



MORPHOLOGY OF POSTURAL SYNDROMES WITH ASSOCIATION TO MUSCULOSKELETAL CHANGES: AN OUTLINE

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ABSTRACT

Today's modern society is full of activity; hectic lifestyle and pressure of demanding job, family with social life are inescapable. These factors keep on building a continuous pressure lowering out the immunity, raised levels of tiredness, loss of energy with body ache. With the advancement in technology every single task has turned out on machines & gadgets which make work easier but declines health levels. The desk jobs, including students, maintain same posture for long work hours. They result in MSDs (musculo skeletal disorders) which are injuries or painful condition in human musculo skeletal system including joints, ligaments, muscles, nerves, tendon etc. Now a day, students come up with symptoms like neck-upper back pain, headaches, numbness or tingling sensation in hands. Due to more dependency over laptops, wrong sitting postures leads to such postural syndrome. The use of mobiles has been observed a common cause among patients of cervical region stiffness with pain among upper extremities. In many researches & surveys came in lime light related with such syndrome among students, office workers associated with musculo skeletal changes. The improper posture includes signs like elbows on desk/table, hunching in back, and head protruding out forward. Inevitably, this is becoming a serious health concern which must be repaired to make a better lifestyle & wellness for mankind.

KEYWORDS: MSDs (musculo skeletal disorder), posture, syndrome, muscle, anatomical structure, numbness, pain etc.

INTRODUCTION

The habit of maintaining a right posture not only presents you better in public but instead it is a healthy approach to prevent musculo-skeletal disorders. People working for long hours in offices, students studying with improper postures lead to changes in normal position of muscles-joints. The skeletal muscles produce movements by exerting force on tendons, which further result in movement of bone or other structure. MSDs (musculo skeletal disorders) are injuries or painful condition in human musculo skeletal system including joints, ligaments, muscles, nerves, tendon. Their sign-symptoms are assemblage which brings out posture deformed (long term forward bending of head), rounded-hunched shoulders.^[1] It includes stiffness, aching in neck upper back, pain with numbness, tingling sensation in hands, headache (lower part of skull). Following headings explain the musculo skeletal changes observed in repetitive manner.

- **TENOSYNOBITIS:** is a condition related to inflammation of tendons, synovial membranes, sheaths surrounding certain joints. The tendons which mostly get affected are at wrists, shoulders, elbows (tennis elbow), fingers (trigger fingers), ankles & feet. Because of the accumulation of fluid there is tenderness, pain with movement of the part. For instance, gymnasts, typists, haircutting, carpentry etc. it includes condition followed by trauma, strain, excessive exercise where there is repetitive chronic maximum hyperextension at wrist.^[2]
- **TENNIS ELBOW:** or Lateral Epicondylitis, is a painful musculoskeletal condition of elbow caused by the overuse of superficial extensor muscles of forearm. Pain is felt over lateral epicondyle and radiates down the posterior surface of forearm. People with suffering from this feel pain during lifting a glass or open a door. There is forceful flexion & extension of wrist which strains origin

point of extensors with inflammation of periosteum of lateral epicondyle.^[3]

- **TENSION NECK SYNDROME:** A syndrome for pain & stiffness in neck with tenderness in trapezius muscle. Mostly desk workers (long hour job) come with such signs-symptoms due to involvement of both cervical and shoulder region.^[4] It may result in neck pain or headache as this muscle originates from external occipital protuberance, superior nuchal line, spine of C7 vertebra & all thoracic vertebrae with supraspinous ligaments. It is inserted to processes of scapula & clavicle. It helps in drawing scapula towards median plane, neck-head backward; rising of shoulders etc. this occurs due to forward bending of shoulders with weight transmitted to upper shoulder, neck & base of skull.^[5]
- **SHOULDER IMPINGEMENT SYNDROME:** also known as rotator cuff tendonitis is mostly occurs in sportsperson (basketball, swimmers, weight lifting over head). It is due to repetitive movement of arm over the head, spiking volleyball or due to stretch or direct blow. Continual pinching in supraspinatus tendon results in pain. It comes with persistent pain & affects everyday activities (overhead use of arm & weakness of shoulder muscles). Even due to degenerative changes in rotator cuff is common in elderly people.^[6]
- **UPPER CROSS SYNDROME:** the syndrome is characterized with over active pectoralis and upper trapezius musculature. There is also inhibition of lower, middle trapezius musculature, which results in winging of the scapula, elevated & abducted scapula.^[7] Dr. Vladimir Janda, a Czech Republic

physician identified common muscle imbalance denoted as upper cross syndrome. It is characterized by rounded shoulders with anteriorly tipped shoulder blade (scapula), forward poking chin. Mostly at atlanto-occipital joint C4-C5 segment, cervico thoracic joint, glenohumeral, T4-T5 segment joint dysfunction is observed.^[8]

- **CARPAL TUNNEL SYNDROME:** the carpal tunnel is a narrow passage formed by the flexor retinaculum & carpal bones where structures within the tunnel especially the median nerve, are vulnerable to compression. Compression to median nerve results in sensory changes over lateral side of hand and muscle weakness in thenar eminence. There is pain, numbness, tingling in fingers due to excessive exercise, infection, inflammation of digital tendon sheath like in regular use of keyboard, playing piano etc.^[9]

Even back problems are a major issue in complaints heard in routine for an individual. The four factors with increased risk of back injury are amount of force applied, repetition, posture & stress applied to backbone. It may be caused due to muscle strain, ligament sprain, degenerative changes due to aging is also a cause for such problems.^[10] Along with this regular use of mobile phones has lead to tremendous rise in severity of neck stiffness and upper back pain. The neck bends with an angle for use of gadgets like cell phones, tilting to different angles which vary from individual to individual which gives pressure over neck (varied amount depending upon angle) leading in similar symptoms.

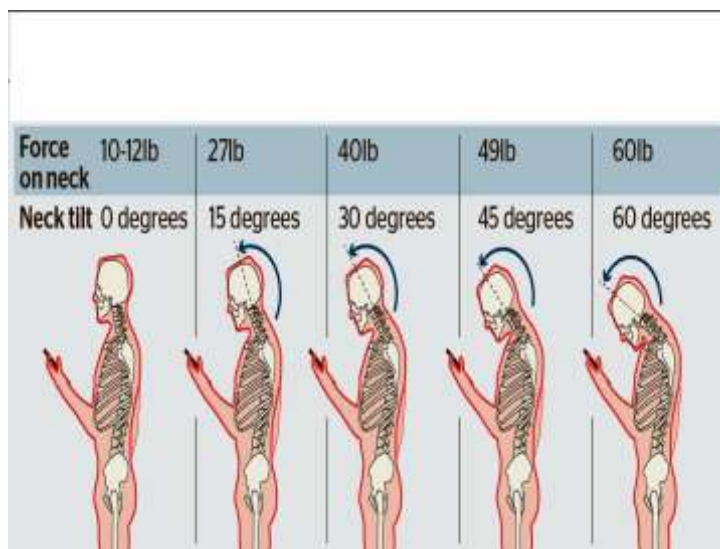


Figure: 1.1 Showing the Posture of Present Scenario.



DISCUSSION

The bodily skeletal muscles helps in producing movements, stabilizing body positions, generating heat

etc. The postural muscle contracts continuously when you are awake, for example, sustained contractions of your neck muscles hold your head upright.^[11] The MSDs

are injuries or pain in human musculoskeletal system where joints, muscles, ligaments, nerves is affected. They arise from sudden exertion or making same motion repeatedly, exposure to force or awkward posture. They arise from interaction of physical factors with ergonomics, psychological or occupational factors. MSDs are caused by biomechanical load, but most occupational related are based on motion that is repetitive, maintaining a static posture. Psychological factors also affect musculoskeletal system with increased muscle tension, raised fluid, blood pressure, more sensitivity, pupil dilatation. There is unnatural biomechanical load of posture affecting neck shoulders & back.^[12] For instance, the use of mobiles has become the most rapidly affecting factor for shoulder, neck, back and upper extremities. The weight of head is transferred to neck to shoulders up to extremities. The extremities become prone to hyper extension or flexion according to the use which lead to changes in musculo-skeletal structures of body. To be more concise in this context, the anatomical structures mostly muscles, ligaments, nerves and vessels are subjected to pressure of wrong postures and habits.

CONCLUSION

The above discussion can be concluded in short as the continuous usage of same posture must be altered with improving sitting postures, a little gap in between the working hours etc. One must include minimal stretching exercises techniques (like movements of neck, flexion extension of upper extremities, walking around). The stretching may give relief in muscle soreness, physical performance also improves. It is better to prevent rather than searching for the cure, so try to avoid such conditions without including medicine (pain killers, relaxants). The principal treatment methods include physiotherapies, massages, consulting a chiropractor who helps in releasing the tightness & pressure over soft tissues by various techniques.

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