

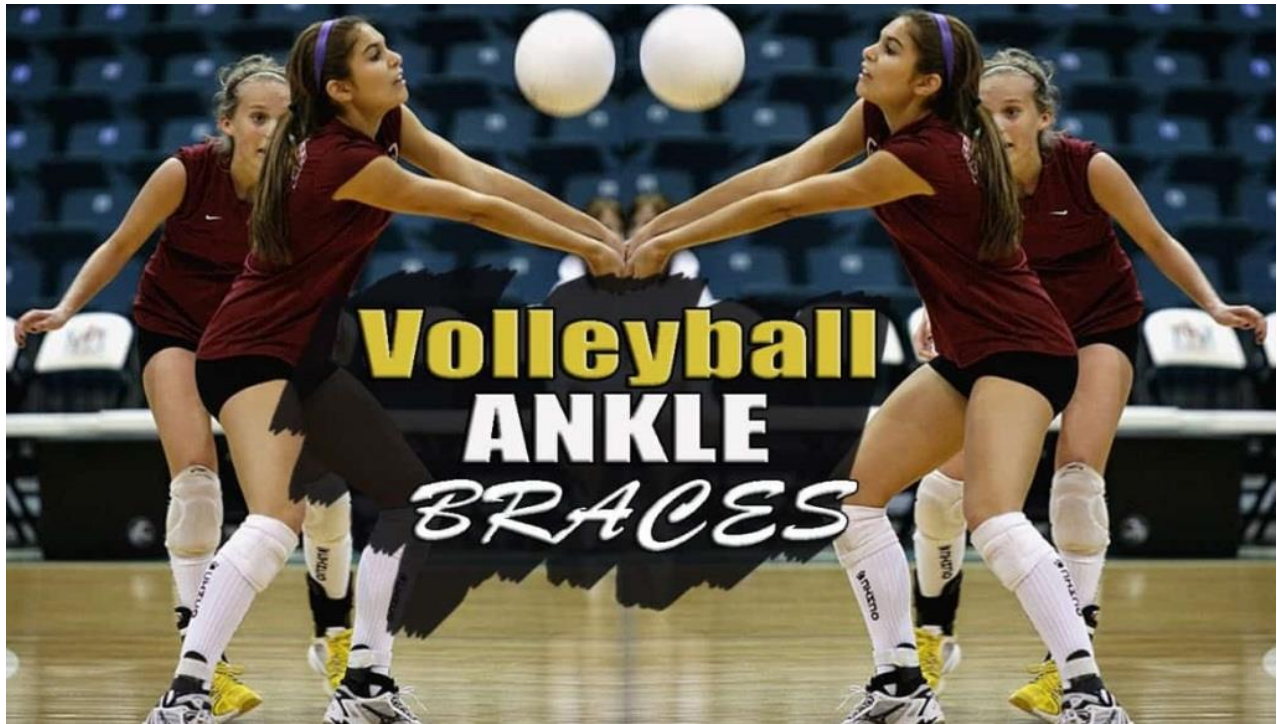
# INJURY-PREVENTION TRAINING



FOR CLUB VOLLEYBALL ATHLETES

**Injury Prevention | Recovery Techniques | Concussions | ACL Injury Prevention | Shoulder Injury Prevention | Ankle Injury**

Common volleyball injuries tend to revolve around the ends of limbs such as fingers, ankles, and toe injuries. Here's some information on how to avoid such injuries, including prevention techniques, as well as how to reduce injury time after you already have the issue. The goal is always to get back on the court or sand, as quickly as you can.



## **Ankle Injuries**

An injury to your ankle is one of the most common that you can get in volleyball. This is due to the excessive jumping and quick turns. The injury also tends to make it so that you're on the sidelines for a long time in comparison with other injuries. The important thing when it comes to ankle sprains in specific is that you should make sure the joint is held fast in order to prevent further injury. This also means staying off it. If you feel pain in your ankle and suspect a strain, the best thing you can do for minimizing downtime is make sure that you don't compound the potential injury by making it move more.

If the pain doesn't go down over the course of many weeks, however, it may be a good idea to make sure that you go in for an X-ray. It could mean that you have more serious damage to the ankle than you initially thought. The safest way to know that you can return to the game is when you are able to put pressure on your ankle and without pain accompanying it. If it supports your weight no problem, then all should be well in general. It's always a good idea to check with a doctor if you

have any doubts. Walking on a sprained ankle could severe the damage, so ensuring adequate rest time is necessary.

If your ankle is sore, you should do less jumping exercises during practice. Make sure your ankle doesn't roll over; this is critical to protecting it and preventing further injury. It also helps to avoid hard surfaces if your ankle is sore, since this could aggravate the situation. Warming up the muscle around the ankle is crucial during stretches, including doing light exercise. After the game, you'll want to go through proper cool down exercises as well.



## ACL

This injury occurs most often while jumping, especially if you land incorrectly. An ACL injury is similar to the frequent causes of ankle injuries. If you feel your knee popping and then becoming painful, this is an indicator that you might have strained or even torn your ACL. This is especially the case if the knee starts swelling. You may need an MRI in order to thoroughly check for potential problems, if this is the case.

## **Finger Injury**

Another highly common injury in volleyball is finger injuries. Volleyball players use the tips of their fingers often during the game. Tipping balls over the net, reaching for out of reach balls, and hitting are all part of the game, but may increase the risk of injuries. Blocking balls from the opposing team, digging down to get a spike, or using your fingers to set a ball in the air are all other examples of this.

Dislocating your finger or causing damage to ligaments and tendons is a common thing to happen in your fingers while playing the sport. The key here is to see whether you can bend your finger or not. If you can't bend it at all, this could indicate you have a significant injury. Again, avoiding moving it at all is paramount as you seek the aid of a professional. If it is merely stiff, then getting an ice pack on it could help decrease the amount of time it takes to get back into movement again, and lowering your discomfort while this happens.

You can also end up with jammed fingers that could hurt initially, but that might end up being OK in the long run. Usually, this isn't a major problem as long as you treat it with the "RICE" technique shortly after it occurs. This stands for rest, ice, compression, and elevation. It essentially boils down to making sure you keep the swelling down with ice and then preventing any kind of movement through binding the area with bandages and staying off of it and keeping it up to minimize blood flow.

## **Toe Injuries**

In the same vein, preventing yourself from injuring toes is also important, especially when you land after jumping. This could be less of a problem if you are primarily playing on sand, but any kind of hard surface, such as a gym floor or anything similar could make the injury worse. This is especially the case if you're playing on a beach that hasn't been cleared properly of rocks. Extending the toe in the wrong direction can cause damage to the muscles and ligaments.

Wearing the right footwear can help to ensure that you either don't incur an injury in the first place or that, if you do have one, it won't be aggravated. It needs to be stiff enough so that your toes won't move too much inside, even if you land toe first after a tall jump. Avoiding this is especially important if you are playing on a hard surface. Wraps might help to bolster your toes if this is a problem for you.

## **Tendonitis**

In particular, volleyball can cause you to end up with patellar tendonitis. This is when the tendon that connects your knee and shinbone becomes inflamed. If you're relying on your knees often for activities that require sudden force, such as jumping, you could cause inflammation to your knee. This is especially the case if you have to perform this action over and over again.

Volleyball certainly requires you to put a lot of power into jumping often during the game, similar to when you quickly get your hands up over the net in order to block someone's shot from the other side. Another example is when you want to get high enough to spike the ball.

You can get special straps for aiding with this particular type of tendonitis. It helps to relieve stress on the tendon. This is often the starting point before other forms of treatment, if you're feeling strain in your knee. You can simply wear the strap until you're out of the danger area and your knee is back to feeling normal again. If you wear the strap and you avoid being too strenuous with jumps, focusing more on lighter work in the back line than on anything that requires you to jump and put a lot of pressure on your knee such as many of the activities you would be doing right near the net. If the strain becomes enough, you'd be well advised to take a break from playing altogether until you have control of it again.

Overall, it's important to keep an eye on common areas of strain for those who play the sport including your fingers, toes, knees, and ankles.

If you're watchful enough, you can often prevent serious injuries before they occur.

## **Low Back Pain**

Sore low backs are common among volleyball players midway through the season. Despite their athleticism and dedicated training, many players suffer from back pain. The cause is simple to diagnose but hard to treat.<sup>[LSEP]</sup> Volleyball players move in short explosive bursts of three to five steps throughout games and practices. These movement patterns, repeated hundreds of times weekly, have a cumulative effect of shortening the hamstrings. As the hamstrings shorten, they pull on their attachment at the base of the pelvis, which causes the pelvis to rotate backwards, increasing stress at the sacroiliac joint and leading to low back pain.

Although common stretching techniques can provide partial relief, basic static stretching won't completely alleviate the symptoms. However, Active Isolated Stretching (AIS) is a fantastic technique to gain greater length through the hamstrings and relieve pain. This form of stretching was developed by Aaron Mattes, a registered kinesiologist and licensed massage therapist, whose techniques have helped thousands of professional and amateur athletes improve their agility and avoid injuries. Whereas static stretching may temporarily lengthen the muscle, Active Isolated Stretching functions as a multi-pronged approach by loosening tight muscles, grooving new neural patterns and increasing range of motion around the joint. These factors combine to offer immediate relief.

The AIS stretching protocol follows four distinct points:

1. Isolate the muscle to be stretched
2. Repeat the stretch eight to 10 times
3. Hold each stretch for no more than two seconds
4. Exhale on the stretch; inhale on the release

Athletes and coaches can apply these points to any muscle in the body. However, for preventing low back pain among volleyball players in particular, two muscles are critical: the hamstrings and the piriformis. Start the new stretching protocol by practicing the following stretches after workouts and on recovery days to help gain extra length through these areas.

### **AIS Hamstring Stretch**

- Lie on your back.
- Bend your right knee slightly and place your right foot flat on the floor to take the tension off your back.
- Keep your left leg straight with a band or rope draped around your foot. Hold an end of the rope in each hand.
- Contract your quads and hip flexors and lift your left leg as high as you can, using the rope to increase the stretch with a gentle pull.
- Hold the stretch for two seconds before lowering your leg back to the ground.
- Repeat for a total of 10 reps; repeat with your right leg

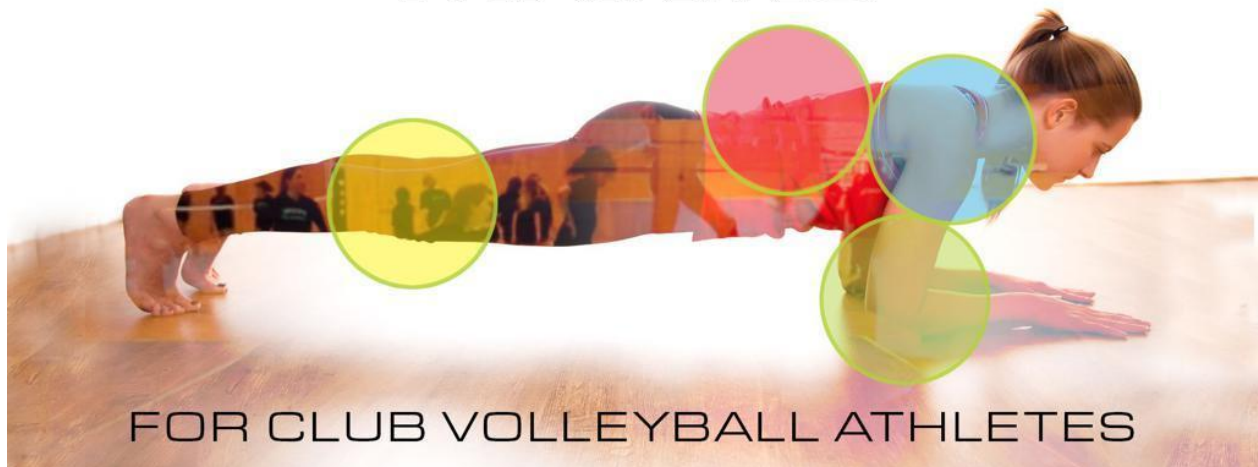
### **AIS Piriformis Stretch**

- Lie on your back.
- Bend your right knee slightly and place your right foot flat on the floor to take the tension off your back.
- Bend your left knee and rotate it outward so your left ankle is crossed over your right knee.
- Pull your right knee toward your chest. This should create a stretch deep in your left hip.
- Hold the stretch for two seconds before lowering back to the ground.
- Repeat for a total of 10 reps; repeat with your right leg

Active Isolated Stretching is a great technique to increase flexibility in tight muscles. However, it doesn't take the place of regular flexibility and

mobility work. Incorporate the above stretches into your regular flexibility routine to reap the benefits of better movement and less pain throughout the volleyball season.

# INJURY-PREVENTION TRAINING



## Recommendations on Volleyball Recovery Techniques

While it would be great to have a hydro-pool, plunge pools and masseurs on tap, many programs do not have these resources and in most cases, you will be on the road. We present a small 'snapshot' of ideas and the rationale behind these techniques. In most all cases these processes are cost efficient. The four areas covered (warm-down, hydration, fuel replenishment & Water Immersion Therapy) have ideas that could be used throughout the recovery process (24-48 hours). There are some areas covered; however, that have small 'windows of opportunity' and need to be used early in the recovery process.

We call this a two stage recovery system (Stage 1 & Stage 2). As I believe the pre-game preparation of players is well established by most teams.

### Rationale:



1. To optimise the opportunities for players to recover between games during weekend tournaments with 6 to 9 matches over three days of play.
2. To educate the players in the processes of recovery
3. To engage a coaching staff to provide players opportunities to recover from games

### **Issues:**

- Playing 'double headers' without maximising athletes recovery time between games
- The need to address recovery and warm-down strategies after games
- The need to maximise the opportunities that exist between games to increase the bodies potential to recover

### **Critical Times:**

Period 1: The immediate time following the game (30-60 minutes)

Period 2: The morning following the game

Period 3: Prior to the next game

### **Stage 1: Physical/Fluid/Fuel**

- Warm-down (physical process)
- Hydration – fluid replacement
- Fuel – carbohydrate and protein replenishment
- Hot and cold water immersion therapy

### **Stage 2: Physical**

- Stretch sessions (individual, partner\_stretching), therabands)
- Massage (self, ball, tennis ball, specialist)
- Low intensity exercise (non-load bearing-bike)
- Pool recovery/water immersion (+ hydration)

### **Stage 3: Physical/Psychological**

- Pre-game techniques
- Mental Preparation

#### **Physical:**

Active recovery or 'low intensity' exercise is seen as an advantageous after an exercise, bout, or game. Through lowintensity exercise you are able to assist in the removal of lactic acid build up in the muscles. Indications are that low intensity exercise of approximately 30% of your maximum is seen as the most effective.

- It is important that athletes take part in a disciplined process of first warming down the body through low intensity jogging/walking, but also rehydrate during this process.
- Alternatively the use of exercise bikes where the body is not subject to as much 'impact pressure' should be considered. This process should take between 10-15 minutes to allow the larger muscles of the legs to continue in the process of lactic acid removal
- The use of thera-bands to allow athletes to take body parts through low intensity 'full range of movement' should also be considered an option in this process.
- Athletes should be educated in the process of 'static stretching'. This will also assist in the injury prevention process.
- Stretches are seen as a common and effective method of injury prevention, as well as recovery. This partner style stretching also reinforces the 'team processes of recovery'. There does; however, need to be an education of the players in the correct techniques.

- The morning following the game should be considered as an important 'window of opportunity' to continue in the physical process of recovery. The use of stretching and low intensity exercise should be used and modified according to individual and team needs.
- Massaging is also considered an integral part of the recovery process. Athletes can select between self-massage, tennis balls, volleyball massage, as well as using the services of teammates or a masseur. Once again this should be seen as an opportunity for 'team processes' to be addressed.

### **Hydration:**

There is a need for athletes to ensure that they continue to hydrate during the game in order to optimize performance. It is therefore important to introduce the players to a drinking plan. Issues that need to be considered when devising this plan for 'in-game' hydration are:

- Athletes need to individualize their drinking plan
- Hydration plans are best calculated during training. However, there needs to be some consideration to the contrast in work rate and intensity between training and games. This also needs to be based on the amount of playing time the athlete has during the game (often different to training). This should be taken into consideration and modified accordingly to prevent adverse effects of 'over drinking'
- Athletes should be consuming a 'sports drink' with a carbohydrate concentration of less than 10 % (Gatorade, Powerade etc) and a sodium concentration of 10-20 mmol/L.
- The possibilities of using a mixed drink of water/sports drink to improve uptake of sports drink could be considered. This is important for athletes who have difficulty ingesting sports drinks.
- Periodic monitoring should be conducted to ensure that athletes are meeting their fluid requirements during training.

## **Method:**

Athletes should weigh themselves before and after training in order to ascertain fluid loss during an intense period of exercise. Each kg lost during the exercise period is approximately equivalent to 1 litre of lost fluid. If the athlete has consumed 1 litre of fluid during session that equates to 2 litres of fluid lost. (intake 1 litre + loss 1 litre)

## **Fuel Replacement**

High priority should be given to the replacement of food fuels. Particularly in the first 3 hours after exercise. Continued replenishment should occur up to 24 hours after exercise. Importance should be placed on addressing depleted glycogen (muscle/liver) levels, as well as protein and electrolyte balance.

- Address glycogen levels by consuming carbohydrate foods or carbohydrate drinks in the time period immediately following exercise. The first 24 hours after exercise is seen as the 'critical energizing window'. The first 2 hours is seen as a time period where the body is at its highest peak to replenish glycogen.
- Protein should also constitute part of the fuel replacement cycle. The body's ability to repair itself, particularly muscle tissue, will be aided by the consumption of protein. It therefore forms a critical part of this process. It is also important for the rebuilding of amino acids. Consideration must be given to ensuring that the athlete takes in 'complete proteins' or essential amino acids.
- During the exercise process the body will lose a considerable amount of sodium through perspiration. Sodium is important in the process of rehydration. Sports drinks usually have a lower level of sodium than is needed (50-80mm/L) and foods containing sodium should be considered.
- Consideration also needs to be given to what resources are available to address this fuel replacement. Protein uptake is generally more effective if balanced with carbohydrate

replacement. The use of carbohydrate-protein food is therefore seen as the best alternative. Often some athletes may not be conditioned to consuming foods straight after exercise. Athletes are quite often 'not hungry'. Alternatively energy drinks are quite often seen as an easily digested method of fuel replacement.

- Most athletes that are being dealt with have lean body mass and high energy demands. Careful consideration needs to be given to the makeup of the athlete's diet during the recovery process. The balance between carbohydrate, protein and fat should be measured.

## **Water Immersion Therapy**

WIT is well documented as an effective process to enhance recovery. This is an effective method of increasing blood flow as well stimulating the central nervous system. The methods used will possibly affect the type of stimulation that will occur. Low level of stimulation will generally only stimulate surface blood flow and not deep muscle blood flow. This is also important for injury recovery as it helps stop inflammation. Depending on the resources and time frame there are a number of methods to consider.

## **Hot/Cold Showers**

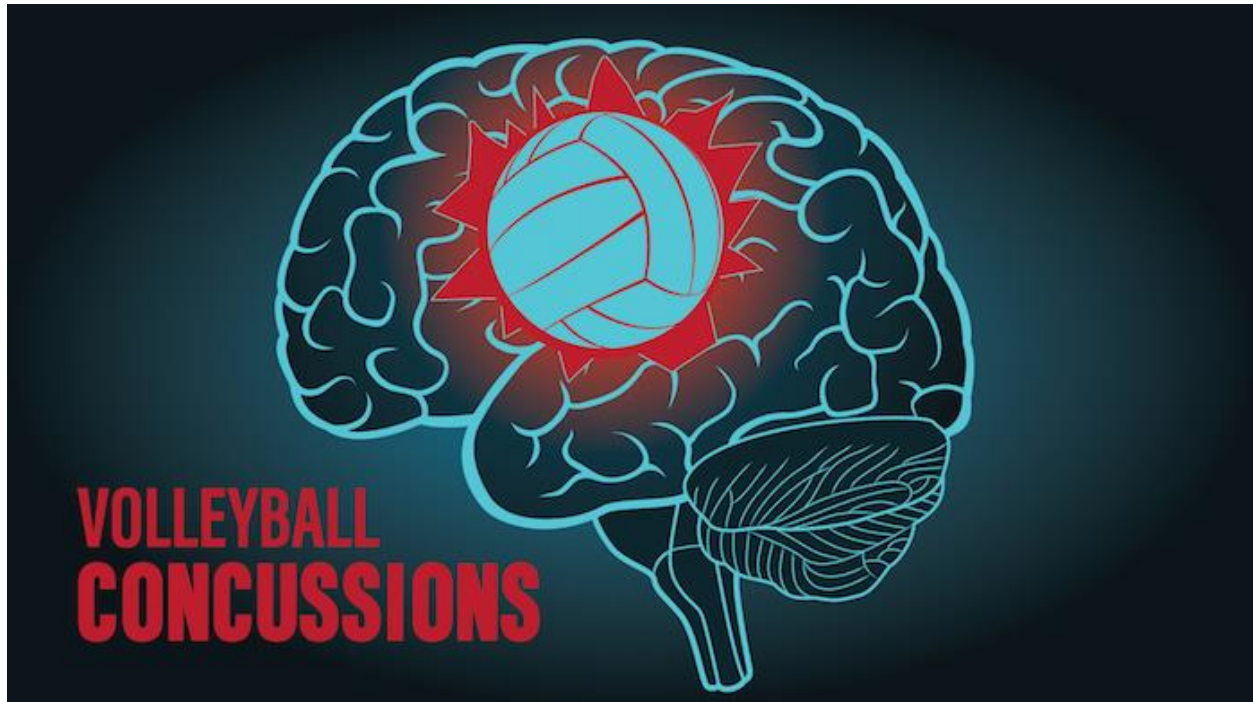
-30 sec cold -60 sec hot, 60 sec cold - 60 sec hot, 60 sec- 2 min hot, 60 se- 3 min hot

## **Ice Bath**

- Shower before, 1 minute plunge, 2 min out x 4-5.

This can easily be done back at hotel rooms that have a bath. This can be filled up with cold water and ice and athletes can sit in the bath. At a minimum, athletes should immerse their lower body. Athletes should not

submerge above their heads. Athletes who have open wounds, gastric problems, colds etc should not participate in this activity.



### **Conclusion:**

Coaches can help educate athletes to understand, plan and use recovery strategies to manage this for themselves. Effective monitoring and recovery management will enable both the coach and athlete to train hard, perform better and more consistently, to reduce training injuries and illnesses, and to develop sound self-management strategies.

### **Concussions**

In working with elementary through open-level indoor volleyball players, we have found key warm-up, training, and even competitive adjustments that can greatly reduce the risk of concussion.

There is no doubt that concussions can occur in volleyball. Yes, volleyball is not a contact/collision activity like some sports. However, when you combine high-speed hitting/serving along with aggressive diving and

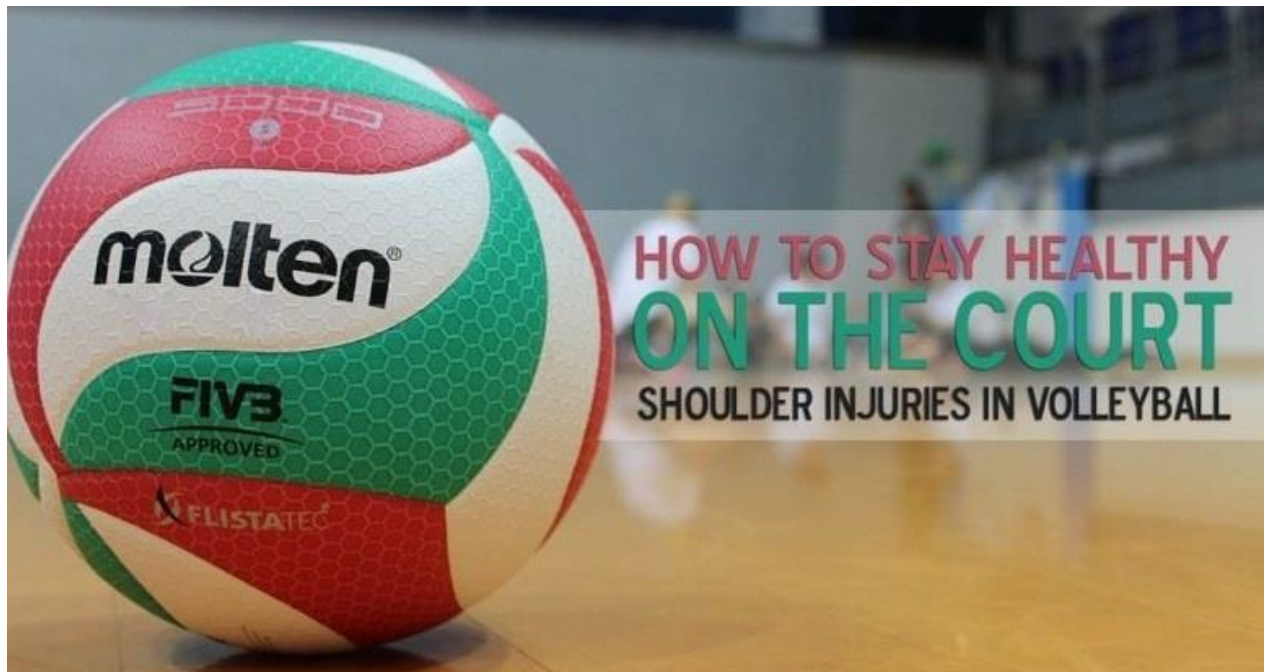
digging, there is definitely a risk for head impacts for both sand and indoor players.

The bad news is indeed, concussions are part of volleyball and some are truly accidental consequences of fast action. The good news is that many others are definitely preventable — especially those that occur due to poor practice and warm-up organization.

### **Pre-Practice and Pre-Game Preparation**

Before stepping on the court, never minimize the role proper selection of player match-ups and organization of the court and practice/warm-up drills.

- When selecting match-ups either in practice or competition, realize that a fair amount of concussions result from mismatches on the court, namely defensive players trying to return serves or hits from much stronger or older players. This is particularly important in sand volleyball. Matching players by overall ability, age, ball awareness, and even gender can make for more balanced play and less injury risk.
- Before practices or matches, take the time to review the placement of ball cages, white boards, chairs and other objects near the court. There have been many times players have collided with these objects when chasing loose balls. Many gyms also have limited room between courts. Moving objects out of the way, putting pads on poles and nearby walls, or stationing observers to catch players before they hit something can reduce injury risk. Anyone on or near the court – players, coaches, staff and spectators — need to be aware at all times about flying balls (and possibly flying players) and should never turn heads away from the court.



## **Reducing Risks during Warm-Up and Hitting/Serving Drills**

While most concussions tend to be found in competition, practice and warm-up drills have their own particular risks, especially when multiple balls are in play. To minimize these risks, the following guidelines should be followed.

- Proper ball control is absolutely essential to reduce inadvertent hits to the head during hitting or serving drills. Chaotic situations where multiple players simultaneously serve/hit into opposite courts at the same time are a recipe for disaster, as is unsupervised play or situations where players are kicking balls or messing around before practice.
- Reduce the number of free balls in the air during serving drills and hitting lines.
- Always serve in one direction. Always hit in one direction. Serve or hit all the balls, shag all the balls, then once all the balls have been collected, turn around and serve or hit in the other direction.
- Never turn a back to a hitter or server — this includes huddles during practice time.



- Don't be afraid to shag for opponents — that way no one has to go under the net or turn a back towards an incoming ball.
- Ideally only one ball should be in play for each defensive player. Players must call balls out before hitting/serving, and any defensive player should be aware and even call for all incoming balls. Anyone chasing or picking up loose balls on or near the court also needs to be constantly aware of incoming balls.

No matter the level, volleyball players should routinely call for balls to reduce the risk of collisions (or balls falling helplessly to the court while players watch). Also, players should be taught how to best use their hands and arms to protect the head and face from direct hits or serves. These skills ideally are first practiced in drills where the athlete is one-on-one with the incoming ball. Diving drills are best done with plenty of open court to allow learning of more efficient diving techniques.

### **How Concussions Occur in Scrimmages or Matches**

The risk of concussions during blocking drills, full scrimmages, or competitive matches seems to be related to the level of play.

- Less-experienced athletes are likely to have more chaotic plays. A setter who has to chase more “out of system” balls is at risk for collision with others and the playing surface. Multiple players diving or chasing after a free ball may run into each other. Middle blockers in lower levels may be at higher risk for contact with the net and poles. Defensive players who are just learning to dive and roll may not be as effective and have a higher tendency to hit their head on the court or other players/objects.
- Passing and digging at higher levels (including my experience with USA Volleyball national teams) puts liberos and outsider hitters at risk during serve reception and other defensive activities. They usually occur from direct ball to head impact or collisions with other players or objects (poles, chairs on courtside) when diving for a ball.

Realize that many volleyball concussions occur when players are tired. This might be at the end of a longer practice or in the third match of a day during a weekend tournament. Players who are slower to react to balls can definitely be at higher risk.

Coaches who identify athletes who are fatigued and make modifications (change drills, shorten practice, rotate players out) can reduce the risk of concussions and other injuries. Coaches should also not hesitate to remove any athlete who appears to have suffered a concussion. It is key to remember that a player's health is best served by the statement, "When in doubt, take them out."

### **Return-to-Play Considerations for Volleyball Players**

- Never return to play after a concussion without being evaluated and receiving recommendations from a qualified medical provider.
- Be aware of your state-specific return-to-play laws and follow those policies, which often call for a step-wise return to sport over the course of several days.
- The step-wise return usually begins with individual activities and finishes with return to full scrimmage and eventual match play.
- Any new or increased symptoms during the return process requires re-evaluation by your medical provider.

Once a player is cleared to resume physical activity, particular volleyball considerations include:

- Importance of eye tracking: many concussed athletes have difficulty with following objects that move side-to-side, up-and-down, or start further away and move closer to the face. Obviously, issues with vision can be a big challenge with volleyball. Make sure your concussion medical evaluation includes checking eye movements, and if any problems are found, they are corrected before starting with ball or court work.
  - Volleyball-specific exercises that are fairly safe and can help with eye tracking include self-setting an individual pepper

- Evaluation of single-leg balance: concussed athletes often have poor balance which can affect jumping and landing.
  - Work on standing on one leg while doing daily activities (brushing teeth, combing hair) and also doing forward and backward heel-toe walking in a straight line.
- Initial Individual Return to Receive and Passing: Once an athlete is cleared to begin ball activities, work on ball tracking with 1:1 (concussed player and one other player) light pepper, then move to individual reception of hits and serves using only one server/hitter without blockers, tips, or anyone else in defensive court
- Initial Individual return to serve/hitting: Start with a float serve into an open court, then can advance to jump serve. Initial hitting can be against the wall, then move to hitting off simple sets without a block. This helps with regaining confidence in balance, timing, and approach/landing skills.
- Return to group activities:
  - Hitting against single block and defensive drills behind block — limit the number of repetitions and expect early fatigue. Add in tips as the athlete shows more endurance.
  - Return to 6 v 6 (indoor) once able to go through the usual number of practice hitting/serving repetitions and normal timing with tracking serves/hits
  - Finally, return to full 6 v 6 scrimmages and matches — again, expect early fatigue and the need to substitute out more frequently

## **ACL Injury Prevention**

A torn anterior cruciate ligament (ACL) can put an end to an athlete's season and even worse, their career. It's a twisting knee injury that progresses with swelling over a 24-hour period and is commonly associated with a distinctive "pop." It can be an extensive healing process with even more frustrating consequences. Too many ACL injuries are due to improper landings and quick changes in direction. In order to prevent this, athletes, especially volleyball players, need to be mindful of how they land on their feet after a jump and how quick they cut in to

another direction. By learning proper form and techniques, athletes can prevent ACL injuries from occurring.

## **Volleyball**

Improper landing and a sudden change of direction in volleyball can put players at a high risk for ACL injuries – particularly in female athletes. The jumping, landing and pivoting involved in volleyball all put stress on the knee's ACL. If these swift movements are performed incorrectly, it can overwhelm the ACL's ability to move the knee the way it's designed to do.

Many clubs, such as Saguaros incorporate an ACL prevention warm-up that includes agility movements that can be performed at the beginning of practice.

Volleyball is essentially a right-hand player's game – right-handed players make up 90% of those playing. In this case, volleyball players develop into one-handed hitters, only utilizing their dominant hand. If a player misjudges the placement of the volleyball, he or she has to quickly lean over to the opposite side to try and save it. This immediate change of direction, especially if the ball veers to the left, tilts the body in an awkward position and creates a dangerous situation of landing off-balance and with full-force. The knee is what takes the most torque as the player finishes falling – leading to a dreaded ACL injury.

Improper landing occurs more often than we think in volleyball, so how can we prevent awkward landings from occurring? Instinctively, volleyball players want to use their dominant hand no matter if they are on the left or right side of the court. However with frequent practice, players can learn how to develop skills on both their non-dominant and dominant hand – decreasing the risk of improper landing and injury. Because airtime is so quick when jumping up to hit the ball, players often land before they have a chance to readjust their body. By training athletes to hit with their non-dominant hand rather than attempt a

dominant hand hit, the landing issue will naturally take care of itself. Using your non-dominant hand will not compromise the way you land and will allow a good vertical form landing.

## Young Volleyball Players

It's important for volleyball players to be able to hit with their non-dominant hand at all levels, but especially at a younger age. ***ACL injuries are extremely prevalent in young volleyball players.*** Younger players tend to make the most errors in judgment and should be given the tools necessary to solve these judgment errors. Coaches are a big part of the solution. For just a minute or two during practice or a warm-up game, coaches should have all their players' practice hitting with their non-dominant hand until it becomes an automatic skill. The younger the player is when he or she gets good at using both hands during practice or a game, the better the player will be in the air when it's time to quickly adjust before landing.

## Reduce the Risk

Combined with utilizing the non-dominant hand, athletes can reduce the risk of ACL injury with supervised training programs. Supervised training programs can help reduce the risk of ACL injuries, and help improve an athletes' leg strength and jump-landing techniques. Proper training techniques can also enhance a player's performance, increase acceleration and the ability to change direction. By following the proper training guidelines, players can also prevent injury with properly warming up muscles and cooling down after practice.

Additionally, volleyball players can reduce the risk of injury with [Topical Gear](#). Topical Gear has designed an [ACL Tube](#) that applies [T: 25 Technology](#) to the medial hamstring and medial quadriceps. The ACL Tube applies topical pressure on both muscle groups, enhancing muscle tone and properly aligning the knee. In response to this simulation, the

muscles are more likely to protect the knee, and become trained to optimize performance and reduce the risk of ACL injury.

## **How to Stay Healthy on the Court: Shoulder Injury Prevention**

The frequency and intensity of sports have increased over the years leading to increased injuries. With the increase in frequency, athletes are not allowing their bodies adequate rest time with jumping from high school, to club and back again with very little to no rest in between seasons. Of particular concern, are the front row overhead athletes.

### **Overhead Athletes**

Overhead athletes are at risk for shoulder injuries, secondary to the repetitive hitting motion they make with spiking the ball down in the opponents court. Rotator cuff tears and impingements are most common for this group.

### **Take the Time to Perform a Proper Warm Up**

Going out and taking big hits with a shoulder that is “cold” or not warmed up is dangerous and can lead to injury. Take control of your shoulder health and begin your practice (or prior to practice) with some forearm passing, dynamic warm up, and with <50% max swings during pepper with a partner or against a wall.

### **Foam Roller**

Perform a pec stretch and swims using the foam roller to help open up the front of the chest. Due to the high number of swings a hitter takes during volleyball, one can become tight in their chest. Performing exercises to improve flexibility of these muscles will reduce the risk of injury to the shoulder.

## **Theraband**

Perform internal rotation (IR) and external rotation (ER) using a theraband to provide resistance and improve strength of the rotator cuff muscles (the muscles that help to stabilize the shoulder joint). In addition, one can use the theraband for a middle row exercise to improve scapular strength, which will help to improve stability of the shoulder and shoulder blade.

## **Summary**

Utilizing these 3 steps will help to reduce and prevent the likelihood of one developing a rotator cuff injury during volleyball activities. As a hitter, the worst thing is sitting on the sidelines or being told you can only play back-row and pass – “coach, we want to hit!!”

## **In “Jumping” Sports — Especially Volleyball — Athletes are at a High Risk of Ankle Injury.**

**Myth No. 1: Ankle braces prevent all ankle injuries** — Some coaches insist their players wear braces to prevent ankle sprains and some players choose to wear them. There are numerous studies that point to the benefits of ankle bracing after the first ankle injury occurs to reduce the incidence of recurrent sprains. It is OK to wear them if an athlete feels safer doing so without having previously injured their ankle.

You’re at a higher risk if you’ve previously injured your ankle or if you’re competing in jumping sports (as opposed to running, in which there is a significantly lower risk of ankle injury). The downside to wearing a brace is that you may decrease mobility to gain stability. Is it really worth it for a healthy ankle when your performance might slightly suffer in a low risk sport like jogging? Probably not.

**Myth No. 2: Ankle braces increase the chance of knee injuries**

— Research has been done looking at the forces on the knee after landing from a jump. Those researchers hypothesized that if you take away motion in the ankle, you need more at the knee. Because they found that there were additional forces on the knee when the athlete wore ankle bracing, it makes sense that this might predispose athletes to knee injury. However, there have been studies showing that there is no increase of knee injuries when wearing ankle braces.

“There is no proof that wearing an ankle brace will increase lower extremity injury; however, there is the evidence that wearing a brace in a laboratory setting while landing from a jump would *change* the knee forces.

**Myth No. 3: Wearing ankle braces promotes ankle weakness** — This

one is pretty straightforward. When strength is tested prior to wearing an ankle brace and after prolonged use of ankle braces, it doesn't change. “There is a misconception that if you wear a brace you don't need to use the ankle as much, so people come to the conclusion without evidence that they will lose the strength; however, no studies have proven this.”

**Myth No. 4: Ankle braces decrease performance** — “We don't see any decrease in agility or jumping wearing our Eclipse II ankle brace. Even in some of the smaller studies, we have seen an *increase* in performance attributes this increase to a psychological effect — many may feel invincible wearing the Eclipse II because they do not feel like they will be injured.

**Myth No. 5: Taping instead of bracing is just fine for repeat injury prevention** — “Research is really on the restriction of ankle range of motion after taping. What you'll see is that with use, over time, the tape will loosen — sometimes as early as 20 or 30 minutes. So, you don't have as much restriction of motion with the tape as you do if you have a brace. A brace, over time, won't lose as much motion restriction. The theory is



that the tape still provides input to the skin to help the body remind where it is in space.

However, this also depends on many factors, such as the application or type of tape (directly on the skin versus on an under-wrap) or the type of brace (Velcro can loosen, lace-up braces stay tighter).

Trying a brace on is important to make sure it's comfortable and fits correctly. For jumping sports, we recommended [Active Ankle](#) Eclipse I or II because they provide full ankle motion for jumping, while restricting motion that causes lateral ankle sprains.

Performance Health's Active Ankle sponsors many programs on the national, collegiate and club levels — often as the official ankle brace. What this means is that they are at events and tournaments, fitting braces to athletes and getting feedback that goes directly to the product development team.

An ill-fitting brace is often left in the locker room instead of being used on a previously injured ankle. Schools are given the same access as an Olympic athlete to Active Ankle braces. Ensuring your players are trying on braces to get the right fit is the best way to ensure they will wear those braces and reduce the risk of repeat injury to the ankle.

[Active Ankle's](#) mission is to protect and support the ankles of all athletes and they do that by selling a wide range of products. Their fundamental belief is that not all athletes are the same and they aim to provide a best-in-class solution for all. Here are a few player favorites.

**Eclipse II Dual Upright Ankle Brace.** The Eclipse II provides maximum protection available through its solid u-shaped design and multipoint strapping system. It's ideal for net players that need a higher level of support.

**Eclipse I Single Upright Ankle Brace.** The Eclipse I provides superior mobility while maintaining the protection of a rigid ankle brace. It's ideal for backcourt players needing increased side-to-side flexibility for digging and diving.

**T2 Rigid Ankle Brace.** The T2 is Active Ankle's best-known rigid ankle brace with its classic and simple design. Recent improvements have strengthened the brace material to be 10 times more durable than previous T2 brace material.

**AS1 Pro Lace-Up Brace.** The AS1 Pro provides superior protection while maintaining the comfort of a lace-up through its supportive compression and vertical straps that imitate the heel-lock taping technique.

For more information about [Active Ankle](http://www.ActiveAnkle.com) and the products mentioned, visit [www.ActiveAnkle.com](http://www.ActiveAnkle.com).