Pilates for Running

An Examination of Cross-Training & Core Strengthening

Karissa Berg

November 11th 2013

CTTC University Place 2013
Abstract

Running is undeniably one of the best forms of cardiovascular exercise. No matter what type of runner you are: long distance, short distance, for leisure, or as a profession, the repetitive movement is all the same. Naturally imbalances occur, whether it be a weak core, bad posture, or tight muscles. To enhance running, Pilates is a great tool to help counteract those imbalances. Utilizing a special Pilates program for a runner’s needs can be of upmost benefit. In this paper a case study was performed on a runner, James, who typically ran up to 5 miles three times a week. I laid out a Pilates program that included core strengthening, leg strengthening and stretching, posture, as well as balance. By the end of the program James found that he had more flexibility, less soreness, and overall better running experience. This demonstrates the wonderful effects that Pilates can have as a cross-training method.
## Table of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page 1</td>
<td>Title Page</td>
</tr>
<tr>
<td>Page 2</td>
<td>Abstract</td>
</tr>
<tr>
<td>Page 3</td>
<td>Table of Contents</td>
</tr>
<tr>
<td>Page 4-5</td>
<td>Anatomical Description</td>
</tr>
<tr>
<td>Page 6</td>
<td>Case Study</td>
</tr>
<tr>
<td>Page 7-10</td>
<td>Conditioning Program</td>
</tr>
<tr>
<td>Page 11</td>
<td>Conclusion</td>
</tr>
<tr>
<td>Page 12</td>
<td>Bibliography</td>
</tr>
</tbody>
</table>
Anatomical Description

Running affects a wide variety of muscle groups. The most important groups are the core and the legs. Figure 1 shows the primary core muscles, vital for the impact of running, body alignment, and balance. Figure 2 shows the primary leg muscles which are utilized the most in a run. Strengthening and stretching these muscles will improve flexibility as well as prevent injury.

![Muscles of the core](image)

**Figure 1: Muscles of the core**
Figure 2: Muscles of the legs
Case Study

Name: James Truitt
Age: 26
Sex: Male
Limitations: Tight hamstrings & hip flexors, knee pain, shoulder pain from posture while running, core weakness.

James Truitt is a 26 year old active male and frequent runner. He typically runs three times a week and averages 5 miles each run. He tends to have problems with tight hamstrings and hip flexors, knee pain, shoulder pain due to his posture. James has participated in many half marathons and is currently training for the Seattle full marathon. He has decided to use Pilates as a cross-training method in order to alleviate his pain, gain more endurance, and flexibility. James has committed to coming to private Pilates sessions twice a week for eight weeks up until his full marathon.

To help James achieve his goals I have tailored a Pilates program specifically for his running habits. He is new to Pilates but has limited experience with yoga. Yoga has helped James stretch, however his core strength is still lacking. In order to ease him into a Pilates regiment I will start him with a basic session focusing on strengthening his core, calf muscles, hamstrings, and quads. I will also help him with stretching the hamstrings and hip flexors.

As James begins to progress in his practice our sessions will advance. I will be logging each session by block and exercise in order to track his progress. Additionally I will keep an open line of communication between us to ensure that he is seeing results in his running. As his understanding of Pilates grows I will give him at-home mat exercises that he can practice in his free time. I have also provided him with a basic stretching routine that he can use before and after his runs.
Typical 0-10 Week Conditioning Program Session

Block: Warm Up
Apparatus: Mat Work
Exercises: Pelvic Curl, Spine Twist Supine, Chest Lift, Chest Lift with Rotation

I chose this warm up for James with the mindset that he is a beginner. I began by having James perform a roll down and explained the neutral position of the spine. Pelvic curls helped James warm the spine up and activate the hamstrings as well as abdominals. Spine twist supine helped maintain shoulder stabilization while utilizing his abdominals with oblique emphasis to draw the legs to center each time. Chest lifts help James build a foundation for a strong core, and adding the rotation targets his oblique’s.

Block: Foot Work
Apparatus: Cadillac
Exercises: Parallel Heels, Parallel Toes, V Position Toes, Open V Position Heels, Open V Position Toes, Calf Raises, Prances, Single Leg Heel, Single Leg Toes

Foot work on the Cadillac helped James to build strength in his quads, hamstrings, and knee extensor strength while maintaining his pelvic and lumbar stability. Calf raises and Prances targeted James’s foot plantar flexors. Foot work on the Cadillac also stretches his hamstrings.
Block: Abdominals

Apparatus: Spine Corrector

Exercises: Chest Lift (step barrel), Overhead Stretch, The Reach

Because James is fairly weak in his abdominals I chose a basic series of abdominal work, focusing on posture and correct engagement of muscles to execute the exercise.

Block: Hip Work

Apparatus: Reformer

Exercises: Frog, Circles Down, Circles Up, Openings

Executing the hip work on reformer will target James’s hip adductors and abductors. This hip work will create movement throughout his hip joints, as well as increase muscle in areas not usually utilized in his running.

Block: Stretches

Apparatus: Ladder Barrel

Exercises: Gluteal, Hamstrings, Adductors, Hip Flexors

I chose stretching using the ladder barrel for James because it targets all the tight areas in his legs caused by running. Loosening these areas will create more flexibility.
Block: Arm Work
Apparatus: Reformer
Exercises: Extension, Adduction, Up Circles, Down Circles, Triceps

While the main focus is the arms, arm supine series requires pelvic lumbar stabilization and abdominal strength. As James was working on his arm strength he was also focusing on his abdominals and breathing at the same time.

Block: Leg Work
Apparatus: Wunda Chair
Exercise: Hamstring Curl

I chose Hamstring Curl because of the focus on knee flexor and hamstring strength both of which will help James immensely with his running.

Block: Lateral Flexion/Rotation
Apparatus: Wunda Chair
Exercise: Side Stretch

I had James perform side stretch on the wunda chair to target his abdominals and oblique’s. With a stronger core James’s posture will begin to improve.
Block: Back Extension

Apparatus: Mat

Exercise: Swimming

Lastly, I had James execute swimming for back extension. This focused him on his back extensors and breathing. Back extensor strength along with abdominal strength helps support the spine for posture during running. We completed the session with a roll down.
Conclusion

Long distance running can be an excellent source of cardio and overall physical fitness activity. However running can also have a high impact on the skeletal structure and joints. Cross-training with a specifically tailored Pilates plan can prevent serious negative effects on the body. In our case study, having James perform exercises that focused abdominal and back extensor strength helped improve his posture while running. Focusing on strengthening and stretching the leg muscles enhanced his endurance and reduced muscle soreness after long runs. In addition, James expressed an overall greater satisfaction with his weekly runs. As a whole, this demonstrates that Pilates helps to create balance, flexibility, strength, and improve endurance for runners.
Bibliography

“How Pilates for Runners Works”, by Ed Grabianowski

“Pilates and Running” by Beth Begelman
http://www.pilatesdigest.com/pilates-and-running/

BASI Study Guide, Comprehensive Course, by Rael Isacowitz