

# PHYSIOYOGA in Upper Crossed Syndromes



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Pain needs to be understood more as a feeling than a mere sensation. Painful syndromes are spreading like an epidemic worldwide and have been great challenge to all professionals dealing in its prevention and management. Painful syndromes results from deviations of normal posture in a static spine and painful syndromes also results from deviations of normal functions in kinetic spine.

"Physiotherapy is the means to relieve Musculo-Skeletal pain, but the ASHTANGYOG LADDER of sage Patanjali is the path".

Musculoskeletal disorders comprise one of most common and costly public health problems in the present times. Epidemiologic research has provided evidence for a relationship between development of musculoskeletal disorders and physical workplace factors such as repetitive work tasks, static contractions, and tiring postures (National Research Council and Institute of medicine, 2001).

Neck/shoulder pain is widespread among office workers with intensive computer use (Jensen, 2003, Juul-Kristensen et al., 2004, Umker et al., 2006). Trapezius myalgia – chronic pain from the upper trapezius muscle – is the most frequent type of neck pain in this occupational group (Juul- Kristensen et al., 2006). Maximal muscle strength is generally impaired in many different types of neck/shoulder pain.

The mechanisms for decreased muscle strength in relation to neck muscle pain may be related to decreased central neural activation (Steingrimsdóttir et al., 2004) It has been indicated that local pain conditions can negatively affect function of other pain free muscles when these are activated independently (Schulte et al., 2006). However, the complex nature of the shoulder joint implies that several muscles act together to provide both stability and motion (Veeger and van der Helm, 2007).



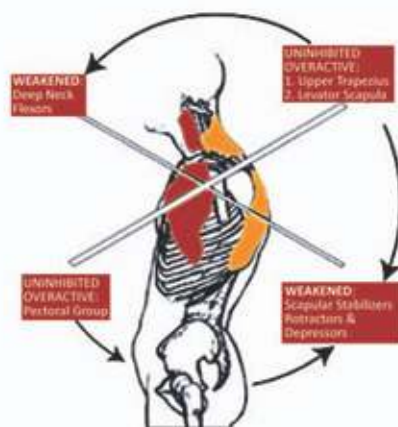


The Clinical psychologist in me always confirmed that Musculo skeletal painful syndromes have been increasing in recent times due to stress, stressors and poor stress coping mechanism. Life style patterns also have a major role to play in the Repetitive trauma syndromes.

Accumulated rage results due to lack of communication and no proper outlet of emotions. This could trigger sympathetic nervous system over activity, muscular tension, vasoconstriction, impaired vascularity, reduced oxygen supply, tissue hypoxia and increased level of lactic acid deposition in muscular tissue which further increased muscular fatigue patterns and postures resulting into painful syndromes which Dr. Sarno refers to as Tension Myositis Syndromes. UCS also is the outcome of this pattern I believe.

Humans are designed to stand and walk. Standing and walking engages the deep neck flexors and scapular stabilizers and lengthens the pectoralis and upper trapezius. Sitting with forward head posture, however, tightens and shortens the pectorals and upper trapezius and inhibits, or turns off, the deep neck flexors and the scapular stabilizers. This paradoxical muscular imbalance is due to Sherrington's Law of reciprocal inhibition, which states that when one muscle is shortened or tightened its opposite muscle relaxes. For example, in the upper arm, when the biceps contract—the triceps relax and vice versa. If the biceps were always tight the triceps could never be strengthened.

The pain and other problems of the forward head are sometimes referred collectively as "Upper Crossed Syndrome." It is not a disease, or "condition," or structural problem, or something to live with. It is pain from bad posture. It is pain from slouching.



UCS leads to a forward head posture causing strain to the muscular attachments of the shoulder and scapula. An anterior tilt and abduction ("flaring out") of the scapula occurs, producing a rounded shoulder appearance. Due to the rounded shoulder posture, the mechanical axis of rotation of the glenoid fossa becomes altered. The humerus (arm) now requires additional stabilization from muscles that typically are quiet: the levator scapulae, upper trapezius, subscapularis, pectoralis minor and supraspinatus muscles. Postural overdevelopment of these muscles creates a deltoid shear (crossing of rotator cuff under AC joint), leading to shoulder impingement, tendonitis and bursitis syndromes.

Microtraumatic shoulder injuries happen in a predictable pattern: impingement - tendinitis - bursitis - rotator cuff injury. This can also lead to the upper crossed syndrome.

Upper Crossed Syndromes, much like cardiovascular disease, is a "silent" disorder. It often takes years to develop and initially causes no symptoms. Symptoms become apparent only after it has made significant changes to the mechanics of the upper back, neck, shoulders and jaw. Upper crossed syndrome, also known as "student syndrome" or "corporate syndrome", is a pattern of tight and weak muscles the body develops based off one's postural tendencies.

The people this affects the most are those that sit all day, usually in front of a computer or at a desk. This is why it is called "student or corporate syndrome" too. Due to poor ergonomics, most people in these situations either find themselves leaning over a desk to read, or hunched at a computer typing all day.

This syndrome is based on Dr. Vladimir Janda's pioneering work in researching and understanding the predictable pattern of muscular compensation and postural imbalances in the body. He postulated that faulty movement patterns on a poor postural base contribute to habitual overuse in isolated joints, while they minimize normal movement in others, thus creating a self-perpetuating cycle of dysfunction and eventual injury. The Upper Crossed Syndrome (UCS) is one of the most common underlying causes of acute and chronic neck pain, headaches, shoulder problems and jaw pain (TMJ).

The muscles most likely to be tight on a person with upper crossed syndrome include: Upper trapezius, Sub occipital, Deep neck extensors, Pectoralis major, Levator scapuli

The muscles that tend to be weak or lengthened include: Rhomboids, Middle and lower trapezius, Deep neck flexors.

**It is important for the Physiotherapist to be aware that shoulder pain is usually a symptom of deeper problems that, unless corrected, may lead to total functional impairment. Proper rehabilitation of the shoulder must include protocol for reversing the upper crossed syndrome.**



I have found the following program to be the most effective form of rehabilitation treatment.

#### PHYSIO-YOGA FOR UCS

#### I & II. YAMA ( SOCIAL DISCIPLINE) NIYAMA(INDIVIDUAL DISCIPLINE):

Yoga is "Self discipline". Yoga is a way of right living. Yoga practices improves clairvoyance and awareness. Inculcating the ten commandments of Yama and Niyama can prevent the UCS to develop.

#### III. YOGASANA: THE PSYCHOPHYSICAL POSTURES:

The dynamic state of yogasana strengthens the musculo skeletal framework whereas the static component relaxes the neuromuscular framework, hence relieving the person from painful fatigue posture. Regular practice of yogasana achieves positive health, keeping body in good shape, psyche fit and relaxed so as to cope with various turbulences of life and not fall prey to psychosomatic painful disorders. Relaxation asanas are meant for everyone and can be practiced by all age groups. Cultural asana when applied for therapeutic purpose are, as non conventional medicine methods and are meant for age group between 8 to 80 years, but under proper supervision and guidance.

#### THE CAMEL CRAWL & SERRATUS ANTERIOR FUNCTION:



*Serratus Strength*



*Serratus & Pectoral stretch*

It is believed that normal scapular kinematics are essential to maximize the volume of the subacromial space during arm elevation and avoid impingement of the rotator cuff either externally or internally. The scapulothoracic musculature is critical to providing both motion and stability to the shoulder girdle complex to allow for proper function of the glenohumeral joint. In particular, the serratus anterior muscle can contribute to scapular upward rotation, external rotation, and posterior tilting during arm elevation.

Furthermore, the serratus anterior acts to stabilize the medial border and inferior angle of the scapula against the thorax to prevent scapular "winging" during arm elevation. Decreased serratus anterior muscle function has been observed in patients with shoulder pathology.

Thus, exercises focusing on restoring scapular mobility and stability are an important part of the rehabilitation of nonoperative and postoperative patients with shoulder pathologies. The push-up plus exercise is a modification of a standard push-up exercise, where the subject performs maximal scapular protraction once the elbows are extended.

**These yoga postures are similar to the push up plus exercise and have profound psychophysical effects in prevention and management of Upper Crossed Syndromes.**

#### THE CAT CRAWL & TRAPEZIUS FUNCTION:



*Trapezius Strength*

#### Trapezius Stretch



**The prevailing view is that sustained low-level activity of the upper trapezius muscle day after day leads to overload of muscle fibers of low-threshold motor units, and eventually pain develops. As a consequence, maximal muscle strength and neural activation may be impaired. Physical exercise has been suggested as treatment, however conflicting evidence exist as to which type of exercise that is most efficient.**

The Scapular Depression exercise is called a Closed Kinematic Chain Exercise.

You do not need to add weight to this exercise because the lower fibers of the trapezius will have to raise the weight of your whole body, and this is a lot of effort for the small amount of muscle fibers that will have to perform the movement.

The pectoralis minor is the other muscle that joins the lower fibers of the trapezius in the depression of the scapula. Besides, of being a very nice exercise to train the lower fibers of the trapezius, the scapular depression is also a good exercise to maintain or even increase the flexibility of the shoulder girdle for elevation-depression movements, very important for the functional movements of the daily living.

If you never tried this yogic exercise, maybe it is time to include it on your routine for the whole development of your trapezius and to keep functional at the shoulder girdle.



Cultural Asana main objective is psychophysical. It directs the mind within and works on eternal principle of energy conservation for higher upliftment of body mind and soul. These Cultural asana reconditions various joints, muscles, tendons, ligaments as well as reflex mechanism in order to offer a stable and comfortable posture for higher practice.

#### IV. PRANAYAM & YOGIC BREATHING

Breath is the connecting link between the mind and the body. With regular practice of Pranayam one gets habituated to deep breathing technique, hence a good gas exchange, which leads to good transportation of oxygenated blood to all tissues of body. Always a feeling of freshness and vitality. "Judicious practice of Pranayam attains sound health, slim and lustrous posture and steady and peaceful mind, giving long lasting result in pain management program". Practice Anulom Vilom pranayam under the guidance of Yoga Physiotherapist and attain the required benefits. **Introducing Inhalation with the "Cat Crawl" and exhalation with 'Camel Crawl' is a natural pranayam maneuver and relaxation exercise.**



*Synonym of camel cat crawl is camel cow crawl.*

#### V. PRATYAHAR & ERGONOMIC ADVICES

- First thing in the morning, do not sit on the bed. Instead of sitting and rounding your back first thing, turn over and lie face down. Prop gently on elbows, but not so high that it

strains. It should feel good and help you straighten out first thing. Get out of bed without sitting.

- Don't droop and hang your head forward when standing, sitting, and other movement. Remember that posture and body positioning is voluntary. This is the whole key to stopping upper back and neck pain when standing, sitting, and exercising.
- **Life style modifications with self analysis is essential for early recovery and prevention of UCS**

#### VI. DHARNA & CONCENTRATION:

- During the day, check if your positioning is straight
- To look downward for reading and working, simply keep chin comfortably in, and neck straight and upright, not forward. Tip your head down instead of hanging the weight of your head forward on your upper spine and muscles.
- When sitting, it is not important "to keep feet on floor" or keep "flat thighs" - parallel to the ground. That is often repeated as advice to prevent pain, but it does not change injurious mechanics. Focus on the main issue, not the symptom.
- **Concentrating within and the breath improves postural awareness and day to day action-mental and physical thus overcoming UCS.**

#### VII. MEDITATION & ATTENTION (A –TENSION)

Meditation has features in common with muscular relaxation, autogenic training and biofeedback, but it is essentially different because all types of meditation operate distinctively through mental rather than physical modality.

Mantra Dhyana – AUM Chanting, Shvasana Dhyana –Breath watching Meditation and Maun Dhyana – Experiencing the silence within have been of great pain relief measures. **Attention is a must to understand pain and achieve pain relief.**

**Keep in mind that symptoms are often very misleading. UCS develops over a long period without causing pain and pain usually vanishes long before the underlying imbalances are corrected.**

It is unlikely that occupational use of computers will decrease in the future, thus strategies for prevention for those without symptoms as well as rehabilitation for those with pain are pertinent.

The good news is that UCS is easy for us to identify and can be corrected with time and a conscientiously applied program of Yoga Postures, Pranayam and rehabilitative care. Over time, manipulation, stretching and progressive exercise reestablishes normal movements and normal muscular length and strength.

In the times of great medical advancement and research, the philosophical, psychological, metaphysical and spiritual basis of Yoga may be accepted or denied, partially or completely, but my experience with this enriching science made me believe that though an adjunct therapy yet there can be no greater rehabilitation method for prevention and management of one of the Psychosomatic disorder - Upper crossed Syndrome, than that achieved by yogic practice.

The Ashtangyoga , eight step ladder of great sage Patanjali educated, and empowered in me the belief that a transformational change is necessary rather than conventional methods of assessments and treatments in preventing and managing painful syndromes, because Self transformation leads to transformation of any situations and Ashtangyoga principles and guidelines according to me is a Self prescription and self management approach. It is rightly said, **"It is important to change the attitude of a person than to change the physique".**