

Text neck: a global epidemic of the modern era

Abstract

“Text neck” is the term used to describe the neck pain and possible damage sustained from constantly looking down at a mobile phone, tablet, or other wireless devices for an extended period of time. As a result of this uncomfortable position of the head, shoulder and neck muscles have to deal with that increased weight burden. The known long-term consequences may include neck discomfort, neck pain, stiffness, and headaches, which may get worse over time. Many people may use smartphones with the head shifted forward and the smart phone placed near the waist or lap while in a sitting position. This flexed neck posture can increase the moment of the cervical spine and induce muscle strain in adjacent portions of the cervical spine. It is especially concerning because young, growing children could possibly cause permanent damage to their cervical spines that could lead to lifelong neck pain. Exercise and stretching can play a big part in preventing and relieving text neck.

Keywords: text neck, smart phone, posture, pain, strain

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Introduction

Ted Turner, founder of the CNN had said “To be happy in this world, first you need a cell phone and then you need an airplane. Then you’re truly wireless”. We cannot agree more since for most of us smart phone is our best friend. No one wants to be parted from it. Smartphones provide various conveniences, such as sending and receiving e-mail, accessing the internet, and engaging in entertainment.¹ Living two days without a smart phone is like surviving unarmed in a combat zone. It not only helps us to stay connected but is a key to entertainment, networking, navigation, schedules and so on. The smart phone may have affected our social skills, but it is indispensable. A recent study by researchers at Baylor University in the US found college students spend an average of nine hours a day on their smart phones.² Female students spend 10 hours a day on the device, while men spend almost eight hours. Smartphones and tablets are changing the way we access information and entertainment. The use of these devices influences our posture and body mechanics in unhealthy ways that contribute to neck, upper back, shoulder, and arm pain. Some researchers have suggested that frequent smart phone use can lead to the use of a non-neutral neck posture or the development of musculoskeletal disorders.³ This flexed neck posture can increase the moment of the cervical spine and induce muscle strain in adjacent portions of the cervical spine.⁴

When it comes to the health of your neck or upper spine; smart phone is your worst enemy. “Blackberry thumb” – repetitive strain injury caused by texting has been joined by “iPad hand”, aches and pains caused by swiping and typing on a tablet. The list of ailments expands with every new piece of technology. Millions of people do it throughout the day and are totally unaware that smart phone use can be detrimental to the spine. In a recent study, Lee and colleagues concluded that the head flexion angle was significantly larger for text messaging than for the other tasks, and significantly larger while sitting than while standing.⁵

Text neck and a load of hurt

“The posture of bending neck to look down does not occur only when texting. For years, we’ve all looked down to read. People tend to do it for much longer periods and it is especially concerning because young, growing children could possibly cause permanent damage to their cervical spines that could lead to lifelong neck pain. How

can using a smartphone or other mobile device cause so much hurt? It’s all in how you look at it. Literally, looking down, dropping your head forward, changes the natural curvature of your neck. Over time, that misalignment can strain muscles and cause wear and tear on the structures of the neck.

According to Dr. Bolash, three things happen when you drop your head: neck moves forward, shoulders round forward or lift up towards ears and neck and shoulder muscles develop spasm. “Neck muscles, in their proper position, are designed to support the weight of your head, about 10 to 12 pounds,” says Dr. Robert Bolash, a pain specialist at C level and clinic. Research shows that for every inch you drop your head forward, you double the load on those muscles. Looking down at your smart phone, with your chin to your chest, can put about 60 pounds of force on your neck.

The forward head posture causes shortening of the muscular fibers around the joints of the upper spine and overstretching of muscles around joints, possibly producing chronic neck pain. Besides muscle pain, text neck can cause a host of other health concerns. Sitting in a slumped position restricts your ability of lungs to expand, impairing your lung capacity. Inhaling less oxygen means your heart needs to pump harder to distribute more oxygen-carrying blood through your body.

Symptoms associated with text neck

Text neck most commonly causes neck pain and soreness. In addition, looking down at your cell phone too much each day can lead to:

- Upper back pain ranging from a chronic, nagging pain to sharp, severe upper back muscle spasms.
- Shoulder pain and tightness, possibly resulting in painful shoulder muscle spasm.
- If a cervical nerve becomes pinched, pain and possibly neurological symptoms can radiate down your arm and into your hand.
- Smartphone users are more likely to complain of muscle fatigue, limited movement at the neck and decreased work capacity. Fatigue of sub-occipital muscles could alter balance due to the activation of tonic gamma motor neurons resulting from build-up of metabolites during muscle contraction.

- e. Using smart phones for long duration of time can cause repetitive use of certain muscles, resulting in muscle fiber injury and cumulative damage from acute trauma to the muscles of neck and shoulders.

According to recent study conducted by US doctors, they are far worse - "text neck" is becoming an epidemic that could lead to permanent damage. The posture we adopt as we stare at our phones increases the stress on the neck and can cause excessive wear and tear. Hansraj reports that although our heads weigh between 10lb and 12lb, as we angle them down to look at our phones, the effective weight on our necks increases; at a 15-degree angle it is about 27 lb rising to 60 lb at 60 degrees.⁶ As the head tilts or angles forward, the muscles, tendons, and ligaments of the neck support the head during movement and when static; such as holding the head in a forward tilted position. Even the intervertebral discs help absorb and distribute the forces exerted on the neck are involved. Maintenance of a non-neutral neck posture, such as a flexed posture, is a well-known causes of neck pain.⁷ A recent study links mobile hand-held devices with musculoskeletal symptoms. The results show a consistent relationship between mobile device use and pain in the shoulders and neck; total time spent using a mobile device on a typical day was significantly associated with any pain reported in the left shoulder, the right shoulder and the neck.⁸ According to the research, with smart phone users now spending an average of two to four hours a day with their heads dropped down, this results in 700 to 1,400 hours a year of excess stresses seen about the cervical spine. Eventually, in conjunction with a sedentary lifestyle, it could lead to serious consequences.

How to nix text neck?

Technology isn't going away, that's one thing we can say for sure. So what can you do to save your spine? Prevention is the best medicine.

- i. To avoid these posture issues, focus on holding hand phones, tablets and e-readers level with your eyes. This prevents the head from drifting forward.
- ii. Sit up straight with your head in a neutral position (ears over your shoulders), and your feet planted flat on the ground while using the phone. Good posture is not only good for the health of your spine; it is good for your over-all health and mood as well. Researchers have found that standing straight elevates testosterone and serotonin levels and decreases cortisol levels, hormones that affect your mood.
- iii. Avoid spending hours each day hunched over and looking down at your phone.
- iv. Use the 20-20-20 rule. Look at something that's 20 or more feet away every 20minutes for at least 20 seconds. This significantly reduces Computer Vision Syndrome, which causes eyestrain, dry eyes, blurred vision, headaches, and neck and shoulder pain. Symptoms are exacerbated by poor posture and lighting, as well as vision problems.
- v. Avoid using the device with a single hand. Use your index finger to text-not both of your thumbs.
- vi. Every 20 minutes stand up, roll your shoulders back and walk around so you're not stuck in one position.
- vii. Use a cervical pillow or roll while sleeping on your back.

- viii. Beyond smart phone use, the spinal surgeons recommend that people who work at computers or on tablets use an elevated monitor stand so it sits at a natural horizontal eye level.

- ix. Some apps can give alarming signals to users to avoid prolonged looking-down posture.

- x. Try out new gadgets before you buy them to make sure they're comfortable to use, and spend time setting them up in a way that works well for you.

- xi. Don't use your cell phone or your tablet for extended computer work. Use your desktop or laptop computer for extended work and make sure these devices are arranged ergonomically.

- xii. Helpful exercises

- xiii. Chin-tuck exercise:** Gently elongate the crown of your head upwards and tuck your chin inwards (creating a double chin); hold for 15 seconds.

- xiv. Neck side tilt:** Tilt your head side to side for 15seconds; try to keep the crown of your head elongated upwards as you perform this exercise.

- xv. Neck turns:** Turn your head side to side for 15seconds; again keep the crown of your head elongated upwards.

- xvi. Shrug your shoulders and move your fingers around to keep the muscles more relaxed.

- xvii. Shoulder blade pinches:** This move will help to strengthen the muscles of the upper back, which tend to get lengthened and weakened when you slouch. While sitting or standing straight, pinch your shoulder blades together and back. Hold for a few seconds, release and repeat. Perform 10 reps every hour throughout the day.

- xviii. Pec stretch:** Stand in a doorway and place your forearms against the frame of the door, with your elbows at shoulder height. With one foot forward, draw your shoulder blades together on your back and gently lean into the door. Hold the stretch for 30 seconds, and then repeat once more. Perform this stretch three to four times a day.

- xix. Prone Y extension:** Lie flat on the floor with your legs shoulder width apart and your arms extended in a "Y" over your head. Lift your torso off the ground while simultaneously externally rotating your shoulders so that your palms are facing upwards. Hold this position for 5-10seconds, and then lower down. Repeat for 3 sets of 8 repetitions.

Conclusion

Contemporary ergonomic guidelines should include advice on how to interact with handheld electronic devices to achieve a relaxed posture and reduced muscle load in order to reduce the risk of musculoskeletal disorders.⁹ Your first contact each day should be with a human being, not a machine. When you turn your cell phone on, you turn the rest of the real world off. Avoiding the cell phone slump is simple and anyone can do it. It just requires a little self-discipline and awareness.

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Conflicts of interest

Author declares that there is no conflict of interest.

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