Rounded Shoulder Syndrome

with

Forward Head

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ABSTRACT

Rounded Shoulder Syndrome, (RSS), and Forward Head Posture (FHP), is one of the most common postural problems in our society. High prevalence of smartphones, sedentary lifestyles of long hours sitting at a desk typing in a downward position, tv watching slouching and even heavy backpacks in educational environment contribute to this pathology. All these factors lead to habitual poor posture Rounded Shoulder Syndrome with Forward Forehead which is one common and serious condition.

Quote by Dr Tim Errington “ALL of the relevant research today supports the fact that investing in a healthy spine is your best investment for a healthy future.”

The human body needs to be in alignment. Posture refers to how the body is aligned and positioned in conjunction with the force of gravity acting upon it. Regardless of whether we are sitting, standing or lying down, there is always a gravitational force that applies pressure on our ligaments, joints and muscles.

With ideal posture, an imaginary line, a plumb line, should drop from the ear lobe through bodies of cervical vertebra, shoulder joint, midway through trunk, grater trochanter, slightly anterior to the knee joint and anterior of the ankle joint, lateral malleolus.
Seen from the front or back we should be straight. This proper posture is a sign that we’ve evenly distributed gravity’s force throughout our body so that no one part is fatigued or overstressed.

The head should be directly on top of your shoulders, not leaning forward. Slouching of the shoulders, rounding of the back or forward leaning of the head are indicators of poor posture. This poor posture causes strain on the posterior neck muscles and according to chiropractic care it can trigger headaches and compromise breathing among other complications. The extra pressure on the discs due to increased weight bearing can also lead to premature arthritis of the neck. Poor posture can also include a forward tilting of the pelvis leading to chronic lower back pain, weakness and pain in the legs and premature spinal arthritis of the joints and discs.

WHAT IS FSS AND FORWARD HEAD POSTURE, FHP?

FSS and Forward Head Posture, FHP, is the gradual loss of correct posture as the shoulders round forward increasing a kyphotic curve of upper back and the head is pulled forward loosing its natural curve leading to increased pressure on the neck and shoulders as muscle imbalances develop.
Chiropractor Adam Meade explains that the curve of your cervical vertebrae is referred to as "the arc of life" by neurosurgeons because these bones protect the brain stem and are the housing for spinal nerves that affect every organ and function in the body. Therefore, subluxation of the vertebra can lead to inflammation and entrapment of nerves creating other body issues.

Healthy breathing can also be compromised due to the combination of rounding of shoulders and protruded head.

It is estimated that for every inch that your head is held forward it gains ten pounds in weight, forcing the muscles
of your back and neck to work that much harder to keep
your head up. According to Rene Cailliet M.D., a famous
medical author and former director of the department of
physical medicine and rehabilitation at the University of
Southern California:

“Head in forward posture can add up to thirty pounds of
abnormal leverage on the cervical spine. This can pull the
entire spine out of alignment. Forward head posture (FHP)
may result in the loss of 30% of vital lung capacity. These
breath-related effects are primarily due to the loss of the
cervical lordosis, which blocks the action of the hyoid
muscles, especially the inferior hyoid responsible for
helping lift the first rib during inhalation.”
Pilates places great emphasis in lateral, anterior and poster breathing increasing the thoracic volume, “lateral or intercostal breathing” This breathing technique allows the consistent beneficial (for this method) inward pull of the abdominal wall.

Pilates provides a well balanced conditioning of the body through increased strength, flexibility and coordination.

The objective of the following research is to contribute to improve alignment and avoid injury to those who suffer from this condition by applying the BASI Pilates Block System into their exercise regimen.
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ANATOMY

The neck muscles and the shoulder are intrinsically connected. The neck includes the cervical part of the spine, where the nerves for one’s entire body is managed, and supplies the support for the head which weights an average about 8 lb. The shoulder joint is a triaxial ball-and-socket joint that permits a wide range of motion it works in the circumlocution ROM; combination of flexion, abduction, extension and adduction.

Muscles in the neck shoulder region can be divided into 3 groups:

. Muscles of scapular stabilization - connect scapulae to surrounding bones: head, spine, ribcage. Primary function is to stabilize or move scapulae. Constitute by trapezius, rhomboids, levator scapulae, pectoralis minor and serratus anterior muscles.

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

. Large shoulder muscles which are responsible for the arm movement and comprise of pectoralis major, deltoids, latissimus dorsi and teres major.
Muscles of Shoulder
Posterior View

- Spinous process of C7
- Trapezius muscle
- Rhomboideus minor muscle
- Rhomboideus major muscle
- Infraspinatus fascia
- Triangle of auscultation
- Spinous process of T12
- Semispinalis capitis muscle
- Splenius capitis muscle
- Levator scapulae muscle
- Acromion
- Spine of scapula
- Teres minor muscle
- Infraspinatus muscle
- Teres major muscle
- Long head of triceps brachii muscle
- Lateral head of triceps brachii muscle
- Latissimus dorsi muscle

Not connected to upper limb
INTRODUCTION

RFS and FHP which causes a number of physical issues is very common.

When your head is abnormally tilted forward the anterior neck muscles tighten and the posterior muscles are fired all the time. If your shoulders are slumped forward for long periods of time, your chest muscles become shortened by pulling your shoulders forward into a postural dysfunction. 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. Dr Bregman, stated during a lecture held by Chiro One Wellness Centers, that against common belief, that muscles when overworked due to having to hold the spine are actually toned, not weak and if we relax them the body will most likely in this case, drop forward, so to improve the pathology we can aid these muscles by recruiting the assisting ones to add strength and support as the posture issues are resolved. In this case we attempt to strengthen the TA, transverse abdominus and multifidus as the base of the “building” to create a strong support for back extensors, rotators, and lateral flexors to assist the upper body to unwind the pathology. A well-rounded program which trains both the agonist and antagonist muscles involved in ideal posture is crucial for the long-term health of the client.

The most common symptoms for RFS and FHP are:
- Forward head chin jutting.
- Thoracic kyphosis.
- Shoulder girdle protracted more than normal.
- Posterior tilt
CASE STUDY

Name:
Oliver Campbell 25 years old

Issues: Lower neck stiffness, tightness of chest and hamstrings muscles

Oliver has practiced a basic pilates routine on foam roller in supine position with base of skull at the edge of the roller promoting alignment of cervical region. The addition of light weights on the hands helped working into the “negative space” to help stretch anterior muscles of the chest and shoulder region that have helped improving the pathology. This program is design with him in mind.

Lifestyle: Graphic designer, works hunched over a computer or laying down slouching with head resting on the wall (which increases the forces of protusion of forward head) close 10 to 12 hours a day.

Using the Pilates ten principles of awareness, balance, breathing, concentration, center, control, efficiency, flow, precision, and harmony we will help the client find musculature balance, flexibility and alignment with a goal to achieve a state of well-being.
BASI BLOCK SYSTEM

Roll Down - to do a "body scan" prior to warm-up to bring awareness and focus to the client, and for instructor to assess client's balances and imbalances which offers valuable information on how to proceed with the session.

Contrology develops the body uniformly, corrects wrong postures, restores physical vitality, invigorates the mind, and elevates the spirit.

— Joseph Pilates —
Warm Up on the Mat.

Maine activation of the core providing overall good blood flow, supplying plenty of oxygen for the work out.

Pelvic Curl

Spine Twist Supine with light weights on hands

Chest Lift and Chest Lift with Rotation

Leg Changes

Foot Work on the Wunda Chair promotes trunk stabilization, by co-contracting the abdominal and back extensor muscles, to help promote core strength. The hands position behind back promotes external rotation of shoulders. A strong core will act as a strong support base for the upper body extremity.

Parallel Heels

Parallel Toes

V Position Toes
Open V Heels

Open V Toes

Single Leg Heels

Single Leg Toes

If hip flexors tightness is present for Single Leg Heels/Toes, we can provide a body or stability ball under the straightened leg for support.

**Abdominal Work** Cadillac

Mini Roll-Ups

Mini Roll-Ups Oblique

Roll Up Top Loaded

Breathing with Push Through Bar. Any exercise in which the PTB is pulled overhead will help with shoulder stretch and scapula improvement as we counter act the forward shoulder, same applies to sitting upright position / PTB overhead bend to relax
any tension in the trapezius as well.

A parallel alternative to above can be the Short Box series on the Reformer, which can be introduced once we see improvement on neck and head with the strengthening and stabilization of trunk particularly. Then as we progress on difficulty level the addition of teaser prep and teaser provide a good stretch for anterior neck muscles stretch/dropping of the head over the box.

Hip Work Cadillac

Frog

Circles Down, Up

Walking

Bicycles, Reversed

These exercises will build more strengthening of the support base for the upper extremity as the pelvic lumbar region stabilizes and overall alignment is achieved. The
exercises can also be alternated with the Single Leg Supine Series on the Cadillac increasing the level of difficulty according to capacity.

**Spinal Articulation Cadillac**

Monkey Original gives stretch to the upper back keeping shoulders neutral and back extended.

**Stretches** Ladder Barrell/Pole/Cadillac/Reformer

**Shoulder Stretch 2**

**Stretches/ Pole Series**

Shoulder stretch/Cadillac This is a challenging exercise for tight shoulders yet so beneficial for the stretch as increases the range of motion limited by rounded shoulders.

**Standing Lunge**

We continue to bring balance as we work different parts of the body in the different planes and motions. In this pathology we find a tendency of posterior tilt of the pelvis accompanied by tight hamstrings and hip flexors due to long periods of static sitting.

**Full Body Integration I Reformer**

Scooter
Up Stretch 1
Elephant
Reverse Knee Stretch
Down Stretch

Stomach Massage Flat Back - the position of the hands facilitate the external rotation of the shoulders opening up the chest.

The above exercises target the trunk, shoulder, scapula stability as overall incorporating the co-contraction of abs and back extensors so necessary to undo the phatology.

**Arm Work Reformer**

Arms Supine Series -

Extension
Adduction
Up circles, Down
Triceps

These exercises work the latissimus dorsi. Strong back dorsal muscles facilitate back extension which helps alignment. After building body strength and stability, we
will progress to the next levels of challenge. Arms Sitting Series to include Biceps, Deltoids, Pectorals. Arms Kneeling Side Series which demands a strong Trunk Stabilization.

Wunda Chair

Shrugs exercise is an ideal choice as we work elevation and lowering the scapulae as well as the mid to lower trapezius.

Ideally we can have a near close circuit of apparatus so we can alternate with out affecting the flow of the routine.

Full Body Integration II

Balance Control Front
Balance Control Back Prep

**Leg Work** Reformer/Wunda Chair

Hamstring Curl

The back extensors keep the shoulders depressed and scapula active and stable

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

Working and stretching the abdominal obliques, focusing on staying in the coronal plane also helps to open up the chest.

**Back Extension** Reformer

Breastroke Prep

Breastroke

Great addition to work on scapular stabilization as we continue to focus on the lengthening of the spine rather than the height as a goal to be achieved.

Swan on Floor

**Cool Down**

Rest Position

Performing a Roll Down at the end of the session helps to assess any differences from before to after
CONCLUSION

After working a routine of 3-4 sessions a week during 2 months, the neck stiffness and trapezius tension, has gradually diminished, as a result of correction and realignment. There is significant improvement in opening the chest and depressing the constant shoulder elevation as well as a less posterior pelvic tilt.

In conclusion, when one suffers from poor posture, including a Pilates regime in one's life is proven to be a valuable asset. One becomes conscious of body alignment as the body learns to adapt to correct mechanics and develops muscle balance.

A quote from Rael Isacowitz, "Pilates not only offers a bridge between mind and body, between everyday life and optimal performance, between rehabilitation and healthy movement; it also offers a system that, when used to its full potential, can enhance every aspect of life."
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