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# The Pain Brain Workbook

# The Path In (and Out) of CHRONIC PAIN



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## Challenging Childhood Experiences

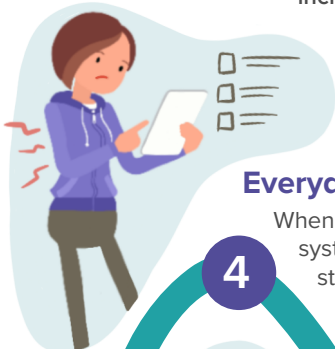
During childhood, the nervous system learns to detect danger. With each experience that feels physically or emotionally unsafe, the brain learns to go into protective mode more quickly and its "alarm system" may become increasingly sensitive.

## Coping Strategies

When faced with challenges, children often try to reduce conflict by behaving perfectly. This can lead them to become perfectionists and people-pleasers in adulthood. The cost that comes with that is a learned, ongoing state of tension and vigilance in the nervous system.



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## Everyday Adult Stress

When an overprotective nervous system meets the everyday stress of adulthood, it often responds by producing physical symptoms. This may show up in the form of headaches, stomach issues, muscle tension, back aches, rapid heart rate, and many more.

4



## Major Life Events

Just as everyday stresses trigger physical symptoms, major life changes can often coincide with the development of new or worsened symptoms. Common events include:

- Change in relationship status
- Change in housing
- Death or loss of a loved one
- Change in employment or career
- Ongoing discrimination
- Change in financial standing
- Involvement in an abusive relationship
- Traumatic event



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## Health Experiences

Health scares during childhood can have a huge impact on how protective the nervous system becomes. Major surgeries, injuries, or incorrect diagnoses can lead to pain catastrophizing, increased amygdala activity, and a more intense experience of pain.

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## Chronic Symptoms

At any point, an overactive nervous system can hit its tipping point and begin the cycle of chronic symptoms. These symptoms may begin with injury, underlying pathology, or appear out of the blue. Common examples include:

- Migraines
- Fibromyalgia
- Fatigue
- Back pain
- Neck or shoulder pain
- Hand or wrist pain
- CRPS
- Knee pain
- Leg or foot pain
- Trigeminal Neuralgia
- IBS and other GI issues
- Lingering pain from an injury
- Other symptoms lasting >3 months



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## Learned Neural Pathways

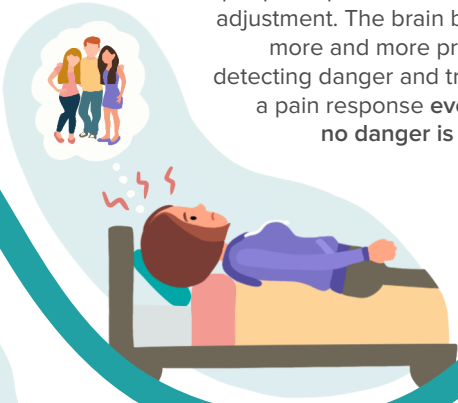
The nervous system is exceptionally plastic, which means it can pick up habits easily. Pain is one of those habits. The more the nervous system "practices" activating a certain symptom, the easier it becomes to activate it again and again.



## The Downward Spiral

Unfairly, the brain changes and life changes that come along with chronic pain provide the pain with fuel. Activities that naturally relieve pain and release “happy chemicals” become restricted, while fear and vigilance grow.

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## Brain Changes

8

As pain becomes chronic, many people experience a sensitivity adjustment. The brain becomes more and more protective, detecting danger and triggering a pain response even when no danger is present.



## Pain Related Stress and Changes

Chronic pain doesn't just impact the brain, it impacts every aspect of life, including:

- Physical activity levels
- Social life
- Relationships
- Identity
- Mental health
- Daily routine

## Targeted Rewiring

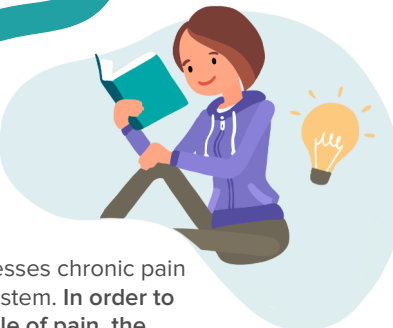
The process of rewiring the neural pathways of chronic pain requires experimentation, patience, and consistency. Science-backed techniques, like those found in the Curable app, can greatly assist in this process. Common techniques include:

- Pain Science Education
- Guided Meditation
- Guided Visualization
- Graded Motor Imagery
- Cognitive Behavioral Therapy
- Expressive Writing
- Brain-Centric PT
- Social/Peer Support
- And many more

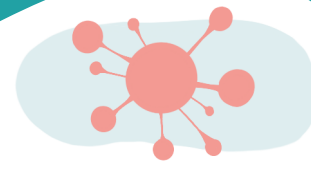
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## Knowledge

The brain processes chronic pain using its fear system. In order to reverse the cycle of pain, the rational part of the brain (the prefrontal cortex) often needs to get more involved. Simply learning about how pain works can help the prefrontal cortex play a larger role.



13



12

## Self Discovery

To help the nervous system feel safe again, it is critical to understand what made it feel unsafe. This can be completed through guided writing exercises or with the help of a professional. An understanding of the nervous system's journey into pain will provide a clearer map of the way out.



## New Neural Pathways

14

Armed with a new perspective on pain, it is possible to start teaching an old nervous system new tricks. Joy, play, gratitude, and physical activity are powerful habits that release natural pain-relieving chemicals. The more these new habits are practiced, the more comfortable they will feel in the nervous system.



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## A Fresh Perspective

Following these steps can greatly reduce physical symptoms, but that is not the only benefit. The work it takes to unlearn chronic pain impacts every aspect of life, allowing for a deeper understanding of the self, better relationships, a greater enjoyment of everyday life, and a loving relationship with the body.



SELF ASSESSMENT:

# Has Pain Programmed Your Brain for Fear?

CHECK ALL THAT APPLY TO YOU.

1-4

- I am afraid that my pain will get worse.
- I frequently worry about whether the pain will end.
- I anxiously want the pain to go away.
- I frequently think about how badly I want the pain to stop.

5-8

- I can't seem to keep the pain out of my mind.
- I spend a lot of time researching my symptoms.
- I spend a lot of time talking about my symptoms.
- At this point, it feels as if my symptoms are a part of my identity.

9-12

- I avoid activity that I might otherwise enjoy doing for fear that it will increase my pain.
- There is a growing list of activities and movements that I fear/avoid.
- I believe that movement is more dangerous for me than for most people.
- Just thinking about an activity I avoid can make my pain start to flare.

# SELF ASSESSMENT: Your Results

## Items 1-4: Pain Catastrophizing

If you checked multiple boxes in items 1-4, you may be prone to **pain catastrophizing**. This means your thought patterns may lead you to magnify pain, ruminate on it, and feel powerless over it.

### How this impacts your nervous system:

Negative thought patterns can make the brain more afraid. These thought patterns can eventually lead to increased reactivity in the brain's fear centers, which are also used in pain processing.

### What you can do about it:

Pain catastrophizing can be addressed through a wide range of easy techniques, like cognitive reframing and nonjudgmental awareness.

#### RECOMMENDED EXERCISES IN THE CURABLE APP:



Education: **Pain Catastrophizing**  
Brain Training: **Word Swapping Technique**  
Brain Training: **Cognitive Reframing**

## Items 5-8: Pain Focus

If you checked multiple boxes in items 5-8, you may be prone to **focusing on pain**.

### How this impacts your nervous system:

The nervous system mostly operates on habits. Pain is one of those habits. By focusing on pain, you keep the pain top-of-mind and help to reinforce this habit. Perhaps most importantly, focusing on pain means that there is little opportunity for focusing on creating NEW habits that could help to release pain-relieving chemicals in the body.

### What you can do about it:

Look for opportunities to shift your focus away from pain as much as possible. Try giving yourself a break from "Dr. Google" for a day or going a full day without talking about pain in conversations. Replace the time spent focusing on pain with things that bring you joy, like a creative hobby.

#### RECOMMENDED EXERCISES IN THE CURABLE APP:



Brain Training: **Reincorporating Joy & Play**  
Guided Meditation: **Pain Identity**

# SELF ASSESSMENT: Your Results (cont'd)

## Items 9-12: Fear & Avoidance of Movement

If you checked multiple boxes in items 9-12, you may be prone to **fear and avoidance of movement**.

### How this impacts your nervous system:

Hypervigilance about whether or not something will hurt you leads to total avoidance of many activities that have the potential to help you, or contribute to your life in some other way. It also leads to the brain becoming increasingly more fearful of non-dangerous activities over time.

### What you can do about it:

Graded motor imagery is an excellent technique to try at home. For those who have concerns about injury, one of the best ways to overcome fear of movement is to work with a brain-centric physical therapist.

#### RECOMMENDED EXERCISES IN THE CURABLE APP:



Brain Training: **Graded Motor Imagery**

Ask a Therapist: **What is Somatic Tracking, and How Can It Help My Pain?**

**What is your initial reaction to these results?  
Was there anything that surprised you? What will you do next?**

REFLECTION EXERCISE:

# How to Tell If Your Nervous System is Getting More Sensitive

Pain is designed to protect us from danger. When danger is detected, pain needs to be produced quickly in order to protect. This is why we process pain and fear in the same areas of the brain.

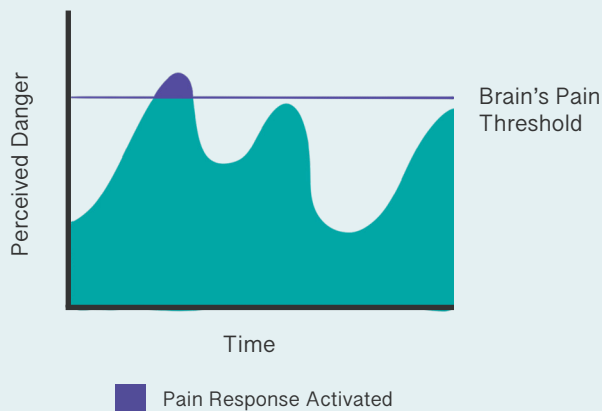
As pain becomes chronic, it is natural for the brain to become more fearful. Think of it as a “sensitivity adjustment”: the fear centers (or danger detectors) in the brain become more sensitive and overactive as time goes on.

**The more fearful the brain is, the more sensitive its pain response becomes.** This is one reason why chronic pain gets worse over time.

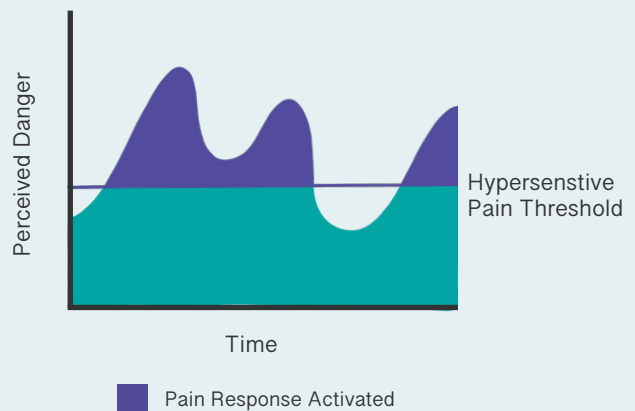
**An example:**

Perhaps your knee only used to hurt when you went for a run, but now it hurts when you take a few steps. Nothing about the situation has changed and your physician advises you that nothing about your knee has changed. What’s happening? Your brain’s pain/ danger threshold may have lowered, causing it to produce a pain response in a less-dangerous situation.

**Before Chronic Pain:**



**After Chronic Pain:**



What evidence do you have that your brain may have experienced a “sensitivity adjustment”?

Want to go deeper on this topic?

RECOMMENDED EXERCISES IN THE CURABLE APP:



- Education: **How Pain Becomes Chronic**
- Education: **Triggers and Expectations**
- Brain Training: **Breaking Habits and Patterns**

SELF ASSESSMENT:

# Discover Your Healing Blocks

Assessment provided by Alicia Batson, MD

CHECK ALL THAT APPLY TO YOU.

1-6

- I have high expectations of myself.
- I have used the word “perfectionist” to describe myself.
- When met with failure, I am typically hard on myself.
- I go out of my way to do what I believe is good and right.
- I frequently experience guilt.
- I am typically more of a rule-follower than a rule-breaker.

7-13

- I tend to prioritize the needs of others over my own needs.
- I care a lot about what others think of me.
- I want to feel that I am “good” and “liked.”
- I often have difficulty making decisions.
- I often feel dependent on others.
- I often have difficulty letting go.
- My self esteem is typically low.

14-19

- I hold my thoughts and feelings in more frequently than I let them out.
- In social situations, I can be perceived as cautious, shy, or reserved.
- I often experience anger-based emotions, like feeling defensive, hostile, or aggressive.
- I hold onto rage and resentment more tightly than I would like to.
- I feel sad more frequently than I would like.
- I often find my mind in a state of worry.

# SELF ASSESSMENT: Your Results

## Items 1-6: Perfectionist

If you checked 3 or more boxes in items 1-6, you likely use **perfectionism** as a coping strategy.

### How this impacts your nervous system:

Perfectionism can keep the nervous system in an ongoing state of urgency and tension. This can lead to the release of stress hormones and easy activation of “fight or flight” mode in the brain. If pain happens to come around while you’re feeling the pressure of perfectionism, your body may be overly-responsive to it.

### What you can do about it:

Self compassion is the ultimate antidote to perfectionism. Learning to have compassion for yourself in life (and in healing) can go a long way. Remember that you do not need to “heal perfectly” or on a schedule. View setbacks and flare-ups as an opportunity to try new techniques and see what works.

#### RECOMMENDED EXERCISES IN THE CURABLE APP:



Education: **Perfectionism**

Guided Meditation: **Self Compassion**

## Items 7-13: People Pleaser

If you checked 3 or more boxes in items 7-13, you likely use **people pleasing** as a coping strategy.

### How this impacts your nervous system:

People pleasing tendencies have been linked with exhaustion, burnout, difficulty relaxing, and low self esteem. All of these factors can make you more susceptible to negative automatic thought patterns, keep your amygdala on high alert and exacerbate any type of pain that comes your way. You may also have a hard time putting yourself first, which means you could feel guilty setting aside focused time to work on your healing.

### What you can do about it:

Better boundaries are the ultimate antidote to people pleasing. In order to heal, it’s critical to acknowledge that your own needs (and your body’s needs!) matter. It can be difficult to create the space you need to heal, but it will come with huge rewards.

#### RECOMMENDED EXERCISES IN THE CURABLE APP:



Education: **People Pleasing**

Brain Training: **Setting Boundaries**

# SELF ASSESSMENT: Your Results (cont'd)

## Items 14-19: Emotional Repressor

If you checked 3 or more boxes in items 14-19, you likely use **emotional repression** as a coping strategy.

### How this impacts your nervous system:

Emotional and physical pain share the same brain space. While each individual situation is unique, years of “sucking up” emotions can commonly manifest in the body as new or worsened physical symptoms.

### What you can do about it:

Try out new strategies that help you get in touch with and express emotion. It is important to know that not every strategy will work for every individual. Therapy, journaling, and screaming into a pillow are all valid options to begin with. Trial and error is key!

#### RECOMMENDED EXERCISES IN THE CURABLE APP:



Guided Meditation: **Mindbody Connection**  
Any Expressive Writing Exercises

**What is your initial reaction to these results?  
Was there anything that surprised you? What will you do next?**

## REFLECTION EXERCISE:

# What Else Was Happening When the Pain Began?

What's going on in our lives (and minds) impacts the way that pain is produced in the body. As you know, pain is designed to protect us from danger and threats. What you may not know is that the brain commonly interprets emotional stress as a threat.

In some people, emotional stress is interpreted as enough of a threat for the brain to create pain and other symptoms with no physical injury or tissue damage present.

In other cases, physical injury or tissue damage is the original reason for pain. However, even in these cases, emotional stress plays an important role in helping this pain to become chronic, causing it to endure long after the injury has healed.

Think about someone who has broken their arm. Under a time of low stress, this injury may be painful, but the pain will subside as the injury heals. This pain is likely to resolve within a few months.

If the same person breaks their arm during a time of emotional stress, the brain and body may respond to this pain quite differently. The brain's "alarm system" is already on high alert from emotional stress, and this new broken arm causes the "pain alarm" to become even more sensitive. Because of this, pain may be activated more frequently during the healing process. Stress from this pain leads to more emotional distress, strengthening and reinforcing the cycle. Over time, this pain signal becomes "learned" by the nervous system and may be activated for years to come.

What kinds of stress can have this impact? Here are a few examples:

- **Tough relationships or familial conflict**
- **Divorce, marriage, or a breakup**
- **Ongoing discrimination/ being targeted/ profiled**
- **Loss of a loved one**
- **Traumatic experiences**
- **Changes in mental health**
- **Changes in employment or career**
- **Changes in financial standing**
- **Moving**



There IS good news here. If you can identify the emotional stress that has impacted your pain, you can actually do something about it. This will look different for everyone, but it may involve:

- **Consciously retraining the nervous system to cultivate safety instead of fear**
- **Removing yourself from ongoing stressful situations to lower your brain's alert level**
- **Processing and releasing past emotions that are still impacting how safe your brain feels today**

Think about the time in your life when your symptoms first began (or when they intensified). What else was going on in your life at this time?

Want to go deeper on this topic?

RECOMMENDED EXERCISE IN THE CURABLE APP:



Expressive Writing: **Stress Assessment**