ABSTRACT

The shoulder girdle is composed of one clavicle and one scapula and the scapula slides on the rib cage, with only muscles connecting it to the spine. The only true body connection of the shoulder girdle to the axil skeleton is the sternoclavicular joint. Because of these limited connections, movements of the shoulder girdle are very dependent on muscles, and muscle imbalances can easily lead to alignment problems.

The function of the scapular muscles may be related more to posture or prevention of an undesired scapular motion so that stability is maintained than to producing visible movement.

In many instances with clients, I can detect less stability on scapular leads to malfunctions in performance and everyday life as well. Well-functioning scapular muscles will provide stability and efficiency, providing better postures and less fatigue resulting from misalignment.
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Anatomical Description - Scapular Movements and Stabilization

The shoulder girdle is composed of one clavicle and one scapula. Unlike the pelvic girdle, which is firmly attached to the spine via the sacroiliac joints, the scapula slide on the rib cage, with only muscles connecting it to the spine. The only true bony connection of the shoulder girdle to the axial skeleton is the sternoclavicular joint, the small joint between the clavicle and the sternum. Because of these limited connections, movements of the shoulder girdle are very dependent on muscles, and muscle imbalances can easily lead to alignment problems. Movements of the shoulder girdle can be simplified by referring to the movements of the scapula.

**Movements of the scapulae**

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Rotator Cuff Muscles

Supraspinatus, Infraspinatus, Teres Minor and Subscapularis are known as the rotator cuff muscles. Together they encompass, and therefore stabilize, the glenohumeral joint. They are all connected to the scapular muscles, such as supraspinatus and infraspinatus to trapezius and
subscapularis to the serratus anterior, engaging in moving and stabilizing scapulae.

**Scapular Depressors and Scapular Adductors**

Among many other scapular muscles, these two muscle groups play critical roles in terms of the particular postures in modern life style, which are shoulders rounded forward and elevated upward with the excessive scapulae separation.

The serratus anterior is unique in its ability to abduct the scapula, making it an antagonist to the rhomboids. Weak serratus anterior results in scapular winging. Understanding the types of muscle contractions that can occur, the varying roles muscles can play, and the ability of muscles to work together in a force couple will allow a better appreciation of full-body movements.
Case Study

Name: Sangmi Yun
Age: 35
Gender: Female
Years of Doing Pilates: 6 months
Rehabilitation or Treatments: N/A

Pains: shoulder, lower back and wrist in minor

She is a full-time mom in her mid 30s and gave a birth about two years ago. When she is caring her child, she usually holds her baby in her left side. She is right-handed and claims left shoulder, lower back and wrist pains. When she flexes shoulder reaching arm overhead, her left forearm starts to hurt. But she didn’t get any diagnosis on those from the doctor. She has been doing pilates for six months and has hard time doing her abdominal works, ‘Roll Up’ and spinal articulation, ‘Roll Over’ exercises. I can easily detect her shoulders way too much get tensioned and elevated what exercises she does. Her head usually misaligned with her spine, pulling chin too close to her chest.

She has been doing pilates with me for months and is about fundamental and pre-intermediate level. I am going to program one-hour session focusing on shoulder stabilizing, shoulder depressing, lower back stretching, and spinal articulation including whole body exercises using the BASI Block System.
**BASI Block System**

**Warm up (on Mat)**

1 Pelvic Curl (five times)

Place a ball between knees engaging Adductors which help stabilize pelvis as well. At the final, have her arms reaching overhead to stretch shoulder.

2 Spine Twist Supine (ten times)

Before this exercise, practice Scapular Abduction reaching arms forward toward ceiling.

3 Chest Lift (six times)

Reaching arms forward and holding thighs with hands to lift body up engaging more abdominals.

4 Chest Lift with Rotation (ten times)

She tends to lateral flex on spinal rotation, so I will try to give more feedbacks on this exercise.

**Foot Work (on Cadillac)**

1 Parallel Heels (ten times)

2 Parallel Toes (ten times)

3 V Position Toes (ten times)

4 Open V Heels (ten times)

5 Open V Toes (ten times)

6 Calf Raises (ten times)

7 Prances (ten times)

At the final on each side, holding the position to stretch calf.
8 Single Leg Heel (eight times on each)
9 Single Leg Toes (eight times on each)

**Abdominal Work (on Cadillac)**

1 Roll up top loaded (four times)

Lifting up heavy springs causes more tensions on her upper trapezius, so I make the resistance lighter for less pressures on shoulder but still activating abdominals and back extensors with more scapular stabilization and head alignment.

2 Breathing with Push Thru Bar (four times)

I choose this particular exercise to stabilize scapulae avoiding elevation of shoulders (on first phase), stretch lower back when curling pelvic up and align her head with the spine (on third phase) engaging abdominal throughout.

**Hip Work (on Cadillac)**

1 Frog (six times)
2 Down Circles (six times)
3 Up Circles (six times)
4 Walking (five times)
5 Bicycles (five times)
6 Bicycles Reverse (five times)

**Spinal Articulation (on Cadillac)**

1 Monkey Original (three times)

To lift up push thru bar, she has to activate her knee extensors, shoulder flexors and back
extensors with scapular stabilization and head alignment.

**Stretch (on Cadillac)**

1 Shoulder Stretch (six times on each side)

She has tight shoulders and minor pains on her left upper arm when reaching overhead, so I pick this exercise to stretch tightened area and figure out the range of motion on her shoulders.

**Full Body Integration F/I (on Reformer)**

1 Upstretch 1 (ten times)

2 Elephant (ten times)

These two Full Body Integration exercises can focus on her serratus anterior abducting the scapulae.

**Arm Work (on Reformer) – Sitting Arm Series**

1 Chest Expansion (six times)

2 Biceps (six times)

3 Rhomboids (six times)

Activating mid trapezius and rhomboids makes pectoralis stretched opening chest wide which is good exercises for rounded shoulders.

4 Hug-a-tree (six times)

5 Salute (six times)

+ Additional Arm Work on Chair

6 Shrugs (eight times)
Based on the scapula stabilization, I want to have her work on both scapular adduction and depression adding ‘Shrugs’ on Arm Work Block.

Lateral Flexion/Spinal Rotation (on Chair)

1 Side Stretch (six times on each side)

Cueing on serratus anterior to depress scapular down on both sides.

Back Extension (on Chair)

1 Swan Basic (six times)

At final two, I will encourage her to pull the pedal toward her for engaging middle trapezius and opening chest.
Conclusion

I try to focus on scapular stabilization on this one-hour session. Activating lower trapezius from ‘Shrugs’ and serratus anterior from ‘Upstretch 1’ and ‘Elephant’ will give her a chance of aware the shoulder mechanism as well as stretching tightened muscles from ‘Shoulder stretch.’ Both strength and flexibility play important roles for being well-conditioned body.

I strongly believe that BASI Block System offers amazing moments to use almost whole body muscles and movements with mind-body awareness. During this ‘whole’ body session, I also can pick additional or selective exercises for particular clients.
Reference

Book


Images
www.Google.com