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Project 4

Using the resources (and my knowledge of volleyball, which unfortunately includes a rolled ankle/ankle sprain from my senior year) I've compiled a list of what I believe are the most common volleyball injuries. I put together 10 exercises that athletes can do to help prevent these injuries.

Many of the injuries to the knees and ankles are most preventable by playing smart. I did not include them here because I wanted to have a resource that athletes could take home and do the exercises on their own time. I will definitely include smart playing tips during everyday coaching. Smart playing also comes with being comfortable with your teammates, knowing where you are supposed to be and where everyone else around you is supposed to be. Landing on a teammate's foot can lead to disaster (and this I speak from experience). If you are watching out for you and others are watching out for you (and vice versa) then the likelihood of injury decreases.

I added QR codes to each of the videos (all found on www.youtube.com). I know that many teens have their phones attached to their hip (as do I sometimes) and that they are more likely to open a video and watch it if they don't have to type in a full web address. I also plan on going over each exercise or stretch during practice so that my athletes can ask questions about proper form before they perform any of these exercises or stretches at home.

Common Volleyball Injuries

Rotator Cuff Tendinitis

During serving and spiking, the rotator cuff muscles are important in generating the necessary power to move the shoulder. While rarely completely torn in young players, these muscles can get irritated or fatigued with overuse.

Ankle Sprains / Rolled Ankle

Ankle injuries are the most common injury to volleyball players and responsible for the most lost playing time. They can occur when landing from a jump (either attacking, setting, blocking, or serving) or can occur when running to a ball (stretching to dig a ball). Since most ankle injuries are sprains, they deal with ligaments. Usually a rolled ankle is the overstretching of ligaments.

Patellar Tendinitis

Patellar tendinitis is inflammation of the tendon that connects the kneecap to the tibia (or shin bone). Patellar tendinitis is common in any athlete subjected to repetitive, forceful jumping activities, such as spiking and blocking.

Physical therapy and athletic training services focused on stretching and strengthening are also helpful. Specific attention to landing from jumping (eccentric contraction of the quadriceps muscles) in rehabilitation is often beneficial.

Anterior Cruciate Ligament (ACL) Injury

Like ankle sprains, most ACL injuries in volleyball players occur when a player lands awkwardly after jumping. Usually ACL tears are associated with a "pop" and immediate knee swelling. Again this injury can happen when an athlete is blocking, attacking, setting or serving.

Sources Consulted:


<http://www.stopsportsinjuries.org/volleyball-injury-prevention.aspx#common>


<http://sportsmedicine.about.com/od/kneepainandinjuries/a/aa022202e.htm>


<http://ikconditioning.com/leg-training/how-to-the-single-leg-romanian-deadlift/#sthash.CGyE687q.dpuf>


http://orthoinfo.org/PDFs/Rehab_Shoulder_5.pdf


Strength and Conditioning Circuit


Exercise name	Lateral Hops over Cone
Purpose/ rationale for including this exercise	Increase power/strength emphasizing neuromuscular control. Improves balance when landing, especially good for building ankle and knee stability.
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Stand with a 6" cone to your left. ▪ Hop to the left over the cone softly landing on the balls of your feet; land bending at the knee on both feet ▪ Repeat this exercise hopping to the right. ▪ Repeat for 2 sets of 20 reps with a break in between
Needed equipment/ materials	6" Cone
Link to video of exercise being performed	http://www.youtube.com/watch?v=zFhz_xHjd34 


Exercise name	Forward/Backward Hops over cone
Purpose/ rationale for including this exercise	Increase power/strength emphasizing neuromuscular control. Improves balance when landing, especially good for building ankle and knee stability.
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Hop over the cone softly landing on the balls of both your feet and bending at the knee. ▪ Now, hop backwards over the ball using the same landing technique. ▪ Be careful not to snap your knee back to straighten it. ▪ You want to maintain a slight bend to the knee. ▪ Repeat for 2 sets of 20 reps with a break in between
Needed equipment/ materials	6" Cone
Link to video of exercise being performed	http://www.youtube.com/watch?v=CkiOQDPfWOU 


Exercise name	Shuttle run with forward/backward running
Purpose/ rationale for including this exercise	Increase dynamic stability of the ankle/knee/hip complex.
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Starting at the first cone, ▪ sprint forward to the second cone, run backward to the first cone, ▪ sprint forward to the third cone, run backward to the first cone, ▪ sprint forward to the fourth(last) cone, run backward to the first cone. ▪ Repeat 5 times
Needed equipment/ materials	4 Cones
Link to video of exercise being performed	http://www.youtube.com/watch?v=zBPzilSr7TY 


Exercise name	Single Leg Romanian Dead lift
Purpose/ rationale for including this exercise	Challenging single leg hip stability while strengthening your posterior chain (hamstrings, gluteals and para-spinals) and abdominals (indirectly)
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Hold a weight. Lift one leg slightly off the ground so that you're now standing on one leg. ▪ Slightly bend your stance leg. As you slowly start to lean forward, simultaneously lift your opposite leg. Keep lifting that leg and keep bowing. ▪ At the end position you should have a flat torso position and should feel tremendous tension in your stance leg's hamstring. If you don't, something is probably wrong. ▪ From the side, your body should form a capital "T." ▪ Bring your mid-air leg down as you stand up. That's one rep. ▪ Repeat for 2-3 sets of 8 reps with a break in between
Needed equipment/ materials	Dumbbell, Medicine Ball, or Weights
Link to video of exercise being performed	http://www.youtube.com/watch?v=WAMBVWe65Qo 

Exercise name	Pendulum Arm
Purpose/ rationale for including this exercise	Strengthen and stretch the muscles of the shoulder (deltoids, supraspinatus, infraspinatus, subscapularis)
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Lean forward and place one hand on a counter or table for support. Let your other arm hang freely at your side. ▪ Gently swing your arm forward and back. Repeat the exercise moving your arm side-to-side, and repeat again in a circular motion. ▪ Repeat the entire sequence with the other arm. ▪ Repeat for 2 sets of 10 reps with a break in between ▪ Do not round your back or lock your knees
Needed equipment/ materials	Table or bench
Link to video of exercise being performed	http://www.youtube.com/watch?v=BKn0UBM2vvE 

Exercise name	Passive Internal Rotation
Purpose/ rationale for including this exercise	Strengthen and stretch the muscles of the shoulder (Subscapularis)
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Hold a stick behind your back with one hand, and lightly grasp the other end of the stick with your other hand. ▪ Pull the stick horizontally as shown so that your shoulder is passively stretched to the point of feeling a pull without pain. ▪ Hold for 30 seconds and then relax for 30 seconds and Repeat the other side. ▪ Repeat 4 times for each side ▪ Do not lean over or twist to side while pulling the stick.
Needed equipment/ materials	Yard Stick
Link to video of exercise being performed	http://www.youtube.com/watch?v=UsqnYrhedWo 

Exercise name	Passive External Rotation
Purpose/ rationale for including this exercise	Strengthen and stretch the muscles of the shoulder (Subscapularis)
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Grasp the stick with one hand and cup the other end of the stick with the other hand. ▪ Keep the elbow of the shoulder you are stretching against the side of your body and push the stick horizontally to the point of feeling a pull without pain. ▪ Hold for 30 seconds and then relax for 30 seconds. ▪ Repeat on the other side. ▪ Repeat 4 times for each side ▪ Keep your hips facing forward and do not twist
Needed equipment/ materials	Yard Stick
Link to video of exercise being performed	http://www.youtube.com/watch?v=87N3PftVhOc 

Exercise name	Ankle Flexing: Toe Points
Purpose/ rationale for including this exercise	Strengthen and stretch the ankle
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Sit on either a bench or the ground to start ▪ Wrap the band around your foot ▪ Start with your toes pointing up, then point them forward (away from you) ▪ Next start with your toes pointing up, then point them to the right (focusing on your ankle – you should keep your knee as flat on the ground as possible) ▪ Lastly start with your toes pointing up, then point them left (opposite from above) ▪ Repeated for 2 reps of 10 for each ankle in each plane
Needed equipment/ materials	Exercise Band
Link to video of exercise being performed	http://www.youtube.com/watch?v=KVvjvIPbhmo (:47 – 1:08) 

Exercise name	Ankle Stability Hold
Purpose/ rationale for including this exercise	Strengthen and stretch the ankle
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Make sure that you are on solid ground ▪ Stand on one ankle keeping your balance for about 30 seconds ▪ Switch ankles ▪ Variations: Shut your eyes, throw a ball back and forth with a team mate, squat ▪ This is good to practice whenever you have a free 30 seconds!
Needed equipment/ materials	None
Link to video of exercise being performed	http://www.youtube.com/watch?v=KVvjvIPbhmo (1:08 – 1:58) 

Exercise name	Ankle Flexing: Knee to the Wall
Purpose/ rationale for including this exercise	Strengthen and stretch the ankle
Step-by-step exercise description including recommended sets and reps	<ul style="list-style-type: none"> ▪ Stand in front of a wall with your front leg about 3” and the other leg about 1’ from the wall ▪ Make sure that both heels are on the ground and both hands are on the wall ▪ Bring your front foot’s knee to the wall and touch the wall (you do not have to hold it for more than a second) ▪ Then , keeping both heels on the ground, move your knee forward but to the right of your foot, repeat one last time to the left ▪ Sit Repeated for 2 reps of 5 for each ankle in each plane
Needed equipment/ materials	Wall
Link to video of exercise being performed	http://www.youtube.com/watch?v=KVvjvIPbhmo (1:58 – 2:40) 