

Understanding Your Total Body Test Report--Overview

The traditional or typical DEXA with which people are most familiar provides measurements of bone mineral density (BMD) in four spinal lumbar and left and right femurs. The “Total Body Test” you completed is often called a “Body Composition Test” since in addition to measuring bone density, it also measures lean mass and fat mass. In addition to measuring the average of these measurements throughout your whole body, it also measures bone, lean and fat in different regions in your body, e.g. arms, legs, trunk, all spinal lumbar, pelvis, etc. It is considered the “gold standard” for these measurements since it actually x-rays your body composition instead of estimating as other “measurements” do. A good summary of the test was recently written by Drs. Roizen & Oz and is attached to the test report. The report contains 6 pages that are summarized below.

Page 1: Interpreting the Total Body Bone Density Test Report

This page contains the basic data that was collected before taking the test. Please review to ensure it does not contain errors. It also contains a diagram of your skeleton and the different areas that were used to measure your bones, fat and lean. Although it refers to a four-color graph, that graph is not explained until the following page.

Page 2: The Standards or Reference Group to which your measurements were compared.

Once the measurements are taken, your measurements are compared to the universally accepted standard for bone health as well as a Total Body average that is compared to people of your age and gender. It may be more detail than you need so after reviewing it, turn to the next page for a simplified bar-graphed presentation of your bone density in the different areas that were measured.

Page 3: A Bar-graphed Representation of your Bone Mineral Density Measurements

This page of your test report provides results from the body fat and lean measurements that were taken. Comparisons were made between your fat and lean measurements also derived from data in IHTI’s Longitudinal Database of Medical Biomarkers Health Technologies’ data base of over 24,000 scans.

Page 4: Body Fat and Lean Measurements

The DEXA scan is considered the “gold standard” for measuring lean, fat and bone since it is based on an actual x-ray of your body’s fat that is usually **5% points higher** than the estimating technologies provide. This page contains the measurements of your % body fat and how it compares to two standards: (1) whether or not your % fat is in the “unhealthy” range and, if so, how much fat will you have to lose to get to the healthy range if you maintain your current lean mass; and (2) whether or not your fat is in the “fit” range and how much fat you will have to lose to get to the fit range if you maintain your current lean mass.

Page 5: Detailed information on regional % fat, lean and bone density.

Most of this information has been summarized in previous pages and is probably more detail than you need. However, if you do have an interest but don’t understand, give us a call at (210-241-4900) for a summary of what these measurements mean.

Page 6: Is There a Fracture in Your Future? By Drs. Mehmet C. Oz and Michael F Roizen.

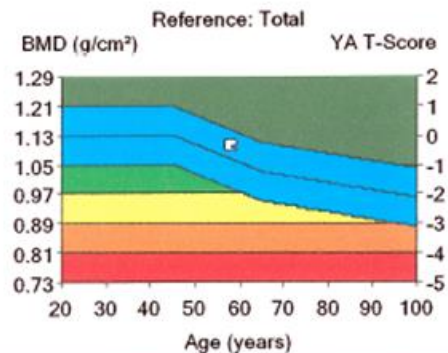
This is a good summary article about the value of a DEXA test. If you haven’t read it before, it is worth reading.

Page 1: Interpreting the Total Body Bone Density Test Report

This page of the report contains basic information about you, a picture of your skeleton with the areas that were measured marked off by the black lines. It also displays how the average bone density throughout your entire body compares to the reference standards used in medicine and research. The next page explains the data shown in the box on the top of the page starting with “patient” and then explains the lines drawn on your skeleton followed by a page explaining the 4-color diagram.

Patient:		Facility ID:	
Birth Date:	8/1/1958 57.8 years	Physician:	48
Height / Weight:	67.0 in. 204.5 lbs.	Measured:	5/31/2016 7:35:02 PM (6.70)
Sex / Ethnic:	Female White	Analyzed:	5/31/2016 7:42:06 PM (6.70)

Total Body Bone Density



Region	¹ BMD (g/cm ²)	² Young-Adult T-Score	³ Age-Matched Z-Score
Total	1.100	-0.3	0.5

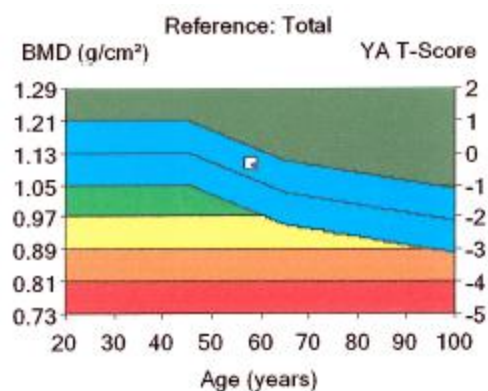
In the pale yellow box at the top of the page, please review your basic information for errors and call us so we can correct any mistakes (210-824-4200). In the left side of this page is an x-ray of your skeleton. The black lines show the regions of your body that were measured for bone density, lean and fat mass which will be reported on later pages. When you took the test, the technician merely located your chin shown by the line just below the head at the top of the page. As the scanner moved back and forth across your body, it automatically measured bone, lean and fat in the areas shown by the line diagrams as well as calculating the same measurements for your total body. Since so much of the measurement is automatic, there is minimal subjectivity or “technician error”. Now turn to the next page for an overview of how to interpret your results.

Page 2: The Standards to which your measurements were compared.

Before reviewing your actual measurements let's explain the reference group or standards to which all of your measurements are compared. The standard is based on 54,618 BMD measurements of 35-year olds of your gender*. Age 35 is when people typically reach their maximum or "peak" bone density. So the comparisons are between your current bone density and where it most likely was, or will be, when you are 35-years old. The interpretation is simple—above the standard is good, below the standard is bad. The further above this standard your measurements are, the healthier and stronger are your bones and the less likely you are to have a bone fracture. Conversely, the further below the standard your measurements are, the more unhealthy or weaker are your bones and the greater your risk of having a fracture. The next page will compare your total body bone density with the accepted standard.

**Although the standard against which your measurements are compared has for years been supplied by G.E. Lunar, Inc. based on their research. However, GE's norms were based on only 1,724 measurements. Therefore, we have recently added 24,415 measurements from our database and 28,479 from the CDC's database to Lunar's 1,724 measurements for a total of 54,618.*

The four-color diagram to the right displays measurement of the bone density in your entire body as compared to the standards used for estimating healthy and unhealthy bones. The closer your measurement is to the red area at the bottom of the chart, the worse and more unhealthy are your bones. Conversely, the closer your measurement is to the dark green area at the top of the chart, the better and healthier your bones. With respect to the colors, measurements in the red area suggests osteoporosis, the orange area "osteopenia" (a precursor of osteoporosis), the yellow area suggests very low bone density, the bright green area below average, the blue area is from low average to high average and the dark green area is well-above average. The higher the score into the dark green area, the greater your bone density and bone health. Conversely, the closer your measurement is to the red area, the worse your bones.

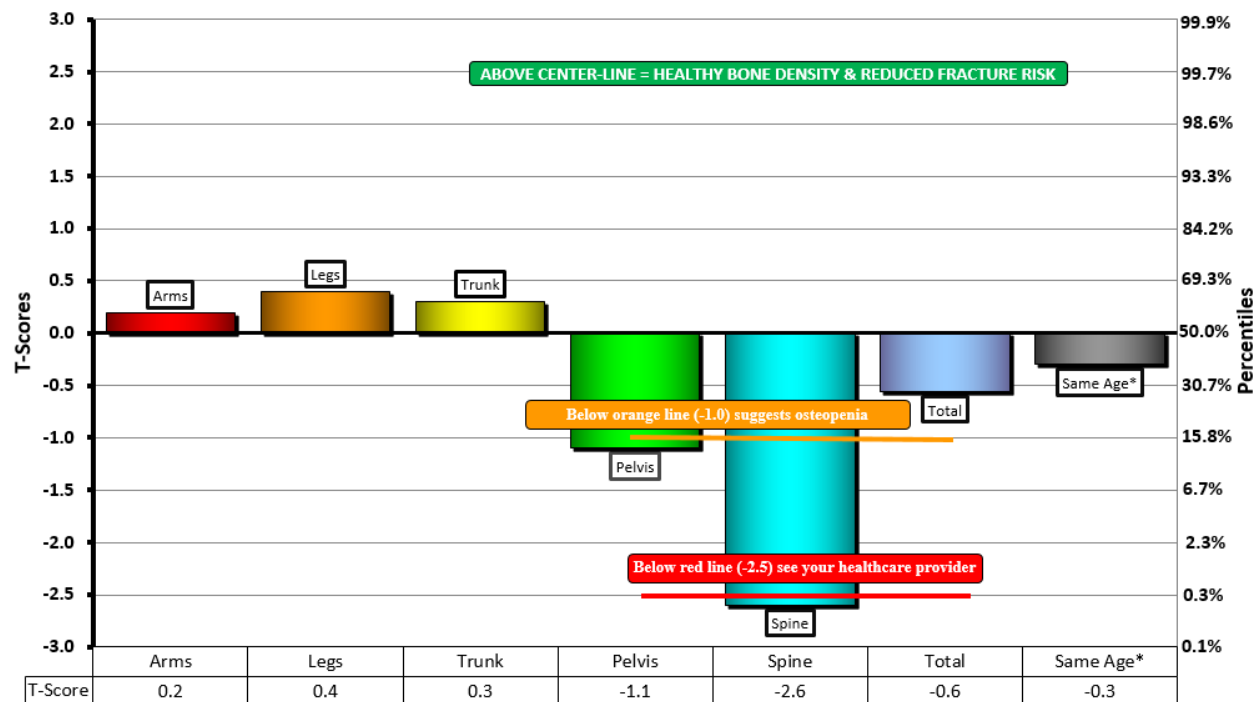


Your personal bone density measurement is depicted by the small white square. For example, in this diagram, the woman's bone density is in the middle of the blue area suggesting she is slightly above average for a woman of her age but a long way from the osteopenia and osteoporosis.

Page 3: Bar-graphed Representations of your Bone Density Measurements

To simplify the explanation of your test results, on page 2 of your report, we have created bar-graph representations of the average bone density in your arms, legs, trunk, pelvis, and spine as well as the average in your total body. The center line of the bar-graphed presentation represents the standard against which your measurements were compared. Any bar-graphs that extend above this line suggests your bones are healthier and stronger than the standard, and you are less likely than a person of your age to have a fracture. Conversely, bar-graphs that extend below the center line suggests the density or strength of your bones in this area is below normal and more likely to fracture. In short, above the center line, is good news, below the center line is bad news. Bar-graphs that extend below the orange line, suggest “Osteopenia” of the Pelvis, Spine, and Total Body.

A sample bar-graph is provided to help you better understand your specific bar-graphs that are provided the page after the sample. Reading from left to right, the bar-graphs for arms, legs and trunk are all above the center-line (the standard) suggesting that this person’s bone density is above average and has a lower than average risk of fracture in these areas. However, the pelvis bar-graph is significantly below the center-line suggesting “osteopenia” and a somewhat greater than average risk of a pelvic fracture. The bar-graph representing the spine is even further below the center-line or standard suggesting osteoporosis and a significant risk of fracture and the need to contact their healthcare provider.



Page 4: Body Fat and Lean Measurements—a Sample Report

Name: Sample

June 8, 2016

ANALYSIS OF YOUR FAT-FREE MASS AND BODY FAT		
1	Since you took the test fully dressed, we have subtracted 1.5% from your scale weight to obtain an estimated nude weight of:	177.3 lbs
2	Of your total body weight, your Fat-Free or Lean Mass (mostly muscle, bone, organs, etc) weighs	108.2 lbs
3	Of your total body weight, your adipose or fat mass weighs	69.1 lbs
4	The percentage of your total body weight that is adipose or fat mass	39.0%
5	The average % fat for women of all ages is	38.1%
6	Compared to women of all ages, your % body fat is higher than	53.7%
7	The average % fat for women of your age is	39.9%
8	Compared to women of your age, your % body fat is higher than	45.8%
9	A "healthy" % body fat for women is generally considered to be	38.0%
10	If you maintain your current level of Fat-Free Mass (item 3 above) you need to lose this many pounds of body fat	2.9 lbs
11	If you maintain your current level of Fat-free Mass and lose only fat, a personalized "healthy goal weight" for you will be	174.4 lbs
12	A "Fit" % body fat for women of all ages is generally considered:	33.0%
13	If you maintain your current level of Fat-free Mass and lose only fat, a personalized "fit goal weight" for you will be:	161.4 lbs
14	Central or mid-section fat is the most unhealthy fat. Our best estimate of the % of fat that is in your mid-section is:	38.0%
15	Our best estimate of your resting metabolism is that you burn this many calories a day at rest without moving	1298
16	Our best estimate of how many calories you burn in a single step of walking is:	0.05

Page 5: Detailed measurements of bone, fat and lean throughout your body.

This page provides more detail than most of you will want or ever use. The upper portion of this data sheet provides information that is already represented in the bar-graphs. The lower portion entitled "BODY COMPOSITION", provides measurements of your fat and lean in the different areas and also provides a measurements of your % fat and lean in the different regions of your body that were measured. The most useful column is the column entitled "Region (% fat)" which reports the percentage of fat in your Left Arm, Left Leg.....and Total body..

ANCILLARY RESULTS [Total Body]							
Region	¹ BMD (g/cm ²)	² Young-Adult (%) T-Score		³ Age-Matched (%) Z-Score		BMC (g)	Area (cm ²)
	Head	2.394	-	-	-	-	501
Arms	0.792	-	-	-	-	296	374
Legs	1.231	-	-	-	-	909	739
Trunk	1.040	-	-	-	-	1,031	991
Ribs	0.966	-	-	-	-	430	445
Pelvis	1.080	-	-	-	-	346	321
Spine	1.128	-	-	-	-	254	225
Total	1.183	105	0.7	114	1.9	2,737	2,313

BODY COMPOSITION							
Region	Tissue (%Fat)	Region (%Fat)	Tissue (g)	Fat (g)	Lean (g)	BMC (g)	Total Mass (kg)
Left Arm	39.4	37.9	3,505	1,381	2,124	140	-
Left Leg	42.8	41.0	10,581	4,528	6,053	453	-
Left Trunk	47.6	46.1	15,466	7,367	8,099	504	-
Left Total	43.8	42.0	31,084	13,610	17,474	1,291	-
Right Arm	39.5	37.8	3,517	1,388	2,129	156	-
Right Leg	42.8	41.0	10,286	4,401	5,885	456	-
Right Trunk	47.6	45.9	14,730	7,008	7,722	526	-
Right Total	43.1	41.2	30,868	13,306	17,562	1,446	-
Arms	39.4	37.8	7,022	2,769	4,253	296	-
Legs	42.8	41.0	20,867	8,929	11,939	909	-
Trunk	47.6	46.0	30,196	14,375	15,821	1,031	-
Total	43.4	41.6	61,952	26,916	35,036	2,737	64.7

Page 6: Is There a Fracture in Your Future?

May 2, 2010 12:00 AM by [Mehmet C. Oz, MD, and Michael F. Roizen, MD](#) |

[Osteoporosis](#) is often called the Rottweiler disease because it chews up your bones fast. And it's sneaky. You won't have a clue that your bones have been quietly getting brittle until you trip over the dog's water bowl and break your wrist or fracture your hip.

Getting a clue early enough to do something about it is the whole point of having something called a bone mineral density test, which checks out the sturdiness of your skeleton. Who should have one of these, and when? Age, sex, family, and "it depends" are part of the answer. (Aren't they always?)

If bones that snap like toothpicks run in your family (or if you're underweight or you overdo alcohol), you should get your skeleton scanned by age 50 or earlier. If not, docs urge women to have the test around menopause and definitely by 65. Men should get it by then, too; osteoporosis doesn't know from sexual discrimination.

No worries about the process. As medical tests go, this one's a gem: It's fast, painless, very safe, and doesn't cost the moon. Figure about 15 minutes for a DXA scan of your hip and spine (DXA stands for [dual energy x-ray absorptiometry](#), if you like to know these things). DXA scans are the gold standard for assessing your bones' mineral content (that is, their strength). If your insurance doesn't cover DXA, it will run about \$200.

Michael F. Roizen, MD & Mehmet C. Oz, MD

