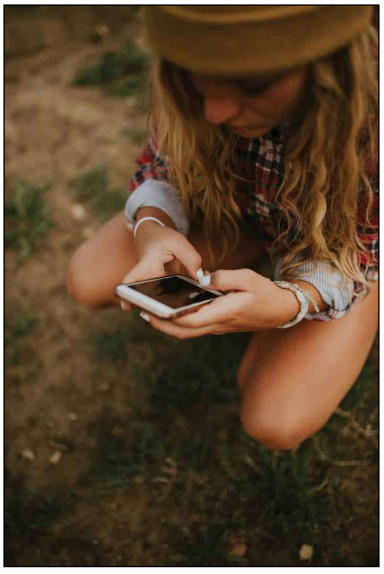
Commentary

# Text Neck: Looking Down at Devices for Way Too Long

**Katina Michael**
School for the Future of Innovation in Society
Arizona State University
Tempe, AZ 85287 USA
and
School of Computing and Augmented Intelligence
Arizona State University
Tempe, AZ 85281 USA

**Text neck is** a diagnosed condition denoting overuse of the neck muscles with technology devices such as tablets, smartphones, and video game consoles [1, p. 141]. The condition is prevalent in all age groups, particularly in those who are heavy users of smartphones [2], [3], [4]. The main contributor to text neck is the frequency of handheld technology device use and the length of time that a user is engaged with their device without physical movement, while their head is in a forward posture [5]. It is said to be a type of repetitive stress injury that can affect the spine, neck, shoulder, upper back, muscles, and associated ligaments [6]. Although studies vary in their findings, adults use their mobile phones on average for 5 hours per day, university students for about 8.5 hours per day, and others on average about 2 hours per day [7], [8], [9], [10]. Some studies have shown that people have their mobile phones with them for all but 2 hours of the whole day, increasing the ease with which to access online applications, thus continuing to aggravate existing strains. Text Neck, also referred to as iNeck, is now recognized as a global public health problem [11].



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## What are the symptoms to look out for?

Self-diagnosis of any medical condition is altogether discouraged. However, some of the telltale signs of text neck that can be shared with your general practitioner, if symptoms, persist include one or more of the following conditions.

- Neck pain.
- Shoulder pain.
- Back pain.
- Muscle stiffness.
- Nerve pain, tingling, or numbness in upper limbs.


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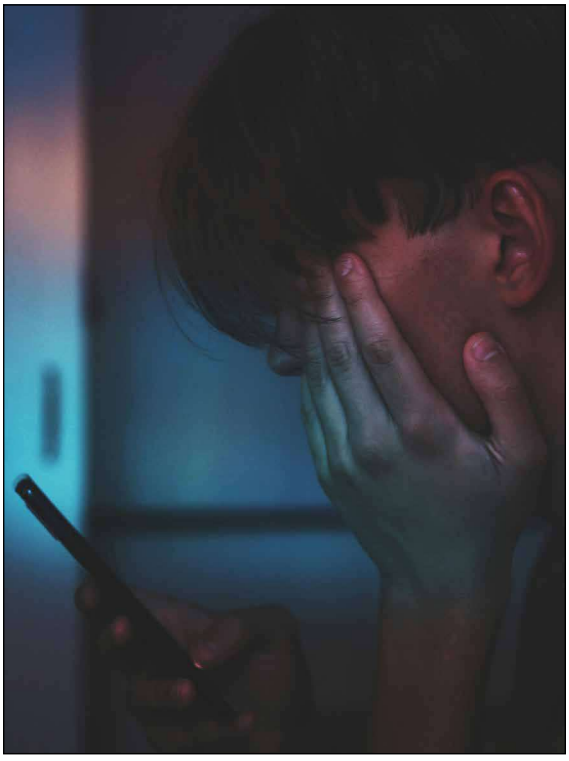
- Change in posture.
- Headaches and eye strains.
- Lung capacity and expiratory flow rate.
- Gastrointestinal issues through excessive sitting.
- Degenerative spine [12], [13], [14].

## Developing an iHunch: How serious is it?

In simple terms, when one develops a visibly poor posture due to holding their mobile phone in an awkward position, they are said to have developed an iHunch. Clinically, this has been referred to as kyphosis, once commonly known as the Dowager's Hump, described as an outward curvature of the thoracic vertebrae of the upper back, appearing as a rounded hunch, in addition to a bump on the neck's base [15]. A person with thoracic kyphosis has a posture where the head is jutting forward, particularly when they are standing in an upright position or walking. The condition might develop naturally with older age (e.g., osteoporosis or disk degeneration), but clinics are now treating children and adolescents with an obvious excessive curvature.



Overuse of smartphones or gaming consoles can put undue pressure on the spine, even if the tilt of the head is less than 15°. The human head weighs about 4–5 kg (10–11 lb) in the neutral position, and that is fine as it is a natural state of bodily balance. However, tilts that are more excessive as users try to interact with their devices in awkward positions (e.g., on a sofa, in a car, while waiting at the bus stop, or even while walking) have been measured by medical practitioners who say that as we continue to tilt our head forward to say 60°, we are making our head carry about six bowling balls of weight or about a 20–25-kg (44–55-lb) child [16], [17], [18]. Experts say for every inch one's head is tilted forward, the pressure on the spine doubles [19]. Unfortunately, falling asleep while using a device in a frozen and contorted position might well cause a significant strain with excessive soreness after just a few minutes, and that can be highly problematic for any person, especially in terms of pain management and the ability to be able to engage in meaningful work or at school.

## Ergonomics and gaining awareness about personal device habits

Users of smartphones and other technology devices need to be aware of their technology habits and behaviors and their bodies to ensure that they are instituting medical prevention strategies rather than trying to fix a problem that has developed. Studies have determined a correlation between the incidence of text neck syndrome and smartphone addiction [20], [21].

To an extent, this is a classic ergonomic issue that has come about as a direct result of technological innovation, as people have begun to increasingly use digital media of all types to text, talk, browse the internet, listen to music, watch videos, or play online games. Ergonomics has been defined in the *Merriam-Webster* dictionary as "an applied science concerned with designing and arranging things people use so that the people and things interact most efficiently and safely" [22]. A prevalent international standard looking at the ergonomics of human–system interaction is ISO 9241-210:2019, which specifically looks at human-centered design for interactive systems [23]. While it was very important to study ergonomics in the workplace [24], it is now becoming just as important to consider ergonomics in everyday settings, particularly since the future of work has changed

dramatically since COVID-19, and more people are working from remote locations where ergonomic design is unavailable.

Users today do not just carry a phone with them in their pocket, in their hands, or strapped to their arms or belt buckles. Users may additionally be wearing smartwatches, large earphones on their heads, pods in their ears, goggles around their eyes and back of their heads, head-mounted audio–visual recorders, haptic devices, remote controls, and more. The social implications of extended reality (XR) technologies in this context require further research [25], as it may add even greater pressures on the human body, causing new types of strains. While the main tech trends have been toward miniaturization, some devices have hit an optimal size as the motherboard reaches maximum capacity with the existing architecture.

## Preventing the onset of thoracic kyphosis

Some general tips can be found below on how to avoid the onset of text neck that can lead to thoracic kyphosis.

- Take frequent microbreaks—do not stay dormant in your chair, in your bed, in the car after you have switched off the engine, on the kitchen bar stool, on the staircase, and in the middle of nowhere. Sitting still for more than 20–30 min at a time can lead to additional strains and injuries. Try to remember to do a gentle doorway stretch, a chin tuck, or a bow pose to encourage a neutral neck position.
- Set time limits for usage—create hard limits when engaging on your smartphone for work-related business or personal interests. These should be no longer than 5–20 min of time depending on one's age. Use support apps to monitor smartphone usage, automatically switching off active app time once the predetermined limits you have set have expired [26].
- Think about sleep hygiene—do not sit up awkwardly in bed trying to type and respond to messages as you are falling asleep or waking in the morning. What you think may take you 5 min, may end up meaning you fall asleep hunched around your phone, laptop, or tablet. There is also the possibility that your phone may hit you as you fall asleep texting, causing facial injuries.
- Try to leave that handset behind as often as possible—deliberately engage in downtime without the use of your smartphone. Examples might include when walking the dog, going shopping for groceries, going out with your kids to the park, and going out with friends.
- Use your phone's functionality to the maximum—rather than holding your smartphone in your hands, might you be able to place it in your pocket or bag and use the phone's Bluetooth to connect it to a speaker or use earpods/buds to listen to your emails rather than read them. There are now many productivity apps available for download, such as voice recognition software.
- Lift the phone higher to your line of sight—if you must use your phone because you are multitasking and with responsibilities that require mobility, hold the phone higher up to your eye level so that your neck is not under additional pressure.
- Use the right device for the right task—do not navigate to your smartphone for tasks that require a tablet, a laptop, or a computer. Ensure you exploit the smartphone for what it offers. If you require additional apparatus, like a standalone tripod for taking video on the smartphone, then anticipate the situation and ensure that you have the right add-ons.
- Turn off notifications—remove the temptation to look at your phone with incoming messages from SMS, work or personal email accounts, or a variety of social media platforms.
- Remember to exercise—those who are constantly hunched over their computer are likely taking shorter breaths and not filling their lung capacity to the maximum. This can negatively impact different parts of the body. Exercise also means that the prevalence of sitting-related ailments can be deterred, avoiding uncomfortable procedures such as colonoscopies.

- Gaze at nature or other people, instead of gazing at your phone—it is much more pleasurable to look up. Resist the urge to pull out that smartphone while you are queuing or waiting for someone. Try taking in nature, talking to the person next to you, playing a simple game of eye-spy by yourself, or practicing a mindfulness exercise.

## The real fear of missing out (FOMO) should be?

What is perhaps even worse than those physical ailments that come from the overuse of smartphones and tablets is what is happening to us in our inward spirit and our relationships. When we look down, we are missing out on those incredible natural and spontaneous moments [27]. We are not gazing into one another's eyes, which is so important for human development and social relationships. Eye contact with our friends and the sense of touch with our family are incredibly important in demonstrating love. Removing the artificial screen from in front of our gaze is not only healthy but a requirement as humans are made up of organic matter. If we are starved of love or that gaze, we begin to shrivel and lose our confidence and even our purpose.

## Turning to the physical without being connected to the virtual

Physically, there are some exercises a person can do to keep an iHunch or related ailments at bay. It is never too late to get active. Taking a walk for 30 min daily can go a long way to preventing some of the more serious symptoms of text neck. Swimming or light cardio and weights are also good strategies when supervised accordingly. Specific exercises that one can do at home include the following.

- Neck tilts.
- Pinch and squeeze shoulder blades.
- Shoulder rolls.
- Resistance training.
- Chin tucks.
- Lion's roar stance.
- Bow pose.
- Wall-angel alignments on your back.
- Yoga.
- Pilates (for those inclined to strengthen the whole body).

## Prevention is better than cure

If people could catch all of their habits early enough, they could intervene and replace risk-prone behaviors with positive ones that will lead to enjoying long-term physical health. Self-care options are the best, as they are free, and the individual is in control. Physical therapy is an option but can be expensive for those who are not insured. People can wear braces or use anti-inflammatory drugs or sprays, take medication, or, in the worst case, have spinal surgery, but these are last resort and not really solutions.

Positive practices need to be taught from childhood to provide young people with every opportunity to thrive in life, exploiting technology for its capabilities but respecting the device for what it is—more than just a play toy. Children should be given opportunities to engage with digital and media literacy classes (beyond cybersafety) [28] and shown how overusing their fingers on mobile social media apps can create problems for the fluid supporting the flex and clasp motion causing carpel tunnel syndrome requiring an operation [29]. Parents should inspect the hands of their children or watch for bruising near joints and knuckles [30], seeking medical attention if a child makes a complaint regarding their wellbeing. In this study [31], for example, it was found that nearly 50% of all participants were moderately severely symptomatic, aligning with the statistics related to usage in the Introduction of this article. It is clear that we need to rethink the ergonomic design of our tech devices and build technologies that are not behaviorally designed to keep us locked in longer.

When Sergey Brin was promoting Google's Glass Explorer wearable device during his TED talk in 2013 [32], he said:

> "But now people get information by turning away from the other people they are with… Is this the way you're meant to interact with other people? Is the future of connection just people walking around hunched up, looking down, rubbing a featureless piece of glass?" [33]

**Of course, he** was speaking of doing away with the need to be carrying a smartphone and looking down all the time instead of being able to look up through Google's Glass Explorer device. Yet, even with a digital glass over one eye, our field of vision is diminished, and our realities become mixed.

Somehow the virtual becomes more gripping; despite our feet being on the ground, our brains are drawn to the cloud. Our technologies have real social implications for how we relate to one another. They can help us to thrive or if we allow them to control us, in ways we never imagined. In the busy lives that we lead, where home and work boundaries are blurring, the phenomena of text neck syndrome and the very real implications on the self can be debilitating. Text neck symptoms can cause additional stresses, heightened anxiety, a feeling of entrapment, and even enslavement to a device [34], [35]. We might be the first to say "it can't happen to me," but that is when we should be especially concerned. How aware are we of our rituals and habits? What kinds of patterns do we detect in ourselves? How might we wish to change these habits to ensure a healthy body? These are just some of the questions that I hope to have made you think about in this simple but important article related to health and well-being, remembering that one's physical state has a bearing on their mental health, as well. ■

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**Katina Michael** is a professor with the School for the Future of Innovation in Society, Arizona State University, Tempe, AZ 85287 USA, and the Arizona State University, School of Computing and Augmented Intelligence, Tempe, AZ 85281 USA. She is also the director of the Society Policy Engineering Collective.

■ Direct questions and comments about this article to Katina Michael, School for the Future of Innovation in Society, Arizona State University, Tempe, AZ 85287 USA; School of Computing and Augmented Intelligence, Arizona State University, Tempe, AZ 85281 USA; katina.michael@asu.edu.