

# The “How To” of Teaching Patients About Pain

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**MEDBRIDGE**

# Disclosures

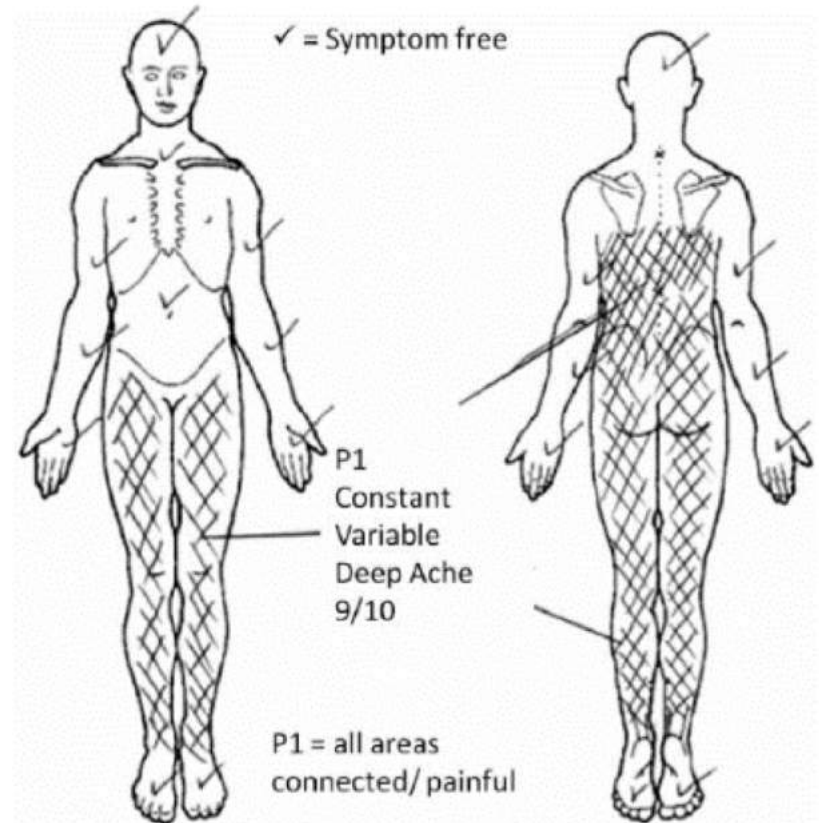
- I publish books for professionals and patients on pain and receive an honorarium for the sales
  - These are not being specifically promoted in the webinar
  - The intent is to share our research and not promote products
- I own and teach for a seminar company offering continuing education for healthcare providers
  - The webinar is not designed to promote the attendance of the seminars

# Chapter One

## The Patient and the Clinical Dilemma

# Chronic Low Back Pain

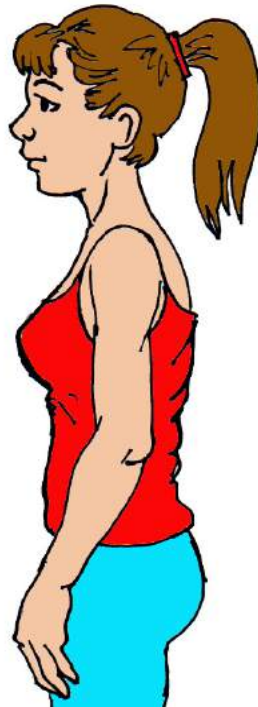
- Widespread pain
- Non-responsive to treatment
- Various providers
- Spreading pain
- Increasing pain



# Chronic Low Back Pain (cont.)

Movement =  
pain

If I stop moving,  
I'll stop hurting

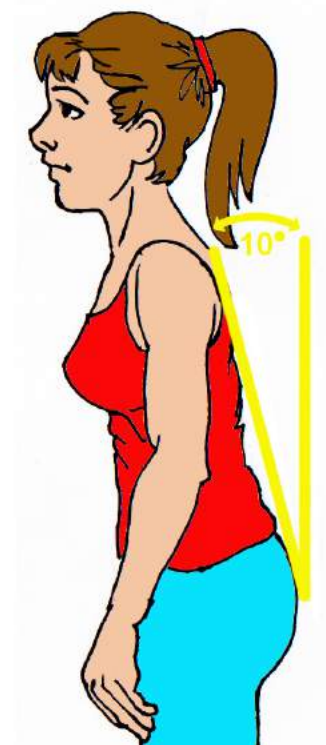


# So What?



# We Know

There is “gold-level” evidence for movement and exercise in treating persistent pain

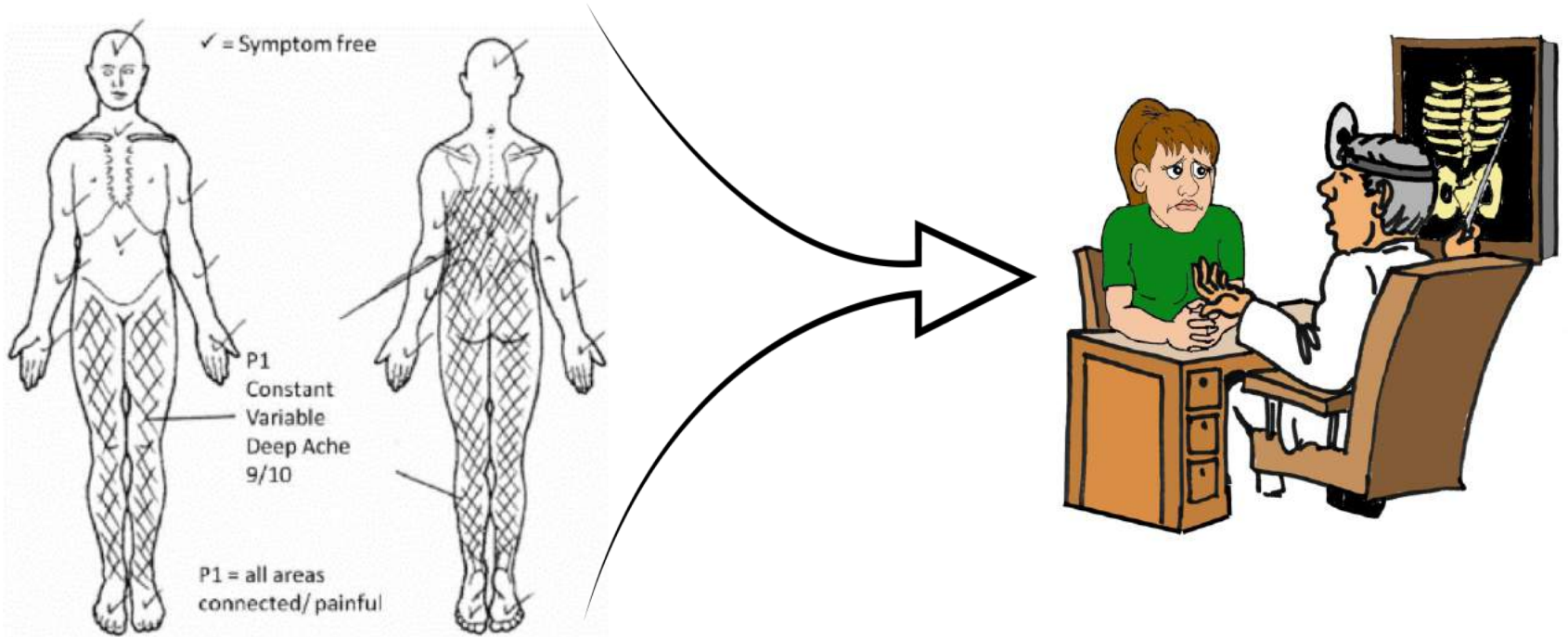


# What Do Patients Want From Us?

- Clear diagnosis
- **Education** about their problem
- Personalized and individualized care
- Prognosis and plan of care
- **Explanation** of treatment
- Pain relief and improved function
- Thorough physical examination



# Education



# Education: Catastrophic Language

## *Degenerative terms*

- *“Wear and tear”*
- *“Deterioration”*
- *“Disc space loss”*
- *“Crumbling”*
- *“Collapsing”*

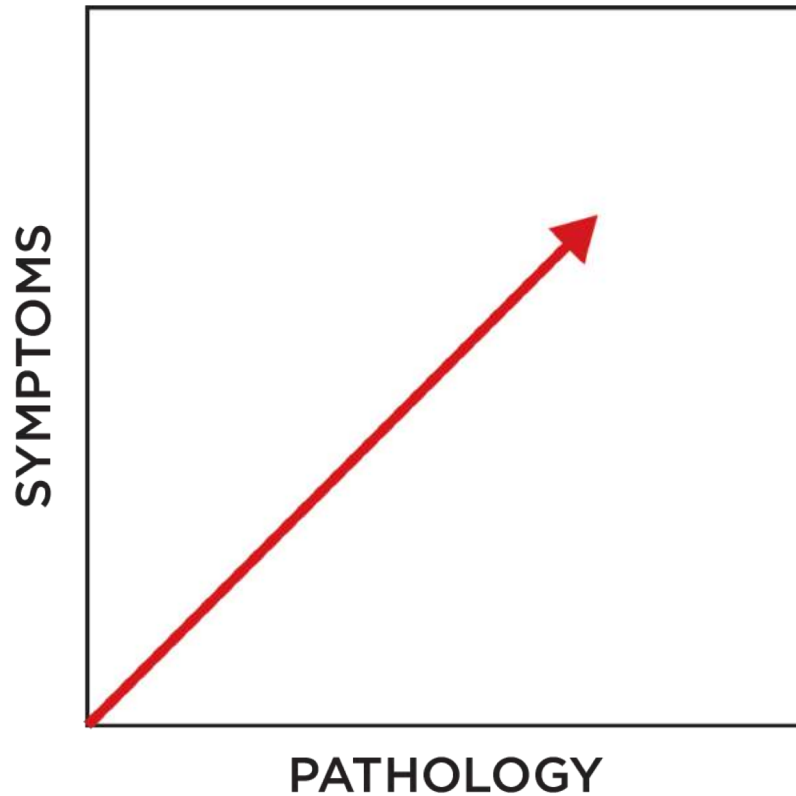


# Biomedical Education

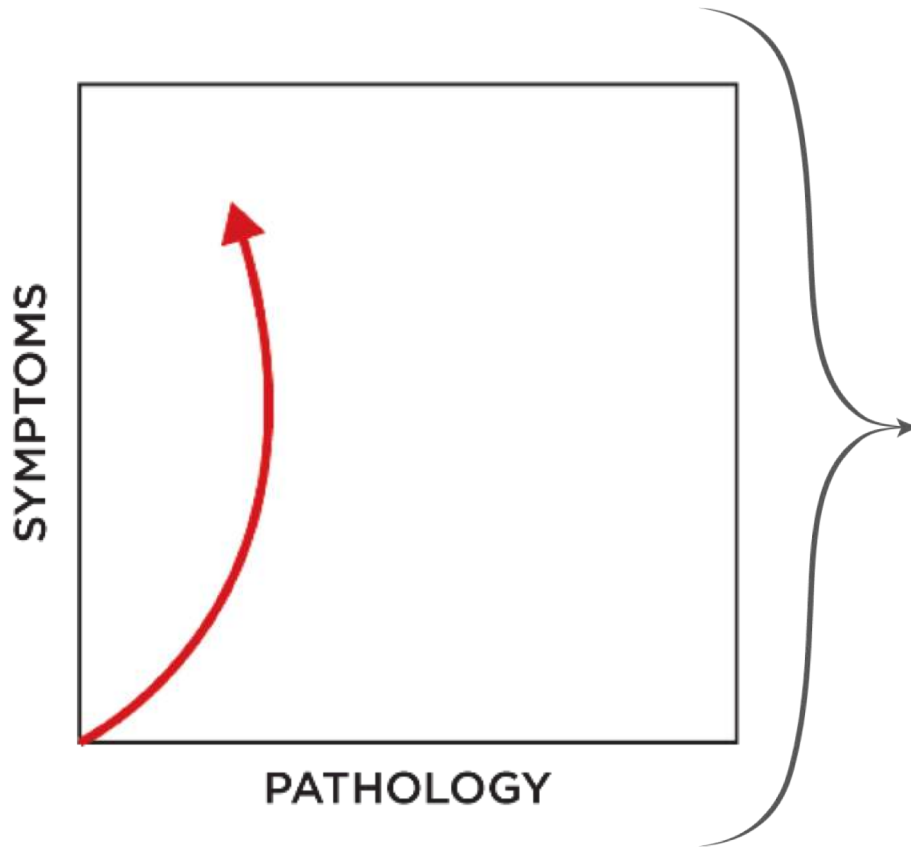
Not only have these models shown limited efficacy in decreasing pain and disability, but they may **increase fear in patients**, which in turn, may increase their pain



# The Traditional Pain Model

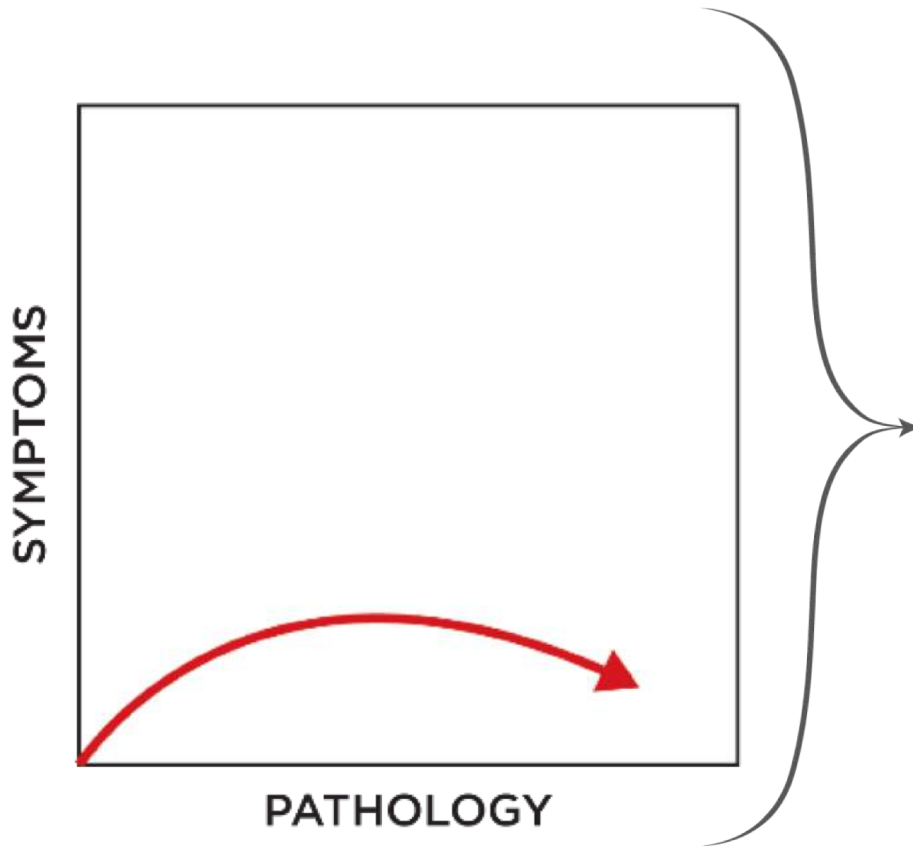


# But We See This



- Paper cuts
- Headaches
- Fibromyalgia
- Chronic Fatigue Syndrome
- Complex Regional Pain Syndrome
- Many cases of back pain

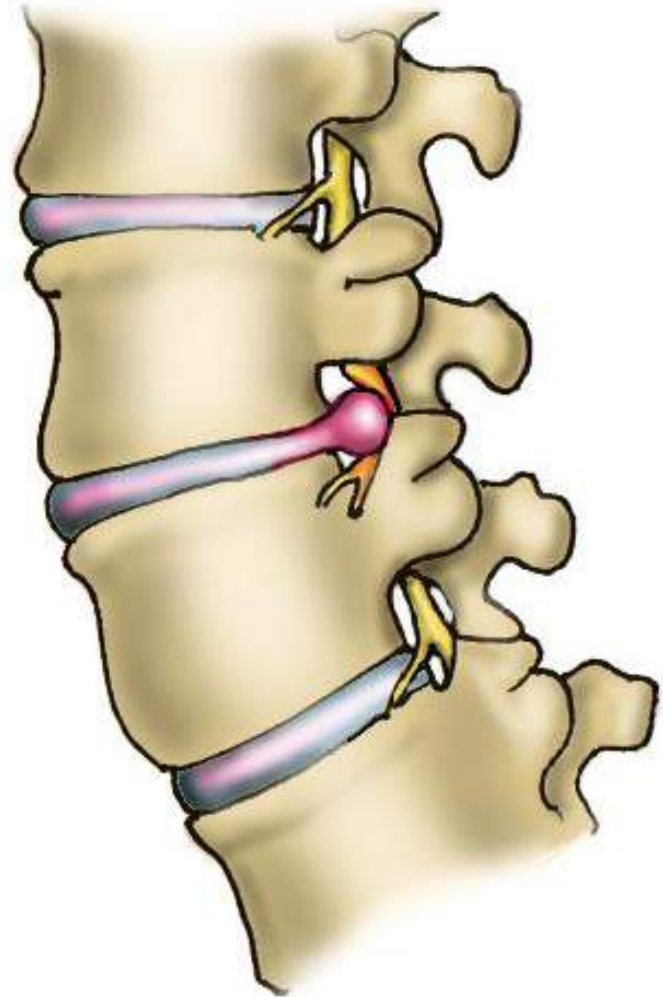
# This Also Happens (Thank Goodness)



- Physical therapists with back pain treating people with back pain
- Farmers
- Commercial fishermen
- Demolition derby drivers
- Rodeo clowns
- Rodeo cowboys

# “Bulging Discs”

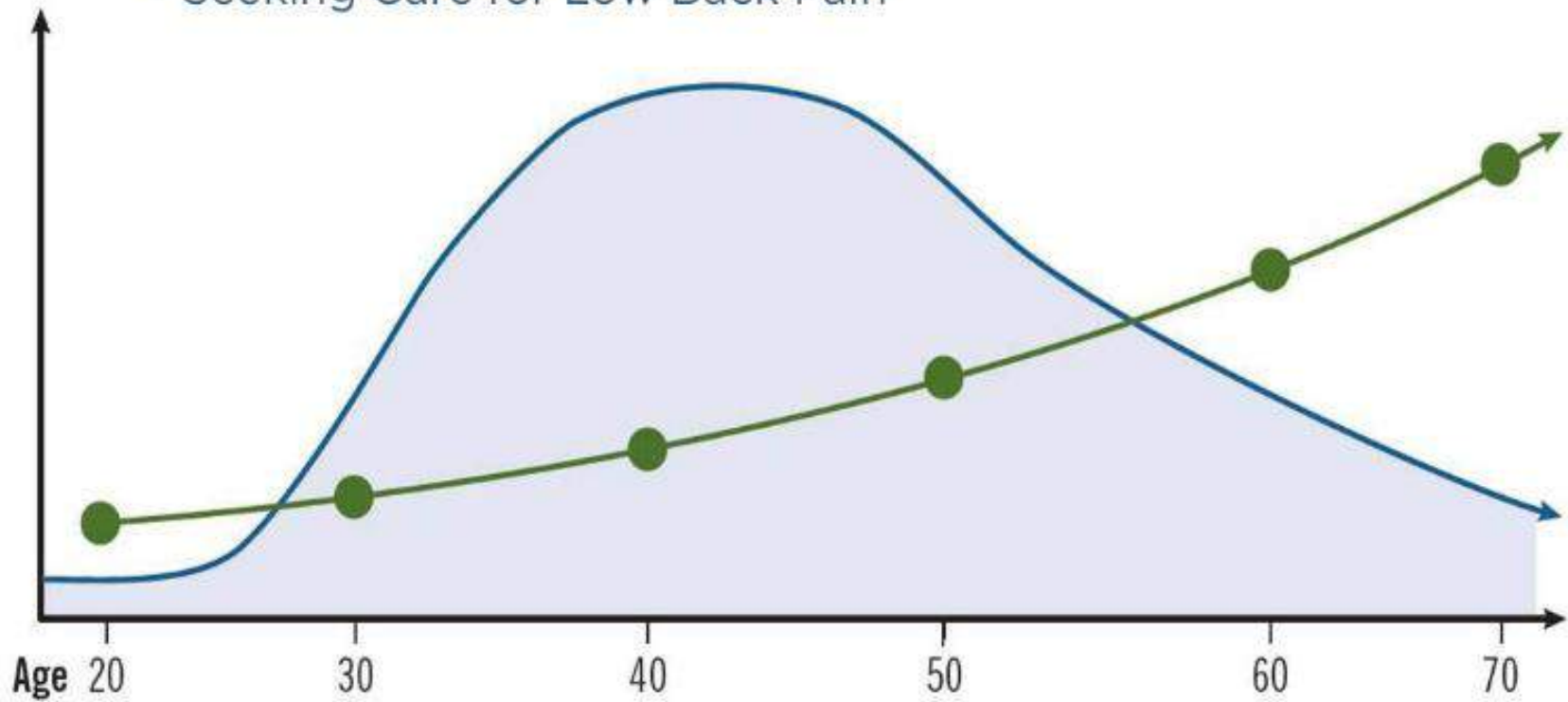
- 40% of people with no back pain has a “bulging disc”
- Disc bulges absorb typically between three to six months



# “Arthritis”

## Low Back Pain vs. Aging of the Spine Over Time

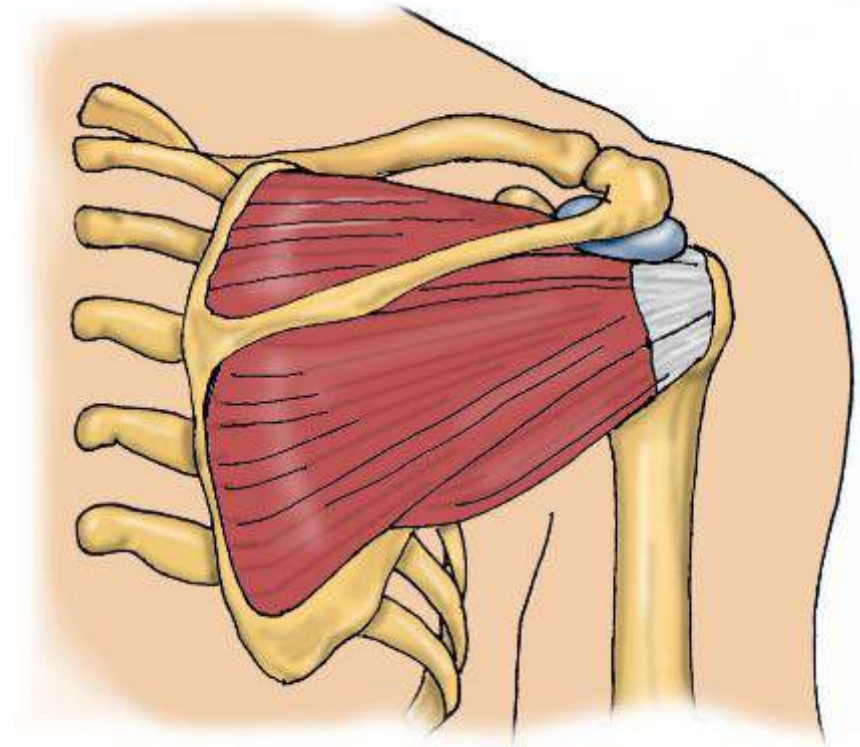
- Age Changes of the Spine
- Seeking Care for Low Back Pain



# “Torn Rotator Cuff”

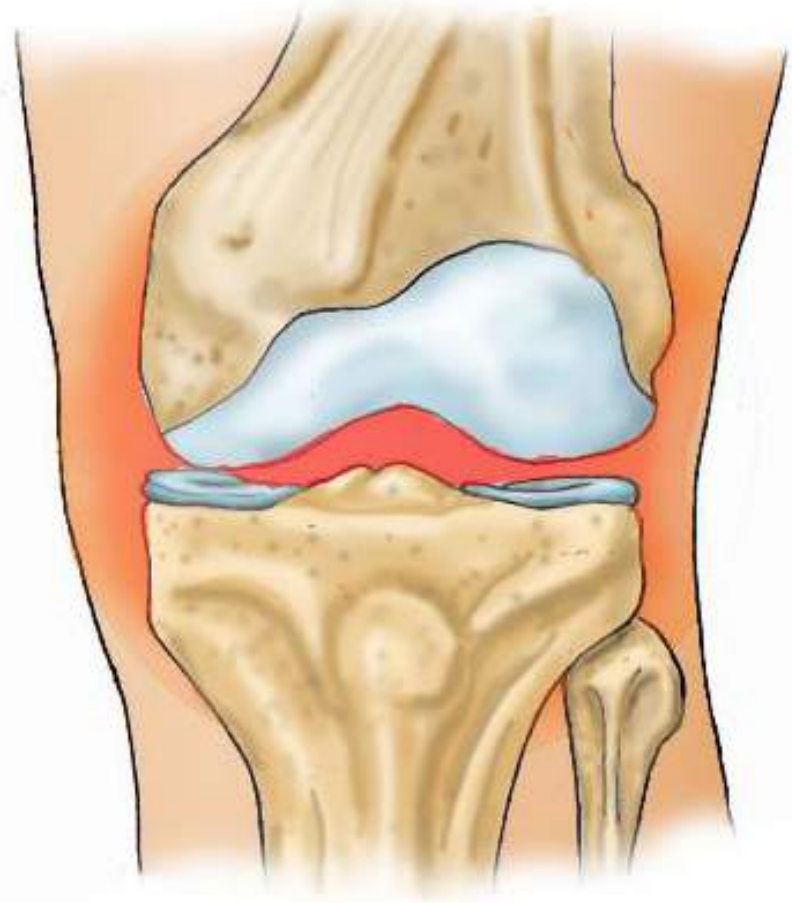
In people with no pain or limited movement and function

- 1/3 people over age 30 has rotator cuff issues on MRI
- 2/3 people over age 70 has rotator cuff issues on MRI



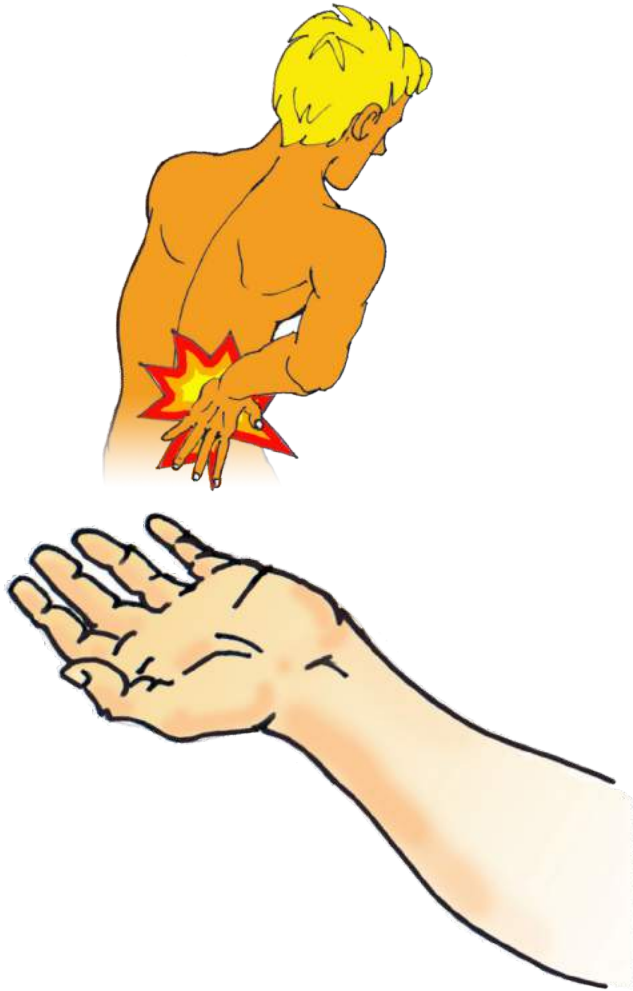
# “Arthritis in my Knee”

- 25% to 50% of people with no knee pain has “arthritis” on their MRI scan
- 35% of college basketball players with no knee pain show significant “arthritis” on their scans



# The Clinical Dichotomy

Tissue Problem



Pain Problem



# Global Epidemic of Pain: Tissue Health



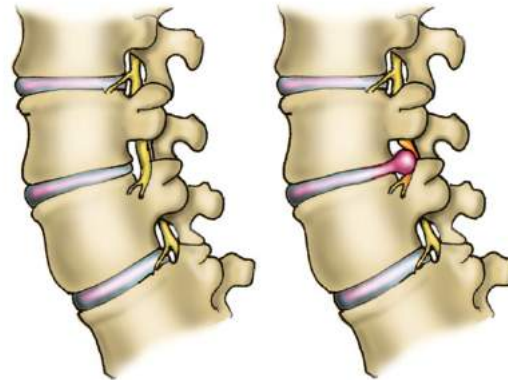
# Chapter Two

## The Evolution and Evidence for PNE

# The “Ah-ha” Moment (For Us)



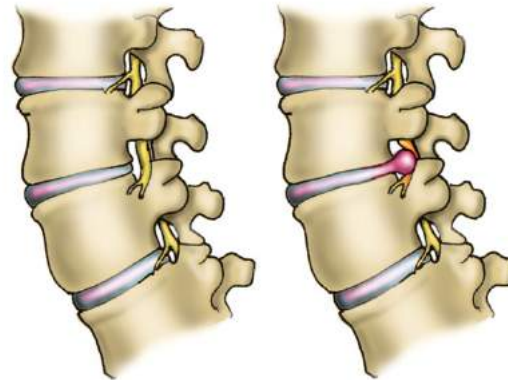
Low Back Pain



# But: What Brings Them to Us?

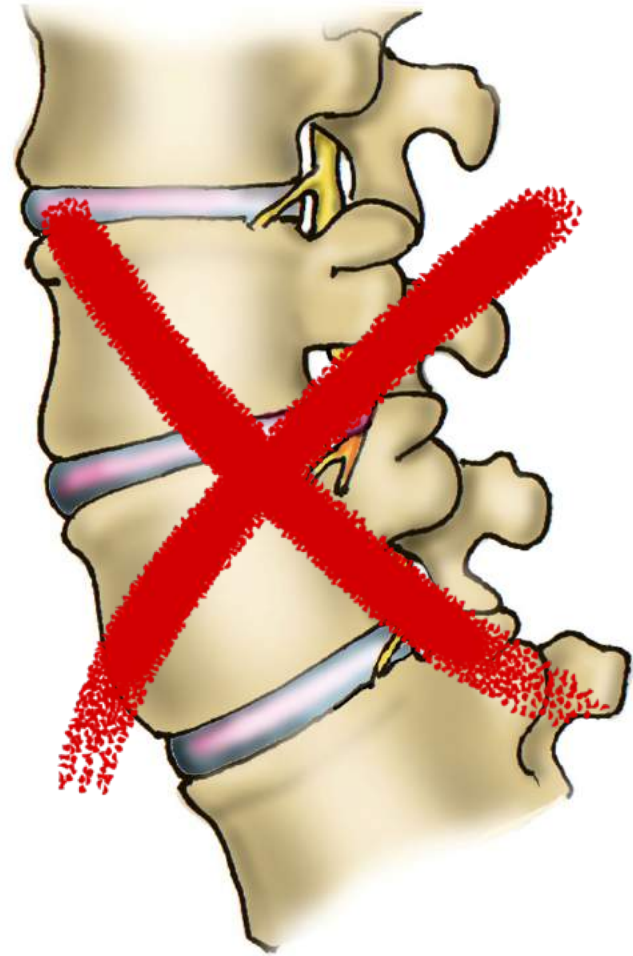


Low Back **Pain**

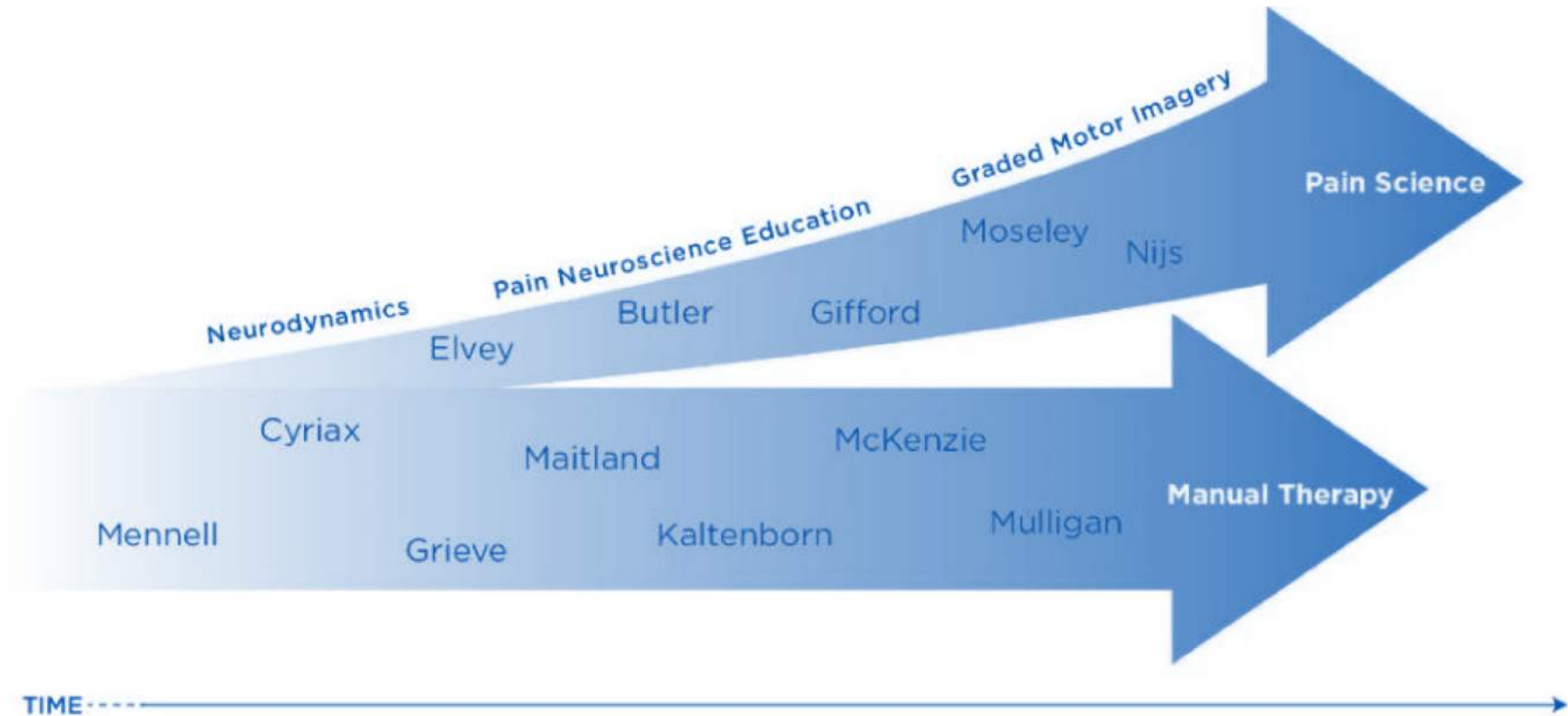


# Biomedical Education

- Does not explain pain
- Induces fear
- Does not include the nervous system, immune system, emotions, abuse, altered body schema, etc.
- Patients want to know more about: **pain**



# Out of Manual Therapy/Orthopedics

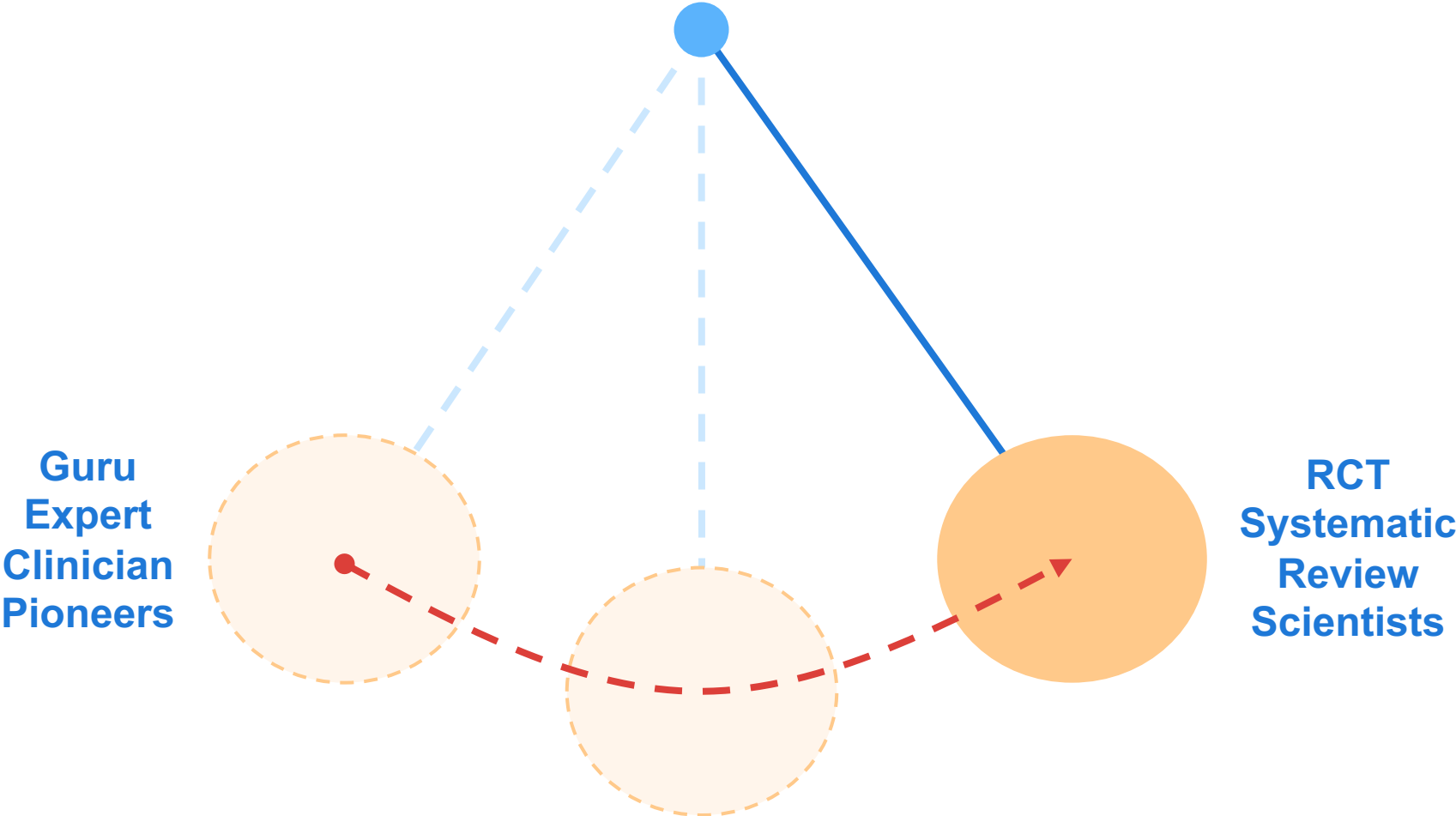


# Teaching People About Pain

In 1998 – announced in the Physiotherapy Pain Association newsletter:

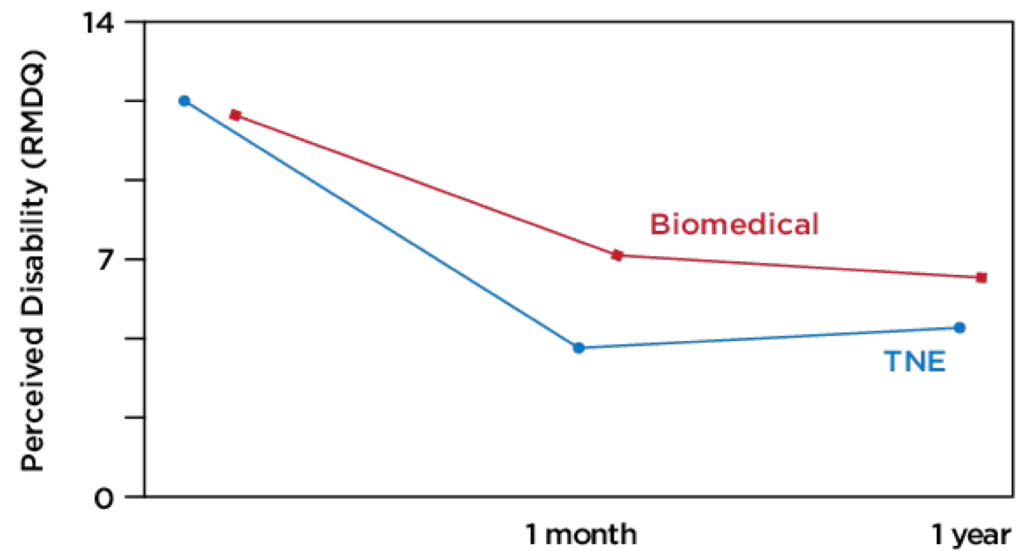
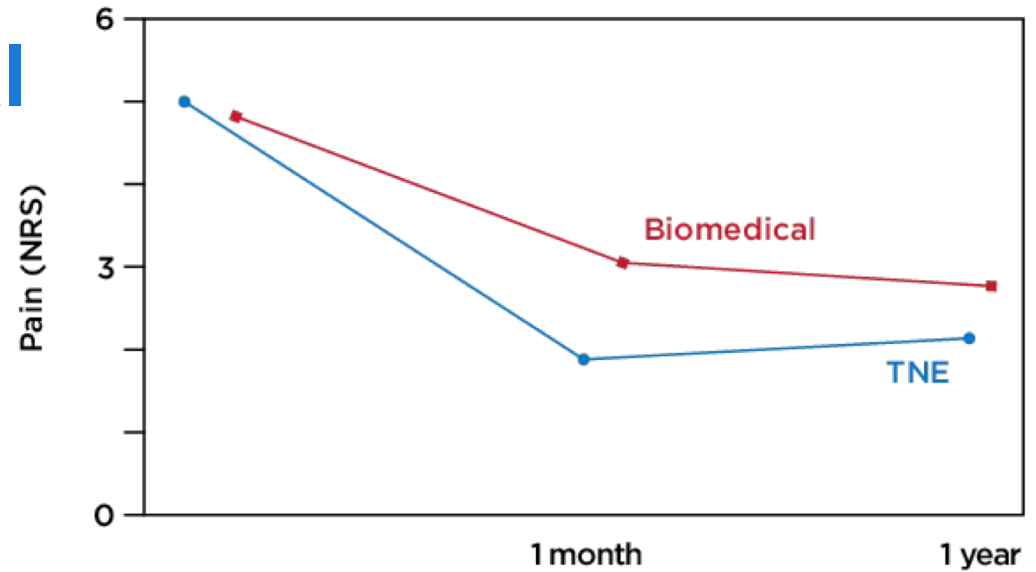
Louis Gifford to present the first “Explaining Pain to patients, family, health care professionals and employers” at the 1999 IASP Conference in Vienna

# Evidence Based Medicine



# First Clinical Trial

- 2002 Journal of Physiotherapy
- Moseley



Lorimer Moseley, Combined physiotherapy and education is efficacious for chronic low back pain.

# This Study Also Showed and has Since Been Validated by Various Studies

For chronic low back pain, the numbers needed to treat (NNT) and pain neuroscience education (PNE)



PNE NNT for function



PNE NNT for pain

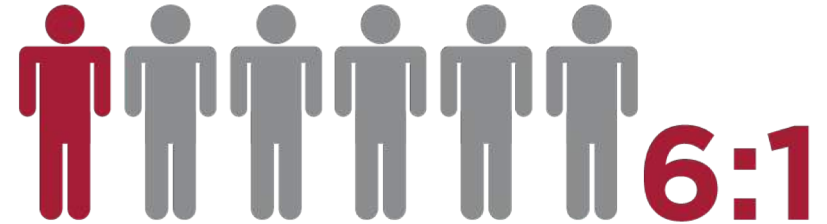
# Putting this into Perspective



PNE NNT for function



PNE NNT for pain



Gabapentin NNT for pain



Antidepressant (SSRI) NNT for pain

# The Efficacy of Pain Neuroscience Education on Musculoskeletal Pain

## A systematic review of the literature

- The results of this systematic review of PNE for musculoskeletal pain provides strong evidence for PNE improving pain ratings, pain knowledge, disability, pain catastrophization, fear-avoidance, attitudes and behaviors regarding pain, physical movement and healthcare utilization

# PNE: Education Delivery Methods

- **Professionals**
  - All healthcare providers
  - Physical therapists
- **Duration and frequency**
  - 10 to 20 minutes
  - One to two times per week



# PNE: Delivery

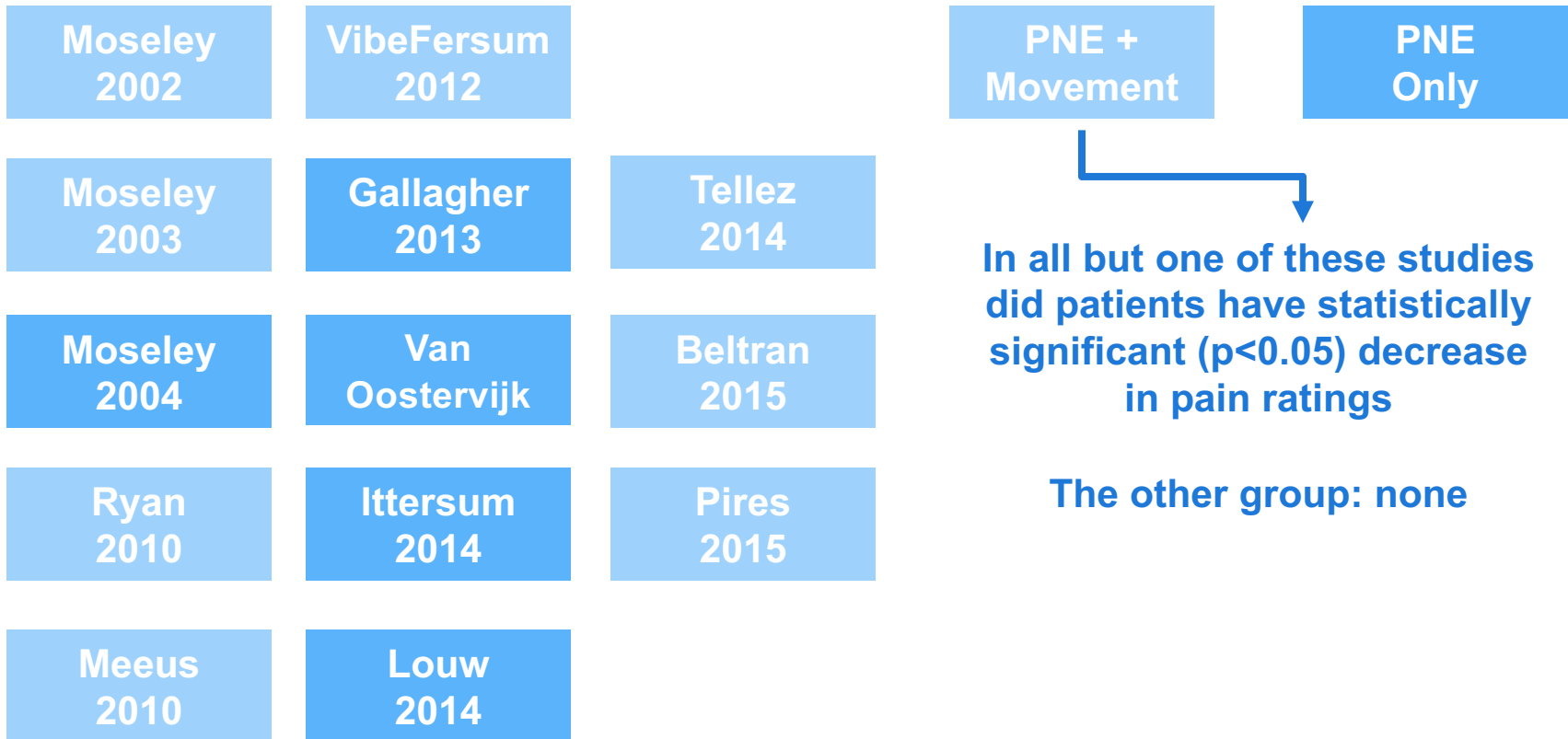
- **Educational tools**
  - Prepared pictures
  - Metaphors
  - Hand drawings
- **Formats**
  - One-on-one
  - Groups
  - Telehealth/VR



# PNE: Content

- Neurophysiology of pain
- No reference to anatomical or patho-anatomical models
- No discussion of emotional or behavioral aspects to pain
- Nociception and nociceptive pathways
- Neurons
- Synapses
- Action potential
- Spinal inhibition and facilitation
- Peripheral sensitization
- Central sensitization
- Plasticity of the nervous system

# PNE Review: Very Important Finding

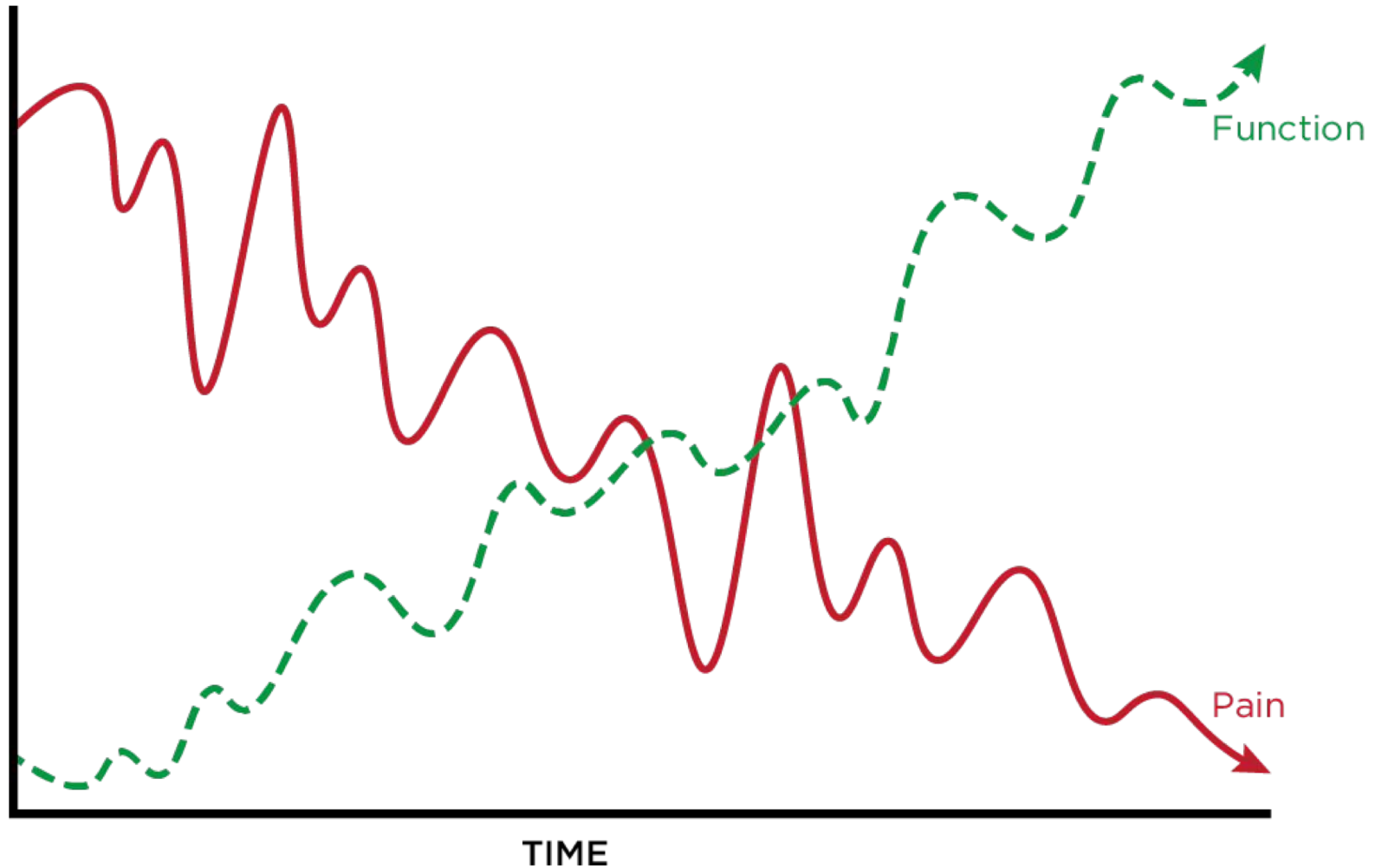


# Emergence of PNE+

- Mobilization and manipulation
- Soft tissue massage
- Muscle and neural mobilization
- Trunk stabilization
- Circuit based aerobic exercise
- Movement exercises
- Pacing of ADLs
- Graded exposure with ADLs
- Trigger point dry needling
- Neck stabilization exercises
- Aquatic exercise program



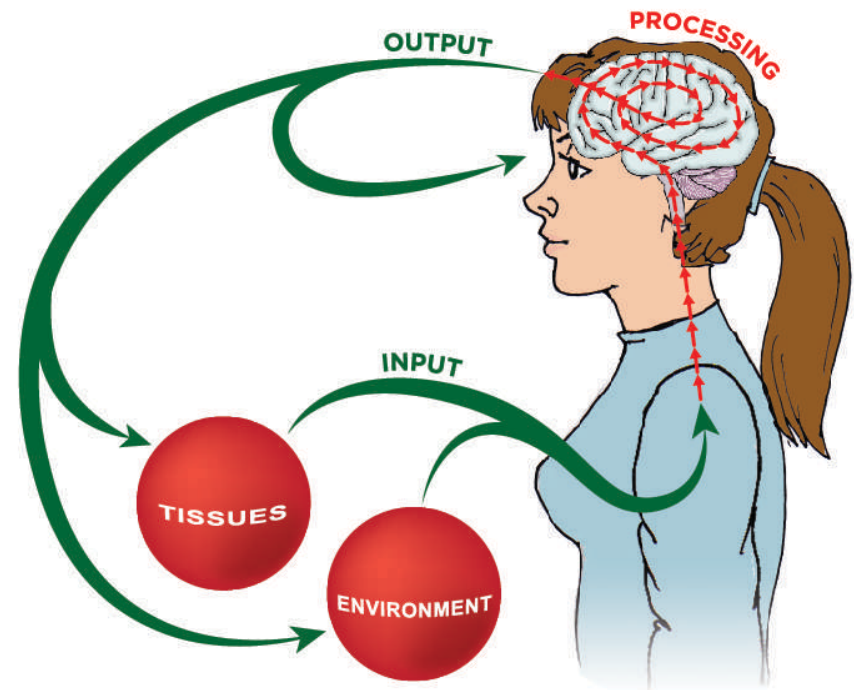
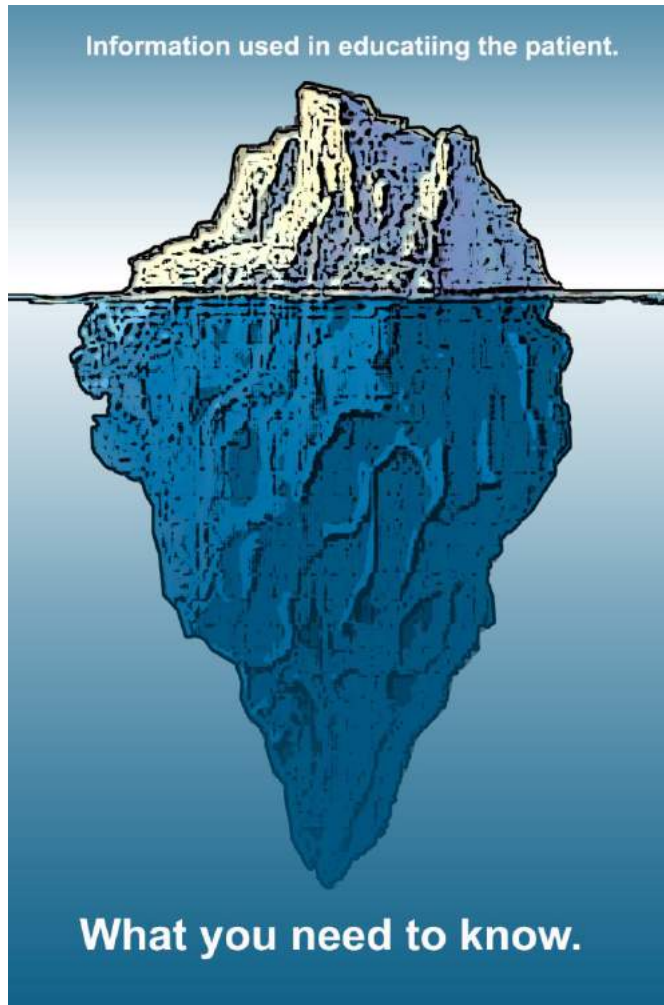
# The Ultimate Goal



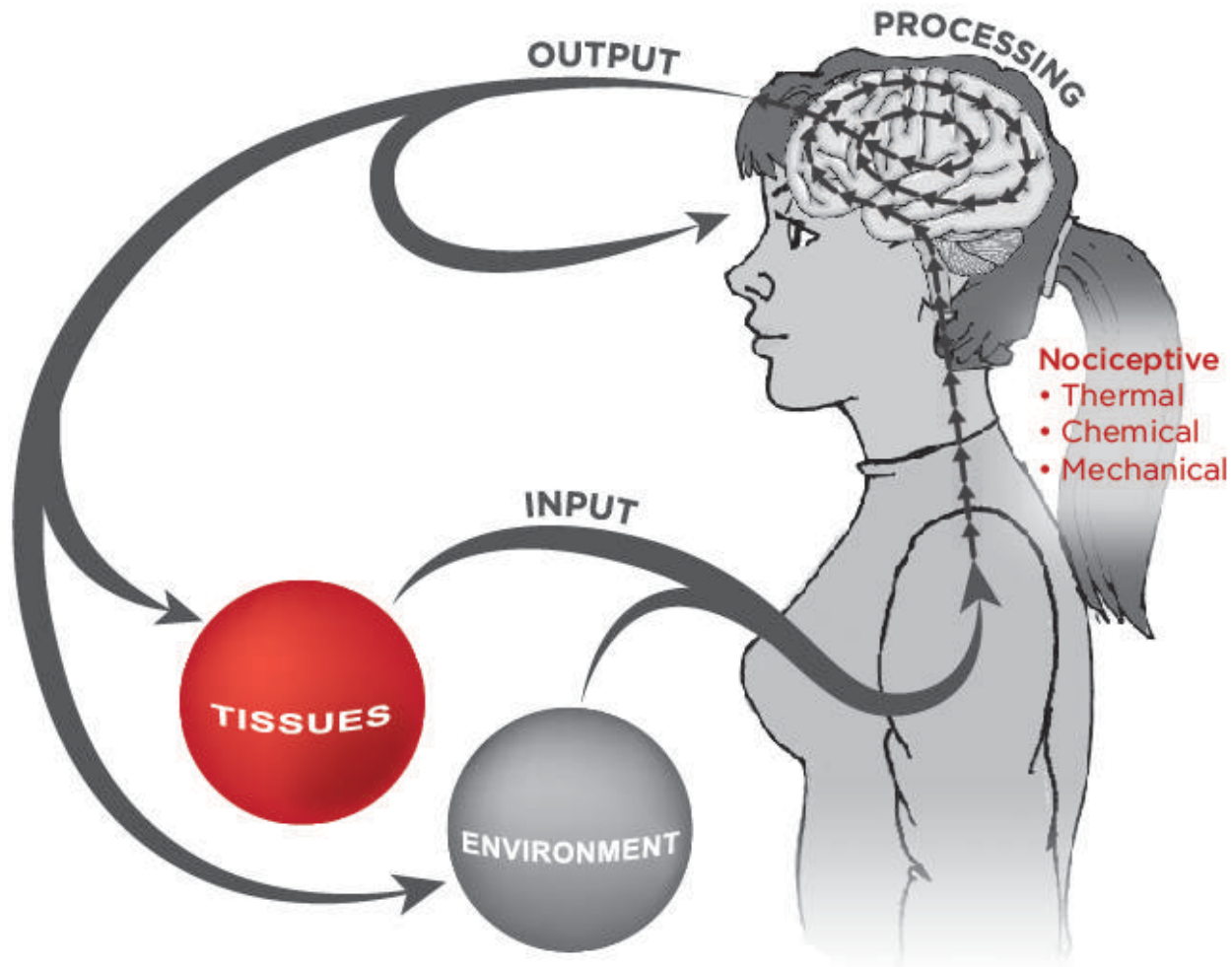
# Chapter Three

## The Neuroscience of Pain: Input Mechanisms

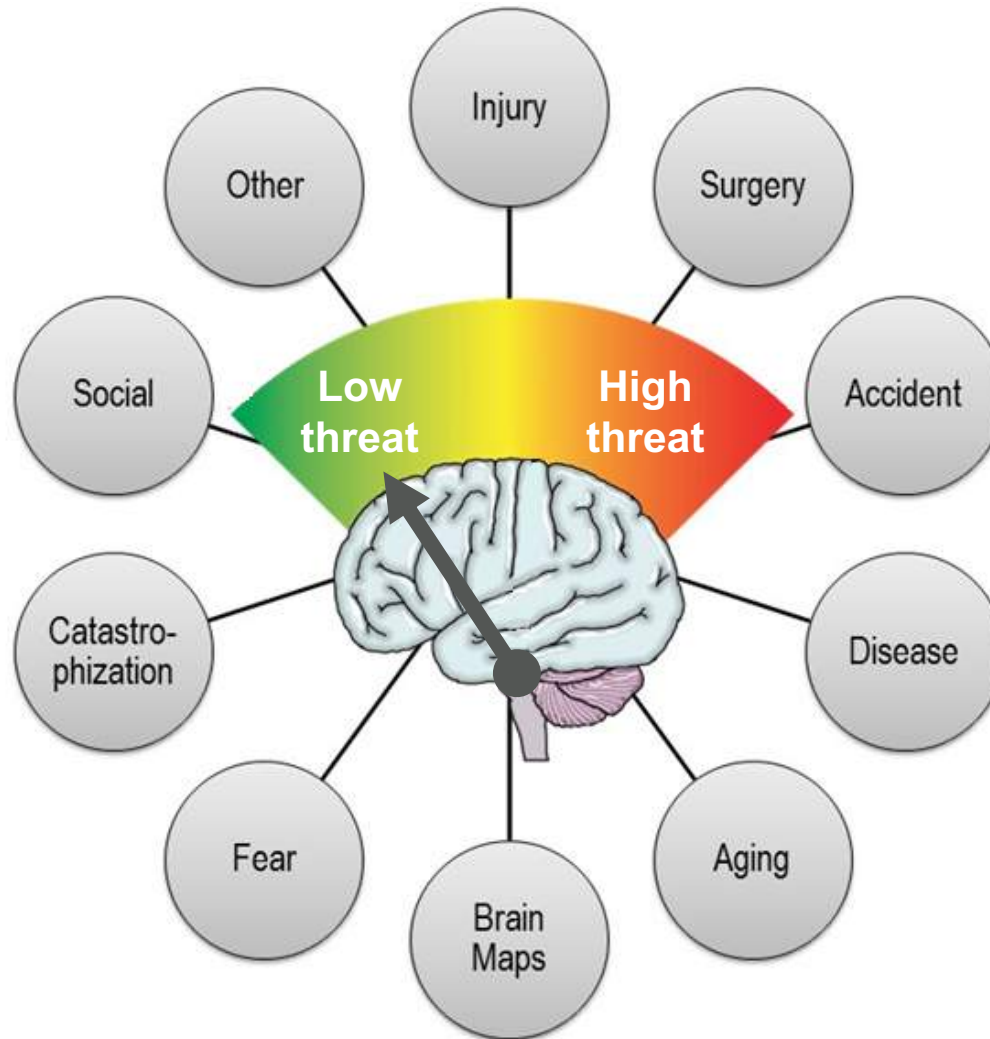
# How Does Pain Work?



# Issues in the Tissues



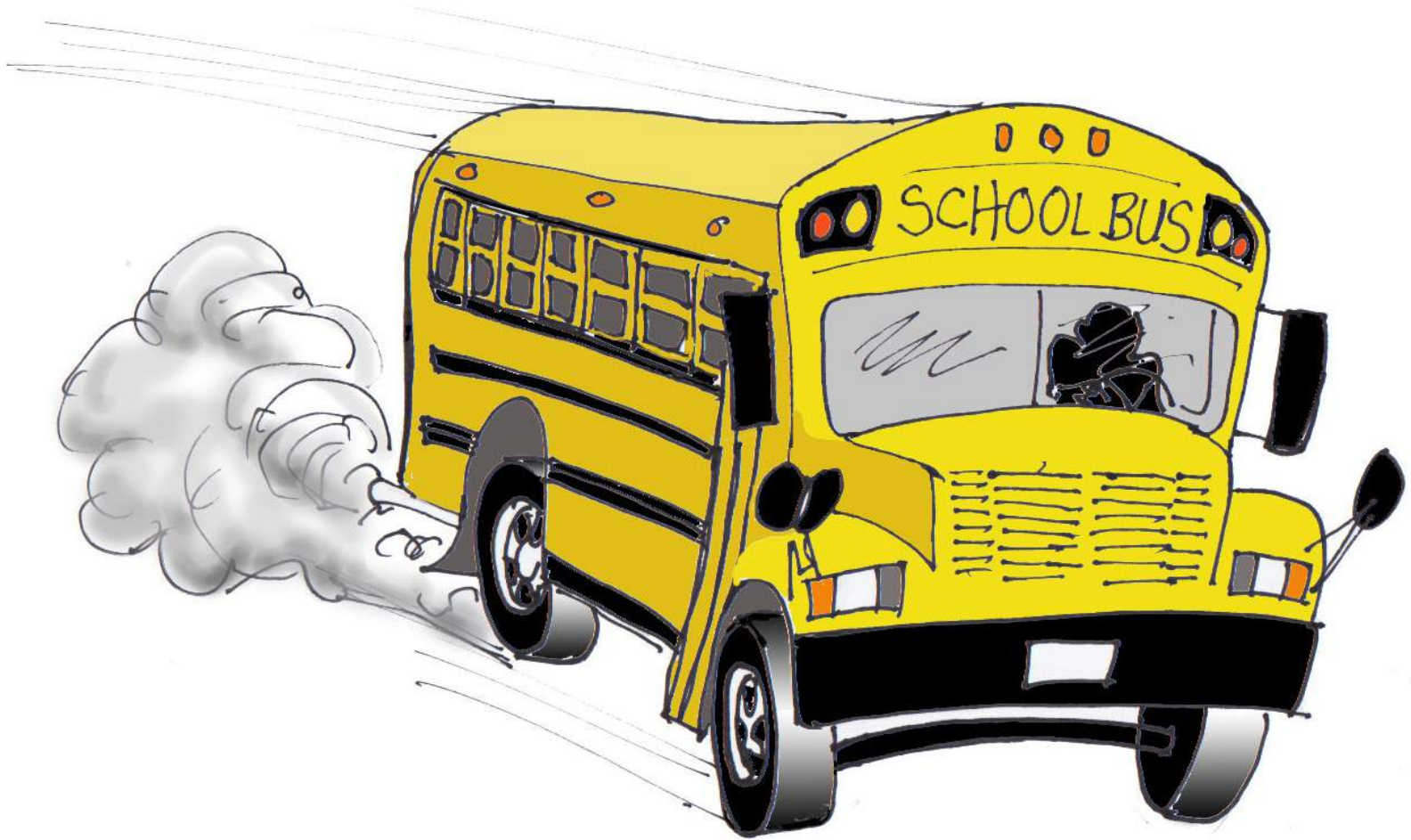
# Pain is 100% Produced by the Brain When It Perceives Threat



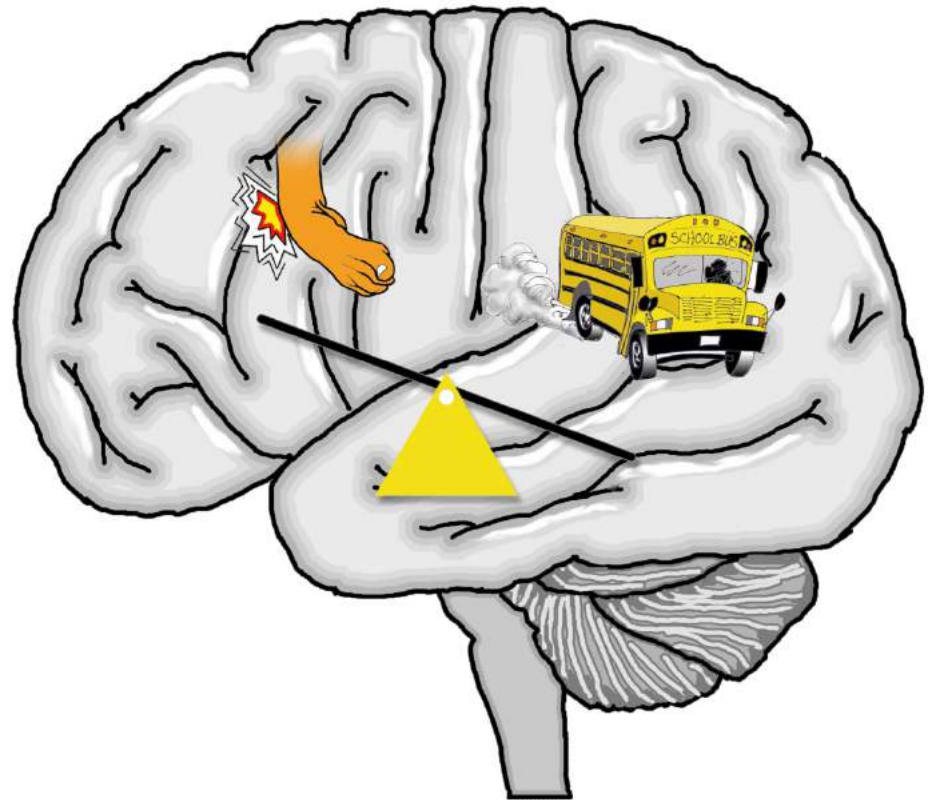
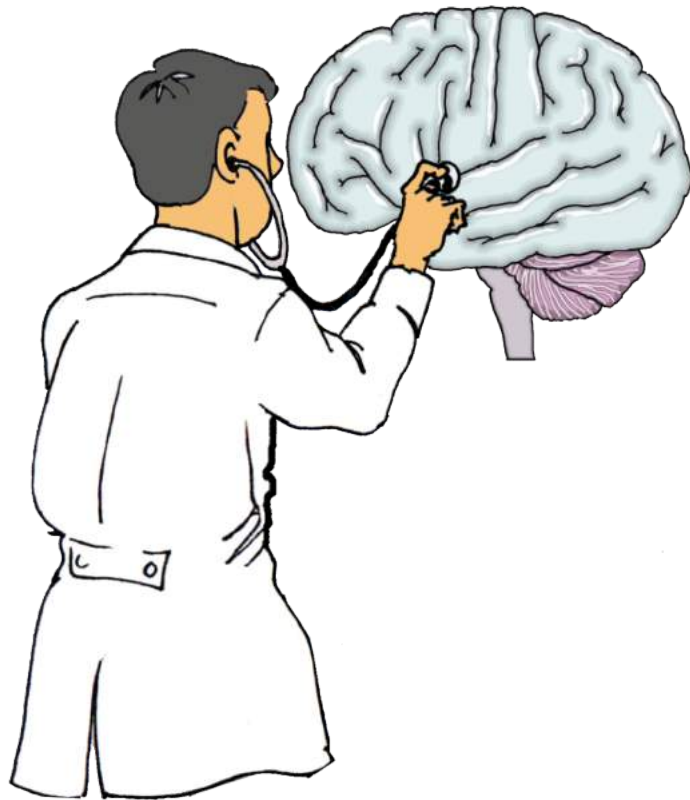
# Would This Hurt?



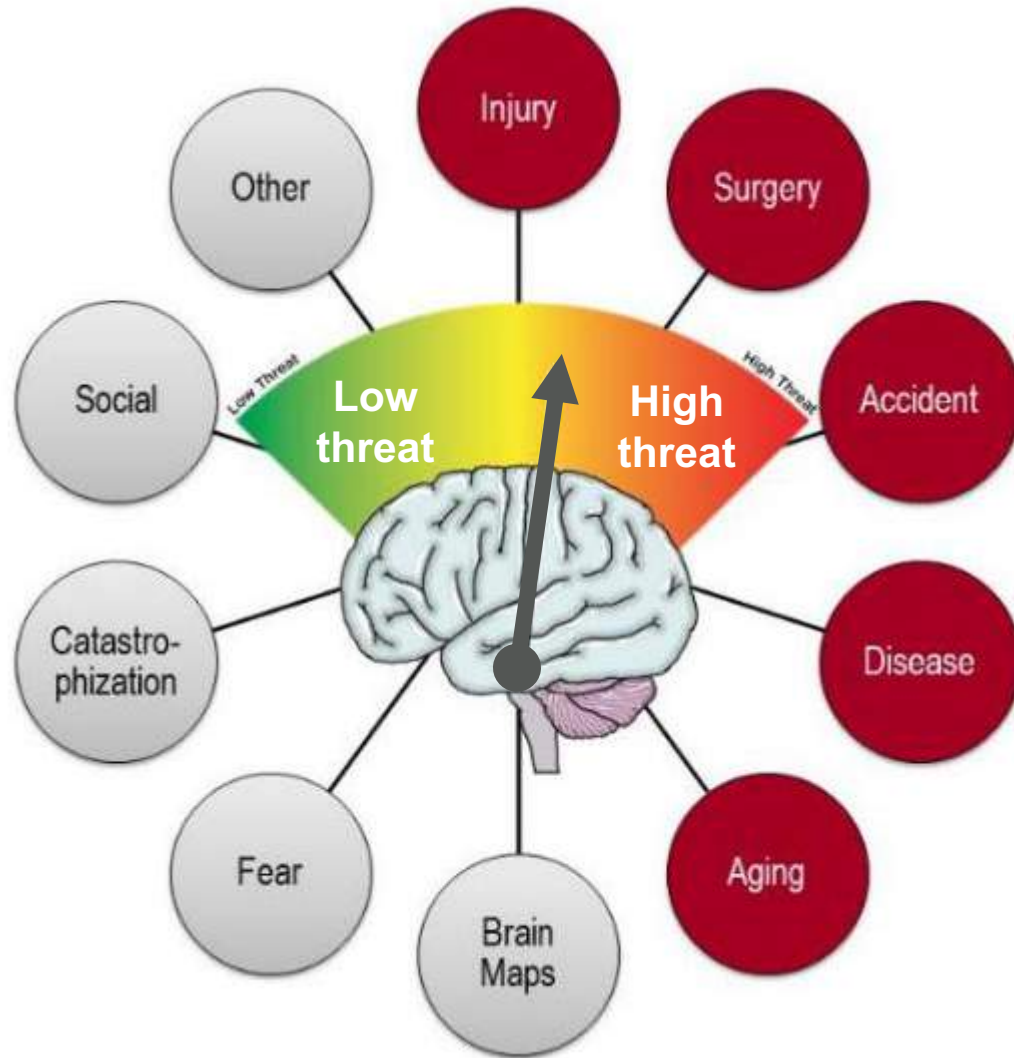
# What If?



# Pain is a Decision by the Brain Based on Perception of Threat



# Tissue Issues

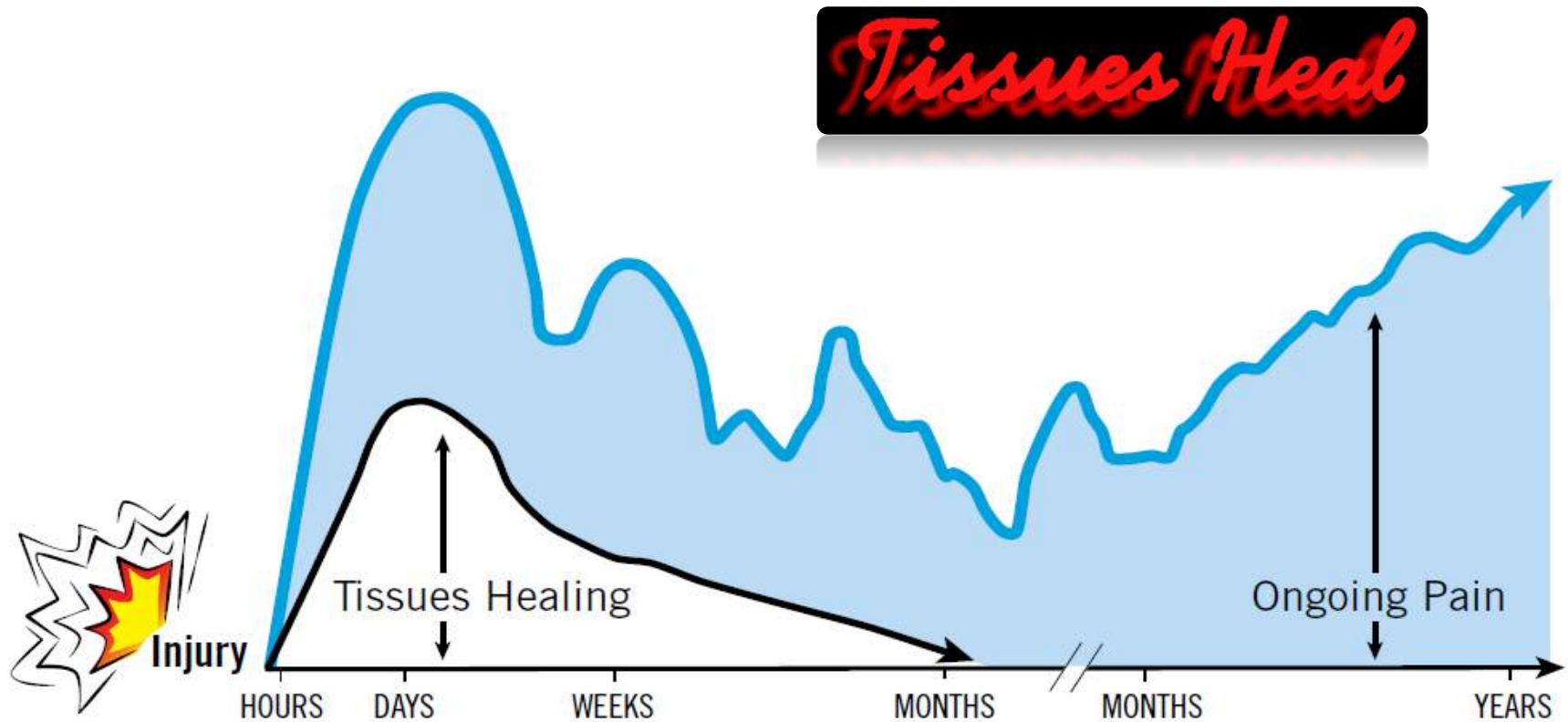


# Pain Fibers and Pain Nerves

- Eyes: contain light receptors, not vision
- Ears: contain vibration receptors, not hearing
- Tissues: contain nociceptive receptors, not pain
- Patients
  - Tissues: contain danger receptors, not pain

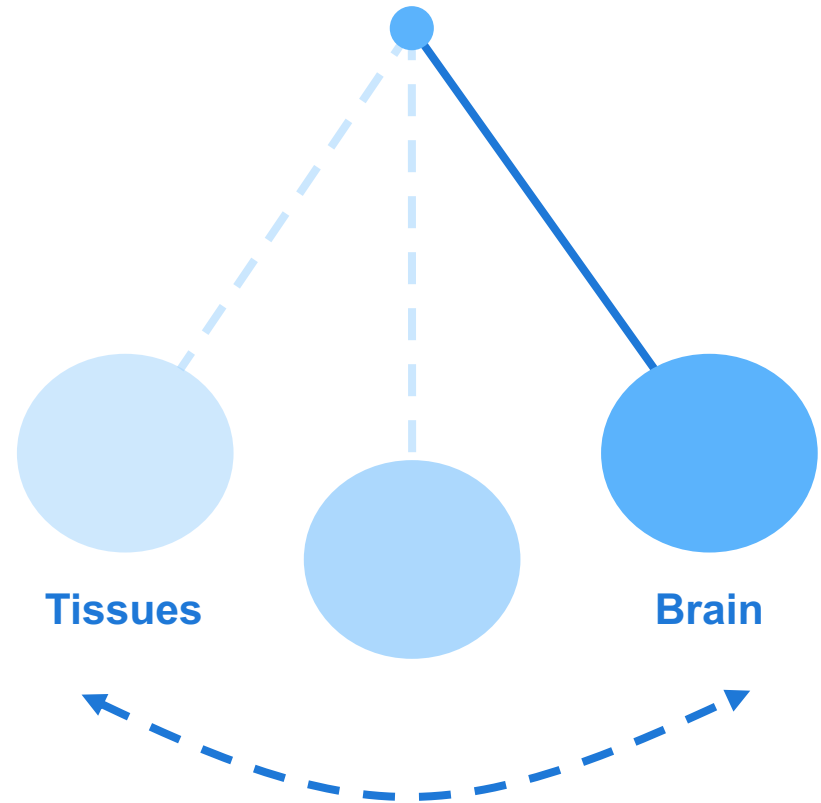
**Injury and pain are two different things**

# Injury and Pain is Not the Same

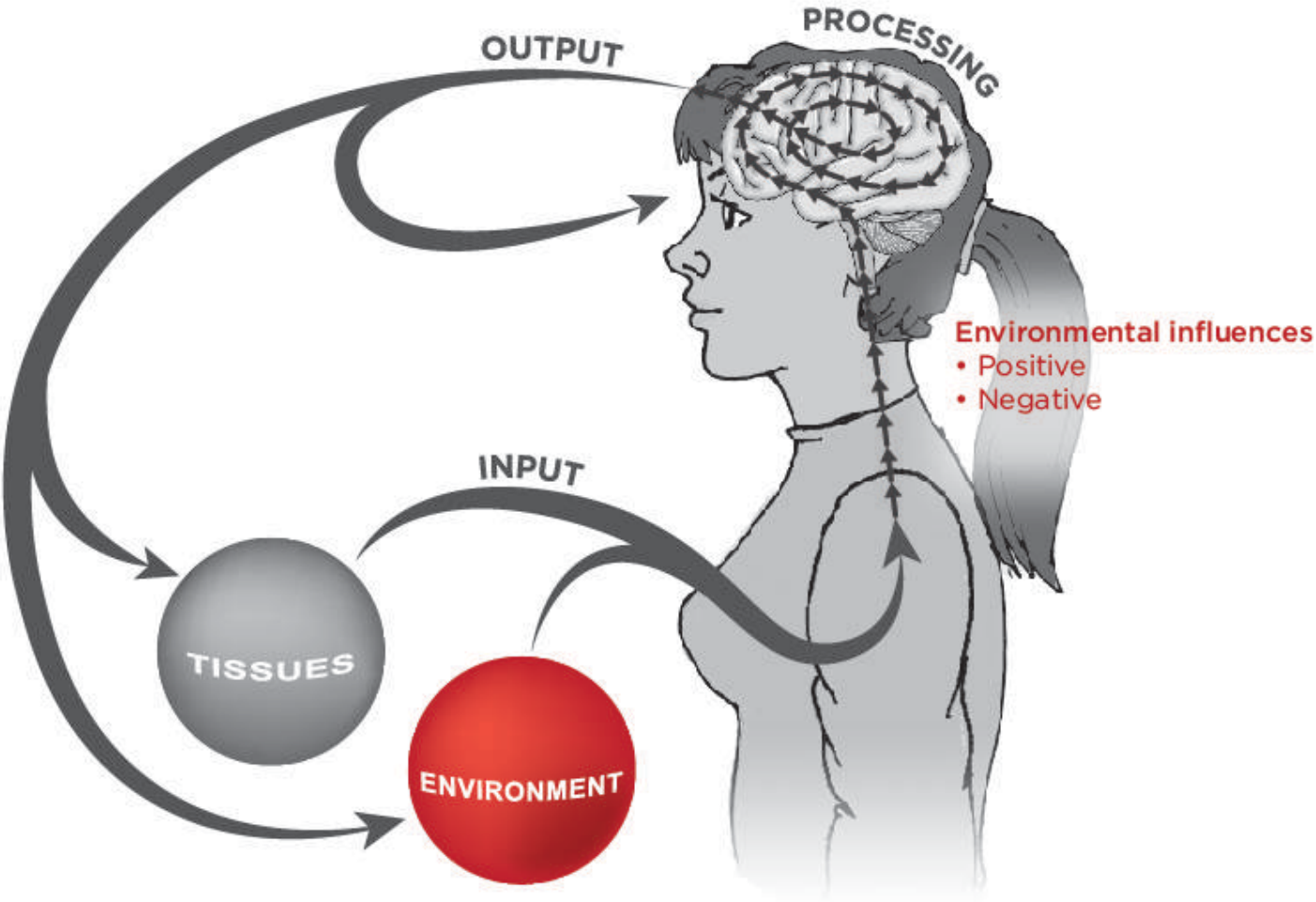


# Tissue Do Matter

- Tissue issues often correlate to pain
- They matter to patients
- Part of safety/red flags
- Many tissue issues drive central mechanisms



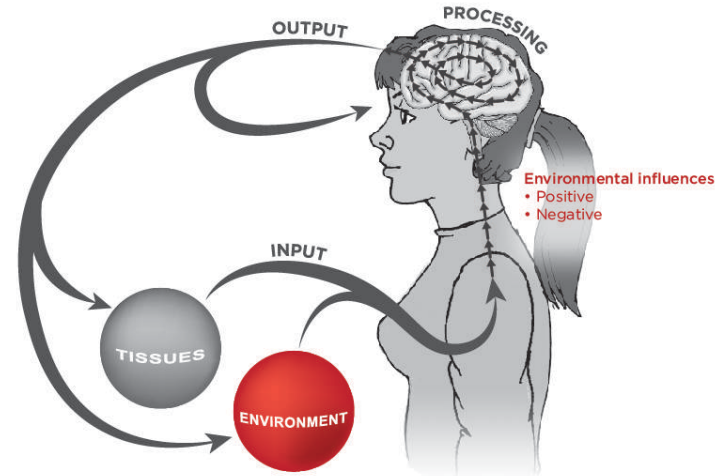
# Environment



# Environment (cont.)

## Positive

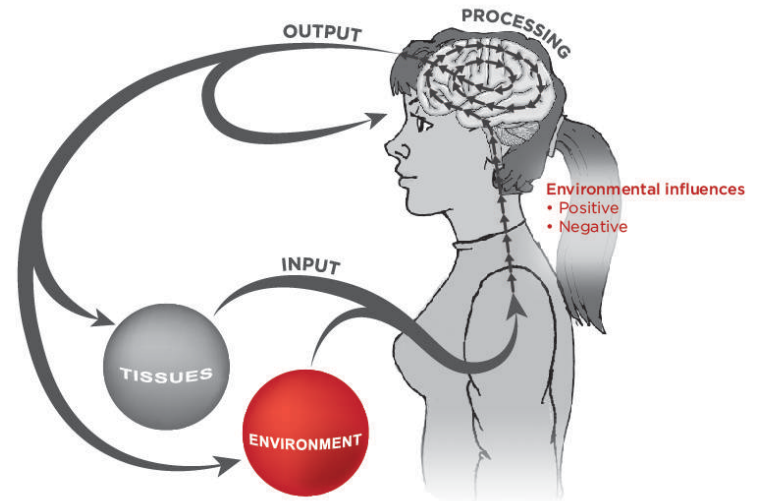
- Kids playing contact sports
- Demolition derby drivers
- Stoic social norms
- Healthcare providers
- Rodeo clowns and cowboys
- Farmers, fisherman, etc.



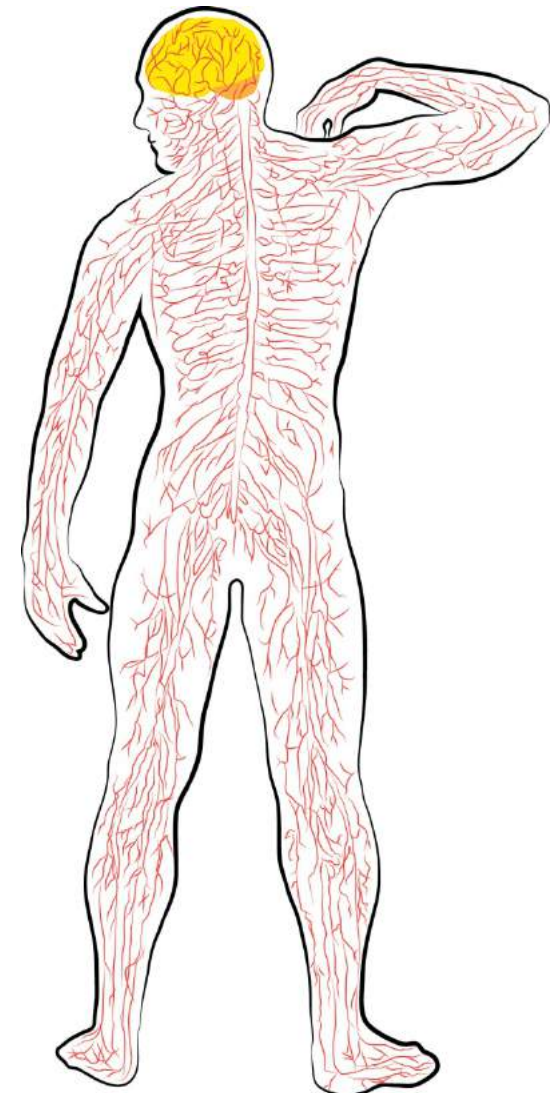
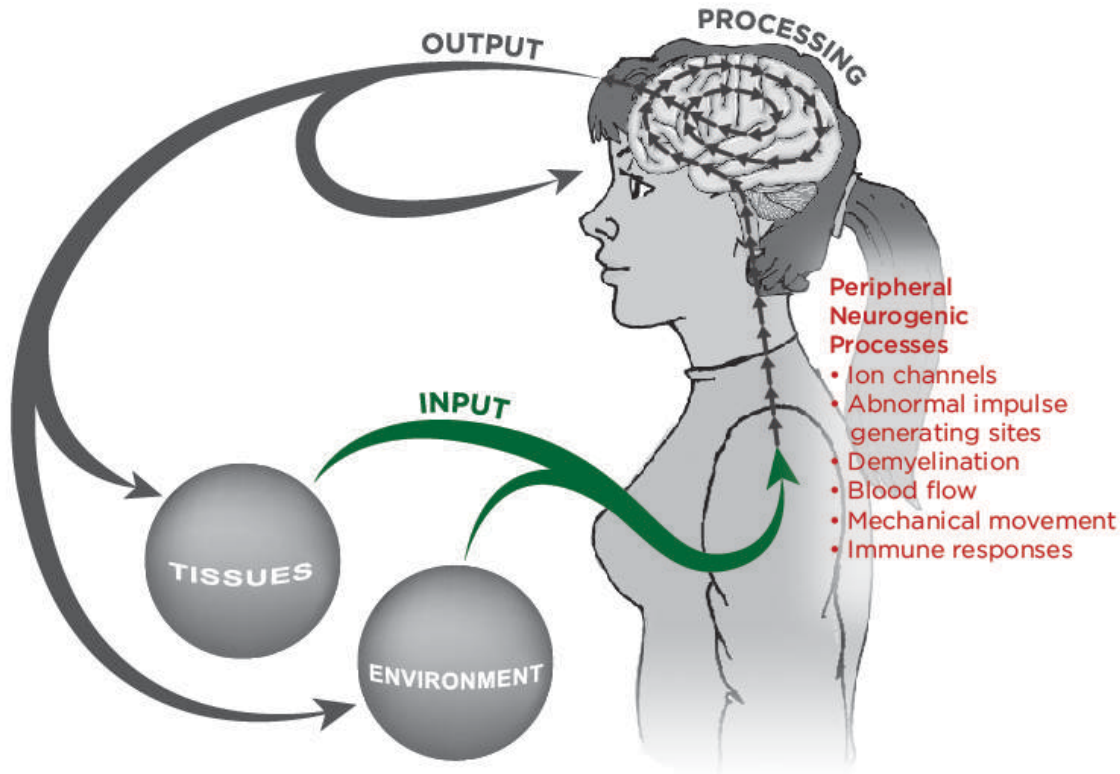
# Environment (cont.)

## Negative

- High stress environment
  - Car accident
  - Surgery
  - Combat
  - Abuse
- Medico-legal system
- Early exposure to pain (i.e., NICU)
- Socioeconomic issues

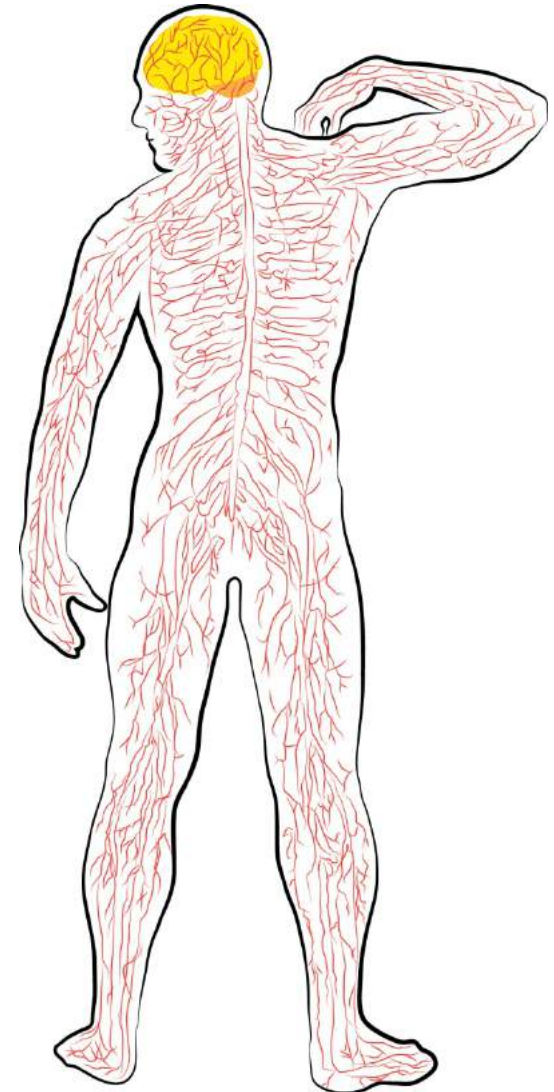


# Peripheral Neurogenic

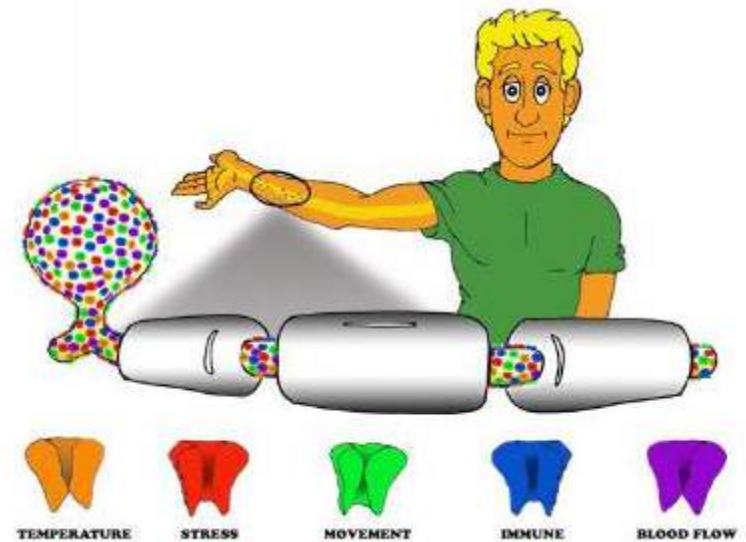
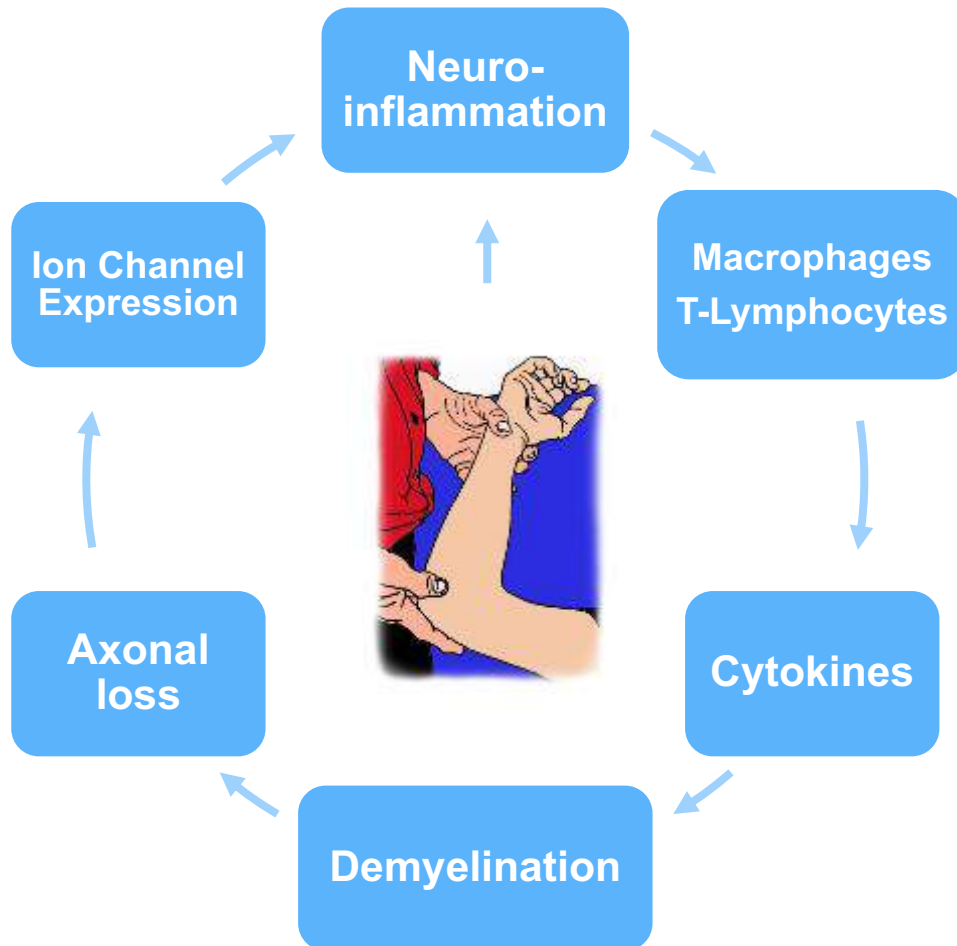


# Neurobiologically and Neurophysiologically

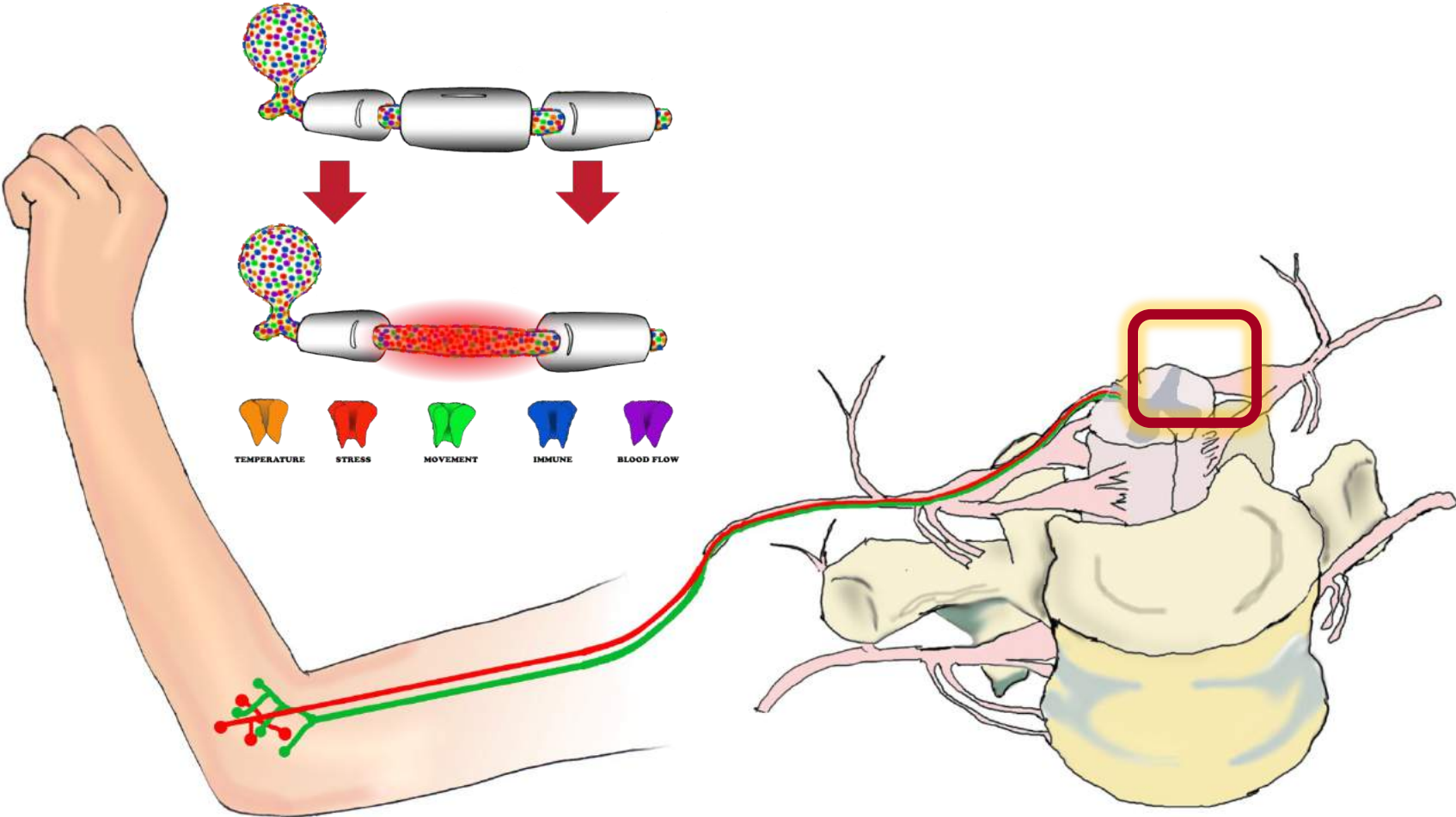
- Space
- Movement
- Blood



# Sensitization of the Nervous System



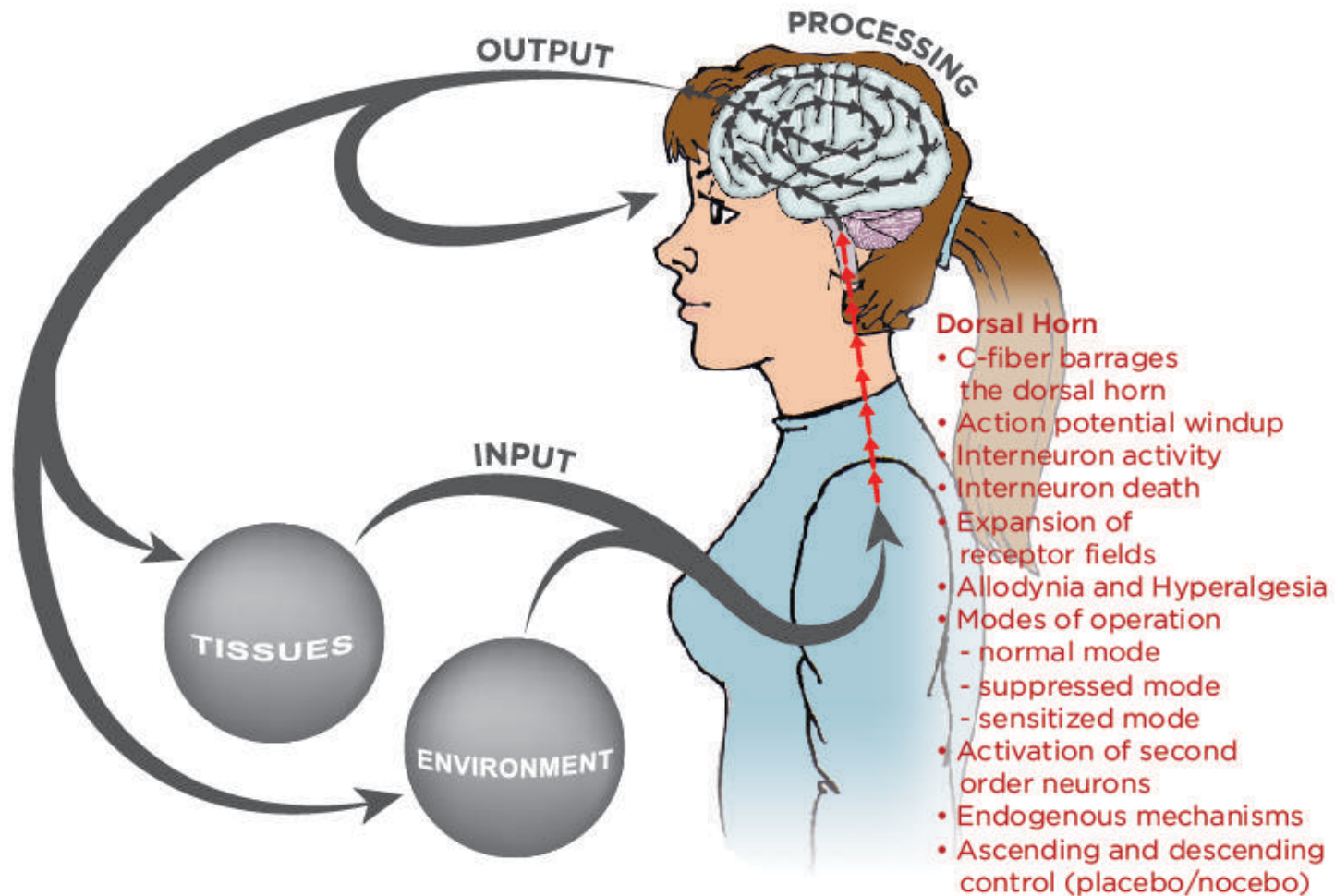
# Barrage into the CNS



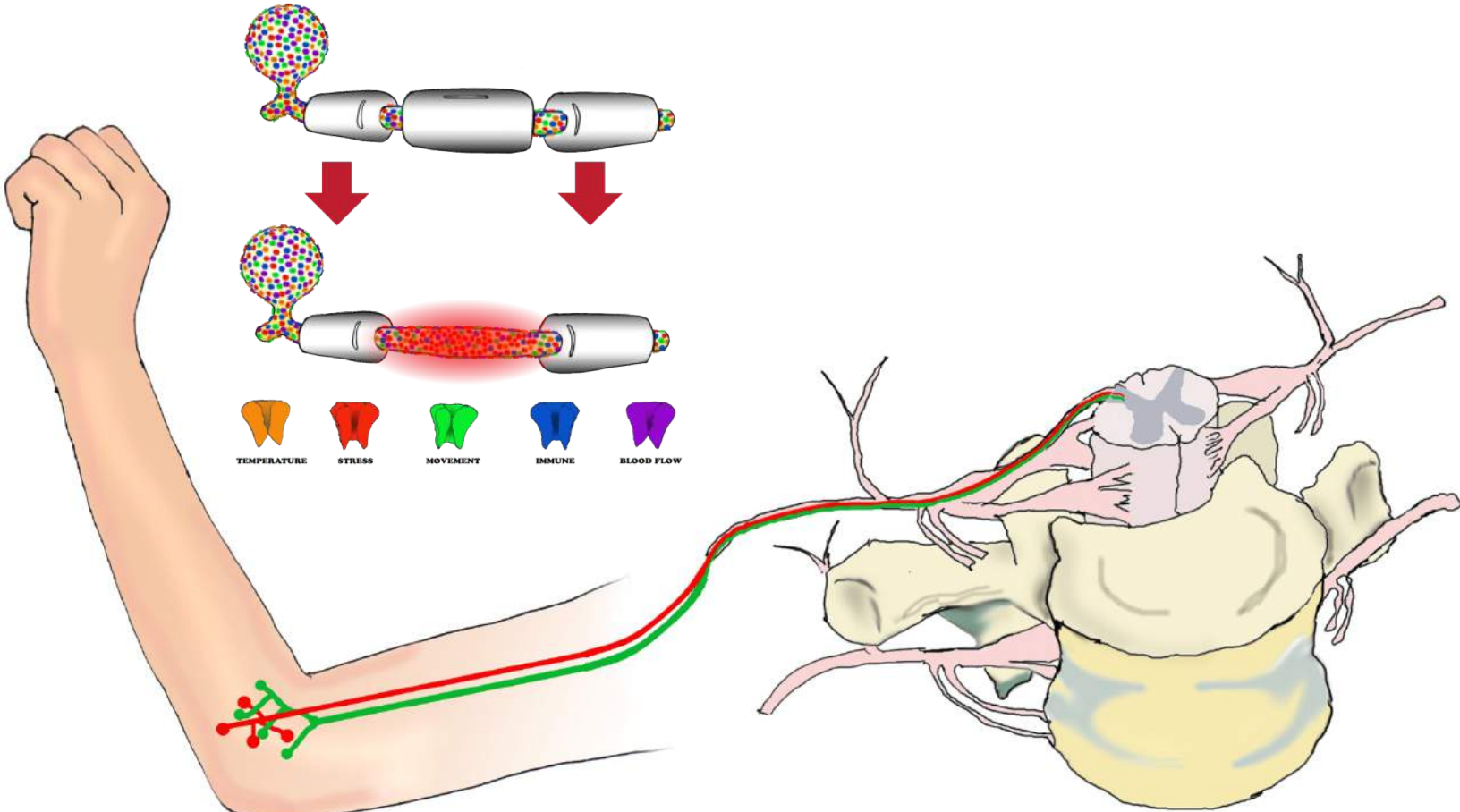
# Chapter Four

## The Neuroscience of Pain: Processing and Output Mechanisms

# CNS Processing



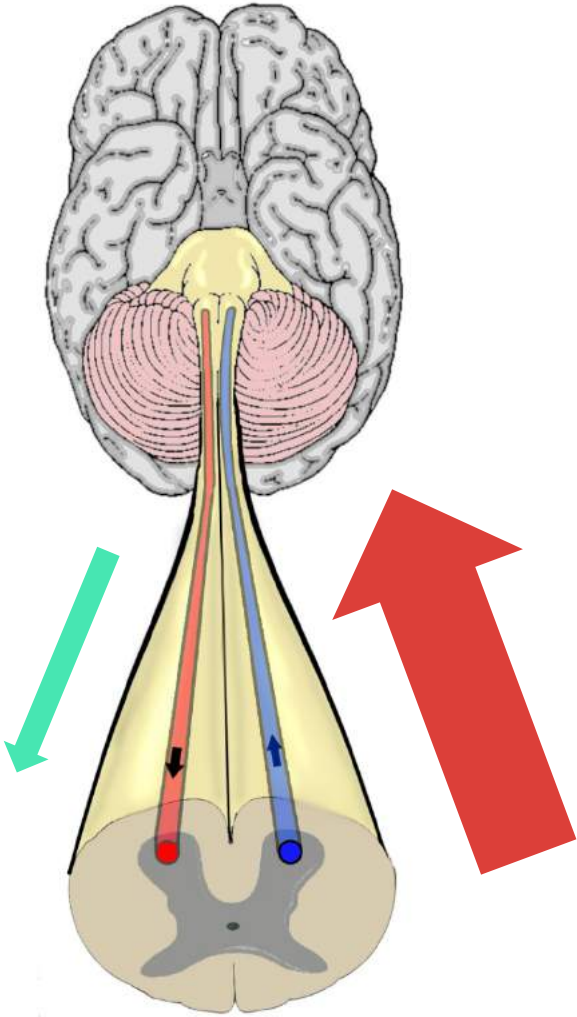
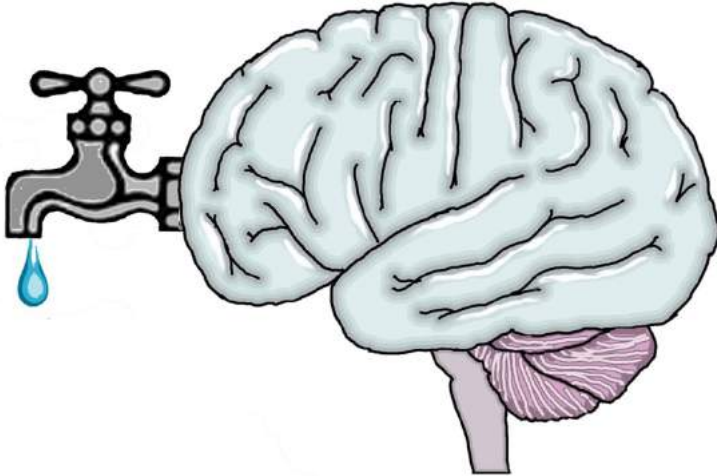
# Barrage into the CNS



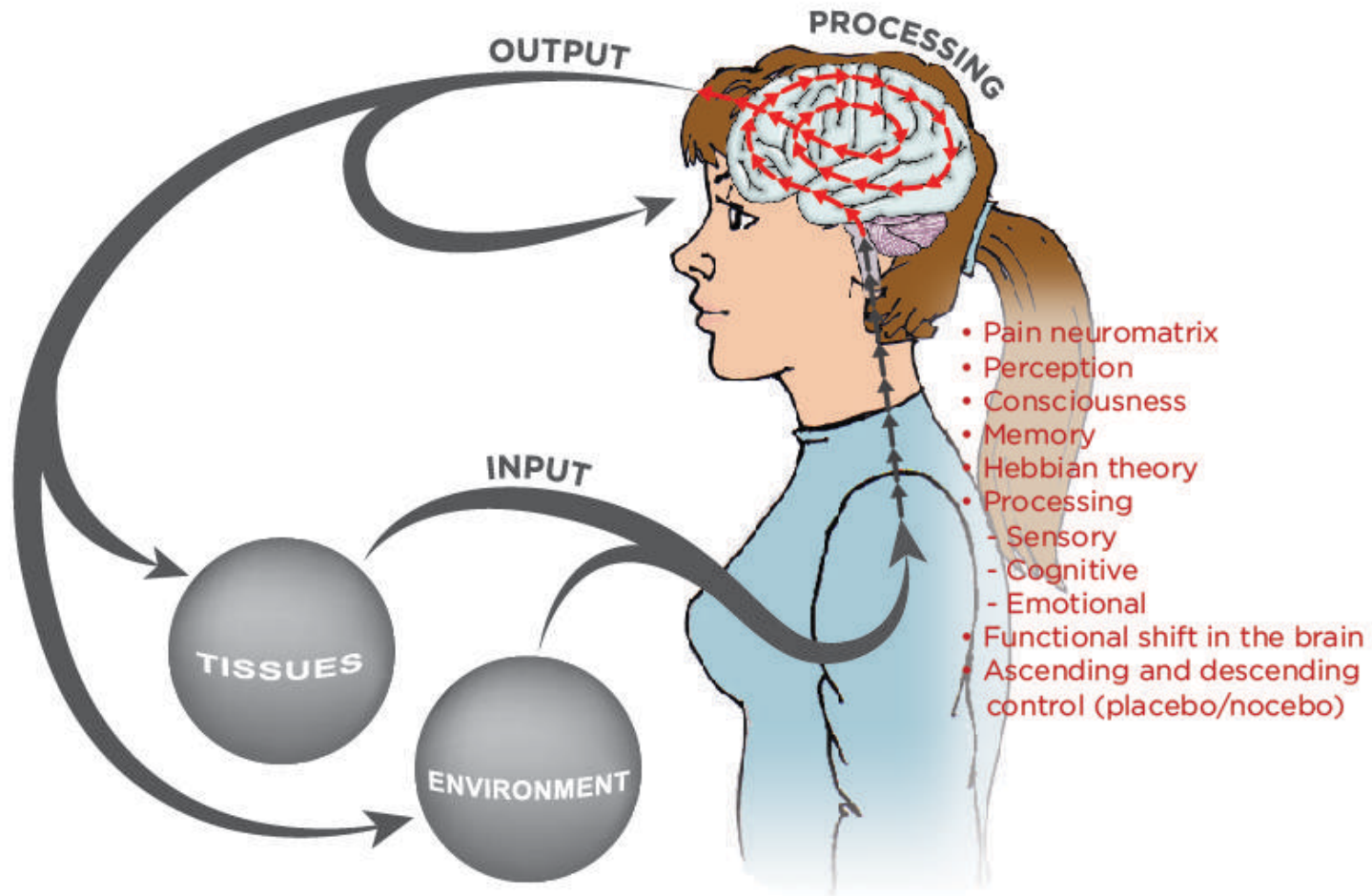
# Consequences of the Barrage into the CNS

Process	Consequence
Death of the inhibitory inter-neurons	Decreased gating from the periphery
C-fibers pull back: A-fibers grow in	Allodynia
Upregulation of second-order neurons	Increased firing towards the brain
Inappropriate synapsing: other levels	Spreading pain
Inappropriate synapsing: other fibers	Sympathetic, immune, motor contributions
Inappropriate synapsing: other side	Bilateral “mirror” pains
Decreased endogenous mechanisms	Allodynia and Hyperalgesia

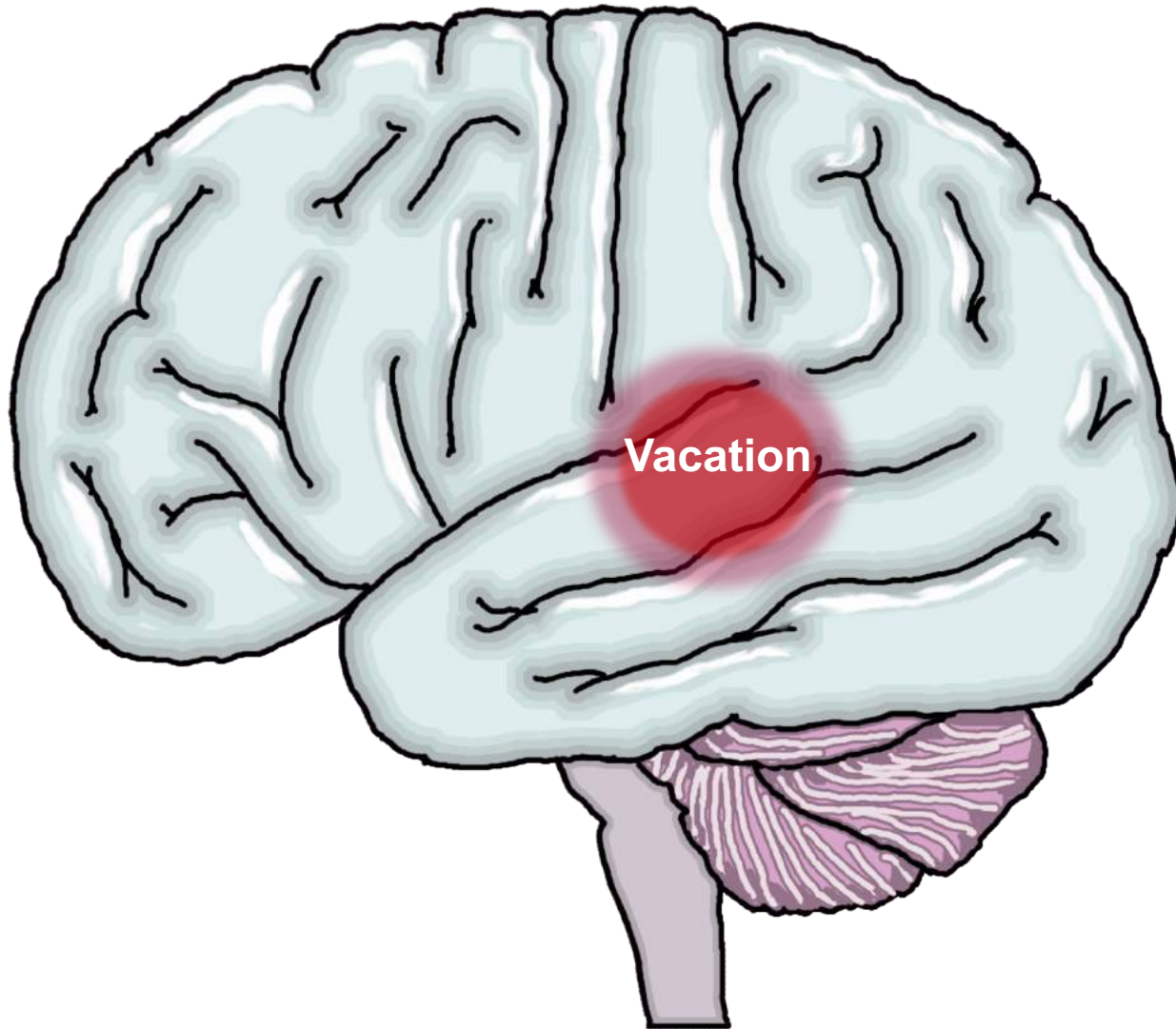
# Central Sensitization/Nociplastic Pain



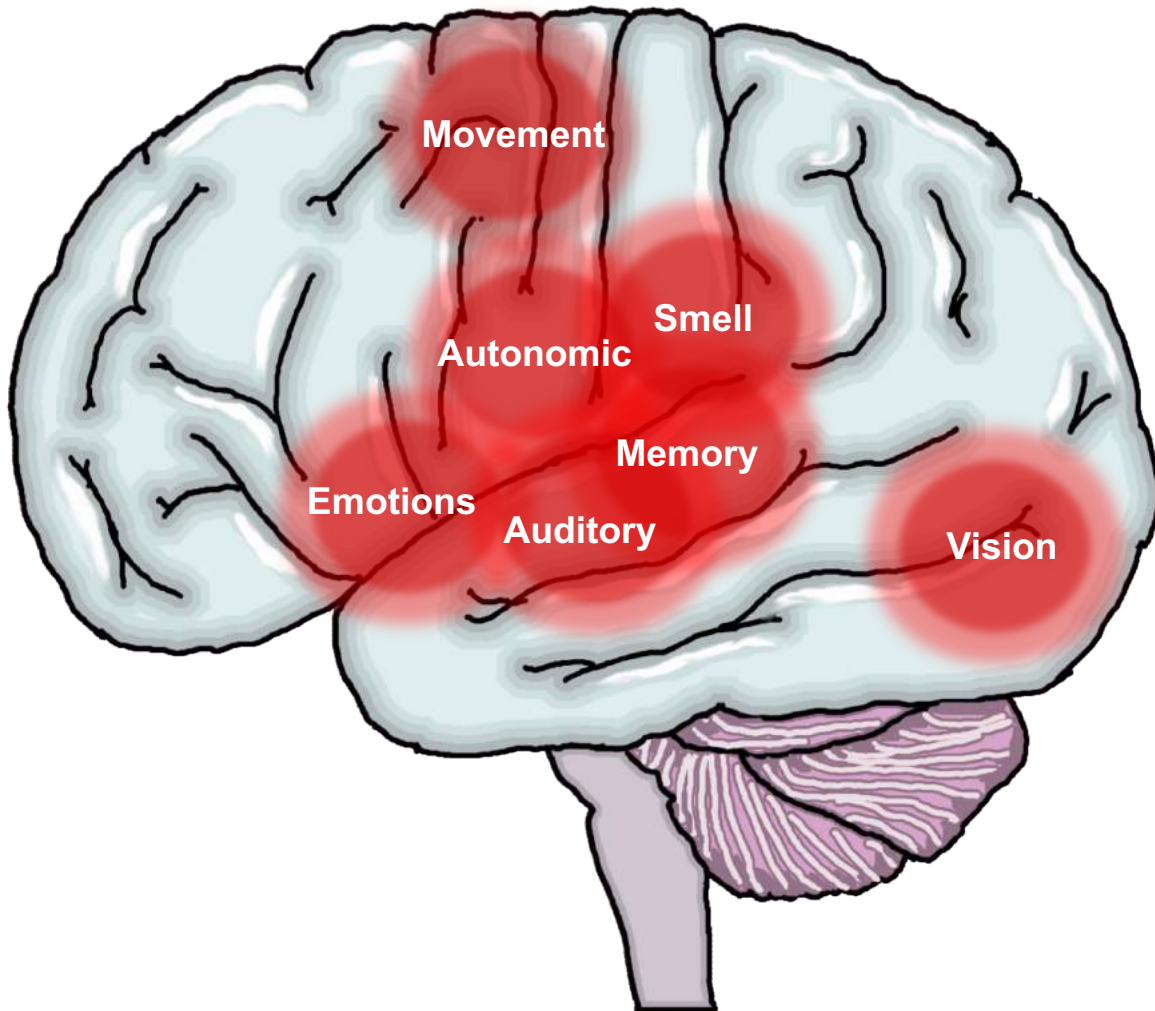
# Pain Neuromatrix



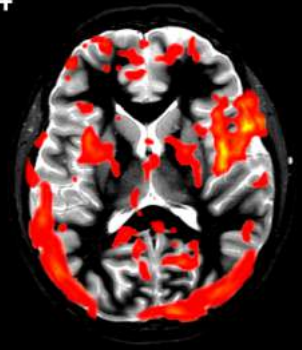
# Let's Start with an Experiment: Vacation



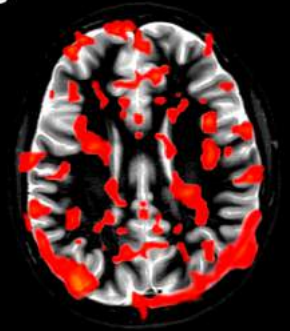
# Actually



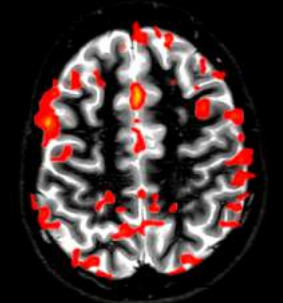
1/24



1/30

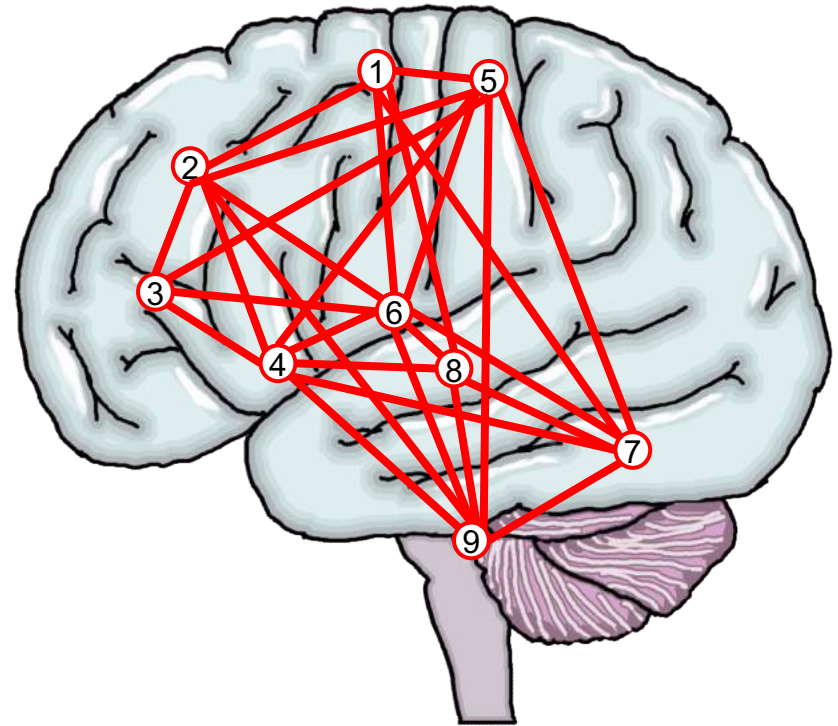


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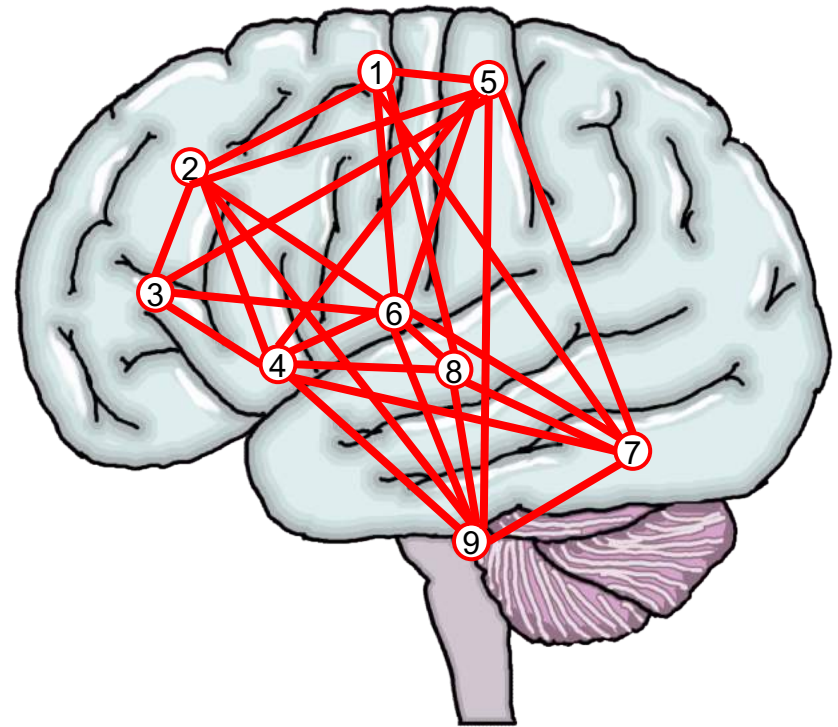
# A Typical Pain Neuromatrix

1. Premotor/motor cortex
  - Organize and prepare movements
2. Cingulate cortex
  - Concentration, focusing
3. Prefrontal cortex
  - Problem solving, memory
4. Amygdala
  - Fear, fear conditioning, addiction
5. Sensory cortex
  - Sensory discrimination



# A Typical Pain Neuromatrix (cont.)

6. Hypothalamus/thalamus
  - Stress responses, autonomic regulation, motivation
7. Cerebellum
  - Movement and cognition
8. Hippocampus
  - Memory, spatial recognition, fear conditioning
9. Spinal cord
  - Gating from the periphery



# Personalizing the Pain Experience

Nociception

Beliefs

Knowledge & Logic

Social Context

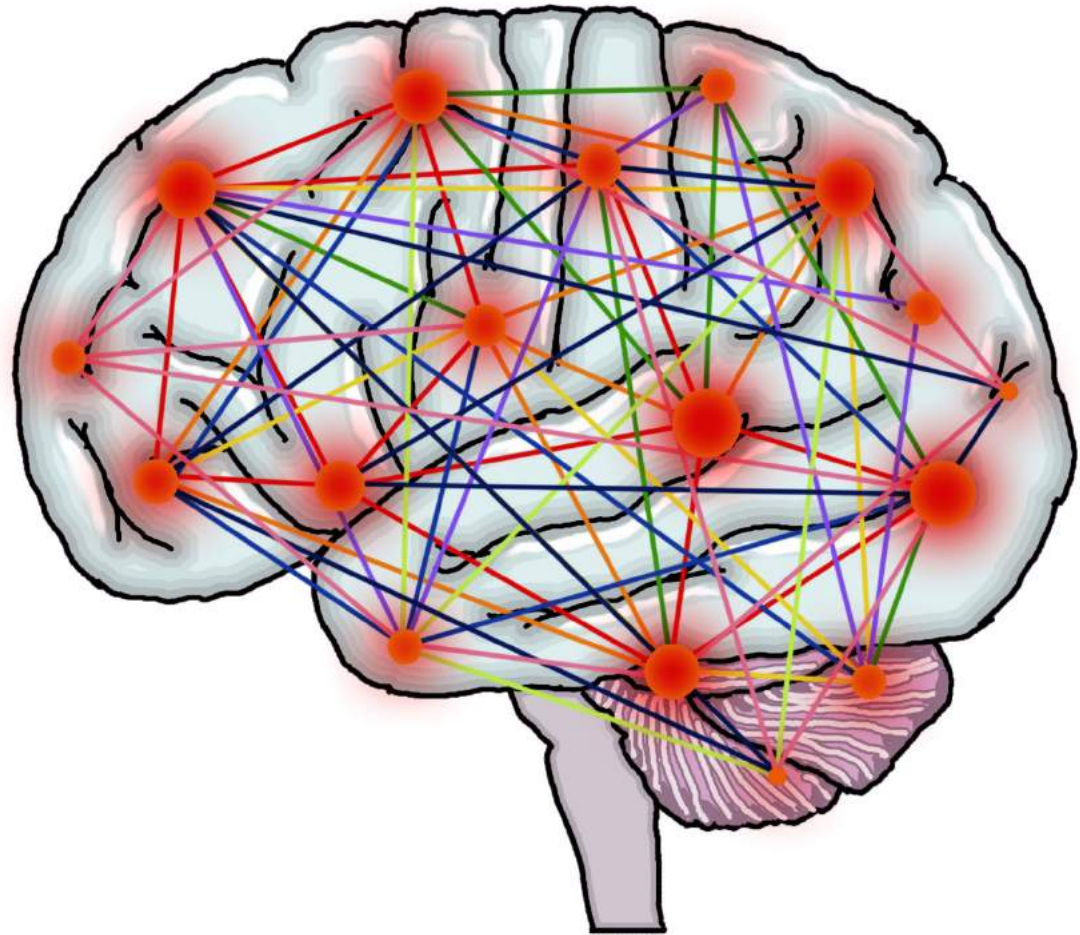
Sensory Cues

Physical Therapy

Internet

Memories

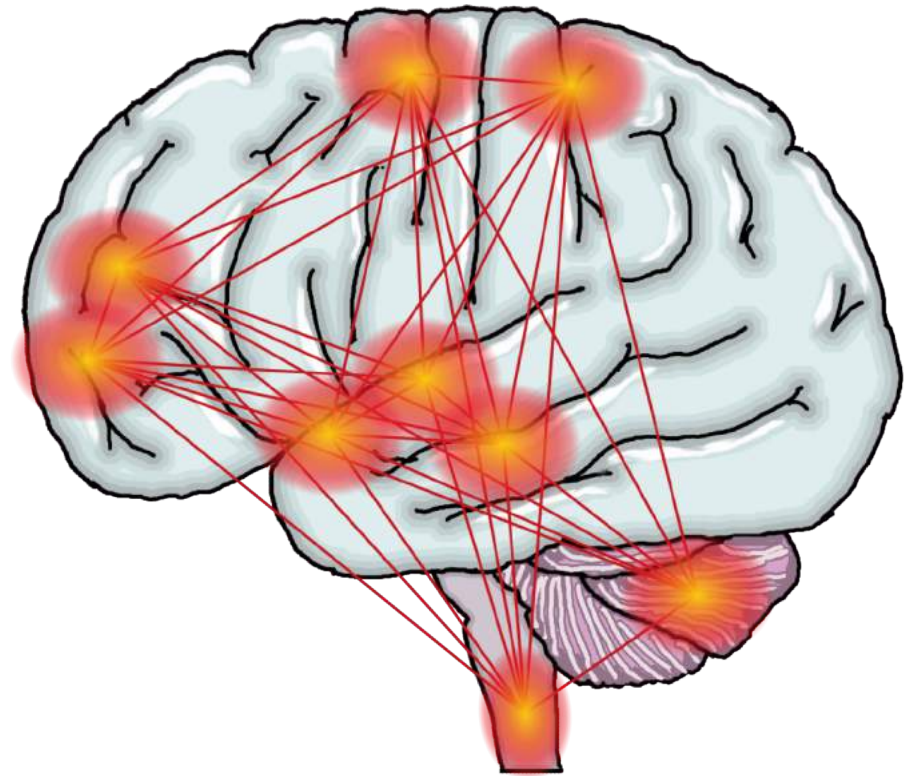
Fear & Anxiety



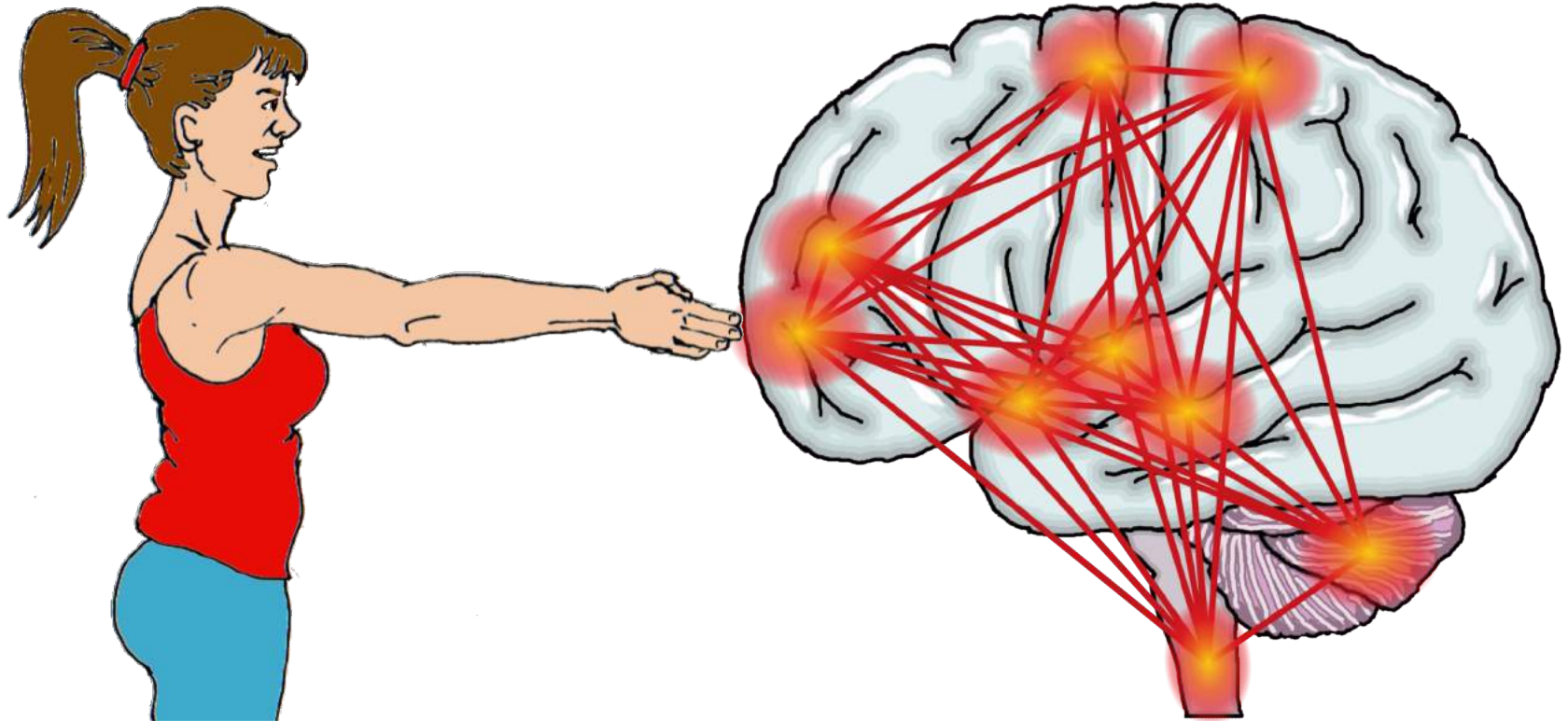
# “Nerves That Fire Together Wire Together”



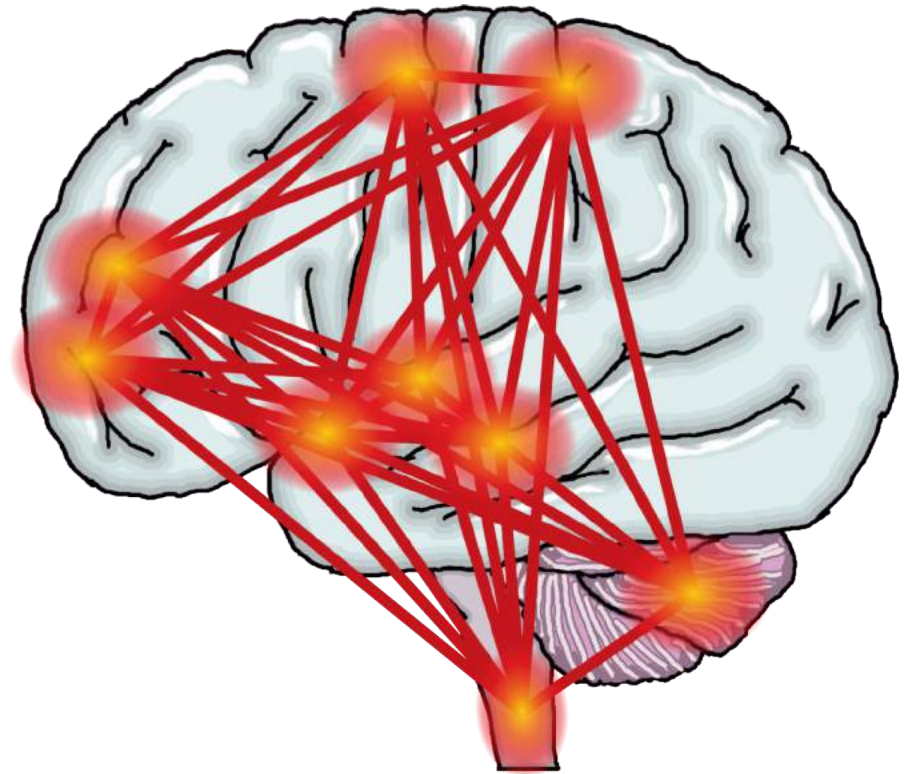
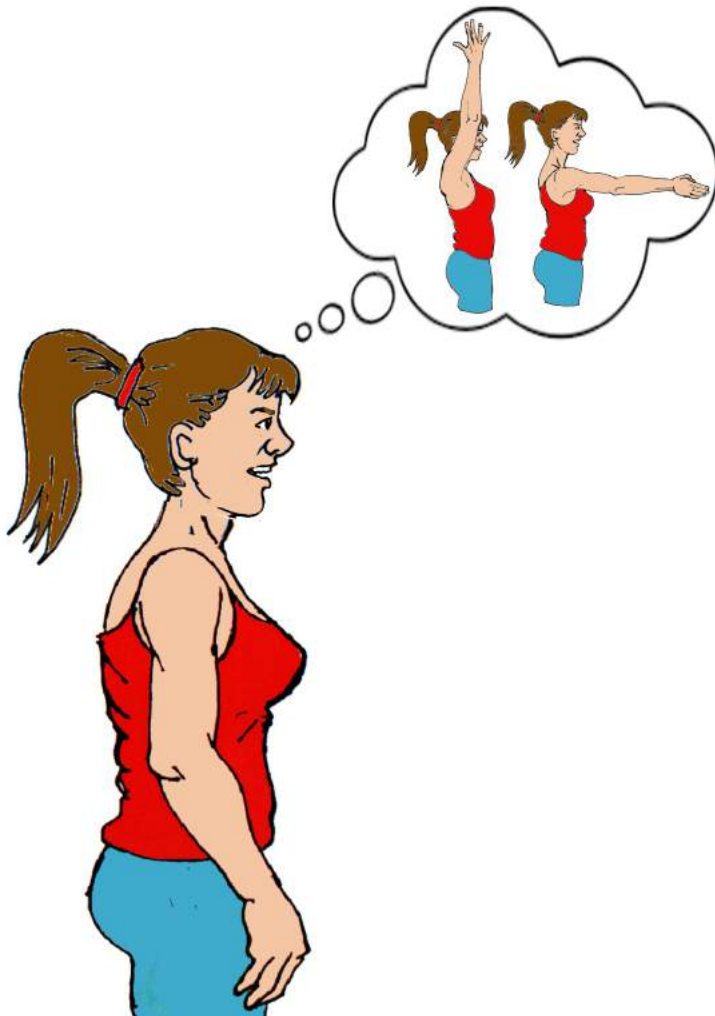
# Living Your Pain: “Nerves That Fire Together, Wire Together”



# Living Your Pain: “Nerves That Fire Together, Wire Together” (cont.)



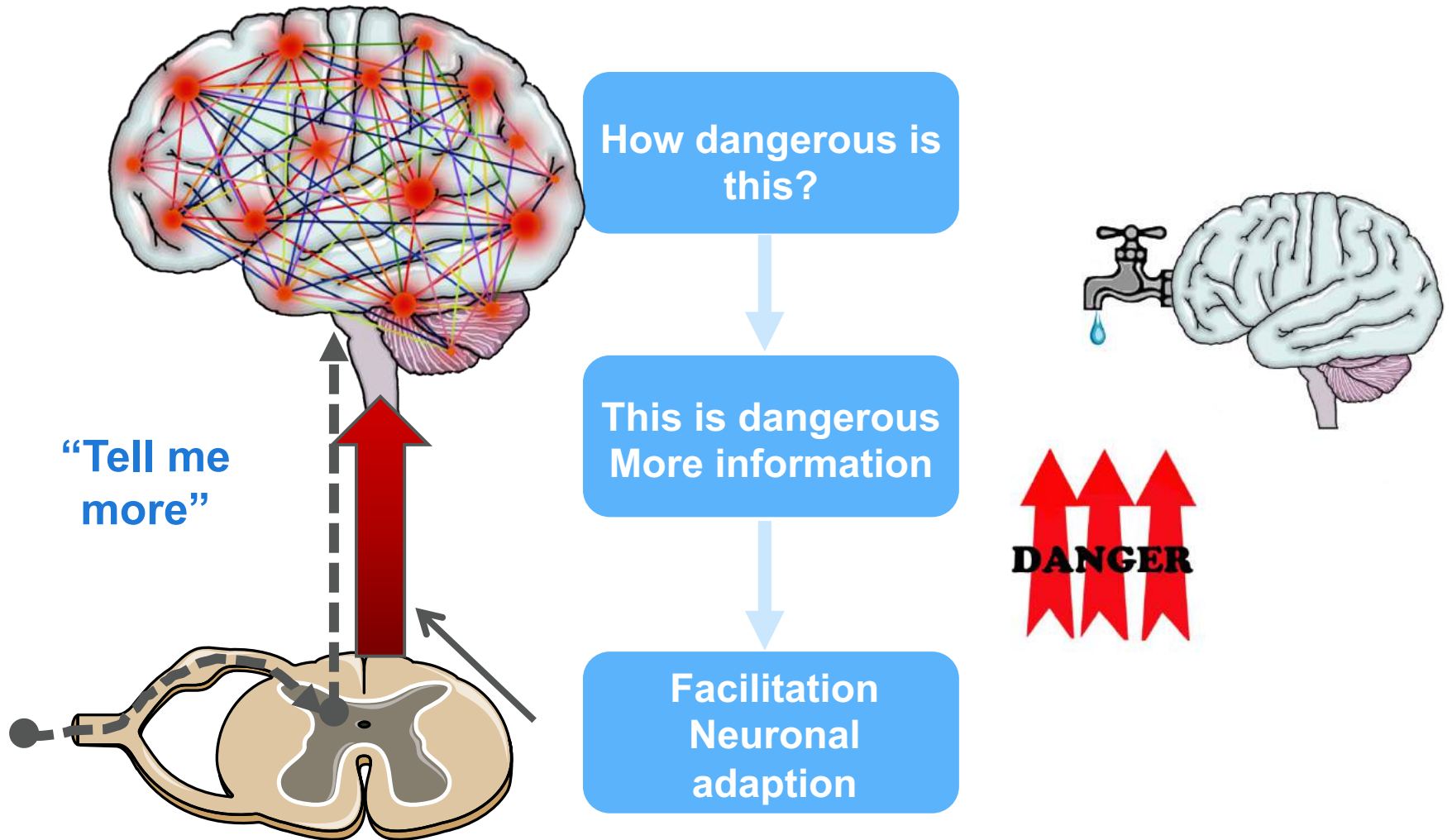
# Living Your Pain: “Nerves That Fire Together, Wire Together” (cont.)



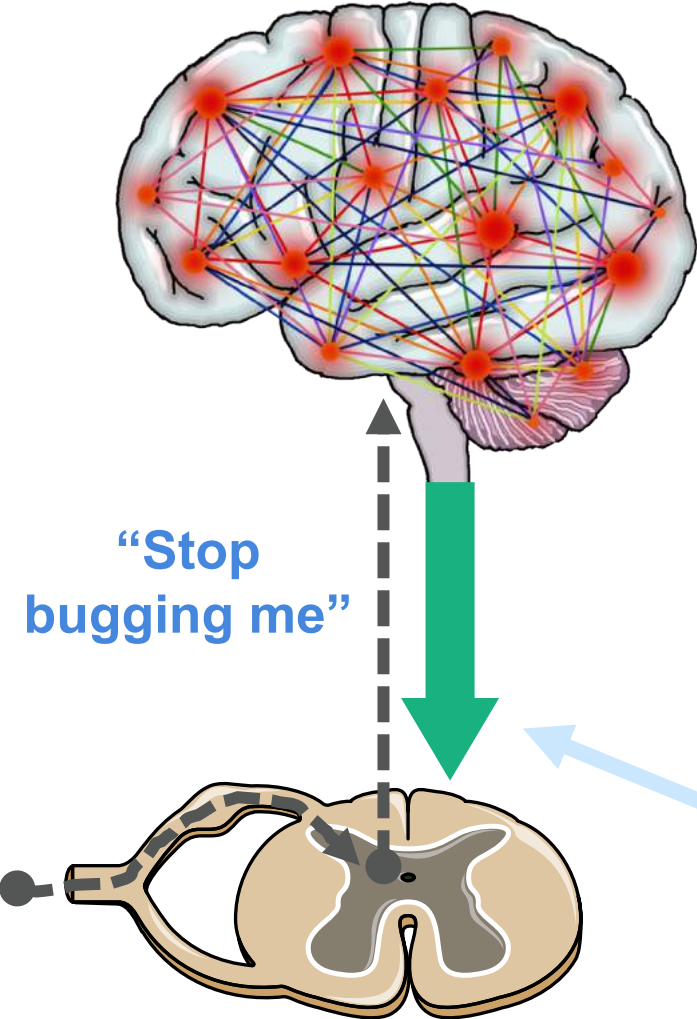
# Definition of Pain: Update

Pain is produced by the brain after a person's neural signature has been activated and concluded the body is in danger and action is required

# Facilitation



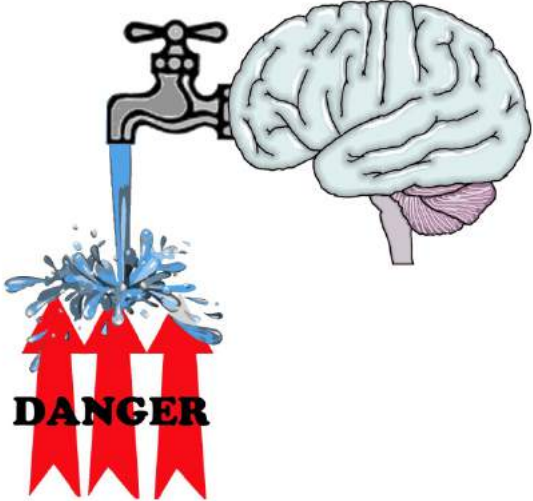
# Inhibition



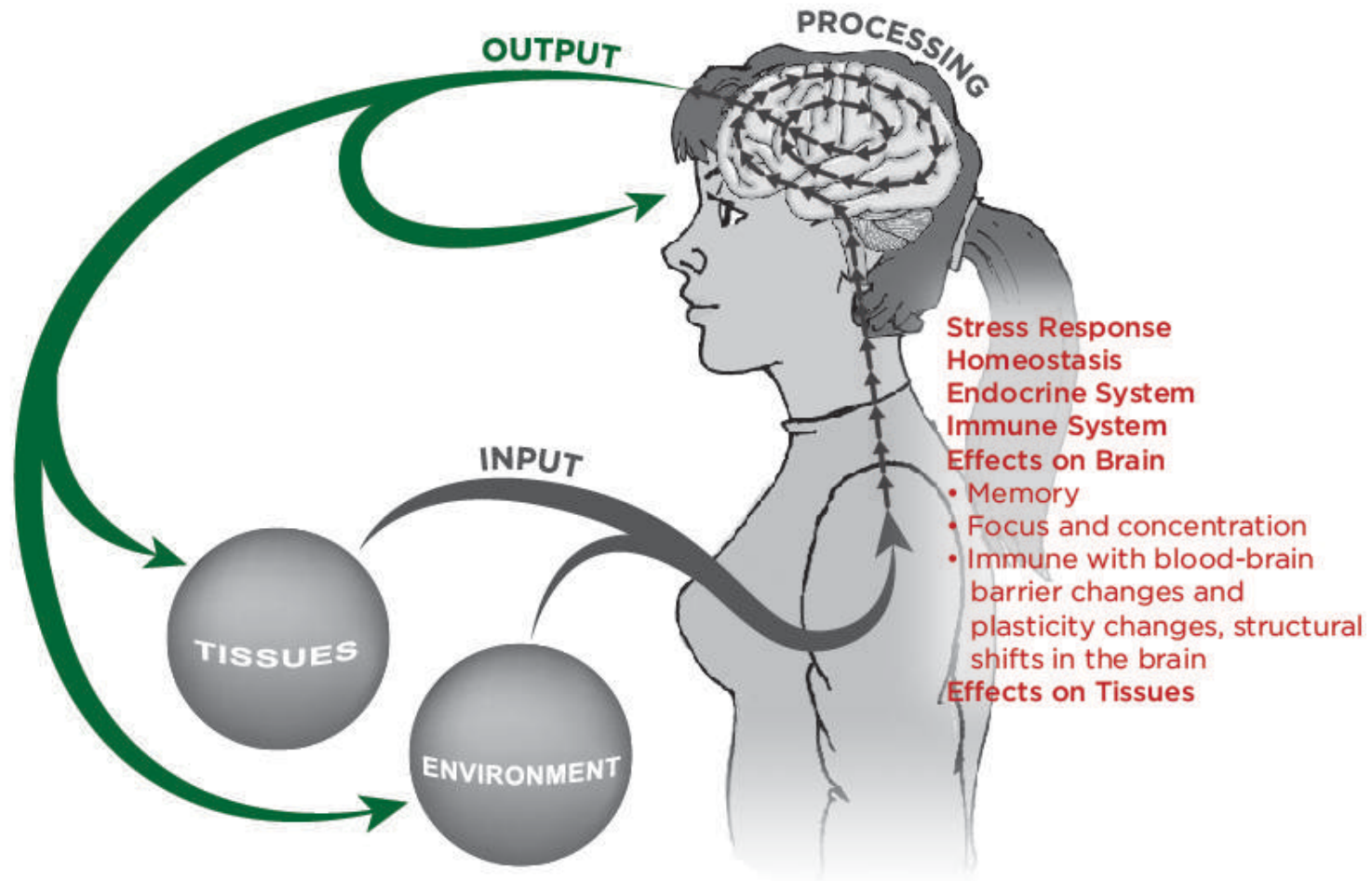
How dangerous is this?

This is not dangerous  
Less information

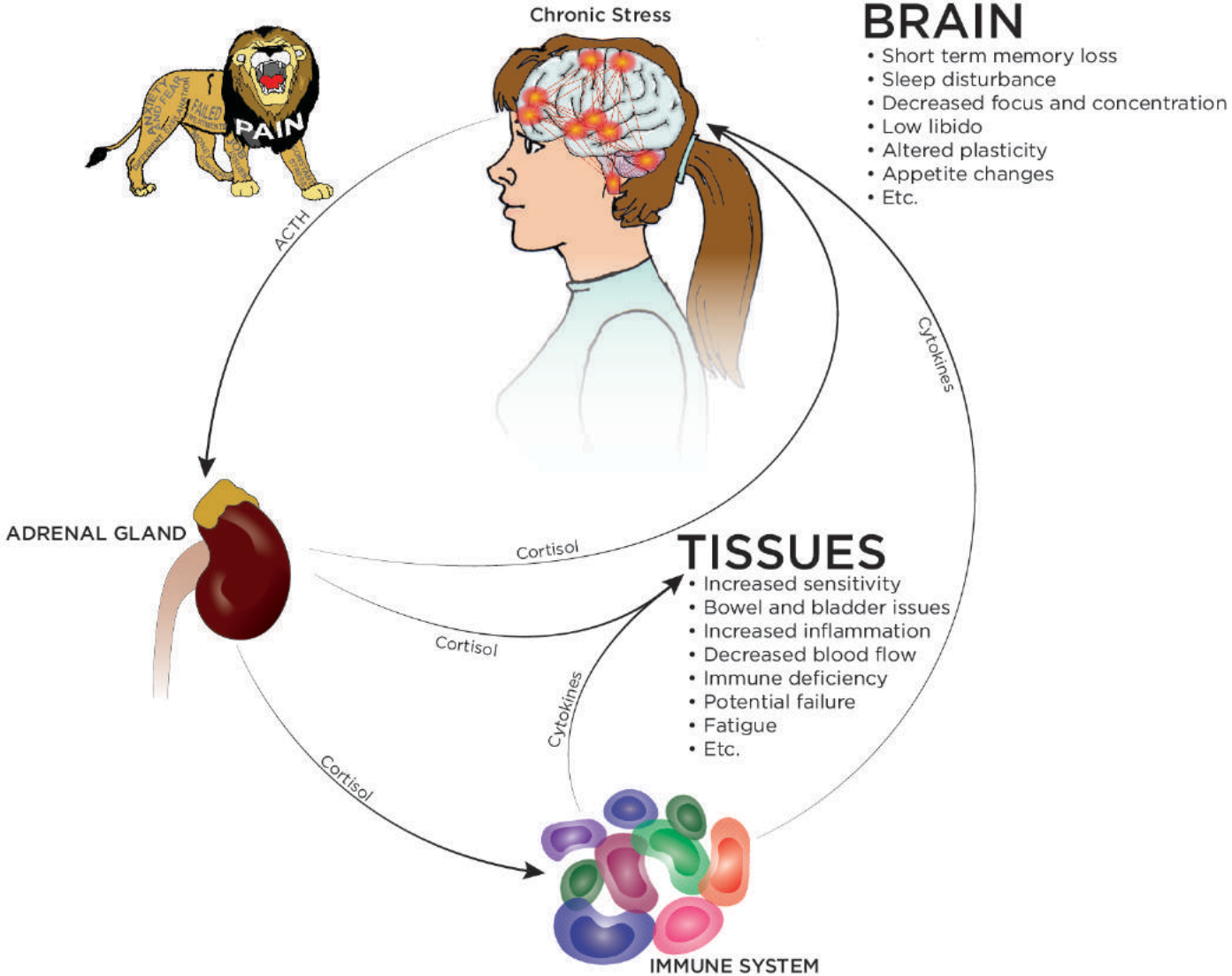
Inhibition  
Neuronal  
adaption



# Multiple System Output



# Chronic Stress



# Break

# Chapter Five

## Screening: Who Needs What?

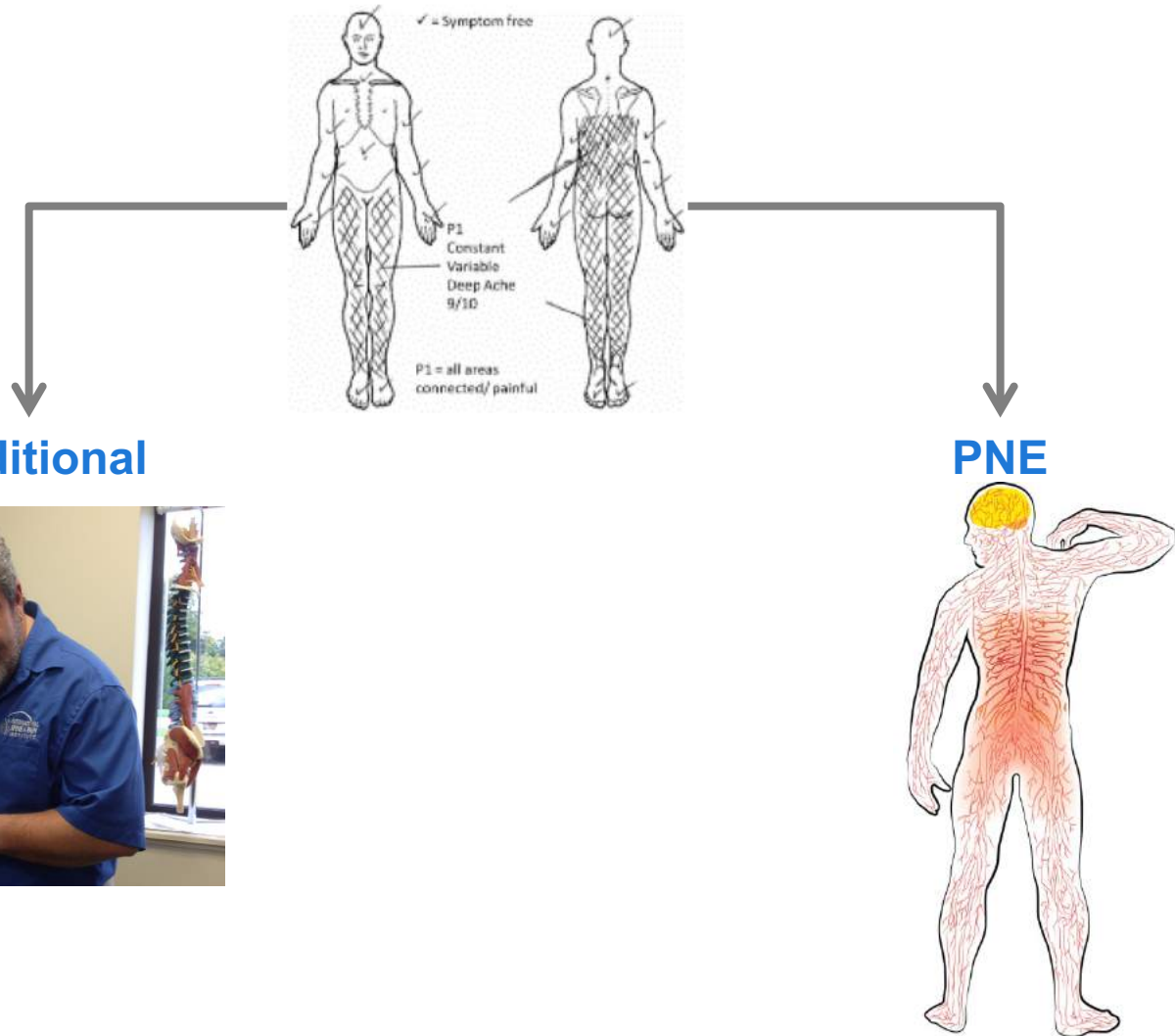
# Taking Pain Science to Patients

- They want it
- We underestimate their ability to take on the information
- We already have the script

## Script for PNE

- Neurophysiology of pain
- Nociception
- Nociceptive pathways
- Neurons
- Synapses
- Action potential
- Spinal inhibition and facilitation
- Peripheral sensitization
- Central sensitization
- Plasticity of the nervous system

# Why PNE for Our Patient?

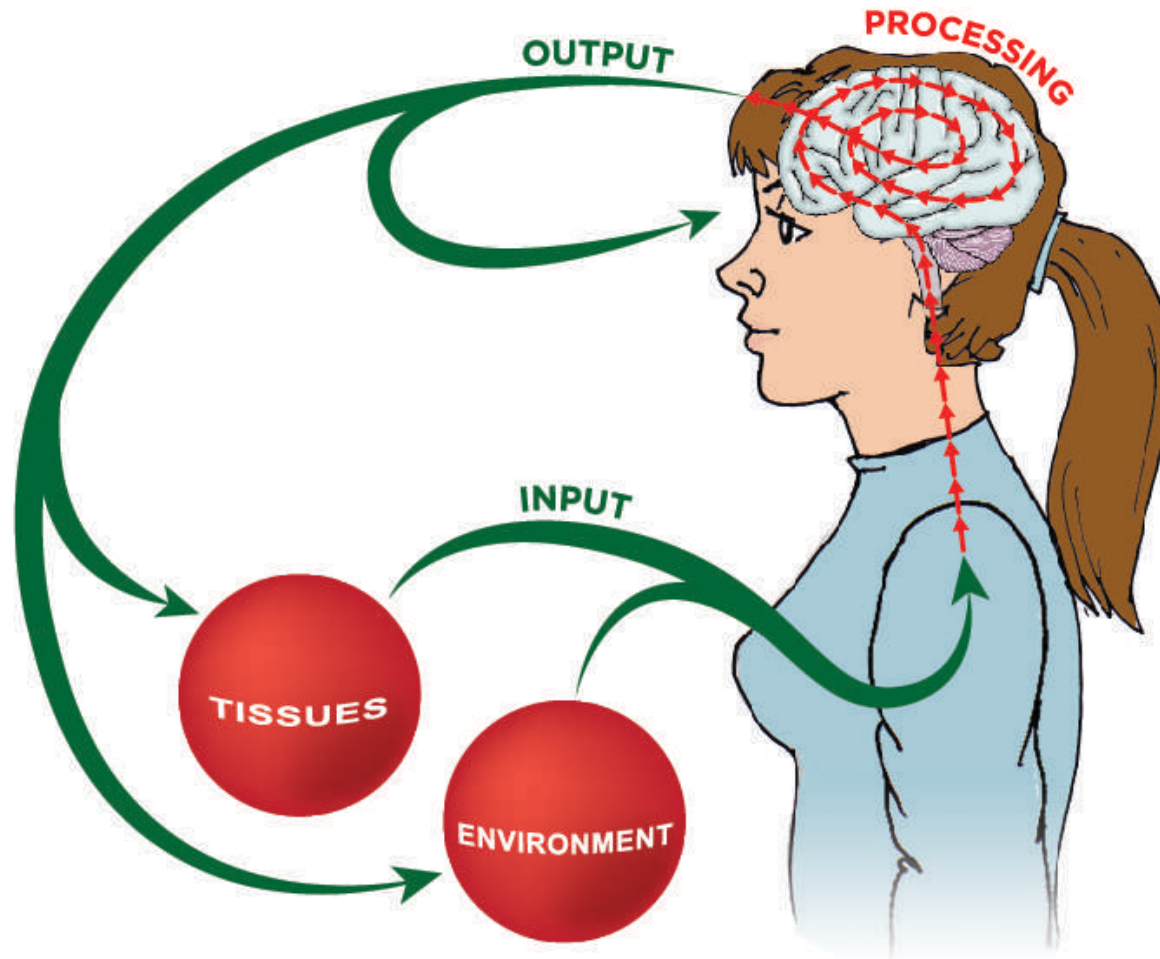


# Who Needs PNE?

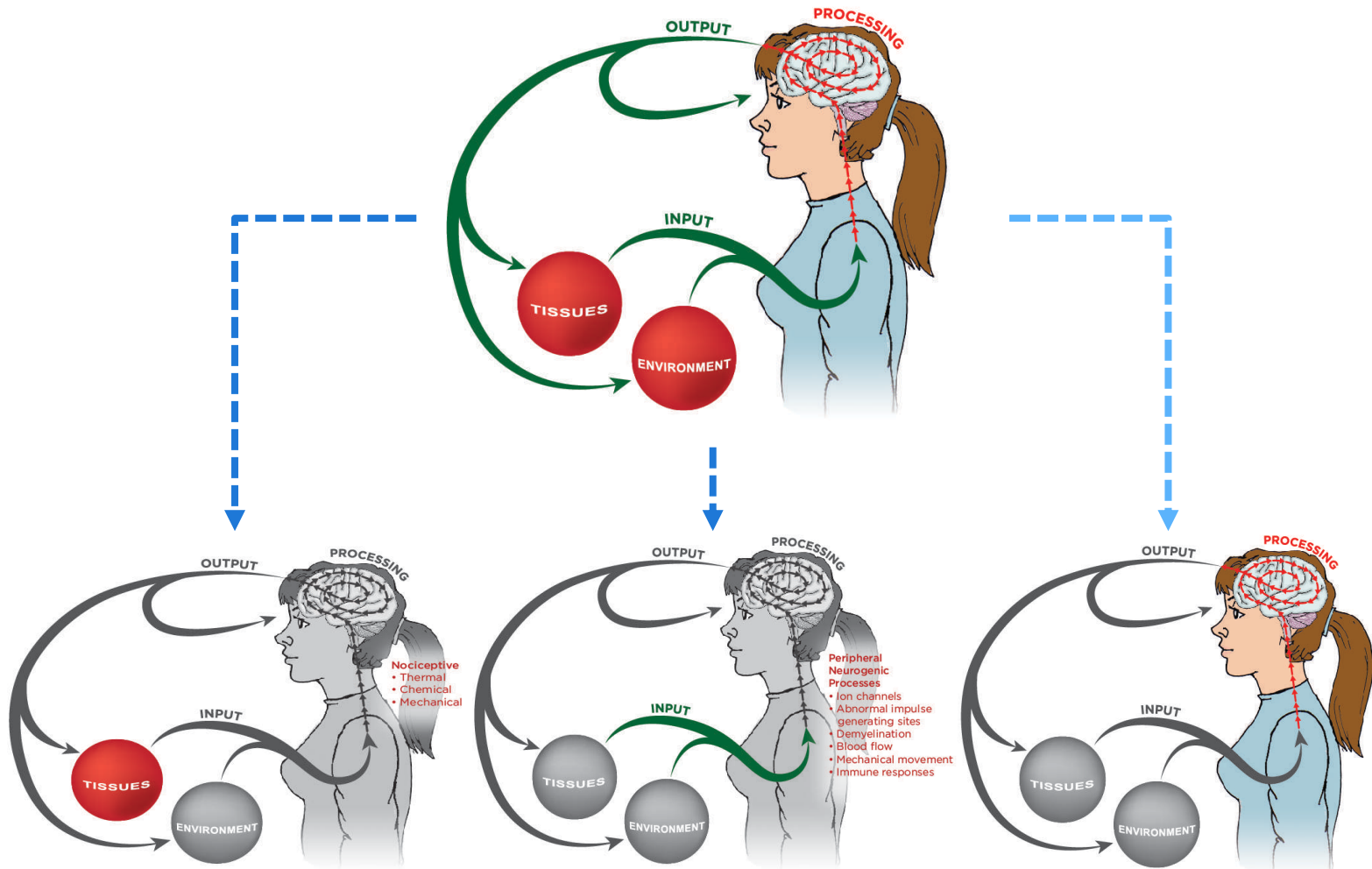
- Central sensitization
- Chronic pain
- Patients who have had multiple treatment “failures”
- Patients referred to therapy specifically for PNE
- Patients with high levels of fear-avoidance (i.e., FABQ)
- Patients displaying various pain catastrophization characteristics



# Different “Kinds” of Pain



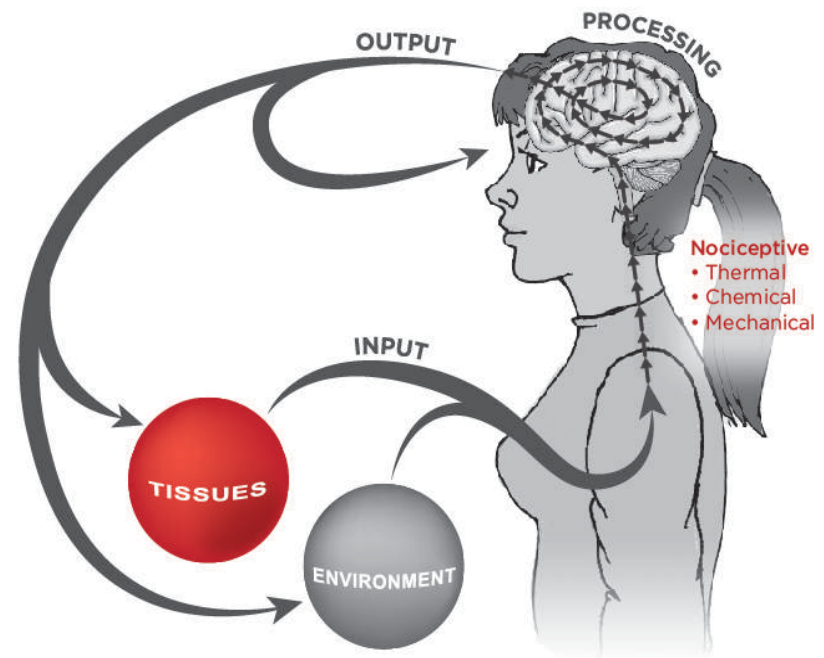
# Different “Kinds” of Pain (cont.)



# Nociceptive

- Well understood
- Symptom and exam cluster
  - Proportionate pain
  - Aggravating and easing factors
  - Intermittent sharp, dull ache or throb at rest
  - No night pain, dysesthesia, burning, shooting or electric

100 times

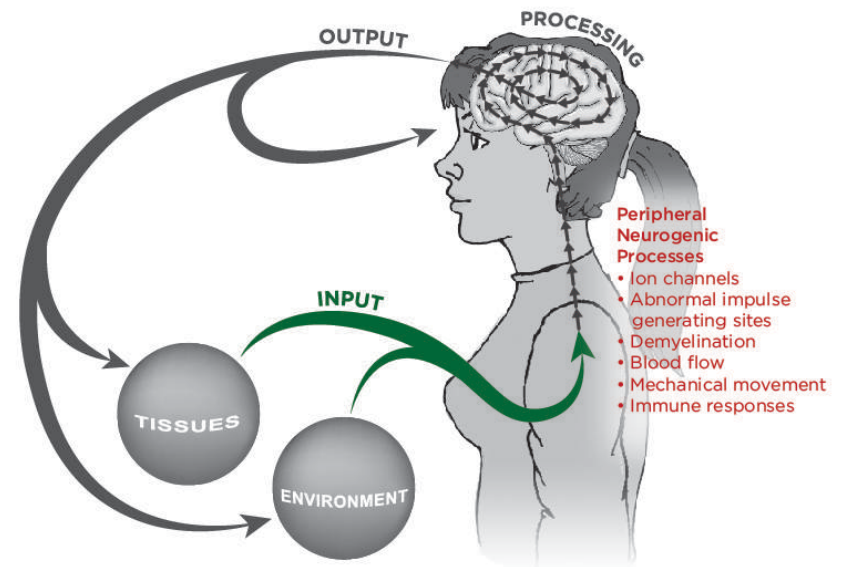


# Peripheral Neurogenic

## Symptoms and sign clusters

- Pain in dermatomal or cutaneous distribution
- Positive neurodynamic and palpation (mechanical tests)
- History of nerve pathology or compromise

150 times

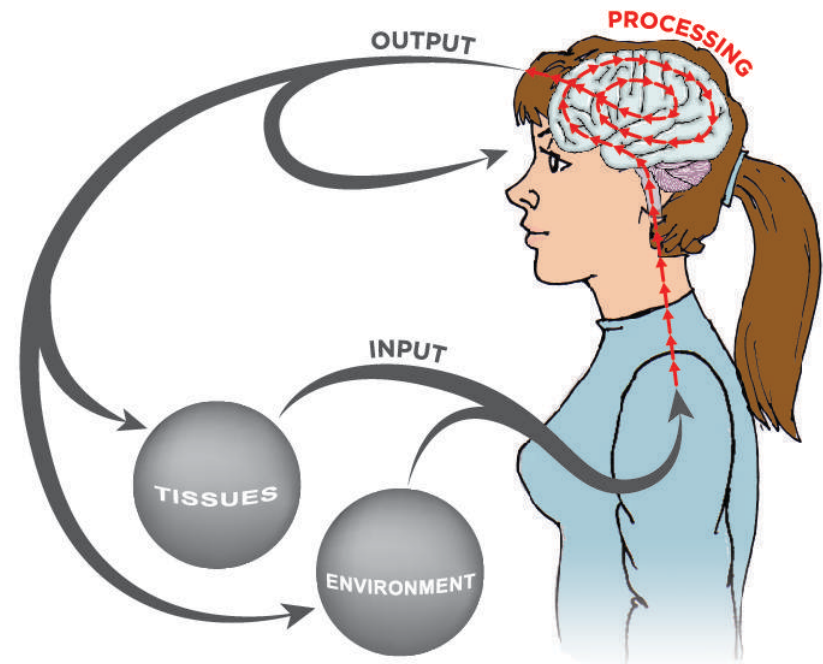


# Central Sensitization

## Symptom and sign cluster

- Disproportionate pain
- Disproportionate aggravating and easing factors
- Diffuse palpation tenderness
- Psychosocial issues
  - Fear-avoidance
  - Pain catastrophization

486 times



# Screening

FABQ-PA > 15

FABQ-W > 34

Higher TSK score

PCS > 30

CSI > 40

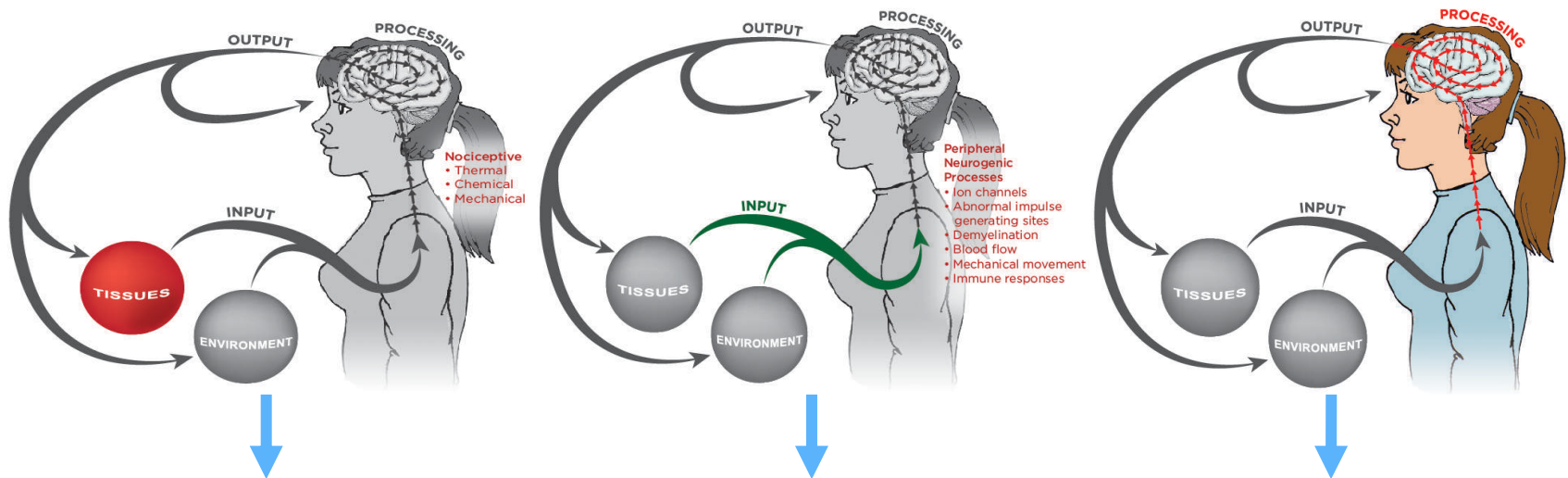
Keele SBST: Total > 4 and  
scores 5-9 > 4



**PNE**

- FABQ-PA
  - Fear-Avoidance Beliefs Questionnaire Physical Activity Subscale
- FABQ-WS
  - Fear-Avoidance Beliefs Questionnaire Physical Activity Subscale
- TSK
  - Tampa Scale of Kinesiophobia
- PCS
  - Pain Catastrophization Scale
- CSI
  - Central Sensitization Inventory
- Keele SBST
  - Keel STarTBack Screening Tool

# So What?



**Treat "as usual"**  
If they display  
high levels of fear  
or have  
catastrophization  
beliefs: add PNE

**Space, movement  
and blood  
responds  
favorably to PNE  
i.e., SLR, ULNT,**

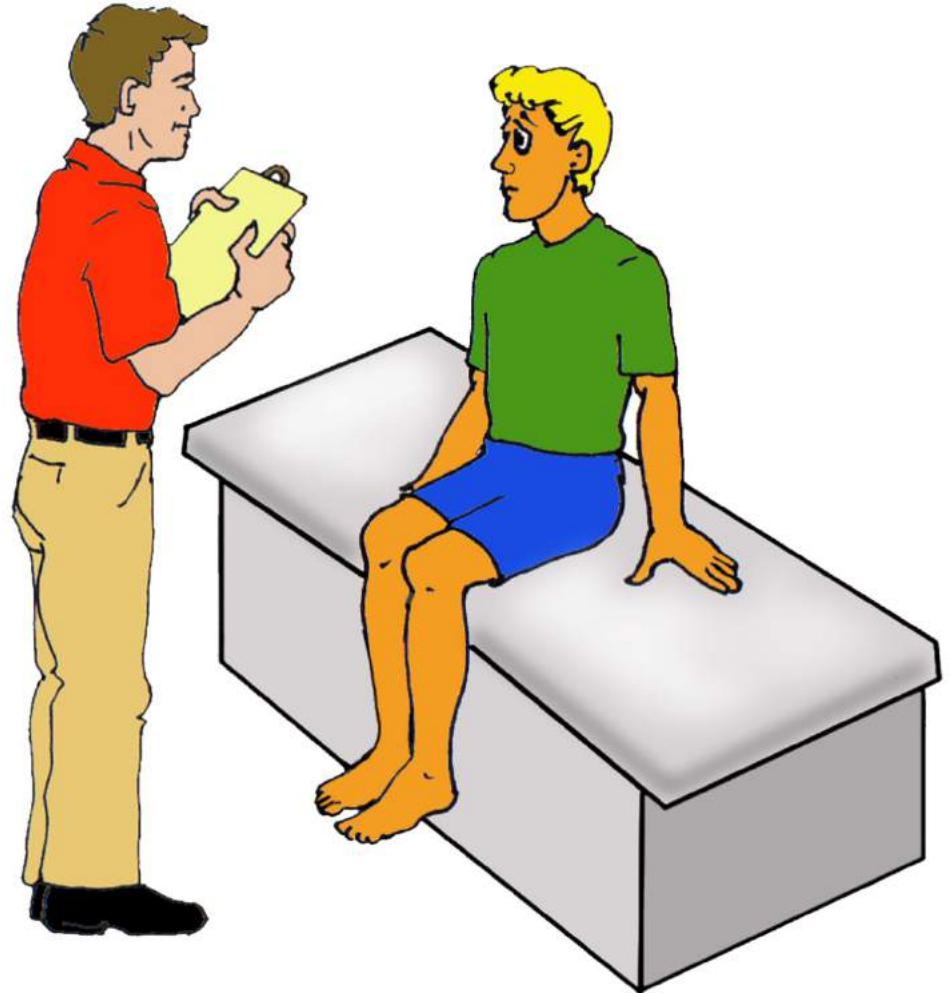
**Ideal patient  
population for  
PNE  
and PNE +**

# Timing is Also Key



# Clinical Guidelines for PNE

- Screen accordingly
  - Red flags
- Use outcome measures
- Thorough interview
- Thorough “low tech” examination

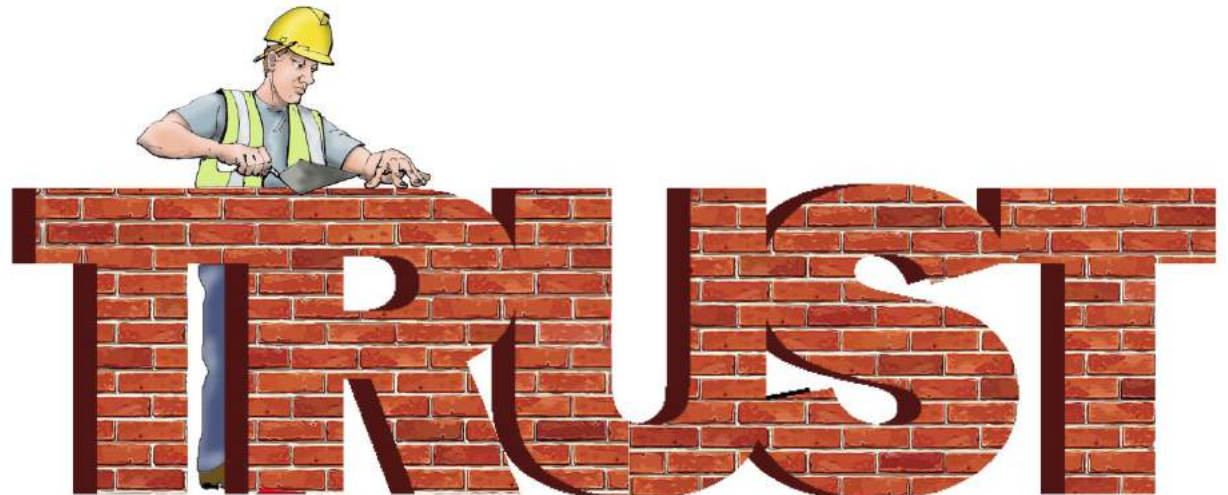


# Clinical Guidelines for PNE (cont.)

## COMPASSION

- ✓ Screen accordingly
  - ✓ Red Flags
- ✓ Use outcome measures
- ✓ Thorough interview
- ✓ Thorough "low tech" examination

## EMPATHY



# Interview: Peeling Layers

## Beyond the basics

- What do you think is going on with your (back)?
- What do you think should be done for your (back)?
- Why do you think you still hurt?
- What would it take for you to get better?
- Where do you see yourself in three years in regards to your back?



# Starting “The Pain Talk”

- Has anyone explained to you why you hurt?
- Would you like to know why your pain is not getting better?
- Before we start some of the “physical” treatment, I’d like to explain to you a little more about your pain

# Chapter Six

PNE 101

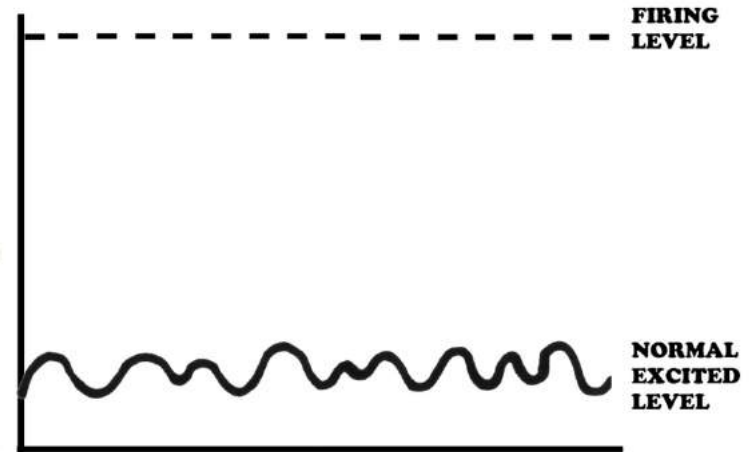
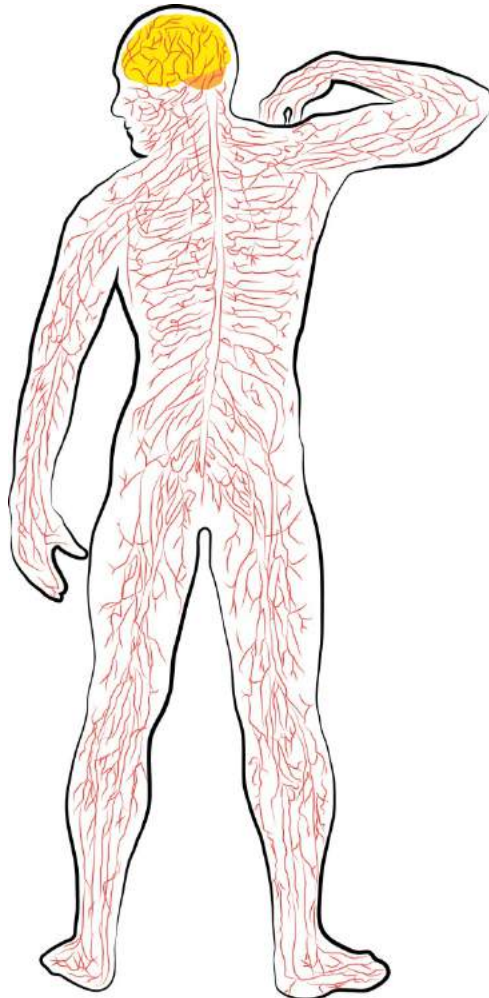
# Pain Metaphors and Stories

- There are many different stories
- Think of them as techniques and match to the problem
  - Mental fatigue: brain meeting story
  - Stress causes pain: nerve sensor story
  - Fatigue: lion story
  - Etc.
- Highest rated: the sensitive alarm system

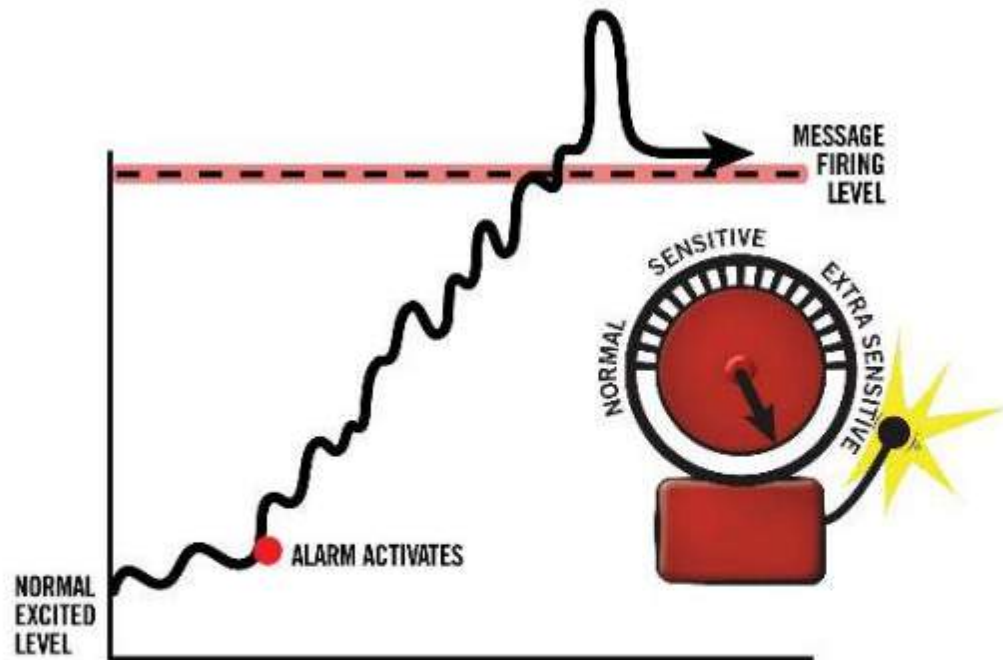
# Pain Metaphors and Stories (cont.)



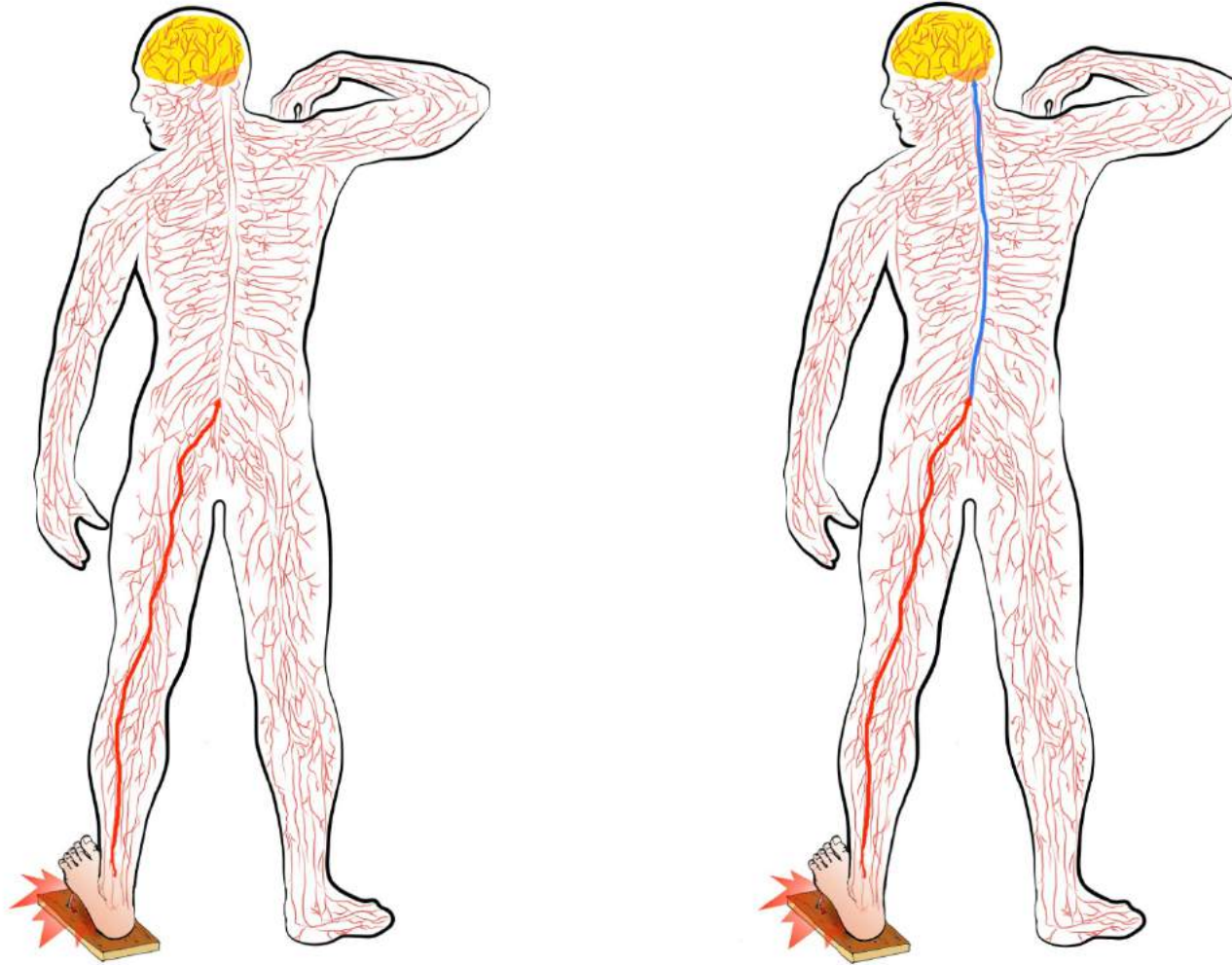
# Pain Metaphors and Stories (cont.)



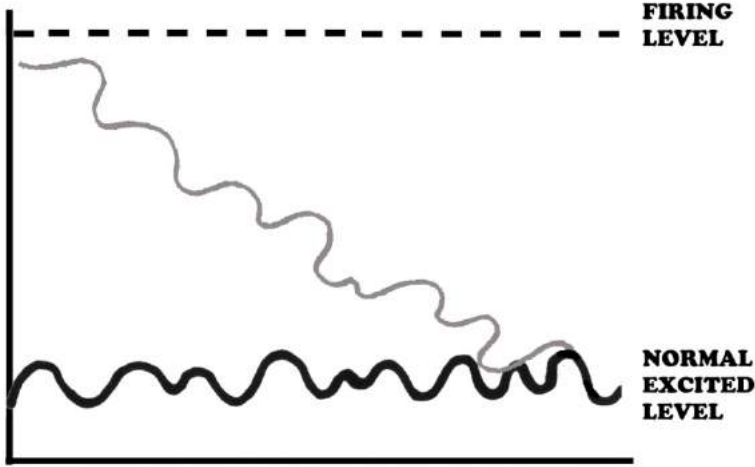
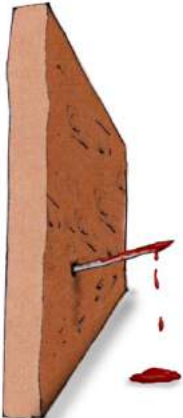
# Pain Metaphors and Stories (cont.)



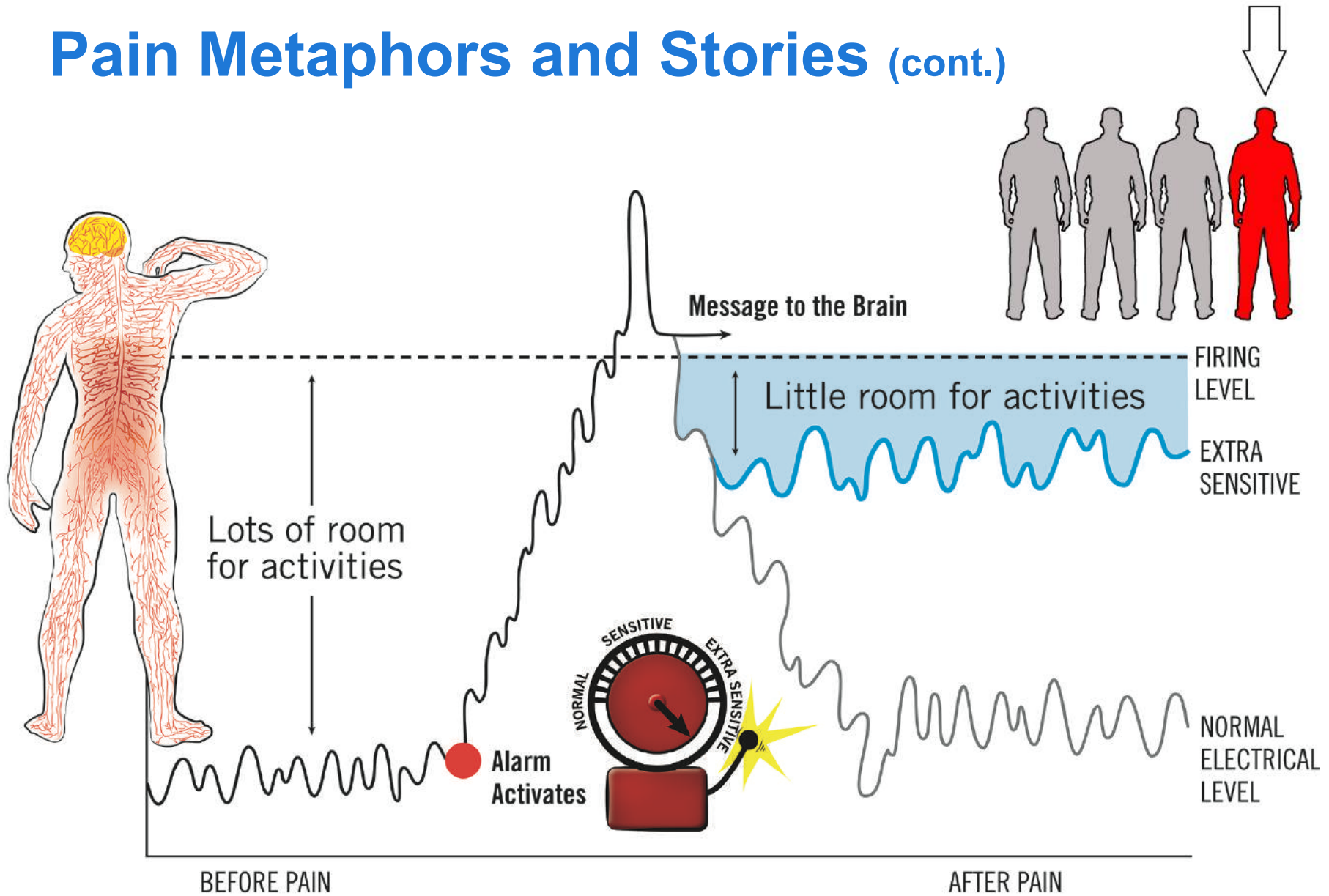
# Pain Metaphors and Stories (cont.)



# Pain Metaphors and Stories (cont.)

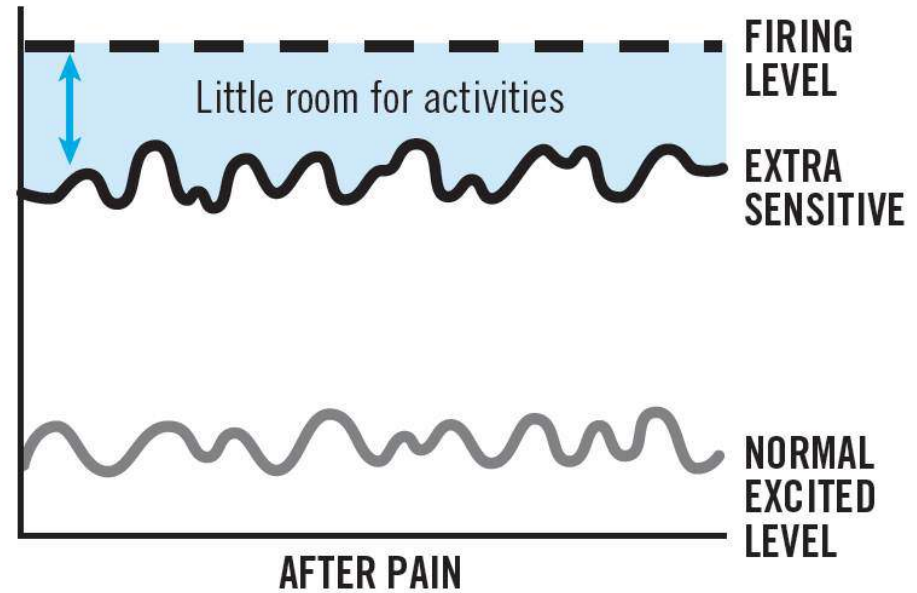
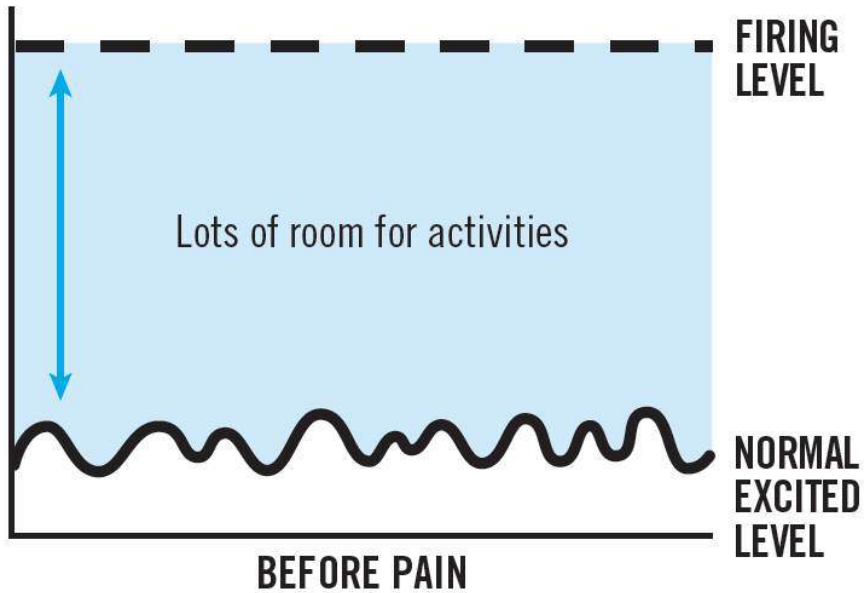


# Pain Metaphors and Stories (cont.)



# Metaphor

- Central sensitization
- Peripheral sensitization
- Hyperalgesia
- Allodynia



# 3 Common Questions

# How Do You Know This?

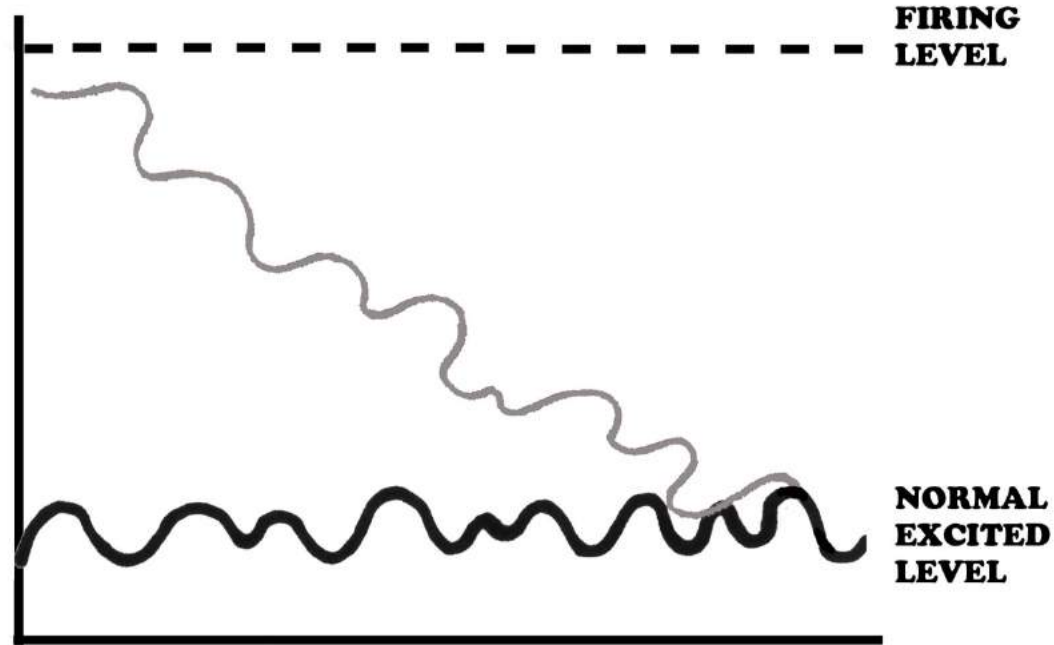
- You told us: “used to could”
- Your Dr. told us: medicine
- Your tests told us: palpation, pressure pain thresholds, neurodynamic tests



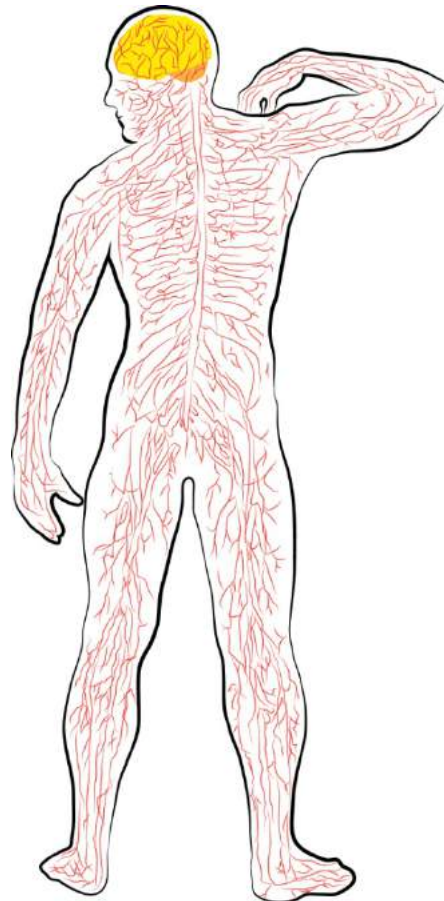
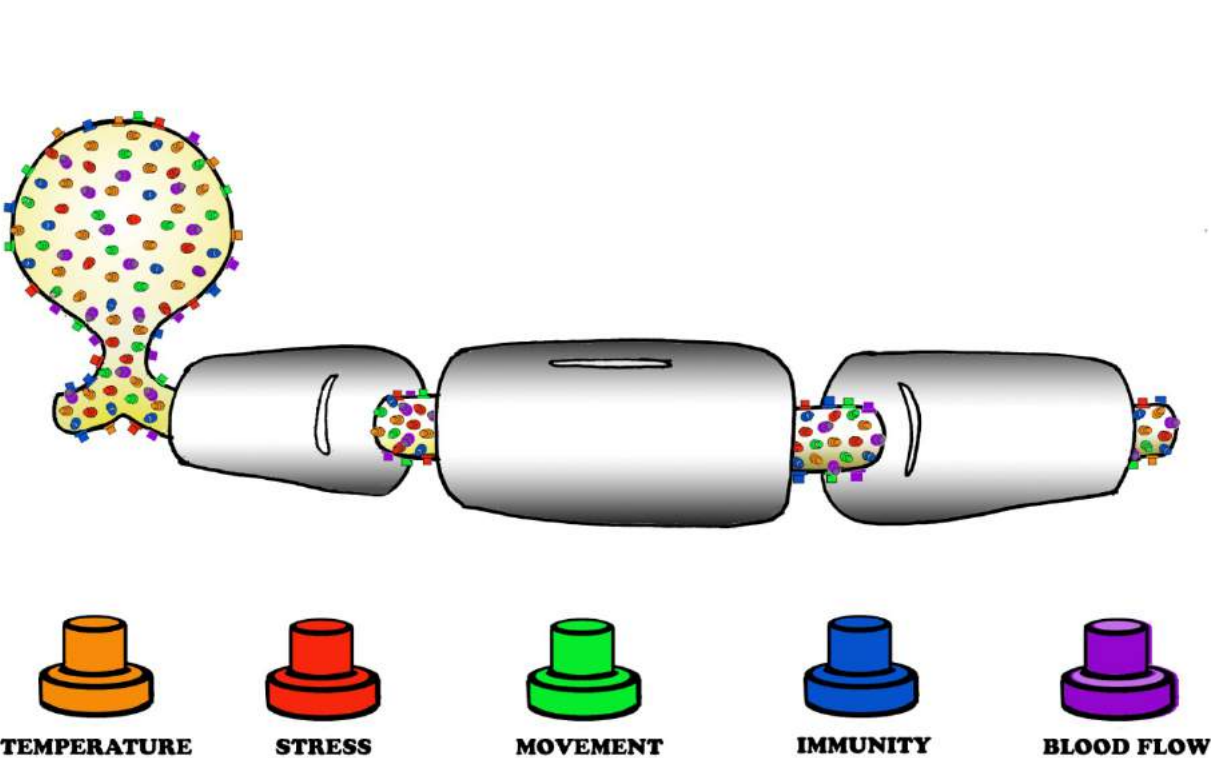
# Why Did My Nerves Not Calm Down?



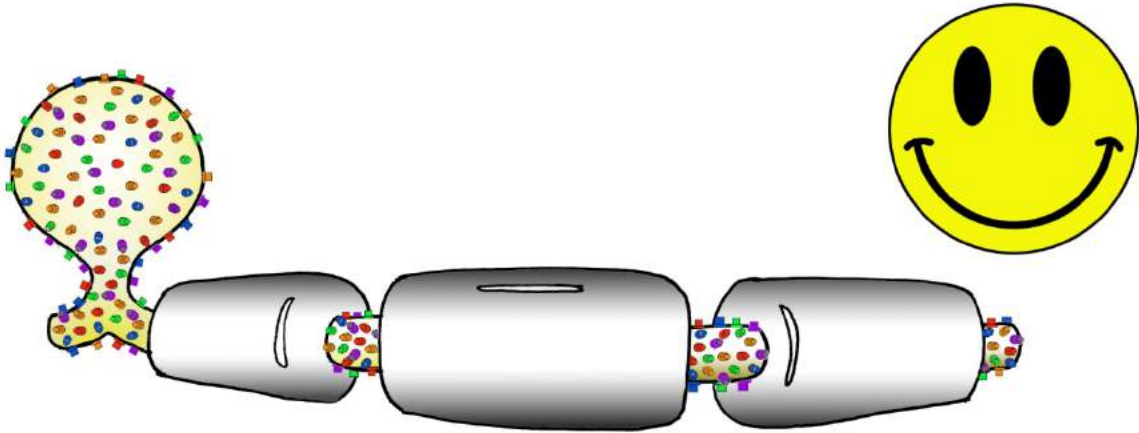
# How Do We Turn Down the Alarm System?



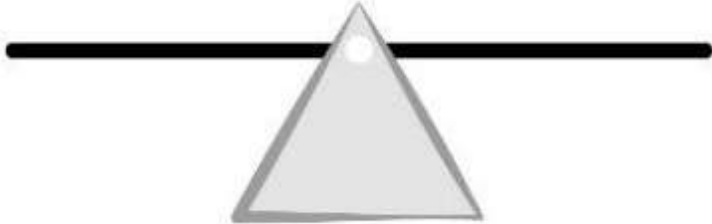
# Next Visit: Sensitivity To...



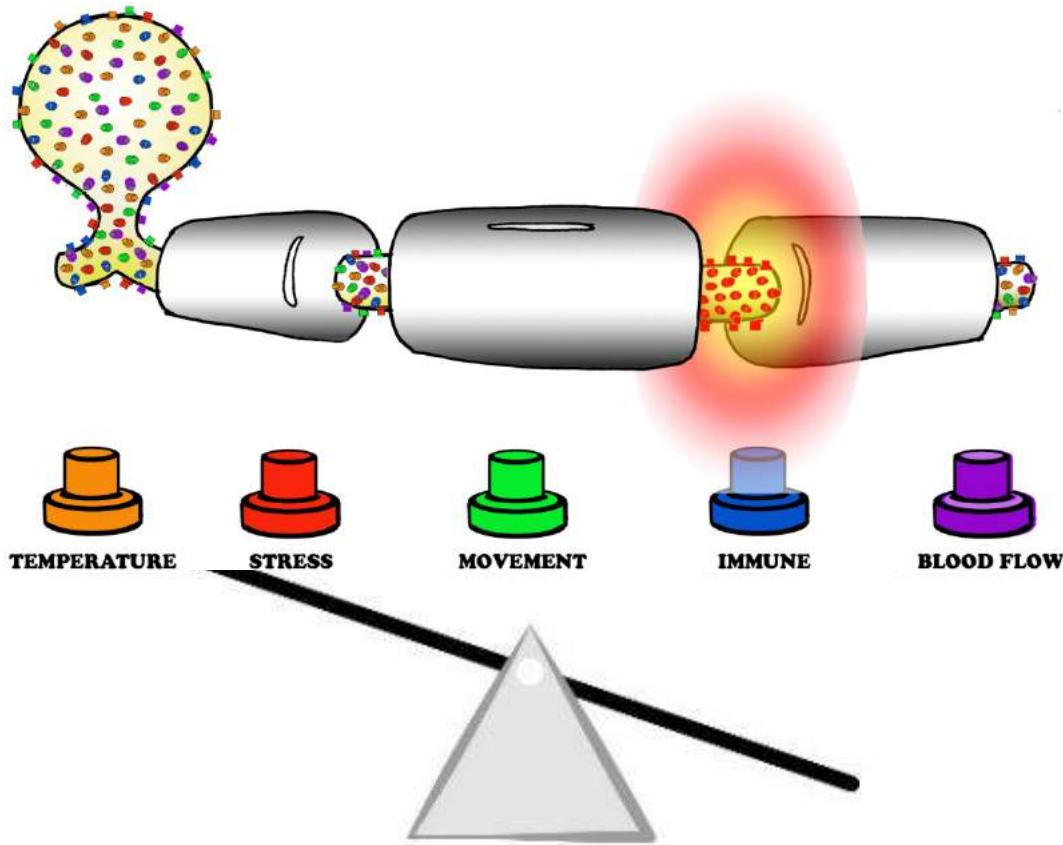
# Next Visit: Sensitivity To... (cont.)



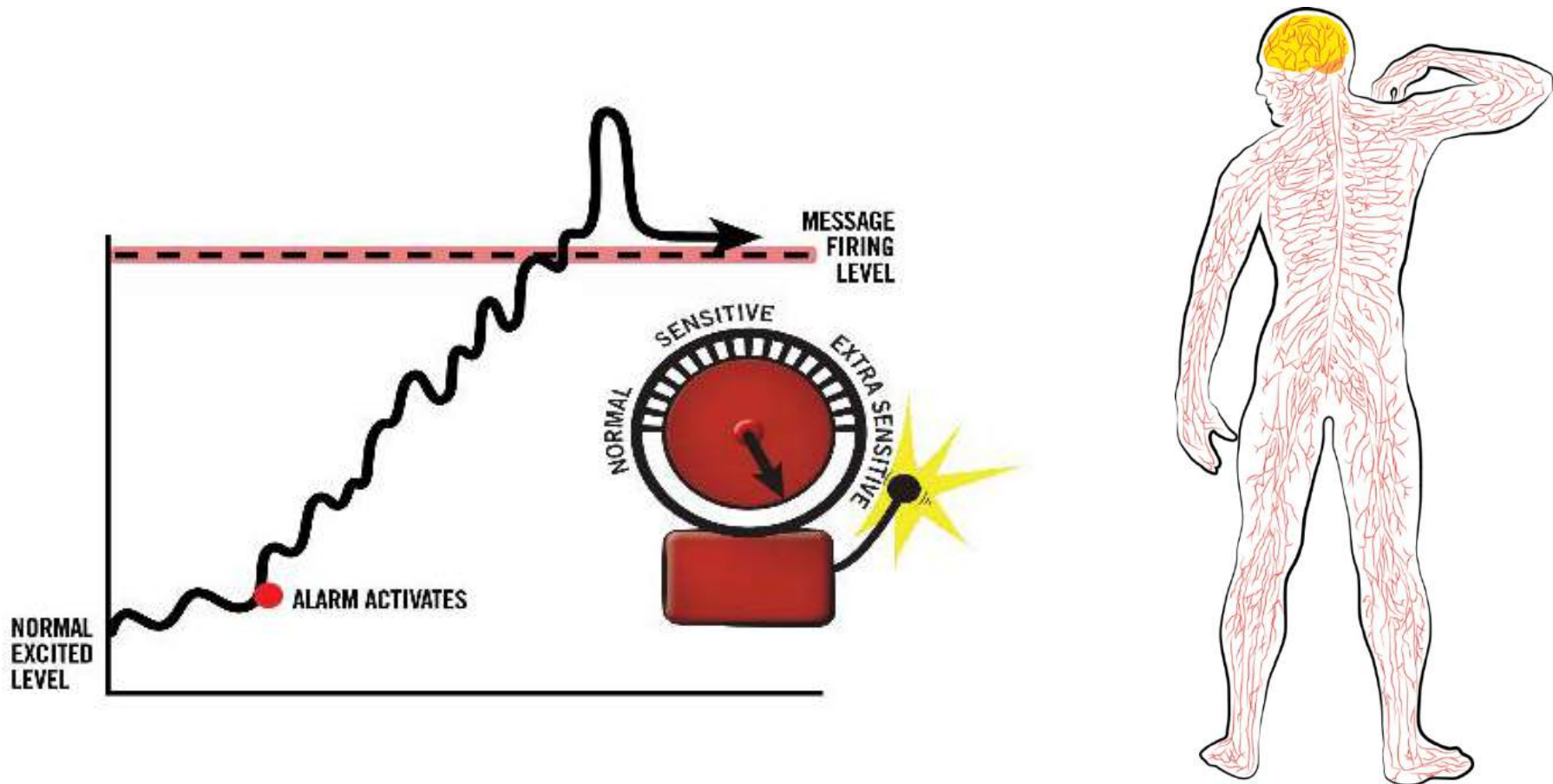
-  **TEMPERATURE**
-  **STRESS**
-  **MOVEMENT**
-  **IMMUNITY**
-  **BLOOD FLOW**



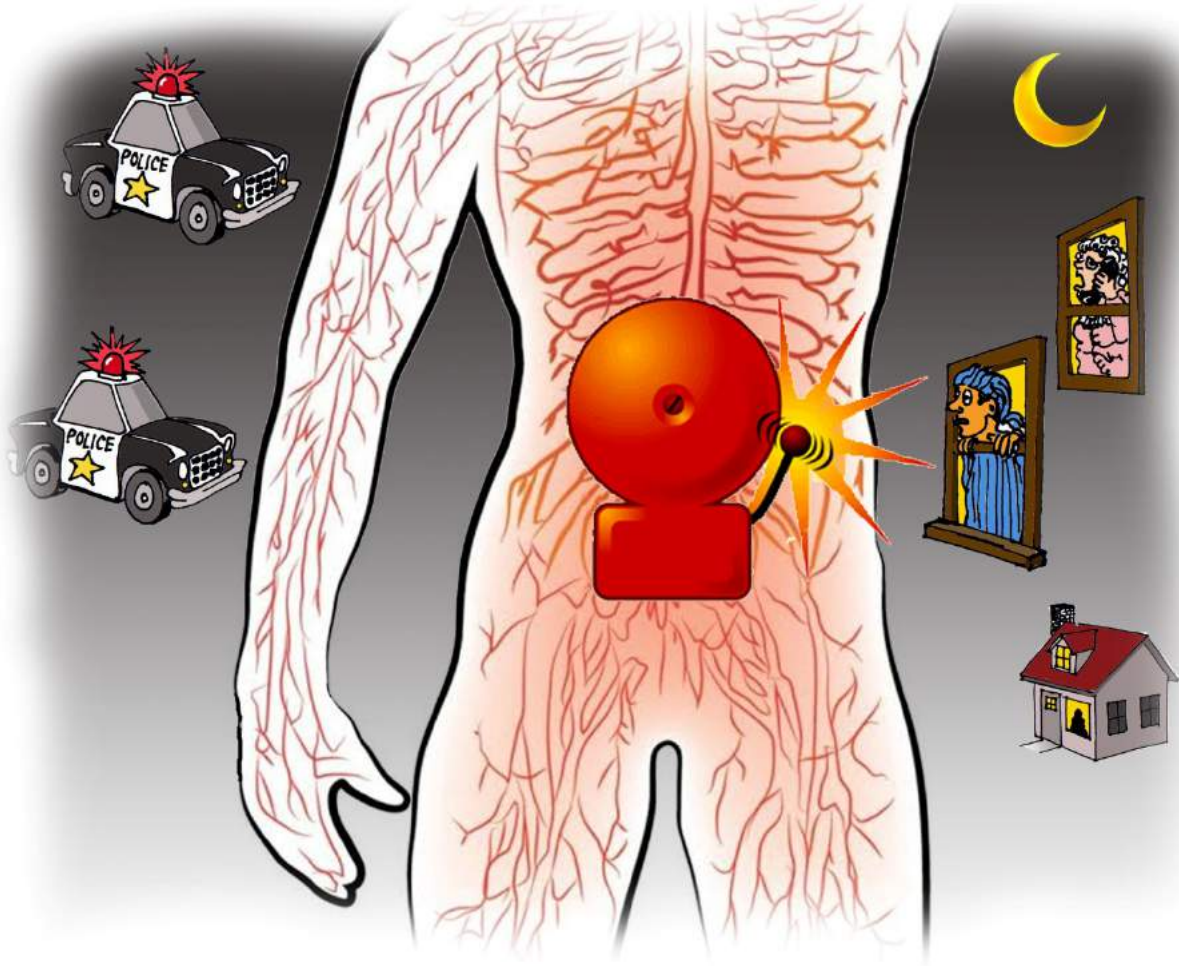
# Next Visit: Sensitivity To... (cont.)



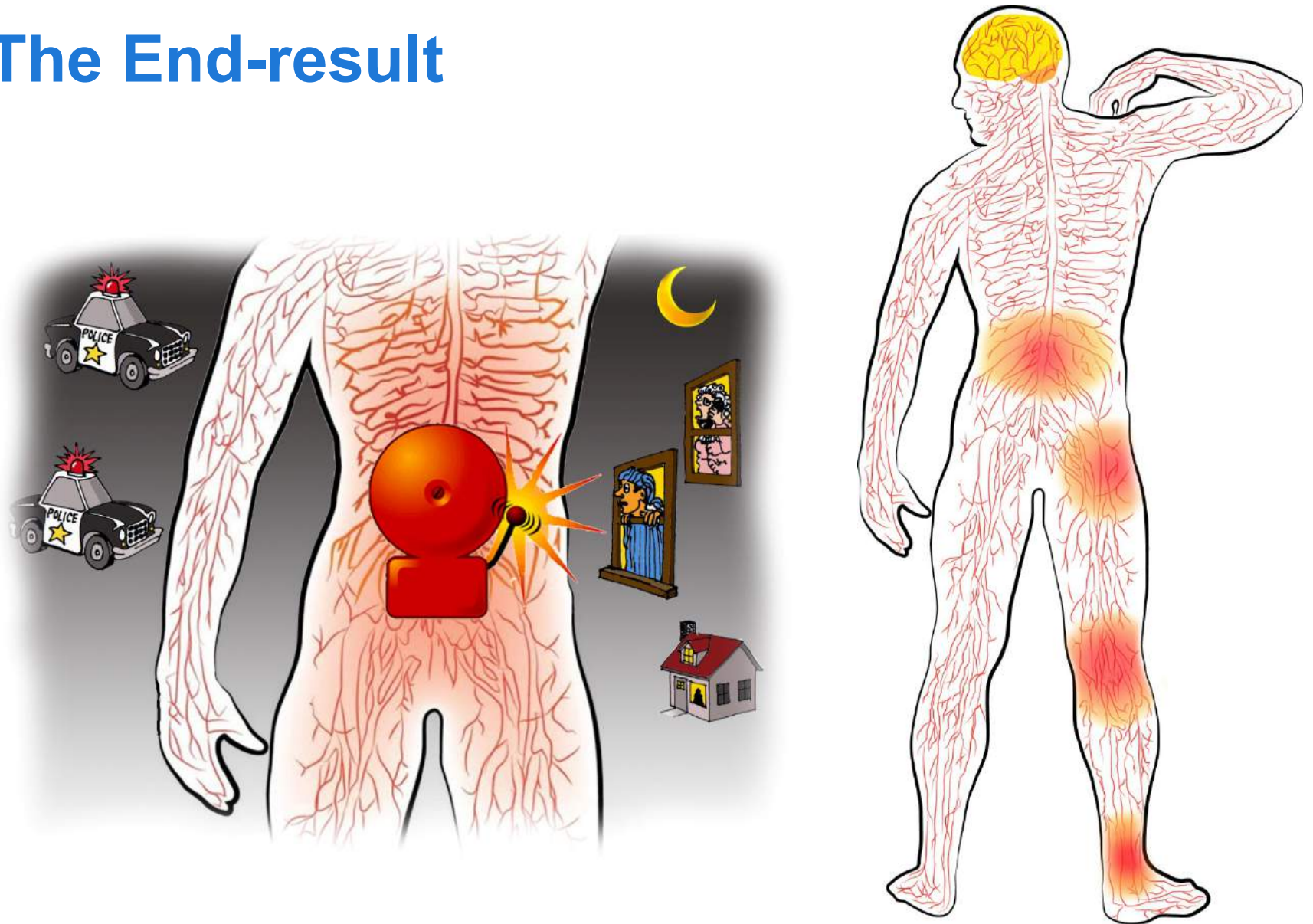
# Next Visit: Spreading Pain



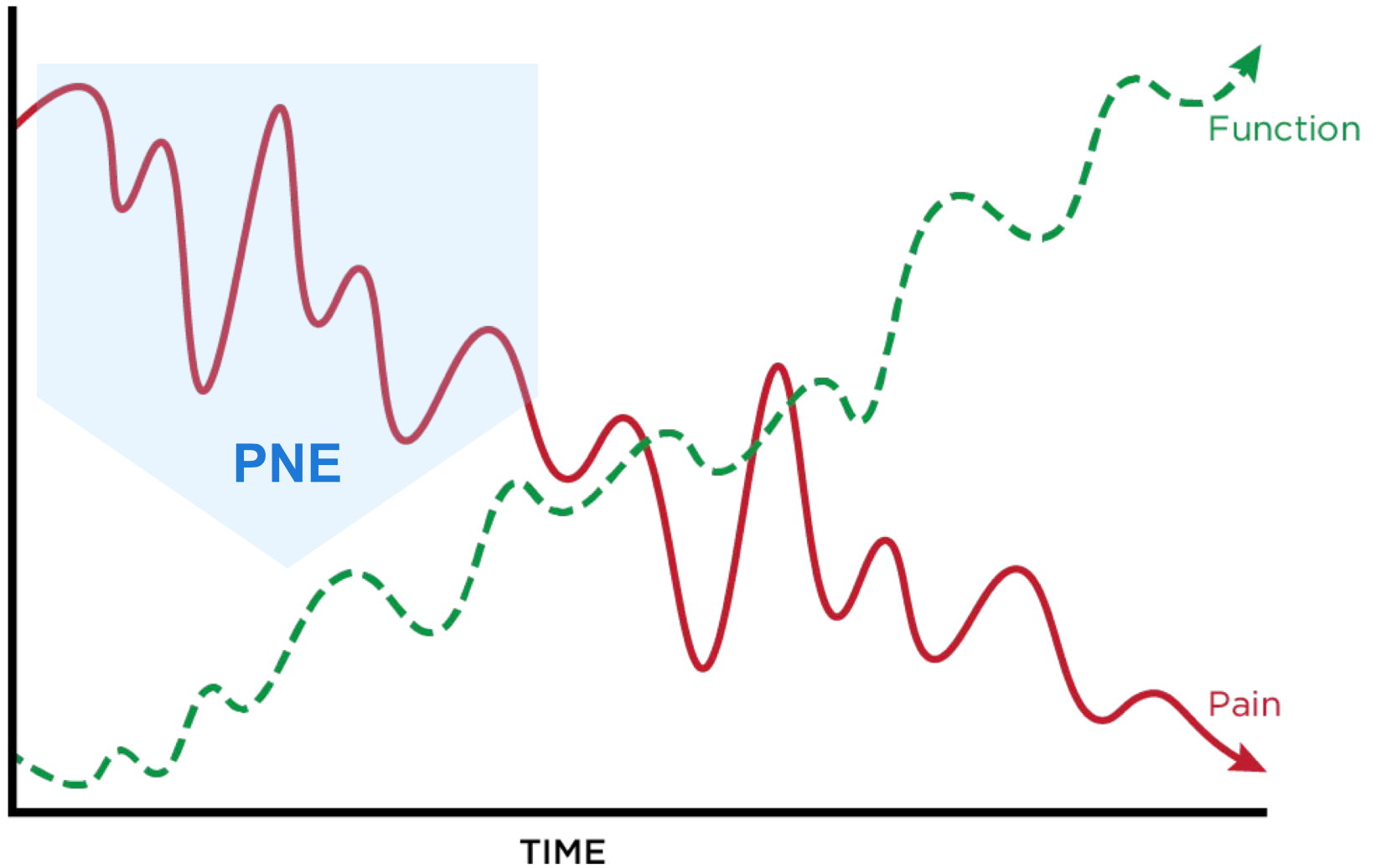
# Next Visit: Spreading Pain (cont.)



# The End-result



# The Ultimate Goal

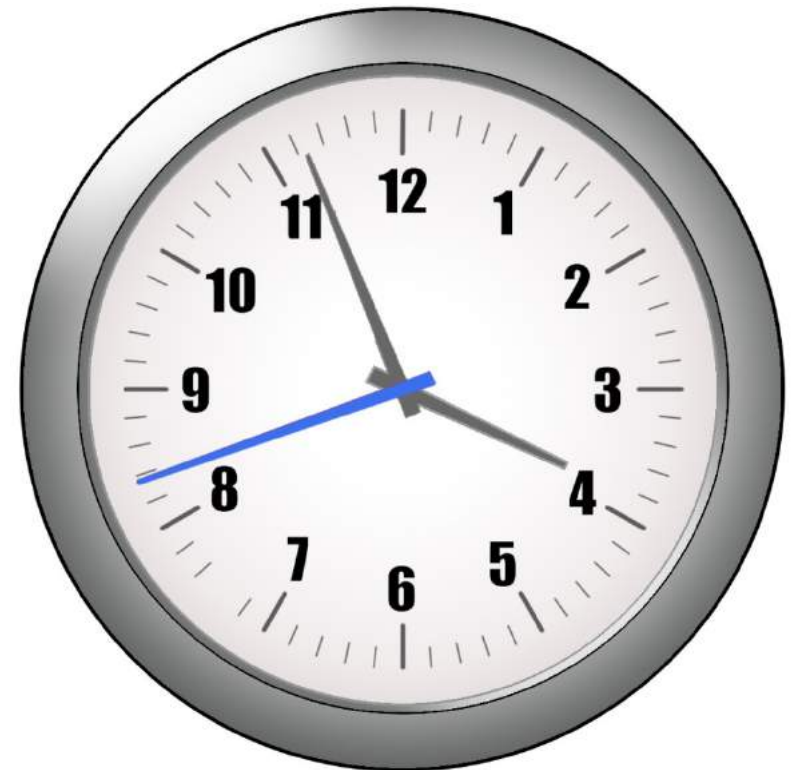


# Chapter Seven

## Placing PNE in the Clinic

# Time

- Screen accordingly
- First visit is key setting the scene
- Metaphors and stories under ten minutes
- Support personnel
- Pace your day
- Designated pain clinic/program
- Group sessions
- Homework



# Cost-effectiveness

- Review previous **time** section
- Stand-alone versus “with therapy”
- Group?
- Written materials/home work
- Telehealth



# Written (Cognitive) Homework

- Written
- Take ownership
- Compliance
- Application of knowledge

### Your alarm system's response

Once or several of the alarms triggered your alarm system. Once your alarm system activated, you went for help; you also have gone to the emergency room, seen your family doctor, had an X-ray, etc. Once you sought out help and received treatment, the alarm system should have calmed down. However, our growing pain research now shows that with 1 in 4 people in this world, something triggers their alarm system, but the alarm never fully calms all the way back down.<sup>11</sup> This leaves an extra sensitive alarm system.

Look at the next two drawings. Before you developed pain, you were able to perform any task you really need for long periods, such as driving, doing dishes, or working on a computer. But since you developed pain, you've noticed and reported it doesn't take but a few minutes of the same task to experience pain. No wonder you think something must be wrong! The main issue is an extra sensitive alarm system.<sup>11</sup>

### How has your extra sensitive alarm system changed your life?

Use the tables below and write down two things you used to be able to do, but now struggle to do, or have given up doing. Indicate how the activities are different before and after your pain.

BEFORE PAIN	AFTER PAIN

A key message for you is that tissues heal and a large part of why you still hurt is due to an extra sensitive alarm system. As long as medical tests and treatments assess the alarms are in your tissues (pain, muscles, etc.), it is unlikely you will get better. We must step back and look in the right place: Your nervous system.

#### TASK 2

Look at the activities you used to be able to do before your alarm system became extra sensitive. How do you feel about the impact this has made on your life? It is okay to feel anger or even grief about your losses. But, if you get stuck there, you are unlikely to find an exit from the surrounded.

Finally, look at the list again and reflect. How much of what you're experiencing is now due to an extra sensitive alarm system versus a tissue issue?

# Billing

- Neuromuscular re-education
- Therapeutic activity
- Activity of daily living
- Self-care
  - Make sure it matches with the intent of the session
  - Make sure it matches documentation
- Often done with other “physical” treatment

# PNE Documentation and Electronic Medical Records

**Assessment/Plan:**

Continue with current plan of care. Did patient meet HIGHER goals:  
 Making progress toward goals.     yes     no  
 Tolerating treatment well.    Patient partially met his/her goals?  
 yes     no

Discharged:      increase frequency to:   
 decrease

Direct PTA Supervision:

Statement:

PT Superbill    Save

PT Forms    Review Progress Note

Frequency/Duration    PT Care Plan

Pain Neuro Education    Previous Screen

**PT Patient Education**

**Pain Neuroscience Education**

**Handouts given to patient**

	Date:
<input checked="" type="checkbox"/> Sensitive Nerves	02/09/2018
<input checked="" type="checkbox"/> Nerve Sensors	02/09/2018
<input type="checkbox"/> Nosy Neighbors	<input type="text"/>
<input type="checkbox"/> Calming Nerves	<input type="text"/>
<input type="checkbox"/> Pain and the Brain	<input type="text"/>
<input type="checkbox"/> Brain's Pain Map	<input type="text"/>
<input type="checkbox"/> Body Inc.'s CEO	<input type="text"/>
<input type="checkbox"/> Lions and Stress	<input type="text"/>
<input type="checkbox"/> Tissue Issues	<input type="text"/>
<input type="checkbox"/> Neurogenic Inflammation	<input type="text"/>
<input type="checkbox"/> The Brain's Body Maps	<input type="text"/>
<input type="checkbox"/> Emotions and Pain	<input type="text"/>

**PT Patient Education**

**Physical Therapy Progress Note**

Patient Name:   
 Provider:   
 Date: 2/9/2018  
 Visit Number: 4  
 Visit Time: 45 minutes

**Subjective:**

**Objective:**

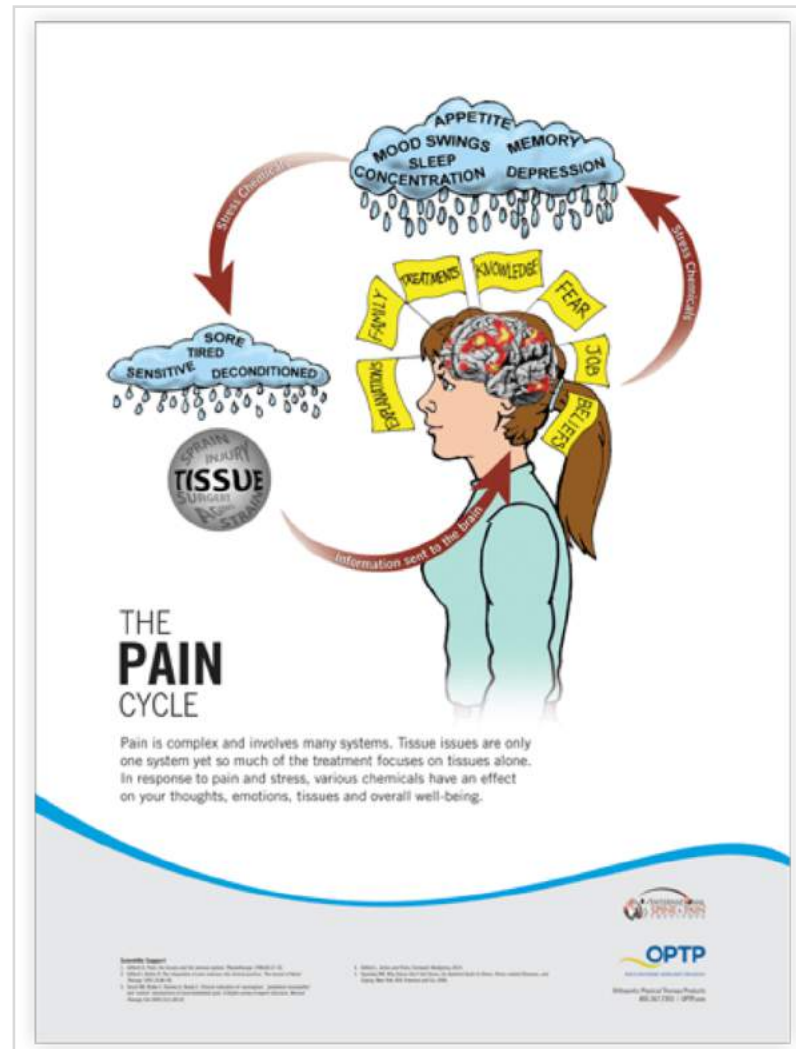
**Treatment:**

**Pain Neuroscience Education:**  
 Patient educated on the concept of the nervous system as the bodies alarm system, and the role of nociception to warn the body of danger. Peripheral nerve sensitization, hyperalgesia and allodynia were explained using metaphors to promote deep learning. Patient educated on the concept of neuroplasticity, and how factors such as temperature, stress, movement, immunity and blood flow affect pain via ion channel expression. Instruction provided regarding homeostasis/ion channel balance disruption may occur based on what your brain thinks is needed for survival.

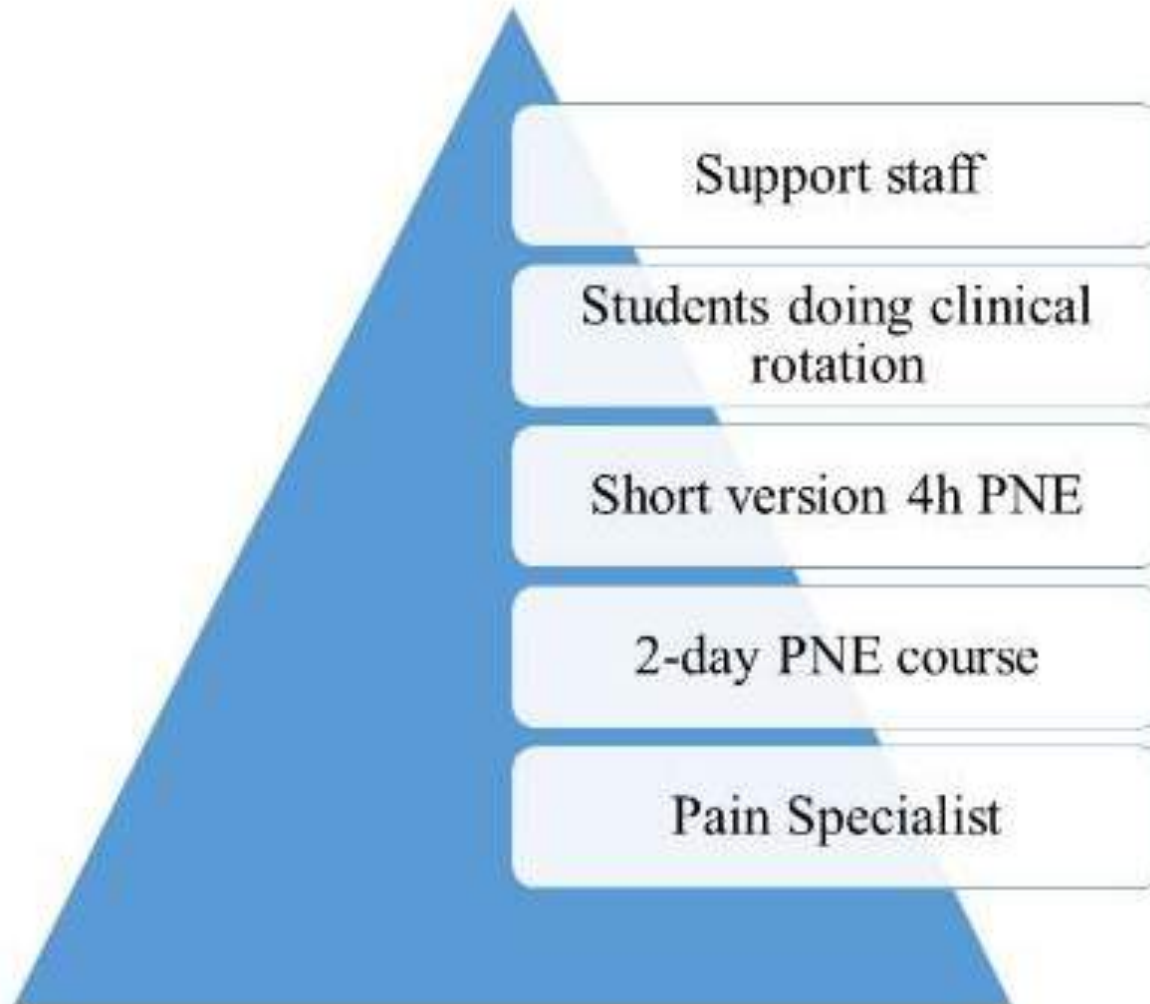
**Assessment/Plan:**

# Clinical Environment

- Biomedical vs. pain science
- Threats
- Plant seeds



# Training Staff: All Staff



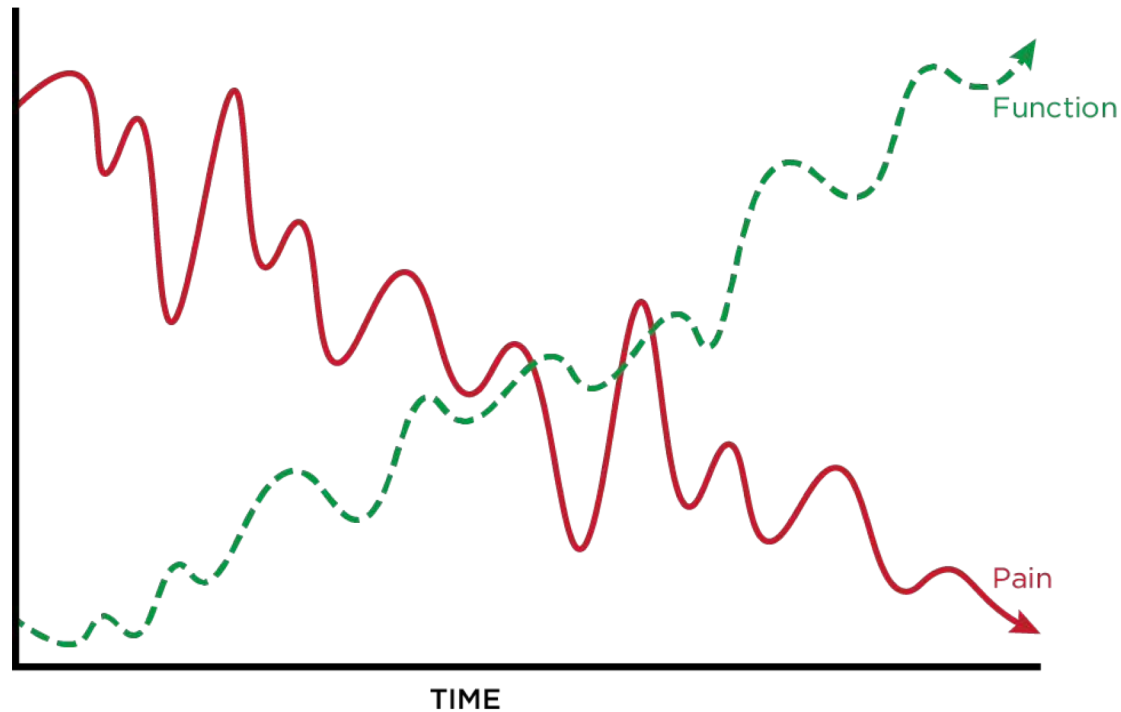
# Clinical Tools

- Pictures
- Drawings
  - Flipcharts
  - Dry-erase boards
  - Markers
- Homework sheets
  - Information
  - Tasks



# Progress?

- Focus on function
- Careful with bombarding patients with pain ratings



# Behaviors: Keeping Patients Accountable

- Boundaries
  - Being late
  - Attending appointments
  - Doing homework
- “Because we care”



CBT

# Planting Seeds



# Planting Seeds (cont.)



# Planting Seeds (cont.)

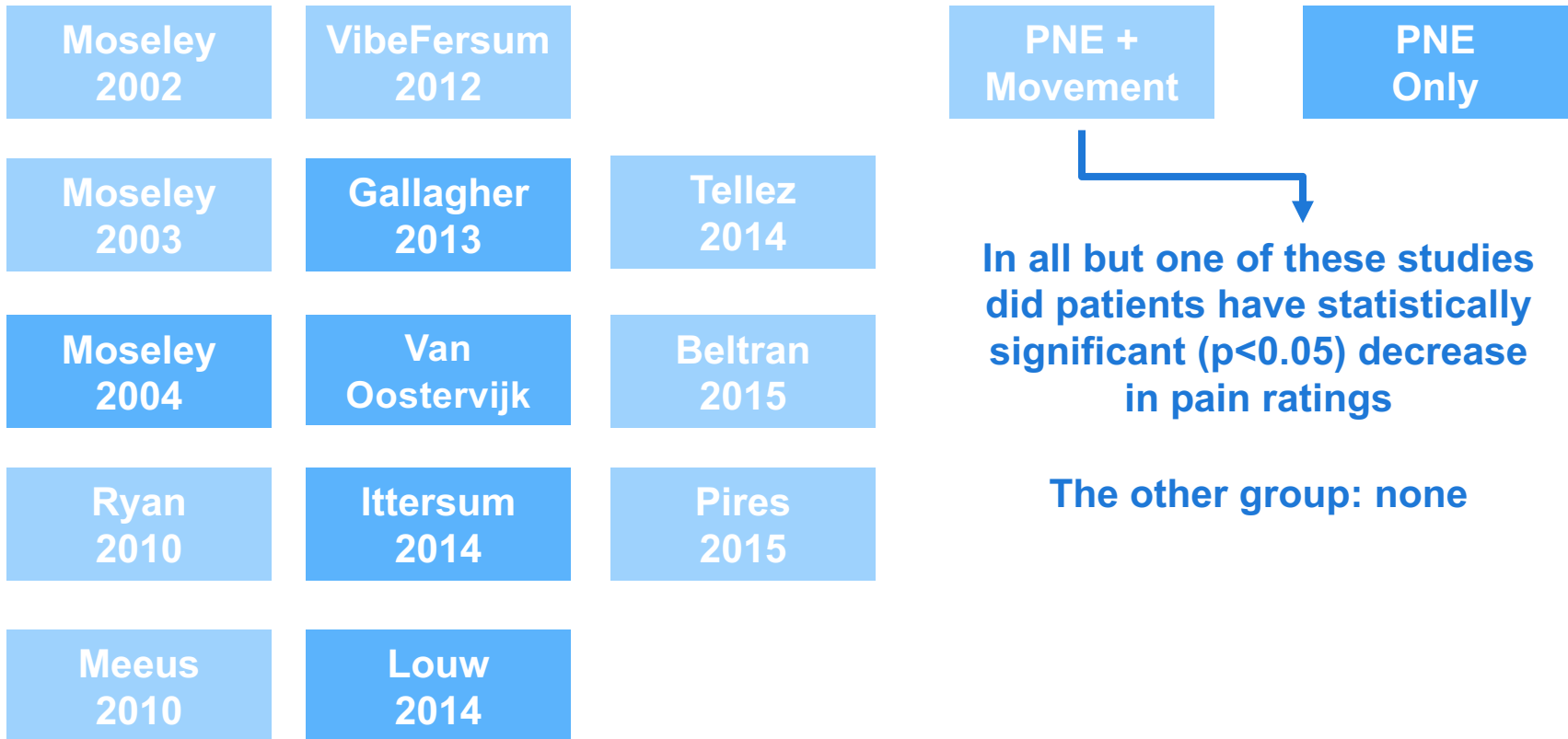
- Acute care
- Perioperative
- Emergency and urgent care departments
- Schools
- Sports medicine
- Etc.



# Chapter Eight

Beyond PNE: Motion is Lotion

# PNE Review: Very Important Finding



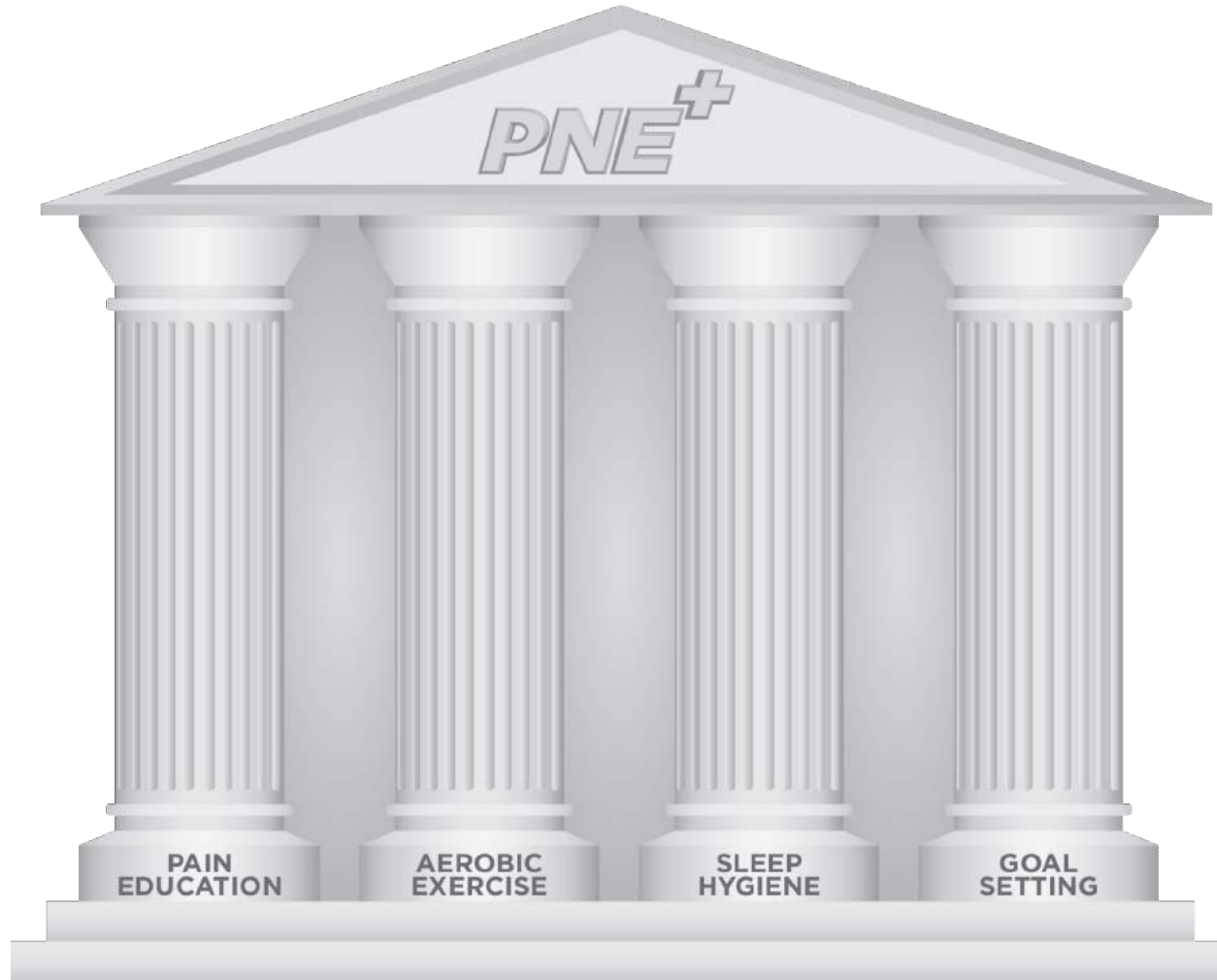
# PNE Review: Very Important Finding

(cont.)



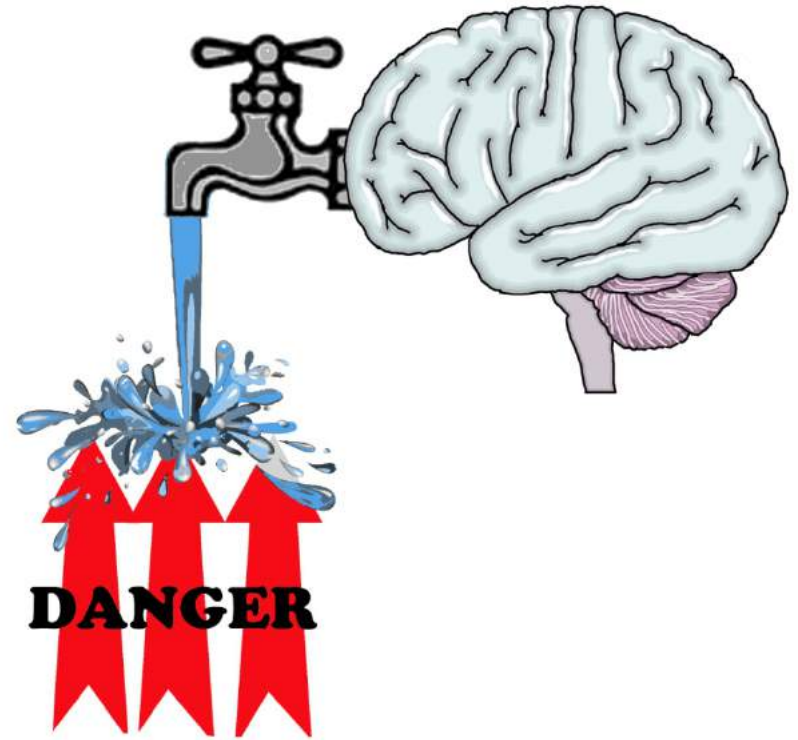
# PNE Review: Very Important Finding

(cont.)



# Movement is the Biggest Pain Killer on the Planet

A six mile run stimulates endorphin release that is equivalent to 10 mg of morphine



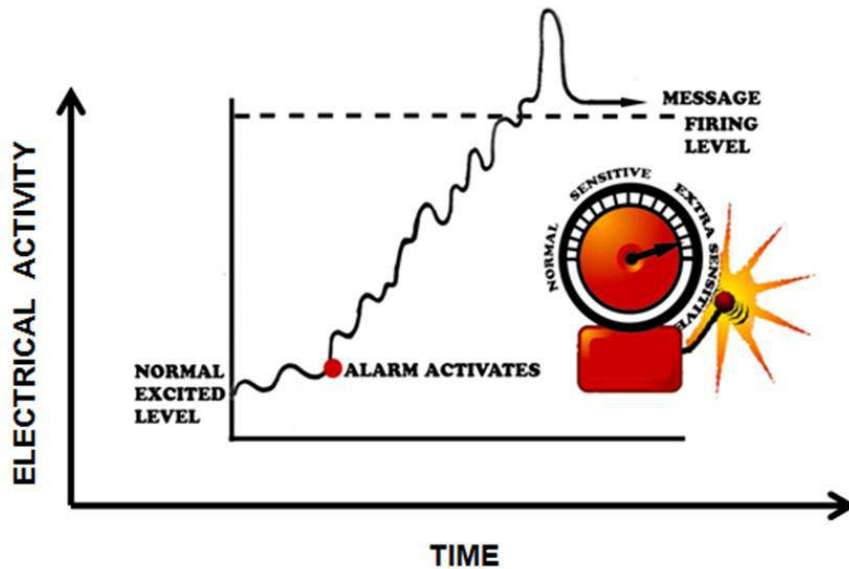
# Movement is the Biggest Pain Killer on the Planet (cont.)

There are thresholds for both the intensity (**over 50%  $\text{Vo}(2)\text{max}$** ) and duration (**over ten minutes**) of exercise required to elicit exercise analgesia



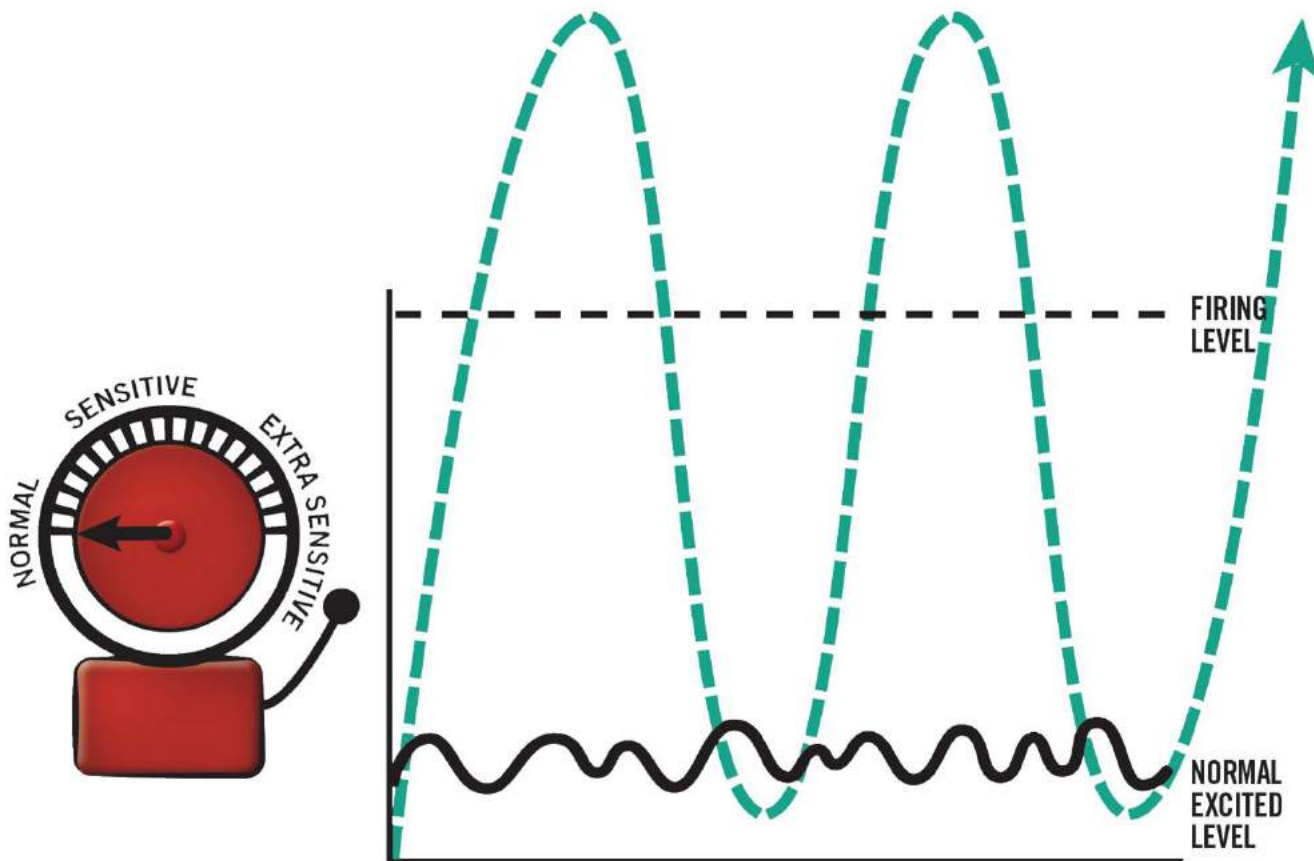
# Exercise, Pain, and PNE

“...But I hurt when I move”



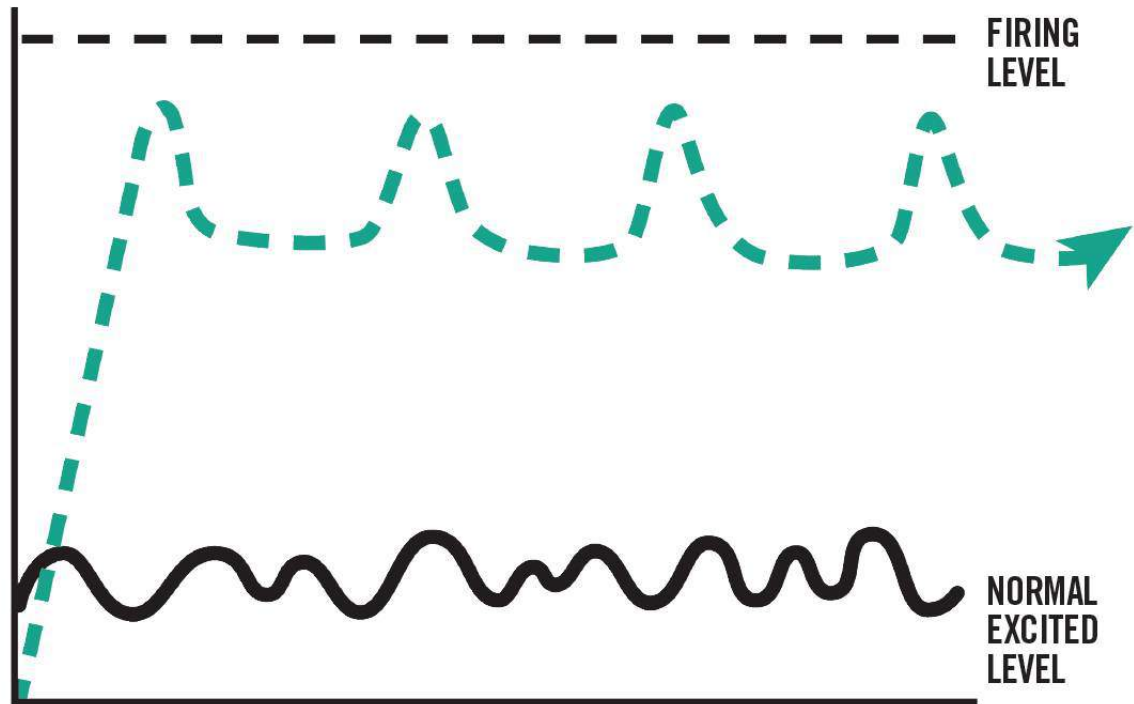
# Exercise and Pain

“No pain, no gain”



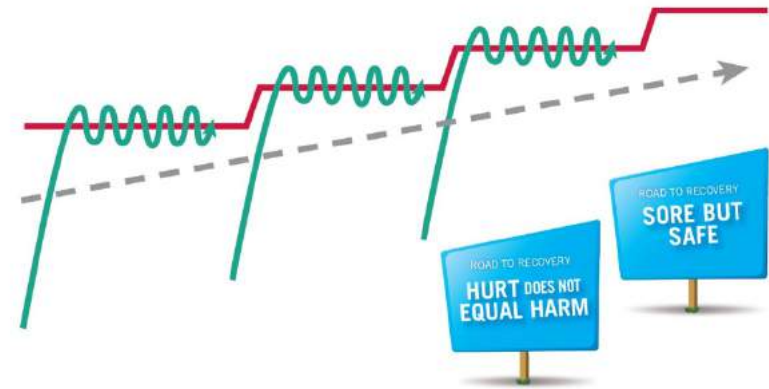
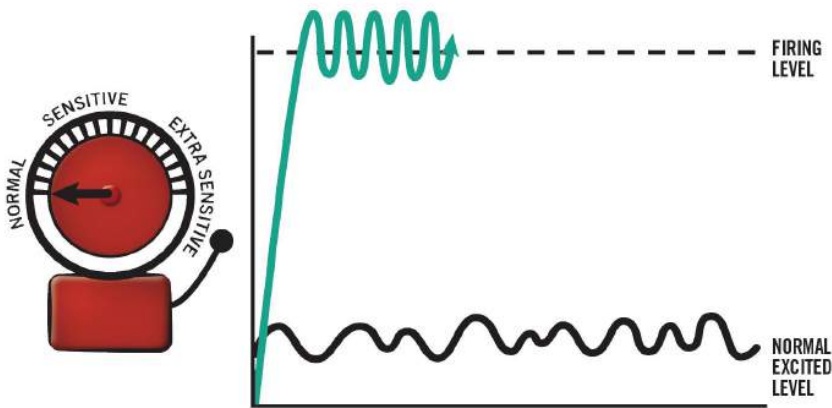
# Exercise and Pain (cont.)

“If it hurts, don’t do it”



# Exercise and Pain: The Answer?

“Tease it, touch it, nudge it”



# Exercise Metaphors

Pacing and graded exposure



# Exercise Metaphors (cont.)

## Pacing and graded exposure



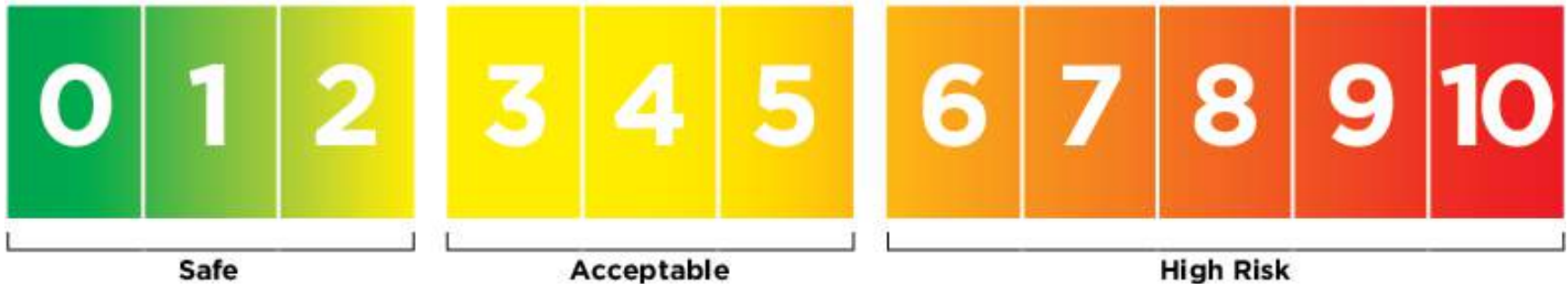
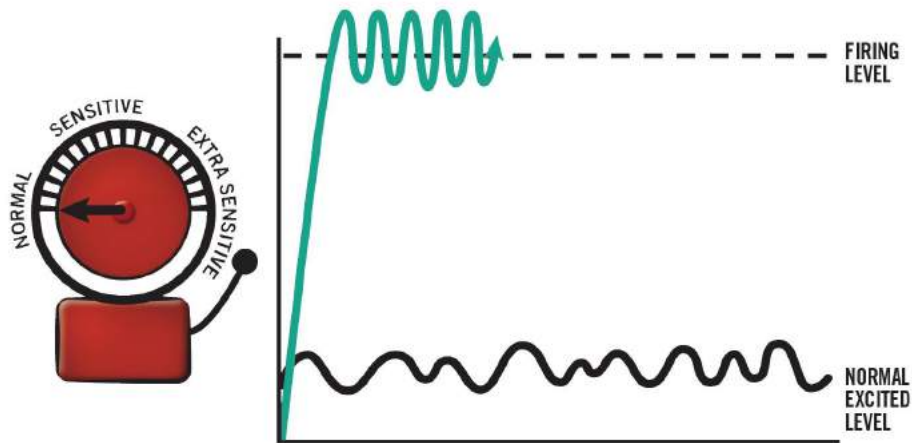
# Exercise Metaphors (cont.)

## Pacing and graded exposure



# Pain and Exercise

## Pain Acknowledgement Scale



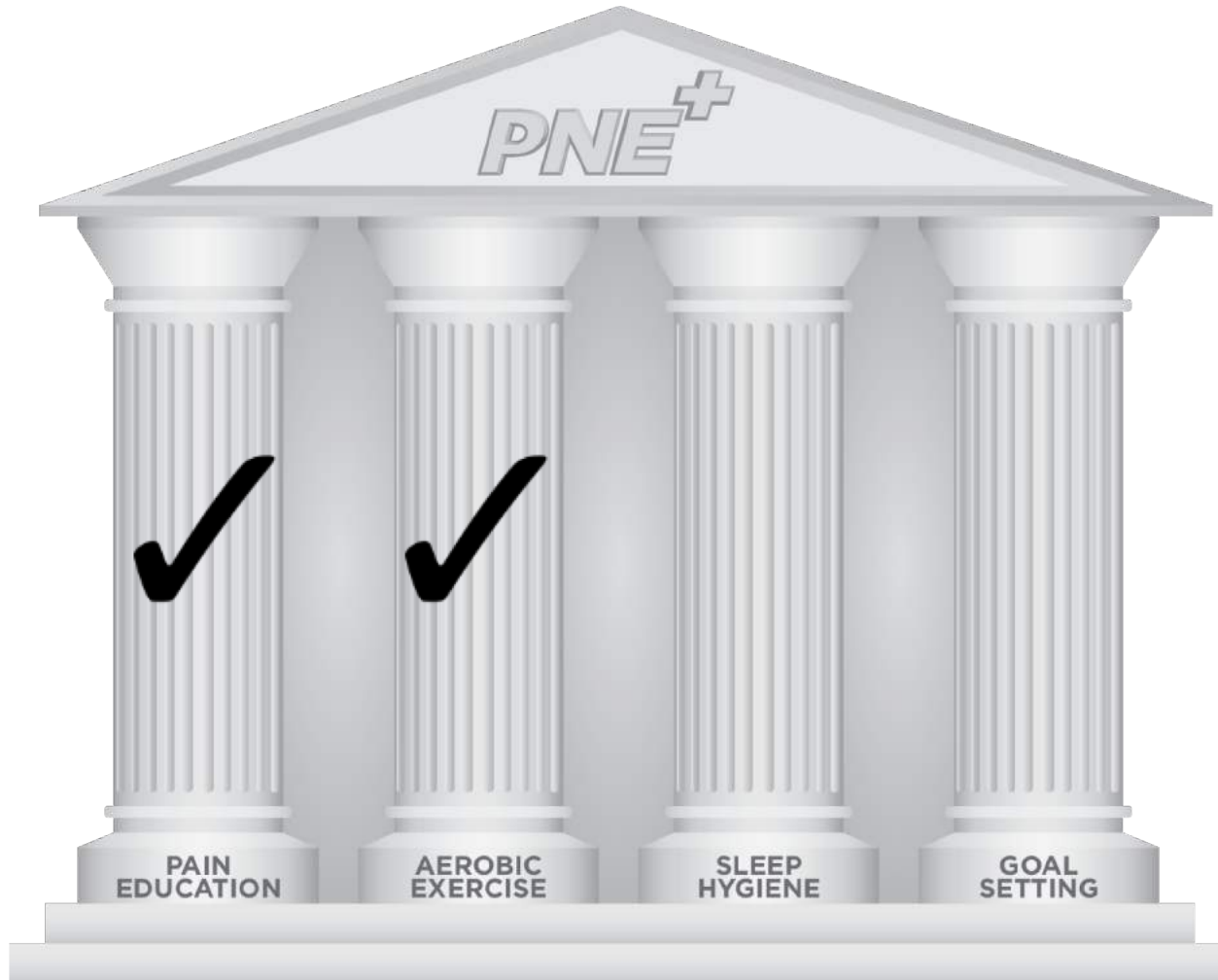
# Helpful Strategies to Consider

- Exercise log book
- No more than five exercises for home exercise program
- Educate **and** exercise (sell it, explain it)
- Make it personal
- Keep instructions simple
- Low cost equipment
- Write it out/plan it
- Accountability

# Chapter Nine

## Beyond PNE: Building a Comprehensive Pain Program

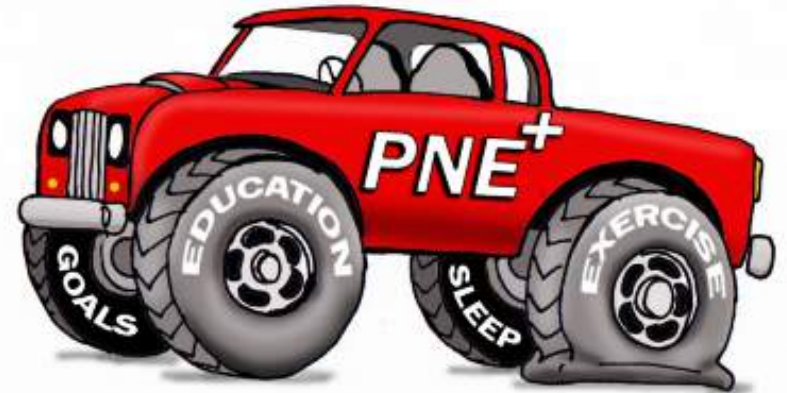
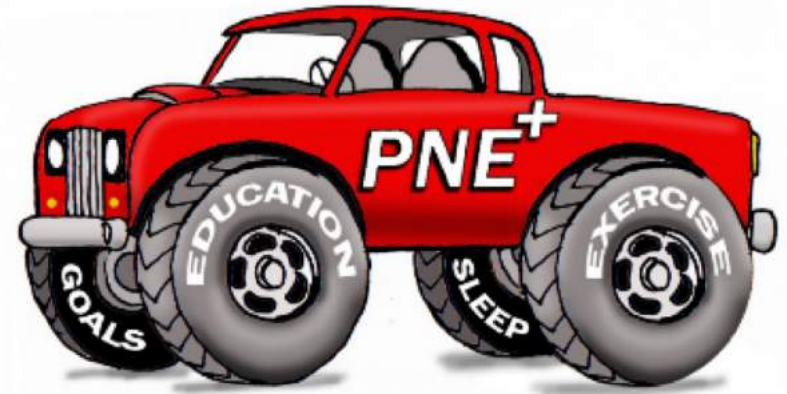
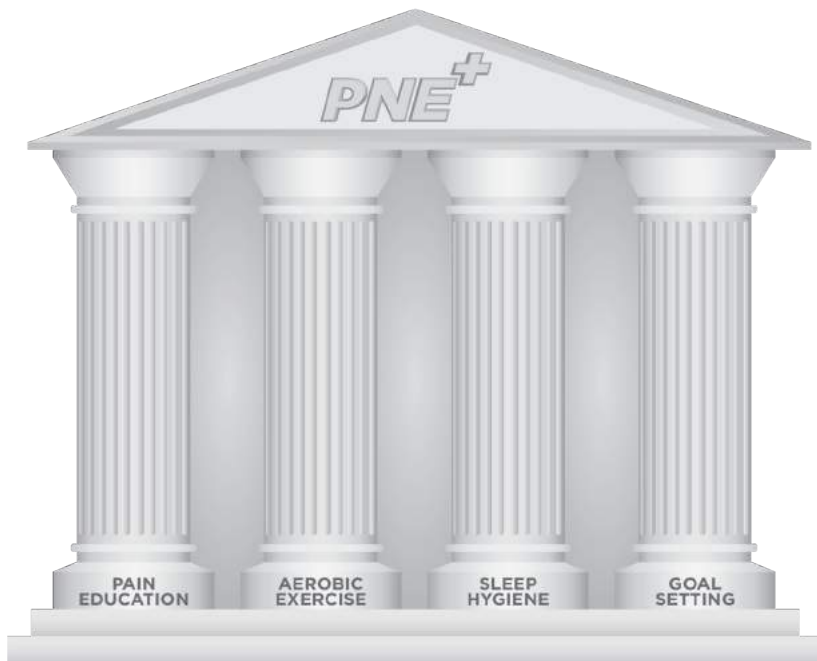
# Building a Comprehensive Pain Program



# Beyond PNE



# Beyond PNE (cont.)



# PNE+



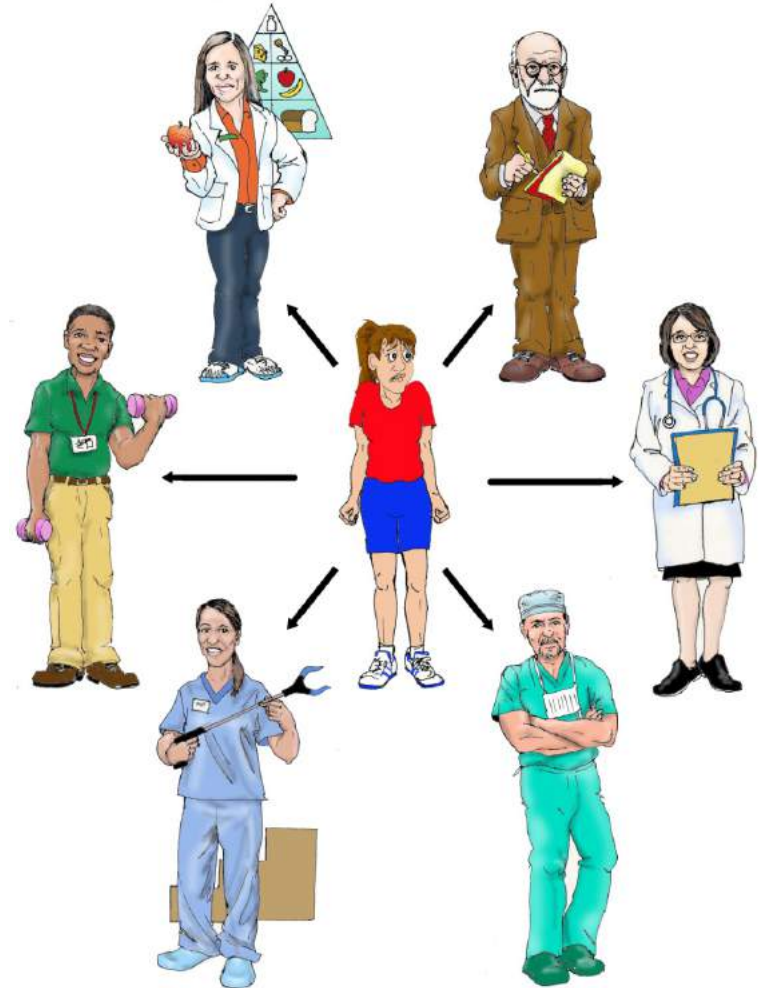
- Manual therapy
- Soft tissue treatment
- Aquatic therapy
- Modalities
- Diet
- Meditation
- Relaxation
- Mindfulness
- Breathing
- Pilates
- Yoga
- Social interaction
- Humor
- Spirituality
- Other

# Current Best-evidence

- Minimize the number of treatments and contacts with medical personnel
- **Consider multidisciplinary management\***
  - No single profession has the answer (especially chronic pain)
  - No single approach has the answer (especially chronic pain)
- Manage identified and relevant physical dysfunctions
- Assess and assist recovery of general physical fitness
- Assess the effects on the patient's creative outlets

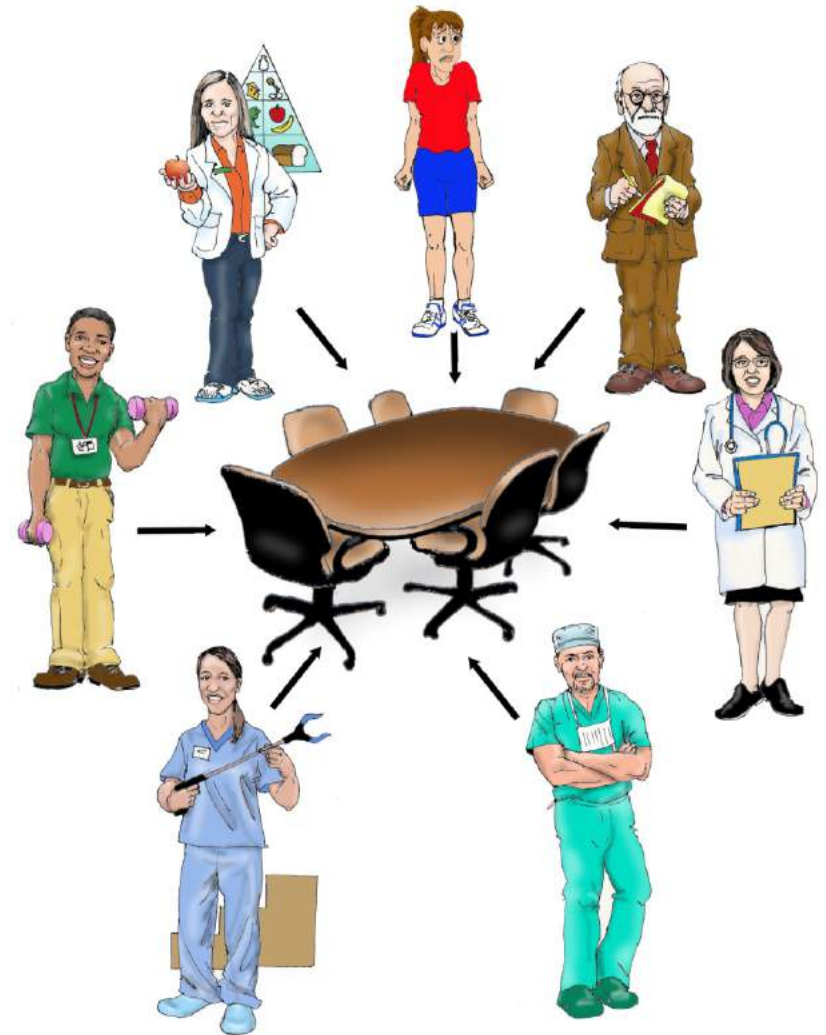
# Multidisciplinary

- Utilize the skills and experience of individuals from different disciplines, with each discipline approaching the patient from their own perspective
- Involves separate individual consultations
- Common for team to meet regularly, in the absence of the patient, to “case conference” findings and discuss future directions for the patient’s care



# Interdisciplinary

- Integrate separate discipline approaches into a single consultation
- The patient-history taking, assessment, diagnosis, intervention and short- and long-term management goals are conducted by the team, together with the patient, at the one time
- The patient is intimately involved in any discussions regarding their condition or prognosis and the plans about their care



# Healthcare Reform

Inexpensive, easy-accessible, movement-based, bio-psycho-social, patient-centered approaches has nothing to lose and all to gain

# Summary

- Pain is normal
- Living in pain is not
- Pain is not an accurate reflection of the health of our tissues
- PNE needs physical/behavioral treatments
- Motion is lotion
- Neuroplasticity means **hope**
- **Know pain, know gain**

# Break

# Q&A

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*The "How-To" of Teaching Patients About Pain*

Adriaan Louw, PT, PhD, CSMT

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2. Louw A, Zimney K, Johnson EA, Kraemer C, Fesler J, Burcham T. De-educate to re-educate: aging and low back pain. *Aging Clin Exp Res*. Mar 09 2017.
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