



Jennifer Beaudry MS, ATC, LAT

Increasing speed is a common goal for many athletes who seek to improve their performance and decrease their risk of injury. The good news is that by participating in various speed training drills, specific stretching, appropriate nutrition and optimal sleep patterns, female athletes can increase their speed.

Food is Your Fuel: To optimize your specific sport skills in competition, it takes a combination of efforts. Out of uniform, it's important to be realistic and sensible with your eating choices. Good nutrition improves not only body performance but mental concentration as well. Maintaining good levels of hydration and getting adequate sleep at night will benefit you overall and reduce fatigue.

Stretch, Condition & Train: Staying on top of stretching techniques, pre-season conditioning and incorporating training changes gradually will all help you reach your goals. Maximizing your strength, agility, flexibility, and speed will lead to a better performance on the athletic field. Speed is not determined by just how strong your muscles are but also by how quickly they react and contract. Muscles adapt; therefore, long, slow running trains the body to run slow. The faster your muscles contract, the faster your legs and arms will move. When your muscle is programmed to instantly contract to a certain position, you can achieve increased speed. Speed and quickness are not the same as strength and endurance and you won't achieve great speed by only training for strength.

Squat and Lunge for the Female: The female body is obviously different from the male; specifically, the biomechanics of the body can make females more susceptible to lower limb injuries. Therefore, females are more likely than males to suffer knee injuries. A great way to provide a positive environment that encourages female athletes to reduce their risk of injury by improving their fitness is to utilize sport specific skills and fitness sessions such as *Performance Speed School*.

Knowledge of the proper ways to perform a Squat and a Lunge is critical for any female athlete. These two exercises should be integrated into any exercise program to strengthen the core, hips and legs. You will be impressed to see how much your performance improves with the increased leg strength and knee stability that results from making these specific exercises part of your routine. Squats and lunges are best performed when you are fresh. Don't attempt them after a long endurance run or a heavy strength training session.



Squat

Start in standing position with feet hip-width apart and toes pointed forward. Hands should be out in front for balance. Move hips back and slowly descend back as if you were going to sit in a chair. Hips should not go lower than the knees. Keep chest up, chin up, heels down and back straight without a forward lean. Keep knees over the feet. Push off heels to return to standing position.

Aim to repeat 3 sets of 10 repetitions. If you are just starting to incorporate this exercise into your routine, start with 1 set of 12 repetitions, 2 times a week with a day of rest in between. If you are already incorporating this exercise into your routine, aim for 3 sets of 10 repetitions, 2-3 times a week.

To advance this exercise, increase weight with medicine balls/dumbbells.



Lunge

Start in an upright position with feet together. Lunge forward with your right leg, and keep toes of the right foot pointed straight ahead. Your right knee should remain inline/over foot. Right knee should remain back behind the toes (over the ankle.) Drop knee of rear leg towards the ground, but not touching. Keep core upright and chin up. To return to starting position, push back off heel of your right leg. Repeat with the left leg. To incorporate this exercise into your routine, follow the same advice as the Squat: aim for 3 sets of 10 repetitions, 2-3 times a week.

It is important to remember to give your body resting points between exercises. You can train up to (but never into) pain. Pain is your body's warning sign. Make sure you tell your coach and athletic trainer if you feel any level of pain at any time during exercising

Performance Speed School Dynamic Warm Up Drills;

A dynamic warm-up is essential before beginning any activity. Save the static stretching until the end of the session; that is when increasing and maintaining flexibility is most effective. Spend at least ten minutes on the following dynamic warm up activities.

- ✚ High Knee Walks/High Knee Runs
- ✚ Heel to Glut Walks
- ✚ Carioca
- ✚ Inch Worm
- ✚ Lunge with arm inside of knee (Monster crawls)

Prevent an ACL Injury

As a female athlete, it is important to learn how to move with good alignment to protect your knees from an ACL injury, which is a common and debilitating injury for many female athletes. It is important to develop body awareness, strength and balance to support your knees and ankles. Always jump, land, stop, and move with your knees directly over your feet. Do not let your knees collapse inward. It's also important to develop strength in your hips and thighs.

Protect Your ACL

- Keep your chest high and over your knees
- Bend from the hips and knees
- Keep your knees over your toes
- Keep your toes straight forward
- When jumping or sprinting, land like a feather

Want to Go Faster?

Once your warm up is completed, work on drills to increase speed, agility, endurance and strength.

Sprinting Drills:

- ✚ **Raise Knees:**
10 meters sprint- jog ~ 10 meters sprint - rest
Sprint 10 meters concentrating on raising knees higher than normal. Jog for 10 meters. Then sprint for 10 meters and rest.
- ✚ **Skipping: 40 meters**



✦ **Fast Knee Pick Ups:**

10 meters sprint - jog - 10 meters sprint- rest

Jog on the spot, raising your knees to waist height while emphasizing arm action. Move forward 10 meters with this action concentrating on the number of ground contacts rather than how fast you cover the distance. Try to get as many ground contacts as possible.

✦ **Flicks:**

10 meters sprint- jog - 10 meters sprint - rest

While sprinting over 10 meters, concentrate on flicking your heels up to touch your behind.

✦ **Elbow Drive: 40 meters sprint**

Concentrate on driving your elbow in a straight line. Keep your elbows flexed at right angles while keeping your arms relaxed.

✦ **Leg Speed: 60 meters sprint**

Put all of your focus on your legs.

✦ **High Hops: 3 x 40 meters**

Bound from one foot to the other. Similar to skipping, however try to gain as much height as you can and stay in the air for as long as possible.

✦ **Ladder Drills:** Jumps; 2 forward & 1 back; One foot in each rung; Two feet in each rung; Lateral Ladder Drill (facing side, leading with right or left foot).



Speed Training Drills:

✦ **Accelerating Sprints**

This drill requires you to mark out a distance of about 100 yards/meters where you can sprint in a straight line. Starting at one end, gradually accelerate to reach full speed at the halfway point and continue to sprint to the end. Slow down gradually to a jog, turn and walk/jog back to the start.

✦ **Alternating Strides**

Set up a series of cones in a straight line. The first 10 cones should be about 1 yard/meter apart. The next 10 should be 2 yards/meters apart. From standing start, sprint the total length of the cones taking one step between each marker. The cones close together will encourage faster, shorter strides. You can gradually decrease the distance between cones as you progress.

✦ **Bounding**

This exercise is an exaggerated running motion focusing on foot push-off and air time. Jog into the start of the drill for forward momentum. After a few feet, forcefully push off with the left

foot and bring the right leg forward. At same time drive your left arm forward. Repeat with other leg and arm. This drill requires you to mark out a distance of about 100 yards/meters.

✦ **Weave In/Weave Out**

Place 4 cones in a straight line about 3 yards/meters apart. Midway between each pair of cones place another cone about 3 yards/meters to the left. Sprint from one cone to the next touching each one with your hand. Try to take quick side steps, rather than turning to face the marker and running forward.



Speed Endurance:

✚ **Pyramids**

Face out 50 meters placing a cone at the start and then at 10 meter intervals (6 cones in total). Starting at the first cone sprint all out for 10 meters and walk the remaining 40 meters. Turn and sprint 20 meters and walk for 30 meters. Turn and sprint 30 meters and walk for 20 meters. Turn and sprint 40 meters and walk for 10 meters. Finally...turn and sprint 50 meters and then turn and sprint 50 meters again back to the start. [This is classed as one set. Rest for 90 seconds and repeat for a total of 4 sets. Rest for a full 3 minutes and repeat.]

✚ **Hollow sprint**

Set 5 cones out in 30 meters intervals. Sprint 30 meters, jog 30 meters, sprint 30 meters and jog 30 meters to the final cone. Turn around and repeat always alternating jogging and sprinting. [Work for 2 minutes and then rest for 2 minutes.]

✚ **Cross Drill**

Using 4 cones mark a box 30 meters by 30 meters. Place another cone in the center of the box. Starting at the center cone, sprint to each corner and back in a clockwise direction. Once you have completed a circuit rest for 60 seconds. Repeat drill after resting period.

Home/Gym- Speed and Endurance Treadmill Workout (following a proper warm-up routine):

✚ Stage	✚ Run	✚ Sprint	✚ Repetitions	✚ Total Time
✚ Stage I	5 minutes	1 minute	5 times	30 minutes
✚ Stage II	4 minutes	2 minutes	5 times	30 minutes
✚ Stage III	3 minutes	3 minutes	5 times	30 minutes
✚ Stage IV	2 minutes	4 minutes	5 times	30 minutes

✚ **Stage V:** Run every other day with the goal of reaching 30 consecutive minutes of your most powerful run on the court. Begin and end with at least a 5 minute warm up/cool down jog before beginning.

Cool Down:

Complete training with a cool down activity to decrease heart and breathing rate slowly, then stretch focusing on:

- ✚ Hamstrings/Calf
- ✚ Quad/Hip Flexor
- ✚ Piriformis
- ✚ Adductors

✚ Sources:

- ✚ <http://www.brianmac.co.uk/articles>
- ✚ <http://www.sport-fitness-advisor.com/speed-training-drills.html>
- ✚ <http://www.athleticquickness.com/>
- ✚ <https://www.femaleathletesfirst.com>



Jennifer Beaudry, MS, ATC, LAT is a Certified Athletic Trainer. She graduated with her Bachelor of Science in Physical Education/Athletic Training from Bridgewater State College in 2007 and with her Master of Science Degree in Applied Kinesiology in 2009. Jen works alongside physical therapists in treating orthopedic injuries at Performance Physical Therapy and she is the Athletic Trainer at Lincoln School in Providence, RI. Jen is respected for her dedication toward injury prevention, especially for the female athlete. For more information please feel free to contact Jen at jbeaudry@performanceptri.com