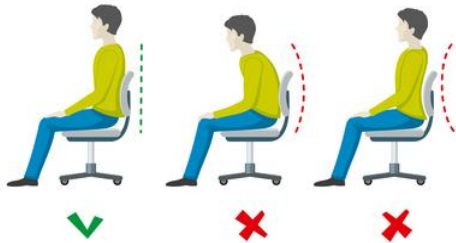


# Questioning the obsession with “correcting” sitting and lifting postures

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How many of our mothers have ever told us to, “sit up straight” and to “stand up tall”?



How many people in their workstations have been told, “You need to improve your ergonomics and adopt a neutral posture, to reduce the risk of damage to your spine”?



How many workers in factories have been given the lecture “Bend with the knees, not the back or else you’ll develop low back pain and injure your spine and discs”?



Throughout our lives, we are bombarded with images, posters and videos telling us to sit and stand up straight, not slouch in order to prevent pain and injuries. Besides, in many cultures and societies, persons with “proper posture” are perceived as being more respectable, attractive and of having even greater moral values (Gilman 2018). After all



chimpanzees and gorillas slouch and are unable to stand up tall, but as human beings we are certainly more “advanced and dignified” than primates. Who knows if gorillas suffer from neck and back pain due to their constant slouched posture and poor lifting mechanics?



Despite questionable evidence, many health care professionals such as physical therapists continue to strongly support the belief that an upright or a slightly lordotic posture is ideal for sitting, standing, lifting and for maintaining optimal spinal health (Korakakis et al 2019).

It is widely assumed that since many experience neck and low back pain (LBP) while sitting slouched or bending to lift, then obviously those postures must be bad for us. However, if certain flexed postures are provocative of pain, does that truly mean that the specific irritating posture is the cause of the pain? Does that automatically imply that the flexed posture or movement needs to be permanently avoided?



After an ankle sprain, weight bearing is often painful, yet patients are not lectured on the dangers of putting weight on the ankle. They are also never told to permanently avoid walking on the injured ankle again; they are rightly instructed to weight bear as tolerated.

While there is some weak evidence that sitting and forward head posture (FHP) may be associated with some spinal pain problems (Tinali et al 2021, Mahmoud et al 2019), the aim of this paper is to present supportive evidence to question the clinical value of “correcting” sitting and lifting postures for those with spinal pain.

***“It is unlikely that awkward occupational postures are independently causative of LBP.”*** – Roffey et al 2010

Even the studies that find an association between posture and pain must be taken with a grain of salt. For instance the systematic review concludes that, “...age played an important role as a confounding factor in the relation between FHP and neck pain.”- Mahmoud et al 2019

This simply means that we develop greater forward head posture as we age, and since age is associated with the greater likelihood of developing neck pain, there is therefore an inevitable association between FHP in seniors and neck pain; but this does not necessarily mean that FHP is the cause of neck pain. In fact in the adult population, habitual FHP was not associated with neck pain (Edmondson et al 2010).

**Do those who sit up tall and always avoid bending have a reduced risk of developing neck and low back pain?** The truth is that after decades of research, we still don’t really know.

***“... there is no evidence to suggest that correct posture prevents or reduces pain and disability.”*** – Slater et al 2019

However a systematic review has concluded that there is conflicting to strong evidence against the commonly held hypothesis that bending, twisting, awkward postures, and sitting are associated with LBP (Kwon et al

2011). Risk factors that may actually be associated with the development of acute and persistent neck and LBP include fear (Wertli et al 2014), catastrophizing (Steenstra et al 2017), stress (Ortego et al 2016), depressive/anxiety symptoms (Liu et al 2019, Pinheiro et al 2015), anger (Nisenzon et al 2015), fatigue (Salveti et al 2013), low job satisfaction (Hoogendoorn et al 2002) , hopelessness (Hülsebusch et al 2016), low self-efficacy (Puschmann et al 2020), physically demanding work (Steenstra et al 2017) and physical inactivity (Felício et al 2021, Scarabottolo et al 2017, Hashem et al 2018)

For decades, health care providers have been instructing patients with LBP to “contract their core” and maintain a neutral posture to help in their recovery and prevent future episodes of LBP. However, there is evidence that individuals with chronic LBP present with reduced lumbar flexion mobility and greater EMG activity of their lumbar spine muscles, which are associated with greater pain-related fears (Geisser et al 2004).

Let’s just put it this way: if core strengthening and maintenance of neutral posture were cures, we would have certainly eradicated LBP by now. Perhaps we could provide patients with really supportive back braces to completely stabilize their spine which would technically keep them in neutral at all times and eventually eradicate their neck and LBP.



Another option would be to simply undergo multilevel spinal fusion surgery to stabilize the entire lumbar spine, which would again ensure a constant neutral spine and theoretically cure LBP and prevent all recurrences.

*(I certainly hope that you can sense the sarcasm).*



## Is the degree of lumbar spine flexion during lifting a risk factor for the development or the maintenance of LBP?

*“...the evidence suggests that occupational bending or twisting in general is unlikely to be independently causative of LBP”* – Wai et al 2010

A systematic review found that compared to those without LBP, individuals with LBP lift with less lumbar flexion (Saraceni et al 2019).

*“...greater lumbar spine flexion during lifting was not a risk factor for LBP onset/persistence...”* – Saraceni et al 2019 (Systematic review)

Using motion analysis and EMG, this study evaluated 3 different lifting postures; maximal extension (lordotic), mid-range (flat-back) and fully flexed. They concluded that, *“A flexed-back posture is associated with increased strength and efficiency of the back muscles compared to a lordotic posture.”* – Mawston et al 2021

**Could the obsession with maintaining a “perfect” up tall posture be harmful? Could the long-term avoidance of bending be a contributing factor to pain, disability, fear and anxiety?**



In my younger days as a physical therapist, I would analyze my patients’ postures in detail, and then confidently provide corrective measures to optimize their sitting, standing and lifting to prevent future pain and injury. As I’ve become older and perhaps wiser (*which I understand is arguable*), I rarely focus on or even comment on my patients’ postures; based on growing evidence, there are so many other factors of

much greater importance to consider and potentially address.

Whenever you get the temptation to give corrective exercises to “fix” someone’s, posture and potentially make them feel bad about their body, simply recall the systematic review concluding that there is strong evidence against the commonly held hypothesis that bending, and awkward postures are associated with LBP (Kwon et al 2011). Once again, the risk factors that may actually be associated with the development of acute and persistent neck and LBP include fear (Wertli et al 2014), catastrophizing (Steenstra et al 2017), stress (Ortego et al 2016), depressive/anxiety symptoms (Liu et al 2019, Pinheiro et al 2015), anger (Nisenzon et al 2015), fatigue (Salveti et al 2013), low job satisfaction (Hoogendoorn et al 2002), hopelessness (Hülsebusch et al 2016), low self-efficacy (Puschmann et al 2020), physically demanding work (Steenstra et al 2017) and physical inactivity (Felício et al 2021, Scarabottolo et al 2017, Hashem et al 2018).

I am convinced that all those years I spent on prescribing my patients so called postural correction exercises, didn’t make an ounce of difference in their actual posture. I may have felt validated when they reported feeling better as a direct result of the novel movements that they performed several times a day, but it was highly unlikely that the self-reported symptom improvements had anything to do with permanent actual changes to their posture. I am saddened to think that I may have unintentionally harmed some of my patients as I perpetuated the belief that their spine was fragile. I regrettably promoted the concept of a perfect posture and made unsubstantiated claims that it would prevent future injuries. To my defence, the patient care I provided was based on the best available knowledge I had at the time.



With growing evidence that flexed postures are not necessarily harmful (Mawston et al 2021, Slater et al 2019, Kwon et al 2011, Saraceni et al 2019), we all need to stop spreading false and potentially damaging beliefs to our patients.

Based on the best available evidence and a touch of common sense, I now educate my patients on the importance of moving with awareness into a variety of comfortable and relaxed postures as often as possible. It is time that we all stopped prescribing the “one perfect” sitting, standing or lifting posture.

Perhaps it would be more effective if we prescribed patients with a variety of options and help them find and consciously investigate their own most comfortable and relaxed postures (O’Sullivan K et al 2013).

***“Comfortable postures vary between individuals, so it is useful to explore different postures.”*** – Slater et al 2019

The next time someone asks you, “*What is the best chair and posture when I’m sitting?*”

You may answer, “*Based on scientific evidence, there actually is no one posture that is good or bad. In an ideal world you should sit on a variety of chairs, at variety of heights and in a variety of positions. A good posture is dynamic, with emphasis on change and movement.*”

***Your best posture is your next posture.*** –Morgan Freeman



The next time someone asks you, “*What is the best way to lift to prevent injury?*”

You may answer, “*There is no one answer to that question. Optimal lifting is based on your own preference, your comfort, and the load being lifted. However factors that may*

*be far more relevant than posture when lifting are your level of training, if you are warmed up, or if you’re experiencing fatigue, fear or stress before or during the lift.*

One could argue that placing excess focus on posture can make individuals needlessly feel guilt and shame that they are the cause of their pain. Beliefs that one has an awful posture can have a nocebo effect. The person may feel that they will have pain due to their “bad” posture and it becomes a self-fulfilling prophecy.

In summary, let us stop the over-hyped solution of correcting sitting and lifting postures. We must stop insinuating that the spine is fragile and that it can easily be damaged if flexed (with the exception of those with osteoporosis). For the benefit of the majority, we can discontinue vilifying flexed postures and movements.

As health care providers our primary focus must be to minimize fear and maximize a sense of self-efficacy. Following an episode of neck and/or LBP, rehab may include education, movements and training to improve tolerance to sitting in various postures including on soft couches, firm chairs and the even the floor.



Similarly lifting may include training in a variety of ways; with a flexed spine, a neutral spine and even twisting using a variety of loads. The load will obviously be based on the individuals’ tolerance and unique maximal potential at that moment.



***Variety in postures and movements are essential spices for the body.*** – Bahram Jam

Posture is variable and individualized; it’s time to put an end to medicalizing normalcy!

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