

Pel ot Performance Coaching

Warm-Ups AKA Movement Preparation (not just getting the body warm)

For maximal sports performance and reduced sports related non-contact injuries athletes need to prepare their bodies for the dynamic and explosive action of sport. Sports require the body to perform rapid, forceful, unpredictable movements in multiple directions. For this reason warm-ups need to not be taken lightly, a proper warm-up before every practice, every game and every training session can actually increase first step quickness, reduce the likelihood of non-contact related injuries (knee, ankle, hamstring, hip flexor, etc... blow outs) and increase mental readiness. The purpose of the warm-up is far more than just increase body temperature, the purpose is to stimulate and prepare the body for movement. I use the term *movement preparation* instead of the term warm-up. In my opinion warm-up does not quite hit the nail on the head for what movement prep should accomplish.

To proper movement prep will increase heart rate, blood circulation, core/muscle temperature, kick start the cardiovascular system, increase concentration/focus (mental readiness), activate muscle for better reaction, stimulate body control/coordination, challenge mobility of joints and activate lactate (lactic acid) buffering systems in the way they need to work in competition. The more active range of motion a joint has; the greater athletic mobility an athlete will have. Additionally, an increase in active joint range of motion; the less likely an athlete is to sustain injury when in contact with other players or other objects (boards, ground, walls, etc...). By the end of the movement preparation, athletes should be out of breath and muscles should have a slight burn. Many coaches and athletes may cringe when they hear this, because there is an automatic assumption that if an athlete is out of breath and if an athlete's muscles have a slight burn that the athlete is going to be too fatigued or pre-fatigued prior to the beginning of the game time. This thought could not be further from the truth. Typically, there is usually a significant amount of downtime between the start of competition and the end of warm-up. This time will allow the body to completely recover from any stress from warm-up. A slight burn in the legs during or immediate following warm-up will activate the lactic acid buffering systems in the body. The earlier these systems can be activated, the more efficient these systems will be at buffering lactate once an athlete body hits the playing field. If the breathing rate is high at the end of warm-up it will help increase lung function by not only activating the tissues in the lungs, but it will help increase the function of removing metabolic waste(carbon dioxide and hydrogen(lactate))from physical activity and force an increased delivery of oxygen to the muscles prior to game time. Again for maximal effectiveness for performance and injury prevention the last couple minutes of a proper movement preparation should simulate game type intensity

Research has shown that static stretching is great tool for athletes and coaches, but it is important to know when and how to do so for maximum athletic performance. Static stretching is the process of holding muscles in a stretched position for a prolonged period of time (20-45sec). Static stretching has been shown to be very beneficial after a game or practice, implementing a good static stretching routine after practices, games and training sessions will promote a good cool down and will help accelerate recovery and reduce injuries. Research continues to provide evidence that implementing a static stretching routine prior to be engaging activities that require maximum speed and explosiveness can be very detrimental to performance. In order to properly

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prepare the body for maximal efforts of sprinting and changing direction athletes and coaches should incorporate a dynamic stretching routine into their warm-ups. Dynamic stretches need to be done after the tissues of the body are warm, implementing dynamic stretching exercise with a cold body can potentially lead to muscle damage.

A Sport Specific Movement preparation should take no longer than 15 minutes. In order to reduce injury and increase the effectiveness of the warm-up there a few things to consider: refrain from maximal exertion at the beginning of the warm-up. Always start a warm-up with light physical activity; always make sure the body is warm before implementing stretching exercise and always end with a few maximal efforts in the form of jumps or quick sprints. Warm-ups can also be a great way to increase an athlete's recovery process when performed on recovery or rest days from training and practices. It is proven that incorporating a recovery/sport specific movement prep the morning after an intense game can actually increase tissue healing, promote increased energy level and decrease the mental burnout. Coaches and athletes need to be aware that a faster recovery from game night can make the next week or the days to come very productive for extra training, practice or games and the recovery process begins immediately after the game is over. Incorporating post game day recovery workouts have shown reduced injuries and have shown increases in speed, quickness and performance as competitive season progresses.