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Archery, Heart Rate and The Importance of Performance and Relaxation Between Shoots

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Introduction

Archery comparatively demands very specific strength and endurance for successful intermittent repetitive shooting and performance, both during training and competition. Analysis of the event showed that there is a demand of cardiovascular fitness during long hours and high number of quality shooting for effective training capacity, and during the competition, which demands not less than 150 shots during the course of the competition, spread over a day. In shooting-based sports where hand-eye coordination is important in shooting skills and performance, a problem is created by a whole-body tremor caused by a cardiac systolic cycle. Elite level top archers, more than the physiological stress, they are negatively influenced by emotional and cognitive factors. It was demonstrated that neural activation of brain during shooting was quite different on archers with at different levels of skill and non-archers. Researchers claim and explain this state as having the elite archers being more efficiently focused and organized in neural networks, and as an outcome of this, they shoot with a less energy cost. It is, also, postulated that at high skill level archers, at central neural programming level, the motor planning and learning are relatively more economical, and, therefore, at high stress competition environment, they respond with a higher consistency in cognitive and motor processes for shooting. Unintentional or involuntary muscle activity may negatively influence shooting performance. One of these activities may be the physiological tremor due to Heart Rate (HR). It was demonstrated that there was a negative relationship between the amplitude of tremor and shooting performance in shooters. One other major source of the tremor is an HR and to a certain extent is the respiratory system activity. Each and every heartbeat results in a transient oscillation

in an extremity. However, the partial number of tremors caused by HR and respiratory activities in the total postural muscle activity tremor is relatively very small. Several investigations on archers have demonstrated that there is a notable specific stress on the cardiovascular system of archers during repetitive shooting, specifically during competition. Despite the fact that there is a change in heart rate values prior to drawing, during drawing and shooting, influenced by psycho-physiological factors, there is also some muscular stress imposed by posture, limited time of shooting, and repetitive shooting upon the whole-body musculature and chest and shoulder girdle muscles.

Yoga does good things for the body, mind and soul. That's why it perfectly complements archery, which offers lots of health benefits ranging from stronger upper bodies to increase self-confidence. Combining yoga with archery creates the perfect recipe for improving posture and strength. During Shooting when the time comes to draw the arrow, focus and stability are of the utmost importance. Along with improved flexibility, stamina, and core strength, yoga help us concentrate on each part of our bodies performing in the way we want. It brings recognition to the breath, stance, draw, and release, helping to perfect each little movement and positioning.

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Conflict of Interests

No conflict of interest.

