



Understanding the Basics of Chronic Pain

Learning Objectives

- Understand the underlying mechanisms behind the development of chronic pain
- Describe how opioids work and why they have addictive potential
- Explain why a person’s history and emotional state can influence the experience of chronic pain

Activities

- Read “Owww! The science of pain” [article](#)
- Watch the “Changing the Conversation about Pain” [video](#) (This requires free registration)
- Shorter option: watch the “Taming the Beast” [video](#)
- Reflect on the Discussion Questions and Key Learnings

Discussion Questions

1. When reading the “Oww! The science of pain” article, what surprised you the most?
2. Why do you think physicians prescribe opioids for chronic pain instead of using more evidence-based non-pharmacologic approaches such as mindfulness therapy, massage, or yoga?
3. What are some conditions that amplify chronic pain? Should we be screening for these conditions in patients with chronic pain, why or why not?
4. Given our current understanding of chronic pain, why is it important have a thorough understanding of a patient’s history and social circumstances/environment?

Key Learnings

- For many, pain originating from an injury or ailment persists long after the underlying cause has resolved. After only a short period of time of tissue injury, for some, this injury can sensitize the central nervous system to transmit pain signals to the brain even with only mild stimulation of the previously injured area, or with no stimulation at all. This is known as “central sensitization.” This type of pain is not a symptom, it is a disease caused by a malfunctioning nervous system.
- The interpretation of pain signals sent to the brain by the nervous system can alter each individual’s interpretation of those signals, making pain a complex subjective phenomenon that can be influenced by a person’s emotional state, past history of emotional trauma and their genetics. This is because there is no single pain center in the brain. Multiple regions of the brain are activated in response to painful stimuli, including the networks that are involved in emotions, cognition, memory and decision-making. This explains why fear, sadness and anxiety can make pain feel worse. And why pain-flares in patients with chronic pain are often due to emotional stress or changes in a patient’s emotional state.



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- Opioids bind to a receptor on the surface of a brain cell. This receptor then communicates to proteins in the cell and these proteins both alleviate the perception of pain AND cause a euphoric effect. Unfortunately, the body develops a tolerance to these drugs, which requires higher and higher doses of them to achieve the same effect. This can lead to addiction.
- Our bodies are capable of producing opioids synthesized in the brain that then block incoming pain signals from the body. Many non-pharmacologic treatments for chronic pain enhance the body's ability to produce and effectively use these natural opioids and explain their effectiveness.



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