



# Whole Body Composition Analysis

## Measuring Body Fat Is Important For Determining Fitness

HEALTHY BODY FAT RANGE		
	<i>Under 30 yrs. old</i>	<i>Over 30 yrs. old</i>
<b>Males</b>	14%-20%	17%-23%
<b>Females</b>	17%-24%	20%-27%

Weight alone is not a clear indicator of good health, because it does not distinguish between pounds that come from body fat and those that come from lean body mass (or muscle) and bone. Carrying too much fat is called obesity, and puts a person at risk for many serious medical conditions including heart disease, diabetes, stroke, and even certain forms of cancer. In fact, obesity contributes to at least half the

chronic diseases in western society.

### Not All Pounds are the Same.

Overweight means an excess of total body weight based on population averages for heights and body frame size. Athletes and very muscular people may be overweight, but that does not mean they are over fat. Obesity means an excess of body fat regardless of weight.

Medical professionals have determined that a healthy range of body fat is 14%-20% for men, and 17%-24% for women. (Although ideal body composition varies with age as Table 1 shows.) But until recently, accurate methods for measuring and monitoring body fat have not been available to the average person.

### DEXA Scanning can safely and accurately quantify body composition

Whole body composition assessment can be done by using DEXA Xray technology. DEXA scanning is commonly used in medical practice to evaluate bone density and to diagnose osteoporosis, a condition that often affects women after menopause but may also be found in men. DEXA has high precision in assessing body composition, involves relatively low radiation exposure (less than one tenth the radiation exposure of a Chest Xray), and has the capacity to quantify regional fat, lean, and bone mass. The bone densitometry machine in this office (a Hologic Discovery W) has been specially equipped with hardware and software that allows for the performance of whole body composition scans.

## Who Should Have a Body Composition Scan?

- Those embarking on diets, new exercise regiments or new weight loss treatments who want to assess baseline % body fat and wish to track accurately changes in body fat in response to treatment
- Athletes who want an accurate assessment of body fat and leanness
- Those with a family history of diabetes, even if they are in the normal weight range for height (high percentage of body fat in all weight categories is a risk factor for diabetes)
- Those working with a personal trainer who want to monitor their exercise progress
- Those interested in body sculpting
- Those with eating disorders
- Those who are in the normal weight range but are not exercising regularly (this will perhaps be an eye opener and a strong motivator to begin exercising on a regular basis)
- Those who are above the normal weight range for height

## How Should I prepare for the Test?

On the day of the exam eat normally. You will need to remove all jewelry and piercings, undress, and put on a gown. Then you'll lie on a padded table with an x-ray generator below and a detector (an imaging device) above. Once on the table you will be asked to lie flat and still with toes pointing inward for approximately 7 minutes while the arm of the machine passes over your body taking measurements. It is important that you stay as still as possible during the procedure to ensure a clear, useful image. The DEXA whole body composition scan takes approximately 10 minutes to perform.

DEXA is a simple, non-invasive procedure. No anesthesia is required. The DEXA machine assesses body composition by sending out a thin, invisible beam of low-dose x-rays with two distinct energy peaks through your bones, muscle and fat tissue. One peak is absorbed mainly by soft tissues and the other by bone. This allows for an exact measurement of body fat, lean, and bone.

Please inform the doctor if you recently had a barium examination or have been injected with a contrast material for a computed tomography (CT) scan or radioisotope scan; you may have to wait 10 to 14 days before undergoing a DEXA test. Women should always inform the doctor or nurse if there is a possibility they are pregnant. All women of child bearing years will be asked to have a urine pregnancy test prior to undergoing DEXA scanning.

## What Do I do with the Results?

Compare your total body fat percentage to the ideal values for your age and gender as listed in Table One.

- If your **percent body fat falls into the fair to excellent range**, keep up the good work with diet and exercise.
- **If you are in the normal weight range for height, but your percent body fat is high and falls into the poor or very poor categories**, you will need to start an exercise program that combines strength building (weight training) with aerobic conditioning. For some, it may be helpful to design a personal fitness program with the help of a personal trainer. You can monitor your success with exercise with a follow up body composition scan in 6 months to a year.
- **If you are overweight and your percent body fat is poor to very poor**, you will need a combination of diet and exercise to improve your body composition and lower your risk for diabetes, heart disease, and certain cancers.
- **If you are underweight and your percent body fat is falls in the risky category**, you will need to alter your diet and exercise program.
- **Share your results with consulting physicians and other health professionals** like Nutritionists, physical therapists, and physical therapists.

## **What is the Cost of a Whole Body Scan?**

The test cost \$300.00. It is generally not re-imbursed by any health insurance plans or by Medicare. The technology is mostly used in Research Studies

# Table 1: Body Fat "Rating Scale"

Many people desire a "rating system" for assessing their current level of body fat. The following table provides a meaningful rating system.

## MALE

Age	RISKY	EXCELLENT	GOOD	FAIR	POOR	VERY POOR
19-24	<6%	10.8%	14.9%	19.0%	23.3%	>23.3%
25-29		12.8%	16.5%	20.3%	24.4%	
30-34		14.5%	18.0%	21.5%	25.2%	
35-39		16.1%	19.4%	22.6%	26.1%	
40-44		17.5%	20.5%	23.6%	26.9%	
45-49		18.6%	21.5%	24.5%	27.6%	
50-54		19.8%	22.7%	25.6%	28.7%	
55-59		20.2%	23.2%	26.2%	29.3%	
60+		20.3%	23.5%	26.7%	29.8%	

## FEMALE

Age	RISKY	EXCELLENT	GOOD	FAIR	POOR	VERY POOR
19-24	<9%	18.9%	22.1%	25.0%	29.6%	>29.6%
25-29		18.9%	22.0%	25.4%	29.8%	
30-34		19.7%	22.7%	26.4%	30.5%	
35-39		21.0%	24.0%	27.7%	31.5%	
40-44		22.6%	25.6%	29.3%	32.8%	
45-49		24.3%	27.3%	30.9%	34.1%	
50-54		26.6%	29.7%	33.1%	36.2%	
55-59		27.4%	30.7%	34.0%	37.3%	
60+		27.6%	31.0%	34.4%	38.0%	

# **SIMPLE TIPS ON EXERCISE AND EATING HEALTHY**

## **EXERCISE:**

Exercise plays important role in weight management and overall fitness for people of all ages. It is important to achieve and maintain ideal percent body fat with age.

For maintaining fitness, you need a minimum of 30 minutes of moderate to intense physical exercise every day or 45 minutes 4 – 5 times a week. Planning an exercise program should be based on personal goals as well as on individual capabilities. The most important element is to think long-term and make exercise a permanent part of your life.

### **Moderately Intense Activities**

- Brisk Walking (3-4 mph)
- Cycling (10 mph)
- Swimming or calisthenics
- Racket sports or table tennis
- Golf (without cart)
- Housecleaning, general\*
- Raking leaves\*
- Dancing\*
- Playing actively with children\*

\*Considered moderate only if they are performed at an intensity comparable to brisk walking.

(Source: Journal of the American Medical Association 273:402:1995.)

## **EATING HEALTHY**

For most people, maintaining a desirable weight and body fat percentage can only be achieved through an integrated program of nutrition and exercise-or balancing energy intake with energy expenditure. Reducing weight and body fat requires cutting back on calories and increasing the amount of exercise.

Dieting alone won't work. Even when a person's weight-control system has genetic flaws that may respond to newly available pharmaceuticals, proper

nutrition and plenty of exercise is still part of the prescription for health.

## **Food Pyramid**

Most Americans have more than enough to eat, but many people don't eat a healthy range of foods. Consuming too many calories from any kind of food source can produce fat. One of the best models for healthy eating is represented in the Food Pyramid. To get the proper daily nutritional value:

- Eat a variety of foods
- Eat a high-fiber diet (choose more grains, fruits and vegetables instead of protein, fats and sugar)
- Maintain a low-fat, low-cholesterol diet (eat no more than 30% of calories from fat, including only 10% from saturated fat)
- Use moderate amounts of salt and sodium and choose sugar substitutes
- Limit alcoholic intake

## **Breaking Old Habits**

Often the first step to a good diet lies in changing food and eating behavior:

- Don't skip meals
- Eat a series of small meals throughout the day and avoid a big meal late in the evening
- Don't eat in front of the television (more calories are consumed during this setting than you may be aware of)
- Eat and chew slowly
- Use a smaller-sized plate to achieve a "full plate"
- Don't go back for seconds
- Bake or broil food instead of frying
- Order from light menus and purchase low-calorie or low-fat foods (remember that low-fat does not necessarily mean low-calorie)
- Learn about food values and make healthy combinations in meals
- Weigh yourself regularly and focus on measuring body fat percentage
- Reward yourself with non-food pleasures