Beyond Survival: Regulating the Nervous System After Operational Stress and Vicarious Trauma

At a glance. People who work in dangerous or traumatic settings often come home with a nervous system still set for threat. Because hypervigilance looks like competence on the job, routine screening can miss it, and symptoms may surface years later. This page explains how operational stress and vicarious trauma affect the body. It sets out a practical, self-directed framework for regulation that works at three timescales: in the moment, while a memory is active, and over the long term. These tools can support recovery alongside professional treatment. They do not replace it.

Content note: this page discusses PTSD, violence and trauma responses. Please read at your own pace. Support lines are listed at the end.

When Screening Says You're Fine

Hypervigilance, constant threat scanning and a body that stays on alert are useful in a conflict zone, at an emergency scene or on the front line of a shelter. In those settings they keep people alive and effective. The nervous system does not automatically switch them off when the job ends. For many workers, a high state of alert simply becomes normal, so it doesn't feel like a symptom at all.

This is one reason routine psychological screening can miss operational stress injuries. A person who has learned to function while dysregulated may complete every task, meet every obligation and answer screening questions in ways that raise no flags. The reaction often comes later, sometimes years later, when an unexpected cue sets off the full threat response in a place where it makes no sense. A smell, a sound, a particular kind of silence or the sight of a damaged building can be enough. The body reacts before the conscious mind has worked out why. Psychiatry recognizes this pattern: PTSD can be diagnosed "with delayed expression" when the full symptoms appear six months or more after the traumatic event.[^1]

Who Is Affected

Canadian research shows how common these injuries are. In a national survey of more than 5,800 public safety personnel, including police, firefighters, paramedics, correctional workers and dispatchers, about 15% reported current symptoms consistent with one mental disorder and about 27% reported symptoms consistent with more than one.[^2] These figures come from screening questionnaires rather than clinical diagnoses, and the researchers note that they cannot be compared directly with general population estimates.

Direct danger isn't the only route. In 1990, psychologists Lisa McCann and Laurie Anne Pearlman described vicarious traumatization: the lasting changes that can occur in people who work closely with trauma survivors and hear their accounts again and again.[^3] Therapists, victim advocates, anti-trafficking workers, lawyers and crisis line staff take in the fear contained in other people's stories without being able to act on it. One way to understand the result is that the body's alarm is triggered repeatedly with no fight or escape to discharge it, so the arousal builds up over time.

Treatment and Self-Regulation Work Together

Several psychotherapies have strong evidence for treating PTSD. The 2023 clinical practice guideline from the US Department of Veterans Affairs and Department of Defense recommends three trauma-focused therapies over other options: prolonged exposure, cognitive processing therapy, and eye movement

desensitization and reprocessing (EMDR).[^4] Trained clinicians deliver these therapies, and anyone living with PTSD symptoms should know they exist.

Therapy happens in scheduled sessions, though, and trauma responses don't keep office hours. Many people find that understanding their reactions does little to calm a body that has already gone into threat mode. What helps between sessions is a set of skills a person can use on their own, immediately, as often as needed. The framework below is built around that need. It draws on research where research exists, and it says plainly where the evidence is still thin.

A Three-Level Framework

Trauma affects the nervous system at different speeds, so regulation works best at different timescales. This framework grew out of lived experience of recovery and the research described below. It groups tools into three levels.

Level	When to use it	Goal	Examples
1. Immediate regulation	At the first signs of activation	Stop the stress response from escalating	Slow breathing with a long exhale, grounding, the butterfly hug, cold water on the face, vigorous movement
2. Active reprocessing	When a memory fully activates	Settle the body while the memory is active, then make sense of it in writing	Eye movements or another demanding task, followed by structured journaling
3. Baseline recalibration	Regularly, whether triggered or not	Lower the body's resting level of alert	Floatation, daily slow-breathing practice, meditation

One level is rarely enough. Immediate tools stop escalation, but they don't change why the alarm keeps sounding. Reprocessing works on specific memories. Baseline work lowers the starting point, so the alarm has further to climb before it goes off.

Level 1: Immediate Regulation

The goal here is to interrupt the stress response within a minute or two, before it reaches full threat mode.

Breathing with a long exhale

Slow breathing with a longer exhale is one of the quickest ways to bring arousal down. In a 2023 randomized trial at Stanford University, five minutes a day of "cyclic sighing" improved mood and lowered breathing rate more than the same amount of mindfulness meditation.[^5] Cyclic sighing means two inhales through the nose, the second one topping up the first, followed by a long, slow exhale through the mouth.

Other options include box breathing (in for four counts, hold for four, out for four, hold for four) and simple long-exhale breathing (in for four counts, out for eight).

The 5-4-3-2-1 grounding technique

This technique anchors attention in the present by working through the senses one at a time:

- **5 things you can see,** such as a chair, a window or the colour of the wall
- **4 things you can touch,** such as your feet on the floor or the fabric of your sleeve
- **3 things you can hear,** such as traffic, a clock or your own breathing
- **2 things you can smell,** or two familiar smells you recall if none are present
- **1 thing you can taste,** or one familiar taste you imagine

Naming and sorting what you notice takes deliberate effort, which pulls attention away from the alarm. The technique is widely taught but has little formal research behind it. Many people find it most useful when they feel numb, distant or disconnected from their surroundings.

The butterfly hug

Lucina Artigas developed the butterfly hug while working with survivors after Hurricane Pauline struck Mexico in 1997, and it became part of group EMDR treatment for disaster survivors.[^6]

1. Cross your arms over your chest so each hand rests on the opposite upper arm or just below the collarbone.
2. Tap slowly, alternating sides: left, right, left, right.
3. Continue for 30 to 90 seconds while breathing slowly and evenly.
4. Focus on your breath, the feeling of your hands, or a calming phrase such as "I am safe right now."

The butterfly hug was designed for use within a structured therapy protocol, and there is little controlled research on it as a stand-alone calming tool. Many people still find the combination of rhythm, pressure and self-holding steadying when they feel overwhelmed.

Cold water and movement

Splashing cold water on the face and doing a short burst of intense exercise are both taught as fast calming skills in dialectical behaviour therapy.[^7] People with heart conditions should check with a doctor before using cold water this way.

Matching the tool to the moment

Different tools suit different levels of activation. One workable pattern is to use breathing for mild activation, grounding when you feel disconnected, the butterfly hug when you need to contain overwhelm, and cold water or vigorous movement when activation is high. Test several and notice which ones shift your body fastest.

Level 2: Active Reprocessing

The idea behind it

This level draws on research into memory reconsolidation. When a memory is recalled, it may briefly become open to change before it is stored again. If the body is calm during that window, the theory goes, the memory may be stored again with less of its original fear attached.

Confidence: contested. The idea has strong support in animal research, but human results are mixed. Several careful attempts to repeat landmark human studies have failed, and researchers point out that the process cannot be observed directly in people.[^8][^9] Reconsolidation is best treated as a promising explanation rather than settled science.

What the evidence says about eye movements and writing

EMDR pairs recall of a distressing memory with side-to-side eye movements. Laboratory studies consistently find that doing a demanding task while recalling a memory makes the memory feel less vivid and less upsetting afterward. Moving the eyes and counting backwards both have this effect, probably because the two tasks compete for limited working memory.[^10] A large clinical trial, however, found that patients improved just as much when their eyes stayed fixed on a stationary point.[^10] The eye movements themselves may matter less than was once thought.

Writing adds structure to memories that trauma leaves scattered. A 2019 meta-analysis found a small overall effect of expressive writing on posttraumatic stress, and a larger effect in studies of people diagnosed with PTSD.[^11]

A self-directed approach

1. **Settle the body while the memory is active.** When a memory activates, move your eyes deliberately around the room: a near object, a far object, then left, right, up and down. Continue until you notice your body beginning to settle, which often takes a few minutes.
2. **Then write, using structured questions.** What set this off? What memory came up? What did I feel in my body? What does the memory look like now, when I look at it calmly instead of reacting to it? What shifted while I was settling?

Self-directed reprocessing is not the same as EMDR delivered by a trained therapist, which includes preparation and safeguards. If a memory becomes overwhelming, stop, return to Level 1 tools, and save that memory for work with a clinician. People who dissociate heavily, or who carry many layers of trauma, should do this work with professional support.

Level 3: Baseline Recalibration

The goal of this level is to lower the nervous system's resting state, so that safety becomes something the body can sustain rather than a brief pause between threats.

Floatation

Floatation-REST (Reduced Environmental Stimulation Therapy) involves lying in a shallow pool of skin-temperature salt water in a dark, quiet room. With almost no sensory input and no effort needed to hold the body up, there is very little for the nervous system to stay alert to.

In a 2018 study at the Laureate Institute for Brain Research, a single float session sharply reduced anxiety in 50 people with anxiety and stress-related disorders, including PTSD.[^12] A follow-up study of 31

people found that floating produced more relaxation and less muscle tension than a comparison condition.[^13]

These were small, early studies of short-term effects, and the researchers themselves call for larger controlled trials. One practical pattern is a regular monthly float, with an extra session as soon as possible after a major incident.

Other options

Daily slow-breathing practice and meditation are more accessible ways to work on baseline arousal.

Avoid hyperventilation-based breathwork in or near water. Methods that combine rapid, deep breathing with breath holds can cause blackouts, and people have drowned after practising them in water.[^14]

Know Your Own Pattern

No two nervous systems respond the same way. Start by learning what actually sets yours off.

- **What are your triggers?** Track what comes just before an episode: places, sounds, smells, crowds, topics, anniversaries or body sensations. Some triggers won't seem logical at first.
- **What does activation feel like in your body?** Notice changes in heart rate, breathing, muscle tension, temperature, gut feelings and vision. The earlier you recognize your personal signature, the earlier you can step in.
- **How are you sleeping?** Sleep disturbance is one of the core symptoms of PTSD.[^1] Sleeping only when completely exhausted, or swinging between long and very short nights, suggests the body isn't standing down.
- **Can you calm yourself on purpose?** If you can only relax after complete exhaustion, voluntary calm is a skill to rebuild.

Then track change over time, using markers you can actually observe: sleep patterns, how often triggers occur and how intense they are, how long recovery takes, and whether you can reach a calm state when you choose to. Keep the tools that produce measurable change. Drop the ones that don't, even if they are popular or well recommended.

Recovery as a Practice

Recovery rarely happens once and for all. New stress can raise the baseline again, and skills fade without practice. What changes is recovery time. A serious incident that once meant weeks of broken sleep and constant alert may come to mean a few difficult days. Trained responses remain available in an emergency. The difference is that the body learns to stand down afterward.

The nervous system isn't broken. It learned exactly what it needed to learn to survive dangerous work. Recovery means teaching it that safety can be real and can last.

Where to Get Help in Canada

If this page has brought up difficult feelings, you do not have to face them alone.

- **Suicide Crisis Helpline:** call or text **988**, available 24/7.

- **Veterans Affairs Canada Assistance Service** (for veterans, former RCMP members and their families): **1-800-268-7708**, available 24/7.
- **Boots on the Ground** (peer support for first responders): **1-833-677-2668**, available 24/7.
- **Hope for Wellness Help Line** (for Indigenous people across Canada): **1-855-242-3310**, available 24/7.
- **In an emergency,** call **911**.

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[^4]: US Department of Veterans Affairs & US Department of Defense. (2023). *VA/DoD Clinical Practice Guideline for the Management of Posttraumatic Stress Disorder and Acute Stress Disorder*. https://www.healthquality.va.gov/guidelines/MH/ptsd/index.asp

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[^12]: Feinstein, J. S., Khalsa, S. S., Yeh, H. W., et al. (2018). Examining the short-term anxiolytic and antidepressant effect of Floatation-REST. *PLoS ONE*, 13(2), e0190292. https://doi.org/10.1371/journal.pone.0190292

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[^14]: Live Science. "Gambling with your life": Experts weigh in on dangers of the Wim Hof method. https://livescience.com/health/gambling-with-your-life-experts-weigh-in-on-dangers-of-the-wim-hof-method