 calories or more per serving of an individual food is considered high in calories.

Read the Label
Revised October 2018

Found on food and beverage packages

Use it to compare and choose foods!

Use %DV

% Daily Value (%DV) is the percentage of the Daily Value (reference amounts of nutrients to consume or not to exceed each day for adults and children 4 years of age and older) and shows how much a nutrient in a serving of the food contributes to a total daily diet. Use %DV to see how a food's nutrients stack up and choose foods that are higher in nutrients to get more of and lower in nutrients to get less of.

Choose Nutrients Wisely

Nutrients To Get More Of
Compare and choose foods to get 100% DV of these on most days:

- Dietary Fiber
- Vitamin D
- Iron
- Potassium
- Calcium

Nutrients To Get Less Of
Compare and choose foods to get less than 100% DV of these each day:

- Saturated Fat
- Sodium
- Trans Fat (Note: Trans fat has no %DV, so use grams as a guide)
- Added Sugars

Tip: 5% DV or less per serving is low and 20% DV or more per serving is high

Eat a variety of foods to get the nutrients your body needs, including:

- Fruits and vegetables
- Whole grains
- Dairy products
- Lean meats and poultry
- Eggs
- Seafood
- Beans and peas
- Soy products
- Unsalted nuts and seeds

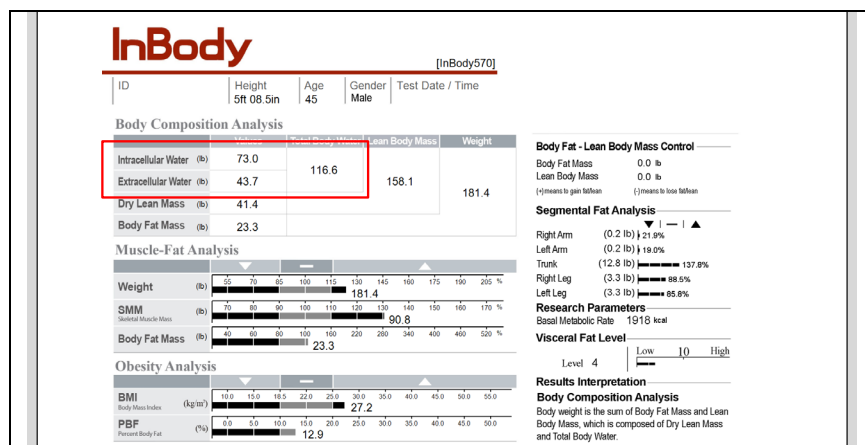
Size up Servings

Nutrition Facts
Serving size 1 1/2 cup (288g)
Amount per serving

Calories	240
Total Fat 4g	8%
Saturated Fat 1.5g	3%
Trans Fat 0g	0%
Cholesterol 5mg	1%
Sodium 430mg	19%
Total Carbohydrate 46g	17%
Dietary Fiber 3g	2%
Total Sugars 4g	4%
Includes 2g Added Sugar	
Protein 11g	20%
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 5mg	30%
Potassium 240mg	6%

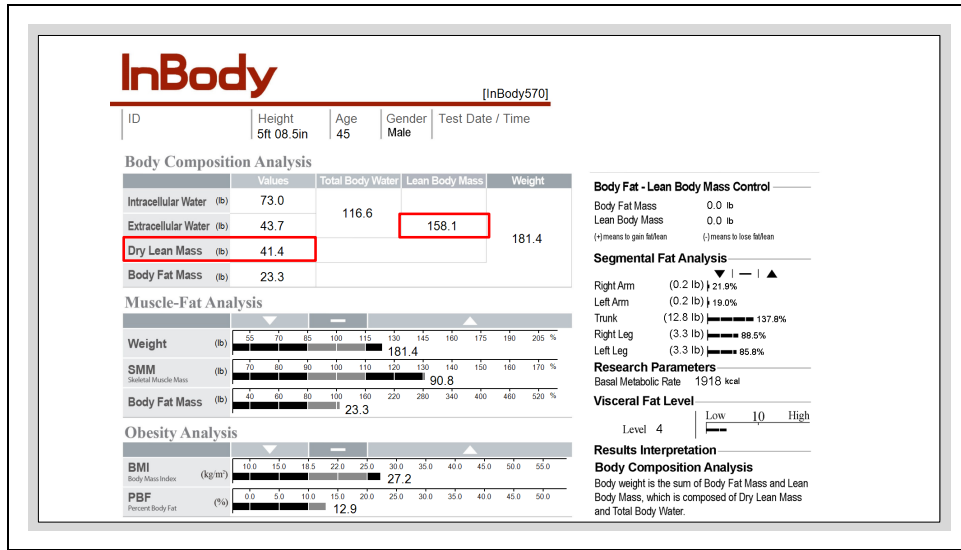
*Percent Daily Values are based on a diet of other people's misdeeds. © 2018 Nutrition Facts. All rights reserved. *Percent Daily Values are based on a diet of other people's misdeeds. © 2018 Nutrition Facts. All rights reserved.

- The nutrition facts label is an amazing tool to help improve your nutrient intake.
- It is important to focus on the nutrients you need more of such as dietary fiber at 28 grams per day based on a 2000-calorie per day diet, vitamin D, calcium, iron, and potassium.
- You should attempt to get less of the following nutrients to include saturated fat, sodium, added sugars, and trans fats.
- Simply you should strive to eat a variety of foods to get the nutrients your body needs.
- It is important to focus on the nutrients you need more of, such as dietary fiber at 28 grams per day based on a 2000-calorie per day diet, vitamin D, calcium, iron, and potassium.
- You should attempt to get less of the following nutrients to include saturated fat, sodium, added sugars, and trans fats.
- Simply you should strive to eat a variety of foods to get the nutrients your body needs.



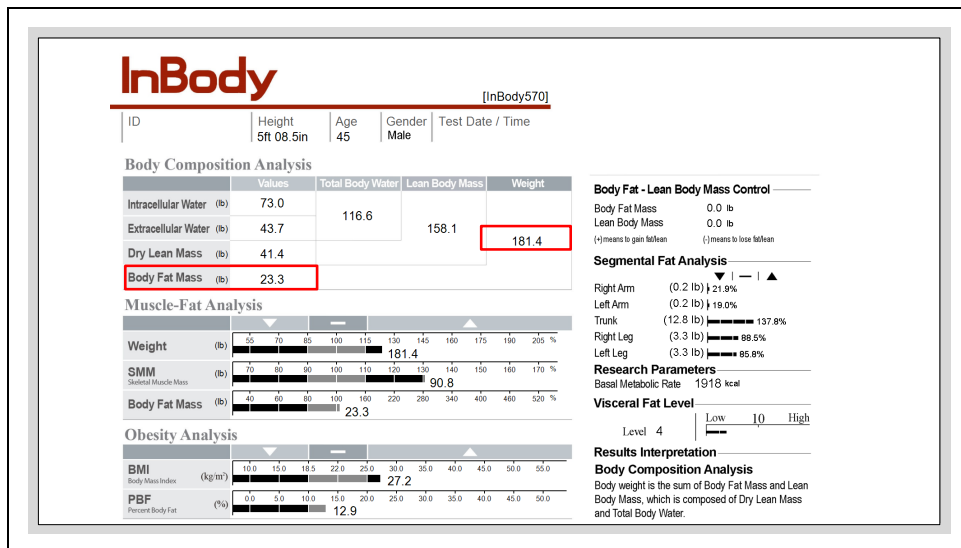
The information provided is to be used for educational/informational purposes only and does not constitute medical advice. Only certified medical & health professionals may diagnose patients and provide such advice.

- The InBody 570 provides accurate **Body Composition Analysis** in less than 45 seconds, providing information about visceral fat, segmental fat, intracellular water, and extracellular water.
- Intracellular and Extracellular Water**
- At the top, you have Intracellular Water (body water inside cells) and Extracellular Water (body water outside cells), which comprise Total Body Water.
 - If you notice an increase in ECW, but not ICW, this could be due to acute inflammation from overtraining.



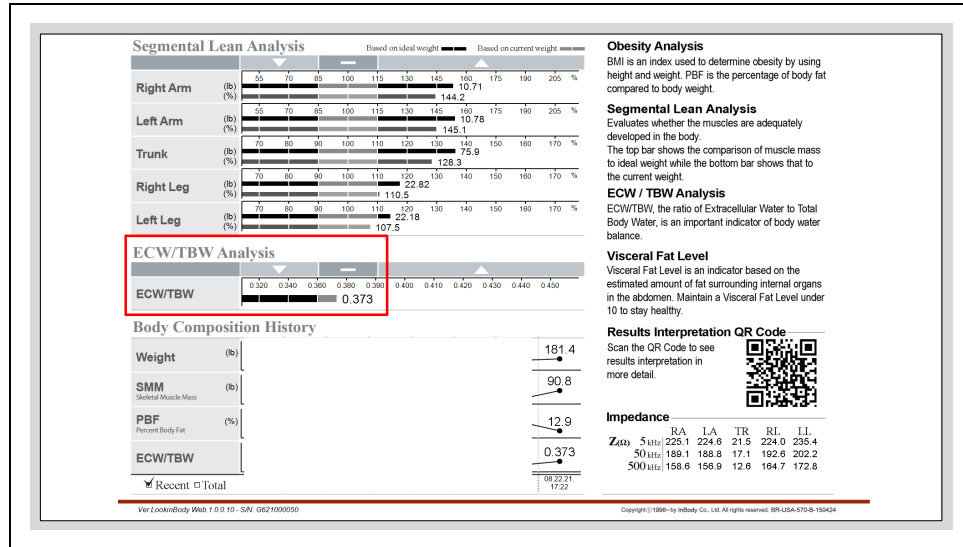
Dry Lean Mass

- This value is the weight of the protein and mineral content in your body.
- Because protein makes up most of your muscle, and Dry Lean Mass excludes body water, if your Dry Lean Mass increases, then this is generally a sign that you have gained muscle mass!
- Displayed in the second column from the right, Lean Body Mass (LBM) is the sum of your ICW, ECW, and Dry Lean Mass. LBM is the weight of everything in your body except fat; for this reason, it is also called Fat-Free Mass. Lean Body Mass includes muscle, water, bones, and organs.
- Usually, increases in LBM reflect an increase in muscle mass (which you can also see as an increase in Dry Lean Mass) and is considered an improvement in body composition. However, people who do not maintain normal body-water ratios may have increased LBM due to swelling caused by strenuous exercise or activity.



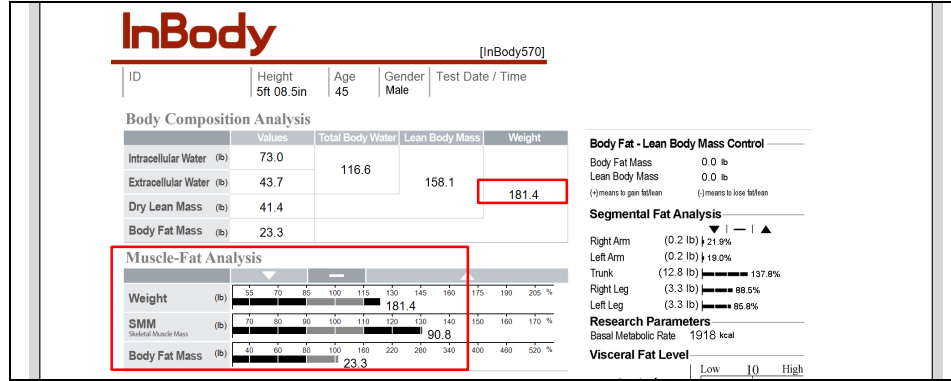
Body Fat Mass

- Below Dry Lean Mass is Body Fat Mass.
- This value reveals how much body fat, both surface level (subcutaneous) and internal (visceral), makes up your weight.
- The Body Fat Mass with the Lean Body Mass makes up your total body weight.



ECW/TBW Analysis

- ECW/TBW is a measure of compartmental fluid distribution and shows, as a ratio, how much of your total body water is extracellular.
- Taking multiple InBody Tests will establish your normal fluid status and help determine any imbalances. As a general guide, check to see that your ECW/TBW is below 0.390.
- This graph lets you quickly understand if you have occasional inflammation or swelling in your body resulting from strenuous exercise or activity. You can also use this to give context to LBM. High LBM and a high ECW/TBW ratio usually indicate excess body water—not just muscle.



Muscle-Fat Analysis

- This section shows how your Weight, Skeletal Muscle Mass, and Body Fat Mass compared to the healthy average range of people of the same height and gender.
- With Muscle-Fat Analysis, you get a better understanding of where your current body composition is so you can make any changes to get it to where you would like it to be.

WEIGHT - this is your Total Body Weight.

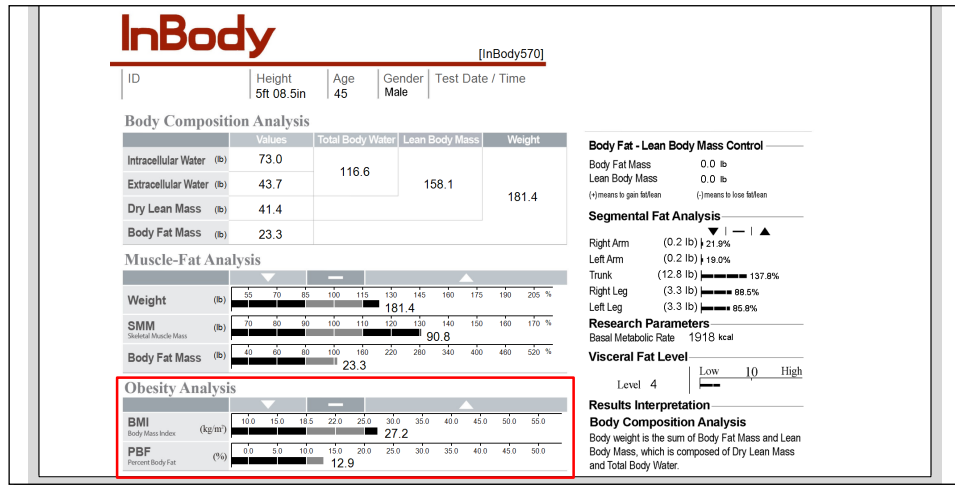
SKELETAL MUSCLE MASS (SMM) - this is the total weight of your Skeletal Muscle Mass (SMM).

- SMM is muscle that can be grown and developed through exercise.
- Unlike Lean Body Mass, which includes everything except body fat, you can confidently interpret an increase in SMM as muscle gain.

BODY FAT MASS

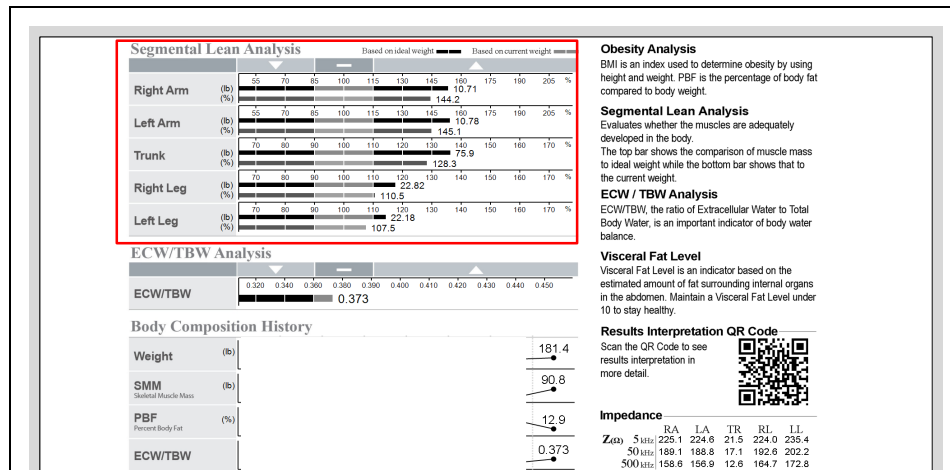
- This is how much body fat you have (both the surface level and internal fat).

The Muscle-Fat Analysis also tells you whether you have a healthy balance of SMM and Body Fat Mass in respect to your weight.



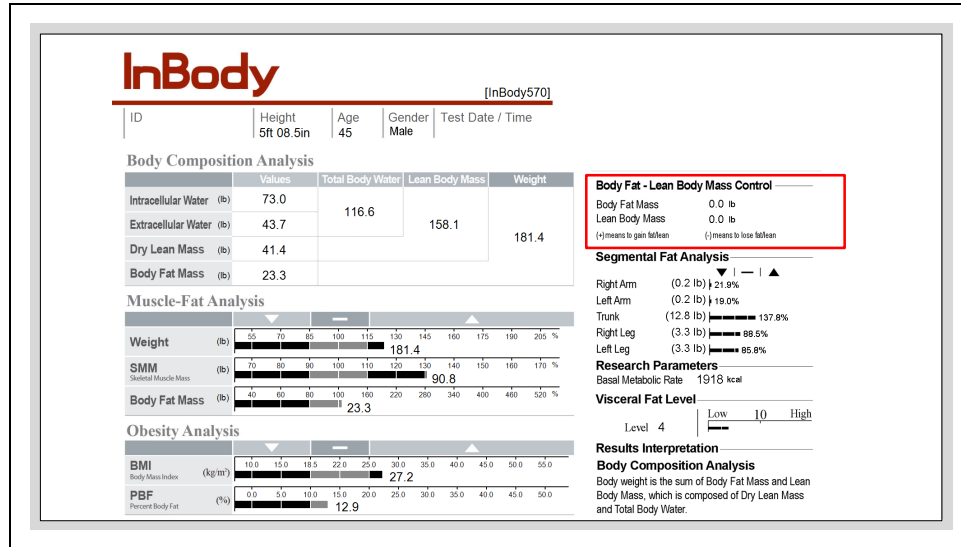
Obesity Analysis

- This section displays your body fat percentage, or Percent Body Fat (PBF), and Body Mass Index (BMI), as well as the healthy ranges for these measurements.
- When assessing your current obesity level and the associated health risks, use Percent Body Fat (a.k.a. Body Fat Percentage) because it reveals how much of your weight is fat. BMI is a poor indicator of obesity risk but is on the Result Sheet for reference purposes.
- For men, the healthy range is set at between 10-20%.
- For women, the healthy range is set at between 18-28%.



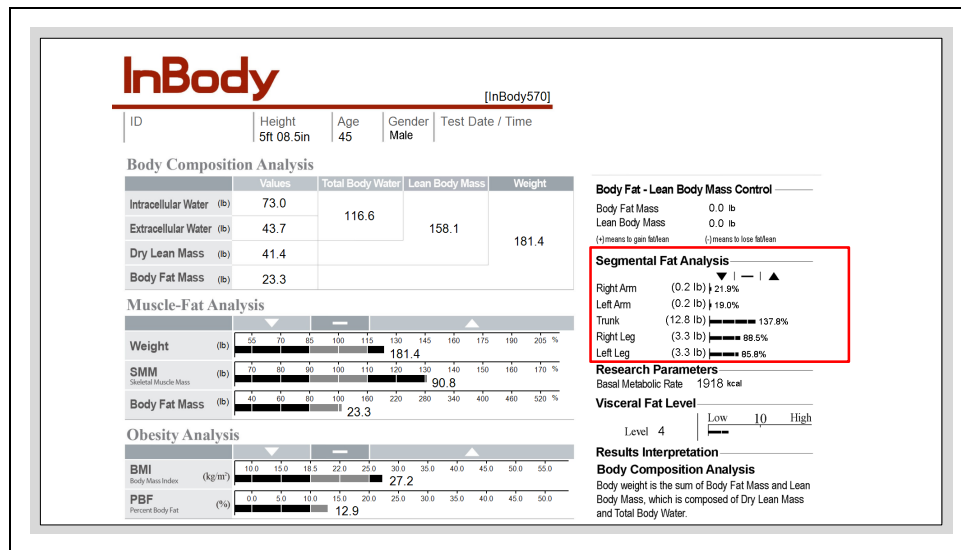
Segmental Lean Analysis displays your Lean Body Mass (Fat-Free Mass) in all body segments in pounds and its sufficiency to support your body weight as a percentage.

- The InBody divides your body into five body segments: your arms, legs, and trunk (torso), or the area between your neck, arms, and legs. The data for each body segment is displayed as two bars.
- **TOP SECTION** The top value shows how much Lean Body Mass (Fat-Free Mass) you have in pounds for each body segment.
 - Just like with the Muscle-Fat Analysis, the top bar of the Segmental Lean Analysis compares the pounds of Lean Body Mass against the average expected amount of Lean Body Mass for your height. You should always work to be at 100% or higher.
- **BOTTOM SECTION** The bottom value compares your Lean Body Mass against your measured body weight, which helps you determine if you have enough Lean Body Mass to support your body weight, where 100% is sufficient.



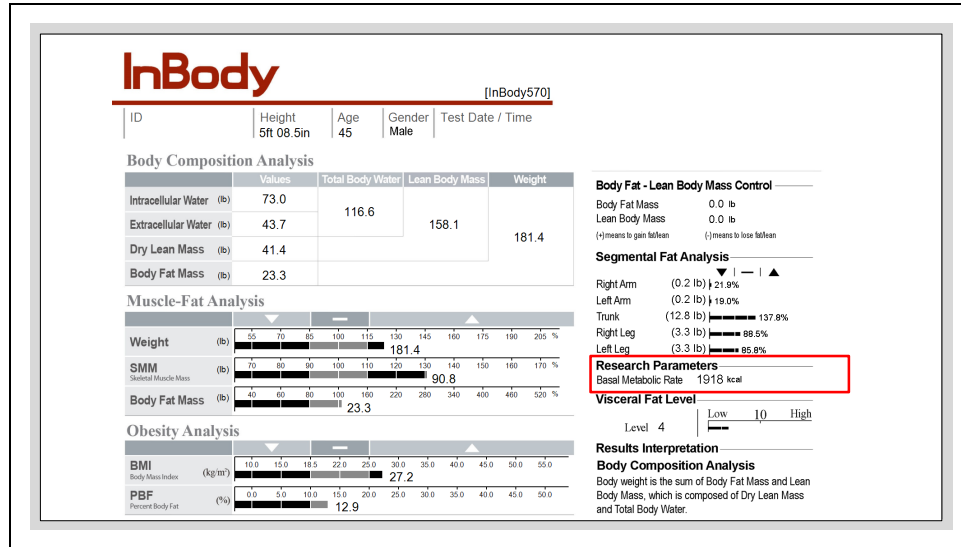
BODY FAT-LEAN BODY MASS CONTROL

- This section makes it very easy for you to set health and fitness goals and help you achieve the recommended body fat percentage for your gender (15% for men, 23% for women).
- Depending on your current Muscle-Fat balance, this Result Sheet output will recommend adjusting Body Fat Mass and/or LBM to reach the target PBF.
- If you have too much Body Fat Mass, the InBody will advise losing a certain amount of fat mass and maintaining or increasing LBM. The InBody will never recommend losing LBM.



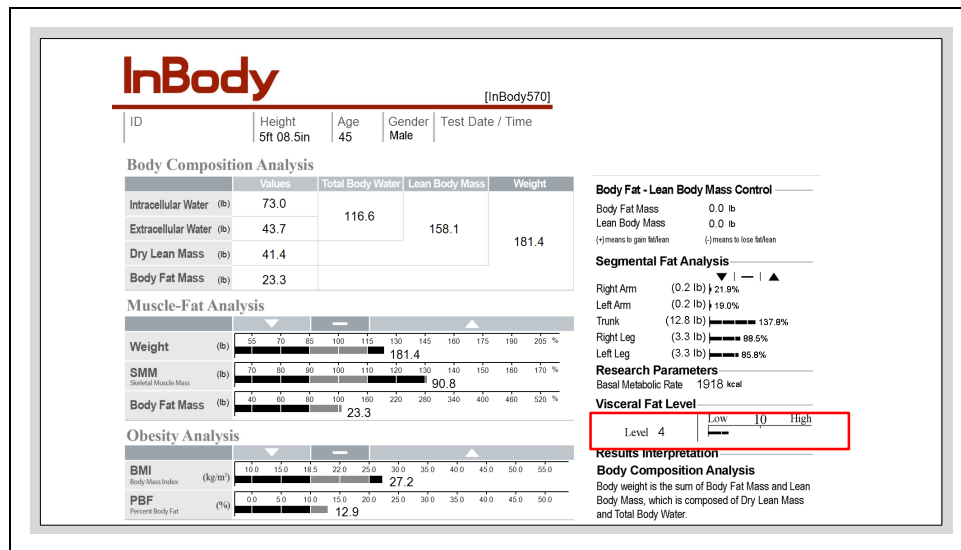
SEGMENTAL FAT ANALYSIS

In the example above, the person has 12.8 pounds of body fat in their Trunk. For a person of their height and gender, that's 137.8%, or 37.8%, more body fat than the average person of the same height and gender. This is based on your estimated ideal body weight and does not consider if you are more muscular than average.



BASAL METABOLIC RATE

- The Basal Metabolic Rate, or BMR, is the calories you need for your basic essential functions. This value allows you to work with your dietician or health care professional to create a nutritional plan, which is key to reaching your body composition goals.
- You may think that your BMR is the calories you should eat in a day, but this is NOT the case. BMR does not take into account any calories needed to perform daily activities, and so your actual caloric need for the day is likely much higher than your BMR.



VISCERAL FAT LEVEL

- As you may know, there are two main types of body fat: subcutaneous and visceral. The Visceral Fat chart allows you to determine how much harmful visceral fat you have.
- The “10” or Level 10 in the middle of the chart represents 100 cm² of the visceral fat area. Your actual visceral fat number is shown to the left of the chart. The level shown above is level 4.
- Try to stay at or below level 10 to maintain a healthy fat balance.



- ✓ **The InBody Test should be performed on an empty stomach.**

Blood is concentrated in the digestive tract after food intake, which increases the blood flow. Due to an increase in the blood flow, there will be a significant decrease in the impedance value which will cause the body composition value to come out different from that of an empty stomach. The blood flow will return to the normal state in 2-4 hours.



- ✓ **The InBody Test should be performed before exercising.**

When exercising, the blood flow will increase, the body temperature will rise and the impedance value will decrease due to vasodilation (widening of blood vessels) which occurs in the process of heat dissipation to lower the body temperature. This might cause the body composition result to come out differently from the actual value. The blood flow returns to normal state in 30 minutes upto an hour. Since this may vary by individual or exercise routine, it is recommended to perform the InBody Test before exercising.



- ✓ **The InBody Test should be performed post restroom.**

InBody measures Body Fat Mass (BFM) by subtracting the measured FFM from the total body weight. If you feel that you should empty out your stomach before performing an InBody test, please do so. Food intake before the test can affect your weight and measurement values.



- ✓ **The InBody Test should be performed before taking a shower.**

Taking a shower or a bath will temporarily increase the body temperature and the body will then expand the skin vessels, which will cause an increase in the blood flow to reduce the elevated body temperature. This will also cause a decrease in the impedance value and the body composition values will come out differently from the actual. Therefore it is best to perform the InBody Test before taking a shower or a bath.



- ✓ **To accurately measure the total body weight, dress light as possible.**

The InBody measures Body Fat Mass (BFM) by subtracting the measured FFM from the total body weight. Since clothes can affect the total body weight, recommendation would be wearing light clothes when performing an InBody Test.



- ✓ **The test should be performed barefoot.**

The InBody analyzes the body composition by measuring the impedance (resistance) by allowing weak alternating current to pass through the body. To measure the impedance, direct skin contact of the hands and feet should be made on the 8 point tactile electrodes. Socks and stockings will cause interference and may disrupt the correct body balance measurement values.



- ✓ **Keep the arms away from the body.**

The InBody divides the body into five cylinders (Right Arm, Left Arm, Trunk, Right Leg, Left Leg) and measures by region. When there is contact between the arms and the trunk, the impedance value will decrease which could lead to an inaccurate body composition result.



- ✓ **Keep the arms straight.**

The alternating current tends to flow through the shortest path. Bent-arm posture will result in lower impedance and PBF than the extended-arm posture.

Any Questions?

References

- American Diabetes Association. (2019). 2. Classification and diagnosis of diabetes. *Standards of medical care in diabetes 2019. Diabetes Care*, 42(Supplement_1), S13-S28. <https://doi.org/10.2337/dc19S002>
- Centers for Disease Control and Prevention. (n.d.). *Prediabetes— Your chance to prevent type 2 diabetes*. Retrieved April 15, 2022, from, <https://www.cdc.gov/diabetes/basics/prediabetes.html>
- Centers for Disease Control and Prevention. (n.d.). *Diabetes tests*. Retrieved March 5, 2022, from, <https://www.cdc.gov/diabetes/basics/getting-tested.html>
- Centers for Disease Control and Prevention. (n.d.). *Prediabetes risk test*. Retrieved March 5, 2022, from <https://www.cdc.gov/prediabetes/risktest/>
- Jo, A., & Mainous III, A. G. (2018). Informational value of percent body fat with body mass index for the risk of abnormal glucose: A nationally representative cross-sectional study *BMJ Open*, 8(4), e019200 <https://doi.org/10.1136/bmjopen-2017-019200>
- Nelms, M., & Sucher, P. K. (2020). *Nutrition therapy & pathophysiology* (4th ed.). Cengage Learning.