

BASI Pilates

Pain and Postural Deviations in Ankylosing Spondylitis

Student Research Paper

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Abstract

Ankylosing Spondylitis (AS) is a form of arthritis most commonly affecting the spinal joints, but can also cause inflammation that extends to other joints including the hips, knees, and shoulders. The inflammation caused by AS leads to stiffness and pain in the affected joints and can be more severe during an exacerbation, or a “flare-up of symptoms, followed by remission where symptoms are lessened. This pain is known to be more severe in the morning and eases as the day goes on; however, AS is associated with an overall decreased quality of life, especially in more severe cases (“About Spondylitis”).

AS is a chronic illness with no known cure; however, many treatments options are available to help alleviate symptoms and manage chronic pain. Treatment options include medications, stress management, nutrition therapy, and exercise. Importantly, a special emphasis can be placed on exercise as an important part of treating AS in that exercise regimens, specifically Pilates, help to improve flexibility and maintain range of motion, lessen joint pains, and assist in preventing changes in posture (“About Spondylitis”).

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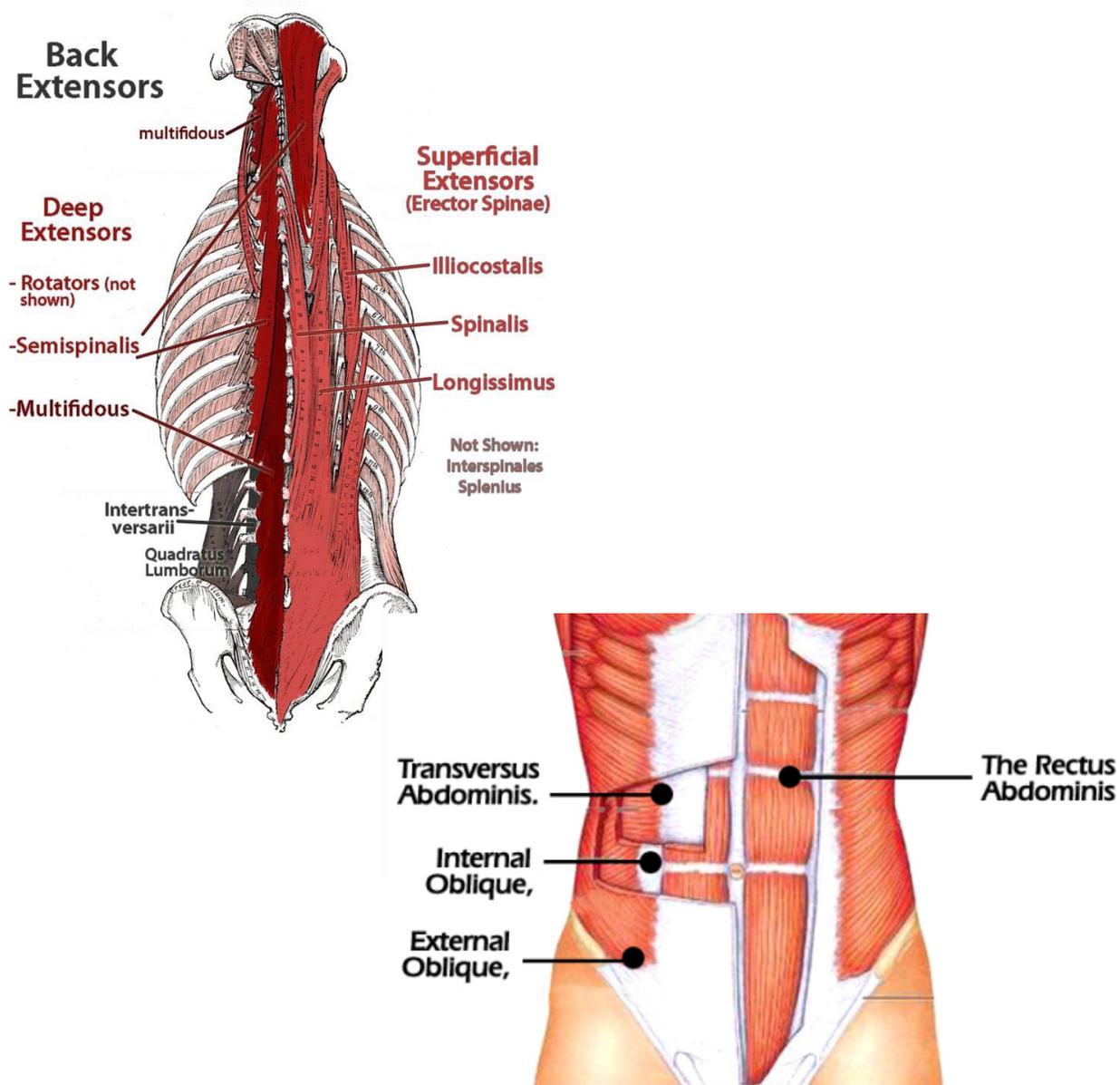
AS Research | Anatomical Description

Ankylosing Spondylitis (AS) is a form of arthritis predominantly affecting one or more areas of the spine with the potential for inflammation to extend to other joints including the shoulders, hips, knees and the hands and feet. Early symptoms of AS include gradual increase in pain and stiffness in the lower back that, over time, can spread upwards towards the neck. The pain associated with AS is explained to be a dull-type ache and is not localized to a specific area, but rather spread diffusely. Additionally, the pain is commonly known to be worse in the morning and can be alleviated by movement as the day goes on or more specifically, exercise (Isacowitz, 2013).

Over time, due to the stiffness, those with AS are prone to poor posture practices that can eventually lead to a “hunchback” of the spine, or kyphosis. Maintaining good posture practices is key to managing AS, making Pilates an exceptional choice for those living with the condition. The muscles of abdominals and back are essential in allowing the body to move in all planes of motion, therefore maintaining a supple spine. Furthermore, those living with AS should practice movements that incorporate rotation, lateral flexion, and spinal extension. A special emphasis should be placed on the transverse abdominus and the multifidus for trunk stabilization throughout these varying movements to help maintain an ideal posture (Isacowitz, 2013).

Other prime movers of importance are the spinal rotators (external and internal obliqui, erector spinae), the lateral flexors of the spine (external and internal oblique, quadratus lumborum, and erector spinae), and lastly the spinal extensor, spinalis,

longissimus, and iliocostalis (Isacowitz 2013). These muscles work together to produce various spinal movements that aide in spinal mobility, therefore increased flexibility and less pain.



Caroline. "All About That Core." Hello, Confidence!, 20 Mar. 2015, helloconfidence.com/2015/03/20/all-about-that-core/.

Case Study

When I met ST for his first Pilates session, he did not have a diagnosis of Ankylosing Spondylitis. He complained of a dull, low-back pain that he believed to be mechanical in nature and felt that exercise, Pilates specifically, would help me with managing his back pain. ST was 35 years old and had been working out consisting of weight training and running for many years. He appeared physically fit, but his poor posture was noticeable with a tendency to hunch over, or collapse through the front of the chest. Below, the first sessions is outlined using the BASI block system.

Block	Exercise	Desired Outcome
	Roll Down x3	Asses posture and alignment
Warm Up	(F) Pelvic Curl Spine Twist Supine Chest Lift Chest Lift + Rotation	Warm up Spinal articulation, hamstring control, pelvic lumbar stabilization, abdominal strength and control
Foot Work	<i>Reformer (F)</i> Parallel Heels Parallel Toes V Position Heels V Position Toes Calf Raises Prances Single Leg Heel Single Leg Toes	Hip Extensor/Knee Extensor Strength, ankle plantar flexor strength/stretch
Abdominal Work	<i>Reformer (F)</i> Hundred Prep	Abdominal Strength
Hip Work	<i>Reformer (F)</i> Frog Openings Circles Down, Up	Pelvic lumbar stabilization Hip adductor strength Knee extensor control
Spinal Articulation	<i>Reformer (F)</i> Bottom Lift	Hip extensor control Spinal articulation
Stretches	<i>Reformer (F)</i> Standing Lunge	Hip flexor and hamstring stretch
Full Body Integration	<i>Reformer (F)</i> Scooter	Trunk and shoulder stabilization, hip and knee extensor control and strength

Arm Work	<i>Reformer, Arms Supine (F)</i> Extension Adduction Circles Up, Down Triceps	Should extensor and adductor strength, scapular stabilization, shoulder mobility and elbow extensor strength
Leg Work	<i>Wunda Chair (F)</i> Hamstring curl	Knee flexor strength and pelvic lumbar stabilization
Lateral Flexion/Rotation	<i>Wunda Chair (F)</i> Side Stretch	Lateral flexor stretch and abdominal control with focus on obliques
Back Extension	<i>Wunda Chair (F)</i> Swan Basic	Abdominal control, scapular stabilization and back extensor strength

During ST’s first session, I was able to notice the stiffness originating from his spine during the first roll down in the beginning of the session. During my time as a teacher, I have seen many stiff bodies, so this was not out of the ordinary or a red flag to me at the time. Additionally, ST struggled with exercises utilizing spinal articulation, including the pelvic curl and bottom lift. ST spoke about how much better he felt after his session and I continued to work with him weekly over the next two months until he finally received an answer for his chronic back pain – an official diagnosis of Ankylosing Spondylitis. Prior to his official diagnosis, he was able to advance to a more intermediate level, despite his difficulty with articulating his spine. He was quite strong and I began to notice a difference in his posture as time went on.

Fortunately, ST experienced mostly mild symptoms, so I was able to continue working with him following his diagnosis. He stated that he contributes his milder symptoms to be a result of his commitment to the practicing Pilates. Below is an outline of a session I taught after learning of ST’s diagnosis.

Block	Exercise	Desired Outcome
	Roll Down x3	Assess posture and alignment
Warm Up	<i>Cadillac</i> Roll up w/ RU bar Mini Roll Up Mini Roll Up, oblique Roll up top loaded Spine twist supine	Abdominal control/strength, trunk stabilization, pelvic lumbar stabilization, strength with focus on obliques, shoulder stretch
Foot Work	<i>Cadillac</i> Parallel Heels Parallel Toes V Position Heels V Position Toes Calf Raises Prances Single Leg Heel Single Leg Toes	Hip Extensor/Knee Extensor Strength, ankle plantar flexor strength/stretch
Abdominal Work	<i>Cadillac (I)</i> Breathing with PTB	Spinal articulation, improve coordination, balance and breathing
Hip Work	<i>Cadillac, single leg supine (I)</i> Frog Circles up, down Hip extension Bicycle	Hip and knee extensor control, pelvic lumbar stabilization, adductor control, and coordination
Spinal Articulation	<i>Reformer (I)</i> Semi circle	Hip extensor control Spinal articulation
Stretches	<i>Step Barrel (F)</i> Shoulder stretch lying side	Shoulder control and stretch, thoracic stretch
Full Body Integration	<i>Reformer</i> Elephant (F) Down Stretch (i)	Trunk and shoulder stabilization, hamstring stretch, shoulder stretch Trunk stabilization and shoulder extensor strength
Arm Work	Reformer, kneeling arms (I) Chest expansion Up circles, down circles Triceps Biceps	Shoulder and elbow extensor strength, trunk stabilization Shoulder abductor strength and flexor strength

Leg Work	<i>Wunda Chair (A)</i> Forward Lunge	Hip extensor and abductor strength, knee extensor strength
Lateral Flexion/Rotation	<i>Wunda Chair</i> Side kneeling stretch (I)	Oblique control and stretch
Back Extension	<i>Wunda Chair</i> Swan on the floor, (I)	Scapular stabilization, back extensor strength and shoulder extensor control

The purpose for the exercises I chose to teach to ST following his diagnosis were selected in order to keep him moving in all ranges of motion with a focus on the postural muscles. Because of ST's bias towards spinal flexion, I attempted to limit the amount of exercises performed in this position in addition to teaching them in the beginning of the session. The remainder was focused more-so on trunk stabilization, back extensor control and stretch, and thoracic stretch and mobilization.

After a few weeks of teaching Pilates to ST, I was able to notice a major change in how he stood and performed different exercises. Both his spinal articulation and range of motion in the shoulder and thoracic spine were the most notable differences. Eventually, ST decided to enter group classes with the confidence of knowing the principles of Pilates and what works given his spinal condition. He continues to practice Pilates at least once week in addition to his other physical activities.

Conclusion

In conclusion, with the objectives of the Pilates methods surrounding overall strength and flexibility and alignment and posture, it continues to be an excellent choice as a conditioning program for those living with Ankylosing Spondylitis. Aside from the well-known physical benefits of Pilates, it is important to note the mental health benefits that Pilates can provide – focus, patience and improvement in mood and overall outlook in life. All of these outcomes, both physical and mental, are equally important for those living with chronic pain and contributing symptoms of Ankylosing Spondylitis.

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