

# Suggested Dynamic Warm-Up: ACL Specific Exercises



Knee injuries are common in high school athletes. Injuries range from minor things, such as bruises, to season-ending ligament tears. There are four main ligaments in the knee, the medial collateral ligament (MCL), lateral collateral ligament (LCL), posterior cruciate ligament (PCL), and anterior cruciate ligament (ACL). Sprains or tears of these ligaments may require surgery for reattachment.

ACL injuries are debilitating but common injuries in high school athletes. Females are statistically more likely to suffer an ACL injury for a variety of reasons that have been well researched. Stressing the importance of a dynamic warm-up may help prevent these knee injuries and keep athletes in the game. The following are some recommendations for dynamic warm-up exercises, including some specific to training muscles that can help improve poor knee position, which has been shown to lead to ACL injury.

## *Squat Jumps*

- This exercise recruits multiple muscle groups in the lower body while training proper mechanics of jumping and landing. Proper positioning of the feet, knees, and hips should be stressed during this exercise. The feet should be shoulder width apart, with toes pointing forward. The knees should be over the toes, never farther forward than the toes. The hips should be pushed back, with the chest up. This position should be maintained on take-off and landing.

## *Walking Forward Lunge*

- Similar to squat jumps, position of the knee should be stressed in this exercise. The knee be pointing straight forward throughout the exercise and should not be farther forward than the toes. The chest should be upright, not leaning forward.

## *Lateral Hops*

- Knee position is key when jumping side to side. The alignment of the foot, knee, and hip is the same as the previous two exercises. When pushing off and landing, proper positioning should be maintained, ensuring the knee is point straight forward. Body weight should be centered over the leg upon landing.

## *Jump Lunges*

- This exercise incorporates the mechanics of squat jumps and walking forward lunges. Jumping and landing require the same principles as described above and athletes should be masters of the mechanics of the previous exercises prior to attempting this exercise.

## *Other Exercises*

- There are a variety of other exercises that can make up the dynamic warm-up for any team. Some common exercises are: running butt kicks, running high knees, skipping for height, lateral shuffles, and carioca.

These exercises have been proven to decrease ACL injuries in athletes, specifically females. Targeted prevention is the best method to help keep athletes on the field.

For additional information, contact WellSport at **(989) 837-9350**  
or visit [www.midmichigan.org/wellsport](http://www.midmichigan.org/wellsport).

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STEP 1



STEP 2



## Squat Jumps

### Setup

- Begin in a standing upright position with your feet slightly wider than shoulder width apart.

### Movement

- Lower yourself into a squatting position with your arms straight, then jump up, moving your arms back as you do. Land in a squat and repeat the movement.

### Tip

- Make sure your knees do not collapse inward or move forward past your toes as you land, and try not to over arch your back.

STEP 1



STEP 2



## Walking Forward Lunge

### Setup

- Begin standing upright with your hands at your hips.

### Movement

- Take a large step forward, lowering into a lunge position with your knees bent at 90 degree angles. Then raise yourself up and lunge forward on your other leg without letting your foot touch the ground in between.

### Tip

- Make sure to keep your trunk upright during the exercise. Do not let either knee collapse inward or let your knees move forward past your toes.

STEP 1



STEP 2



STEP 3



## Single Leg Lateral Hops with Agility Ladder (BKA)

### Clinician Notes:

Does not require agility ladder

### Setup

- Begin in a standing upright position to the side of an agility ladder on the ground.

### Movement

- Jump to the opposite side of the agility ladder with one foot, then return to the starting side with your other foot. Continue this pattern until you reach the end of the ladder.

### Tip

- Make sure to keep your movements controlled and maintain your balance during the exercise. Remember to put weight on the prosthetic toe to get some dynamic return from the foot.

STEP 1



STEP 2



## Jump Lunges

### Setup

- Begin in a lunge position.

### Movement

- Jump straight upward and switch the position of your legs, landing back in a lunge position. Continue these jumps, alternating your legs each time.

### Tip

- Make sure to keep your back straight and do not let your knees collapse inward or move forward past your toes as you land in the lunge.

STEP 1



STEP 2



## Running Butt Kicks

### Setup

- Begin standing in a long, open, and flat area.

### Movement

- Lightly jog, and try to kick your heels to your buttocks as you bend your knees.

### Tip

- Make sure to keep your movements controlled and maintain your balance during the exercise.

STEP 1



STEP 2



## Running with High Knees

### Setup

- Begin standing upright in a long, flat, open space.

### Movement

- Move forward with quick small steps bringing your knees up to waist height each time.

### Tip

- Make sure to keep your movements controlled and maintain your balance during the exercise.

STEP 1



STEP 2



## Skip with High Knees

### Setup

- Begin standing upright in a long, flat, open space.

### Movement

- Skip forward driving your knee up each time you jump as you swing your opposite arm up overhead.

### Tip

- Make sure to keep your movements controlled and maintain your balance during the exercise.

STEP 1



STEP 2



STEP 3



## Lateral Shuffles

### Clinician Notes:

Add in arm rotations for a full-body warm-up

### Setup

- Begin standing in a long, open, flat, space.

### Movement

- Bend your knees and hips into a mini squat position. Then quickly skip to the side.

### Tip

- Make sure to keep your core engaged and do not arch your low back during the exercise.