A PATIENT'S ROADMAP TO LASTING RELIEF

Beyond the Posture Myth

Why “sitting up straight” isn’t the fix for your 3 PM headache — and what the research says actually is.

A plain-language guide to Spinal Postural Variability (SPV) and how to break the cumulative loading cycle behind cervicogenic, neck-driven headaches.

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THE RESEARCH

For years, patients have blamed their headaches on bad posture. Ergonomic chairs, lumbar supports, posture straps: the idea was always the same, hold yourself "correctly" and the pain goes away.

A 2021 study in Scientific Reports (Mingels et al.) tells a different story. Researchers used 3D motion-capture to compare desk workers who had chronic cervicogenic headaches with healthy controls.

The headache group's posture wasn't actually worse. What set them apart was how often they moved. Or rather, how rarely.

Spinal Postural Variability (SPV)

Most people shift position constantly throughout the day without even noticing. Researchers call this Spinal Postural Variability. The headache group in this study had a lot less of it: they'd settle into one position, good or bad, and stay there far longer than the healthy participants did.

Worth noting: this is one motion-capture study. It shows an association, not proof that low SPV causes headaches. Treat it as a promising lead rather than a settled fact — more research is needed to confirm how the pieces fit together.

The pattern shows up elsewhere too

A 2020 review of systematic reviews on spinal posture and low back pain (Swain et al., Journal of Biomechanics) couldn't find consistent evidence that any specific posture causes pain. Results were mixed, and the better-designed prospective studies were the least likely to find a link at all. Separately, research on workplace "microbreaks," just a couple of minutes of light movement every half hour, has shown they reduce musculoskeletal discomfort in office workers without hurting productivity. Posture probably isn't irrelevant. But staying in any one position too long, correct or not, seems to matter more.

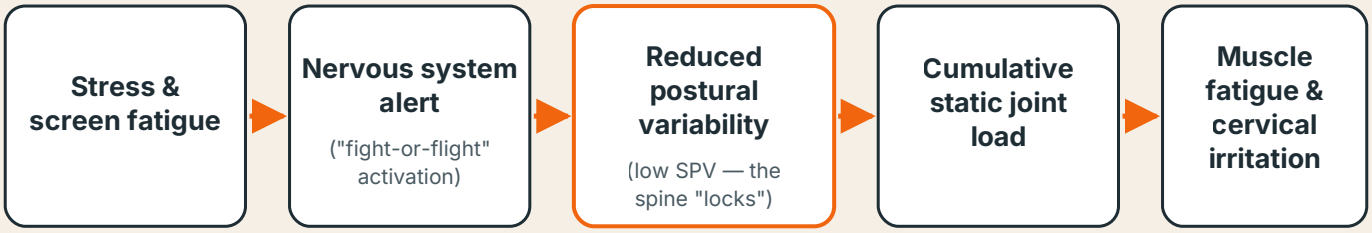
Why this matters biologically: holding any posture for too long, even a "correct" one, puts sustained load on your tissue. Without small movements to redistribute that load, muscles start to fatigue and spasm, and the joints at the top of your neck take on continuous mechanical stress.

THE MIND–BODY CONNECTION TO STASIS

Why do some people keep shifting around at their desk while others freeze in one spot? Turns out this isn't purely mechanical. The nervous system's response to stress and fatigue plays a role too.

When you're stressed, under-slept, or mentally fried, your nervous system tends to shift into a more guarded, defensive state. And that tension often shows up physically, right in the neck and shoulders:

- **Occupational stress:** deadline pressure often shows up as jaw clenching and a stiff, guarded upper back.
- **Sleep deprivation:** poor sleep lowers your pain threshold and raises muscle tension.
- **The ergonomic trap:** forcing yourself into one "ideal" position can work against your body's natural urge to shift around.



proposed mechanism linking desk-work stress to cervicogenic headache — based on observed associations, not yet proven cause-and-effe

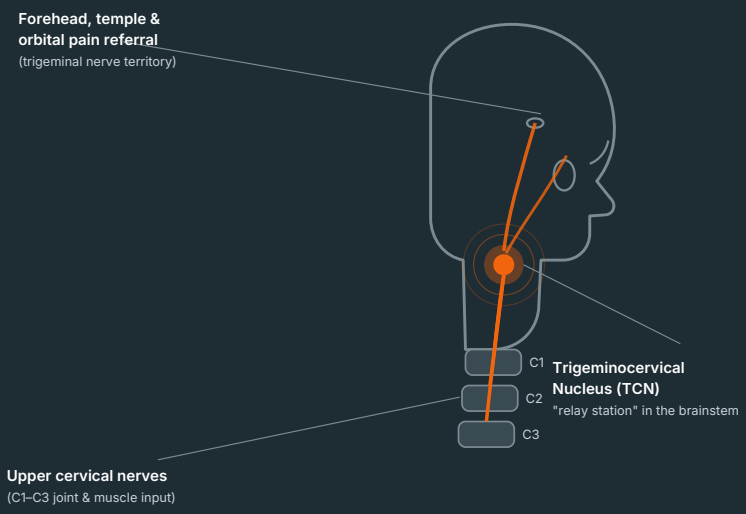
Common aggravating factors

A number of things can make symptoms worse: forward head posture at a screen, an unsupportive pillow, long stretches in one position, an old whiplash injury, high stress, or degenerative changes in the neck.

TRIGEMINOCERVICAL CONVERGENCE

So how does stiffness at the top of your neck end up feeling like pain behind your eyes? There's an actual explanation, and it comes down to a relay point in the brainstem called the **Trigeminocervical Nucleus**, or **TCN**.

Two nerve pathways meet at that relay point. One carries signals from the top three joints of your neck (C1 to C3). The other is the trigeminal nerve, which handles sensation across your forehead, temples, and eyes.



Why the pain feels like it's in your head:
Nerves from the upper neck (C1–C3) and the trigeminal nerve converge at the same relay point in the brainstem, so sustained neck joint irritation can be felt as head pain.

When those upper neck joints are under constant load, they keep sending signals to the TCN right alongside the trigeminal ones. The brainstem isn't always great at telling the two apart, so neck irritation can end up feeling like it's coming from your forehead, temple, or eye.

Clinical context

Cervicogenic headache is a real, recognized diagnosis, but it's not the only explanation for head pain. Migraine and tension-type headache can look similar on the surface. Sorting out which one you actually have takes a proper history and exam from a clinician; this guide is meant to inform that conversation, not replace it.

THE 3-PHASE MOVEMENT CAPACITY ROADMAP

Lasting relief rarely comes from holding a rigid posture, and it rarely comes from a passive treatment repeated over and over with nothing else changing. Restoring your body's capacity to move is usually the missing piece. Dr. Notley's approach, combining chiropractic care with athletic therapy, is built around three phases:

1

The Unlock — Chiropractic Care

GOAL: Restore segmental joint mobility

A restricted joint is hard to move freely, let alone vary. Joint mobilization and spinal manipulation work to restore motion at the C1–C2 segments specifically, which can take pressure off the irritated nerves at the top of your neck.

2

The Stability — Athletic Therapy

GOAL: Rebuild muscle endurance & neuromuscular control

Getting the joint moving again is only half the job. Targeted motor control training, especially for the deep neck flexors, builds the endurance to get through a full desk day without fatiguing back into that frozen pattern.

3

The Variability — Postural Integration

GOAL: Cultivate movement habits & nervous system calm

Short "movement snacks" every 30 minutes break up static loading before it builds. Addressing sleep and stress helps with the nervous system side of things too, the part we talked about back on page 3.

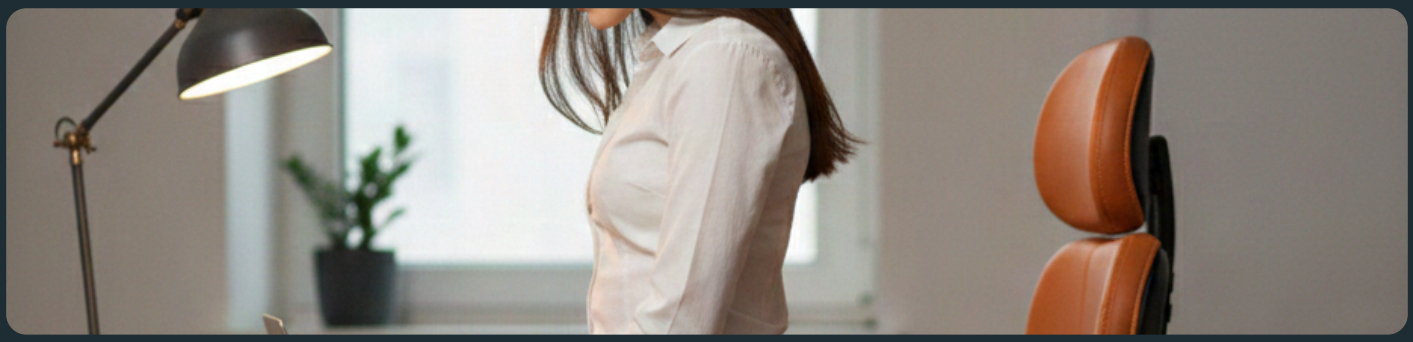
When to seek immediate medical attention

Most headaches respond well to conservative care, but some symptoms warrant prompt medical evaluation:

- Sudden, severe headache described as the "worst of your life"
- Vision changes, weakness, numbness, or coordination problems
- Fever with headache, especially with neck stiffness or light sensitivity
- Headache following a head or neck injury
- Headaches that steadily worsen despite treatment
- Difficulty speaking, confusion, or altered consciousness

EXERCISES TO BUILD ON THIS

The roadmap on the previous page is about rebuilding your capacity to move, not memorizing a "correct" position. Here are four practical starting points, each backed by its own body of research, separate from the SPV study we opened with.



The 20-8-2 Rule

Every 30 minutes, aim for roughly 20 minutes sitting, 8 minutes standing, and 2 minutes moving. Cornell ergonomics researcher Alan Hedge developed this pattern, and it turns the vague advice to "move more" into something you can actually follow.

Neck CARs (Controlled Articular Rotations)

Slow, controlled circles that pull your neck through its full available range of motion. Think of it less as a stretch and more as a daily check-in on your mobility. Dr. Notley walks through his approach on his site and YouTube channel.

Guide: drnotley.com/neck-circles-cars-for-neck-mobility

Scapular / Shoulder CARs

The same idea, applied to your shoulder blade and shoulder joint. The muscles that stabilize your shoulder blade also support your neck and upper back, so keeping this area mobile backs up everything above.

Guide: drnotley.com/healthy-shoulders-with-shoulder-circles-cars

Deep Neck Flexor / Craniocervical Flexion Training

A gentle chin-tuck exercise targeting the deep stabilizing muscles at the front of your neck. Of everything on this page, this one has the strongest evidence behind it: multiple clinical trials show it reduces the frequency and intensity of cervicogenic headaches, and it's what Phase 2 on the previous page is built around.

Guide: drnotley.com/deep-neck-flexor-training

TRY THE ACTIVE ROTATION SELF-SCREEN

This won't diagnose anything. It's just a quick way to notice your own movement pattern:

1. Sit tall, relax your shoulders, and gently tuck your chin.
2. Slowly turn your head fully to the left, then fully to the right.
3. Notice: is there more stiffness or a familiar ache on one side?

Noticing more stiffness on one side can point to an upper cervical restriction, but on its own it doesn't tell you much. A clinician can put that finding in context alongside your history and a proper exam.

Ready to Address What's Behind the Pain?

Dr. Notley has spent over 25 years helping Winnipeg professionals get to the root of problems like this, not just chase the symptom.

Book Your Appointment →

Serving Downtown Winnipeg (164 Fort St.) and St. Vital (12-845 Dakota St.)

This guide is for general educational purposes and is not a substitute for individualized medical assessment, diagnosis, or treatment. If you are experiencing any of the warning signs on page 5, seek immediate medical attention. Always consult a qualified healthcare provider regarding your specific symptoms.

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