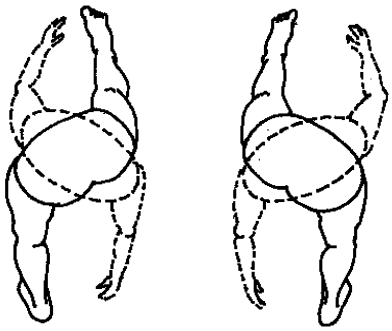
The Squawk on the Back Row Squat

Learning Objectives:

- Incorporate correct biomechanical squatting and single leg squatting into functional back row training.



- Progress a low center of gravity oriented athlete into an upper quadrant reaching and flexion program with corresponding forward movement provided by plantar flexors, knee and hip extensors in a maximal to moderate range of knee and hip flexion.

- Develop distal quadricep function in jumping and landing and proximal quadricep function in digging.

Key Points:

- Muscles that require maximal flexibility to allow for critical joint motion in the back row:

1) Plantar flexors and calf muscles

2) Hamstrings

Proximal Control

Poor Proximal Control

3) Quadriceps

Heels Down

Knees Forward
Back Rounded

Poor Quad Control
Overuse of Hip Flexors

4) Hip flexors

Good Abs and Hip Flexor Contraction

Overuse of Hip Flexors

5) Back extensors/paravertebrals

Proper use of Quads, Hamstrings, Calves and Back Extensors

Overuse of Quads and Calves Strained Paravertebrals

- Basic volleyball back row functional tests:

1) Standing Reach Test

Negative Test

Positive Test

2) All Four Belly Lift Walk

Negative Test

Positive Test

3) Un-Assisted Squat

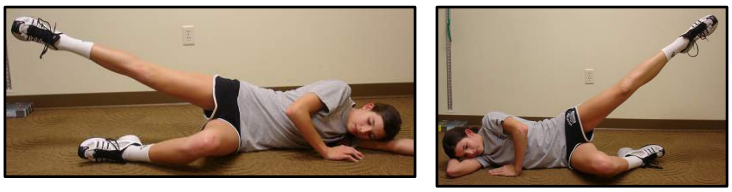
Negative Test

Positive Test

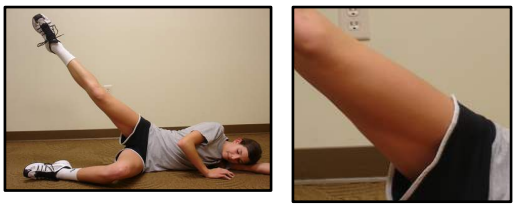
Reverse Squat

Negative Test

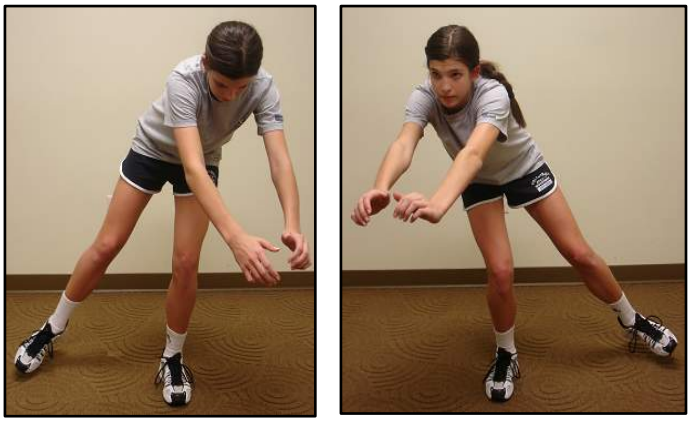
4) Standing Active Adductor Magnus Stretch



Negative Test



Positive Test – Secondary to overuse of hip flexors (usually seen on right side)



- Most significant non-respiratory kinetic considerations to improve forward reach in the back row:

1) Knees forward and back rounded

2) Co-contract quadriceps during squatting with posterior pelvic tilt (hamstrings)

3) Heels down when coming down (proximal quad)

4) Heels up when going up (distal quad)

5) Abduct first, squat with contralateral leg second vs. squat first, abduct with contralateral leg second

CORRECT

Abduct 1st, squat with opposite leg 2nd

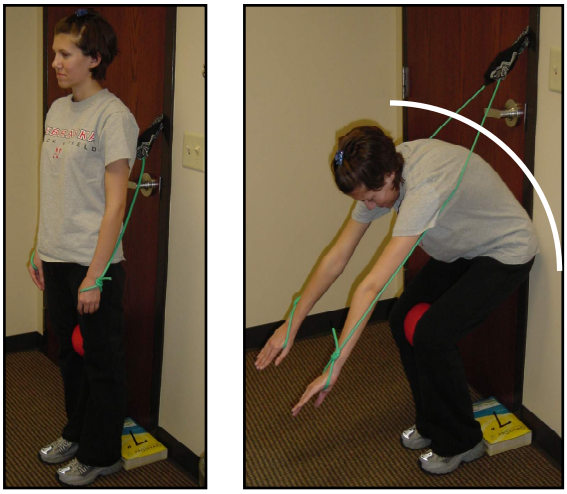
INCORRECT

Squat 1st, abduct with opposite leg 2nd

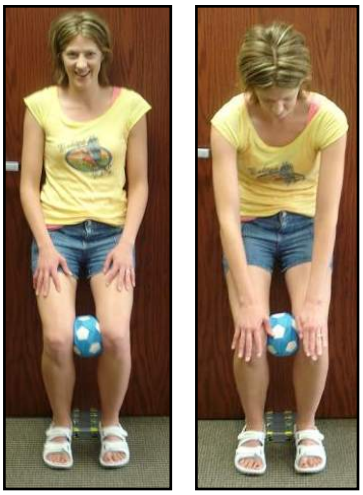
- Drills to improve maximal control during maximal lowering of center of gravity:

1) Respiratory Wall Reaches

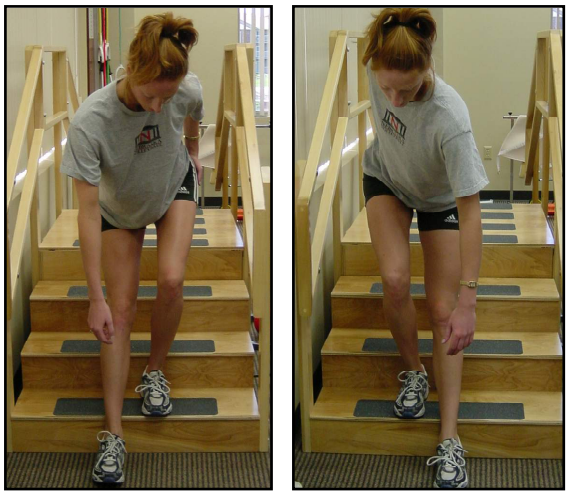
2) Standing Resisted Wall Reach



3) Standing Un-Resisted Wall Stretch



4) Retro Stairs



5) Decline Retro Walk

6) Gorilla Gait

7) Heel Stair Descents

8) Repetitive Standing Active Adductor Magnus Stretch

9) Bilateral Forward Lateral Dig with Ipsilateral Squat and Contralateral Abduction

Conclusion:

- Above tests, concepts and drills reduce:

1) Femoral-patellar compression
2) Hamstring pulls
3) Back strain
4) Hip bursitis and groin impingement
5) Hip flexor tonicity
6) Plantar fascitis
7) Lateral knee muscle tension