

Welcome to the Basic Training Methodologies for Weight Loss presentation.

The purpose of this presentation is to provide the health and fitness professional with an overview on the importance of physical activity strategies to obtain weight loss and understand how to administer weight loss exercise programs.

After completing this presentation, the health and fitness professional will be able to communicate the rationale for cardiorespiratory and resistance training in accomplishing weight loss goals, be familiar with other training methodologies to assist in weight loss, and implement a weight loss program using NASM's Optimum Performance Training model and cardiorespiratory exercise.

Weight loss continues to be the leading reason why individuals start an exercise program or join a health club. While dieting alone can certainly result in weight loss, the combination of physical activity, including resistance exercise and diet, appear to favorably increase resting metabolic rate and lean body mass, and reduces unwanted body fat.

Although weight loss can be simplified as the difference between caloric intake and expenditure, it is important to recognize that exercise alone generally is insufficient for successful weight loss, especially for new exercisers. Therefore, it would be a mistake to focus exclusively upon exercise as the primary means to enhance caloric expenditure for weight loss, when the focus should shift to reflect a more global approach of all calories expended throughout the day.

If exercise alone is insufficient, then consider strategies that can affect the entire day rather than just a few hours of exercise. Recent research has focused upon non-exercise activity thermogenesis, or NEAT, a phenomenon that represents one's basic activities of daily living and includes fidgeting, standing, and moving around. Those who move more throughout the day tend to expend more calories, have a lower body mass index, and improve physiological functions. This is an important conversation health and fitness professionals should have with their client.

Although we need to incorporate a more global approach to weight-loss, the numerous other ancillary benefits of exercise can never be undermined. Exercise helps yield total body wellness, including decreased risk for cardiovascular disease, alters body composition, psychological benefits, and enhances overall health.

All resistance training programming has benefits. However, some maximize caloric expenditure

better than others. Let's review a few common resistance training programming schemes, including total body training, power training, circuit training, and metabolic resistance training.

Total body training implies the use of compound exercises where several joints and muscle groups are trained simultaneously in one exercise. These exercises typically involve the use of both the upper and lower extremities. Consequently, these exercises increase the overall caloric burn rate of the session, offering one explanation for their popularity. This form of training also includes many exercises that mimic activities of daily living more closely than isolation type exercises, thus, becoming more functional in nature. However, total body movements generally involve a greater degree of complexity. Therefore, these exercises should be given the appropriate amount of instruction and practice to achieve mastery and minimize injury risk.

Traditional power training emphasizes an eccentric lengthening action, or loading phase, that precedes a very brief transition or amortization phase, an explosive concentric shortening action or unloading phase, to harness the muscles' elastic energy. This form of training primarily targets type 2 muscle fibers to increase strength and explosiveness. A modified version of power training aimed at weight loss increases the volume of work performed and requires shorter recovery intervals than traditional power training, thus, increasing caloric expenditure while still targeting the type 2 fibers, as they are generally recruited under increased loads or velocities.

Circuit training involves completing a number of carefully selected resistance exercises arranged sequentially with short or no rest periods between the exercises. One primary objective behind circuits is to incorporate both cardiorespiratory and resistance training into a single bout, enabling some simultaneous physiological adaptations from each. Circuits reduce the risk of morbidity from cardiovascular disease, and they improve aerobic efficiency and caloric expenditure.

Metabolic resistance training, or MRT, is an all-encompassing generic term to define any workout that involves high work rate type activities coupled with little to no recovery intervals. The primary goal with MRT is to impose greater physiological stress upon the body in order to elicit larger neuroendocrine responses that result in faster biological adaptations. Additionally, these workouts aim to increase caloric expenditure and excess post exercise oxygen consumption.

Guidelines have been created by various organizations to improve cardiorespiratory efficiency for health, fitness, and performance. The general guidelines from NASM use the F.I.T.T.E factor. F.I.T.T.E stands for frequency, intensity, time, type, and enjoyment.

Frequency refers to the number of exercise sessions per week. Obese individuals should exercise at

least five times per week. However, it would be prudent for the health and fitness professional to develop a frequency plan that is achievable to avoid overwhelming the client rather than simply subscribing to the guidelines.

Intensity refers to the level of demand that a given activity places on the body. Overweight and obese individuals are encouraged to participate in moderate to vigorous intensity activity at 40% to 60% of VO₂ reserve or heart rate reserve, progressing gradually to 50 to 75% of VO₂ reserve or heart rate reserve. Because most individuals have no means to correlate this intensity into practical terms, the use of rating of perceived exertion and the talk test are suitable methods to gauge intensity. Refer to your text for more information regarding these methods of monitoring exercise intensity.

Time refers to the length of time engaged in an activity or exercise training session and is typically expressed in minutes. Overweight and obese individuals should aim for at least 30 to 60 minutes of moderate intensity exercise most days of the week to accumulate a minimum of 150 minutes per week. These recommendations can be accomplished through one continuous bout of activity per day, or intermittently throughout the day with bouts lasting a minimum of 10 minutes each.

Type refers to the mode of activity selected. Common types of cardiorespiratory exercise include walking or jogging on a treadmill, using a stair climber, or a stationary bike. It is important to change the type of exercise used from time to time, particularly if the client has had a weight loss plateau, as well as to decrease the risk of boredom.

Enjoyment refers to the amount of pleasure derived from engaging in a specific activity. Enjoyment is perhaps the most overlooked parameter, and yet it is arguably the most important, because positive experiences are more likely to promote adherence.

Like resistance training, there are many cardiorespiratory training options fitness professionals can apply when working with clients who have the goal of weight loss. These methods include steady state continuous training, aerobic interval training, anaerobic interval training, multimode training, stepwise or pyramid training, mixed-tempo, undulating or Fartlek training, and split routine training. Refer to your text for more information regarding each of these cardiorespiratory training methods.

Although exercise trends rise and fall, NASM's optimum performance training, or OPT model, provides an evidence-based platform with systematic progressions that properly prepares the deconditioned body for greater intensities and volumes of work.

The OPT model uses an integrated approach to fitness training. Integrated training incorporates all

forms of training as part of a progressive system. The components that make up an integrated training program are flexibility training, core training, balance training, plyometric training, speed, agility, and quickness training, resistance training, and cardiorespiratory training. Incorporating all of these training components improves all facets of fitness and aids in weight loss.

NASM's OPT model progresses individuals through three levels-- stabilization, strength, and power. The OPT model is built on a foundation of principles that progressively and systematically progresses any client to any goal, regardless of their fitness level.

The stabilization level consists of one phase of training-- Phase 1-- Stabilization Endurance Training. Stabilization Endurance Training is geared toward improving posture, flexibility, stamina, and movement efficiency. Phase 1 favors high volume, low-load exercises performed in a proprioceptibly-enriched environment and creates a foundation for more advanced forms of strength and power training.

The strength level of training follows the successful completion of stabilization training. The strength level consists of three phases-- Phase 2-- Strength Endurance Training, Phase 3-- Hypertrophy Training, and Phase 4-- Maximal Strength Training.

In Phase 2-- Strength Endurance Training, the goal is to enhance stabilization endurance while increasing prime mover strength. These two adaptations are accomplished by performing two exercises in a superset sequence with similar joint dynamics. The first exercise is a traditional strength exercise such as a chest press, whereas the second exercise is a stabilization exercise such as a stability ball push up. This hybrid phase of training may represent the stage of training best suited for overweight and obese individuals, because it simultaneously boosts resting metabolism, preserves lean muscle mass, and improves posture and movement quality.

The goal of Phase 3-- Hypertrophy Training, is to maximize opportunities to increase muscle mass. This phase is optional for weight loss clients, but it should always be considered for individuals who need or desire more lean mass.

The goal of Phase 4-- Maximal Strength Training, is to increase prime mover strength by lifting heavy loads. This phase may hold the least relevance for weight loss clients, because this form of training requires long rest periods, which reduce the total number of calories expended in a session.

Power training builds upon the stability and strength built in the preceding phases in order to generate force more rapidly. The power level consists of one phase, Phase 5-- Power Training. This

training phase also uses a superset format, sequencing a more traditional strength type exercise, followed by an explosive power exercise of a similar biomechanical motion. For example, a barbell squat may be followed by squat jumps. This phase of training is not limited solely to improving speed and power, but is an effective training method to promote weight loss.

NASM's cardiorespiratory stage training model follows the same philosophical premise as resistance training-- to properly prepare the body for greater levels of work while building self-efficacy through the exercise. Stage training is comprised of three stages-- Stage 1, Stage 2, and Stage 3.

Stage 1 aims to develop a solid cardiorespiratory foundation using low intensity, steady state aerobic exercise. In Stage 1, the individual ideally would be at an intensity of 40 to 59% of VO₂ reserve. However, if VO₂ reserve cannot be measured, staying within 65 to 75% of maximal heart rate, or an RPE of 12 to 13 on the Borg 6 to 20 interval ratio scale, are alternative methods. Clients will progress through Stage 1 by increasing the duration of exercise bouts followed by frequency of exercise sessions per week.

Stage 2 is designed to help clients move to moderate conditioning levels and tolerate higher intensities of exercise. This stage is the introduction to aerobic interval training. The peak of each interval should range between 76 to 85% of maximal heart rate, or RPE values between 14 and 16 on the Borg 6 to 20 interval ratio scale, before recovering back to a Stage 1 heart rate.

Clients with more advanced levels of cardiorespiratory fitness are capable of training successfully in Stage 3. The focus of this stage is to further increase workloads using anaerobic intervals. The peak of each interval should range between 86 to 95% of maximal heart rate, or RPE values between 17 and 19 on the Borg 6 to 20 interval ratio scale.

In summary, exercise produces a myriad of benefits, including weight loss. However, a more global approach to weight loss, including NEAT strategies, must be considered. Health and fitness professionals must also understand the need for a progressive and systematic training approach. Using NASM's OPT model and stage training system, minimizes the potential for chronic injury and promotes lifelong exercise adherence.