



# Understanding Pain

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## Patient Handbook

Pain has the ability to put our lives on pause.

Allow us to guide you towards a long-lasting solution.

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"All symptoms regardless of severity,  
duration or intensity have one thing  
in common.

**The nervous system."**

Dr. Isaiah Redfern  
Lead Clinician  
Ottawa Performance Care

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# What is

# Pain?



Before we begin our story lets introduce our characters...

Our main character: No one other than **you** of course



Our less than favourite co-star: **pain**

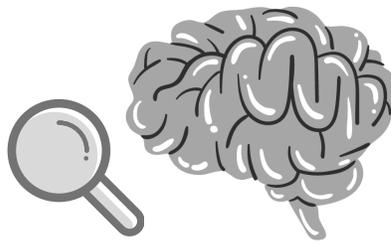


We'll let you fill in the details of our main character... Their job, favourite Netflix series, music preference and go-to 11pm snack.

The only detail we will provide of our main character is that they have been introduced to pain. For some, this meeting was brief, then they said their goodbyes.

For others, pain just wont leave them alone. It's like that person at a social event who cant take the hint when you dont want to talk to them.

# What is Pain?



Pain is defined as an unpleasant sensory and emotional experience associated with actual and potential tissue damage. It is the alarm signal from our brain that something is wrong. When we have that encounter with pain it is for our protection. In all honesty, pain is **usually** a good thing. It protects us from serious harm.

The problem is pain isn't very good at taking the hint when we want to be left alone and it frequently overstays its welcome.

Hi! Its me again, pain..  
Did you miss me?



Nope..



Initially, pain has our best interest in mind. It's trying to tell us something is wrong and motivate us to address it.

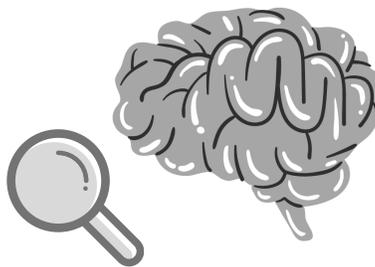
It was nice to meet you but I  
have some important stuff  
to get done, bye.

you

But you havent heard  
all I have to say!



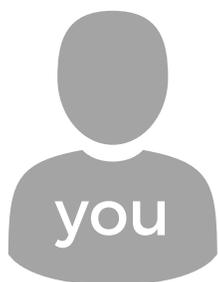
You cant get  
rid of me that  
fast!



# So far...

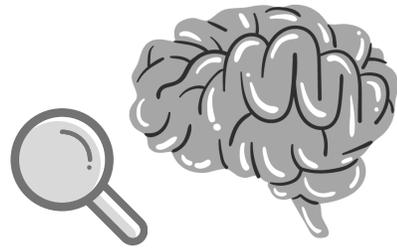


- Pain is an alarm signal created in our brain
- It has two purposes:
  - To alert us that something is wrong
  - To motivate us to do something about it
- Pain traditionally comes in two forms
  - Acute - short duration (up to 6 weeks)
  - Chronic - long duration (3+ months)



- You're great
- You're frustrated and possibly confused why this pain won't simply just go away or disappear.
- You're going to have all your questions answered shortly

# Understanding **Pain**

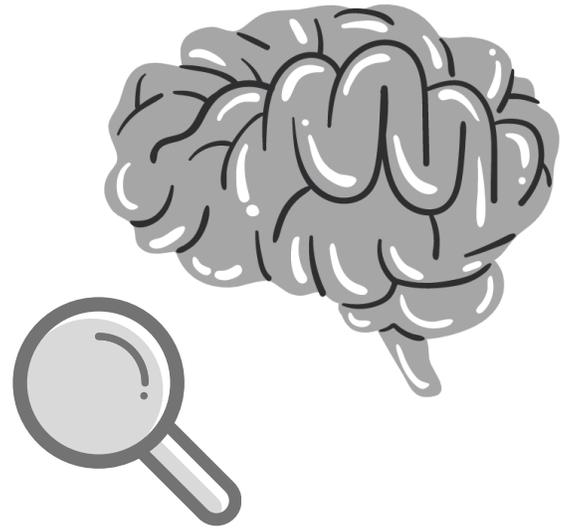


Before we get further into our story, let's introduce a few more qualities about our co-star pain 

- Pain is neurologic and it lives in the brain, even though we feel it in our elbow or neck with certainty.
- Pain has the ability to make our peripheral nerves more sensitive due to swelling.
- Intensity of pain is not linked to the amount of damage and it isn't always located at the site of the injury/ problem
- Pain can change in sensation ie: stabbing, aching, burning as well as change locations and spread to different regions of the body
- Pain can make surrounding areas more sensitive to touch or movement
- Pain can be influenced by factors such as our mood, stress level, diet and lifestyle

What we need to remember is that pain wants its voice to be heard. If we ignore it or try to calm it down, it has no other option than to turn up the volume till we have given it the attention it deserves.

# Why am I in Pain?



## Scenario 1 - Safety switch

**Pain is the result of force finding it's way into an area of anatomy that wasn't originally designed to sustain that amount of force.**

Our muscles have a built in safety switch that shuts them down when they are about to be overloaded and sustain a structural injury.

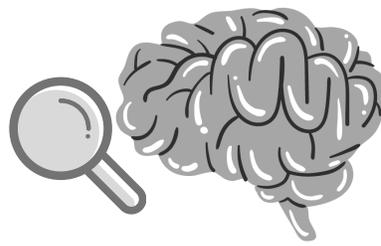
The problem is that muscles don't always 'reboot' after they've been shut down. Now you are doing the work of 10 muscles with 8 and they are being overworked.

Pain is our brains messenger saying:

Hey! I'm 2 muscle's short of a full work crew,  
this wont be able to work for long.  
Can you do something about it?



# Why am I in Pain?



## Scenario 2 - Location, location, location

**Pain is the result of a local environmental change at the cellular level. Nutrient delivery and waste removal have both become less efficient.**

Every cell in our body works hard. They're tiny but mighty and like most of us they need a clean work space to get their job done efficiently.

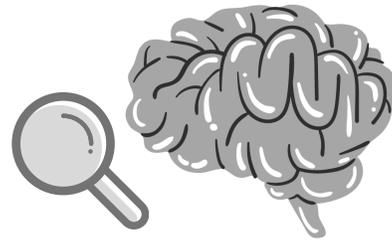
When a muscle doesn't effectively remove waste and deliver nutrients properly it can't work at maximum capacity. The muscle then becomes inflamed and that is what leaves us with our companion pain. This is why strategies aimed at:

- Improved circulation
- Lymphatic drainage
- Muscle activation and biomechanics

can all be beneficial for pain reduction when used correctly

I cant work under these conditions, its a mess in here! Can you do something about it?





# So far...



- Pain is an alarm signal created in our brain and a protective mechanism
- It has two purposes:
  - To alert us that something is wrong
  - To motivate us to do something about it
- Pain traditionally comes in two forms
  - Acute - short duration
  - Chronic - long duration
- Pain is usually caused from one of two scenarios
  - Improper force absorption
  - Improper nutrient delivery and waste removal



- You're still great and now less frustrated/confused about your pain
- You're getting answers to these difficult questions

# Acute vs Chronic <sup>8</sup>

## Pain



This is where our story gets complex. However, solving acute pain is pretty straightforward when the proper steps are taken.

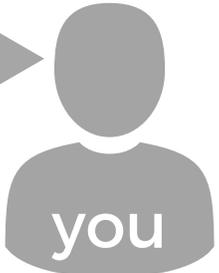
- We have pain
- We respond to it either by:
  - Seeing a **qualified professional**
  - Change our lifestyle or movements
- We no longer have pain

When we respond **appropriately** and rapidly to acute pain, we are able to address the problem and continue on as though it never happened. We'll be addressing the lifestyle piece in a bit.



Thank you so much for listening to what I had to say!

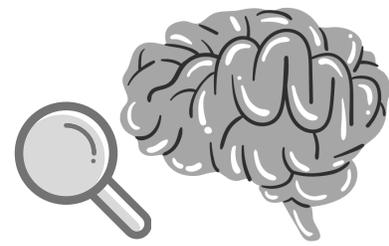
Anytime!  
I know you were just trying to help me



you

# Acute vs Chronic Pain

## Pain



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Chronic pain is like the older and meaner brother of acute pain. Our body makes a lot of changes to try and compensate for this long standing pain but unfortunately it is usually of little benefit. We are going to talk about this section in depth. Below are a few of the topics to expect:

- Central sensitization
- Central & peripheral circulatory changes
- Amygdala & Anterior Cingulate Cortex re-organization
- Gate Control Theory of Pain

These four above points create the perfect storm for a chronic pain environment. The hard part is the pain signal we feel can't tell us specifically what it needs. We become frustrated and discouraged that things aren't getting better and possibly worried that we might be stuck with pain.



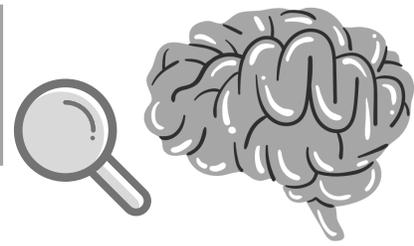
I'm sorry im not able to tell you exactly what I need, but I need help!



Ugh! This is so confusing, nothing is working

# Acute vs Chronic Pain

## Pain

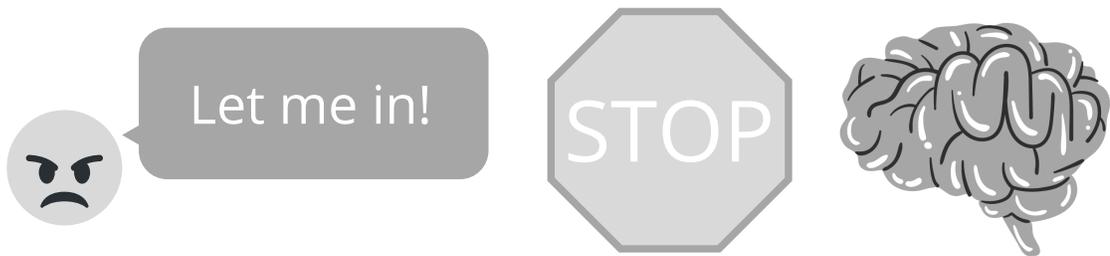


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## Gate Control Theory of Pain

Pain uses our nerves to transmit its message to the brain. Thankfully our nervous system has developed a sneaky little trick to help us block this transmission. The **gate control theory** states:

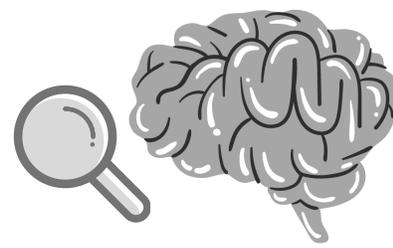
Both painful and non-painful stimuli use the same road to reach the central nervous system, but they can't use it at the same time. When a **non-painful** stimulus is traveling up towards our brain, it puts up a roadblock behind it and now **painful** stimulus is unable to reach the brain to make us aware of it.



## Apply it

If you have elbow pain, lightly massage the area or apply vibration to it. While these non-painful stimuli are present your pain won't be noticed. However, the pain will return once the roadblock comes down. This is why we recommend to use these techniques as temporary band-aids before you can see a **qualified professional** to have your pain properly treated.

# Acute vs Chronic Pain



Peripheral circulation is altered due to the fact that local tissues are becoming inflamed as a result of improper mechanics. With decreased circulation, inflammatory proteins are now building up at the site of pain. When this happens it makes people more sensitive to what was once a non-painful stimulus.

**Lymphatic drainage** is another form of waste removal. Our lymph nodes and vessels are delicate structures that can often become compressed in sites of inflamed tissue and not able to remove waste properly.

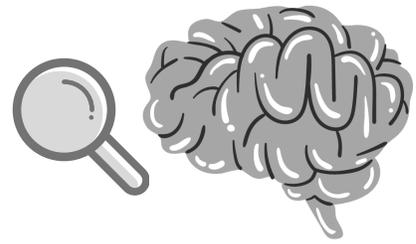
**Central sensitization** is a process that is present in most cases of chronic pain. It is a process where the central nervous system is in a constant state of high reactivity to pain. Essentially things that weren't painful before are now painful. We'll talk about this at length on the next page.

## What we know

Our nervous system is in a constant state of high reactivity and we aren't able to properly remove waste products or deliver consistent nutrients to the inflamed regions.

# Acute vs Chronic

# Pain



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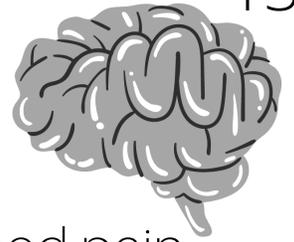
At OPC, we believe in clinical neuroscience based solutions for injury treatment. Neuroscience also explains how stress can influence pain. When the brain perceives stress it sends blood away from the **frontal lobe** which is responsible for **cognition, thinking and reasoning** into the **limbic system** which is the **emotional, reacting and 'fight or flight'** part of the brain.

When this happens we react more emotionally to pain rather than with clear thinking and reasoning.

Below are network components involved in pain:

- **Amygdala** - sends 'red alert' signals to warn us an emergency is on the way and we need to react
- **Autonomic Nervous System** - responsible for circulation, breathing rate and how we process fuel. When its alarmed it puts us in 'fight mode' not 'relax mode'
- **Anterior Cingulate Cortex** - emotional area of our brain and it is involved in error detection. When this area is active it deactivates the DLPFC
- **Dorsolateral Prefrontal Cortex (DLPFC)** - involved in decreasing pain perception

# What Can I Do About My Pain?

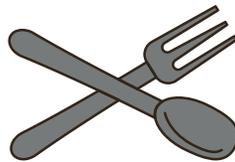


Now that you've made this unfortunate friend named pain, lets give you some realistic strategies to help get rid of it.



A word that came up frequently in the previous pages was **inflammation**. In order to maximize the efficiency of getting rid of pain we need to decrease inflammation and here's how:

The Mediterranean Diet



This diet relies heavily on fruits, vegetables, nuts, beans and whole grains. Poultry and lean meats are still present but fish is the go-to option.

The reason this diet is so powerful against inflammation is that the food sources of fruits, vegetables and fish are densely packed with **antioxidants**. Antioxidants fight directly against inflammation and defend your cells against harmful particles called **free radicals**.

We've laid out more guidelines on the next page.

# What Can I Do To Decrease My Steps to take

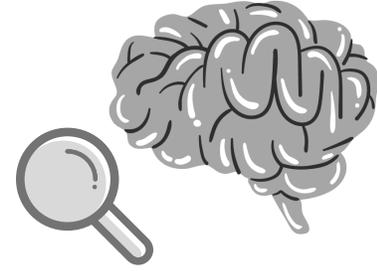
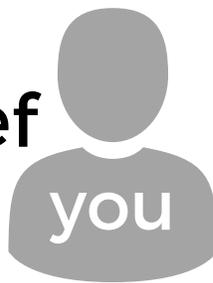
Pain?



- Adopt a mediterranean lifestyle, for a guide click [here](#)
- Take antioxidants, we love Curcumin and Vitamin D
- Our guideline is 1,000mg Curcumin and 3500iu Vitamin D daily
- Sleep is when our lymphatic system has the best opportunity to clean up metabolic waste
  - Get in a habit of no screens 1-2 hours before bed, read a book, reflect on your day, talk with your spouse or practice mindfulness
- Cliche but.. water. Pain is an ever burning fire, so lets drown him out with plenty of H<sub>2</sub>O. In a perfect world, you'd consume a gallon each day.

**Pain**

**Debrief**



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Pain is designed to help and protect us, but it tends to overstay its welcome. As mentioned earlier in some cases our nervous system adapts and further promotes this pain state.

Here, to wrap up your struggle is your debrief on what to do, in order to both manage the pain you're experiencing and decrease the possibility of it re-occurring in the future.

- Adopt a mediterranean lifestyle
- Supplement antioxidants (Curcumin & Vit D)
- Prioritize sleep
- Increase water intake to 1 gallon/ daily
- Contact a **qualified health professional** and continue your journey moving in the right direction

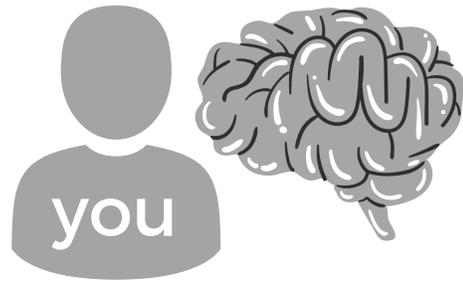
Thank you so much for taking these steps! Now I dont need to bug you as much and we can both be happy



Now that I understand more about you Pain... You're not so bad, thanks for caring!

# Goodbye

# Pain



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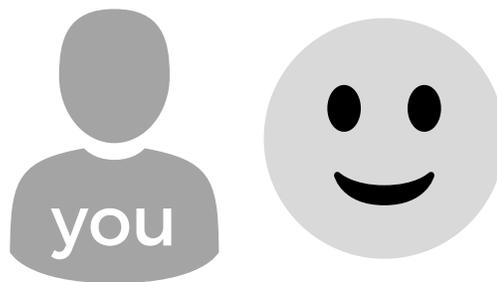
Thank you for allowing us to guide you through this journey. We hope that we were able to clarify this difficult topic and provide you with a starting point of how to manage your pain.

For more information regarding our expedited treatment strategies or which treatment program would be the best for you please visit our website or send us an email.

[www.ottawaperformancecare.com](http://www.ottawaperformancecare.com)

[info@ottawaperformancecare.com](mailto:info@ottawaperformancecare.com)

Best,



OPC