

Strength and Conditioning Exercise Circuit Focused on Injury Prevention

Focusing on the most common injuries in women's basketball I have designed a 10 exercise circuit focusing on injury prevention. Each of the exercises below will help in prevention of the most common injuries seen in women's basketball.

Here are the injuries we focused on:

- Ankle Sprains
- Achilles Tendonitis
- Patella Tendonitis
- Meniscus Injuries
- ACL Injuries
- Hamstring Strains
- Shin Splints
- Rotator Cuff Tendonitis

Description:

- We do not have a strength training or workout room, so we will have to use the gymnasium.
- The exercise circuit will be ran with the help of stations. After completing the specific amount of sets and repetitions asked of each station, athletes will then move on to an open one. They do not have to go in order.
- The athletes will be exposed to each exercise individually, and the following "Circuit Packet" will be given to each of them for review to take home.
- Familiarizing the athletes with all the exercises first and reviewing each with them, will make them more comfortable, when we actually start the circuit.
- Athletes will work in pairs when rotating to the different stations.
- A task card will be placed at each station for them to reference.
- This will require a lot of repetition and practice for the students to get used to, but it will benefit all of our athletes and take.

How Often:

- This circuit will be performed once or twice a week depending on our practice or game schedule.
- Once in the season our time will be limited, so we might split the circuit up over a few days or athletes may have to perform some of the exercises at home.

Equipment Needed:

- Open area
- Two Resistance Bands
- Floor Tape (place "X" marks with tape on the ground in a pattern of a Five on a Dice – 2 sets)
 - Label each X- A,B,C,D,E
- Two 6-8 lb. Medicine Balls
- Exercise Task Cards for each station

Quick Dynamic Warm-ups Performed All Together

- One repetition equals there and back

1.) Exercise: Forward Jog/Back Pedal (Complete 4 repetitions)

Purpose: This exercise engages the entire body and the movement patterns are similar to what is used when transitioning from offense to defense in basketball.

- Engages and warms up the muscles of the legs.
- It elevates muscle temperature and gets the heart and lungs ready for basketball play.

Exercise Description:

1. Have players spread out on one of the basketball sidelines, an arm's length apart.
2. On the whistle, athletes will then jog to the opposite sideline (about 15 yards away).
3. Touch the opposite sideline with their foot and switch to back pedaling.
4. Once the athlete has reached the sideline they started from, they need to stop and be prepared for the next whistle to go again.
5. This exercise will be done for 4 repetitions on the whistle.

2.) Exercise: Jogging with Arm Circles (Complete 4 repetitions)

Purpose: This exercise engages the entire body and improves flexibility in the shoulders, chest and upper back.

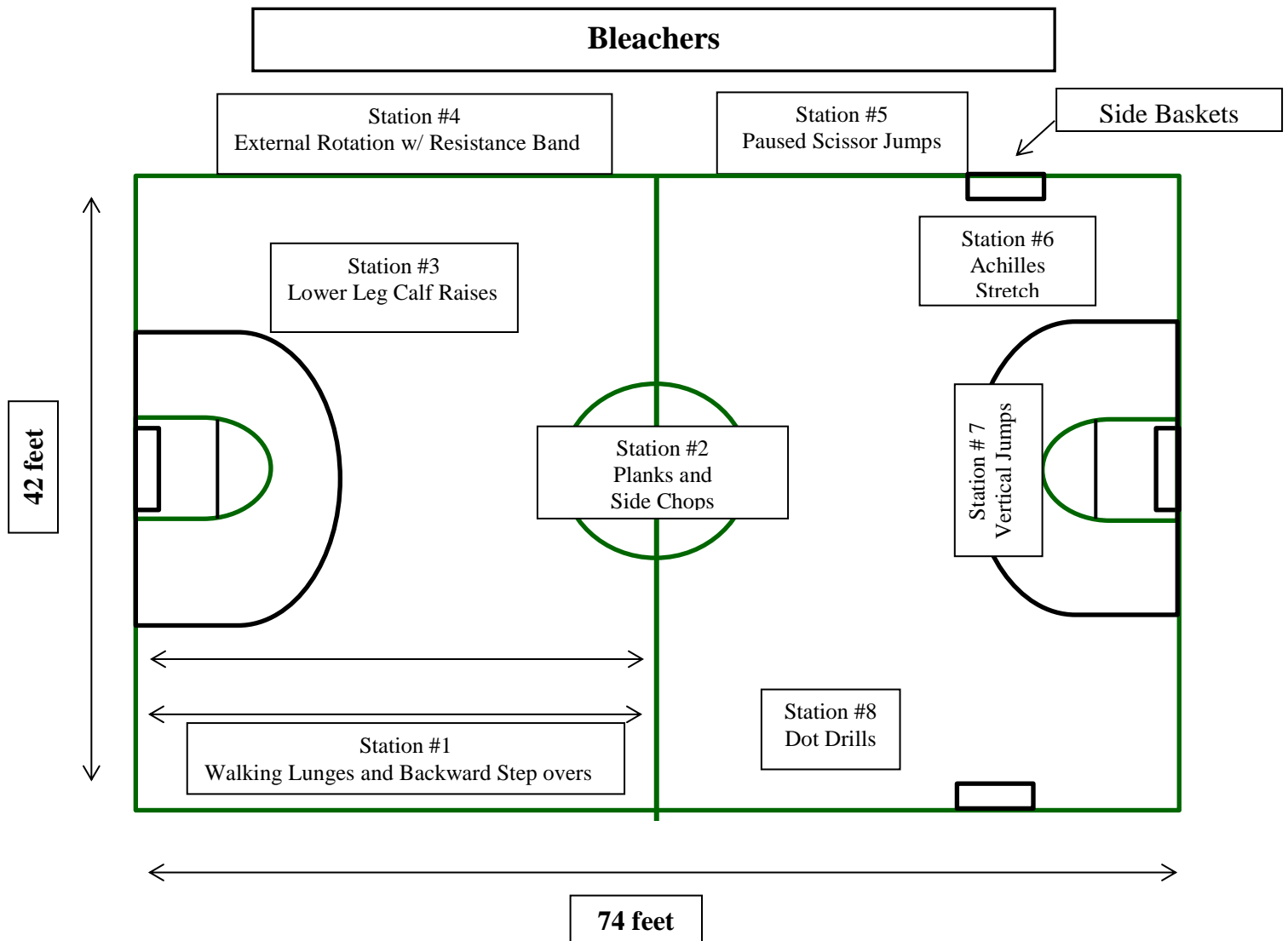
- Engages and warms up muscles of the shoulder, which are important for passing, shooting and rebounding used in basketball.
- Engages and warms up the muscles of the legs.
- Improve flexibility in the shoulders, chest and upper back

Exercise Description:

1. Have players spread out on one of the basketball sidelines, an arm's length apart.
2. On the whistle, athletes will then jog at a moderate pace while swinging their arms forward in large circles.
3. Once they hit the opposite sideline, athletes will Change direction and swing their arms backwards as they jog back to the starting sideline.
4. The athletes will perform this exercise for 4 repetitions at their own pace.

Gym Set-up and Exercise Circuit

- Below you will find a diagram of our gymnasium and how the exercises will be set-up in the gym.
- Some stations include more than one exercise so make sure you perform both before moving on to the next.
- Work together with your partner cooperatively at each station.
- Always focus on good form and do not rush.



Station #1

Exercise: Backwards Step Overs

Purpose:

- Injury prevention for the hips and knees
- Improve flexibility and active range of motion in the hips
- Improve dynamic balance
- Improve strength in the muscles around the hip



Exercise Description:

1. Start at half court with your back facing the wall and the basket.
2. Lift your right knee up and rotate it at the hip outwards.
3. Step backwards as if you are trying to clear a hurdle, and place the foot down so it's facing forwards.
4. Repeat with the left leg and work your way across towards the baseline.
5. Remember this is not a race and to go slow and work on the form.
6. This exercise will require practice to get used to.
7. Complete 3 repetitions.
8. After completion move to Walking Lunges.

Exercise: Walking Lunges

Purpose:

- Injury prevention in the knee
- Strengthen hip and knee extensors
- Improve flexibility and active range of motion in the hips
- Improve strength in the muscles around the hip



Exercise Description:

1. Start with your feet together facing toward basket. Your arms can be by your side or behind your head.
2. Step forward with your right foot, bending both knees so that your front knee is aligned over your ankle and the back knee comes close to the ground. The back heel should be lifted off the ground.
3. Before your back knee touches the floor, push up with your back left leg, forcing the weight of your body through your right heel, simultaneously bringing your left foot together with your right foot.
4. Without pausing, alternate legs, lunge forward with your left foot, bending both knees so that your front knee is aligned with your ankle and the back knee comes close to the ground. Your back heel is lifted off the ground.
5. Before your back knee touches the ground, push up with your back right leg, forcing the weight of your body through your left heel, simultaneously bringing your right foot together with your left foot.
6. Complete 3 repetitions and then move on to another station.

Station #2

Exercise: Planks



Purpose:

- Injury prevention in the lower extremities
- Strengthen core muscles to help with stability in the leg and ankles

Exercise Description:

1. Begin in the plank position with your forearms and toes on the floor.
2. Keep your torso straight and rigid and your body in a straight line from ears to toes with no sagging or bending.
3. Your head is relaxed and you should be looking at the floor.
4. Hold this position for 10 seconds to start.
5. If you need to modify, place your knees on the ground, still maintaining the correct body position.
6. Hold for 20 to 60 seconds, lower and repeat for 3-5 reps.
7. Change to side chops when finished.

Exercise: Side Chops

Purpose:

- Injury prevention in the lower extremities
- Strengthen core muscles to help with stability in the leg and ankles
- Increase shoulder rotation

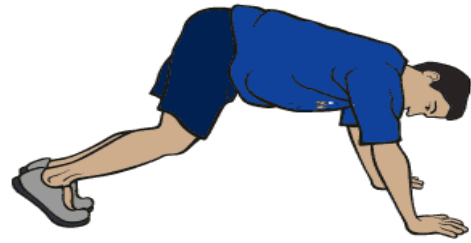
Exercise Description:

1. Kneel with knees spread about shoulder-width apart.
2. Hold ball with both hands above your right shoulder.
3. Bring the ball across your body and down to the outside of your left knee.
4. Bring it back across your body to the starting position.
5. Perform 2 sets of 10 reps for each side (left and right)
6. After completion move on to another station.



Station #3

Exercise: Lower Leg Calf Raises



Purpose:

- Injury prevention in the lower leg (gastrocnemius and the soleus)
- Improve strength in calf muscles vital to jumping and rebounding

Exercise Description:

1. Position your body as if you were on the starting blocks of a sprinting race, feet side by side.
2. Support your weight on your hands and feet.
3. Start stretching your calves by pushing one heel towards the ground then onto the ball of the foot and then back again.
4. Alternate between legs.
5. Perform 3 sets of 15-20 repetitions.
6. After completion move on to another station

Station # 4

Exercise: External Rotation with Resistance Band

Purpose:

- Injury prevention in the shoulder
- Strengthening the rotator cuff
- Focus on developing external rotation in shoulder

Exercise Description:

1. Hold a resistance band with hands a few inches apart, palms facing up.
2. Keeping the elbows in a fixed position, rotate the forearms out a few inches until you feel the shoulder rotators engage.
3. Rotate the arms back in while keeping tension on the band.
4. Repeat for 1-3 sets of 8-16 reps.
5. You may need to adjust your hands closer together or further apart to change the tension on the band.
6. After completion move to another station.



Station#5

Exercise: Paused Scissor Jumps

Purpose:

- Injury prevention for the lower body
- Improve dynamic balance
- Improve ability to absorb and stabilize landing forces
- Increase ankle strength
- Practicing proper jumping technique



Exercise Description:

1. Get into a split lunge position, hands should be at your waist or on the side.
2. Then as hard and as much effort as you can jump up and switch the positions of your legs.
3. When you land make an effort to stabilize yourself as quickly as possible.
4. Take a brief pause to gather yourself and refocus, and then explode back up again.
5. Remember to keep shoulders down and away from ears, split your weight evenly on both feet, absorb in the glutes and hips, and jump straight up and down.
6. Complete 2-3 sets of 10 total jumps, alternating legs.
7. After completion move to another station.

Station #6

Exercise: Achilles Stretch

Purpose:

- Injury prevention for the Achilles tendon
- Stretch Achilles and soleus muscles

Exercise Description:

1. Stand about an arm's-length from a wall or another sturdy object.
2. Lean forward and place both hands on the wall about shoulder width apart.
3. Extend one foot (the side to be stretched) behind you with your knee bend and heel on the ground.
4. Keep the other foot closer to the wall.
5. Lean into wall slightly and bend the knee of the heel to be stretched (keeping the heel down) until you feel a stretch in the back of the lower leg.
6. Sink down slowly with your hips to deepen the stretch.
7. Hold this stretch for about 30 seconds and change sides.
8. Perform this exercise 3 times on each leg
9. This stretch is similar to the calf stretch, however by bending your knee you focus the stretch on the Achilles rather than the calf.
10. Once finished move to another station.



Station #7

Exercise: Vertical Jumps

Purpose:

- Injury prevention for the lower body
- Improve dynamic balance
- Increase strength of quadriceps, hamstrings, and calves
- Improve ability to absorb and stabilize landing forces



Exercise Description:

1. Stand with feet shoulder width apart with a slight bend in the knees.
2. Explode up with your hands and jump as high as possible.
3. Land with a soft landing, back into your starting position.
4. Give yourself a brief pause before performing the next jump.
5. Complete 2-3 sets of 10 total jumps.
6. Once finished move to another station

Sport Specific Variation:

- Once students get familiar with the vertical jump and have experience with it, incorporate a basketball and using the backboard.
- Still continue to perform the basics of the exercise, but include a basketball and every time the athlete jumps up they toss the basketball off the backboard and catch it as if they were rebounding.

Station #8

Exercise: Dot Drills

Purpose:

- Injury prevention for knees and ankles
- Develop dynamic leg strength
- Increase knee and ankle strength and stability

Exercise Description:

1. Have each person stand on the dot drills set-up.
2. Perform the following exercises 6 times each.

• **UP AND BACK**

- A. Start with feet on A and B.
- B. Now jump quickly to C with both feet
- C. Then jump and split feet to D and E.
- D. Come back the same way jumping backward.
- E. Repeat 5 more times.

• **RIGHT FOOT**

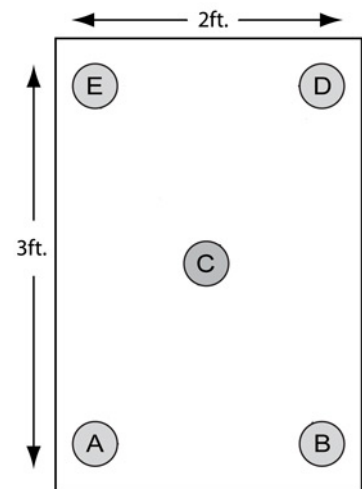
- A. Your feet from up-and-back should end on dots A and B.
- B. Now go to dot C with your right foot.
- C. Now go in order: Dot D, E, C, A, B.
- D. Repeat 5 more times.

• **LEFT FOOT**

- A. You will end the right foot drill on Dot B.
- B. Now go to dot C with your left foot.
- C. Now go in order: Dot D, E, C, A, B.
- D. Repeat 5 more times.

• **BOTH FEET**

- A. You will end the left foot drill on Dot B.
- B. Now go to C with both feet.
- C. Now go in order with both feet: Dot D, E, C, A, B.
- D. Repeat 5 more times.



Resources:

Achilles Tendon Stretch

http://sportsmedicine.about.com/od/flexibilityandstretching/qt/Achilles_Stretch.htm

Dot Drill- The Warm-up

<http://www.biggerfasterstronger.com/uploads/Dot%20Drill%20Info.pdf>

12 Ways to Build Ankle Strength

http://www.active.com/fitness/Articles/12_Ways_to_Build_Ankle_Strength_for_Top_Performance.htm

How to Protect Your Shoulders

<http://www.dummies.com/how-to/content/how-to-protect-your-shoulders-with-internal-and-ex.html>

Coach Paul's Corner

<http://www3.sympatico.ca/paul.patrick/dynamic.htm>

Therapeutic Associates Physical Therapy, Dynamic Basketball Warm-up

<http://www.therapeuticassociates.com/youth-athletics/general-dynamic-warm-up-basketball/>

USTA- Sport Science, Dynamic Warm-up

http://www.usta.com/Improve-Your-Game/Sport-Science/249177_Dynamic_WarmUp/