



# Injury Prevention Series: Indoor Volleyball

What can an athlete do to prevent injury? It is difficult to predict who is likely to sustain an injury and when. However, athletes can get ahead of the game with **prehabilitation**.

## PREHABILITATION

Preventative injury risk assessment and training to reduce the chance of future injury to an athlete

## ACUTE INJURIES

Injuries that occur in an instant, due to a single traumatic event, such as:

- Ankle sprain
- ACL tear
- Fracture
- Concussion

## OVERUSE INJURIES

Injuries that develop over time, due to repetitive action causing microtrauma, such as:

- Patellar tendonitis
- Stress fracture
- Shoulder impingement

**Prehabilitation** is the concept of incorporating strategic exercises into regular training with the goal of preventing and overcoming injuries before they ever happen. This involves analyzing a player's biomechanics in conjunction with a risk assessment of the injuries specific to the athlete's sport and the individual position that the athlete plays.



Injuries in volleyball are generally classified as **acute** or **overuse** injuries. There are known risk factors for each type of injury. Some injuries may be preventable by mitigating these risk factors.

Factors that may predispose an athlete to an **overuse injury** include:

- Rapid increase in intensity, duration, or frequency of training
- Returning quickly to high intensity training after an extended period of rest
- Muscle imbalance – for example, quadricep strength greater than hamstring strength
- Unequal body alignment – for example, unequal leg lengths

Factors that may predispose an athlete to an **acute injury** include:

- Playing in the three front row positions
- Environmental factors – for example, a wet court

Factors that may predispose an athlete to either an **overuse** or an **acute injury** include:

- Higher repetitions of play, especially serving, blocking, and hitting
- Incorrect technique or form, especially serving, blocking, and hitting
- Improper or poorly fitting equipment
- Previous or incompletely rehabilitated injuries, especially within the first 6-12 months after an injury

This handout is part of an informational series on sports injury prevention produced by SPARCC (Sports Medicine Rehabilitation and Concussion Center).



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## SERVICES AVAILABLE

### SPORTS & MUSCULOSKELETAL INJURIES

- Non-operative Rehabilitation including Bracing, Orthotics, Physical Therapy, and Individualized Home Therapy Programs
- Splinting and Casting, Pediatric Orthopaedics including Surgical Options, Post-Fracture Care, and Rehabilitation

### REAL TIME ULTRASOUND

- Functional and dynamic studies capturing muscle, tendon, ligament, and soft tissues
- Doppler and functional studies to evaluate for vascular and nerve entrapment
- Pediatric focused studies of growth plates

### CONCUSSION CARE

- Comprehensive assessment and treatment
- Vestibular and Exertional Rehabilitation
- Return-to-play Guidelines
- Pediatric Neuropsychological Testing
- School Planning and Academic Support

### COMPREHENSIVE SPORTS PHYSICAL EXAMS

For more information on any of our services, please visit us on the Web at: [www.sparccucson.com](http://www.sparccucson.com)

# Common Volleyball Injuries & How to Prevent Them



## Ankle Sprains

- Most common acute injury in volleyball
- How does it happen?
  - Ankle inversion, usually as a player lands on another player after a jump
  - Most commonly occurs at the center line
- How can I prevent it?
  - Drills emphasizing proper hitting approach, take off, and landing technique
  - Blocking drills emphasizing form and footwork
  - Wobble or balance board training
  - External ankle support, such as taping or use of a brace

## Patellar Tendinopathy or “Jumper’s Knee”

- Affects 50% of male volleyball players
- How does it happen?
  - Cumulative tissue (**overuse**) injury causes degeneration and fibrosis of the tendon, which leads to pain
  - More common in athletes who jump highest and land with deepest knee flexion
- How can I prevent it?
  - Minimize the volume of training, specifically jumping, on hard surfaces
  - Eccentric training protocols for knee extensor muscles *may* help

## Shoulder Overuse Injuries

- On average, causes the **longest absence** from play
- How does it happen?
  - High repetitions (**overuse**) of hitting and serving can decrease the stability of the shoulder joint and reduce its ability to rotate internally
  - Instability of the shoulder joint can also cause nerve problems
- How can I prevent it?
  - Limit the volume of serving and full swing hitting drills (i.e., focus some hitting drills on approach or play-calling only)
  - Year-round eccentric resistance training for shoulder strength, as well as core strengthening
  - Internal rotation stretching *may* help

## REFERENCES

1. Briner WW, Gallo R. Preventing Volleyball Injuries. American Orthopaedic Society for Sports Medicine. [http://www.stopsportsinjuries.org/STOP/Prevent\\_Injuries/Volleyball\\_Injury\\_Prevention.aspx](http://www.stopsportsinjuries.org/STOP/Prevent_Injuries/Volleyball_Injury_Prevention.aspx). 2010.
2. Matava, MJ. Overuse Injury. American Orthopaedic Society for Sports Medicine. [http://www.stopsportsinjuries.org/STOP/Prevent\\_Injuries/Overuse\\_Injury.aspx](http://www.stopsportsinjuries.org/STOP/Prevent_Injuries/Overuse_Injury.aspx). 2010.
3. Reeser JC, Verhagen E, Briner WW, Askeland TI, Bahr R. Strategies for the prevention of volleyball related injuries. *British Journal of Sports Medicine*. 2006;40(7):594-600.



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