MAXIMIZING PERFORMANCE OF THE CANINE ATHLETE

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What is 'performance'? What does 'training' entail? There is much discussion surrounding these topics and the 'perfect' training program for our canine athletes remains a mystery. Of course, there are many components that may affect performance. In addition to proper training and conditioning, nutrition, the type of sporting event and overall health of the animal must be considered. Prior to designing an optimal training or conditioning program for your four-legged athlete, a basic knowledge of tissue physiology is necessary. The focus of this lecture will include the necessary components to achieve maximal performance of your canine athlete. In addition, a better understanding of the optimal performance of involved tissues including, tendons, ligaments, muscles, bones and cartilage, will be gained.

In order to maximize the function of each of these tissues, the 'SAID' principle, 'specific adaptation to imposed demands' is best applied.[1] Simply stated, exercises designed for a specific training program should mimic the anticipated function. For example, if the specific activity requires more muscular endurance than it does strength, then the training program should be geared to improve muscular endurance. Building an exercise program should include the necessary foundation - a framework of specificity.

It is this principle that applies to all body systems and is an extension of the theory that body systems will adapt over time to the stresses placed upon them, or Wolff's Law.[2] Improving cardiovascular endurance may be achieved by engaging in large muscle group activities such as running, jogging or swimming at varying frequencies, durations and intensities. Resistance training to enhance muscle strength, endurance and to maintain flexibility is equally as important.

Stretching is also a vital component to any training program. It improves joint range of motion and function, enhances muscle performance, and helps prevent musculoskeletal injuries. Pollock et al states that poor flexibility may lead to declining performance and subsequent injury. However, performance may be modified through flexibility training.[3]

The 'warm up' and 'cool down' phase of an exercise program is also a necessary component to achieving maximal performance. The purpose of a warm-up is to allow the body to make the physiologic adjustments necessary before the onset of activity. This allows the body to meet its physical requirements prior to physical activity. Following exercise, the cool-down period is necessary to prevent pooling of blood in the extremities and to enhance the recovery period by removing metabolic waster and replacing energy stores.

A basic understanding of the principles of exercise and a basic understanding of achieving maximal performance of important body tissues is a vital component when

considering development of an exercise plan. With these concepts, one is well on their way to developing an optimal training program for a canine athlete.

REFERENCES

1. McArdle WD, Latch FI, and Katch VL. *Essentials of exercise physiology.* 2nd ed. Lippincott Williams & Wilkins;Philadelphia, PA. 2000.
2. Kisner C, Colby LA. Therapeutic exercise: foundations and techniques. 4th ed. F.A. Davis;Philadelphia, PA. 2002.
3. Pollock ML, Gaesser GA, Butcher JD, Despres J-P, Dishman RK, Franklin BA, Garber CE. The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness, and flexibility in healthy adults. *Med Sci Sports Exercise* 975-991, 1998.