



Dynamic Motivation

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Since the current practice of warm-up static stretching has been based more on intuition than scientific evidence, there has been a growing interest in warm-up procedures for youth that involve the performance of dynamic movements designed to elevate core body temperature, enhance motor unit excitability, improve kinesthetic awareness, maximize active ranges of motion and develop fundamental movement skills by reinforcing critical movement patterns. This type of warm-up protocol is referred to as dynamic exercise and typically includes low, moderate and high intensity hops, skips, jumps and various movement-based exercises for the upper and lower body. It is likely that moderate to high intensity movements performed during the warm-up period may excite the neuromuscular system which in turn may allow for greater explosive effort during subsequent exercises.

Potential Benefits of a Dynamic Warm-up

Physical education teachers and youth coaches should consider the potential impact of warm-up protocols on motivation and performance. A well-designed warm-up can set the tone for the class or practice session and establish the desired tempo for upcoming activities. If the warm-up is slow and monotonous (e.g., walking or jogging a lap or two around the gymnasium), then motivation and performance during the main part of class or practice may be less than expected.

Conversely, if the warm-up is characterized by a variety of dynamic movements that are exciting and challenging, motivation and performance during the main part of class or practice may meet or exceed expectations.

Unlike low intensity aerobic exercise and static stretching, performance of dynamic movements during the warm-up period not only ‘excites’ the neuromuscular system for the demands of physical education class or sports practice, but a dynamic warm-up provides an opportunity for boys and girls to learn and practice movement patterns that can carry-over to other physical activities and sports. Moreover, since motivation to participate in physical activity involves the exploration of goal setting, concentration, facilitation of hope and team building exercise, a well-designed dynamic warm-up characterized by cooperative and successful experiences can be a useful tool to spark an interest in physical activity which is an important public health objective. Based on the available evidence as well as impressions from physical education teachers and youth coaches who report that many students do not enjoy traditional static stretching, it seems reasonable to suggest that students should perform dynamic exercises during the warm-up period and static stretching during the cool-down period when youth need time to recover from the main part of class or practice.

Program Design Considerations

We begin each class or practice session with a 10 minute dynamic warm-up which typically consists of ten to 12 drills. We start with standing drills in place (about 10 to 15 repetitions) and progress to dynamic drills that involve walking, lunging or running. This approach allows the teacher or coach to effectively ‘manage’ the class while introducing key concepts related to

dynamic warm-up procedures (e.g., proper technique, spatial awareness, and body control).

Following the standing drills, students perform each dynamic movement for about ten yards, rest about five to ten seconds, and then repeat the same exercise as they return to the starting point.

Since most youth see little value in prolonged periods of aerobic exercise, a dynamic warm-up is more consistent with how children naturally move (i.e., short bursts of moderate to high intensity physical activity interspersed with brief recovery periods as needed). Moreover, equipment is not needed and this type of warm-up can be performed in a relatively small space. An example of dynamic warm-up routine is noted below:

1. **Jumping Jacks:** While moving feet, progress from low-jacks (lifting arms from hips to shoulder level), to high-jacks (lifting arms from shoulder level to overhead) and finally to full-jacks (lifting arms from hips to overhead).
2. **Standing Skips:** Skip in place with elbows at 90° and a swift knee drive.
3. **Standing Flutter:** Stand with both arms extended above head and feet shoulder width apart. Move left arm and right leg backwards while maintaining an erect body position; return to starting position and perform with opposite limbs. Keep arms and legs extended during the movement.
4. **Standing Toe Touches:** Stand with arms extended in front of the body. Lift one extended leg towards the extended arms and then return to starting position. Alternate with other leg.
5. **Hip Rotations:** While hopping in place, turn toes in/heels out then toes out/heels in.
6. **Trunk Rotations:** With hands clasped behind head, turn hips to the right then the left as you hop forward. Focus on trunk rotation and an erect body position during this movement
7. **Side Shuffle:** From a standing side-stance with feet hip-width apart, hop and land with feet

shoulder width apart and body lowered to semi-squat position. While maintaining semi-squat position, move laterally by taking a short lead step followed by a short secondary step.

8. **High Knee Skips:** Rapidly skip forward while focusing on knee lift, arm action and reduced ground time.

9. **Kick Aways:** While jogging forward, kick heels backwards with extended leg then cycle heels towards buttocks while moving forward.

10. **Run and Go:** From a standing position, lean forward as you begin to run to the 5 yard mark and then sprint through the 10 yard mark. Focus on arm action, knee height and accelerating as fast as possible.

11. **Run and Stop:** From a standing position, lean forward as you begin to sprint through the 5 yard mark and then stop at the 10 yard mark. Focus on decelerating by lowering your body, bending your knees and increasing foot contacts (i.e., chop feet several times).

In summary, physical education teachers and youth coaches should consider the immediate impact of a dynamic warm-up on motivation and performance. Dynamic movements are not only more enjoyable to perform than static stretching, research findings suggest that this type of movement preparation better prepares boys and girls for the demands of physical education class and sports training.

Selected References

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