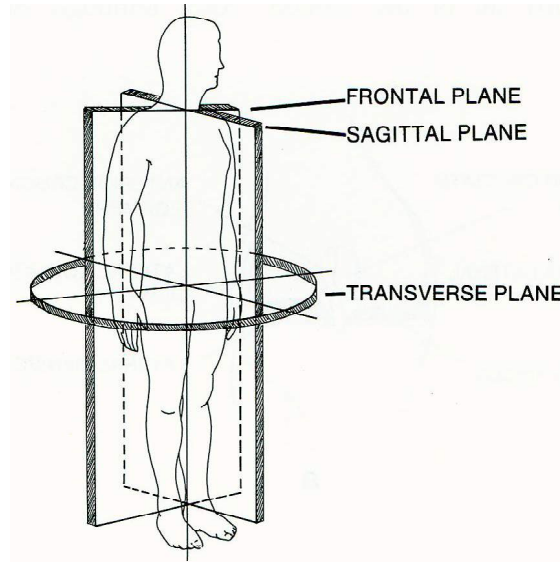


“Improving the Functional Strategy of the Volleyball Athlete”

Ron Hruska, MPA, PT

PREPARATION PHASE

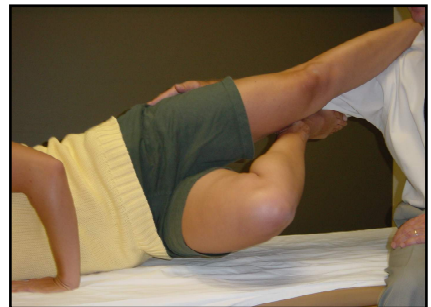
Individual examination, mechanical testing and tri-planar assessment.



Frontal Plane Tests:

Adduction Lift Test

Athlete lies on their side with back slightly rounded. Place their top leg on your shoulder with their leg straight and hip aligned with their ankle. Have the athlete bend their bottom leg. Ask the athlete to raise their ankle of the lower leg to the upper knee (do not allow their upper hip to rotate forward or backward). Next have the athlete raise their bent lower knee from the ground while keeping the ankle up. Athlete then attempts to raise their lower hip while maintaining the above positions. Discontinue test at the step athlete is unable to perform. Repeat on other side.



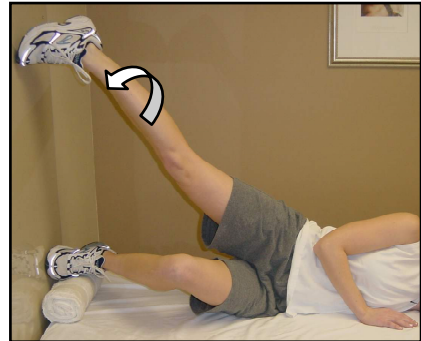
Positive Test Outcomes:

Reasoning Behind Positive Outcomes:

Recommendations:

Abduction Lift Test

Athlete lies on their side with top leg straight (aligned with hip and shoulder) and foot resting on a wall. The top knee should be above the level of the shoulder. The lower leg is bent with toes on the wall directly under the top foot and placed on 4-6" towel roll. Ask the athlete to press their bottom toes into the wall. Then have them press bottom hip into the floor. Next they turn and raise bottom knee up or inwardly without moving top hip backwards. Then turn top heel up or top toes down without lowering bottom knee or moving top hip forward. Finally, athlete attempts to raise top leg off the wall while trunk and hips are stabilized in previous positions. Discontinue test at the step athlete is unable to perform. Repeat on other side.



Positive Test Outcomes:

Reasoning Behind Positive Outcomes:

Recommendations:

Apical Expansion (Balloon) Test

Athlete lies on their back with knees bent and back flat. Have them breathe in through their nose and as they breathe out into a balloon, guide their left rib cage down. Hold their ribs down as they attempt to breathe in filling their right chest wall. Repeat on opposite side.



Positive Test Outcomes:

Reasoning Behind Positive Outcomes:

Recommendations:

Sagittal Plane Tests:
Shoulder Flexion Test

Athlete lies on their back with knees bent and back flat. Place one hand on athlete's lower rib cage and your other hand on the athlete's arm. Passively guide the arm over their head as far as it will comfortably go. Repeat on other side.



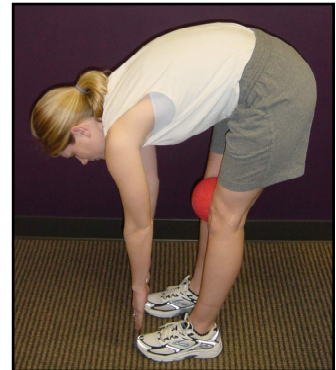
Positive Test Outcomes:

Reasoning Behind Positive Outcomes:

Recommendations:

Standing Reach (Trunk) Test

Athlete stands with knees straight, feet together and arms at their side. Ask the athlete to reach down towards the floor as their arms move forward and hips move back. Be sure their back is rounded in attempting to touch toes with fingertips. Encourage them to breathe out as they reach toward the toes. Measure distance from fingers to floor in inches.



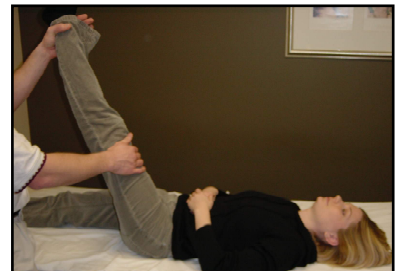
Positive Test Outcomes:

Reasoning Behind Positive Outcomes:

Recommendations:

Straight Leg Raise Test

Athlete lies on their back with both legs straight. Using both hands, lift one leg in the air as far as it will comfortably go towards the athlete's head. Repeat on other side.



Positive Test Outcomes:

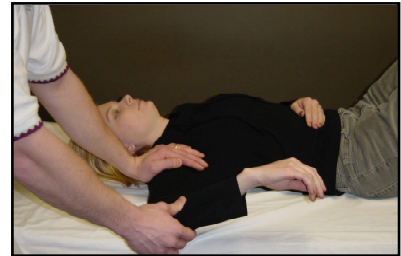
Reasoning Behind Positive Outcomes:

Recommendations:

Transverse Plane Tests:

Shoulder Internal Rotation Test

Athlete lies on their back with knees bent and back flat. Bring the athlete's bent arm to shoulder level. Stabilize their shoulder by placing firm pressure on the top of the shoulder joint. Rotate their forearm toward the table as far as it will comfortably turn without the shoulder moving forward. Repeat on other side.



Positive Test Outcomes:

Reasoning Behind Positive Outcomes:

Recommendations:

Shoulder Horizontal Abduction Test

Athlete lies on their back with knees bent and back flat. Bring the athlete's straight arm to shoulder level and lower towards the floor while securing the shoulder joint with one hand and maintaining the athlete's palm toward the ceiling with the other hand. Repeat on other side.



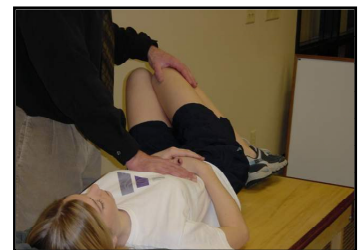
Positive Test Outcomes:

Reasoning Behind Positive Outcomes:

Recommendations:

Trunk Rotation Test

Athlete lies on their back with knees bent and feet together. Rotate their legs to a comfortable point with one hand, while stabilizing their trunk with the other hand. A yardstick may be used to measure the distance from the table to the top of the knees. Repeat on other side.



Positive Test Outcomes:

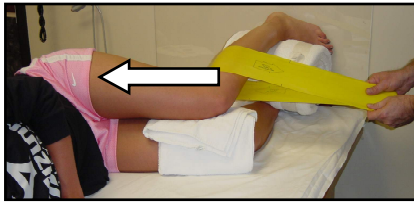
Reasoning Behind Positive Outcomes:

Recommendations:

PROCESS PHASE
Frontal Plane

Adduction Lift Test

Right Sidelying Adductor Pull Back

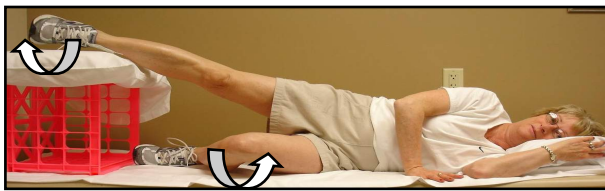
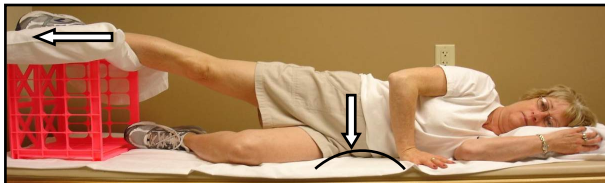


Left Sidelying IO/TA Foot Toward Foot



Abduction Lift Test

Left Sidelying, Left Flexed Adduction with Right Extended Abduction and Left Abs



Un-Resisted Single Leg Lateral Dips



Apical Expansion (Balloon) Test

90-90 Hip Lift with Balloon



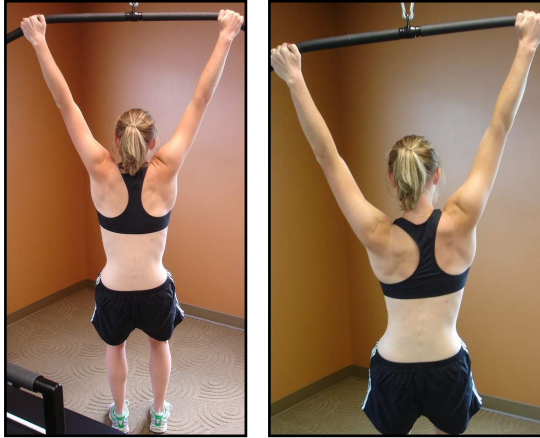
Right Sidelying Apical Expansion with Balloon



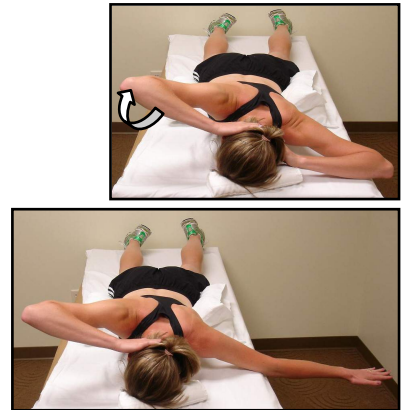
PROCESS PHASE
Sagittal Plane

Shoulder Flexion Test

Lat Hang with Low Traps

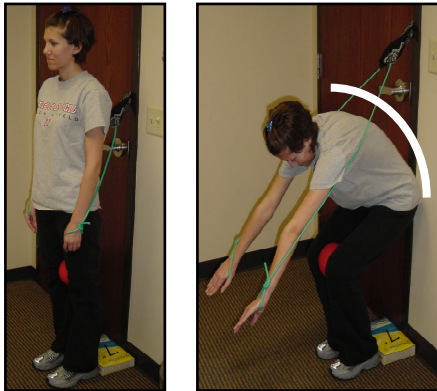


Prone Right Scapular Retraction with Right Trunk Rotation and Active Left HG Flexion

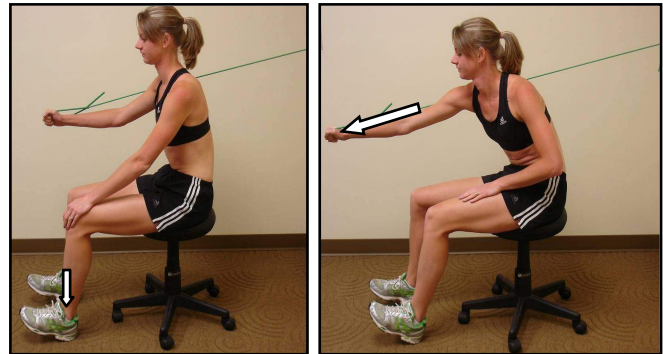


Standing Reach (Trunk) Test

Standing Resisted Wall Reach

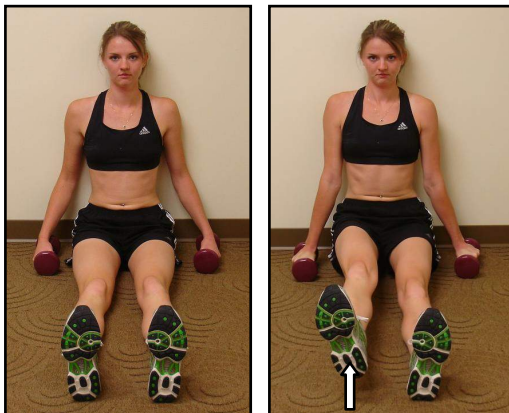


Seated Resisted Serratus Anterior Punch with Hamstrings

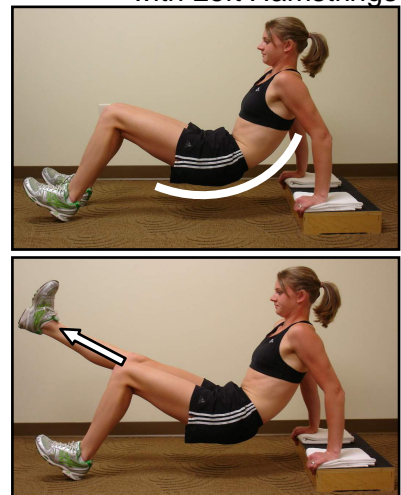


Straight Leg Raise Test

Long Seated Wall Press Down with Right Iliacus and Psoas

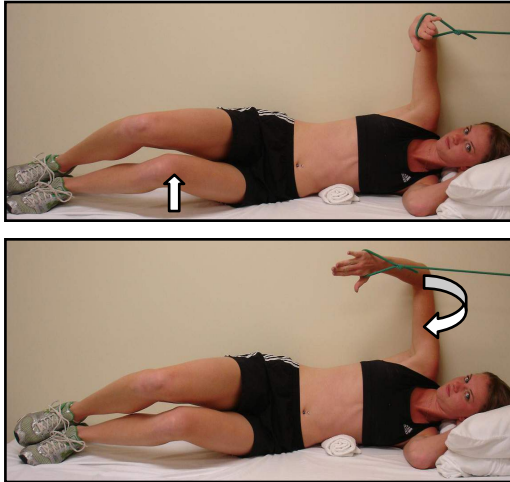


Long Seated Paraspinal Release with Left Hamstrings

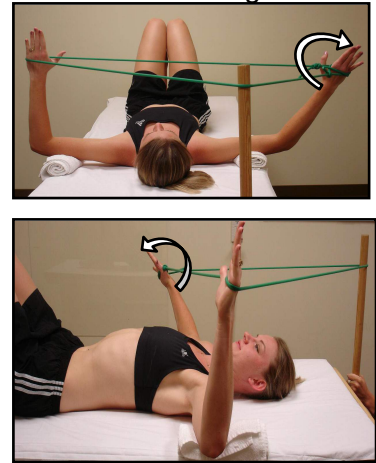


PROCESS PHASE
Transverse Plane

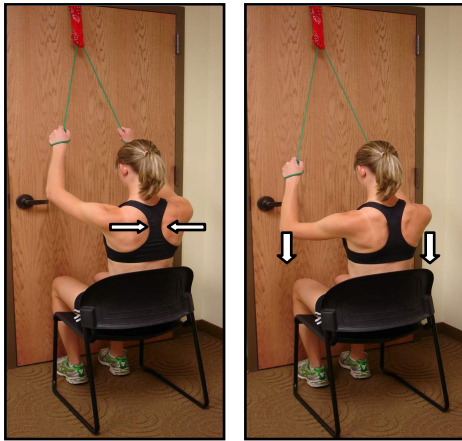
Shoulder Internal Rotation Test
Sidelying Resisted Right HG IR



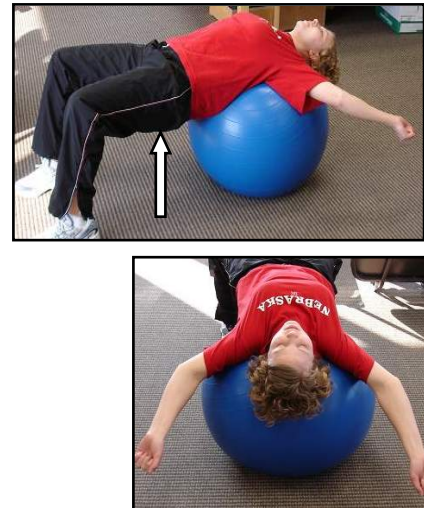
Supine Resisted Right Tricep Extension with Right HG IR



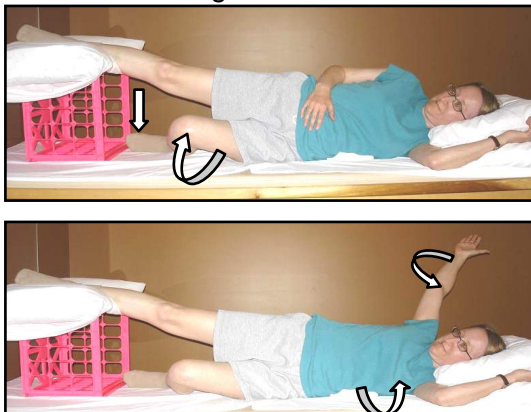
Shoulder Horizontal Abduction Test
Seated Resisted Scapular Pull Downs



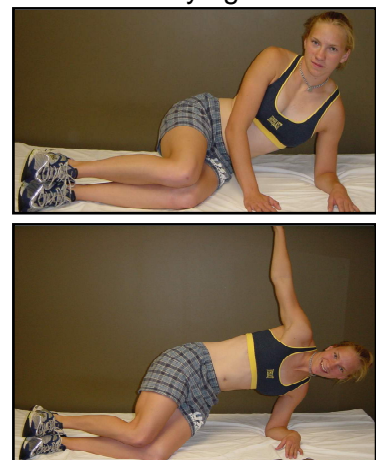
Sternal Positional Swiss Ball Stretch



Trunk Rotation Test
Left Sidelying Left Flexed Abduction with Abs and Right Trunk Rotation



Sidelying Trunk Lift



PRACTICE PHASE

Integrate these Concepts:

1. Chest wall expansion on the right
2. Mid-back sidebending to the left
3. Hip shifting to the left
4. Mid-back flexion
5. Hip extension especially on the left
6. Shoulder blade retraction
7. Lower pelvis and spine rotation to the left
8. Upper trunk rotation to the right
9. Shoulder internal rotation with limited latissimus muscle activity

Dynamic Integrated Examples for the Volleyball Player:

1. Retro Stair Climbing
2. Retro Decline Walking
3. Supine Resisted D2 Flexion
4. Standing Right Step Around with Right Quadratus Lumborum Inhibition and Right Apical Expansion
5. Standing Resisted Right Trunk Rotation in Left Acetabular-Femoral Internal Rotation

