The Benefits of Pilates for Myofascial Pain Syndrome

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Acknowledgments

I was inspired to take this course after I attended a workshop in the summer of 2016 in Athens with Rael Isacowitz. I am ever so grateful for Rael and BASI’s vision for making such an amazing course and for all the knowledge and inspiration it gave me.

First of all, I would like to dedicate this paper to my loving husband and my dearest children, not only for all their support but mostly for their understanding for all the time I took from them from the very beginning of my training.

Secondly, to my much-loved friend Kapi, who kindly and patiently became my first student and showed her devotion to me until today.

To my beloved faculty instructors Patricia and Tash. Thank you, Patricia, for caring and for sharing your knowledge so generously with me. Thank you, Tash, for all your support, encouragement and boosting my confidence when I really needed it!

I’m also very grateful to Lucy, who was by my side from day one of this program helping and believing in me. Additionally, a big thank you to Mirka who spent hours with me practicing and teaching each other!

Last but not least, to my precious friend and teacher Maryliz, with whom I made the BASI journey, step by step, hand by hand, and who grew to become a “sister” to me!
Abstract

This paper aims to describe the benefits of Pilates for Myofascial Pain Syndrome, which is a common syndrome occurring nowadays, not only due to spinal alignment deviations and muscle imbalances, but also due to bad habits in everyday life.

My student came to me after the doctor’s recommendation to do Pilates as one of the treatments for her Myofascial Pain Syndrome, mainly located in her upper back and neck area. I spent some time understanding her case, and based on the BASI Block System, I prepared two conditioning programs over an eight-week period, which I’ve outlined in this paper.

We’ve started our lessons together and the first results proved to be effective in relieving pain and tension. The aim is to continue the conditioning program to achieve overall improvements in the spinal alignment and posture.
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Anatomical Description

The Myofascial (Muscle + Fascial) System

Fascia is a “web” - a connective tissue that envelops, connects, supports and invests all of the structures of the body. (Oscar, E. and Bussard, M., 2015).

Figure 1: Fascia is a web.

The fascial system of the human body has been called the ‘Organ of Stability and Mechano-regulation’ (Myers, T.W. 2011, citing Valera and Frenk), which means that its job is to do just that: to provide stability and maintain it by adapting to whatever mechanical forces it encounters (Oscar, E. and Bussard, M. 2015).

The Myofascial System refers to the interwoven and inseparable nature of the muscles and the fascia; together, the myofascial system creates stability and integrity in the body through tensile forces. (Oscar, E. and Bussard, M. 2015).
Myofascial Pain Syndrome and its Causes

Myofascial Pain Syndrome, which is a very common condition nowadays, is a collection of signs and symptoms in a particular area of the body that indicates muscle trauma. Ideally, the fit of the bones is designed to keep the body’s posture upright and moving smoothly; however, when this is not occurring, muscles take over the job and eventually get fatigued. As such, poor posture is one of the primary causes of Myofascial Pain Syndrome. Other factors can include serious lack of exercise and movement, generalized fatigue and lack of sleep. (Asher, A. 2018).

Citing the words of Dr. Sheriff Gamil, Specialist Orthopedic Surgery, “Myofascial Pain Syndrome” is not a disease; it is a syndrome out of which 50% is a ‘muscular’ issue and the other 50% is ‘psychological’; so, tension, stress and emotional problems (e.g. depression, anxiety) play a vital role. Besides, it has been said that muscles are a window to the brain (Butler, D. and Mosely, L. 2013). Truly, our thoughts, emotions and beliefs are reflected in our posture and movement patterns and the mechanical tensions associated with them. (Oscar, E. and Bussard, M. 2015).

Kyphosis

Before describing how the “Myofascial Pain Cycle” occurs and affects the person and the body it would be necessary to talk a little bit more about the primary and most common cause of the syndrome, that of “poor posture”. For the purpose of this paper we will be referring to “poor posture” focusing on the area of the upper back and neck.
One of the most typical alignment problems is an “exaggeration of the curvature in a given region of the spine; exaggeration of the cervical curve is often associated with the alignment problem called ‘forward head’ in which the chin juts forward and the earlobe is forward relative to the plumb line and shoulders. This increased curve in the thoracic region is termed as Kyphosis”. (Isacowitz R. and Clippinger, K. 2011).

In that postural syndrome, as the upper back appears curved, the shoulders are rounded (rolled shoulders) and the scapula (shoulder blades) are protracted, meaning that they are positioned further away from the spine. (Sports Injury Clinic).

Figure 2: (a) Ideal standing alignment, (b) kyphotic posture.
Thus, this cervical poor posture is mainly caused by the following imbalances of muscles in the upper back and neck:

- The pectoralis major and minor muscles and the muscles in the back of the neck are shortened and tight.
- The muscles of the back of the shoulders and upper back (trapezius, latissimus dorsi and rhomboids) are weakened and stretched.
- In particular the sternocleidomastoid muscle is tight and shortened causing the jaw to be postured forwards. (Sports Injury Clinic).

Most of these muscles mentioned above, pectoralis minor, trapezius, rhomboids (of course along with the serratus anterior and levator scapulae) are main muscles that the shoulder girdle depends on. And this brings us to what Rael Isacowitz and Karren Clippinger pointed out in their book “Pilates Anatomy, that “movements of the shoulder girdle are very depended on muscles and muscle imbalances can easily lead to alignment problems”.

**Myofascial Pain Cycle**

Whilst talking about alignment problems and muscle imbalances it is worth giving an example from everyday life that I believe anyone could relate to. When you sit at your computer all day long and your upper body begins to slump forward to raise your head to see the screen, you use your upper trapezius muscle – which is located at the top of your shoulders.
The ‘upper trapezius’ muscle is now working at something it is not really supposed to do and it is doing so continuously and for a prolonged period of time. There is little or no time for rest and relaxation; instead the continual contraction of the trapezius causes microscopic injury to this muscle. The normal or self-protective response of an injured muscle is to seize up or spasm. But in this case, the extra input of tension into the trapezius intensifies the situation; the constriction in the muscle reduces nourishing blood flow to the area, which in turn causes pain, the pain signals the cycle to begin again which eventually causes the muscle to create trigger points, which may lead to disability.

If the spasm-pain-spasm cycle is not interrupted to be treated, it will most likely repeat endlessly and the problem will become chronic; “Chronic Myofascial Pain Syndrome”. Therefore, Myofascial Pain Syndrome shows up as ‘active trigger points’ in muscles and if left untreated, it’s often experienced as a recurring ‘cycle of spasm’ (restriction in the soft tissue): spasm – pain – spasm again. (Asher, A. 2018).
‘Active Trigger points’, can be felt not only where they are located but also as pain referred to other areas. Each muscle has a particular referral pattern; in other words, pain that goes from a trigger point in a specific muscle to another place in the body will show up pretty much the same way in every person who has trigger points in that particular muscle.

When this ‘spasm-pain-spasm cycle’ occurs, blood flow decreases, and it causes the muscle to develop ‘active trigger points’, which cause pain that leads back to more spasms, and the cycle repeats itself.

**Figure 4: Trigger points.**

**Symptoms**

Myofascial Pain Syndrome can affect your quality of life; you may not be able to participate in physical activities that you used to enjoy. It limits flexibility and muscles become tight, tense and taut and joint range of motion decreases; all these cause pain and dysfunction in the musculoskeletal system and all these together could lead to depression and even isolation. Generally, myofascial pain can be found in the shoulders and neck but also arms, face, low/upper back, and /or legs. (Asher, A. 2018 and Osborn, C. 2017).
Case Study

Introduction

The whole problem feels like one vicious circle itself; upper back muscle imbalances, poor posture, incorrect scapular movements leading to further muscle imbalances and more alignment deviations, muscles get fatigued, tensed and tight and if remained untreated, they get traumatized, then range of motion decreases and movement is poorly performed. Eventually, if all these conditions remain without treatment or corrections this will lead to a “Chronic Myofascial Pain Syndrome”.

It can occur in all sections of the population. Even, in the sports world for example, cyclists and baseball catchers are at risk as they have to hold postures for long periods of time. (Internet, Sports Injury Clinic).

Body

Sophia, my 40-year old client was diagnosed with Myofascial Pain Syndrome three months ago. Sophia had been very sporty and active all her life; from ballet and contemporary dance in her youth, to volleyball and tennis. Since giving birth in her early thirties to 2 children, she was following gym fitness programs, doing cardio classes (e.g. step class, body combat) and also light weight lifting classes for strength (body pump). Pilates Mat classes have been part of her life for the last 6 years along with the other fitness programs and she recently (2 months ago) started private sessions using the Pilates apparatus.

In the meantime, being a full-time active mom, Sophia got a new part time job which demanded a lot of reading, writing and ‘computer work’ which involved spending a lot of time at a desk.
Coordinating and keeping up with all responsibilities of family and work, and maintaining her very active athletic life, Sophia started feeling a lot of tension and stress.

When I first met Sophia, I could not avoid noticing her ‘kyphotic’ tendency, where her upper back appeared to be curved with the shoulders rounding forward, her scapulae protracted (positioned away from the spine) and her chin slightly poking forward rather than being tucked in.

Putting all these details about Sophia and her lifestyle together, it seems that she fulfills all the preconditions to develop a Chronic Myofascial Pain Syndrome mainly affecting the area of her upper back, her shoulder girdle and her neck. Thus, after visiting the doctor, Sophia was partially treated with oral medication, including analgesics, pain relievers and muscle relaxants for 10 days. According to the doctor, this alone would never solve the problem but would rather only relieve the pain. She was also prescribed with 20 sessions of physiotherapy. During her physio-sessions her therapist used therapy message to increase the blood flow in the area and to warm up the muscles in order to release muscle stiffness, tension and pain.

During the therapeutic messages, the therapist avoided using the thumb to put pressure on the trigger points as this only aggravated the pain. Instead, it was decided to follow the method of ‘dry needling’, one of the most effective and quickest methods to inactivate myofascial trigger points. However, after all these treatments, citing Dr. Sheriff’s words, “when medication is finished and physio is over, this is when Pilates comes in” to assist in targeting the problem from its root.
And this is more or less how Sophia and I got together. From our first session after hearing all the details about her life, I assessed her posture and it was obvious that her back had a kyphotic tendency. As I correctly suspected after our first session, most of her arm and scapular movements were being performed in an undesirable manner.

It is exactly what Rael Isacowitz and Karen Klippinger very accurately and clearly explained in their book “Pilates Anatomy”: “One of the most common dysfunctional movements of the shoulder girdle, the movements of the scapula, is when the arm rises to the side or to the front. Ideally, when the arm moves the scapula would move in a coordinated manner that would allow the humerus to maintain proper positioning in the shoulder socket.” However, in our case, “as the arm moves upwards, there is an undesired excessive elevation of the scapula”, which means that the wrong muscle has taken over to make an unnecessary movement.

Figure 5: (a) Upward and downward rotation, (b) use of scapular depressors to avoid excessive elevation of each scapula as the arms are raised overhead.
**Conditioning Program**

The main target of the Conditioning Program designed for Sophia is, of course to strengthen the muscles that are important for her correct alignment and not to forget her core stability. Equally important is to make her feel the correct alignment; to guide her how to hone the skills for quickly achieving this correct alignment and to practice with her how to utilize this alignment, in both her sports and her everyday life activities. “Research suggests that with repetitive activation of the desired muscles in the appropriate manner, overtime your body will automatically start utilizing these more optimal strategies”. (Isacowitz R. and Clippinger, K. 2011).

More anatomically speaking, I’ll try to educate Sophia on how to use her scapular depressors to pull the scapulae slightly down before lifting the arms, to encourage use of these muscles as the arms move. We will try to balance the use between the upper trapezius, which elevates the scapulae and the lower trapezius which depresses the scapulae. (Isacowitz R. and Clippinger, K. 2011). At the same time, we will attempt to strengthen her back extensors, ‘Erector Spinae Muscle Group”, which are also responsible for the posture as well as the head and arm movement. Finally, we will work on strengthening the “Rhomboid” muscles, right underneath the trapezius as they both work together to adduct (or to bring towards the middle of the body) the shoulder blades. (Salyer, J. 2017).

It is necessary to clarify here that Sophia’s level is intermediate as she has been doing Pilates for quite a long time. Moreover, due her prolonged experience with sports she is also quite aware of her body.
### BASI Block System

**Weeks 1 – 4**

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<th>Exercise</th>
<th>Reasons and Purpose</th>
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<td>Basic:</td>
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<td>We want to make sure that the client is able to perform all these fundamental exercises. We need to start mobilizing the spine in different directions and start focusing on the right alignment especially that of the upper back. (E.g. keeping shoulders relaxed and down on mat during spine twist; or keeping the head in alignment with the spine during chest lift).</td>
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<tr>
<td>• Pelvic Curl</td>
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<td>• Spine Twist Supine</td>
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<tr>
<td>• Chest Lift</td>
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<td>• Chest Lift with Rotation</td>
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<tr>
<th>FOOTWORK</th>
<th>Wunda chair:</th>
<th>Reasons and Purpose</th>
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<tbody>
<tr>
<td></td>
<td>• Parallel Heels</td>
<td>Giving a good opportunity to work the client’s upright position, to learn to keep the trunk stable, to be able to focus on co-contraction of abdominals and back extensors and through the different arm positions to learn to control the movement (especially the unnecessary elevation) of the scapula.</td>
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<tr>
<td>• Parallel Toes</td>
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<tr>
<td>• V position Toes</td>
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<tr>
<td>• Open V heels</td>
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<td>• Open V toes</td>
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<tr>
<td>• Calf Raises</td>
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<tr>
<td>• Single Leg Heel</td>
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<td>• Single Leg Toes</td>
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<tr>
<th>ABDOMINAL</th>
<th>Step Barrel:</th>
<th>Reasons and Purpose</th>
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<tbody>
<tr>
<td>• Chest Lift</td>
<td>It is an extraordinary and yet safe way, especially for a curved thoracic spine to start opening up and stretching, while you strengthen the abdominals! At the same time, you educate the spine, while safely supporting it, to work in all directions; from an upper back extension, through neutral, all the way to flexion. The client learns to keep the head in alignment with and without support so the neck muscles are not tensed or overworked. And it is a wonderful way to mobilize and stretch the shoulders!</td>
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<tr>
<td>• Reach</td>
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<tr>
<td>• Overhead Stretch</td>
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<tr>
<th>HIPS</th>
<th>Step Barrel:</th>
<th>Reasons and Purpose</th>
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<td></td>
<td>• Openings</td>
<td>It can help the client get the feeling that the upper back is supported by the mat; to learn to avoid putting tension on the neck but keep the weight on the shoulder girdle. And while working the hips, she can feel perhaps a stretch happening across the chest, control shoulders from rounding forward and work on her trunk stability while legs are moving.</td>
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<tr>
<td></td>
<td>• Helicopter</td>
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<td>• Scissors</td>
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<tr>
<td></td>
<td>• Bicycle</td>
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<td></td>
<td>• Bicycle reverse</td>
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<tr>
<th>SPINAL ART</th>
<th>Step barrel:</th>
<th>Reasons and Purpose</th>
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<tr>
<td></td>
<td>• Roll Over</td>
<td>From there the client is ready to move into a roll over as she can control now to avoid putting tension on the neck. The articulation of the spine with the support of the barrel here allows the client to stretch more of the lower back while keeping shoulder girdle on the mat.</td>
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<tr>
<th>STRESCHES</th>
<th>Step Barrel:</th>
<th>Reasons and Purpose</th>
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<tbody>
<tr>
<td></td>
<td>• Shoulder Stretch</td>
<td>What an incredible way to stretch the thoracic spine and the tight shoulders of our client; to release all her tension from her neck muscles by allowing her head to roll back and forward, naturally following the path of the body. At the same time, we are focusing on the Latissimus dorsi and pectorals, muscles of great</td>
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<tr>
<td>Lying Side</td>
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<tr>
<td>Ladder Barrel:</td>
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<td></td>
</tr>
<tr>
<td>• Shoulder Stretch 1</td>
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<tr>
<td>• Shoulder Stretch 2</td>
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importance if we want to correct our clients posture and scapula movement.
And of course, a shoulder extensor and flexor stretch at the Ladder Barrel, will encourage especially with the shoulder mobility.

**FBI 1**

**Mat:**
- Front Support
- Back Support

Keeping the flow of the session by moving into the Mat, to target not only abdominals but we care more about in our case study, the scapular stabilizers. Strengthening both (abdominals and scapular stabilizers will support our client in her effort to manage to keep her body in a straight line from head to toes!
After having stretched her shoulder extensors (just in the previous block) now we will strengthen them with Back Support; the client here, will also have to maintain co-contraction of the abdominals and back extensors to keep that neutrality of the spine, the neutrality of the scapulae, and at the same time the shoulder extensors are strengthening!

**ARMS**

**Wunda Chair:**
- Shrugs
- Tricepts Press Sit

Shrugs: what a better way than this fundamental exercise to make someone understand and control the scapular movement.
Supporting the overworked ‘upper trapezius’ to elevate the scapulae with the help of the pedal and then engaging/strengthening the ‘middle trapezius’ [muscle responsible for the retraction [adduction] of the scapula] and then strengthening the ‘lower trapezius’ who is responsible for the depression of the scapulae and (along with the upper trapezius) it will rotate scapulae to lift the arm overhead.
It’s a wonderful exercise for our client to control and at the same time support, an upright position and the scapulae movement from rolling forward.
Then focusing on stabilizing the scapulae the client will strengthen Triceps while getting a stretch across the chest.

**FBI 2**

**Wunda Chair:**
- Tendon Stretch

Having focused mostly on working the upper back towards an extension and a neutral position, I believe it would be necessary to work on how to stabilize the shoulders while the upper body is in flexion. It is also important to mention that we want to target the serratus anterior here, the muscle which is responsible for stabilizing scapulae during a push up type movement and which rotates scapulae from abducting and raising arm. (Bandhayoga.com)

**LEGS**

**Wunda Chair:**
- Frog Front

Again, here we want to focus on maintaining trunk stabilization, by keeping more of an upright position with the upper body; we also focus on scapulae stabilization as the legs work.

**LAT FLEX / ROTATION**

**Wunda Chair:**
- Side Kneeling Stretch

Focusing once more on maintaining stable scapulae in a neutral position, while the body this time is working laterally to strengthen oblique abdominals.
### BACK EXTENSION

**Wunda Chair:**
- Swan Basic
- Swan on the floor

Using the support of the pedal to strengthen back extensors is a very safe way to do so, especially when the specific area of the body is already in traumatized.

The client also gets a better feeling of whether scapulae are being stable throughout the movement (from neutral spine to back extension).

Coming on “Swan on the floor” we demand from the client a bit more of an effort; to engage her back extensors even more to enhance their strength and a little bit more effort to stabilize her scapulae and as now the pedal is working like an extra challenge in her movement. Also, this exercise is helping the client to increase shoulder extensor control!

### Weeks 5 - 8

<table>
<thead>
<tr>
<th>BASI Block System</th>
<th>Exercise</th>
<th>Reasons and Purpose</th>
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</table>
| **WARM UP**       | Intermediate:  
- Roll Up  
- Spine Twist Supine  
- Double Leg Stretch  
- Single Leg Stretch  
- Criss Cross | The client has been ready to move into a more dynamic and intermediate warm up. With the ‘roll up’, the client will learn how to feel and control the scapulae through the articulation of the spine, from neutral all the way to a C curve. This is also a very nice way to learn how to keep the head in alignment with the spine throughout the movement, so she stops putting excessive tension in her neck muscles. She is getting a nice thoracic stretch with “Spine Twist Supine”. And finally, she works on the trunk stabilization with the three abdominal exercises. She also works on keeping the head aligned with the spine in flexion and to focus on the abdominal engagement rather than putting tension in the neck muscles. |
| **FOOTWORK**      | Cadillac:  
- Parallel Heels  
- Parallel Toes  
- V Position Toes  
- Open V Heels  
- Open V Toes  
- Calf Raises  
- Prances  
- Single Leg Heel  
- Single Leg Toes  
- Hip Opener | A very active and sporty person like Sophia needs a very good stretch in her hamstrings. I believe footwork in the Cadillac is one of the most effective ways to do that. In addition, with her back supported on the Cadillac, she can learn to feel her scapulae wide and flat on the ‘mat’, keeping shoulders form rounding forward, her chest open, and the neck muscles are without tension, as the head is aligned with the spine and supported by the Cadillac. |
| **ABDOMINAL**     | Reformer:  
- Short Box Series:  
  - Round Back  
  - Flat Back | Round Back: is a very nice exercise to make the client understand how the C curve is happening by pulling deeply into the abdominals and the upper back is rounding as a natural response to that deep lumbar flexion rather than curving just the thorax. |
• Tilt
• Twist
• Round About
• Climb-A-Tree
Then, we get the opportunity here with the rest of the series, to work on the abdominals and the back extensors at the same time by co-contracting them equally to maintain movement with a flat back. Also, this is a great chance for the client to work on keeping the head in alignment while supporting it slightly by giving her the option to position her hands with interlaced fingers behind the head (like in “Tilt”) until the “Roundabout”.
And finally, a great benefit for Sophia, is that back extension during “Climb-A-Tree” as she will feel the chest muscles opening and stretching while the arms circle overhead!

HIPS
**Reformer:**
• Frog
• Circles Down
• Circles Up
• Openings
While the client is strengthening and stretching her hip adductors, the client can work on maintaining her chest nice and open keeping her arms active and long by her side to maintain slight activity in the upper back there.

SPINAL ART
**Reformer:**
• Semi-Circle
The wide range of spine mobility and articulation of this exercise, allows the client to stretch once more the upper back and the chest in a unique way! Again, she can work on keeping all weight on her shoulder girdle, avoiding tension on the neck muscles and the body positioning will help her to keep arms stretched while being overhead; pushing into the shoulder rests can help her to control the shoulders from excessive elevating.

STRECHES
**Cadillac:**
• Shoulder Stretch
One the best ways to mobilize and stretch the shoulders especially when they suffer from tension and tautness. This exercise could be considered therapeutic in our case.

FBI 1
**Cadillac:**
• Side Reach
• Kneeling Cat Stretch
A great exercise for mobility, stretching at the same time the shoulders adductors, focusing on opening the chest and stretching the back as the thoracic spine has to remain isolated from the lumbar spine (which has to remain in flexion). With “Cat stretch Kneeling”, while mobilizing the whole spine, we are strengthening the back extensors, working on scapular stabilization and we also offer a tremendous shoulder stretch! Main targets for our client.

ARMS
**Cadillac:**
• Shoulder Adduction
  • Single Arm
  • Double Arm
Or Alternatively,
• Sitting Side Prep
• Sitting Side
An effective way to make our client understand how to focus on actively engaging the Latissimus dorsi, without letting the ‘wrong muscles’ to take over all the work.
It’s also great for improving the client’s posture as her shoulders (which are rounding forward) have to remain externally rotated.
With our alternative exercise, we can improve the client’s scapula adduction and abduction control creating at the same time more scapular mobility, which will free the client from a lot of tension and perhaps some pain. It is also a nice opportunity for the client to understand and control scapula
unnecessary elevation, which has been one of her most common dysfunctions.

**FBI 2**

<table>
<thead>
<tr>
<th>Cadillac:</th>
<th>Sitting Back</th>
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We already offered shoulder stretches for the client (with ‘shoulder stretch’, Kneeling Cat Stretch) but what is making this one more intense, and perhaps more effective, is that in this exercise as the shoulders rotate externally for the stretch the thoracic spine is flexing quite deeply.

**LEGS**

<table>
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<tr>
<th>Cadillac:</th>
<th>Squats</th>
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While working on the legs the client once more has to control spinal alignment and work on maintaining the trunk in an upright position. At the same time, she will need to control the shoulders from rolling forward as the springs’ tension will be an extra challenge there for her. Keeping the head in alignment with the spine will be also one of our main targets.

**LAT FLEX / ROTATION**

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<th>Cadillac:</th>
<th>Butterfly</th>
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A wonderful exercise for our client to work on her abdominal obliques while she will also benefit from learning how to control the unnecessary elevation of the upper shoulder during the rotation of the body and while the arms are swinging around. The starting/finishing position of this exercise until the lateral flexion, can encourage the client to feel a strong neutral spine with the head in absolute alignment and the opening in her thoracic spine (in contrast with her kyphotic posture).

**BACK EXTENSION**

| Cadillac: | Prone 1
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<td></td>
<td>Prone 2</td>
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</table>

Now the body, is well prepared for a more focused back extensor strengthening and shoulder stretch! The client will once more have to think of scapular stabilization, to achieve maximum stretch in the shoulders and will strengthen the back extensors by learning to articulate the spine in order to lift and lower the trunk.

It would be naïve for someone to believe that the chosen exercises above for Sophia’s Conditioning Program, are the only exercises that will avail her or anybody dealing with the same problem of pain. I strongly feel that every single exercise of the whole BASI Pilates repertoire can be a benefit for someone suffering from Myofascial Pain Syndrome in the upper back or any other area of the body.
Conclusion

In conclusion, I would like once more to refer to Isacowitz, R. and Klippergner K. (2011) and emphasize that the goal of the conditioning program, “is not to overcorrect and remove the natural curves of the spine”; “the goal is not to hold the scapulae excessively downward or in place but rather to help establish a neutral position of the scapulae as they naturally rotate upward”. As Rael stated, “it’s just like we find neutral position of the pelvis we need to find neutral position of the scapula; the scapula is like the pelvis of the upper body, is the powerhouse of the upper girdle and we address the scapula the same way we address the pelvis; we need to find neutral position of the scapula”. (https://youtu.be/IcZ6jKhwzqA).

Hopefully, in this way we can probably assure that the right muscles will work for the appropriate movement. The movement can then be performed more accurately, to provide a more balanced work on the muscles. This will make it possible for almost any spinal alignment deviation to be corrected, avoiding muscle fatigue and trauma and thus treating Myofascial Pain Syndrome!

I can happily note down that Sophia has already felt a significant relief of pain and her scapulae are more mobile and her body feels stronger and less tensed. However, her biggest achievement and my biggest satisfaction is that Sophia has deeply understood how her poor posture affects her body and she has now realized what/when and how to correct it by herself in her sports activities but her everyday life! I can feel her more content, trouble-free and more confident, full of energy to keep going on!
Bibliography

Books


Online


Consultation

Dr. Sherif Gamil, Specialist Orthopedic Surgery, Symbiosis Medical Center Dubai, 2018.

Videos

BASI Pilates Mat Exercises | Shoulders, the Second Powerhouse, by Isacowitz, R.  
(https://youtu.be/lcZ6jKhwzqA)

Figures / Images

Figure 1: Fascia is a web: www.laurachancelmt.blogspot.com

Figure 2: Figure 2: (a) Ideal standing alignment, (b) kyphotic posture: Isacowitz, R. and Clippinger, K. 2011. Pilates Anatomy, Illustrated Guide to Mat Work and Core Stability and Balance, page 22.

Figure 3: Common postural deviations: Marshal, J. 4 Simple desk-based stretches for effective lower back pain relief. (https://www.lifehack.org/492069/4-simple-desk-based-stretches-for-effective-lower-back-pain-relief).

Figure 4: Trigger points: Prakasa. J. 2012. Myofasical Pain Syndrome, Pain Sensation (www.painsensation.blog.ae).

Figure 5: (a) Upward and downward rotation, (b) use of scapular depressors to avoid excessive elevation of each scapula as the arms are raised overhead: Isacowitz, R. and Clippinger, K. 2011. Pilates Anatomy, Illustrated Guide to Mat Work and Core Stability and Balance, page 24.