Commentary

The Benefits of Weight Training in Controlling Obesity and Maintaining a Healthy Body Weight

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Objectives

Differentiate between aerobic metabolism and anaerobic metabolism and energy systems used. Explore body composition including the importance of the ratio of fat vs. lean body mass. Describe how body composition affects our mobility and our overall health as we age. State the importance of using compound weight training exercises and muscle recruitment. Illustrate a sample fat loss and gain lean body mass weight training program.

Aerobic Metabolism Vs Anaerobic Metabolism

Aerobic or oxidative metabolism is engaged while we are participating in longer duration, steady state activities such as walking or cycling. As soon as exercise begins, the physical demands placed on the body increases and plateaus for the duration of the exercise. Once exercise ceases, aerobic metabolism remains active for a short time before returning to base levels. Aerobic metabolism typically accounts for approximately 25-35 percent of daily calorie expenditure depending on individual activity levels and is fueled primarily through the oxidative system.

On the other hand, Anaerobic or basal metabolism is engaged 24/7 and becomes more active as lean body mass is increased through consistent shorter duration weight bearing resistance exercise such as training with weights. This type of exercise typically accounts for < 65 percent of daily calorie expenditure and when performed in conjunction with aerobic exercise as part of a complete exercise program, is very effective at creating significant long-term calorie expenditure and fat loss. Fuel for this type of short term activity derives primarily through the ATP-PC system which is the fastest and simplest of the energy systems.

Importance of the Ratio of Body Fat to Lean Body Mass

After the age of 35 years, inactive adults on average lose five-percent lean body mass for every decade they age. So it is typical that as adults reach retirement age in their mid-sixties, they have lost upwards of 15 percent or more of their lean body mass. This scenario left unchecked, reduces an individual's calorie burning capacity and when combined with an excess intake of calories consumed, will contribute to a steady increase in body fat and unwanted weight gain.

For older seniors this can also have a significant negative impact on mobility and increase the incidence of falling episodes which subsequently can lead to serious health situations due to chronic loss of balance and muscle strength.

Compound Weight Training Exercises and Muscle Recruitment

When designing a weight training program with fat loss and gaining lean body mass the primary objective, it is important to build the program using primarily moderate to heavy sets of compound, or multi-joint exercises. As described earlier, this approach will better enable an over-weight individual to harness the significant calorie burning potential of the anaerobic metabolism [1].

A chest press and squat are two examples of compound exercises. These types of exercises are excellent for increasing muscle fiber recruitment which when used consistently will not only enhance short-term calorie expenditure during exercise, but through the development of lean body mass will stimulate and increase the
effective calorie expenditure capacity of anaerobic metabolism.

**Sample Fat Loss and Gain Lean Muscle Weight Training Program**

The following is an example of a weight training program with the primary emphasis of fat loss and gaining lean body mass. As previously discussed, the majority of the activities in this sample program utilize compound weight training exercises to maximize muscle recruitment and long-term calorie expenditure [2].

Following a thorough warm-up consisting of an aerobic activity such as treadmill walking or stationary cycling followed by static and active stretching, a typical introductory weight training program for fat loss and gaining lean muscle would proceed as follows:

**Full Body – Kettlebell (KB) ball squat with front raise**

**Chest – Push-ups (use various spacing between hands)**

**Back/Latissimus- Single Arm KB/dumbbell (DB) Row**

**Shoulders –Seated ball DB overhead press**

**Biceps – Standing single-leg DB curl**

**Triceps – Bodyweight dips on bench**

**Legs – DB ball squats**

**Note**

All activities are performed for two sets of 15 repetitions using a moderate tempo and minimal rest between sets.

**References**