

STRENGTH & CONDITIONING I PROJECT

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0 - Introduction. The first part of strength and conditioning class was very informative and useful for me as a soccer coach. All of the material we covered was useful and can be incorporated into my current coaching practices going forward. In this project, I will reflect on some of the key topics covered in the class and how they can be applied to soccer training specifically. Finally, I will present a plan for one practice session for my team which incorporates some of the ideas I learned during the class.

1 - Pre-Practice. One very thought-provoking idea that we discussed during the class was the idea of having athletes have a short “pre-practice” session in which they warm up by engaging skills they would need in their specific sport. During the class, we spent some time playing spike ball. It was my first time playing spike ball, but after playing a few rounds, I quickly realized it was a very fun way to get the blood flowing, and also worked on certain skills that would help in a soccer context. In particular, when we got to some more advanced moves in the games, I realized that you can get a big advantage by doing three basic things: 1. good communication with your partner; 2. working the space around the net; 3. blocking opponents off using placement of your body. These are all skills that are really important to be a good soccer player, and this was a fun and different way to work on those skills.

2 - Dynamic Warm Up and Injury Prevention. Warm-ups using static stretching are mostly unhelpful at the start of practice and are better used at the end of practice as a form of cooling down. A good dynamic warm up can save a lot of time in terms of getting athletes ready to engage at high level during practice. Additionally, it helps a lot in training for injury prevention. A large part of the conversation during the class was promoting strengthening exercises to prevent injuries during practices and games. For soccer players (and other multi-sport athletes), hip flexor injuries are common. Several ideas were given to help athletes become stronger in this area (see the practice plan below for more details). For soccer specific injuries, some ankle movement exercises were discussed to minimize the effects of “shin splints.”

3 - Nutrition. Nutrition is a vital part of any athlete's routine in order to enhance performance during games. We spent some time during the class discussing appropriate food groups to eat and also timing of meals and snacks during game days and practice days.

4 - Anaerobic and Aerobic Training. Anaerobic phases of training involve high intensity while aerobic phases of training involve moderate intensity. The former helps with power and explosiveness, while the latter focuses on endurance training. For soccer players, both of these components are important for overall fitness for the game, and therefore both have to be incorporated as part of training.

5 - Overall Strength Training. Having technical and skillful players is not enough to compete with the very best teams. We need players who are strong, quick and have the endurance to last for long periods of the game and make good decisions throughout the entire game. To get to the latter, overall strength training is key. We discussed some basic movements that humans perform all the time that can be improved and can lead to gains in overall strength - the push, the pull, the hinge, the squat, the lunge and walking/running. All these basic movements can be trained in the weight room using the "big 3" exercises - the squat, the benchpress and the deadlift. Two key take-aways for me on how to improve these movements using those 3 lifting techniques are: 1. using progressive training methods (starting with mastering basic form and technique using no weight and other helpful tools, such as PVC pipe or elastic bands. Once the technique is mastered, then move on to the machines). 2. the importance of the off-season (regular gains happen over longer stretches of time and it is important to encourage athletes to be in the fitness center in the off-season. Along with that, it helps greatly for the coach to be a presence in the fitness center encouraging athletes to continue their fitness work).

3 - Practice Session Plan for Girls' Soccer. Below is a possible plan for a 90-120 minute soccer practice incorporating some of the ideas that I picked up during the class. Breaks for players should be incorporated at the coach's discretion and at appropriate times. Below is a list of possibilities in each section. This does not imply they should all be done at every practice.

Before Practice.

- (1) Breakfast Nutrition
 - (a) Fast Energy (cereal, bread, bagels, tortilla, pancakes, waffles, pretzels, crackers, dry fruit, fruit)
 - (b) Sustained Energy
 - (i) Protein (eggs, grilled chicken, lean beef, lean pork, turkey, milk, cheese)
 - (ii) Plant protein (nuts, seeds, hummus, beans, lentils)
 - (iii) Fats (avocado, cream cheese, olives)
 - (c) Health Protection
 - (i) Fruit (apple, banana, blueberry, cherry, raspberry, pear)

- (ii) Vegetables (spinach, tomato, peppers, broccoli)
- (2) Lunch Nutrition
 - (a) Fast Energy (bread, cereal, crackers, tortilla, dry fruit)
 - (b) Sustained Energy
 - (i) Protein (egg, jerky, tuna, chicken, cheese, milk, yogurt)
 - (ii) Plant protein (beans, lentils, hummus, nuts, seeds)
 - (iii) Fats (avocado, olives)
 - (c) Health Protection
 - (i) Fruit (apple, banana, cherry, blueberry, grapefruit, grapes, melon, orange, peach, raspberry)
 - (ii) Vegetables (broccoli, cauliflower, cucumber, pepper, lettuce, spinach, tomato)

Pre-Practice (15 minutes prior to start).

- (1) Set up several spike-ball games so that groups of players can warm up by playing several rounds.
- (2) Set up “rondo” squares (either 4v1 or 4v2) where players are passing the ball to and keeping the ball from each other.
- (3) Players can alternate between the two stations

Dynamic Warm-Up (15 minutes).

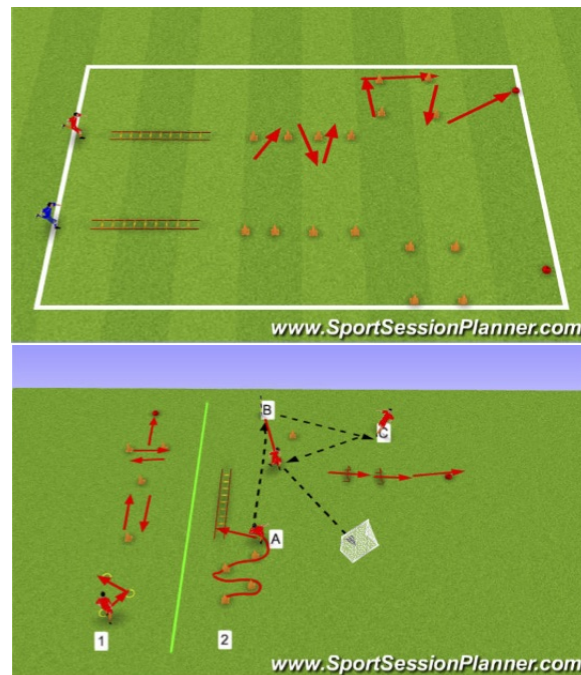
- (1) Air Squats (x20).
- (2) Alternate Side Lunges (x6).
- (3) Forward Side Lunges (x10).
- (4) Iron Crosses (x6).
- (5) Scorpions (x6).
- (6) Glute Bridges with 1-2 second hold [progress to single leg] (x6-8)

Injury Prevention (5 minutes).

- (1) ABC Woodchoppers (x3 each)
- (2) 90-90 Hip stretches
- (3) Ankle movement exercises
- (4) Lateral plyometrics

Agility (Anaerobic) (20 minutes).

- (1) Box Jumps.
- (2) Line drills (change of direction).
- (3) Various combinations of drills with ladders/cones.
- (4) Incorporate the ball into the progression when appropriate.



Technical/Tactical Work (60 minutes).

- (1) Control, Passing, Finishing drills.
- (2) Passing patterns, attacking movements, defensive shape.

Endurance (Aerobic) (10 minutes).

- (1) Interval training.
- (2) Runs/Lunges.

Cool down (10 minutes).

- (1) Static stretching.

After Practice.

- (1) Dinner Nutrition.
 - (a) Sustained Energy
 - (i) Protein (Chicken, eggs, lean beef, lean pork, salmon, turkey, cheese, milk, yogurt)
 - (ii) Plant Protein (beans, lentils, hummus, nuts, seeds, tofu)
 - (iii) Fats (avocado, cream cheese, olives)
 - (b) Health Protection
 - (i) Fruit (apple, banana, cherry, grapes, orange, peach, pear, raspberry)
 - (ii) Vegetables (broccoli, lettuce, peppers, spinach, tomato)