

PRESENTS...

# **It Doesn't Have to Hurt: Managing Chronic Pain**

*Dr. Michael Long ND BSc*





# What is Pain?

- *Pain*: an unpleasant sensory or emotional experience associated with actual or potential tissue damage.
- Pain is meant to help us survive.
  - It is an alarm bell alerting us to harm in the body, it tells us to rest, and persists until we heal.
- But when pain overstays its welcome, it is very detrimental!

# Burden of Pain

- 1/5 of all Canadians have chronic or recurrent pain.
  - 7 million people.
- The cost of lost wages, productivity, and medical bills is staggering.
  - \$10 billion annually.
- Pain affects family and friends, a major contributor of household stress.





Section I

## UNDERSTANDING THE PHYSIOLOGY OF PAIN



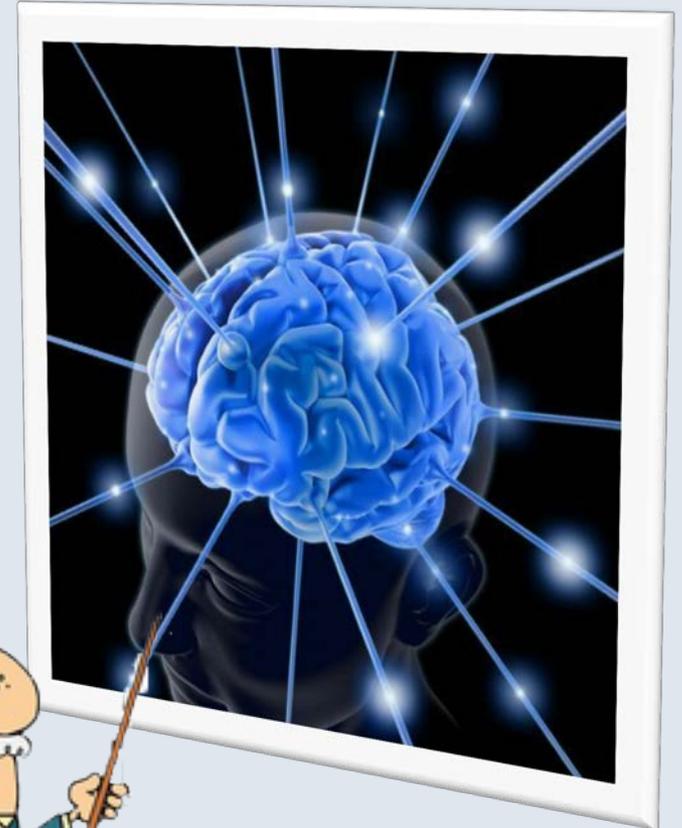
# Where Does Pain Originate?



No matter how sharp or dull, recent or old, severe or mild, emotional or physical....

...ALL pain comes from...

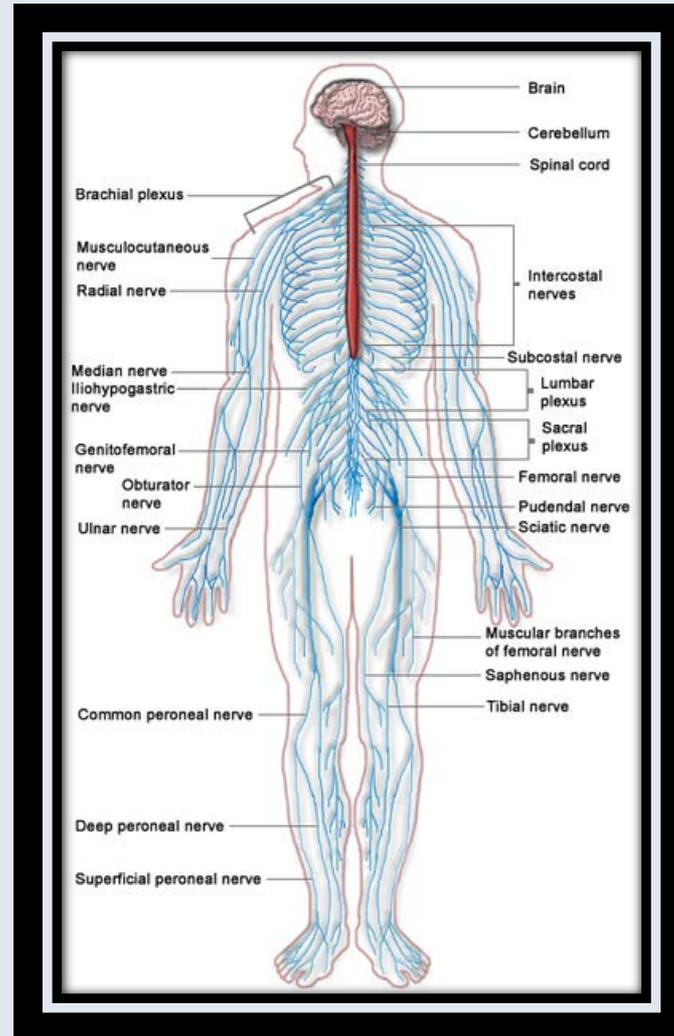
**The BRAIN!**



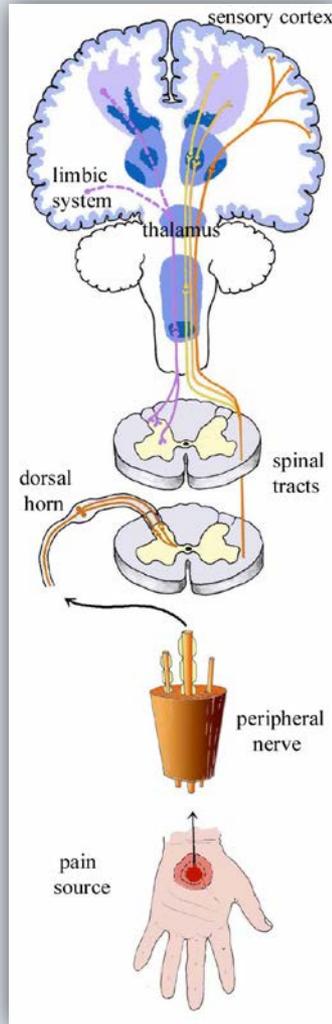
# Central and Peripheral Nervous System



- Central Nervous System
  - Brain
  - Spinal Cord (red)
- Peripheral Nervous System
  - All other nerves (blue)



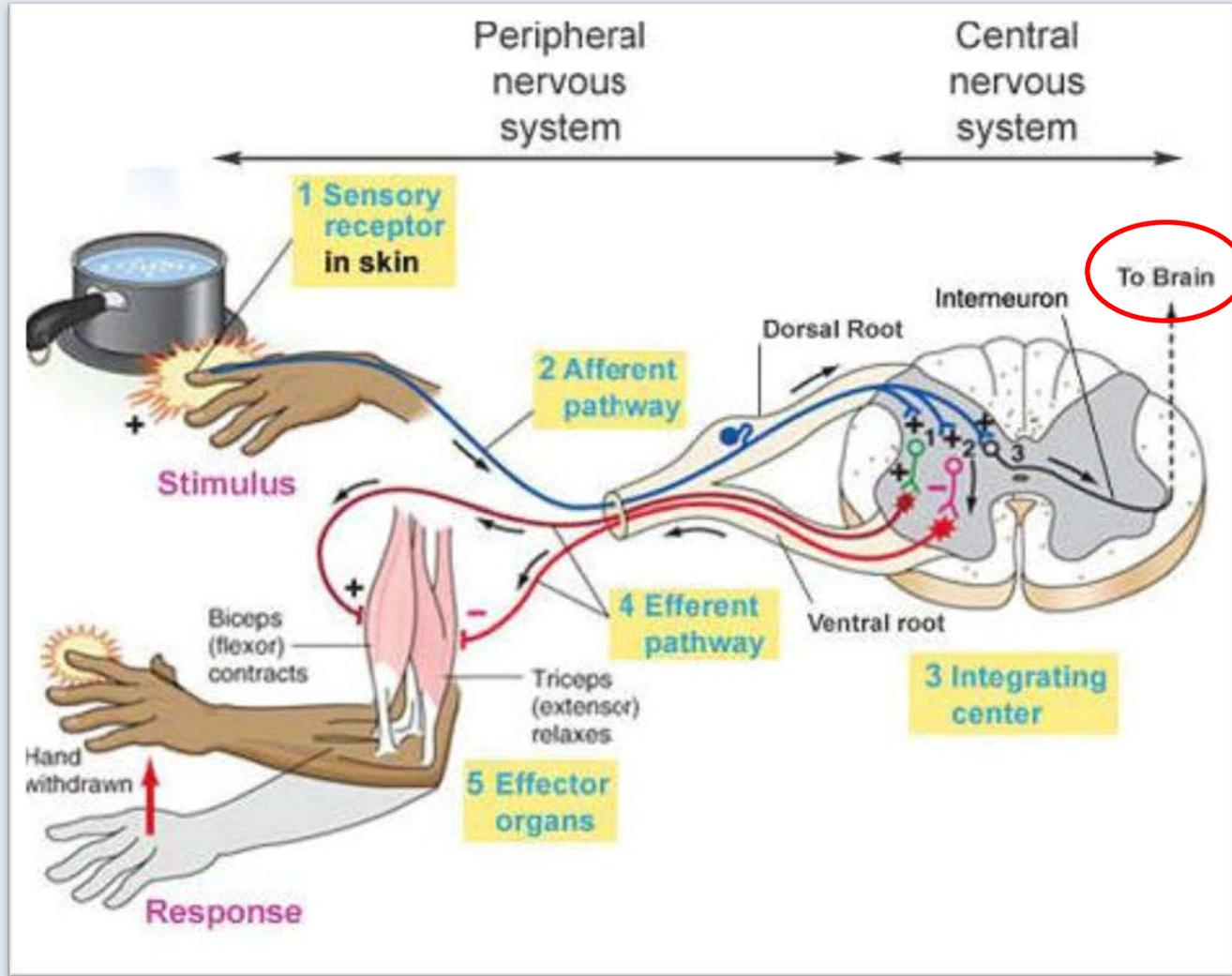
# Passage of Pain Sensation



- From source of pain
  - To the spinal cord via peripheral nerves
  - Sensation travels up the spinal tract for interpretation in the brain



# Pain Reflex





# Pain in the Brain

- Pain is associated with areas of **learning**, **memory**, and **reward** in the brain.
  - WHY?
- Pain is an adaptive response, with the intention of helping us.
  - It teaches us a valuable lesson that is remembered, in order to avoid the same mistake in the future.

# Acute vs. Chronic Pain

## Acute

Pain of 3 months or less duration

Caused by tissue damage

Generally a simple physical problem

Improves ability to survive



## Chronic

Pain of more than 3 months

Caused by increased nerve sensitivity

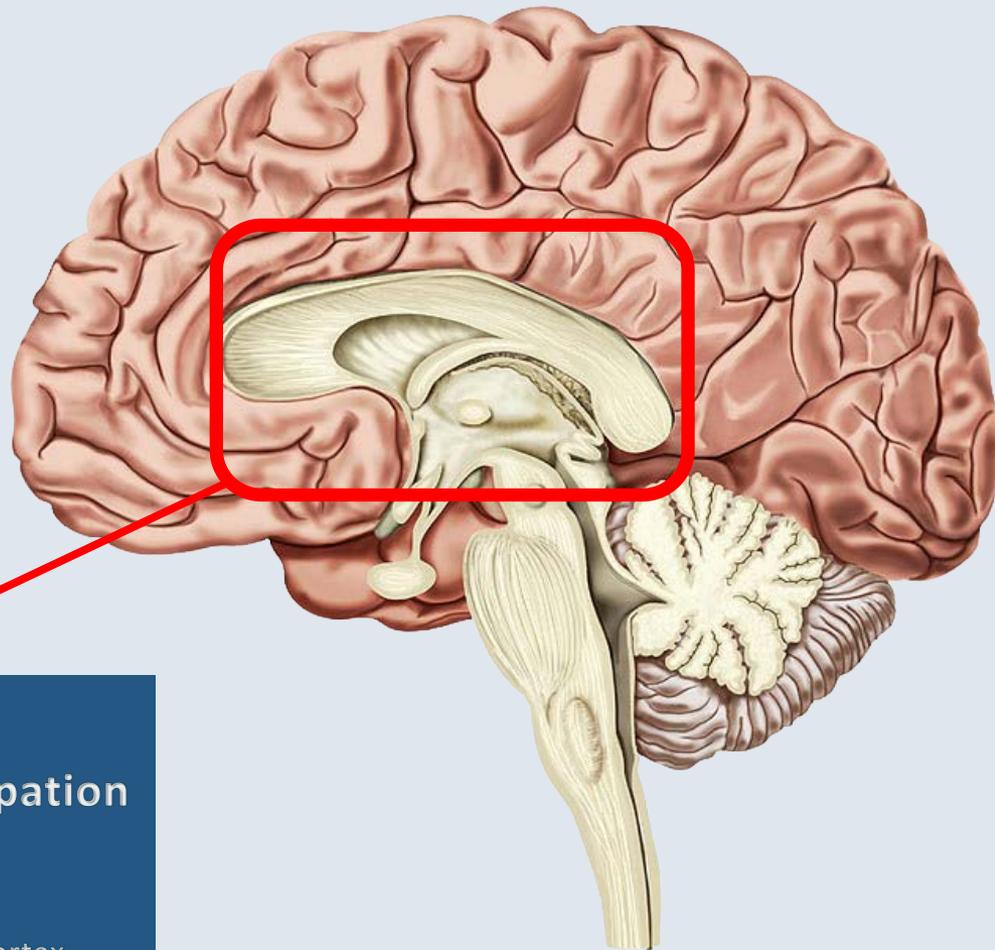
Very complex and multifactorial

Does not help us live longer or better





# Acute Pain

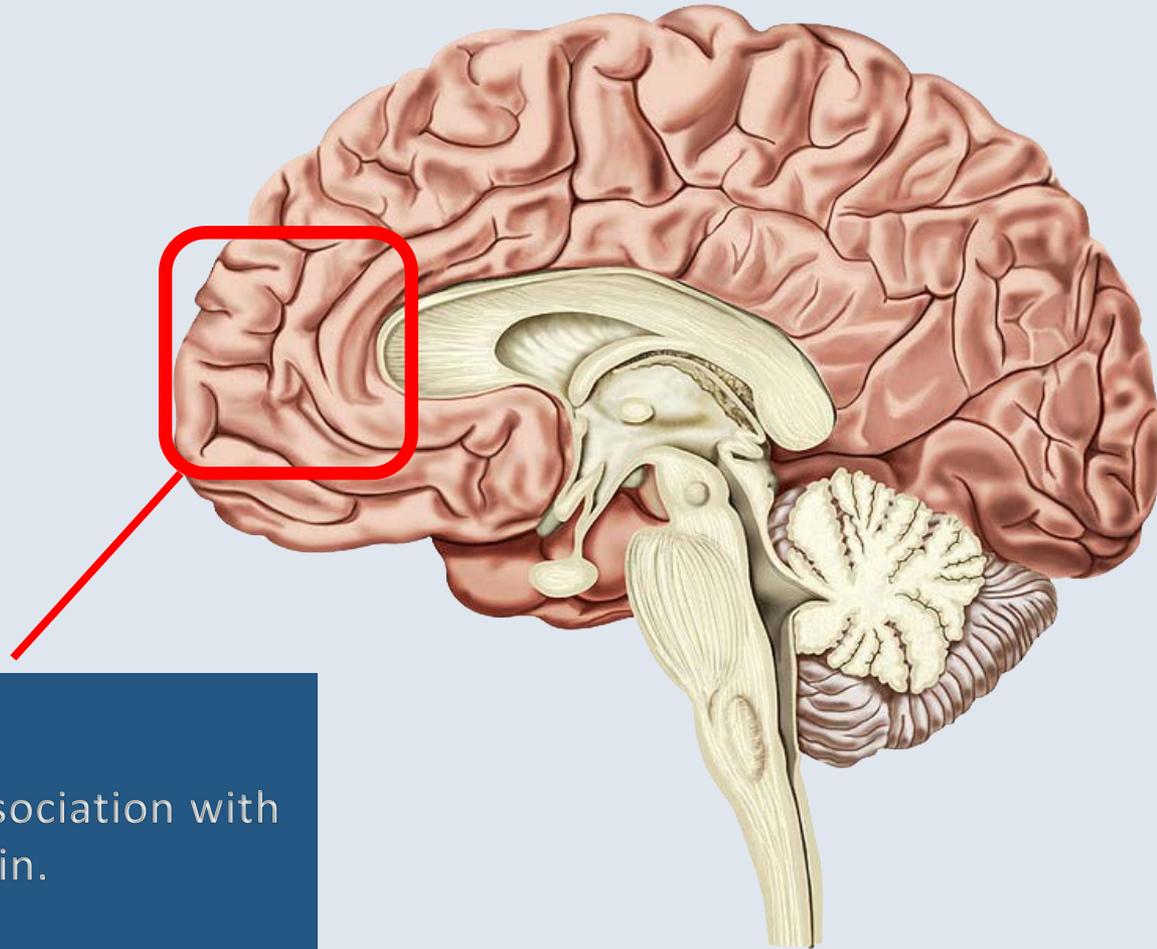


**Perception and anticipation  
of pain**

(Insula, anterior cingulate cortex,  
thalamus, and basal ganglia)



## Chronic Pain



**Emotional** association with pain.

(Pre-frontal cortex)

# Acute → Chronic Pain

- Pain signal is '*stuck on*' despite no physical problem.
  - **WHY?**
  - Largely unknown
- Thought to involve the inability to '*turn off*' thoughts of painful events from the memory.
  - The brain is '*rewired*' to misinterpret pain by forming an emotional relationship with it.





# Chronic Pain is Learned Pain

- The longer pain persists, the better the body becomes at experiencing it.
  - The nervous system becomes ‘rewired’ and more efficient at feeling pain.

# Underlying Factors

- Often very complicated and intertwined
- Usually a combination of:
  - Biological
  - Sociological
  - Psychological
  - Cultural
  - Environmental





Section II

# MANAGING AND TREATING CHRONIC PAIN

# Unlearning the Pain

- Just as we can learn pain, we can unlearn it through **retraining**.
  - However, the longer it persists, the harder it is to unlearn!
  - Early detection and treatment is vital.





## An Interdisciplinary Approach

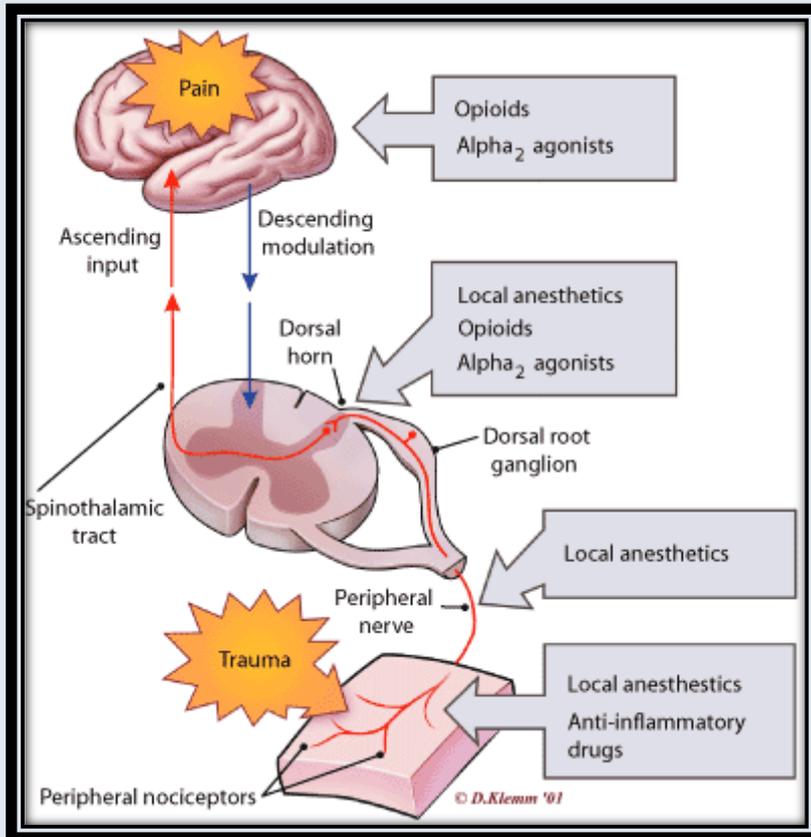
- A complex problem requires a complex solution.
- *Must* address **physical, mental, and emotional** factors.
  - Each person develops chronic pain individually, so each person has unique needs in order to heal.



# Pain Management Solution

1. **Medical Intervention**
2. Thoughts and Emotions
3. Diet and Lifestyle
4. Other Therapies

# Medical Intervention



- Analgesic medications to stop the pain signal from the brain
- Effective short term treatment, but not a viable long term solution
  - Issues with drug dependence and tolerance





# Pain Management Solution

1. Medical Intervention
- 2. Thoughts and Emotions**
3. Diet and Lifestyle
4. Other Therapies



## Emotional Pain

- Latest research largely agrees that chronic pain persists through the association between pain and emotions.
- Pain strongly affects **mood** and **stress level**.
- Dwelling on pain only makes it worse!



## Dealing with Emotional Pain

- Managing mood and stress helps the nervous system stop misinterpreting emotional trauma as physical pain.
- Helpful practices to break the cycle:
  - Mindfulness (mediation, yoga)
  - Counselling
  - Exercise
  - Stress management



# Pain Management Solution

1. Medical Intervention
2. Thoughts and Emotions
- 3. Diet and Lifestyle**
4. Other Therapies

Optimum



# Lifestyle Factors

- Our nervous systems are **overstimulated** by our daily choices, and **deprived** of the necessary components for optimal function.
- We are '*hardwiring*' our nervous system to misinterpret sensory information from our environment.



# Healthy Lifestyle

## Do More

- Whole food nutrition
- Adequate hydration
- Physical activity
- Read
- Spend quality time with family and friends

## Do Less

- Eat pre-packaged and 'fast food'
- Over-stimulate the senses (TV, computer)
- Drink alcohol and smoke cigarettes





## Pain Management Solution

1. Medical Intervention
2. Thoughts and Emotions
3. Diet and Lifestyle
4. **Other Therapies**



# Effective Complementary Care

- Medical research has shown that these complementary treatments are effective in reducing chronic pain (*seek professional guidance to determine which is best for you*):
  - Acupuncture
  - Clinical Nutrition
  - Lifestyle Counselling
  - Massage Therapy
  - Spinal Manipulation
  - Stretching and Exercise Protocols
  - Therapeutic Ultrasound

# Control Over Pain

- Can we simply *choose* to turn off the pain?
  - YES!
- This is what happened when people were simply asked to train their minds by focusing on something other than pain...





Brain MRI showing chronic pain activity before (orange) and after (yellow) retraining (or unlearning).



# Changing Your Pain Perception

- Be stubborn: you can modify your perception of chronic pain by simply choosing not to feel it, and focusing the attention on something else.
- This helps explain why mindfulness practices are so effective:
  - Meditation
  - Deep self reflection
  - Yoga
  - Walking through the woods



# In Summary

1. Pain is meant to improve our survival.
2. When pain persists more than 3 months, it becomes abnormal.
3. Chronic pain is **learned** through an improper association between emotional trauma and physical pain.
4. Unlearning pain is multifactorial, and tailored to the individual.
5. Effective treatment addresses **physical**, **mental**, and **emotional** factors.
6. You have the ultimate control over your pain!





**Unit 3  
855 St David St N  
Fergus, ON  
N1M 2W3**

**T: 519-787-4100**

**F: 519-787-4105**

**[info@ontariohealth.org](mailto:info@ontariohealth.org)  
[www.ontariohealth.org](http://www.ontariohealth.org)**

**Thank You!**