

PainWeek®



Life Hacks

to Teach Chronic Pain Patients

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Disclosure

- I have no actual or potentially relevant conflict of interest in relation to this activity
- I am not a psychologist, just a pharmacist and an educator wishing to do more for patients in pain

life hacks

Can't whistle? Whisper the letter Q out loud while you change the shape of your lips and the pressure of your blowing. You'll be able to do it within minutes!

#597

1000LifeHacks.com

Learning Objectives

At the completion of this presentation, participants should be able to:

- Recognize the impact that thoughts, emotions, and behaviors can have on the pain experience for individual patients.
- Describe the gate control theory of pain using simplified language for patients and caregivers
- Identify self-management tools (“life hacks”) that can be taught to patients, regardless of the setting



Pain Toolbox Feeling A Little Light?

- Opioid Use Discouraged
- Non-Opioids: Safe? Effective?
- Underinsured/Low Income
- Passive Patients
- Cure-Seeking Patients (Another Medication, Surgery)
- Dissatisfied Patients



Education is Free, Safe, and Effective!



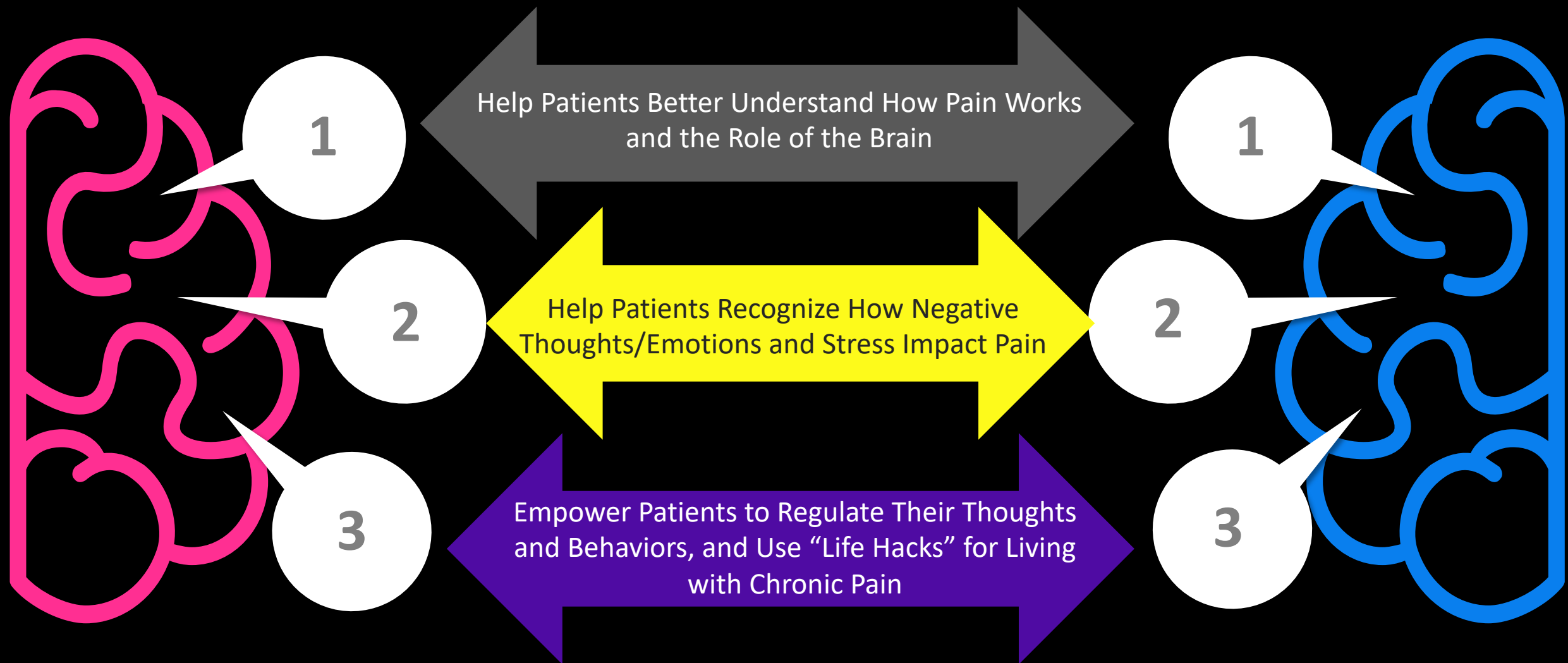
IDENTITY THEFT

“Disabled, Chronic Pain Patient”

Helping Patients Broaden Their Identity Can Result In:

- *Lower* perceived pain levels
- *Less* pain-related distress and depression
- *Less* avoidance of activities
- *Lower* levels of disability
- *Greater* daily function

First Steps Toward a New Identity



Cognitive Behavioral Therapy (CBT) in Chronic Pain:

- Evidence in Chronic **Non-Cancer** Pain
 - Cognitive-behavioral interventions reduce pain; increase coping responses, self-efficacy, and physical functioning (Gil et al, 1996; James, Thorn, & Williams, 1993; Johansson et al, 1998; Kropp et al 1997; Turner & Clancy, 1986; Turner & Jensen, 1993)
- Evidence in Chronic **Cancer** Pain
 - Education with CBT coping skills training and relaxation/imagery reduces pain and distress across different cancer diagnoses and treatments (Sheinfeld et al, 2012; Johannsen et al, 2013; Kwekkeboom et al, 2010; Tatrow & Montgomery, 2006; Syrjala et al, 1995; Bennett et al, 2009; Marie et al, 2013)

J Clin Oncol 2014; 32:1703-1711

Thorn BE. *Cognitive Therapy for Chronic Pain: A Step by Step Guide*. 2nd ed. NY, NY: The Guilford Press; 2017

No Psychologists or CBT resources in your workplace?

■ Self-help CBT books

- Margaret Caudill’s “Managing Pain Before It Manages You”
- Lefort et al “Living a Healthy Life with Chronic Pain”
- Beverly Thorn’s “Cognitive Therapy for Chronic Pain: A Step-by-Step Guide” (for practitioners)
- Richard Wanlass’s “Bouncing Back: Skills for Adaption to Injury, Aging, Illness, and Pain”



■ Community-based or online pain self-management programs

- <https://www.selfmanagementresource.com/programs/small-group/chronic-pain-self-management/> (Stanford Patient Education Research Center)
- <http://www.eblcprograms.org/evidence-based/map-of-programs> (directory of community self-management programs)
- <https://www.selfmanagementresource.com/programs/online.programs/> (online group workshops)

■ Incorporate cognitive-behavioral approaches into scheduled medical visits?

- Utilize nursing, pharmacist, social worker colleagues
- Learn some quick “life-hacks” today



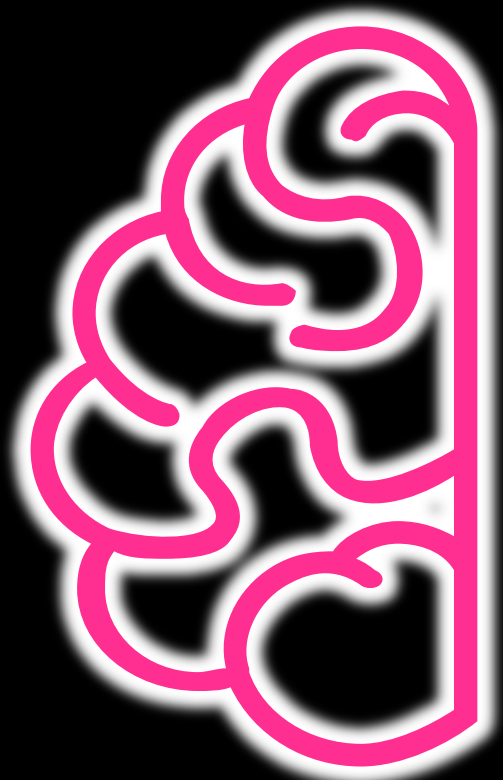
The Brain in Pain



“Clinician-Speak”

“Patient-Friendly”

Central Nervous System and Pain



- Neuronal plasticity: “the capacity of neurons to change their structure, their function, or even their chemical profile”

Woolf CJ, Salter NW. *Science* 2000; 288: 1765-1769

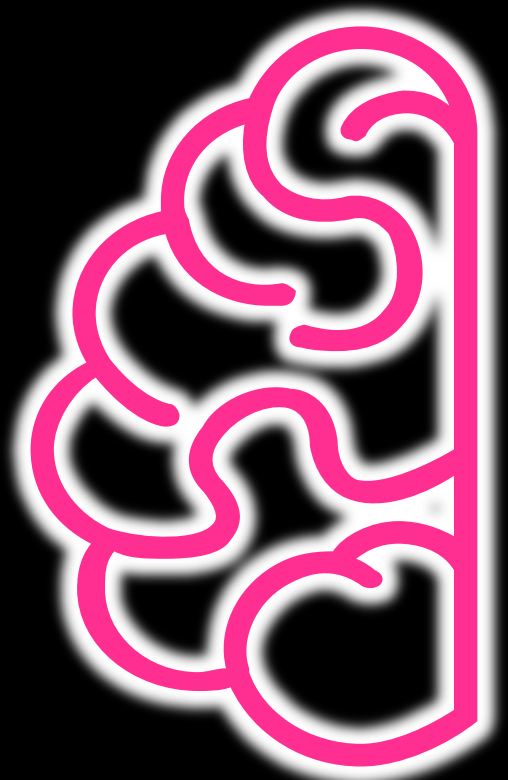
- Chronic pain: “the consequence of plastic changes in cortical-limbic circuitry, leading to new learning and to memory formation that are continuously reinforced”

Mansour AR, et al. *Restorative Neurology and Neuroscience* 2014; 32: 129–139

- Treatment: “ideally, pharmacologic, physical, and/or psychological approaches should reverse the reorganization accompanying chronic pain.”

McCarberg B, Peppin J. *Pain Med* 2019 Mar 13 doi: 10.1093/pm/pnz017

Influence of Cognitive and Emotional Factors on Pain



- “Negative treatment expectation interfered with the analgesic potential of remifentanyl to the extent that the effect of this potent analgesic was completely abolished.”

Sci Transl Med 2011 Feb 16;3(70):70ra14

- “A number of reports show that pain is perceived as less intense when individuals are distracted from the pain”

Pain 2002; 95:195–199.

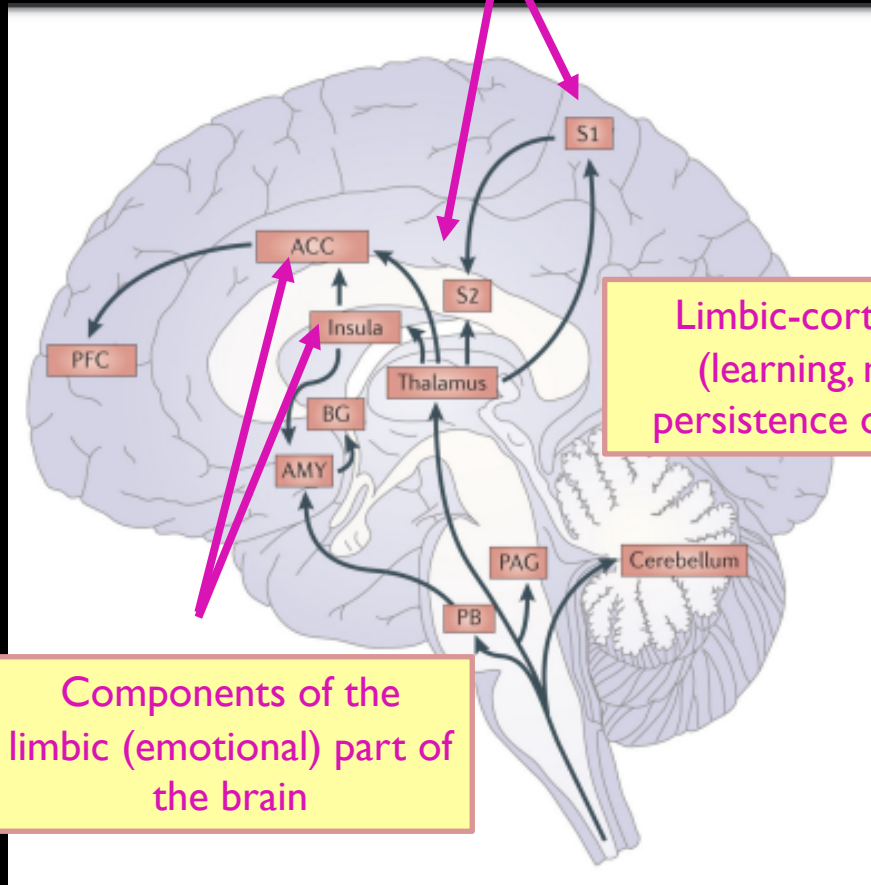
- Separate from attention, “our emotional state also has an enormous influence on pain; a negative emotional state increases pain, whereas a positive state lowers pain”

- “What makes pain ‘pain’ is usually the affective component of the experience — that is, how unpleasant it is.”

Nat Rev Neurosci 2013; 14(7): 502–511.

Influence of Attention and Emotion on Pain Processing

Somatosensory cortices (S1, S2)
encode the sensory features:
duration/location

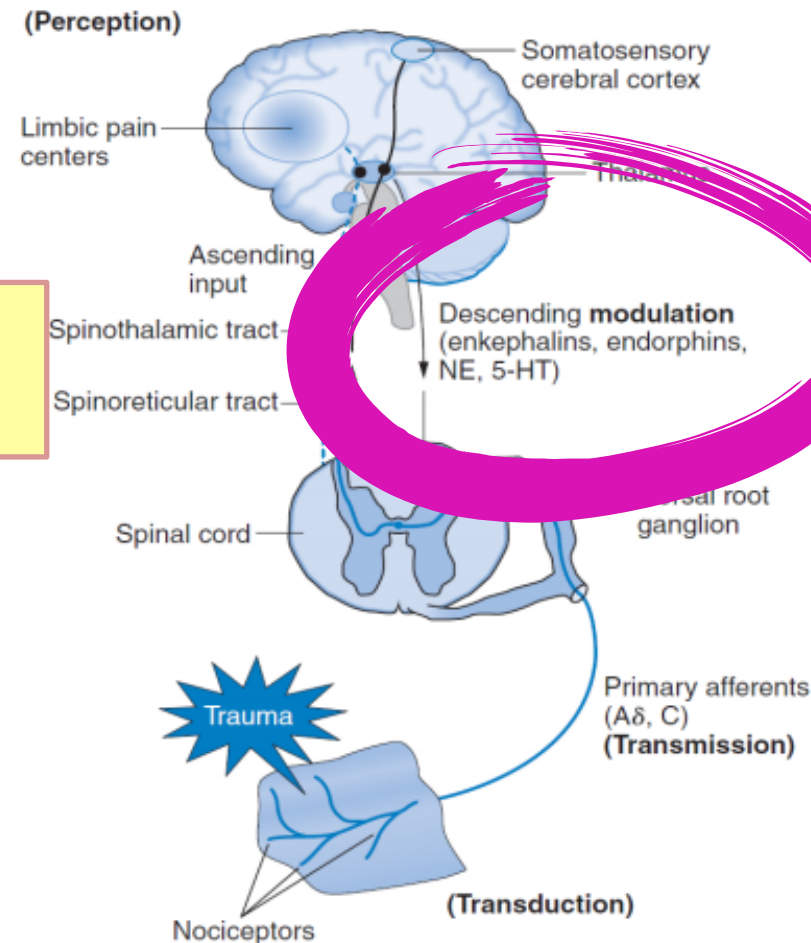


Limbic-cortical plasticity?
(learning, memory, and
persistence of chronic pain)

Components of the
limbic (emotional) part of
the brain

Adapted/Translated by permission from Springer Nature. Figure 2.
Bushnell MC, Ceko M, Low AL. *Nat Rev Neurosci* 2013; 14(7):502-511

PFC, prefrontal cortex
PAG, periaqueductal grey
ACC, anterior cingulate cortex



Involve descending
projections from PAG
Outputs from ACC, PFC,
and amygdala reach the
PAG

Suggests that descending
modulation could be
influenced by
psychological factors

Used with permission from Wolters Kluwer Health, Inc.: [Zeind
CS, Carvalho MG, *Applied Therapeutics*, WK Health Book, 2017]
Restorative Neurology and Neuroscience 2014; 32: 129-139

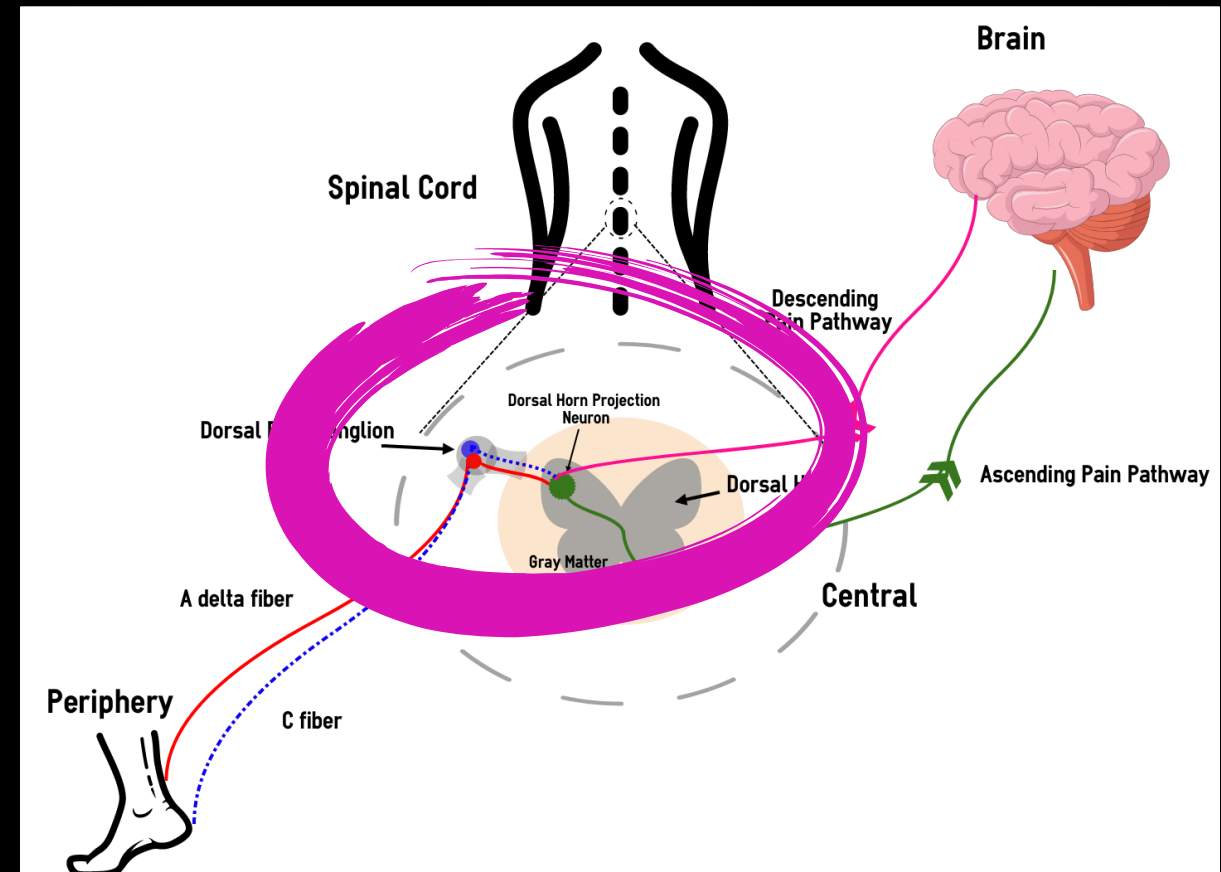
Pain Med 2019 Mar 13. pii:
pnz017. doi: 10.1093/pm/pnz017

Nat Rev Neurosci 2013;
14(7): 502-511

Pain 2002; 95:195-199.

Gate Control Theory (Melzack & Wall, 1965)

- Hypothesis of a “gating mechanism” in the substantia gelatinosa (SG) of the dorsal horn that can modulate pain signals reaching the somatosensory cortex.
 - Inhibitory interneurons in the SG act as the gate
- CNS can increase or decrease the pain experience by changing the sensory input gaining access to the somatosensory cortex.
- Proposes that higher brain centers for emotion and cognition can activate descending pain pathways



Annu Rev Psychol 2005. 56:601–30

Thorn BE. *Cognitive Therapy for Chronic Pain: A Step by Step Guide*. 2nd ed. NY, NY: The Guilford Press; 2017

Gate Control Theory of Pain



“A fortunate aspect of our publication in 1965 is the use of the phrase ‘gate control.’ It evokes an image that is readily understood even by those who do not grasp the complex physiological mechanisms on which the theory is based.”

-Melzack and Wall



Gate Control Theory of Pain

Opens the “Gate”

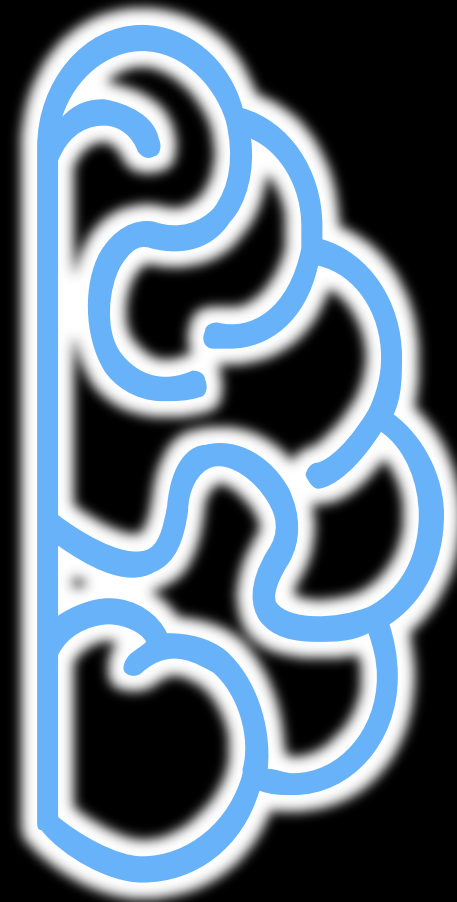
- Nociceptive information that reaches a threshold that exceeds inhibitory capacity of the interneurons

Closes the “Gate”

- Large-fiber activity inhibits (or closes) the gate
 - Non-pain sensory input (touch, pressure, temperature)
- Activity from descending fibers projecting to the dorsal horn that originate from supraspinal regions
 - Emotions and thoughts can influence pain signal transmission

Explain the Brain and Pain to Patients using the Gate Analogy

- Let's say you hit your elbow, the “funny bone.”
- The pain signal from your hurt elbow moves along nerve fibers and reaches the spinal cord before eventually going to the brain.
- In the spinal cord, pain signals have to pass through a “type of gate” in order to get to the brain.
- When the gate is open, the pain signal from your hurt elbow goes to the brain, and you feel pain.
- When the gate is closed or partially closed, the pain signal cannot get to the brain. As a result, you feel minimal or no pain. In other words, pain signals must reach the brain for you to feel pain.
- The gate can be opened or closed by many things, including by the brain itself.



Explain the Brain and Pain to Patients using the Gate Analogy

- When the pain signal reaches the spinal cord, natural pain fighting molecules like endorphins, noradrenaline, and serotonin are sent from the brain down to the spinal cord to try to reduce or block the pain signal. Or in other words, these brain messages try to close the “gate” in the spinal cord.
- When we have negative emotions and thoughts and expect the worst, our brains have a difficult time sending out the pain fighting molecules to the spinal cord to help shut the gate. So the gate opens wider, allowing pain signals to pass through.
- When we are tense and stressed, hormones in our bodies like cortisol become revved up and also hold the gate open for pain signals to pass through.



Explain the Brain and Pain to **Patients** using the Gate Analogy

- Fortunately, there are many things help to close the gate:
 - **Positive mood and thoughts**
 - Pleasurable activities
 - Humor
 - **Adequate Rest**
 - **Pacing Activities**
 - **Relaxation, deep breathing**
 - **Distraction**
 - Heat and Cold
 - Massage



The Permanente Journal 2005; 9 (4): 9-18

LeFort SM, ed. *Living a Healthy Life with Chronic Pain*. Boulder, CO: Bull Publishing Co.; 2015

Telephone Cable Analogy for Distraction

- Nerves are like “telephone cables”
 - Both can carry many types of signals and calls
 - But the total number of calls at any given time is limited
-
- Everyday Examples:
 1. Our natural instinct when we hit our elbow is to rub it
 - i. The rubbing/pressure sensation competes with the pain signal
 2. Many dentists have televisions in the treatment rooms
 1. Watching a TV program during a dental procedure distracts your attention away from the pain



LeFort SM, ed. *Living a Healthy Life with Chronic Pain*. Boulder, CO: Bull Publishing Co.; 2015

The Permanente Journal 2005; 9 (4): 9-18

Hadjistavropoulos, ed. *Pain Management for Older Adults: A Self-Help Guide*. 2nd ed. Washington, DC: IASP Press; 2019

Distraction/Attention Re-focusing for *Short Painful Times*

- Make plans for what you will do after the painful activity passes
 - If climbing stairs are uncomfortable, think about what you will do when you get to the top
- Think of person's name or object, etc for each letter of the alphabet
- Try to remember words to favorite songs
- Redirect your attention to something pleasurable:
 - Look outside at something in nature
 - Try to listen and identify all the sounds around you
 - Smell a sweet or pungent odor
 - Massage your hand



The “STOP!” Technique



If you are stuck in an endless trap of repeating negative thoughts and worry...

Slap your hand on the table or your thigh and...

Shout “**Stop!**”

(Just whispering “Stop” or mouthing “Stop” will also often work)

Visualizations for Transforming Thoughts about Pain and Associated Symptoms

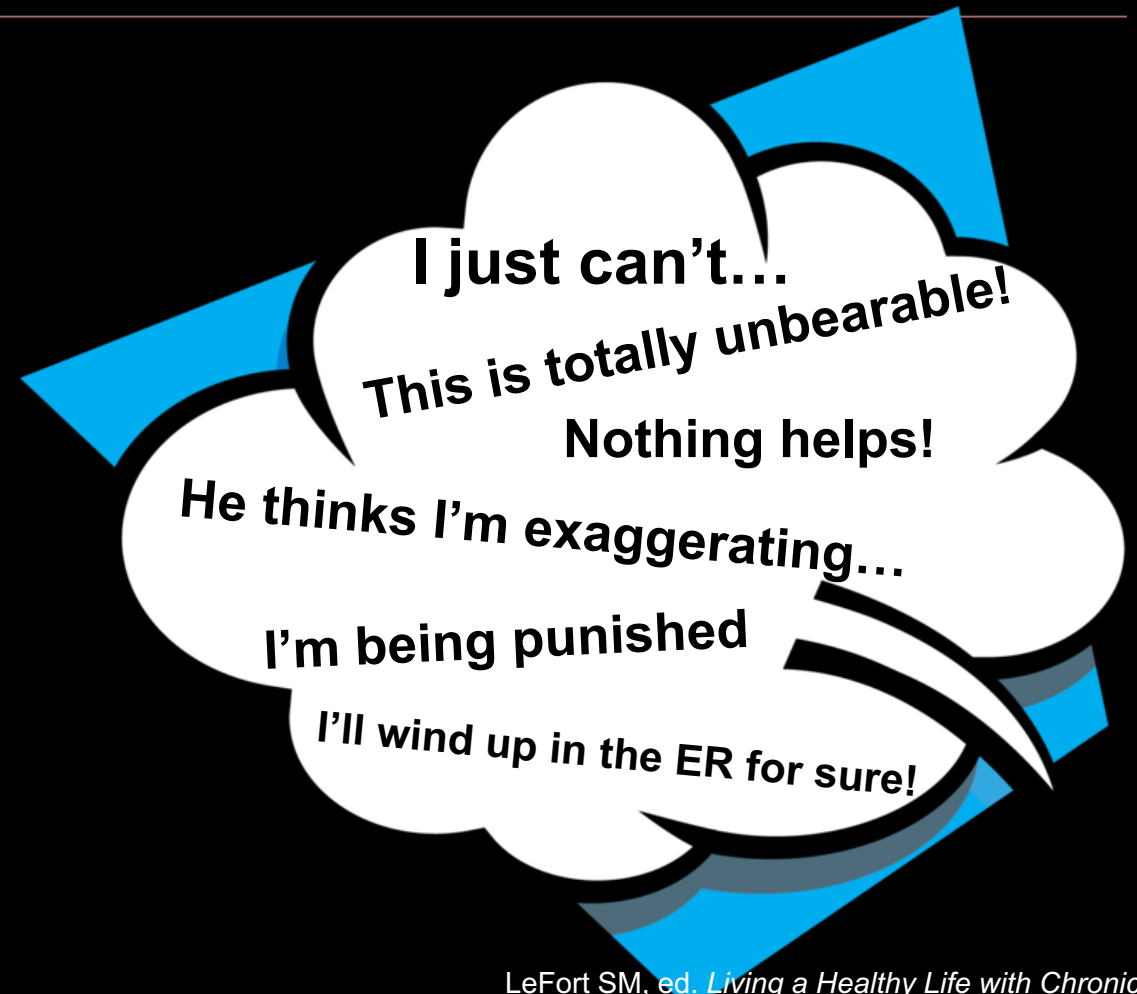
For Pain	For Pain Associated with Treatments	For Tension and Stress	For Depression
Use a TV remote control to turn down the pain volume until you can barely hear it, then it disappears completely	Before a needle stick: put on your “magic glove” that protects your hand from pain	A tight, twisted rope slowly unravels	Your troubles and sadness are tied to a big, colorful helium balloon float and float off into the big blue sky
A cool, calm river flows over your body, washing away the pain	A healing, radiant white light dissolves the discomfort. As the light leaves, you feel warm and relaxed.	Hard wax softens and melts	A strong, warm sun breaks through dark clouds
Your pain is put in a large metal box and locked with a huge padlock and is placed on ship heading out to sea		Tension swirls out of your body and down the drain	You feel a sense of lightness and detachment, allowing you to float easily through your day



Thoughts and Self-Talk

Negative Self-Talk

- What is “Self-Talk?”
 - We talk to ourselves, all the time
 - A constant stream of comments in our heads
 - Impact on our mood, self-esteem, and attitude
- Negative Self-Talk
 - Self-defeating thoughts
 - Opens the pain gate and makes pain worse
 - Focuses our attention on the pain
 - Makes other symptoms worse



LeFort SM, ed. *Living a Healthy Life with Chronic Pain*. Boulder, CO: Bull Publishing Co.; 2015, p.84

Thorn BE. *Cognitive Therapy for Chronic Pain: A Step by Step Guide*. 2nd ed. NY, NY: The Guilford Press; 2017

Identifying Negative Thoughts and Creating New Ones

- Examining the “untrue” parts of our thoughts
 - Think of a garden with flowers and weeds
 - Remove the weeds and leave the flowers
- Remove the “red flag” words (the weeds)
 - “never”
 - “always”
- Remove “worst-case” scenario predictions
- Think about how you would respond if friend/family member made critical statements about themselves



LeFort SM, ed. *Living a Healthy Life with Chronic Pain*. Boulder, CO: Bull Publishing Co.; 2015, p.84

Thorn BE. *Cognitive Therapy for Chronic Pain: A Step by Step Guide*. 2nd ed. NY, NY: The Guilford Press; 2017

Wanlass R. *Bouncing Back: Skills for Adaption to Injury, Aging, Illness, and Pain*. NY, NY: Oxford Press, 2017.

The Thought Stopper



If you find it hard at first to change negative thoughts into positive ones...

Use a **thought stopper** as a shortcut to replace your negative thought

(this can be anything meaningful to you—a mental image of a puppy, a beautiful sunrise, a grandchild—or a positive affirmation such as “I can do this” or “I’m a good person.”)



Relaxation

Stress-Pain Connection

- The Biological Response to Stress (“Fight or Flight”):
 - Adrenaline and other hormones released into the blood stream (from the sympathetic nervous system)
 - Increase in Blood Pressure, Heart Rate, and Rate of Breathing
 - Decrease in Digestive Processes
 - Body is put into what should be a *temporary* overdrive
- Ongoing response instead of a short-lived one
- Chronic pain is an ongoing stressor
- Negative thoughts/emotions about pain also worsen stress level
 - → worsen pain



The stress “thermostat” in chronic pain is more sensitive = more easily stressed

Caudill MA. *Managing Pain Before It Manages You*. 4th ed. NY, NY: The Guilford Press; 2016

Thorn BE. *Cognitive Therapy for Chronic Pain: A Step by Step Guide*. 2nd ed. NY, NY: The Guilford Press; 2017

The Relaxation Response: Resetting the “Stress Thermostat”

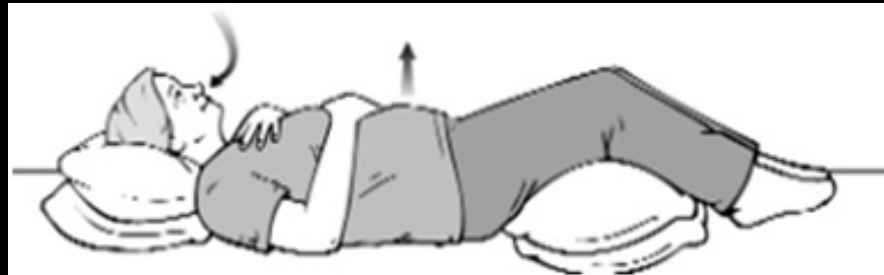
- AKA the “Rest-and-Digest” Response
 - Heart Rate and Blood Pressure decrease
 - Breathing slows and becomes deeper
 - Blood Flow to the digestive system increases
- The Relaxation Response closes the pain gate and calms the nervous system



Portable Relaxation Tools

Diaphragmatic Breathing, aka “Belly Breathing”

- During the stress response, we “chest breathe” at the top of our lungs (swallow, often more rapid breaths)
- Recall how a baby breathes: stomachs move with every breath
- DIY Belly Breathing:
 - Place one hand on your belly and one hand on your chest
 - With your eyes closed, imagine a balloon inside your abdomen
 - When you breathe in, Intentionally inflate the belly more than the chest and imagine a balloon filling with air
 - With exhalation, feel the belly go back in as you imagine the balloon collapsing



Caudill MA. *Managing Pain Before It Manages You*. 4th ed. NY, NY: The Guilford Press; 2016

Thorn BE. *Cognitive Therapy for Chronic Pain: A Step by Step Guide*. 2nd ed. NY, NY: The Guilford Press; 2017

Free Relaxation Audio and Breathing Exercises

The American Chronic Pain Association

<https://www.theacpa.org/pain-management-tools/relaxation-audio/>

Quieting Reflex



Relieves muscle tightening, tension, and breath holding...

1. Become aware of the short-term stressor
2. Repeat to yourself, “**alert mind, calm body**”
3. Smile both with your eyes and your mouth
4. Inhale slowly, counting to three and imaging that the breath is coming in through the very bottoms of your feet
5. Exhale slowly, feeling your breath move down your legs and then out through the feet.
6. Allow your tongue, jaw, and shoulders to go limp.

Sleep

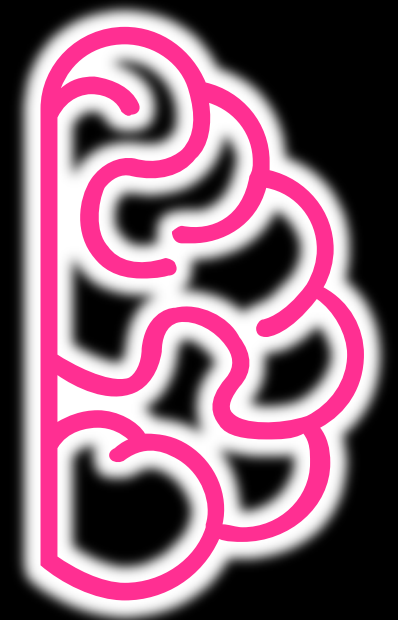
- Impaired sleep is associated with lower pain tolerance
- Sleep quality may predict the pain severity the next day
- Improving sleep habits is a key step in managing pain
- **Some sleep tips *that you may not have heard of*:**
 - Keep painful knees warm (cut the toes off of socks and wear the socks as sleeves on your knees)
 - Don't eat or drink alcohol before bed
 - Afford smoking before bed and consider removing nicotine patches at bedtime
 - Avoid sleeping pills (concern with concurrent use of opioids, risk of falls, and rebound insomnia)
 - Avoid blue light before bed (TV, cell phones) and get out in the sun every morning—regulate sleep/wake cycle
 - Do the same thing every night before bed
 - To avoid worries at night, set aside a “worry time” earlier time during the day and write down worries

The image features a central grey rectangular banner with the word "Acceptance" in white. This banner is flanked by two vertical decorative elements. On the left is a pink scrollwork design, and on the right is a blue scrollwork design. Both designs consist of a vertical line with intricate, swirling patterns extending from it. The entire composition is set against a solid black background.

Acceptance

Acceptance and Commitment Theory (ACT)

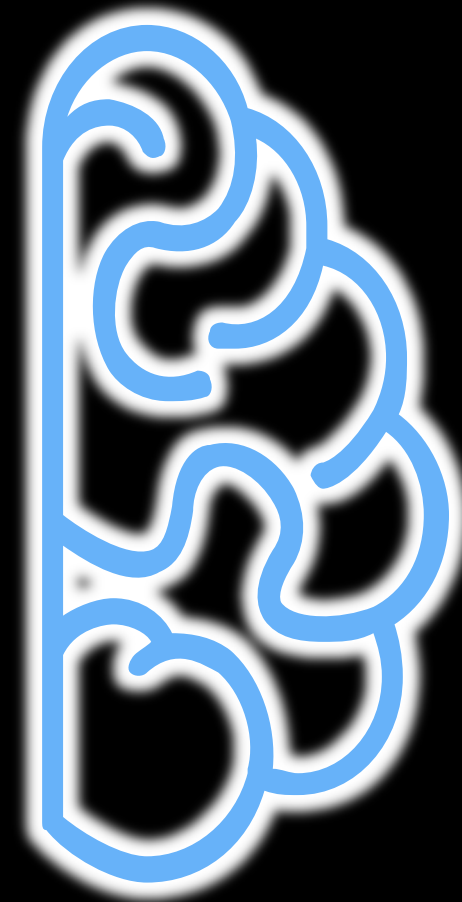
- Psychological intervention for chronic pain that focuses on increasing the patient's acceptance of their pain
 - acceptance is not the same as “giving up”
 - Acceptance of pain = “willingness” to live best life *with* pain
- Patients who are more accepting of their pain are less likely to catastrophize about their pain
- Major components
 1. First, acknowledge the pain
 2. Then stop focusing on getting rid of the pain
 3. Instead, focus on *living* with the pain



Acceptance and Commitment Theory (ACT)

- For patients, can explain as:
- **A**: Accept (“accept your pain, instead of fighting it”)
- **C**: Choose (“choose how you want to live”)
- **T**: Take Action (“take back your life”)

Serenity Creed: *Grant me the courage to change the things I can, the serenity to accept the things I cannot change, and the wisdom to **know the difference**.*



Knowing the difference, continued...

- Explain to patients the difference between acute and chronic pain

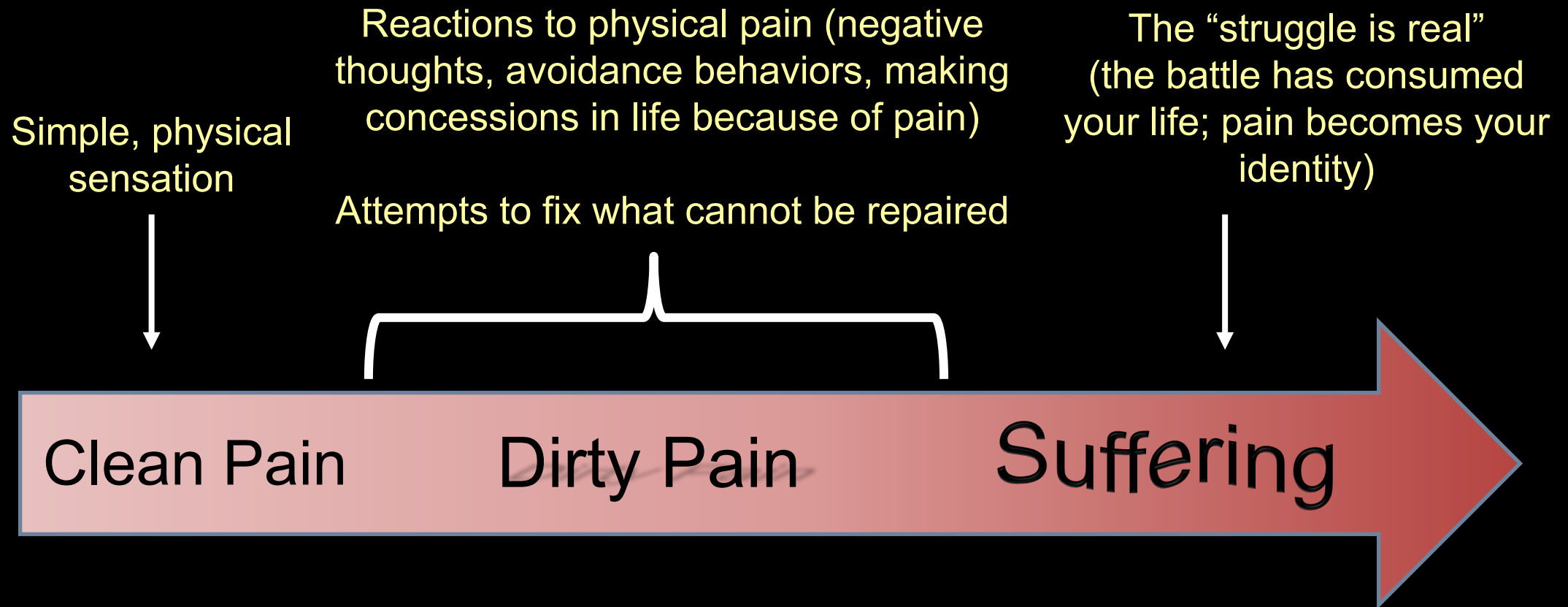
	Acute Pain	Chronic Pain
Duration	Short (time-limited)	Long term (continues past the usual time for healing)
Purpose	Survival (warns of danger, spurs us to action)	No survival value (no immediate danger)
Cause	Usually tissue damage with well-understood biological mechanisms	The brain is mis-interpreting nerve signals as danger (but body tissues have healed)
Emotional Response	Fear and anxiety occur but go away	Emotional feelings continue; chronic pain becomes a form of chronic stress
Treatment	Effective. Cure is common.	Goal: “calm the nervous system and retrain the brain”
Role of healthcare providers	Diagnoses and treat	Partners and teachers
Role of the pain patient	Follow treatments and advice	Become the primary manager of your pain (and partner with healthcare providers)

Knowing the difference...

- No exact relationship between the amount of injury/tissue/nerve damage or disease and the amount of pain felt
- Two people can have the same pain-producing stimulation but have completely different pain experiences
 - One may feel excruciating pain
 - The other may feel little pain or discomfort

Knowing the difference...

- Clean Pain vs Dirty Pain



Mindfulness

- Forming a different relationship with your thoughts
- Observe the present moment without judging it
 - With no intention of changing it or getting rid of it
 - Observe any bodily sensation, emotion, or thoughts, acknowledge them, and then let them pass
- Focuses on the present moment
 - Thoughts about the past or future can evoke a stress response now
 - Even if the current moment is filled with pain, being “present” has been found to reduce pain intensity and anxiety

Thorn BE. *Cognitive Therapy for Chronic Pain: A Step by Step Guide*. 2nd ed. NY, NY: The Guilford Press; 2017

Wanlass R. *Bouncing Back: Skills for Adaption to Injury, Aging, Illness, and Pain*. NY, NY: Oxford Press, 2017.

Dahl J, Lundgren T, eds. *Living Beyond Your Pain: Using Acceptance & Commitment Therapy to Ease Pain*. Oakland, CA: New Harbinger Publications, Inc, 2006.

Free Mindfulness Tools

- Free apps and training
 - <https://www.headspace.com/>
 - <https://insighttimer.com/>
- Free online training
 - <https://palousemindfulness.com/>





Getting the Most Out of the Visit

Teaching “Take PART” to Chronic Pain Patients

- Prepare
- Ask
- Repeat
- Take Action

Take PART: Prepare

Pain Profile

- **Prepare your pain profile**
 - When did the pain start?
 - Was there a specific cause?
 - Has the pain gotten worse or stayed the same?
 - Does it come in waves and then subside?
 - What does the pain feel like?
 - What makes it worse, what makes it better?
 - How severe is the pain (0-10)?
 - How is the pain affecting you (sleep, daily function, mood, social function, etc)
- **Increase your pain language vocabulary**
 - Throbbing, stabbing, burning, tingling, squeezing

Lists

- **Before every appointment, make a list of questions**
 - Star the most important questions if the list is long
 - Give the list to the provider at the beginning of the visit
- **List all of your medication and doses, including over-the-counter products**
 - If this is too difficult, bring all of your medications with you in a bag
- **Be prepared to report on how the new medication or dose change went (effectiveness, side effects)**
- **Be prepared to report any issues obtaining medications or if you didn't take them as prescribed**
 - Be honest and open about your medication taking behaviors and feelings

Take PART: Ask and Repeat

Ask

- Diagnosis
- Tests
- Treatments
- Follow-up

Don't be afraid to ask questions.

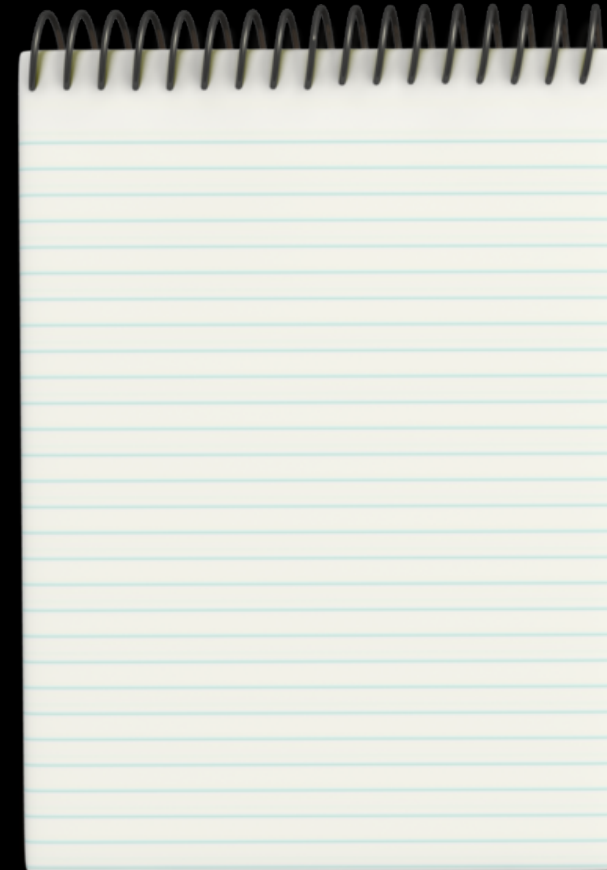
Repeat

- To ensure you understand, repeat back key points to the provider
 - This gives the provider a chance to correct any misunderstanding
- Take notes or bring someone with you to take notes
- If you misunderstand something or can't remember something, it is ok to ask to go over it again

Take PART: Take Action

Take Action

- Be sure you have any necessary instructions and appointments made before you leave the visit
- If you don't plan on following the advice or taking the medication, let the provider know
 - If providers know the barriers, we may be better able to help



Life Hack Show n' Tell



PainWeek®



Life Hacks

to Teach Chronic Pain Patients

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