

Technology-related Posture Problems



For many years, office workers have known that spending hours at their desks can induce back and neck pains. Furthermore, long periods of staring at display screens are associated with various eye strain symptoms. As more and more of our time is now spent using modern technology, it is almost inevitable that a range of new conditions are being identified that relate to our use of computers and personal handheld devices.

Apart from the spinal problems associated with what is called the axial skeleton, we are now encountering more issues with parts of our appendicular skeleton. That means the hundred or more bones and joints in our limbs and shoulder and pelvic girdles.

Even whilst reading this article your posture is the position in which you spend that time, it may be lounging on the couch, lying on your bed, or sitting at a desk, perhaps even walking about and not being aware of potential hazards. In all probability, it is not a balanced posture and some parts of your body are working harder than others. For comfort and ultimately good health, an anatomically neutral posture is preferable.

Posture has meant different things to different generations. Our Victorian ancestors on both sides of the Atlantic were preoccupied with the matter of correct posture. This was partly a social convention within the middle classes, to move away from slouched and relaxed postures that were associated with the aristocracy, while remaining distinct from the common workers. New rules for posture became associated with both class and etiquette. Following these rules became strongly linked to one's financial status, physical wellness, and moral character.

From the late 18th century and into the mid-19th century, the concerns and advice led to posture standards that impacted on dress and furniture design, so much so that it would be regarded as a moral failure to stray from the new ideals. Unfortunately, particularly for women, it could lead to condemnation of morals, character, and beauty.



However, by the late 1800's the middle class itself had expanded and included more people from more diverse backgrounds. Increased consumerism and a desire for time to relax and enjoy the fruits of work, led to an easing of the stiff postures and Victorian manners. Leisure activities including the popular dances of the time reflected these attitudes by emphasising flexibility and ease of movement over careful, rigid postures.

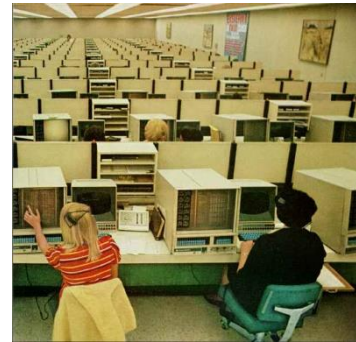
As in our modern society, it was not without what we now call "push-back". Those with traditional values sought to counteract the growing trend toward relaxed postures in the late 1800's, citing ramifications on health. Medical professionals gave detailed instructions for proper behaviour in both sitting and standing. These guidelines were prominently featured in manuals for raising children, where exercise and postural education was heavily stressed.



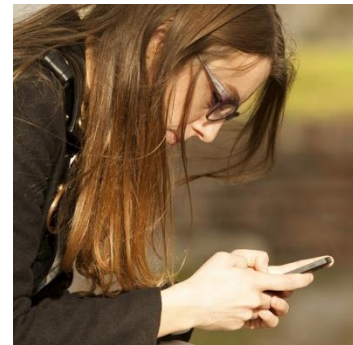
Then as now, there were strong beliefs that the consequences of poor posture in children would lead to spinal deformities and the organs to move or become compressed against each other thus impeding function. The perception that extended periods of sitting in school classrooms were harmful, led to a wide variety of tests and treatments for postural problems: enforcement of habits, exercises, and new furniture designs. From the late 1800's to as far as the 1960's, attention to posture was a significant matter in schools and universities that even affected domestic attitudes. Prominent voices in parenting and childhood development also trumpeted the importance of postural training in the home.

After WWII, the middle class grew rapidly, and new communities were formed. Increasingly plush furniture, looser clothing, and family gatherings around the radio or TV almost demanded a sort of lounging. Doctors came to largely abandon postural evaluations or considerations in all except a select few conditions by the 1960's, due to what would now be regarded as pseudo-science, covert forms of racism and misogyny.

In the late 20th century, from the 1970's onwards, there has been an exponential growth in technology that has brought us the mainframe and then the personal computers and mobile phones. Initially these were still office-based and by the 1990's, workplace health and safety concerns were leading to a greater recognition of posture and repetitive actions as a cause of ill health that required interventions. The explosion of devices for personal use came with the advent of personal data assistants and then the laptop computers, tablet devices and now the ubiquitous smart phones.



The most noticeable aspect of laptop and handheld device usage is the rounding of the neck and shoulders as devices are tiresome to be held at face height or used laid-flat on desks or perched on the knees when sitting. Prolonged slouching is one of the most dangerous postures for young people. A poor posture causes muscles to shorten and lengthen in abnormal ways. Within the muscles, specialized cells called nociceptors detect pain and send pain signals to the brain.



Activation of nociceptors can have more widespread effects within our bodies. Chronic inflammation caused by tissue damage from overuse also leads to something called Nociplastic Pain. This is a relatively new concept that may explain type of pain experienced in the absence of nerve injury.

The good news is you can reduce nociceptor activation by using an anatomically neutral posture. On the following page are some suggestions that may ease discomfort and reduce the long-term effects that could arise from overuse of modern technology.



1. “Tech neck” is the forward head posture that many people unconsciously adopt when using their phone for prolonged periods. In many cases, this forward head posture leads to neck and shoulder pain, headaches and a hunched back over time.
 - Maintain an upright spinal posture when using your smartphone
 - Avoid holding your phone in your lap or below chest height – try to keep your phone at chest, chin or eye level to minimise neck bend and maintain optimal posture
 - If your phone is below eye level, look down with your eyes rather than your neck
 - Keep your wrists relaxed and as straight as possible
 - Avoid holding your phone between your ear and shoulder
 - Regular stretches and targeted exercises, such as chin tucks, neck rotations and shoulder shrugs
 - Move your laptop to a desk or specialised adjustable frame at comfortable height

2. “Scroller’s Thumb” smartphones require a lot of repetitive movement from our thumbs. Tendon sheaths can become inflamed and thickened, leading to clicking and locking, which is painful.
 - With repetitive actions, any reduction in the frequency and intensity of use is the primary objective. Continuous scrolling without a specific objective in mind, is a habit that can only be reduced by conscious effort.
 - Changes of digit or switching hands is less efficient but can help.
 - Avoid typing on smartphones for long period of time and keep your messages short
 - Hold your phone in one hand and use your index finger on the other hand to text or scroll
 - Record a voice message or make a phone call instead of typing out a message
 - Regular finger stretches and targeted wrist exercises

3. “Wrist pains”. The classic condition is De Quervain’s Tenosynovitis, which has been recognised in machine workers and other manufacturing industries for many years.
 - Periods of rest, as with trigger thumb conditions, are helpful.
 - Reductions in continuous use of pointing devices.

4. “Digital Eye Strain”. Eye, fatigue, blurring of vision, double vision, headache, dry and itching eyes. High levels of concentration reduce blink frequency and causes drying of the conjunctival membranes. Use of a display screen for long periods reduces the need to refocus the internal lens compared to normal activities where we change vision from near to far more regularly.
 - Adjust your screen settings including contrast, brightness and font size
 - Keep a sensible distance from your smartphone or screen (16-18 inches away)
 - Control the light with night mode and anti-reflective screen protectors

As a general rule, you should take regular breaks every 5-15 minutes of smartphone use. You can set up alerts on your phone to keep track of your usage. By following the ergonomic practices, you can enjoy the benefits of your smartphones and laptop computer without compromising your health. P.S. Don’t forget to use your nighttime for adequate sleep!