BOD POD® - Body Composition Analysis

British College of Osteopathic Medicine (BCOM)

Table 1: Subject Information		Body Composition Results	
Name	[redacted]	% Fat	23.3 %
Age	[redacted] 42 yrs	% Fat Free Mass	76.7 %
Height	186 cm	Fat Mass	20.4 Kg
Operator	[redacted]	Fat Free Mass	67.1 Kg
Test Date	[redacted]	Total Body Mass	87.49 Kg
Test Profile		Body Volume	80.877 L
Density Model	Siri 1961	Body Density	1.046 Kg/L
Thoracic Gas Volume Model	Predicted	Thoracic Gas Volume	4.5 L
Operator Comments			
Suggest retest in 3-6 months to track body composition changes from exercise training and dietary adjustments.			

Table 2: Energy Expenditure Results		
Est. Basal Metabolic Rate (BMR) kcal/day.	Est. Total Energy Expenditure (TEE) kcal/day.	Physical Activity Level Factor (PAF)
1819 BMR = 370 + (21.6 x Lean Mass in Kg) Katch-McArdle Formula	2401	Sedentary (1.2) (little or no exercise, desk job)
	2751	Low Active (1.375) (light exercise/ sports 1-3 days/week)
	3101	Active (1.55) (moderate exercise/ sports 6-7 days/week)
	3451	Very Active (1.725) (hard exercise every day, or exercising 2 x's/day)
	Est TDEE = Est BMR x PAF Factor x Thermic Effect of Food (1.1)	

Applies to adults aged 18 and older. Based on information from the Institute of Medicine (2002). Dietary Reference Intakes For Exercise Carbohydrates, Fiber, Fat, Fatty Acids, Cholesterol, Protein And Amino Acids Part 1 pp83-206. Washington D.C. National Academy of Sciences.

Table 3: Male age-based body fat percentages in adults (40-59 y/o) *(See Figure 1).*			
	Body Fat Rating	Men	Explanation
	Risky (High Body Fat)	>28%	Ask your health care professional about how to safely modify your body composition.
x	Excess Fat	22-28%	Indicates an excess accumulation of fat over time.
	Moderately Lean	11-22%	Fat level is generally acceptable for good health.
	Lean	8-12%	Lower body fat levels than many people. This range is generally excellent for health and longevity.
	Ultra-Lean	5-8%	Fat levels often found in elite athletes.
	Risky (Low Body Fat)	<5%	Ask your health care professional about how to safely modify your body composition.

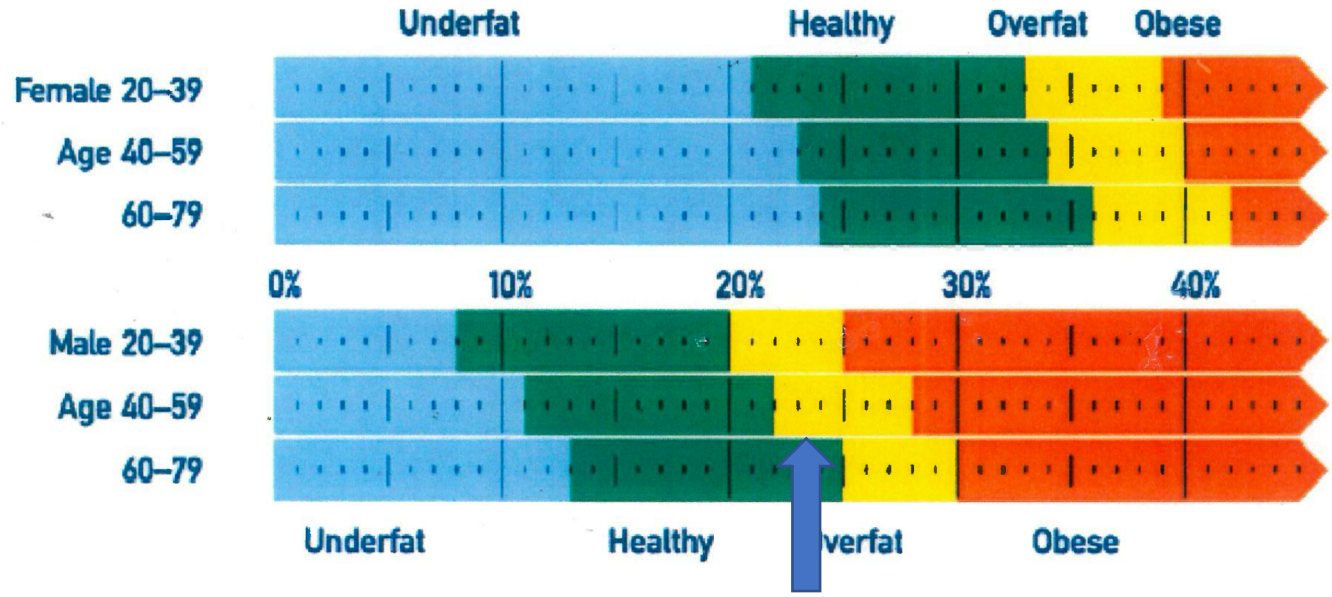

Figure 1 – Body Fat percentages for adults (separated by sex and age). Based on information from the American College of Sports Medicine, the American Council of Exercise. Exercise Physiology (4th Ed) by McArdle, Katch and Katch and various scientific epidemiological studies.

Body Fat Mass: A certain amount of fat is absolutely necessary for good overall health. Fat plays an important role in protecting internal organs, providing energy and regulating hormones. The minimal amount of "essential fat" is approximately 3-5% for men, and 12-15% for women. If too much fat accumulates over time, health may be compromised. Table 1 show your body composition results, and Table 3 / Figure 1 show how these relate to population normative data based on your sex and age.

Fat Free Mass: Fat Free mass is everything except fat. It includes muscle, water, bone and internal organs. Muscle is the 'metabolic engine' of the body that burns calories (fat) and plays an important role in maintaining strength and energy. Healthy levels of fat-free mass contribute to physical fitness and health longevity.

Energy Expenditure Results: Based on your body composition analysis, it is possible to *estimate* your total daily energy expenditure (TDEE) required for differing levels of physical activity (see Table 2). These numbers are to maintain body mass, so depending on the exercise training you complete, or your body composition goals you may need to consume more or less.

Your Basal Metabolic Rate (BMR) is a measurement of the number of calories needed to perform your body's most basic (*basal*) functions, like breathing, circulation and cell production. On top of this, general movement and physical activity increase our calorie need. Therefore we multiply our BMR by a physical activity factor (PAF). Also contributing to our exergy expenditure is the thermic effect of food (TEF), which is the amount of energy it takes for your body to digest, absorb, and metabolise the food you eat and usually represents about 10% of the caloric need. All of these factors form your TDEE.

How to change body composition: The most effective way to improve (or maintain) healthy body composition is to combine appropriate exercise with good nutrition. In a safe manner, you can create a calorie deficit. Two types of exercise that can be helpful are: 1) aerobic exercise to burn fat, and 2) resistance exercise to increase muscle mass. Consult with a knowledgeable health professional for advice on designing an exercise program, or a nutritionist for dietary adjustments.