Movement to Muscle
SPORTS CONDITIONING FOR THE VOLLEYBALL SHOULDER
Introduction

- My goal and purpose today....
  - Summarize/explain the correct muscle mechanics of a healthy volleyball shoulder.
  - Instruct/Demonstrate safe and effective exercise.
  - Explain to you which exercises and muscles you need to use sparingly or avoid all together.
The ideal sports training environment

- Preventative training strategies and sports conditioning should meld together as one entity

- How do we accomplish both?

  1.) Make the exercises functional-

     They should somewhat resemble the movements made in volleyball.
The ideal sports training environment

2.) Conditioning sessions should be similar to sports practice

   Fundamentals (passing, serving, blocking)
   ▶ Scrimmage (create various game like situations)

   You need to teach your volleyball players muscle fundamentals before you have them do exercises “that put it all together”
The ideal sports training environment

3.) Identify good muscles from the bad

- Which muscles when overused can predispose our young people to injury
- Which muscles foster healthy shoulder mechanics
What must a volleyball shoulder do?

#1. The volleyball athlete must be able to get their hand above their head

It’s a triplanar function that could be summed up with one word- **Abduction** -180 degrees

- Scapula
- Clavicle
- Arm
What must a volleyball shoulder do?

#2 The volleyball shoulder must **Rotate**

- It must externally rotate
  - to cock the arm back
- It must internally rotate
  - to swing the arm forward
What key muscles facilitate healthy abduction and rotation?

- #1 Subscapularis (What’s that?)
  - It is the most important shoulder internal rotator
  - It maintains the flexibility of the posterior rotator cuff and posterior shoulder capsule
  - Why is this so important? Prevents abnormal and excessive force via the anterior shoulder- specifically the biceps tendon and labrum
Subscapularis
What key muscles facilitate healthy abduction and rotation?

- #2 Triceps (Not biceps)
  - It does more than straighten the elbow
  - Helps extend the shoulder
  - It has a big attachment to the shoulder blade (helps oppose anterior chest wall and biceps)
What key muscles facilitate healthy abduction and rotation?

- #3 Posterior Deltoid
  - It’s the most important external rotator
  - It’s like the glut max of the shoulder complex - the big gun
    - It cocks the shoulder back - concentric
    - It helps slow internal rotation - eccentric
What key muscles facilitate healthy abduction and rotation?

- #4 Serratus anterior (What’s that?)
  - Helps to push the shoulder blade up when they abduct
  - **Should be** very active during push-ups
  - Known as the “boxer muscle” but in volleyball this has major implications for blocking
    - it improves an athlete's ability to reach over and seal the net
Serratus anterior
What are the muscles that can rob the shoulder of healthy ROM?

- #1 Latissimus- The number one culprit
  - Latissimus is a huge powerful *adductor*-it pulls the arm down to the body or the body up to the arm
  - This action describes two of the trendiest exercises we are all doing today; pulldowns and pull ups
  - This is exactly the opposite of what a volleyball shoulder must do
Latissimus dorsi
What are the muscles that can rob the shoulder of healthy ROM?

- **#1 Latissimus** - it can hog all the rotation responsibility
  
  - Latissimus is also a powerful internal rotator of the shoulder.
  
  - How does it do this? The lat insertion is on the front of the arm - lower than subscapularis.
  
  - The Problem - if the lat gets too tight it can actually translate/pull the ball of the shoulder joint forward.
What are the muscles that can rob the shoulder of healthy ROM?

#1 Latissimus- Can start a domino effect

- The shoulder joint loses passive range of motion
- This changes the position and mechanical advantage of the entire shoulder girdle.
- Most effected is subscapularis and its ability to internally rotate the shoulder and keep the posterior shoulder flexible.
- Without normal IR the external rotators can not function correctly to slow down the attack arm.
- The biceps tendon attempts to do perform this function.
- This frequently evolves into bicipital tendonitis which can unfortunately lead to a labrum tear (SLAP lesion)
What are the muscles that can rob the shoulder of healthy ROM?

- #2 Pectoralis major (the anterior chest wall)
  - Together pec major and latissimus are the largest adductor/extensor muscles
  - Pec major has a large attachment to the clavicle
    - It can cause a rounded shoulder posture
    - Rounded shoulders feed the latissimus overuse problem
  - You must develop strength in the opposing muscles before you start full body lifts
Exercises to use sparingly or avoid

► Use sparingly
  ► Push-ups/ Burpees
  ► Why? Many young athletes are compensating- they do not have the strength in the triceps, serratus, and posterior deltoid

► Avoid all together
  ► Pull-ups/ Pull-downs
  ► Why?
    ► It is non-functional for the volleyball shoulder
    ► It heavily recruits muscles that can rob ROM- lats and biceps
What are the “fundamental” exercises for volleyball shoulders

1.) Subscapularis - Pool noodle ball drops with spin ins
2.) Triceps - Back lying dumbbell press
3.) Posterior deltoid - Pool noodle spin backs – resisted
4.) Serratus anterior
   ▶ Rocker board
   ▶ Back lying mini punches
What are “put it together” exercises for the volleyball shoulder?

1.) Standing IR & ER – Resisted
   - Perform at 30 degrees and 90 degrees of abduction
   - Can be done with a partner

2.) Dumbbell Shoulder Press
   - Alternate arms so the abs engage
   - Use low weight and high reps
What are “put it together” exercises for the volleyball shoulder?

- 3.) Modified Plank
  - Hands On (Not forearms)
  - Dip Option
  - Walk Up Option

- 4.) Standing D2 Flexion –Resisted
  - High reps with light resistance
  - Can be done with a partner
Does your existing program need modification?

Make a list of every single exercise your volleyball players are doing and answer the following questions:

► What muscle or muscles am I targeting with this exercise?

► Is this exercise functional for the sport of volleyball?

► Do I have any rotation and abduction exercises in my program?
Closing Remarks


- The “Take Home Message”
  - You are coaching immature muscle-skeletal systems
  - Be careful of the extreme workout-boot camp mentality
  - Teach muscle fundamentals first and gradually build a solid foundation