Title: Rounded Shoulder Syndrome

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ABSTRACT

Today's modern workforce sits hunched over a computer for 8 to 10 hours at a stretch, with increasing number of people reporting persistent neck pain, tight and frozen shoulders and even headaches. This is a serious issue that affects a large population yet somehow does not seem "serious" enough to encourage people to seek prompt treatment, until it is too late and the pain becomes chronic and debilitating. This paper looks to address the symptoms, causes and treatment (via an exercise program) of rounded shoulder syndrome.
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ANATOMY

The shoulder joint is a triaxial ball-and-socket joint that permits a wide range of motion yet has very little stability as it has very little bony or ligamentous support attached to it. This instability makes it imperative to develop correct mechanics and balanced muscular support. Muscle of this region can be divided into 3 groups:

1. Muscles of scapula stabilization - connects scapulae to surrounding bones (head, spine, ribcage) with no direct connection to humerus. Primary function is to stabilize or move scapulae according to needs of the arms. Comprised of trapezius, rhomboids, levator scapulae, pectoralis minor and serratus anterior muscles.

2. Rotator cuff - a group of small muscles connecting scapulae to proximal humerus, providing shoulder stability and facilitating subtle shoulder mechanics. Comprised of supraspinatus, infraspinatus, teres minor and subscapularis.

3. Large shoulder muscles - produce gross movements of the arm. Comprised of pectoralis major, deltoids, latissimus dorsi and teres major.
INTRODUCTION

Rounded forward shoulder posture is very common in adults. Everything we do is in front of us. We reach forward when typing on keyboards, holding a steering wheels, even washing dishes. If your shoulders are slumped forward for long periods of time, your chest muscles become shortened over time, pulling your shoulders forward into a postural dysfunction (which becomes your new norm). Muscle imbalances result where the chest and front shoulder muscles get tight and the shoulder's stabilizers (upper back and posterior shoulder muscles) are overstretched, which makes them weaker.

The most common traits include (1) shoulder girdle protracted more than normal, accompanied by a (2) thoracic kyphosis, with (3) forward head chin jutting. The average human head weighs 8 pounds. If your chin moves forward just 3 inches -- as it tends to when you work at a computer - the muscles of your neck, shoulders, and upper back must support the equivalent of 11 pounds, a weight-bearing increase of 38 percent (often for hours at a time)!

The shoulder is the most complex and unstable joint in the human body. For it to function properly, you need to train ALL the muscles that help stabilize it. The average guy usually performs exercises that target only the front and middle portions of the shoulders (upper trapezuis, levator scapula, deltoids, pectoralis major and minor), but neglect the smaller, less visible muscles at the back of the shoulder joint (middle and lower trapezius, rear deltoids, rotator cuff muscles and scapular muscles). A well-rounded program which trains both the agonist and antagonist muscles is crucial for the long-term health of the client.
CASE STUDY

Name: Ashley Koh (Self)

Age: 37

Limitation: (1) Lower neck stiffness (2) tight/frozen shoulders, notice shoulders are often in an elevated state even when doing nothing like standing around

Rehab treatments: Have not undergone any special rehab treatments before. Have been joining Group Pilates Tower Classes once a week for over 2 years, with occasional private sessions.

Lifestyle: (1) work in Finance for the past 12 years, hunching over a computer 10 to 11 hours a day, in a fast paced, stressful environment (2) became a mother 3 years ago, breastfeeding and carrying baby who is now a 32-pound toddler

Pilates Level: Intermediate
**BASI BLOCK SYSTEM**

**Warm Up (Mat)**

- Roll Down - to do a "body scan" pre warm-up for client to focus and center herself, and for instructor to assess client’s alignment which offer valuable input & correction on how to proceed with the session
- Pelvic Curl
- Spine Twist Supine
- Chest Lift and Chest Lift with Rotation
- Leg Changes

**Foot Work (Wunda Chair)**

- Parallel Heels
- Parallel Toes
- V Position Toes
- Open V Heels
- Open V Toes
- Single Leg Heels (optional)
- Single Leg Toes (optional)

I chose above Wunda Chair exercises as they promote trunk stabilization, by co-contracting the abdominal and back extensor muscles, to help promote core strength. A strong core will act as a strong support base for the upper body extremity. As the shoulder & neck problems improve, a strong core will provide the base for the future improved shoulder and neck
posture. As client has an issue with "gripping hip sockets" for Single Leg Heels/Toes, I put her straightened leg supported on a big stability ball.

**Abdominal Work (Cadillac)**

- Mini Roll-Ups
- Mini Roll-Ups Oblique
- Roll Up Top Loaded
- Breathing with Push Through Bar (optional, if time permits, it is a good overall exercise to improve coordination, balance and breathing))
- Bottom Lift with Roll Up Bar

Start with working on the Abdominals and Obliques, then move on to Roll Up Top Loaded for the added shoulder stretch, which helps to alleviate some neck stiffness (in the upper trapezius). End with Bottom Lift with Roll Up Bar to open up the chest and the front of the body to counteract the rounded shoulders.

An alternative to above can be the Short Box series on the Reformer. But I would skip other abdominal work on the reformer which requires head and neck to be lifted, until after the neck stiffness has be eradicated (or do those exercises with the head and neck down).

**Hip Work (Cadillac)**

- Frog
- Circle (Down, Up)
- Walking
- Bicycles
Pelvic lumbar stabilization in these exercises will add to more strengthening of the support base for the upper extremity as mentioned before. As client progresses, above exercises can also be alternated with the Single Leg Supine Series on the Cadillac.

**Spinal Articulation (Cadillac)**

- Monkey Original
- Tower Prep

I like that Monkey Original gives a little stretch to the upper trapezius area as one moves into the pike position keeping shoulders neutral and back extended. I did not include Tower (and Reformer Short and Long Spine) yet as client is still experiencing neck stiffness/ache and these exercises place too much body weight on the thoracic and neck region if not performed properly, risking further injury.

**Stretches (Cadillac/Reformer)**

- Shoulder Stretch

This is relaxing to stretch out the shoulder region as well as increases the range of motion limited by rounded shoulders.

- Standing Lunge (can alternate with Kneeling Lunge between sessions)

It is good to stretch out more than one area of the body, in this latter case, the hip flexors and hamstrings.
Full Body Integration I (Reformer)

- Scooter
- Up Stretch 1
- Reverse Knee Stretch
- Down Stretch - gives an open chest feeling
- Stomach Massage Flat Back - particularly like that the hands are placed backwards on the shoulder rests, it helps to open up the chest.

All above exercises have a strong objective of trunk stabilization, with some working on co-contracting both the abdominals and back extensors. As client progresses, can replace Up Stretch 1 with Up Stretch 2 or Long Stretch to add in the scapular stabilization component which also helps with the rounded shoulders.

Arm Work

- Arms Supine Series - Extension, Adduction, Up and Down Circles, Triceps

Above exercises mainly works the latissimus dorsi which is important as strong "lats" allows client to extend back to counteract rounded shoulders. As client gains more upper body strength over time, one can transition to Arms Sitting Series to include Biceps, Deltoids, and Pectorals challenges, and then finally to Arms Kneeling Series which encompass a strong Trunk Stabilization component (as there is less body support with kneeling on the reformer).
Note: Whenever possible and not too disruptive to the flow of a class, I like to slip in Shrugs exercise on the Wunda Chair as it really helps with the "elevated shoulder" habit by elevating and lowering the scapulae and working the mid to lower trapezius.

**Full Body Integration II**

Client is not at level to perform Advanced or Masters exercises in the Full Body Integration II repertoire at this time.

**Leg Work (Reformer/Wunda Chair)**

- Hamstring Curl
- Single Leg Skating
- Frog Front

Above leg exercises give an all-rounder workout to the Hamstrings, Glutes and Hip External Rotators.

**Lateral Flexion/Rotation (Wunda Chair)**

- Side Stretch
- Side Kneeling Stretch

Besides working and stretching the abdominal obliques, the action of the hand depressing of the pedal kind of have a positive remedial effect to counteract the "elevated shoulders" habit. Making the body moves flat "in between two planes of glass" also help to open up the chest.
Note: As client gains upper body strength, Side Pike can be added to work on scapular stabilization.

**Back Extension (Wunda Chair)**

- Swan Basic (or can alternate with Back Extension Single Arm in between sessions)
- Swan on Floor

The back extensor exercises are a great way to wind down the session, helping client walk away with back extended, standing "taller", hence opening up front of body more.

**Warm Down**

Roll Down - to do a body scan before concluding the session to assess improvements and any lingering issues

Care has also been taken with regards to the flow of the class and not move clients around too much between each block of exercises. I start and end the session on the Wunda Chair, working on the Cadillac and Reformer in between.
CONCLUSION

After three weeks on the program (3 times a week), the neck stiffness/ache has gradually gone away, as helped by the stretching exercises in the upper trapezius. By the seventh week, there is significant improvement in terms of chest "openness" and shoulders do not "elevate" at all times anymore. The "mind" part of the program definitely helps one to be more conscious of one's movement patterns in daily life and not get into bad habits.

In conclusion, when one suffers from poor desk posture, while including a Pilates regime helps, it does not resolve the problem entirely. After all, the 3 to 4 hours a week one spends on Pilates is only a fraction of the time one spends sitting in one position daily. Functional lifestyle changes have to be made in how daily activities are performed to truly maximize the effects of Pilates. For example at work, do 10 standing shoulder retractions every hour when working at a computer, stand and pull shoulders back as one squeezes one's shoulder blades together for 3 seconds, and focus on keeping one's head and shoulders directly above one's pelvis at all times.

Last but not least, always balance your training by training BOTH the agonist and antagonists muscle groups. It is also important to implement a balanced overall exercise regime that conditions the entire body, and not over emphasize only on the "injury"... as quoted in our Study Guide "... the weak link must be addressed, but never losing sight that it is the function of the chain as a whole we are ultimately interested in".

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- Are Your Shoulders in a Slump?, Lorenzo Gonzalez, Men's Health magazine, 5 January 2006