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Exercise 10
Critical Performance Factors 2
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Think about the sport, or one of the sports, you work with. What are the factors that one needs to excel in the sport? Your job is to think about the sport, and based on your present level of knowledge and your experiences, identify what you think are the critical performance factors that serve as the building blocks for elite performance. Make a list of no more than 6 critical factors and provide a brief (1-2 sentences for each) explanation for why you chose each.

Sport: Offensive Line Play in Football

Critical Factors:

- High levels of muscular strength, power, and endurance in the lower body.
 - An offensive lineman needs a high level of muscular strength, power, and endurance in his lower body. In order to achieve these levels, a proper strength training program should be developed. The program should focus on building muscular endurance, then improving strength and finally increasing power. These should be planned as microcycles throughout the overall training mesocycle. Exercises that could be performed include parallel squats, dead lift, Romanian dead lift, split squat, lunges, calf raises, and leg press among others. All of these exercises (except calf raises) are multiple joint exercises that focus mainly on the hamstrings, quadriceps, and gluteal muscles which provide the most force while blocking.
- Training of the Phosphocreatine and Glycolytic systems.
 - An offensive lineman blocks for roughly 5 seconds at a time. During this time, energy is produced using the phosphocreatine system. At any given time, a play may last longer resulting in the glycolytic system being engaged to provide energy. In order to properly train these systems, conditioning drills need to provide adequate energy expenditures. An example would be a short sprint with a rest followed by another short sprint and so on. Practice session drills should consist of repetitions lasting roughly 5 seconds or more to train the energy systems properly.
- Proper biomechanical form blocking.
 - A lineman that performs correct technique when blocking has a much greater chance of beating his opponent than one that does not have proper form. Keeping the back flat and a “z in the knees” allows maximum use of the leg muscles to drive through the opponent because the muscles are at the optimal length to provide the most power. Force is produced because the muscle is at an advantage as it creates the proper line of pull.
- Quick foot speed and balance.
 - An offensive lineman will need to move quickly and react to the actions of the opponent. A lineman moving his feet quickly in six inch steps allows for proper knee bend which creates optimal muscle length as explained above. The lineman’s weight should be centered on the ball of the foot to allow for quicker movement. Quick, short steps also provide a balance point while moving forward during a run block and moving laterally during a pass block. Quick, short steps allow a short period of time where the feet are not in contact with the ground. To be completely balanced, contact needs to be made with the ground in order to create a base of support. A short, quick step also produces a ground reaction force in order to gain “push” from the ground into the

opponent being blocked. Quick steps produce more subsequent forces that allow the lineman more opportunity to move the opponent.

- Injury Prevention
 - A contact sport such as football incurs a lot of injuries, especially linemen. In order to help prevent these injuries, a proper strength training program should be implemented that focuses on strengthening muscles that cross the knee joint and muscles around the shoulder. In addition, proper dynamic warm ups should be implemented prior to practice and competition that engage and activate primarily used muscles. Injury prevention could also include preventative measures such as braces or tape that limit and protect from excessive range of motion.
- Film Review
 - A sport with as many moving parts as football could benefit tremendously from film review. Individual drills could be filmed, analyzed by the coaching staff, and then reviewed with the players. This allows immediate feedback for the athlete and also provides a concrete example of performance that the athlete may be able to review at any given time. The review process should show both positive and negative performances to provide information on what the form should look like and what needs to improve. This could tremendously improve skill acquisition and performance.