

Ergonomics: How to Promote Healthy Posture

Improving your posture can help prevent permanent damage to your spine and a myriad of other health issues.

By Matthew D. Hansen, DPT, MPT, MBA

“STOP SLOUCHING! Stand up straight!” Sound familiar? How many of us *haven't* had someone lecture us on the importance of good posture? Some of us were even scared that if we didn't heed their warnings, we would eventually get stuck in that notorious hunchback position.

Although the curse of a hunchback — or kyphosis, by its technical term — takes a long time to develop, habitually poor posture can lead to permanent changes in the spine, as well as many other health issues such as back, shoulder, neck and/or jaw pain; tension headaches; impaired circulation; disrupted digestion; poor sleep; decreased lung capacity; and pinched nerves, which can lead to pain and other sensory symptoms all over the body.

Clearly, good posture is important for optimal health, but what exactly does it look like, and what can we do to promote it?

The Problem with Poor Posture

First, let's discuss poor posture. Poor posture happens when we position our spine in an unnatural position that puts stress on joints, muscles and vertebrae.¹ Slouching or hunching over while seated is a major culprit of poor posture. Prolonged poor posture creates major problems, and people are spending more and more time in these positions due to sitting at desk jobs, driving, using laptops and watching television (just to name a few). In fact, according to an analysis of 16 years of data, the average American adult sits for 6.4 hours per day, an increase of approximately one hour per day since 2007. The same study showed average American youth between 12 and 19 years of age spend 8.2 hours per day seated.² Further, a 2018 study reported that about 25 percent of adults spend more than eight hours per day sitting down.³ The body compensates for all this sitting with a “shortened position” (trunk bent forward and hip and knees bent), which causes loss of flexibility and/or range of motion, making the body more prone to musculoskeletal injuries and other health issues. Our bodies aren't mean to sit for more than eight hours at a time; they are intended to move, and good posture supports that movement.

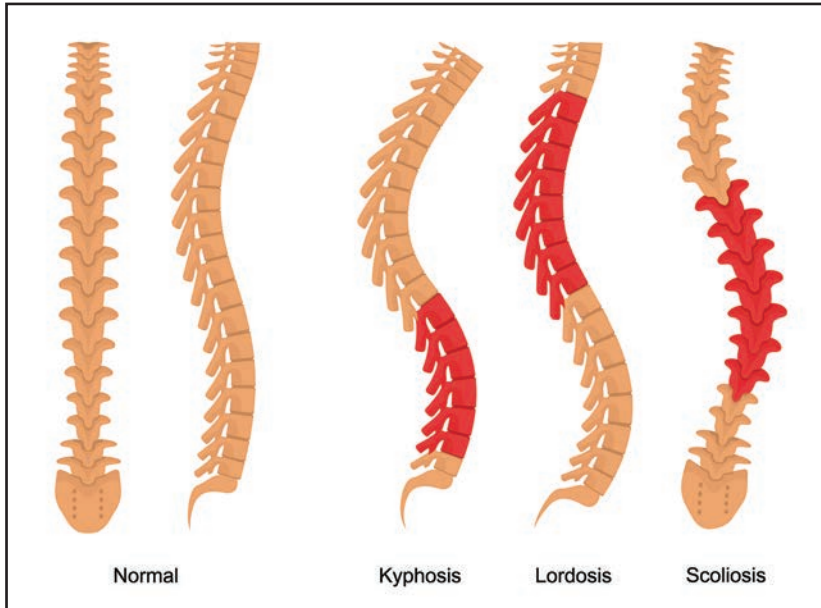
But while good posture is imperative for a healthy body, it isn't as simple as “standing up straight.” One part of the body will often compensate for another part that is out of alignment. For example, a slouched back and/or bent neck quickly results in “knots” in the muscles or connective tissue, pinched nerves and/or tension headaches. Poorly adjusted workstations or looking down at digital devices are common culprits. Also, bending the head forward by even 15 degrees more than doubles its load on the neck from 11 pounds to 27 pounds (and the load continues to increase as the angle increases).⁴ The extra weight puts undue pressure on the spine.

Ergonomics and the Spine

The key to good, healthy posture is optimizing the position of the spine. As “an applied science concerned with designing and arranging things people use so that the people and things interact most efficiently and safely,”⁵ ergonomics identifies and seeks to understand the most beneficial ways to sit, stand and move the body, and arranges the external environment to better support the natural curve of the spine.

The spine has three natural curves: the cervical spine curves slightly inward, exhibiting a “lordotic” curve; the thoracic spine, the longest segment of the spine, runs from the base of the neck to the bottom of the rib cage, exhibiting an outward or “kyphotic” curve; and the lumbar curve runs from below the thoracic spine to the sacrum of the pelvis in a lordotic curve. Healthy posture maintains these natural curves without exaggerating them, as in slouched or hyperextended postures (Figure 1). (Of course, there is some natural variation in the degree of curves, putting some people at greater risk of postural strain and injury. People with scoliosis, or unnatural sideways curvature of the spine, are at increased risk of postural complications and require special considerations when designing an ergonomic workstation and/or healthcare intervention.) Ergonomics finds solutions to support the spine's natural curvature, whatever it may be, whether the body is in motion or stationary.

Figure 1. The Human Spine's Curves



avoid twisting your spine (e.g., to reach for an object) or bending and twisting your back at the same time, especially when lifting a particularly heavy load.

You can improve your dynamic posture by:⁶

- Being mindful of your posture: Think about how you are holding your body as you move.
- Staying active: Walking, stretching and core-strengthening exercises are particularly efficacious.
- Maintaining a healthy weight: Extra weight can weaken your abdominal muscles, causing problems for both your pelvis and spine.
- Wearing comfortable, low-heeled shoes to keep your body balanced.

Dynamic Posture: Moving and Exercising

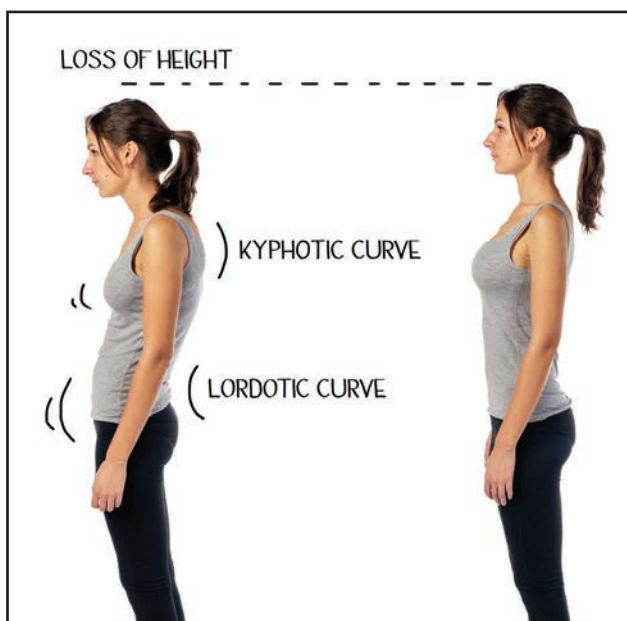
Dynamic posture refers to the position of the body when it is in motion: It is how you hold your body while it is moving, either when transitioning between static postures or while exercising. Exercising with proper posture can prevent injury. When lifting, use your leg muscles instead of your back, and

Static Posture: Standing and Sitting

Static posture refers to the position of the body when it is not in motion: It is how you hold your body while it is stationary, including while standing up and sitting down.⁷ My mother used to encourage me to have good posture by saying, “Chin up, shoulders back, chest out,” and I’ve heard elementary school teachers teach children how to have healthy posture by instructing them to imagine they have a thread attached to the center of the top of their head, pulling straight upward (Figure 2). You can improve your static posture by:⁷

- Keeping your chin parallel to the floor
- Making your shoulders even (roll the shoulders up, back and down)
- Maintaining a neutral spine (no flexing or arching to over- or underemphasize the curve in the lower back)
- Keeping your arms at your sides with elbows straight and even
- Bracing your abdominal muscles
- Keeping your hips even
- Keeping your knees even, while pointing straight ahead (and slightly bent)
- Distributing your body weight evenly on both feet

Figure 2. Poor vs. Proper Standing Posture



Healthy Posture at Work

Knowing what healthy posture looks like is one thing, but setting yourself up to use it is another — especially at work or school where so much of the day is spent sitting down.

For the treatment of adults with chronic inflammatory demyelinating polyneuropathy (CIDP) to improve neuromuscular disability and impairment

PANZYGA—Strength to move forward

{ pronounced: *pan-zee-guh* }



Not an actual patient.

INDICATIONS AND USAGE

PANZYGA (Immune Globulin Intravenous [Human] – ifas) is indicated for the treatment of primary humoral immunodeficiency (PI) in patients 2 years of age and older, chronic immune thrombocytopenia (cITP) in adults and chronic inflammatory demyelinating polyneuropathy (CIDP) in adults. PANZYGA is a liquid medicine for infusion that contains immunoglobulin G (IgG), which are proteins that help fight infection. It is made from human plasma that is donated by healthy people and contains antibodies. For patients with PI, PANZYGA helps replace the missing antibodies in the body. For patients with cITP, PANZYGA helps the body produce more platelets (the blood cells that help blood clot) to control or prevent bleeding. For patients with CIDP, PANZYGA may help improve mobility and hand strength.

PANZYGA is given into a vein (intravenously) in a hospital, infusion center, doctor's office, or at home by a trained healthcare provider (HCP).

IMPORTANT SAFETY INFORMATION

WARNING: THROMBOSIS, RENAL DYSFUNCTION, and ACUTE RENAL FAILURE

See full prescribing information for complete **BOXED WARNING**

- **Thrombosis may occur with immune globulin intravenous (IGIV) products, including PANZYGA. Risk factors may include: advanced age, prolonged immobilization, hypercoagulable conditions, history of venous or arterial thrombosis, use of estrogens, indwelling vascular catheters, hyperviscosity, and cardiovascular risk factors.**
- **Renal dysfunction, acute renal failure, osmotic nephropathy, and death may occur with the administration of IGIV products in predisposed patients. Renal dysfunction and acute renal failure occur more commonly in patients receiving IGIV products containing sucrose. PANZYGA does not contain sucrose.**
- **For patients at risk of thrombosis, renal dysfunction, or acute renal failure, administer PANZYGA at the minimum infusion rate practicable. Ensure adequate hydration in patients before administration. Monitor for signs and symptoms of thrombosis and assess blood viscosity in patients at risk for hyperviscosity.**

Do not use PANZYGA if you:

- Have had a severe allergic reaction to immune globulin or other blood products
- Have a condition called selective (or severe) immunoglobulin A (IgA) deficiency, with antibodies against IgA and a history of hypersensitivity

What should I know before taking PANZYGA?

- PANZYGA can make vaccines (like measles/mumps/rubella or chickenpox vaccines) work less effectively for you. Before you get any vaccines, tell your healthcare provider that you take PANZYGA
- Decreased kidney function and kidney function failure can occur
- Severe headache, drowsiness, fever, painful eye movements, or nausea and vomiting can occur
- Elevated blood pressure can occur particularly in patients who have a history of hypertension (high blood pressure)
- If you are elderly, with heart or kidney problems, discuss with your healthcare provider prior to initiating treatment with PANZYGA
- PANZYGA is made from human blood and therefore may have a risk of transmitting infectious agents, including viruses and, theoretically, the variant Creutzfeldt-Jakob disease (CJD) and CJD agent. The production and manufacturing process reduces this risk, but the risk cannot be eliminated

PANZYGA can cause serious side effects. If any of the following problems occur after starting PANZYGA, stop the infusion immediately and contact your HCP or call emergency services:

- Hives, swelling in the mouth or throat, itching, trouble breathing, wheezing, fainting, or dizziness. These could be signs of a serious allergic reaction
- Bad headache with nausea, vomiting, stiff neck, fever, drowsiness, painful eye movements, and sensitivity to light. These could be signs of irritation and swelling of the lining around your brain

Please see Important Safety Information on adjacent page of this advertisement and Full Prescribing Information, including complete **BOXED WARNING, at www.PanzygaInfo.com.**

PANZYGA offers:

- **Improvement in arm and leg mobility, impairment symptoms, and hand strength***
- **Patient resources for each stage of your treatment experience**
 - Eligible, commercially insured patients taking PANZYGA may receive **co-pay assistance** of up to **\$5,000** per calendar year, or the cost of a patient's co-pay in a 12-month period (whichever is less) for claims received by the program[†]
 - Adult patients with CIDP starting PANZYGA may be eligible for a refund of their out-of-pocket PANZYGA drug costs through the **Pfizer Pledge Warranty Program**.[‡] Terms and conditions/eligibility requirements apply. See full terms and conditions at PanzygInfo.com.

*Depending on the ongoing therapy dose.

[†]Terms and conditions apply. See full terms and conditions at PanzygInfo.com.

[‡]Not available for residents of Puerto Rico.

IMPORTANT SAFETY INFORMATION (continued)

- Reduced urination, sudden weight gain, or swelling in your legs. These could be signs of a kidney problem (decreased kidney function or kidney failure)
- Pain, swelling, warmth, redness, or a lump in your legs or arms. These could be signs of a blood clot, which could happen in the heart, brain, lungs, or elsewhere in the body
- Brown or red urine, swelling, fatigue, fast heart rate, difficulty breathing, or yellow skin or eyes. These could be signs of a liver or blood problem
- Chest pain or trouble breathing, or blue lips or extremities. These could be signs of a serious heart or lung problem
- Fever over 100°F. This could be a sign of an infection
- Headache, fatigue or confusion, vision problem, chest pain, difficulty breathing, irregular heartbeat, or pounding in your chest, neck, or ears. These could be signs of high blood pressure

Ask your HCP whether you should have rescue medications available, such as antihistamines or epinephrine.

What are the possible or reasonably likely side effects for PANZYGA?

The most common side effects that may occur with PANZYGA are:

- | | |
|----------------------------|------------------|
| • Headache | • Fatigue |
| • Nausea | • Abdominal pain |
| • Fever | • Dizziness |
| • Increased blood pressure | • Anemia |
| • Dermatitis | |

These are not all the possible side effects. Talk to your HCP about any side effect that bothers you or that does not go away.

Tell your HCP if you are pregnant, or plan to become pregnant, or if you are nursing.

Patients should always ask their doctors for medical advice about adverse events.

You may report an adverse event related to Pfizer products by calling 1-800-438-1985 (US only). If you prefer, you may contact the US Food and Drug Administration (FDA) directly. The FDA has established a reporting service known as MedWatch where healthcare professionals and consumers can report problems they suspect may be associated with the drugs and medical devices they prescribe, dispense, or use. Visit www.fda.gov/MedWatch or call 1-800-FDA-1088.

PANZYGA® is a registered trademark of Octapharma AG.

panzyga®

Immune Globulin
Intravenous (Human) - ifas
10% Liquid Preparation



**Talk to your doctor
about PANZYGA
and learn more at
PanzygInfo.com**

PANZYGA is FDA approved for 3 indications:

CIDP in adults

PI in patients 2 years of age or older

cITP in adults

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CONSUMER BRIEF SUMMARY

(PANZYGA: *pan-zee-guh*)

This brief summary highlights the most important information about PANZYGA. Please read it carefully before using PANZYGA and each time you have an infusion, as there may be new information. This brief summary does not take the place of talking with your healthcare provider about your medical condition or your treatment. If you have any questions after reading this, ask your healthcare provider. For more information, go to www.PanzygaInfo.com.

What is PANZYGA?

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This brief summary is based on the PANZYGA Prescribing Information (February 2021).

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Use these six steps to strategically set up your workstation. (See Figure 3 for an example of a properly designed ergonomic workstation.)

1) Situate your work surface so that the top third of the computer screen is at eye level to help you hold your head and neck in a neutral position.

2) Position your keyboard so your elbows are bent to about a 90-degree angle and kept close to your body. While typing or using a mouse, keep your hands at or just below the level of your elbows, with your wrists neutral or slightly extended. A gel wrist rest can help prevent carpal tunnel injuries, but make sure it is lower than the keyboard to prevent wrists from bending excessively. Also, limit its use to only between keystrokes.

3) Adjust your chair. Position your armrests to accommodate the 90-degree angle of your arms to help avoid strain caused by gravitational pull on your shoulder muscles. Make sure your hips can be pushed back in the chair while keeping your upper and lower back supported. Set the seat height to allow your feet to remain flat on the floor and ensure your knees are roughly level with your hips. Consider using a chair with an adjustable backrest, which allows for a slightly reclined angle and frequent position changes while maintaining proper alignment.

4) Keep your feet flat on the floor. If a height-adjustable chair or desk is not available, use a footstool or other small, elevated surface to position your legs properly, keeping your feet in contact with it.

5) Arrange office supplies so you don't have to bend, twist or stretch to reach them. Consider using a speaker or headset instead of cradling your phone between your head and neck.

6) Take frequent breaks. Stretch every 20 to 30 minutes, and stand up or change tasks for at least five to 10 minutes every hour.

Healthy Posture Elsewhere

- *Choose posture over fashion.* Footwear and other accessories alter proper alignment. For example, high-heeled shoes increase lumbar lordosis and can affect movement and balance. Shoulder bags, purses and backpacks strain the body.

- *Take advantage of ergonomic tools.* Make use of the many commercially available posture-promoting products, including contoured pillows, split keyboards and computer stands. Or, consider having a professional ergonomic evaluation.


- *Know the warning signs.* Some symptoms are more indicative of poor posture or bad ergonomics than others. For example, if your back pain is worse after a long day of slouching at the computer than it is on the weekend when your body position is more varied and relaxed, your pain may be due to poor posture

Figure 3. Properly Designed Ergonomic Workstation



at work. Pain that coincides with starting a new job assignment or using new office equipment; comes and goes for months; goes away after switching positions; or starts in the neck and moves downward into your back and extremities may all point to poor ergonomic design.

Make Good, Healthy Posture Second Nature

Establishing and maintaining healthy posture may initially be awkward or tiring. However, as you form good habits, your muscles will strengthen, and it will become almost second nature — even if you do still need an occasional reminder from a well-intentioned family member or friend. 

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