Dynamic Warm-Up

Historically, stretching prior to sports or activity has been thought to be necessary to improve performance and prevent injury. Several new studies however have shown that sprinting and jumping performance improves when preceded by a dynamic warm-up program rather than static (stationary) stretching.

Dynamic warm-up programs are designed to increase blood flow to working muscles, improve dynamic flexibility and prepare the neuromuscular system for complex movements. In addition to improving performance in explosive power movements, like sprinting and jumping, it is likely that the neuromuscular effects of the dynamic warm-up improve performance in activities requiring precision and accuracy.

Below is a sample of dynamic warm-up drills. The specific drills that are most optimal may vary based on the specific sport or athlete.

1. Forward – Backward A Skip
The movement is a step and then a hop, followed by a step and hop on the other leg. During the hop the same arm and opposite knee should move forward in a smooth coordinated movement. The lead knee should come almost to hip height and in this position the foot should be parallel to the ground. It then returns directly back toward the ground. This should be done forward and backward.

2. Forward – B Skip
The movement is a step and then a hop, followed by a step and hop on the other leg. During the hop the same arm and opposite knee should move forward in a smooth coordinated movement. The lead knee should come almost to hip height and in this position the foot should be parallel to the ground. Unlike the A skip, during the B skip the lower leg of this lead leg should reach out and forward—simulating a sprinter's stride.

3. Ankle Pops
This movement is similar to the A skip but eliminates most of the hip flexion and focuses primarily on the ankle push off, still using the step–hop sequence.
4. Short Quick Carioca
This is a lateral movement with rotation. The trail leg steps over and then under the lead leg on alternating steps. Initiate the rotational movements with your trunk/core to prevent your feet from getting crossed up. Maintain similar speed and motion for the forward and backward steps, but steps should be very fast and short.

5. Side Shuffle
This is a lateral movement. Start in an athletic position with the hips and knees flexed, the trunk is angled forward but the spine is still relatively straight. Keep the toes pointed forward—focus on pushing off the trail leg as opposed to pulling with the lead leg. Take quick steps, pushing off with the back leg primarily.

6. Three Step and Stop Zig Zags
This movement can be of progressive speed and should be from a tall athletic position—slight hip and knee flexion. Keep the feet pointed forward as you take 3 steps in a forward and lateral direction. The first and second steps should be very quick with the third step being the landing. The key is to come in to the landing position by flexing the knee and hip at the point of contact on the ball of the foot. Hold this landing for 1–2 seconds before changing directions, this creates the zig zag pattern.

7. Three Shuffle Pivot Zig Zags
The shuffle movement is the same as the side shuffle, but now a reverse pivot is incorporated. Take three shuffle, then pivot on the lead foot with the body rotating backward (reverse pivot) ~80–90 degrees. The key is to work on rotating the trunk and hips over the ball of the foot. Avoid a step out and turn on a planted foot—this leaves the knee vulnerable and limits your reaction speed.

8. Backward Accelerations
This is a backward running movement. Start with small, quick steps progressing to longer reaching strides. Your arm and leg movement should be of similar amplitude, thus when taking short strides initially you should have a small arm swing.

9. Tall – Fall – Run
This is a forward running movement. Start by raising both heels, then slowly fall forward keeping the body forward, when you get to the point where you can’t fall forward anymore take small quick accelerating steps to keep your body inclined forward.

Watch a video of these drills at uwhealth.org/sportsrehab.