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THE CENTER FOR PHYSICAL ACTIVITY & HEALTH

Consent to Participate in Exercise Testing & Programming

Name: Michael Dayah (Please print) Date: 9/11/17

In order to participate in an exercise program with The Center for Physical Activity and Health (The Center), I understand that I may be asked to complete one or more fitness assessment tests. I voluntarily consent to perform this test(s) and understand that the information provided by such tests will allow the staff within The Center to appropriately assess my current physical condition and design exercise prescriptions for maintaining or improving my physical fitness. Below are explanations of the tests and potential risks associated with them.

Graded Exercise Test - The graded exercise test will be performed on a stationary cycle, stairs, or motor driven treadmill. The work load will be periodically increased until 85% of age predicted maximal heart rate is reached, or until exhaustion. As with any exercise, risks include muscle soreness, abnormal blood pressure response, irregular heart beat, fainting, and heart attack. I understand the risk of a serious complication requiring hospitalization due to a graded exercise test is small (0.1%). I am free to stop this test at any time because of fatigue or discomfort. Trained personnel will be on hand during all tests.

Lactate Threshold Test – Lactate Threshold testing can be performed utilizing the treadmill, bicycle ergometer, or other more sport specific modality. During the LT test I understand that a series of "finger pricks" for blood samples will be required coinciding with incrimental increases in workload. The protocol will begin with a light workload and gradually increase until you are exercising vigorously. The risks for this test are similar to the graded exercise test (see above). Additionally, there is a risk of bruising, soreness, and potentially infection at the sites where blood is withdrawn.

Body Composition Analysis - Body composition analysis involves an estimation of body fat in relation to lean weight. Several techniques may be used to gather information about body composition. Tests include measurement of height, weight, skinfolds (thickness of skin and fat just under the skin's surface), body circumferences (such as the distance around the hips and waist), underwater weighing (the body is submerged in a tank of water and weighed), bioelectrical impedance (involves passing a small electric current through the body and measuring the opposition to flow) and air displacement (involves sitting in sealed Plexiglas chamber). There is minimal, if any, risk involved in these procedures.

Flexibility Testing - Flexibility testing requires the measurement of the range of motion in various joints. Several basic stretches may be performed and measured in order to determine the level of flexibility. Some muscle soreness may result from such testing but the chances are lessened with a proper warm-up prior to testing.

Use of Information

I understand that the information found during all testing will be used to scientifically assess my physical work capacity and appraise my physical fitness status. These results will be utilized in the development of an exercise program suited to my individual needs and concerns.

I understand that the information from these tests will be kept on record and will be confidential. By signing below I give permission for the Center to access my records for scientific investigations. Even if information from this program is published in scientific journals, my individual results WILL NOT be released. Only Center staff will have access to my records.

Before beginning an exercise program, I understand that I will be asked to provide information about my health status (existence of heart disease, diabetes, muscle or joint injuries, etc.). This information will be used in determining what type of exercise is safe and appropriate for me. If indicated, I may also be asked to provide written clearance from a physician before beginning the exercise program. (Although not required by the Center, regular check-ups and medical clearance for exercise is advisable for everyone.) All of the information gathered from these surveys will remain confidential.

I understand that there is a risk of injury when engaging in any type of exercise. Muscle soreness or injury, joint injury, and cardiovascular events such as heart attacks are all possible during exercise. The exercise involved in this program will be low to moderate intensity in order to minimize the risk of injury. In fact, only about 1 in 18,000 men will suffer a heart attack while jogging. (The statistical occurrence of heart attack during exercise in women is unknown.) The potential benefits of regular exercise include reduced risk of heart disease and diabetes, weight control and stress management.

I have read, understand, and have been given the opportunity to ask questions about the information provided in this consent form. I have discussed all concerns with the staff of The Center to my satisfaction. I understand that questions are encouraged and may be addressed at any time in the future. Questions may be directed to Dr. Dixie Thompson at (865) 974-8883, or Center staff at (865)974-6040.

I hereby voluntarily and with full knowledge of risks, give my consent to participate in the aforementioned tests and programs within The Center for Physical Activity and Health, and waive and release The Center, its staff, and the University of Tennessee from any and all claims, potential claims, or damages which may arise from my participation.

[signature]	[signature]
Signature of Participant	Signature of Center Staff
9/11/17	9/11/17
Date	Date

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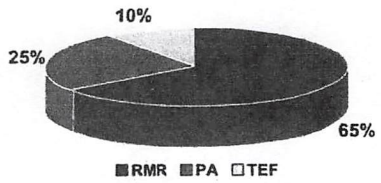
Estimated Resting Metabolic Rate

What is Resting Metabolic Rate (RMR)?

Your RMR (kcal/day) represents the minimum energy your body needs to support its basic physiological functions, including heartbeat, breathing, maintaining body temperature, and all of the numerous biochemical reactions required to keep you alive. In essence, it is the amount of energy that the body uses at rest. Your daily Total Energy Expenditure (TEE, kcal/day) consists of three components: *RMR*, *Physical Activity (PA)*, and *Thermic Effect of Food (TEF)*. Of these three, RMR is the largest contributing component of TEE at around 60-70%.

Components of TEE

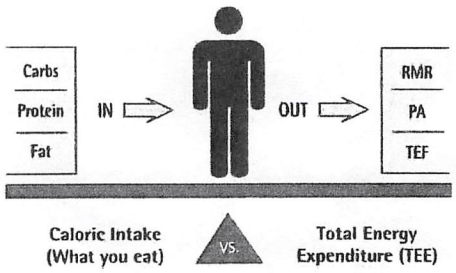


How can I find out my RMR?

Due to the strict protocol and technical difficulties associated with obtaining an accurate measurement of RMR, prediction equations have been developed to estimate RMR based on parameters more easily measured. Research studies indicate that prediction equations which account for both fat and fat-free mass provide the most accurate estimates of RMR. Therefore, the equation of Nelson et al (*Am J Clin Nutr 56:848-56, 1992*), which includes accurately measured fat-free and fat mass as predictors, will provide a reliable and accurate estimation of your RMR. This equation is also useful in tracking changes in estimated RMR that occur with a change in either fat-free or fat mass.

Why do I need to know my RMR?

Most of us understand that weight management depends upon the energy balance equation: the amount of energy you put into your body (your caloric intake) versus the amount of energy you expend (your TEE). The way to lose body fat is to maintain a negative energy balance. This is accomplished by reducing caloric intake, increasing TEE or, preferably, a combination of both. Your RMR is dependent primarily on the fat-free part of your body, and accounts for the vast majority of your TEE. So to improve your overall fitness, it is critical to know your RMR.



- ***Changes in estimated RMR can be used to influence changes in your body composition.*** If you lose body fat and replace it with muscle, you should see a steady increase in your RMR. Having your RMR monitored throughout a weight management program can help you track improvements in your muscle mass, thus optimizing your fat loss and fitness/nutrition program strategy.

- ***Estimated RMR can be used to provide an estimation of your TEE, which can help manage your daily caloric intake.*** While RMR is generally 65% of your TEE, the level of your physical activity can add significant variability to the actual percentage. For this reason, your daily activity level, selected from the activity chart below (*Institute of Medicine, DRI, pp93-206, 2002*), should be used in the estimation of TEE.

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Estimated TEE (kcal/day) = Estimated RMR (kcal/day) × Daily Activity Level

DAILY ACTIVITY LEVEL	MALE	FEMALE	DESCRIPTION
SEDENTARY	1.28	1.24	Mostly seated or standing daily living activities; no exercise or other leisure activities.
LOW ACTIVE	1.51	1.52	Light exercise and leisure activities (i.e., walking 50 minutes per day at 3 mph or golfing 40 minutes per day).
ACTIVE	1.74	1.74	Moderate exercise and leisure activities (i.e., cycling moderately 75 minutes per day or playing tennis 90 minutes per day).
VERY ACTIVE	2.08	2.07	Heavy manual labor job or heavy exercise and leisure activities (i.e., jogging 75 minutes per day or playing basketball 60 minutes per day).

Who should not use the estimated RMR or TEE?

Estimated RMR or TEE *should not* be used for children < 18 years old, pregnant or lactating women, or individuals in which metabolism may be affected by disease or medication.