

# Yoga for management of text neck Syndrome

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**Abstract - "Text neck" is a condition due to repetitive stress or overuse in the region of neck, induced by long term use of smart phone or computer devices with bent the head downward and not moving for long time. Due to frequent flexion of neck can change the curvature of cervical spine, supporting structures like ligaments, tendons, muscles, the bony parts, causing changes in body posture and induce pain on the neck and associated areas. Yoga practice can bring back the head and spine into proper alignment by strengthens the supporting structures like ligaments, muscles of neck and back.**

**Keywords - Yoga, Text neck syndrome and spinal alignment.**

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## TEXT NECK SYNDROME

"Text neck" is a condition due to repetitive stress or overuse in the region of neck, induced by long term use of smart phone or computer devices with bent the head downward and not moving for long time. Also it is called "tech neck" and **forward head posture (FHP)**. This abnormal postural changes often results in neck and shoulder pain (Priya DB, 2021), headaches and thoracic hyperkyphosis (Neupane S, Ifthikar Ali UT, 2017).

Globally, in 2023 reports estimate (accessed on 1<sup>st</sup> July 2022) the total number of smartphone users may reach 6.8 billion. Given the world population to reach just over 8 billion, 8 in 10 people will be equipped with a smartphone (85%) (Oberlo, 2022). India had 374.8 million smartphone users and most of the youngsters spend time for smartphone use an average of 3 to 4 hours daily (Priya DB, 2021).

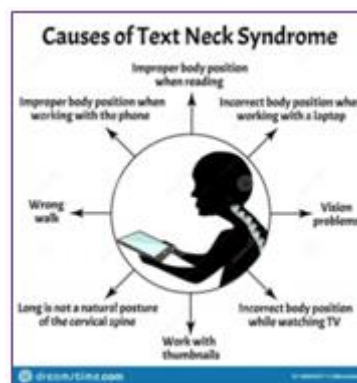
While using smartphone, the weight of the head on the spine is gradually increased when the neck is bent forward, and the effects and amount of weight are progressively increased by varying the degrees of neck flexion.



- In fact, while neutral position of neck, a full head weight is almost 5 kg (Hansraj, 2014).
- When the degree of neck flexion is increased to 30 degree, the burden of the weight of the head also increases to 18 kg.
- While 60 degree of neck flexion, the weight of the head also increased to 27.22 kg (Hansraj, 2014).

Not only the degree of the neck bending is relevant but also the frequency of head bending induces changes on the structure & functions of neck. In fact, the frequent forward bent of neck can change the curvature of cervical spine, supporting ligaments, tendons, muscles, bony parts, causing changes in body posture and pain on the neck, shoulder and other associated areas (Fishman, 2015).

## CAUSES OF TEXT NECK SYNDROME



- Effect of gravity on body: Slouching,

poor ergonomic spinal alignment.

- **Occupation:** Prolong forward or backward leaning of head, faulty or abnormal posture in sitting while using mobile phone / computer / screen.
- **Abnormal or faulty postures** in pelvic region (anterior or posterior tilt of pelvic bone) and lumbar spine.
- **While sleeping** using too high pillow to elevate the head.
- Maintaining of **Poor/ abnormal body posture** for long durations.
- **Lack of neck extensor's strength.**

#### SYMPTOMS OF TEXT NECK SYNDROME



The symptoms of Text Neck Syndrome are neck pain, stiffness and soreness. The major symptoms include:

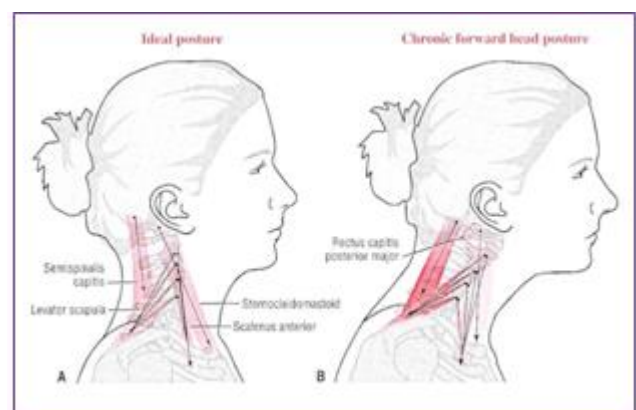
- **Stiffness in neck:** Soreness and difficult in moving the region of neck, after long usages.
- **Pain:** Pain can be localized on one spot or spread over an area, usually lower neck region. It may be sharp or dull aching or stabbing in extreme cases.
- **Radiating pain:** Pain may be radiate into the shoulders and arms from neck.
- **Weak Muscles:** Muscles of shoulders like, trapezius, rhomboids and external rotators are often weak.
- **Headache:** Muscle tightness in Sub-occipital region can lead to tension headaches.

In addition to these common symptoms there can also be other symptoms:

- Flattening of thoracic kyphosis
- Early onset of arthritis in spine
- Degenerative changes in Spine
- Inter vertebral disc (IV Disc) compression
- Neck & spinal muscle weakness
- Reduce of lung capacity & volumes

#### PATHOPHYSIOLOGY OF TEXT NECK SYNDROME

While screen time may prolonged can cause deconditioning the muscles in neck, chest, and upper back regions. As a result it makes difficult to maintain good spinal alignment, which can worsen the symptoms associated with tech neck.



- Text neck condition increases compressive forces on spinal facet joints and ligaments in the cervical spine.
- Studies have reported that Text neck syndrome having the symptoms including neck pain, headache, temporomandibular (TM) joint pain, and musculoskeletal disorders.
- This condition affects respiratory function by weakening the muscles of respiratory (Koseki et al., 2019).
- The Forward Head and Round-Shoulder Postures (FHRSP) can induce pain in shoulder region and dysfunction due to altered the functions of scapula (kinematic) and muscles activities and consequently, placing increased pressure on the shoulder joint (Fathollahnejad et al., 2019).
- In the posterior aspects of cervical muscles there is stretching and weakness of Semispinalis cervicis and over action with ultimate shortening of Semispinalis

capitis. The corresponding neck flexor muscles, namely, Longus cervicis and Longus capitis are shorten and lengthen respectively (Burt, 1950).

Text neck syndrome is due to an imbalance of muscles in neck, shoulders, and upper back.

**a. Weakened muscles include:**

- Muscles of Longus colli, Longus capitis, Infrahyoid and Suprahyoid (Anterior part of neck)
- Rhomboids muscle (muscles of upper back)
- Serratus anterior (Muscle in lateral side of thoracic region)
- Posterior rotator cuff (Muscle in back part of the shoulder joint)
- Lower part of trapezius (muscle in middle back)

**Tightened muscles include:**

- Suboccipitals muscle (muscle in base of the skull)
- Sternocleidomastoid muscle (muscle in side and front of neck)
- Upper part trapezius muscle (muscle in upper back)
- Pectoralis minor and major muscles (Chest muscles)
- Levator scapulae muscle (muscle in neck down to shoulder blade)
- Subscapularis muscle (muscle in shoulder blade area)
- Latissimus dorsi muscle (muscle in mid to Lower back)

**YOGA FOR MANAGEMENT OF TEXT NECK SYNDROME**

- Practice of yoga asana (postures) can bring back the head and spine into proper alignment. The spine gets its natural curvature and the ears align with the shoulders. As a result of this optimal postural alignment leads to reduces the strain / stress in intervertebral discs of spine in neck area.
- Also asana practice strengthens the muscles in the region of neck and back, which allows maintaining a more healthy posture on a daily basis.

**YOGA PROTOCOL FOR TEXT NECK SYNDROME**

**a. Yogic sukshma vyayama (loosening practices)**

- Chin tuck
- SkandhaCakra (shoulder Rotation)
- KatishaktiVikasak (Trunk Twisting)

**b. Yogāsanas**

- Tādāsana (Palm Tree Posture)
- ArdhaChakrasana
- Virabhadrasana (Warrior-Posture)
- Baddha Padmasana (locked lotus pose)
- Gomukhasana (cow's face pose)
- Uttanamandukasana (Stretched Up Frog Pose)
- Ushtrasana ( Camel Pose)
- Marjariasana (Cat Pose )
- Makarāsana (The Crocodile Posture)
- Bhujangāsana (The Cobra Posture)
- Shalabhasana (Locust Pose)
- Jathara Parivartanasana (Supine Abdominal Twist )
- Śavāsana (Dead body Posture)

**c. Kapālabhāti**

**d. Prānāyāma:**

- Nadiśodhana Prānāyāma
- Bhrāmarī Prānāyāma

**e. DHYĀNA**

**PREVENTION OF TEXT NECK SYNDROME**

The following suggestions are recommended while using mobile phones or other handheld devices (Toh et al., 2017):

1. Hold the mobile phone up to level of eye.
2. Avoid excessive and continuous uses of mobile / computer device and take breaks frequently.
3. To avoid prolonged static positions.
4. To avoid too repeated neck movements such as prolonged typing.
5. To avoid holding the devices in single hand for long duration.
6. Slightly tuck the chin and retract the shoulder blades backwards.

- For kids, keep the mobile device on a table instead of in the hands or on the floor.

With proper education, positioning and awareness, one should be able to reduce or overcoming the text neck syndrome from developing.

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