

Training Variables

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In the last issue, we discussed the components of a fitness program (cardiovascular conditioning, strength training, and flexibility) as well as ways to vary these components. This issue focuses more intensely on the training variables of frequency and intensity for each of the components.

Frequency and Intensity for Cardiovascular Fitness—The American College of Sports Medicine (ACSM) states that although some deconditioned persons may benefit from cardiovascular training only 2 days a week, the optimal training frequency is from 3 to 5 days a week. Research has shown that benefits of training any more than this is minimal compared to the increase in risk of overuse type injuries such as shin splints and runner's knee. Another variable in cardiovascular conditioning is exercise intensity. To monitor intensity, use the simple age-predicted heart rate maximum (HR max) formula $(220 - \text{age})$ and train at 70–85 percent of this. For example, if you are 40 years old, your predicted HR max is 180, and the recommended training intensity is 126 to 153 beats per minute. If you train at the low end of this spectrum, it will be beneficial to train more than 3 days a week. Your schedule and personal limitations can also dictate the frequency and intensity of your training program. Officials can benefit from varying intensity throughout the week—incorporating shorter higher intensity workouts with a long slow run once a week building from half the duration of a typical game to the full game time.

Frequency and Intensity for Musculoskeletal Flexibility—A staple of all officials' training programs should be flexibility. Lack of flexibility in the low back and hamstrings increases chronic injuries such as low back pain. A flexibility program will help in the ability to perform all the activities associated with basketball officiating and hopefully keep you injury free through a grueling season. Flexibility training is recommended to be added to your training schedule a minimum of 3 days a week. An active muscular warm-up before stretching provides maximum benefits without increasing risk of injury from stretching cold muscles. Try including stretching exercises to your warm up and cool down periods before and after your workouts. All stretches should be held to a position of mild discomfort and not pain.

Frequency and Intensity for Muscular Fitness—Resistance training is an important component for officials to add to their training

regimen. Muscular strength and endurance can benefit any activity, including officiating. Increased muscular strength and endurance will aid in diminishing the stresses caused by bending, twisting, stopping and starting which are all associated with calling any basketball game. Resistance training also increases lean muscle mass, increases bone density, and helps to strengthen the connective tissue in joints. All of these adaptations will help any official stay on the top of his/her game and be as productive as possible. A resistance training regimen should focus on total body strength and endurance using the overload principle. This principle states that by increasing the resistance to movement, frequency of movement and/or duration of movement, muscular strength and endurance are increased. Guidelines for developing strength and endurance are to incorporate a resistance workout 2–3 times weekly. Training more frequently and adding additional sets, repetitions and combinations are all variables that can be manipulated to elicit larger strength gains.

Each workout should consist of total body exercises with a minimum of 1 set of 8–12 repetitions for each. The importance of adhering to specific lifting techniques cannot be overstated. Poor form can lead to a number of negative outcomes including injury. If you are unsure of the proper technique, contact a professional for guidance.

Follow these guidelines for frequency and intensity of cardiovascular endurance, muscular strength, and flexibility to get the most out of your workouts. It will surely help you be in your best shape on the court at game time. In future issues, we will cover the last two components of the F.I.T.T principle, time (duration) and type of exercises in regards to these same three components of fitness (cardiovascular, strength, and flexibility).

References:

- Baechle, TR; Earle, RW. (2000). *Essentials of Strength Training and Conditioning*. 2nd ed. (NSCA).
- Hittner, N. "Avoiding the Traditional Pitfalls of Training." (Parts 1 & 2). *Personal Training on the Net*. Online. <http://www.ptonthenet.com>, Internet. 2003.
- Franklin, B.; Whaley, M. (2000). *ACSM's Guidelines for Exercise Testing and Prescription*. 6th ed. (ACSM)
- Clark, M. (2001). *Integrated Training for the New Millennium*. (NASM).