

# Chronic Pain Management



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# Objectives



- Enhance awareness of the physical and psychological aspects of chronic pain within different pain models.
- Increase awareness of the differences between acute and chronic pain
- Increase familiarity with treatment options for chronic pain

# National Implications

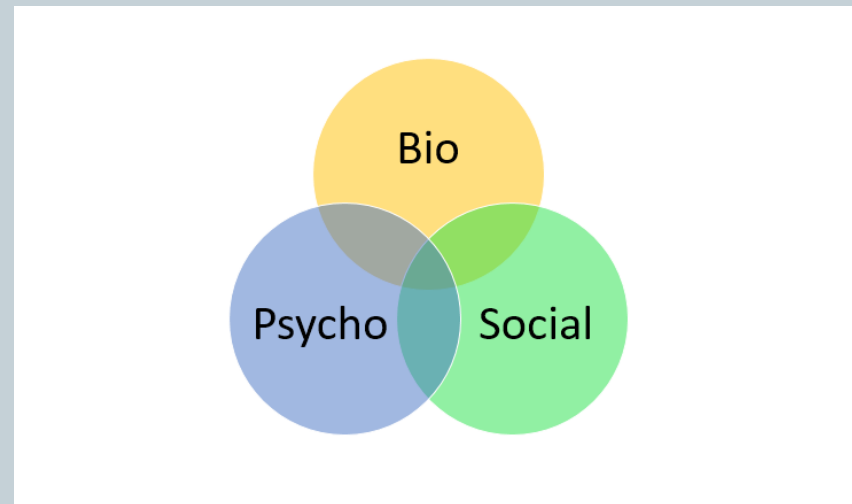


- Affects an estimated 50 million US adults
  - Institute of Medicine (2018)
- The leading cause of disability and often does not respond to traditional treatments
- Cost estimated at \$560 billion - \$635 billion
  - Agency for Healthcare and Research Quality ,2018
- A Dual Crisis

# Biopsychosocial Implications



- Physical and emotional health connection
- Depression and Anxiety comorbidities
- Quality of Life
- Relationships



(Ballantyne & Shin, 2008)

# A Biopsychosocial Assessment



- Pain experience (current and history)
- Pain beliefs
- Mental health history
- Family/friends' beliefs about pain
- Cultural beliefs about pain
- Provider's reactions
- Coping strategies
- Access to treatment

# Defining Pain: 3 Models



**CARTESIAN MODEL**

**GATE CONTROL MODEL**

**NEUROMATRIX MODEL**

# Cartesian Model (Rene DesCartes)



- Pain is associated with tissue damage
- “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage”
- The International Association for the Study of Pain (1979)

# Types of Pain



- Nociceptive
- Neuropathic
- Headache





# Acute Pain



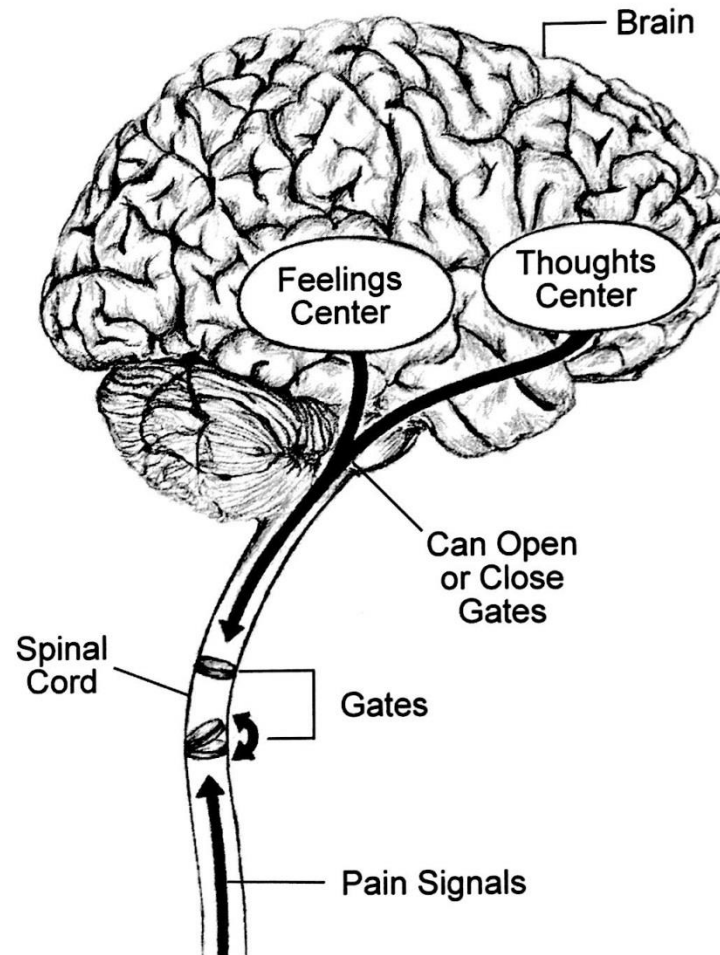
- Less than 3 months
- Is a symptom
- Cause is identified (body's response to injury)
- Responds to treatment

# Chronic Pain



- More than 3 months
- Is a condition
- My develop after incident; may or may not have known cause
- Persists despite treatment and/or beyond expected healing time

# Gate Control Model (Melzack & Wall, 1978)



# Factors that Open the Gate



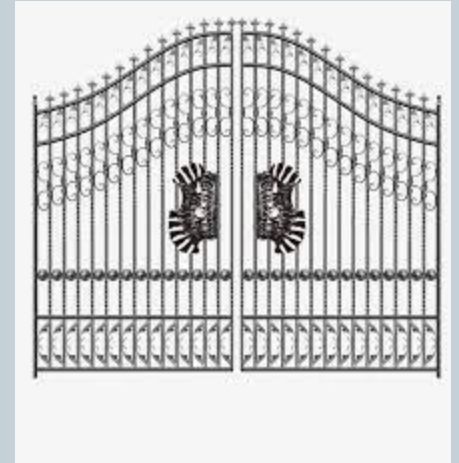
- Emotional distress
- Unhelpful thoughts
- Deactivation
- Over-productivity
- Chronic opioid treatment



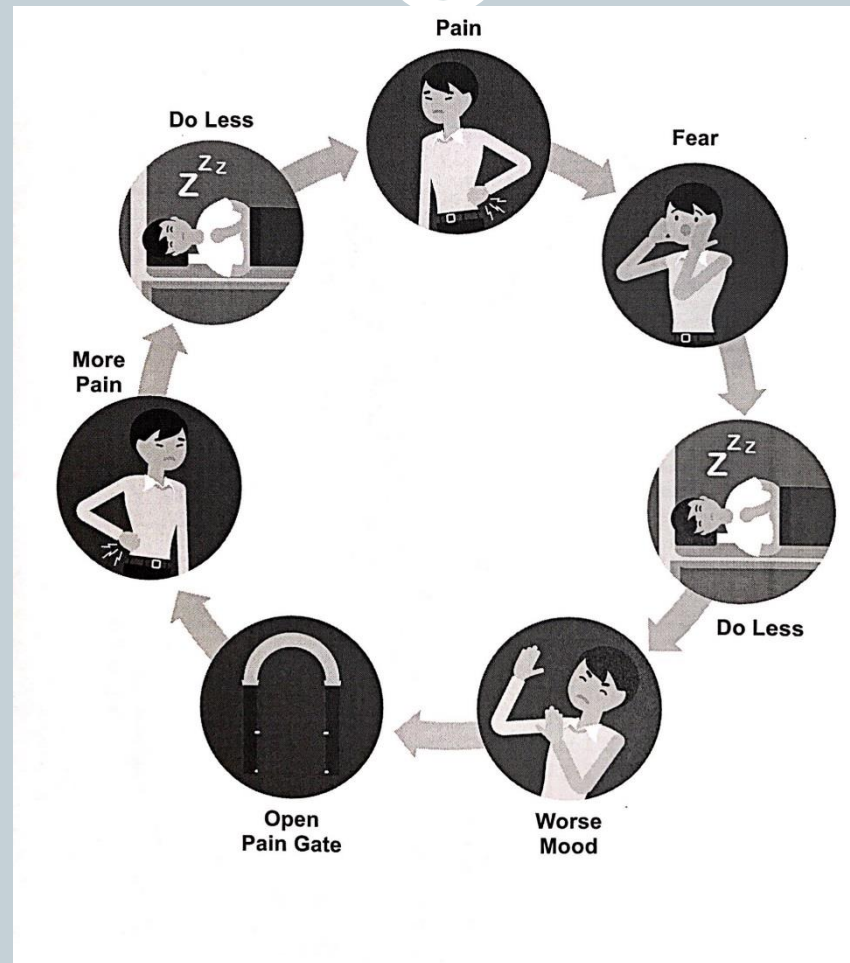
# Factors that Close the Gate



- Relaxation
- Pacing activities
- Helpful thoughts
- Satisfaction with values
- Satisfaction with relationships
- Adequate sleep
- Certain Medications



# Pain Cycle



# Neuromatrix Model (Melzack, 1990)



- Expands on Gate Control Theory with 2 Important Shifts:
  1. The brain and spinal cord are what produce pain, not tissue damage
  2. Various parts of the central nervous system work together to produce pain

# CNS Factors That Generate Pain



- Spinal cord
- Brain stem and thalamus
- Limbic System
  
- Insular cortex
- Somatosensory cortex
- Motor cortex
- Prefrontal cortex





# Neuromatrix Model of Pain



Institute for Chronic Pain, 2019

# Treatment Options



# Pain Management Best Practices



- Balanced
- Individualized
- Multidisciplinary
- Increase Access to care
- Reduce Stigma

**BEST  
PRACTICES**



# Recommendations for Acute Pain Management



- Assessment and Monitoring



- Risk-Benefit Analysis



# Opioid Therapy



- **Benefits:** Can provide pain relief for a wide variety of conditions
- **Risks:**
  - **Side Effects and Dependency**
    - ✦ Constipation, sedation, nausea, vomiting, irritability, respiratory suppression, sensitized pain receptors
  - **Acute and Post Acute Withdrawal Syndrome (occurs after 1 week of taking a prescribed opioid)**
    - ✦ **Acute:** Severe flu symptoms, depression, insomnia
    - ✦ **Post Acute:** insomnia, mood disturbance, low energy, pain sensitivity (can last up to 12 months)

# Non-Opioid Medications for Consideration



- Acetaminophen
- NSAIDs
- Anticonvulsants
- Antidepressants
- Musculoskeletal agents

# Restorative Therapies



- Physical and Occupational Therapies
- Message Therapy
- Cold/Heat

# Minimally Invasive Interventions



- Injections
- Ablations
- Electrical or Magnetic Stimulation
- Pumps



# Psychotherapy Interventions



- Behavioral Therapy
  - ✦ (McCraken & Turk, 2002)
- Cognitive Behavioral Therapy
  - ✦ (Shelly et al., 2018)
- Acceptance and Commitment Therapy
  - ✦ (Dahl & Lundgren, 2006)
- Mindfulness-Based Stress Reduction
  - ✦ (Cherkin et al 2016)

# Motivational Interviewing



- “A collaborative conversation style for strengthening a person’s own motivation and commitment to change”  
(Miller & Rollnick, 2013)
- Help individuals consider active vs. passive treatment

# Alternative/Complimentary Therapies



- Chiropractics
- Acupuncture
- Yoga/Tai Chi
- Biofeedback
- Hypnotherapy

# Special Populations



# Pediatrics



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- Chronic pain affects 5-38% of children and adolescents (Huguet, 2008)
- Developing nervous system is vulnerable to pain sensitization
- Poor pain management in children can result in increased impairment in adulthood
- Comorbidities: anxiety, depression
- Important to involve family members in treatment

# Older Adults



- Treatment is complex due to medical comorbidities, polypharmacy
- Loss of functioning
- Increases risk for depression and suicide



# Gender



- Men and women process pain differently
- Gender roles may influence provider communication
- Men report higher threshold; Women report higher tolerance

(Fillingim, 2009)

# Health Disparities



- Racial and ethnic minority populations
  - (Campbell & Edwards, 2012)
  
- Sexual minority populations
  - (Case et al. 2004; Cochran & Mays, 2007; Wise et al., 2015)



# Questions?



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