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"Sit Up Straight": Time to Re-evaluate

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Posture is a frequent topic of discussion for patients, clinicians, the media, and society. A common belief is that spinal pain is caused by sitting, standing, or bending "incorrectly." Despite the absence of strong evidence to support these common beliefs, a large posture industry has flourished, with many interventions and products claiming to "correct" posture and prevent pain. Unfortunately, many health care professionals provide advice in line with this non–evidence-based perspective. In this Viewpoint, we reflect on common beliefs regarding posture and spinal health and why they are so widely held, and consider how clinicians can positively influence these beliefs.

Beliefs About Posture

Health care professionals and the community typically agree that avoiding spinal flexion is the safest way to sit[5,9] and bend.[8] Patients and pain-free members of the community are commonly advised to sit upright and undertake bending and lifting tasks in a "natural" lordotic posture. Manual handling guidelines in the United States and the United Kingdom advocate a straight back or a slight bend of the back during lifting tasks. A slightly lordotic posture is also commonly identified as the ideal standing position.[5] The assumption is that maintaining these postures might protect spinal structures, and posture beliefs likely reflect the fact that sitting, standing, and bending are often provocative for complaints such as low back pain. Awkward postures and heavy lifting may precipitate episodes of acute low back pain, and some links between lifting and injury have been reported. Despite widespread beliefs about correct posture, there is no strong evidence that avoiding incorrect posture prevents low back pain, or that any single spinal curvature is strongly associated with pain.[6]

Protecting the spine is also advocated by the fitness industry. Common advice is that the "core" muscles of the trunk must be consciously activated to maintain a "correct" posture and protect the spine. Advice about "perfect form" given in relation to weight-training is often applied away from the lifting platform. While there is additional muscular effort required for correct posture when sitting and lifting, there is no evidence to suggest that correct posture prevents or reduces pain and disability. People with low back pain bend their spine less and show more trunk muscle activity when forward bending and lifting. The notion that people with low back pain must be careful and "protect" their spine is further challenged by the association of higher levels of fear and lower self-efficacy with a guarded way of moving.[2]

The non–evidence-based perspective that pain can be prevented by avoiding incorrect posture, such as slouching, is reinforced by fear-inducing messages in the mainstream media. People might become concerned about their spinal health when they are exposed to articles about potentially damaging postures and advertisements for posture-correction aids. Unhelpful posture ideals are also reinforced by long-standing stereotypes that suggest posture reflects a person's sex, dignity, respectability, attractiveness, and morality.[3]

Assessing the Posture of People With Pain

Observing the posture of a person presenting with musculoskeletal pain has a role. It may help patients to feel they are being taken seriously and allow the clinician to identify rare cases of clinically

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relevant deformity such as a significant, deteriorating scoliosis. Importantly, the clinician may observe overly protective postures, levels of muscle tension, apprehension, vigilance, distress, mood, and body image that can provide insights into behavioral responses and how people make sense of their pain experience. We strongly encourage building a relationship with patients to explore why they adopt certain postures. Although there is evidence that people with low back pain may find certain postures provocative,[1] it cannot be concluded that the postures are the cause of pain.

Assessing the Posture of People Without Pain

There is no evidence to support posture or movement screening for primary prevention of pain in the workplace. People come in different shapes and sizes, with natural variation in spinal curvatures. Preferential lifting style and posture adaptability are influenced by spinal curvatures.[11] The mandatory manual handling training and ergonomic assessments in offices that pain-free people are often subjected to may perpetuate a misconception that common daily tasks and working environments are dangerous.

"Mind Your Back": Mind Your Language!

The iatrogenic nature of low back pain is a reminder of the clinician's responsibility to be mindful of the language we use. Advice given by clinicians can lead to fear and encourage hypervigilance. Here are some examples.

"Sit Up Straight" In the absence of any good evidence that one posture exists to prevent pain, asking patients to work hard to achieve correct posture may set them up for a sense of failure and create more anxiety when their pain persists.

"Sitting Is Bad for You" Encouraging people to move and change position can be helpful. Sedentary lifestyles are a risk factor for low back pain, among many other health conditions. Nevertheless, it is important for clinicians not to perpetuate worry that sitting down for more than 30 minutes in one position is dangerous or should always be avoided.

"It's Caused by Your Swayback Posture" There is some resistance within health care to shift away from the biomedical model of pain. Consequently, pain is often ascribed to relatively "normal" variations and asymmetries, despite the lack of strong evidence. We urge clinicians to be cautious in their explanations to avoid further worry about posture "flaws."

Clinical Recommendations: Help People to Sit, Stand, and Move More Easily

Helping people to adopt more relaxed postures, while reassuring them that these postures are safe, can provide symptom relief.[4,7,10,12] Comfortable postures vary between individuals, so it is useful to explore different postures. The clinician might consider how to expose people to postures and ways of moving that they have avoided, and how to encourage change in habits that may be provocative. Alterations in posture or movements that feel good in the acute stage may not be needed long term.

Some people who find upright postures provocative may be required to adopt such a posture for their sport/role (eg, ballet dancers, military personnel). It is possible for people to be upright and be more relaxed. If clinicians help people to experience an upright, relaxed posture, it may be beneficial—even symptom modifying! Although the posture may be required for the sport/role, it may not be required for spinal health and, as such,

1. **There is no single "correct" posture.** Despite common posture beliefs, there is no strong evidence that one optimal posture exists or that avoiding "incorrect" postures will prevent back pain.
2. **Differences in postures are a fact of life.** There are natural variations in spinal curvatures, and there is no single spinal curvature strongly associated with pain. Pain should not be attributed to relatively "normal" variations.
3. **Posture reflects beliefs and mood.** Posture can offer insights into a person's emotions, thoughts, and body image. Some postures are adopted as a protective strategy and may reflect concerns regarding body vulnerability. Understanding reasons behind preferred postures can be useful.
4. **It is safe to adopt more comfortable postures.** Comfortable postures vary between individuals. Exploring different postures, including those frequently avoided, and changing habitual postures may provide symptom relief.
5. **The spine is robust and can be trusted.** The spine is a robust, adaptable structure capable of safely moving and loading in a variety of postures. Common warnings to protect the spine are not necessary and can lead to fear.
6. **Sitting is not dangerous.** Sitting down for more than 30 minutes in one position is not dangerous, nor should it always be avoided. However, moving and changing position can be helpful, and being physically active is important for your health.
7. **One size does not fit all.** Postural and movement screening does not prevent pain in the workplace. Preferred lifting styles are influenced by the naturally varying spinal curvatures, and advice to adopt a specific posture or to brace the core is not evidence based.

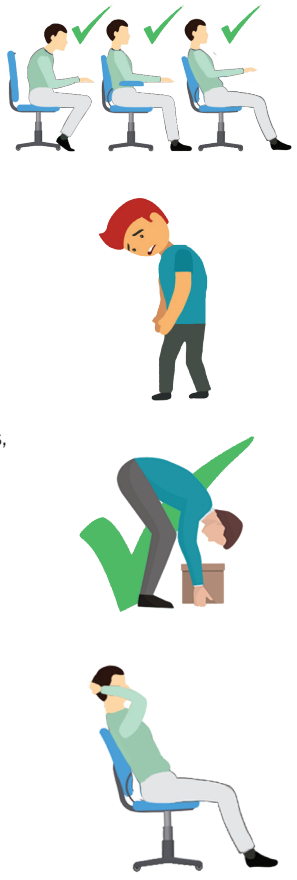

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FIGURE. Key points to change the posture narrative.

may not need to be transferred to other aspects of life.

Recommendations for Beyond the Clinic

There are challenges in reframing the idea of "correct" posture. Science does not support the common posture and "core" beliefs often held by clinicians, manual handling trainers, and society. Forty years ago, it was common practice to recommend bed rest for people with low back pain. Persistent evidence-based education means bed rest is no longer an appropriate recommendation.

Let us work together to change the "posture narrative." The spine is a robust, adaptable structure to be trusted. The **FIGURE** highlights this and other key points from evidence related to spinal posture. Discussions about spinal health and pain with colleagues, patients and pain-free members of the community should also include other evidence-based factors such as physical activity, stress, and sleep. An educational campaign to change the posture narrative may encounter resistance in certain areas of the physical therapy and ergonomic professions, whose business models may not align with what we now understand to be best practice for managing low back pain. ◉

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