



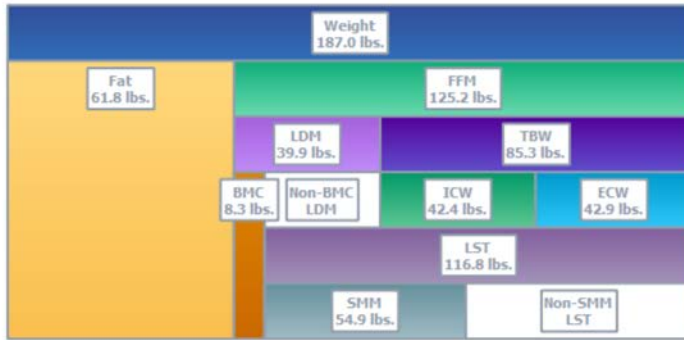
Name: Robert Sample Test Date: 4:38 PM; February 18, 2014  
 Subject ID: Report Printed on: 1:37 PM; April 8, 2015

Height	Weight	Age	Sex	Resistance	Reactance	Frame	Target Wt.	Activity Level	Equation Set		
68.8 in	187.0 lbs	64.0	Female	542.0	53.6	Medium	144.0 lbs	Very Light	RJL Systems		
HR	BP	Waist	Wrist	Neck	Hips	Shldrs	Vit_D	A1C	Cholesterol	Triglycerides	HDL
70	138 / 81	36.0	8.5	18.0	45.0	42.0	60.0	4.5	170.0	104.0	48.0

	Current	Average Range	Comment
<b>Height</b>	68.8 in	59.9 - 65.3 in	Above average by 3.5 in
<b>Weight</b>	187.0 lbs	123.5 - 192.5 lbs	Within average by 5.5 lbs
<b>Fat</b>	61.8 lbs	39.6 - 84.8 lbs	Within average by 22.2 lbs
<b>Fat % of Total Weight</b>	33.1 %	31.7 - 44.9 %	Within average by 1.4 %
<b>Fat-Free Mass (FFM)</b>	125.2 lbs	81.5 - 110.1 lbs	Above average by 15.1 lbs
<b>FFM % of Total Weight</b>	66.9 %	55.1 - 68.3 %	Within average by 1.4 %
<b>Bone Mineral Content (BMC)</b>	8.3 lbs	5.6 - 8.6 lbs	Within average by 0.2 lbs
<b>BMC % of Total Weight</b>	4.5 %	4.5 - 4.6 %	Within average by 0.0 %
<b>BMC % of FFM</b>	6.7 %	6.4 - 7.9 %	Within average by 0.3 %
<b>Lean Soft Tissue (LST)</b>	116.8 lbs	77.7 - 106.9 lbs	Above average by 9.9 lbs
<b>LST % of Total Weight</b>	62.5 %	52.0 - 67.0 %	Within average by 4.5 %
<b>LST % of FFM</b>	93.3 %	92.1 - 93.6 %	Within average by 0.3 %
<b>Skeletal Muscle Mass (SMM)</b>	54.9 lbs	39.4 - 56.5 lbs	Within average by 1.6 lbs
<b>SMM % of Total Weight</b>	29.4 %	26.6 - 35.0 %	Within average by 2.7 %
<b>SMM % of FFM</b>	43.9 %	44.7 - 51.7 %	Below average by 0.8 %
<b>Lean Dry Mass (LDM)</b>	39.9 lbs	20.5 - 27.9 lbs	Above average by 12.0 lbs
<b>LDM % of Total Weight</b>	21.3 %	13.6 - 17.6 %	Above average by 3.7 %
<b>LDM % of FFM</b>	31.9 %	23.8 - 26.8 %	Above average by 5.1 %
<b>Total Body Water (TBW)</b>	85.3 lbs	60.7 - 82.5 lbs	Above average by 2.8 lbs
<b>TBW % of Total Weight</b>	45.6 %	41.1 - 51.0 %	Within average by 4.5 %
<b>TBW % of FFM</b>	68.1 %	73.2 - 76.2 %	Below average by 5.1 %
<b>Intra-Cellular Water (ICW)</b>	42.4 lbs	33.2 - 42.2 lbs	Above average by 0.2 lbs
<b>ICW % of Total Weight</b>	22.7 %	21.3 - 27.6 %	Within average by 1.4 %
<b>ICW % of FFM</b>	33.9 %	38.0 - 41.1 %	Below average by 4.1 %
<b>ICW % of TBW</b>	49.7 %	51.0 - 54.9 %	Below average by 1.2 %
<b>Extra-Cellular Water (ECW)</b>	42.9 lbs	27.4 - 40.4 lbs	Above average by 2.5 lbs
<b>ECW % of Total Weight</b>	22.9 %	19.6 - 23.7 %	Within average by 0.8 %
<b>ECW % of FFM</b>	34.2 %	33.5 - 36.9 %	Within average by 0.8 %
<b>ECW % of TBW</b>	50.3 %	45.1 - 49.0 %	Above average by 1.2 %
<b>Body Mass Index (BMI)</b>	27.8	22.4 - 34.3	Within average by 5.4
<b>Fat Mass Index (FMI)</b>	9.2	7.1 - 15.2	Within average by 2.0
<b>Fat-Free Mass Index (FFMI)</b>	18.6	14.9 - 19.4	Within average by 0.8
<b>Phase Angle (PA)</b>	5.6 Degrees	5.8 - 7.7 Degrees	Below average by 0.2 Degrees
<b>Basal Metabolic Rate (BMR)</b>	1717.2 Calories	1172.0 - 1481.9 Calories	Above average by 235.3 Calories
<b>Daily Energy Expenditure (DEE)</b>	2232.4 Calories		

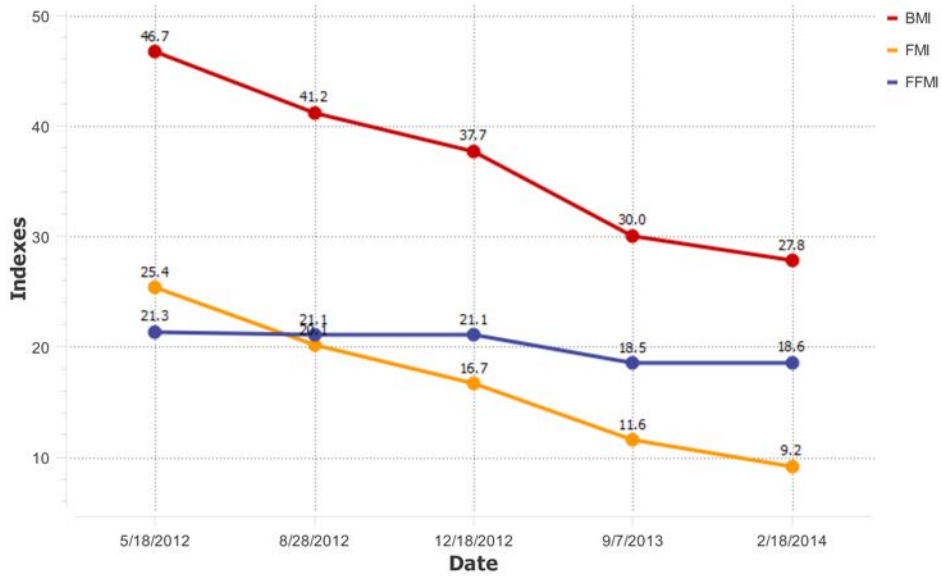
Please note that these ranges represent average values taken from a treatment of the NHANES-III survey data. They are not meant to be "Clinical" or "Ideal" ranges.

### Estimated Complete Body Composition



- Weight
- Fat is 33.1% of Weight
- FFM is 66.9% of Weight
- LDM is 21.3% of Weight
- LDM is 31.9% of FFM
- TBW is 45.6% of Weight
- TBW is 68.1% of FFM
- BMC is 4.5% of Weight
- BMC is 6.7% of FFM
- BMC is 20.9% of Ldm
- Non-BMC LDM
- ICW is 22.7% of Weight
- ICW is 33.9% of FFM
- ICW is 49.7% of TBW
- ECW is 22.9% of Weight
- ECW is 34.2% of FFM
- ECW is 50.3% of TBW
- LST is 62.5% of Weight
- LST is 93.3% of FFM
- SMM is 29.4% of Weight
- SMM is 43.9% of FFM
- SMM is 47.0% of LST
- Non-SMM LST

### BMI, FMI, & FFMI

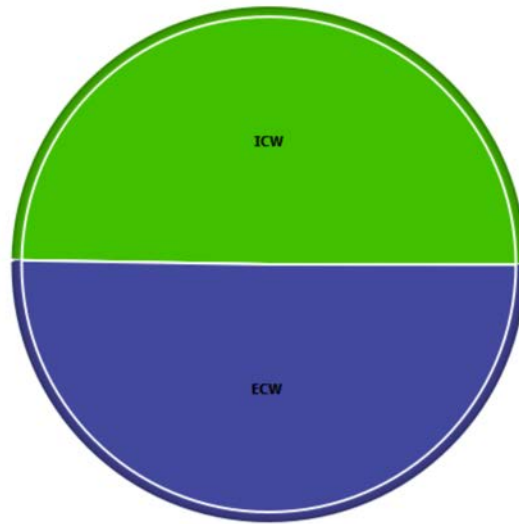


### Estimated Body Composition



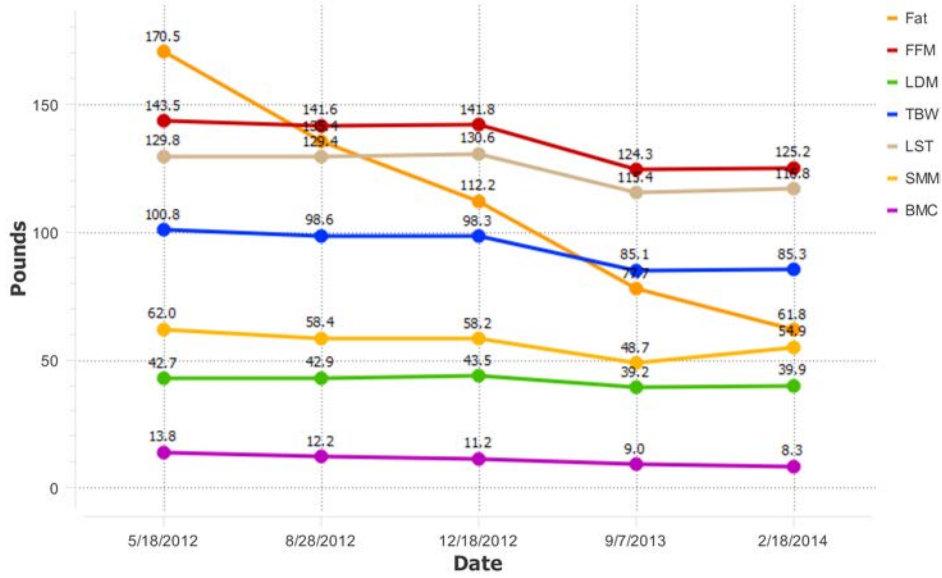
- Fat is 33.1% of Weight
- FFM is 66.9% of Weight

### Estimated Fluids Distribution

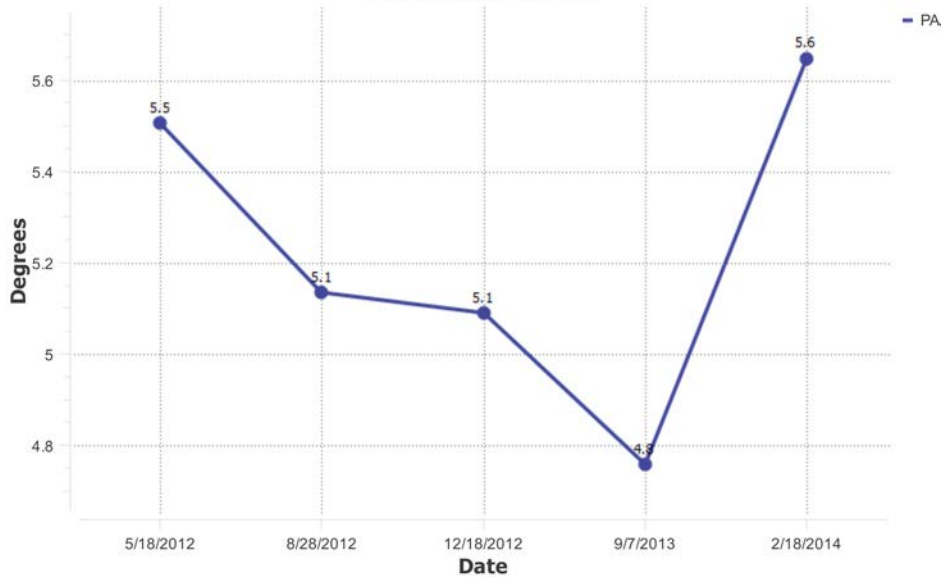


- ICW is 49.7% of TBW
- ECW is 50.3% of TBW

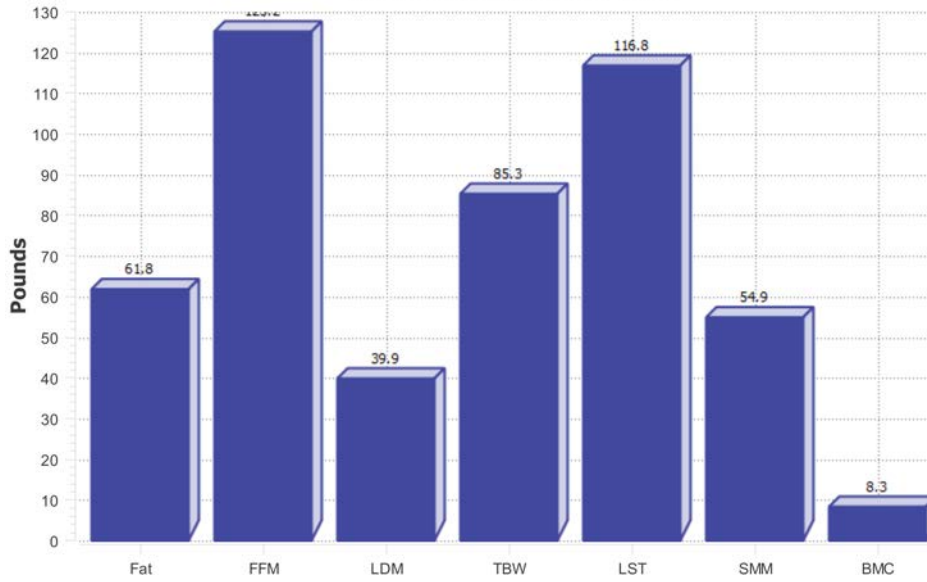
### Body Composition History



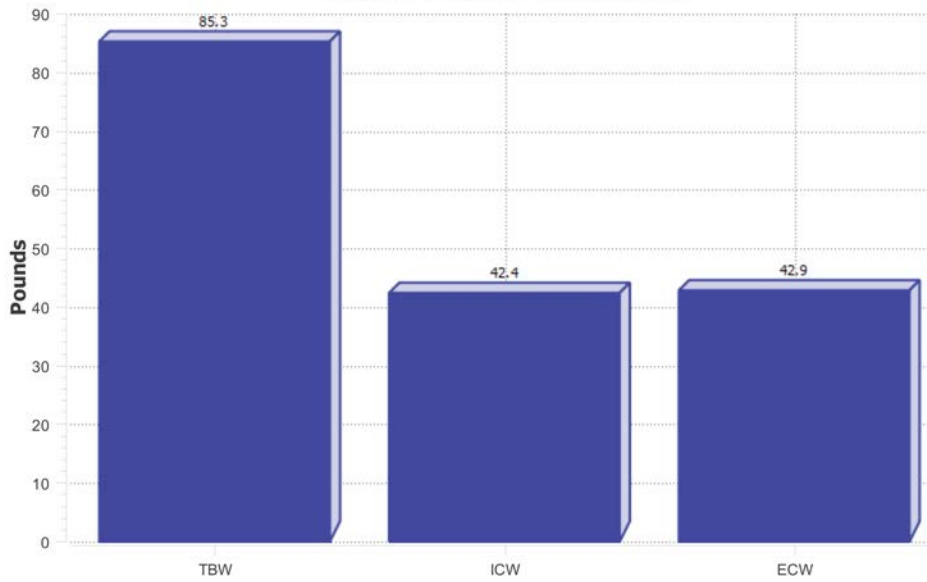
### Phase Angle History



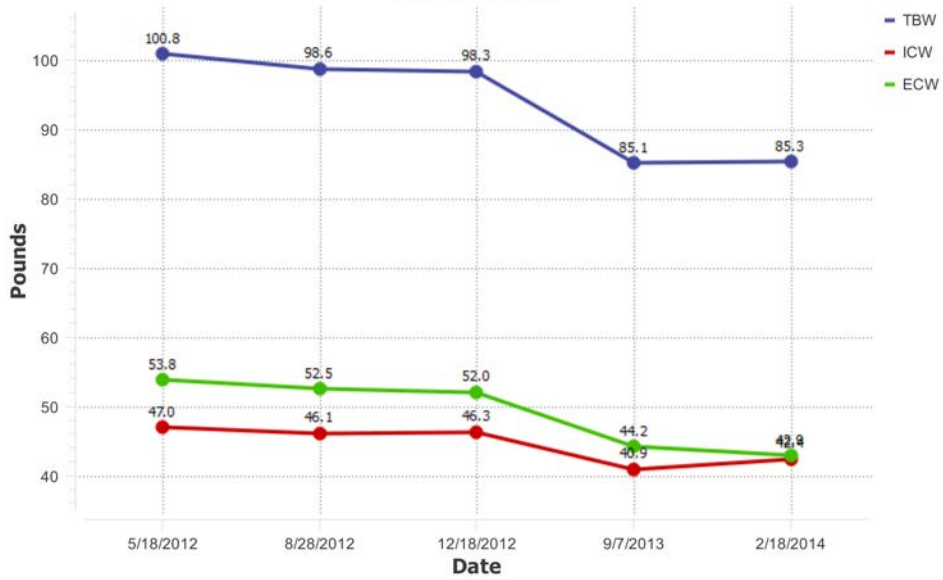
### Estimated Body Composition

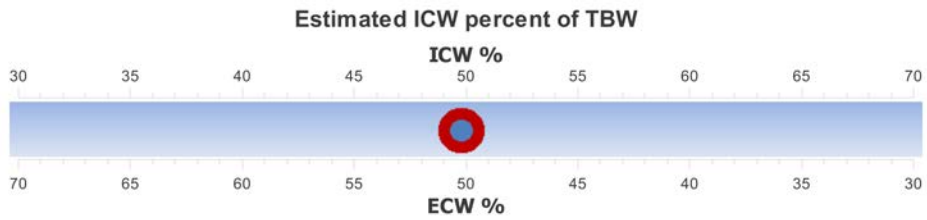
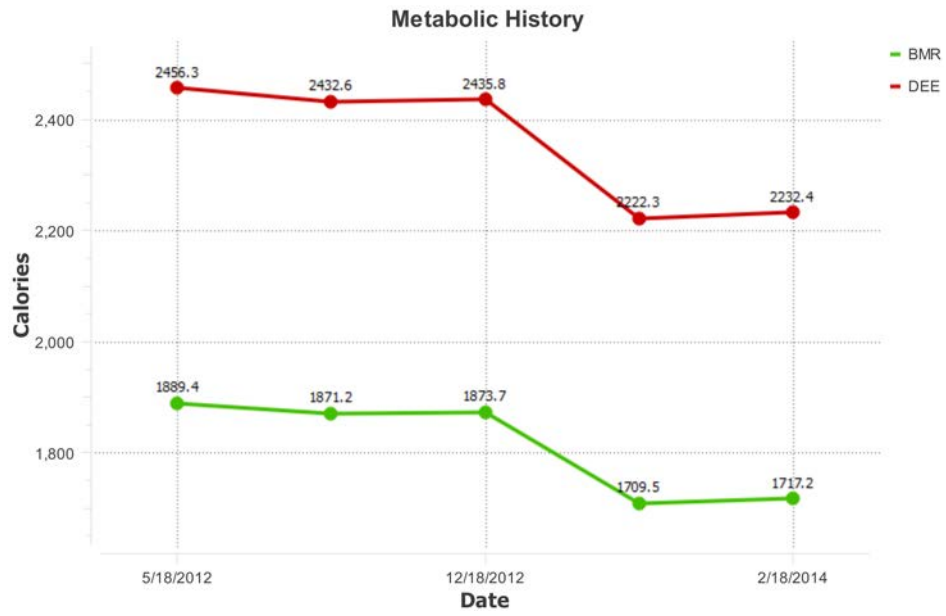


### Estimated Fluids Compartments



### Fluids History





## History

	5/18/2012	8/28/2012	12/18/2012	9/7/2013	2/18/2014
Height	68.8	68.8	68.8	68.8	68.8
Weight	314.0	277.0	254.0	202.0	187.0
Age	64.0	64.0	64.0	64.0	64.0
Gender	Female	Female	Female	Female	Female
R	530.2	512.0	494.0	560.0	542.0
Xc	51.1	46.0	44.0	46.6	53.6
Frame	Medium	Medium	Medium	Medium	Medium
Activity Level	Very Light	Very Light	Very Light	Very Light	Very Light
equation_set	RJL Systems	RJL Systems	RJL Systems	RJL Systems	RJL Systems
Target Weight	143.8	143.8	144.0	143.8	144.0
BMI	46.7	41.2	37.7	30.0	27.8
FMI	25.4	20.1	16.7	11.6	9.2
FFMI	21.3	21.1	21.1	18.5	18.6
PA	5.5	5.1	5.1	4.8	5.6
BMR	1889.4	1871.2	1873.7	1709.5	1717.2
DEE	2456.3	2432.6	2435.8	2222.3	2232.4
Fat	170.5	135.4	112.2	77.7	61.8
Fat % of Weight	54.3 %	48.9 %	44.2 %	38.4 %	33.1 %
FFM	143.5	141.6	141.8	124.3	125.2
FFM % of Weight	45.7 %	51.1 %	55.8 %	61.6 %	66.9 %
BMC	13.8	12.2	11.2	9.0	8.3
BMC % of Weight	4.4 %	4.4 %	4.4 %	4.4 %	4.5 %
BMC % of FFM	9.6 %	8.6 %	7.9 %	7.2 %	6.7 %
LST	129.8	129.4	130.6	115.4	116.8
LST % of Weight	41.3 %	46.7 %	51.4 %	57.1 %	62.5 %
LST % of FFM	90.4 %	91.4 %	92.1 %	92.8 %	93.3 %
SMM	62.0	58.4	58.2	48.7	54.9
SMM % of Weight	19.7 %	21.1 %	22.9 %	24.1 %	29.4 %
SMM % of FFM	43.2 %	41.3 %	41.0 %	39.2 %	43.9 %
LDM	42.7	42.9	43.5	39.2	39.9
LDM % of Weight	13.6 %	15.5 %	17.1 %	19.4 %	21.3 %
LDM % of FFM	29.8 %	30.3 %	30.7 %	31.6 %	31.9 %
TBW	100.8	98.6	98.3	85.1	85.3
TBW % of Weight	32.1 %	35.6 %	38.7 %	42.1 %	45.6 %
TBW % of FFM	70.2 %	69.7 %	69.3 %	68.4 %	68.1 %
ICW	47.0	46.1	46.3	40.9	42.4
ICW % of TBW	46.6 %	46.8 %	47.1 %	48.1 %	49.7 %
ECW	53.8	52.5	52.0	44.2	42.9
ECW % of TBW	53.4 %	53.2 %	52.9 %	51.9 %	50.3 %
Neck	19.5	--	--	--	18.0
Shoulder	45.0	--	--	--	42.0
Waist	38.0	--	--	--	36.0
Hip	48.0	--	--	--	45.0
Wrist	9.0	--	--	--	8.5
HR	78.0	--	--	--	70.0
Systolic	154.0	--	--	--	138.0
Diastolic	91.0	--	--	--	81.0
Vit-D	41.0	--	--	--	60.0
A1C	6.1	--	--	--	4.5
Chol	212.0	--	--	--	170.0
HDL	41.0	--	--	--	48.0
Trig	177.0	--	--	--	104.0

## Food & Fitness

You are currently **43.00 lbs** over your target weight of **144.00 lbs** and it has been suggested that you try to lose **0.96 lbs** per week. At this rate, it will take you **45 weeks** to reach your goal. Work with your healthcare practitioner on strategies designed to help manage your total body weight, while building and maintaining muscle and bone density, and losing only unnecessary retained water and body fat.

Based on your body composition and activity level, your body would require approximately **2232** calories to keep your weight stable. You can lose weight by increasing your daily activity and/or decreasing your food intake. The more active you can make your day, the less restrictive your food intake has to be in order to maintain the same rate of weight loss.

Remember that the quality of the calories you eat also matters. For example, a candy bar and a piece of fruit may have the same number of calories, but the fruit contains more nutrients and fiber to help slow the absorption of its natural sugars.

Research shows that people who enjoy a variety of activities have a positive effect on several health markers. The following table offers a selection of lifestyle and fitness activities for your reference. It also includes an estimate of how many calories you would burn doing each activity for various time periods. Consider trying to work in an average of **246 Calories** of added activity each day.

Activity	Calories burned per				
	10 Minutes	20 Minutes	30 Minutes	60 Minutes	120 Minutes
bicycling, BMX	150	299	449	897	1,795
bicycling, mountain, general	150	299	449	897	1,795
bicycling, leisure, 9.4 mph	102	204	306	612	1,225
bicycling, 14-15.9 mph, racing or leisure, fast, vigorous effort	176	352	528	1,056	2,112
Elliptical trainer, moderate effort	88	176	264	528	1,056
health club exercise, conditioning classes	137	275	412	824	1,647
stretching, mild	40	81	121	243	486
yoga, Hatha	44	88	132	264	528
yoga, Power	70	141	211	422	845
ballet, modern, or jazz, general, rehearsal or class	88	176	264	528	1,056
aerobic, low impact	88	176	264	528	1,056
aerobic, high impact	128	257	385	771	1,541
vacuuming, general, moderate effort	58	116	174	348	697
walk/run, playing with animals, moderate effort, only active periods	70	141	211	422	845
shoveling snow, by hand, moderate effort	93	187	280	560	1,119
playing musical instruments, general	35	70	106	211	422
jog/walk combination (jogging component of less than 10 minutes) (Taylor Code 180)	106	211	317	633	1,267
jogging, general	123	246	370	739	1,478
Running, 4 mph (13 min/mile)	106	211	317	633	1,267
running, 5 mph (12 min/mile)	146	292	438	876	1,753
running, 6 mph (10 min/mile)	172	345	517	1,035	2,069
running, 7.5 mph (8 min/mile)	202	405	607	1,214	2,428
running, 8.6 mph (7 min/mile)	216	433	649	1,299	2,597
running, cross country	158	317	475	950	1,900
running, stairs, up	264	528	792	1,584	3,167
basketball, general	114	229	343	686	1,373
basketball, shooting baskets	79	158	238	475	950
bowling, indoor, bowling alley	67	134	201	401	802
golf, general	84	169	253	507	1,014
golf, walking, carrying clubs	76	151	227	454	908
hockey, ice, general	141	282	422	845	1,689
martial arts, different types, slower pace, novice performers, practice	93	187	280	560	1,119
rope jumping, slow pace, < 100 skips/min, 2 foot skip, rhythm bounce	155	310	465	929	1,858
soccer, casual, general (Taylor Code 540)	123	246	370	739	1,478
softball, practice	70	141	211	422	845
tennis, general	128	257	385	771	1,541
volleyball, non-competitive, 6 - 9 member team, general	53	106	158	317	633
walking for transportation, 2.8-3.2 mph, level, moderate pace, firm surface	62	123	185	370	739
backpacking, hiking or organized walking with a daypack	137	275	412	824	1,647
walking, household	35	70	106	211	422
walking, 3.5 mph, level, brisk, firm surface, walking for exercise	76	151	227	454	908
kayaking, moderate effort	88	176	264	528	1,056
swimming laps, freestyle, fast, vigorous effort	172	345	517	1,035	2,069
swimming, leisurely, not lap swimming, general	106	211	317	633	1,267
skiing, cross country, 4.0-4.9 mph, moderate speed and effort, general	158	317	475	950	1,900
skiing, downhill, alpine or snowboarding, moderate effort, general, active time only	93	187	280	560	1,119



## SAMPLE MEAL PLAN for 2000 CALORIES

The following sample meal plan meets or exceeds the dietary guidelines set by the American Heart Association, the American Cancer Society and the Surgeon General. The Health Enhanced Options provide suggestions that are high in fiber and phytonutrients, and contain no cholesterol. These options are also dairy-free, and often wheat-free and gluten-free, as well. If you have specific concerns, be sure to read ingredient labels.

### BREAKFAST

0.5	Quinoa Rice & Shine(tm) OR Oatmeal
1	Engine 2 Ancient Grain Sprouted Tortilla OR Whole wheat bread
1	Earth Balance(tm) OR Other margarine
1	Almond/Rice/Soy/Oat Milk OR Skim Milk
0.5	Grapefruit OR Banana

### LUNCH

2	Engine 2 Ancient Grain Sprouted Tortilla OR Whole wheat bread
2	Lightlife ChikN Cutlet(tm) OR Sliced chicken
3	Spectrum Naturals Light Canola Mayo(tm) OR Light Mayonnaise
	Jicama/Red Pepper/Cauliflower slices OR Carrot/Celery sticks
1	Peach OR Orange
5	Nilla(tm) wafers OR Vanilla wafers
	Zevia(tm) OR Diet soft drink

### DINNER

4	Baked Tofu Cutlet OR Broiled whitefish
0.67	Brown/Wild Rice OR Rice
1	Heaven Mills(tm) gluten free mini challah OR Dinner roll
2	Earth Balance(tm) OR Other margarine
1	Collard greens OR Spinach
1	Tossed Salad and Light Dressing
1	Almond/Rice/Soy/Oat Milk OR Skim Milk

### SNACK

1	Vegan Gourmet(tm) Cheese OR Lowfat cheese
2	Engine 2 Ancient Grain Sprouted Tortilla OR Whole wheat bread
1	Earth Balance(tm) OR Other margarine
1	Pineapple Juice OR Orange juice
5	Walnuts OR Life Savers(tm)

## Higher Protein Foods

Foods that are higher in protein are used by the body to build tissue and muscle. All proteins, whether from plant or animal, are broken down by the body into amino acids, and then re-built into the proteins your body needs.

Proteins from plants will also contain fiber. Proteins from animals, birds, fish or insects will also contain cholesterol.

### HEALTH ENHANCED OPTIONS (also contain fiber)

1 Black bean burger  
 1 cup Peas  
 1 cup Vegetarian Chili  
 1 cup Snap peas or pea pods  
 1 cup Red beans  
 1 cup Tofu, edamame, or soybeans  
 ½ cup Hummus  
 ½ cup Garbanzo beans  
 1 cup Pea Soup  
 1 cup Quinoa  
 ½ cup Sprouts  
 ½ cup Veggie Burger Crumbles  
 1 cup Lentils or Mujadra  
 1 Bean burrito

### STANDARD MENU OPTIONS (also contain cholesterol)

½ cup Chicken  
 ½ cup Turkey  
 ½ cup Beef, beef ribs, steak, hamburger  
 ½ cup Fish  
 ½ cup Shellfish  
 ½ cup Ham, Pig, pork, pork ribs, sausage  
 ½ cup Lamb  
 ½ cup Buffalo  
 2 slices Lunchmeat, bologna  
 ½ cup Cottage Cheese  
 1 Egg

## Higher Carbohydrate Foods

Our bodies need higher carbohydrate foods for energy and metabolism. In their natural state, higher carbohydrate foods also tend to be high in fiber, low in fat, and contain no cholesterol.

Grains, fruits and vegetables are prominent in this category. Compared to all of the other food groups, fruits are our number one food source of vitamins, and vegetables are number one for minerals.

The carbohydrate category contains foods that are either high in fiber (i.e. broccoli, beans), or high in sugar (i.e. candy, donuts), or high in both fiber and sugar (watermelon, pineapple).

When the high carbohydrate food is still in its natural 'unrefined' state, it is typically also high in fiber, low in fat, and containing no cholesterol.

When the food contains 'refined sugar' or 'refined flour', it typically means fiber has been removed, usually in an effort to make the product's shelf life longer.

The HEALTH ENHANCED list will include options like berries, fruits, grains, and vegetables that are closer to their natural state, or are 'unrefined'. The fiber that is still naturally present in these 'unrefined' foods is very important for proper digestion, waste product transit time, blood sugar balance, and overall disease prevention. Therefore, the preventive nutritional approach would suggest food in its 'whole' and unrefined state whenever possible.

### HEALTH ENHANCED OPTIONS (whole foods)

1 slice whole grain bread  
 ½ whole grain Bagel  
 1 cup whole grain cereal or muesli  
 ½ whole grain muffin  
 1 cup oatmeal  
 1 whole grain English Muffin  
 ½ cup 'high fiber' or 'bran' (unrefined) cereal  
 1 slice sprouted bread or Ezekial™ bread  
 3 cups air-popped popcorn  
 ½ cup whole grain or quinoa noodles  
 ½ cup brown rice  
 ½ cup corn  
 1 corn cob  
 1 cup squash  
 1 small baked potato

### STANDARD MENU OPTIONS (refined foods)

1 bread stick  
 ½ donut  
 ½ refined flour muffin  
 ½ croissant  
 ¼ cup cheese crackers  
 ½ cup corn chips  
 1 cup microwave popcorn  
 ½ cup 'refined' or presweetened cereals  
 ¼ cup stuffing  
 1 dinner roll

## Higher Fat Foods

Humans need dietary fats for insulation, warmth, and healthy nerve conduction. An adequate amount of fat is also required to be able to absorb vitamins A, D, E, and K.

There are basically five different types of dietary fats: Essential, monounsaturated, polyunsaturated, saturated, and trans fats. Compared to the Standard American Diet intake, the World Health Organization recommends higher essential fats (like omega 3s), sufficient monounsaturated and polyunsaturated fats, lower saturated fat, and no trans fat (hydrogenated oils). The foods on the HEALTH ENHANCED list of choices contain no cholesterol.

*(Please note that animal and poultry foods are high in fat, but they are also considered protein foods. For this reason, you will find them listed on the Higher PROTEIN Foods List, on the STANDARD MENU List.)*

### HEALTH ENHANCED OPTIONS

2 TB non-dairy salad dressing  
2 TB of chia seeds  
2 TB of hempseeds  
2 TB of ground flax seeds  
1 handful Walnuts  
½ Avocado  
¼ cup Coconut  
1 TB Earth Balance margarine  
1 TB of Mayonnaise  
2 Olives  
1 TB Olive Oil  
2 TB Sesame seeds  
2 TB tahini sauce  
½ cup non-dairy pudding  
1 handful Almonds  
1 handful Peanuts, Cashews, or Pecans  
2 TB peanut butter  
2 TB almond butter  
2 TB cashew butter

### STANDARD MENU OPTIONS

1 TB of mayonnaise  
1 TB of butter, ghee, lard, shortening or margarine  
1 TB of coconut oil  
1 TB of corn, safflower, sunflower oil  
2 TB Cream  
¼ cup cottage cheese  
1 TB cream cheese  
1 slice or 3 cubes cheese  
2 TB Sour cream  
1 TB Ranch-style dressing  
½ cup Yogurt  
½ cup pudding

## Calcium-Rich Foods

Strong bones and healthy teeth require a symphony of nutritional building blocks, like magnesium, calcium, phosphorus, boron and vitamin D.

While the Standard American Diet is heavy in dairy products, other cultures with healthy teeth and bones eat a variety of 'beans and greens' combinations that provide the necessary building blocks. The choices in the HEALTH ENHANCED list are rich in calcium, magnesium and other building blocks, without the cholesterol or saturated fat found in dairy products.

### HEALTH ENHANCED OPTIONS

1 cup Broccoli  
1 cup Bok choy  
1 cup Calcium enriched orange juice  
1 cup Raisin bran cereals  
½ cup tofu  
1 cup vanilla or chocolate soy milk  
1 cup vanilla or chocolate almond milk  
1 handful of Almonds  
1 cup Collard Greens  
½ cup Black-eyed peas  
1 cup Kale  
1 cup Turnip or Mustard Greens  
1 handful Figs  
¼ cup Parsley, Basil, or Oregano  
½ cup Beans or Lentils  
¼ cup Cilantro or Chives  
1 handful Sesame seeds  
2 TB Tahini sesame butter  
1 handful Pumpkin Seeds

### STANDARD MENU OPTIONS

½ cup yogurt  
½ cup cottage cheese  
½ cup frozen yogurt  
1 cup milk  
½ cup ice cream  
½ cup buttermilk  
1 slice cheese  
3 cubes cheese

## Snack Foods

Most food plans call for one to three servings of snacks per day. It is important to choose wisely, looking for snacks that are both healthy and tasty. Since there really is no such thing as an 'empty calorie', it is a good idea to be mindful what is coming along with each calorie.

For example, some snack calories come with added sodium, artificial flavoring and colors, or no natural fiber left to help balance the snack's blood sugar spike (and subsequent crash). Other snack calories, like whole fruits and vegetables, come with vitamins, minerals, fiber, and phytonutrients.

If you are considering snacks that are not whole foods, look for 'fruit drinks' that are 100% fruit juice, and feel free to add water to dilute the sugar content - especially if the juice is 'from concentrate'. Read labels on packaged foods, as many 'fruit snacks' and 'fruit pastries' contain little to no actual fruit.

### HEALTH ENHANCED OPTIONS

½ cup of any fresh or fresh-frozen fruit  
(apple, banana, kiwi, peach, pear, starfruit,  
pineapple, mango, melon, etc.)  
1 cup tomato soup  
1 cup rice crackers  
¼ cup dried banana chips, raisins, cranberries,  
dates, figs  
1 handful walnuts, pecans, hazelnuts, filberts,  
peanuts, or cashews  
1 handful soy nuts  
1 handful pumpkin or sunflower seeds  
2 TB veggie cream cheese  
1 cup vegetable soup  
1 cup of any fresh or frozen berries  
(strawberries, blueberries, lingonberries,  
raspberries, blackberries, marionberries,  
etc.)  
1 plant-based protein bar  
2 TB dipping hummus  
2 TB dipping sesame tahini  
1 piece sprouted tortilla  
1 piece whole grain flatbread  
½ cup frozen peas or edamame  
½ cup whole grain crackers  
1 slice sprouted bread  
2 TB almond, hazelnut, peanut, or cashew butter  
1 cup of any fresh vegetable  
(tomato, celery, carrot, jicama, romaine,  
spinach, yam, sweet potato, etc.)  
½ cup fresh fruit juice, NOT from concentrate  
1 cup fresh vegetable juice

### STANDARD MENU OPTIONS

½ cup fruit cocktail  
½ cup canned fruit  
½ cup canned vegetables  
½ cup crackers  
½ cup yogurt  
½ cup cottage cheese  
1 slice cheese  
2 TB ranch-style dipping dressing  
1 cup of canned soup  
½ cup fruit juice, from concentrate  
1 protein bar

# Glossary of Terms

The terms below, as well as the graphical representation at the right, will help describe the general breakdown of the composition of the body.

**Height** - in inches (in) or centimeters (cm)

**Weight** - in pounds (lbs) or kilograms (kg)

**Resistance** - the opposition to the flow of an electrical current. Higher TBW and LDM yield a lower Resistance, and higher Fat and dehydration yield a higher Resistance.

**Reactance** - measures the body's opposition to changes in the flow of an electrical current. Reactance is related to the capacitance of the cell membranes, and reflects integrity, function, and composition.

**Phase Angle (PA)** - PA reflects the relative contributions of fluid (resistance), and cellular membranes (capacitive reactive). It is calculated as the arc-tangent of Reactance over resistance, measured in degrees. Typical Phase Angles (NHANES human data) range between 4-9.

**Fat** - provides insulation, warmth, and energy storage, and is necessary for the absorption of many vitamins.

**Fat Free Mass (FFM)** - is also called Lean Body Mass, and is everything in your body, except Fat.

**Lean Dry Mass (LDM)** - is what is left after subtracting all of the water from your Fat Free Mass.

**Total Body Water (TBW)** - is all of the water throughout your body, both inside and outside of your cells.

**Intra-Cellular Water (ICW)** - represents the amount of water inside your cells.

**Extra-Cellular Water (ECW)** - represents the amount of water outside of your cells.

**Bone Mineral Content (BMC)** - Bones are dynamic organs that include cells, blood vessels, collagen and mineral deposits. BMC is only an estimate of the minerals in the bones and does not represent the total weight of the skeleton. It is part of Fat-Free Mass.

Total Body Weight					
		Lean Dry Mass		Total Body Water	
Fat	Bone Mineral Content	Non-BMC LDM	Intra-Cellular Water	Extra-Cellular Water	
		Lean Soft Tissue			
		Skeletal Muscle Mass		Non-SMM LST	

**Lean Soft Tissue (LST)** - In the same way that LDM is the result of removing all water from Fat-Free Mass, Lean Soft Tissue is the result of subtracting Bone Mineral Content from Fat-Free mass. This includes your organs, muscles, connective and supportive tissues, as well as all of Total Body Water.

**Skeletal Muscle Mass (SMM)** - SMM is the muscles responsible for posture and movement.

**Basal Metabolic Rate (BMR)** - The caloric energy required to sustain life in a sedentary state for 24 hours.

**Daily Energy Expenditure (DEE)** - DEE adjusts the BMR valued based on the selected activity level. The caloric energy required to sustain life, plus daily activities.

**Body Mass Index (BMI)** - BMI is derived by dividing total weight (kg) by height (m), squared. BMI is a general measure typically used to determine if someone is overweight, but knowing actual body composition is much more accurate.

**Fat Mass Index (FMI)** - FMI relates fat mass to height in the same way that BMI relates total weight to height. Because it takes into account only the fat mass, it is a superior indicator of obesity compared to BMI.

**Fat Free Mass Index (FFMI)** - FFMI relates fat-free mass to height in the same way that FMI does to fat. Fat + FFM = Weight, FMI + FFMI = BMI.

## References

- "About BMI for Adults." Centers for Disease Control and Prevention.  
[http://www.cdc.gov/healthyweight/assessing/bmi/adult\\_BMI/index.html](http://www.cdc.gov/healthyweight/assessing/bmi/adult_BMI/index.html)
- Accuracy of Bioelectrical Impedance Analysis in Estimation of Extracellular Space in Healthy Subjects and in Fluid Retention States.  
Giuseppe Sergi, et. al.  
Annals of Nutrition and Metabolism (1994) 38, 158-165
- Bioelectrical Impedance Analysis (BIA) New Indications of Use for RJL Systems BC 4.0 Body Composition Software  
RJL Systems  
2014
- Body composition estimates from NHANES-III bioelectrical impedance data.  
WC Chumlea, SS Guo, et. al.  
International Journal of Obesity (2002) 26, 1596-1609
- Development of bioelectrical impedance analysis prediction equations for body composition with the use of a multicomponent model for use in epidemiologic surveys.  
Shumei S Sun, et. al.  
American Journal of Clinical Nutrition (2003) 77, 331-40
- Differences in resting metabolic rate between paraplegic and able-bodied subjects are explained by differences in body composition.  
AC Buchholz, et al.  
Am J Clin Nutr. 2003 Feb;77(2):371-8.
- Fundamentals of physics : extended, with modern physics  
David Halliday; Robert Resnick; Jearl Walker  
New York [etc.] : John Wiley & Sons, cop. 1993 (4th Ed.)
- Physical Characteristics
- Recommended Dietary Allowances, 10th Edition.  
National Academy Press 1989-1999  
ISBN: 0-309-04633-5  
Online: <http://books.nap.edu/catalog/1349.html>
- Therapy: changing dietary concepts.  
Hamwi GJ.  
Diabetes Mellitus: Diagnosis and Treatment 1964(1):73-78
- Total-body skeletal muscle mass: estimation by a new dual-energy X-ray absorptiometry method  
Kim J, et al.  
AJCN. 2002;76:378-83