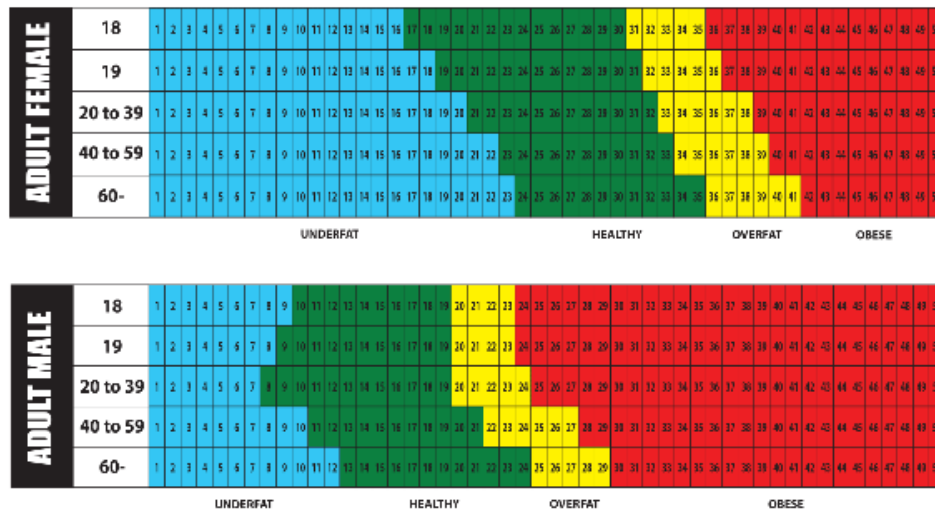


# UNDERSTANDING YOUR MEASUREMENTS



## BODY FAT PERCENTAGE AND BODY FAT MASS

**Body Fat Percentage is the proportion of fat to the total body weight. Body Fat Mass is the actual weight of fat in your body.**

Body fat is essential for maintaining body temperature, cushioning joints and protecting internal organs.

The energy, or calories, our body needs comes from what we eat and drink. Energy is burned through physical activity and general bodily functions. If you consume the same number of calories as you burn, all the calories are converted into energy. But if you consume more than you burn, excess calories are stored in fat cells. If this stored fat is not converted into energy later, it creates excess body fat.

Too much fat can damage your long-term health. Reducing excess levels of body fat has been shown to directly reduce the risk of certain conditions such as high blood pressure, heart disease, type 2 diabetes and certain cancers.

Too little body fat may lead to osteoporosis in later years, irregular periods in women and possible infertility.

It is important to check your body fat results against the Tanita healthy body fat ranges. These measurements are available for everyone from age five to 99 years.

## VISCERAL FAT

**Visceral fat is located deep in the core abdominal area, surrounding and protecting the vital organs.**

Even if your weight and body fat remains constant, as you get older the distribution of fat changes and is more likely to shift to the abdominal area. Ensuring you have a healthy level of visceral fat directly reduces the risk of certain diseases such as heart disease, high blood pressure and may delay the onset of type 2 diabetes.



## MUSCLE MASS

**The predicted weight of muscle in your body.**

## VISCERAL FAT

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## MUSCLE MASS

**The predicted weight of muscle in your body.**

Muscle mass includes the skeletal muscles, smooth muscles such as cardiac and digestive muscles and the water contained in these muscles. Muscles act as an engine in consuming energy.

As your muscle mass increases, the rate at which you burn energy (calories) increases which accelerates your basal metabolic rate (BMR) and helps you reduce excess body fat levels and lose weight in a healthy way.

If you are exercising hard your muscle mass will increase and may increase your total body weight too. That's why it's important to monitor your measurements regularly to see the impact of your training program on your muscle mass.

## MUSCLE QUALITY

Indicates the condition (quality) of muscle, which changes according to factors like age and exercise level. The muscle of young people or those who exercise regularly is normally in a good state, but the state of muscle deteriorates in elderly people or those who not have enough exercise. Both Quantity and Quality are important for a healthy muscle! Please make sure you maintain a good balance between muscle mass and quality.

Muscle Quality Judgement Chart

Male	18 - 29	30s	40s	50s	60s	70s	80 and Over
High	74 and higher	73 and higher	70 and higher	64 and higher	56 and higher	46 and higher	39 and higher
Average	49-73	47-72	44-69	39-63	33-55	25-45	21-38
Low	48 or less	46 or less	43 or less	38 or less	32 or less	24 or less	20 or less
Female	18 - 29	30s	40s	50s	60s	70s	80 and Over
High	68 and higher	70 and higher	69 and higher	67 and higher	61 and higher	54 and higher	50 and higher
Average	48-67	48-69	45-68	41-66	34-60	26-53	22-49
Low	47 or less	47 or less	44 or less	40 or less	33 or less	25 or less	21 or less

\*Muscle Quality Score may not be accurately evaluated if there are abnormalities in the state of body water, such as in the following conditions:

- If the body fatigued or swollen.
- If the person is dehydrated or suffering from reduced blood flow.

It is important to maintain a good balance between muscle mass and quality.  
More ★ indicates a better state of muscle.  
(Max. ★★★★★)

Balance Between Muscle Mass and Muscle Quality

Muscle Quality Judgement	High	★★	★★★	★★★★
	Average	★★	★★★	★★★★
	Low	★	★	★★
		Low	Average	High
Muscle Mass Judgement				

## TOTAL BODY WATER

**Total Body Water is the total amount of fluid in the body expressed as a percentage of total weight.**

Water is an essential part of staying healthy. Over half the body consists of water. It regulates body temperature and helps eliminate waste. You lose water continuously through urine, sweat and breathing, so it's important to keep replacing it.

The amount of fluid needed every day varies from person to person and is affected by climatic conditions and how much physical activity you undertake. Being well hydrated helps concentration levels, sports performance and general wellbeing.

Experts recommend that you should drink at least eight 8-ounce glasses of fluid a day, preferably water or other low calorie drinks. If you are training, it's important to increase your fluid intake to ensure peak performance at all times.

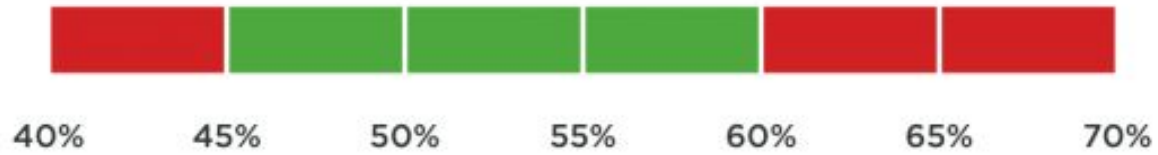
The average TBW% ranges for a healthy person are:

Female 45 to 60%

Male 50 to 65%

## Total Body Water

### Average healthy range for women



### Average healthy range for men



## BONE MASS

### The predicted weight of bone mineral in your body.

While your bone mass is unlikely to undergo noticeable changes in the short term, it's important to maintain healthy bones by having a balanced diet rich in calcium and by doing plenty of weight-bearing exercise.

You should track your bone mass over time and look for any long term changes.

## Bone Mass

### Average of estimated bone mass (lb) Women

Less Than 110 lb 4.3 lb	110 lb - 165 lb 5.3 lb	165 lb and up 6.5 lb
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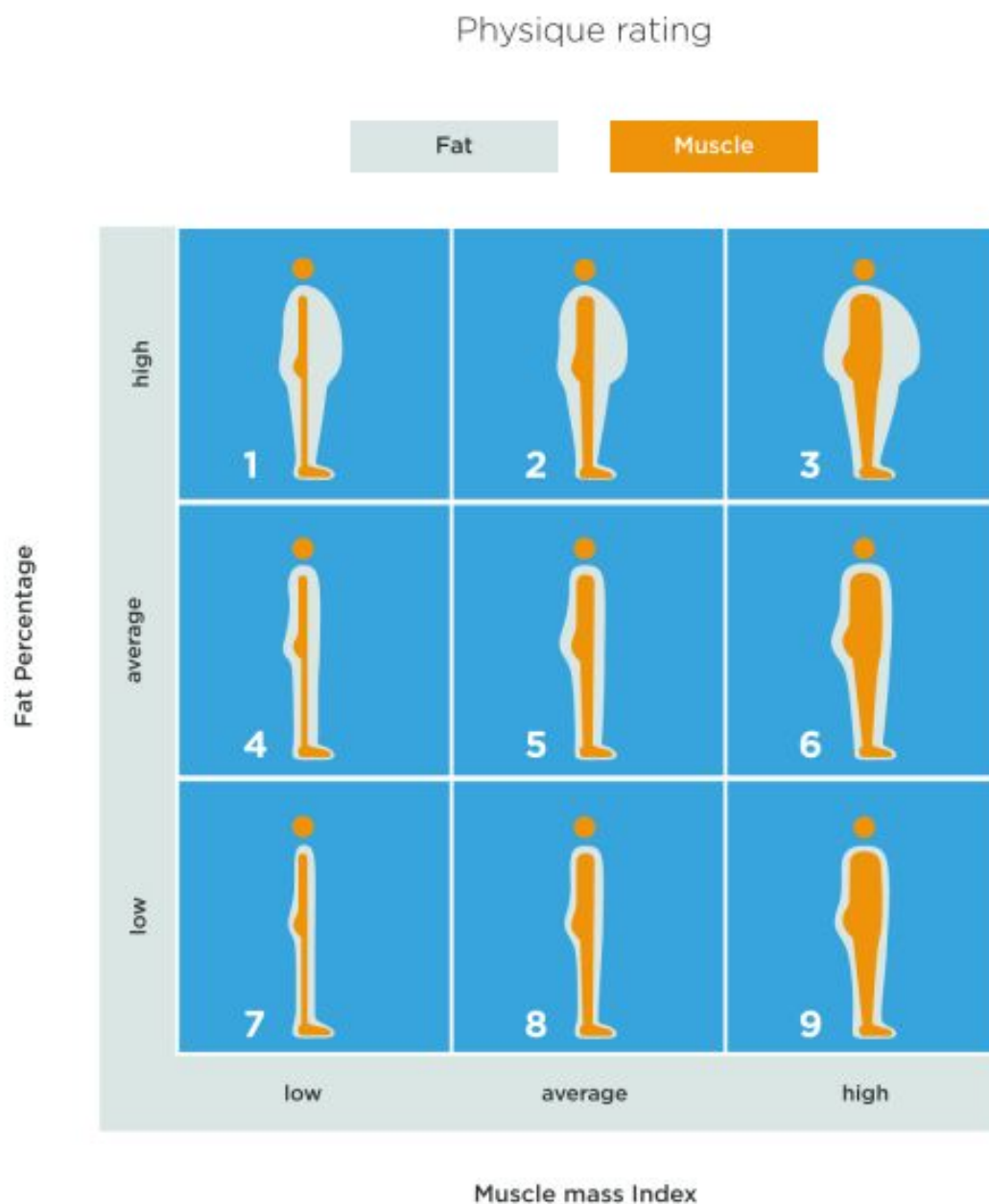
### Average of estimated bone mass (lb) Men

Less Than 143 lb 5.9 lb	143 lb - 209 lb 7.3 lb	209 lb and up 8.1 lb
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## PHYSIQUE RATING

Assesses muscle and body fat levels and rates the result as one of nine body types.

As your activity level changes the balance of body fat and muscle mass will gradually alter, which in turn will affect your overall physique.



## **BASAL METABOLIC RATE (BMR)**

**The daily minimum level of energy or calories your body requires when at rest (including sleeping) in order to function effectively.**

Increasing muscle mass will speed up your basal metabolic rate (BMR). A person with a high BMR burns more calories at rest than a person with a low BMR.

About 70% of calories consumed every day are used for your basal metabolism. Increasing your muscle mass helps raise your BMR, which increases the number of calories you burn and helps to decrease body fat levels.

Your BMR measurement can be used as a minimum baseline for a diet program. Additional calories can be included depending on your activity level. The more active you are the more calories you burn and the more muscle you build, so you need to ensure you consume enough calories to keep your body fit and healthy.

As people age their metabolic rate changes. Basal metabolism rises as a child matures and peaks at around 16 or 17, after which point it typically starts to decrease. A slow BMR will make it harder to lose body fat and overall weight.

## **DAILY CALORIC INTAKE (DCI)**

An estimate of how many calories you can consume within the next 24 hours to maintain your current weight.

Daily Calorie Intake (DCI) is the sum of calories for basal metabolism (BMR), daily activity metabolism (activities including daily household chores), and diet-induced thermogenesis (energy used in connection with digestion, absorption, metabolism, and other eating activities). Use this as a guideline in your daily meal planning. Consuming fewer calories than your predicted DCI value will help you lose weight, be sure to maintain good physical activity so you don't lose muscle mass.



## **METABOLIC AGE**

**Compares your BMR to an average for your age group.**

This is calculated by comparing your basal metabolic rate (BMR) to the BMR average of your chronological age group. If your metabolic age is higher than your actual age, it's an indication that you need to improve your metabolic rate. Increased exercise will build healthy muscle tissue, which in turn will improve your metabolic age. Stay on track by monitoring regularly.

## **SEGMENTAL MUSCLE MASS**

**Muscle mass rating for five body segments: the core abdominal area, arms and legs.**

Monitoring the muscle mass of each of your arms and legs and core abdominal area will help you see and understand the impact of your training program over time. You can also use this information to correct muscle imbalances and avoid injury.

## **SEGMENTAL BODY FAT PERCENTAGES**

**Body fat percentages for five body segments: the core abdominal area and each arm and leg.**

Monitoring the body fat percentage of each of your arms and legs and core abdominal area will help you see and understand the impact of your training program over time.

# BODY MASS INDEX

A standardised ratio of weight to height, used as a general indicator of health.

Your BMI can be calculated by dividing your weight (in kilograms) by the square of your height (in meters).

BMI is a good general indicator for population studies but has serious limitation when assessing on an individual level.

HEIGHT	WEIGHT (LBS)																														
	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250
4'11"	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	44	44	45	46	48	48	49	50
5'0"	19	21	21	22	23	25	25	26	28	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
5'1"	19	20	21	22	22	24	25	25	27	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	45	45	46	47	
5'2"	18	19	20	21	22	23	24	25	26	27	27	28	29	30	31	32	33	34	35	35	37	37	38	40	40	41	42	43	44	45	46
5'3"	18	19	20	20	21	22	23	24	25	26	27	27	29	29	30	31	32	33	34	34	36	36	37	38	39	40	41	42	43	43	44
5'4"	17	18	19	20	20	22	22	23	24	25	26	27	28	28	29	30	31	32	33	33	34	35	36	37	38	39	39	41	41	42	43
5'5"	17	18	18	19	20	21	22	23	24	24	25	26	27	28	28	29	30	31	32	32	33	34	35	36	37	37	38	39	40	41	42
5'6"	16	17	18	19	19	20	21	22	23	24	24	25	26	27	27	28	29	30	31	31	32	33	34	35	36	36	37	38	39	40	40
5'7"	16	17	17	18	19	20	20	21	22	23	24	24	25	26	27	27	28	29	30	30	31	32	33	34	35	35	36	37	38	38	39
5'8"	15	16	17	17	18	19	20	20	22	22	23	24	25	25	26	27	28	28	29	30	31	31	32	33	34	34	35	36	37	37	38
5'9"	15	16	16	17	18	19	19	20	21	22	22	23	24	24	25	26	27	27	28	29	30	30	31	32	33	33	34	35	36	36	37
5'10"	14	15	16	17	17	18	19	19	20	21	22	22	23	24	24	25	26	27	27	28	29	30	30	31	32	32	33	34	35	35	36
5'11"	14	15	15	16	17	18	18	19	20	20	21	22	23	23	24	24	25	26	27	27	28	29	29	30	31	31	32	33	34	34	35
6'0"	14	14	15	16	16	17	18	18	19	20	20	21	22	23	23	24	25	25	26	26	27	28	29	29	30	31	31	32	33	33	34
6'1"	13	14	15	15	16	17	17	18	19	19	20	20	21	22	23	23	24	25	25	26	27	27	28	29	29	30	30	31	32	32	33
6'2"	13	14	14	15	15	16	17	17	18	19	19	20	21	21	22	22	23	24	24	25	26	26	27	28	28	29	30	30	31	32	32
6'3"	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	24	25	26	26	27	28	28	29	30	30	31	31
6'4"	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	23	23	24	25	25	26	27	28	28	29	29	30	30	31
6'5"	12	13	13	14	14	15	16	16	17	17	18	18	19	20	20	21	22	22	23	23	24	24	25	26	26	27	27	28	29	29	30

UNDERWEIGHT

NORMAL

OVERWEIGHT

OBESE

## SMI (SKELETAL MUSCLE INDEX).

The ratio of the muscle in your arms and legs to your height.

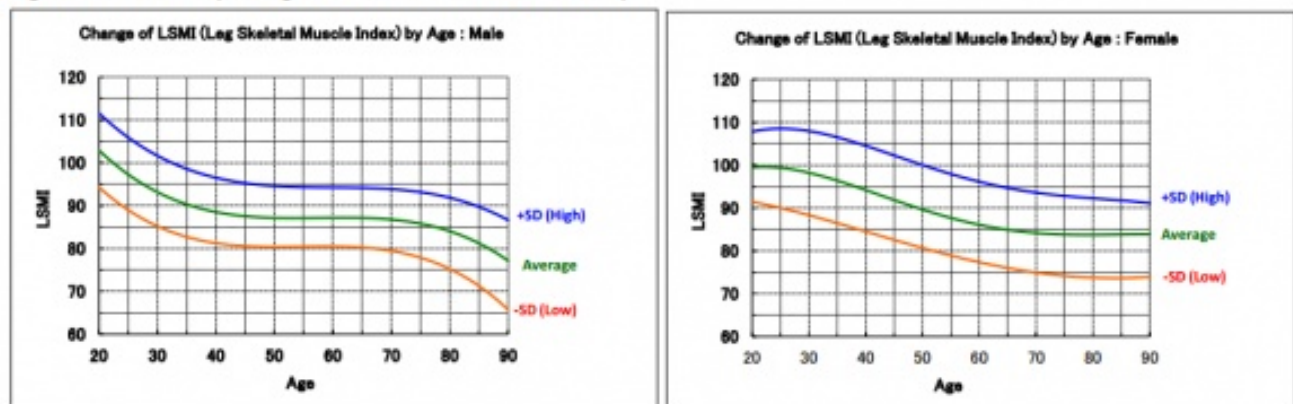
As we age we lose muscle mass. This can lead to a condition known as sarcopenia. In older people this has substantial tolls in terms of morbidity, disability, and increased costs of health care. A SMI value of 7.23 or higher is desired for men, and 5.67 is desired for women. Maintaining an active lifestyle along with specialized dietary strategies may prevent or delay the onset of this condition.

## LEG MUSCLE SCORE (LMSI)

The ratio of muscle mass in your legs to your total body weight.

A score is given for your physical condition, and plotted against average healthy values for gender and age. The score is based on your leg muscle mass divided by your body weight. A healthy 20-25 year old should achieve a score of 100. Refer to the chart to analyze your score. Maintaining an active lifestyle along with healthy dietary habits will improve your score.

Leg Muscle Score (= Leg Skeletal Muscle Index:LSMI)



(/data/Image/measurements/Leg-Muscle-Score.png?rev=FE64)

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