Abstract

“Athletes are often lacking balance due to the highly repetitious nature of their particular activities. This in term could detract from optimum performance and potentially lead to injury.” -p101 Study Guide

When developing a Pilates program for a male athlete, it is important to not only focus on improving flexibility but to realize that some muscles have been overworked through habitual movement patterns causing undesired imbalances. And these imbalances need to be addressed.

Male athletes often experience weakness or inflexibility in the muscles that make up the pelvic floor complex. These muscles include the hip flexors, hip extensors, adductors, abductors, and both the internal and external rotators of the hip. A limited range of motion in the hips will hinder optimal sports performance, and could eventually lead to injury. In this paper, I will be specifically discussing the muscles within the pelvic floor complex.
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Hip adductors.

- Pectineus
- Adductor longus
- Gracilis
- Adductor brevis
- Adductor magnus
Description of Anatomy

The hip joint is a ball and socket joint allowing three types of movement: flexion and extension, adduction and abduction, and both external and internal rotation. The hip adductors is a common name for the group of muscles that make up the inner thighs, these muscles include the pectineus, adductor longus, adductor brevis, adductor magnus, and gracilis.

The external rotators of the hip include gluteus maximus, the piriformis, the obturator internus, the obturator externus, the gemellus inferior, gemellus superior, and quadratus femoris (deep outward rotators).
Introduction to Case Study

Holden contacted me in search of private training and the specific request to help him improve his performance in lacrosse. Holden is a 22 year old male who plays recreational lacrosse at the local university. He has a large, muscular build. He stands about 6’2” and his muscles are over developed in the upper body. His typical fitness routine, outside of lacrosse team practices, includes weight lifting a few times a week (with a heavy emphasis on his arms, shoulders, and back) and games of pick up basketball with friends. At the start of our first session Holden expressed a desire to strengthen his adductors, abductors, abdominals, and to see an improvement in his overall flexibility. After his first roll down I noticed a limited range of motion in his upper lumbar and lower thoracic spine.

“Because the pelvis moves primarily as a unit, the large movements of the pelvis mostly occur at the lumbosacral joint, the junction of the lower back and the pelvis.” – p19 Pilates Anatomy

Because his spinal extensors have been overworked and his abdominals have been underworked he struggles with spinal articulation. Going through Foot Work on the Reformer I began to notice that he was physically uncomfortable in an external rotation position of the hips. While performing Open V Heels on the Reformer, Holden had a difficult time bringing the carriage back into the stopper because his adductors and hip
flexors were both weak and tight. After our first session together it became clear that a Pilates program would benefit Holden greatly. Not only would he notice an improvement in his lacrosse game but all areas of his life would improve by strengthening his core and finding mobility through his spine and pelvic floor complex.
Program for the Case Study

Introduction to Pilates Stage 1

Warm up: Pelvic Curl, Spine Twist Supine, Chest Lift, Chest lift w/ Rotation, Leg Changes, Leg Circles with theraband, Roll up with Roll up Bar.

Foot Work: Parallel Heels, Parallel Toes, V Toes, Open V Heels, Open V Toes, Calf Raises, Prance, Single Leg Heels, Single Leg Toes

Ab Work: Hundred Prep, Short Box: Round Back & Tilt

Hip Work: Frog, Circles (Down, Up), Openings

Spinal Articulation: Bottom Lift

Stretches: Standing Lunge

Full Body Integration: Scooter

Arm Work: Arms Supine Series- Extension, Adduction, Circles (Down, Up), Triceps
Leg Work: Hamstring Curl

Lateral Flexion/Rotation: Mermaid

Back Extension: Breastroke Prep

For the first four weeks of Holden’s training I planned very basic workouts, incorporating fundamental exercises and a handful of more challenging intermediate exercises. We began each session with a Mat Warm Up, focusing on correct pelvic alignment, spinal stability, and discovering the transversus abdominis. The basic Chest Lift and Chest Lift with Rotation was challenging for Holden because his back and shoulders compensated for weaker abdominal muscles. Leg Circles was helpful because he didn’t have the range of motion in his hips and lacked the strength in his abdominals to perform the exercise, so I incorporated the use of a band as an assist. With the assist of the theraband Holden was able to fully circumduct the leg around the hip joint (a spheroid joint) and achieve the objectives of the exercise. I chose to put Holden through Foot Work on the Reformer to start so that Holden could focus on his spinal stability, correct pelvic alignment, and abdominal engagement.

I chose to keep the exercises we did for this Abdominal Block pretty fundamental so that he could focus on the correct stabilizing muscles and moving muscles. For his Stretch
Block we did a *Standing Lunge* because it’s perfect for a male athlete complaining of tightness through the hip flexors. *Scooter* was the most appropriate exercise from the Full Body Integration Block because of its focus on the abdominals, hip extensors, and trunk stabilization. It also helped that it wasn’t a difficult position for him to get into. Although Holden protested doing any arm work, I knew he would benefit from the *Arms Supine Series* due to the emphasis on trunk stabilization, and hip flexor strength. *Mermaid* was an excellent stretch for Holden and further his introduction into spinal mobility. After our first few sessions, Holden noticed an improvement in his lacrosse game and credited his Pilates session as the reason. This was the confirmation that he was headed in the right direction.

**Introduction to Pilates Stage 2**

Warm up: Pelvic Curl, Roll Up with Roll Up Bar, Roll Up, Spine Twist Supine, Leg Changes, Double Leg Stretch, Single Leg Stretch, Criss Cross

Footwork on Chair: Parallel Heels, Parallel Toes, V Toes, Open V Heels, Open V Toes, Calf Raises, Single Leg Heels, Single Leg Toes

Ab work: Double Legs, Double Legs w/ Rotation
Hip Work: Supine leg Series: Frog, Circles (down, up), Walking, Bicycle

Spinal Articulation: Bottom Lift, Bottom Lift with Extension

Stretches: Side Splits

Full Body Integration: Reverse Knee Stretch

Arm Work: Arms Supine

Leg Work: Single Leg Skate

Lateral Flexion Rotation: Butterfly

Back Extension: Pulling Straps 1 & 2

After the first month of training I decided to make our sessions more challenging. He was showing improvement, and ready for some more difficult exercises. I decided to change the Warm-Up and emphasize more abdominal strength. Once he became familiar with the concept of a neutral spine and trunk stabilization, I knew he was ready for Foot Work on the chair. The exercises proved to be quite a challenge for him, especially Single Leg Heel and Single Leg Toes! Though most weight lifters aren’t willing to admit that
Pilates Foot Work is challenging, he was certainly feeling his abdominals and hip flexors worked like never before. I chose to move his hip work to the Cadillac. Because Holden’s legs are quite long that the progressive resistance of the springs made for an extra challenge. Due to his weak and inflexible adductor muscles, I found that the Side Splits was an ideal Stretch and challenge for Holden. Another excellent exercise for him was the Single Leg Skate, because he experiences weakness in the hip abductors as well. Holden does a lot of weight lifting in the upper body so I decided to give him butterfly for his lateral flexion/rotation block. The exercise is an excellent stretch for his latissimus dorsi with the added benefit of strength for the obliques. Because Holden was committed to his weekly sessions he continued to see positive results.

Stage 3

Warm Up: Pelvic Curl, Roll Up, Spine Twist Supine, Double Leg Stretch, Single Leg Stretch, Criss Cross, Rolling Like a Ball

Footwork on Chair: Parallel Heels, Parallel Toes, V Toes, Open V Heels, Open V Toes, Calf Raises, Single Leg Heels, Single Leg Toes

Ab work: Mini Roll Ups, Mini Roll Ups Oblique, Roll Up Top Loaded, Roll Up Bottom Loaded
Hip work: Single Leg Side Series: Changes, Scissors, Circles (forward & back)

Spinal Articulation: Bottom Lift, Bottom Lift with Extension

Stretches: Stretches on Ladder Barrel: Gluteals, Hamstrings, Adductors, Hip Flexors

Full Body Integration: Sitting Forward, Side Reach

Arm Work: Side Arms Kneeling Series: Deltoid Reach, Cross Arm Pull, Triceps, Arms Overhead

Leg Work: Magic Circle Leg Sitting Series

Lateral Flexion/Rotation: Side Over on the Box

Back Extension: Prone 1

After eight weeks, we decided to incorporate Rolling Like a Ball into his Warm Up. Previously Holden struggled with spinal articulation exercises, and he wouldn’t have been able to perform the exercise. This Fundamental exercise proved to be a challenge that he was now able to execute. For Holden’s Abdominal Work Block at this stage of his training, I knew he was able recruit the right muscles as opposed to use his arms in Mini Roll Up
and *Mini Roll Up Oblique* (he was ready for more abdominal work on the Cadillac).

Holden was showing increased strength in both his adductors and abductors so I decided to challenge him with the *Single Leg Side Series*. *Stretches* on the Ladder Barrel were perfect for Holden to work on his flexibility. Holden’s articulation and hamstring flexibility were both improving so I felt he was ready for *Sitting Forward* and *Side Reach*.  


Conclusion

“Pilates has a tremendous benefits as a form of cross training. It can help develop body awareness, enhance mental focus, and bring balance to many levels of the athletes training. It can re-educate the body on a neuromuscular level, with the possibility of benefits including heightened performance and decreased incidents of injury. “ -101 Study Guide

Most athletes are familiar with weightlifting, and it is common for the male athlete to spend a lot of hours lifting heavy weights with an emphasis on certain muscle groups while neglecting the core and smaller muscle groups. In Holden’s case, Pilates proved to be the right choice for cross training. He wanted to take his lacrosse game to the next level. And he came to realize that the inflexibility and weakness within the pelvic floor complex was largely caused by his weakness in the abdominals, hip external rotators, and adductors/abductors. Through the above outlined training program, Holden gained a solid understanding of neutral spine and pelvis. He became aware of his limited range of motion through the spine, and his struggle with spinal articulation (specifically in the lower and middle parts of the spine). Both of these things have encouraged him to re-examine his weight lifting program. Pilates and the BASI Block System has proved to be extremely beneficial for this male athlete.
Bibliography

**Pilates Anatomy** Rael Isacowitz & Karen Clippinger

**The Concise Book of Muscles** Chris Jarmey

**Study Guide** Body Arts & Sciences International

**Reformer** BASI

**Cadillac** BASI

**Mat** BASI

**Wunda Chair and Ladder Barrel** BASI