



LESSON 1

PERMANENTE MEDICINE®
The Permanente Medical Group

Basics of Pain Science: The Biopsychosocial Model

SANTA ROSA MEDICAL CENTER

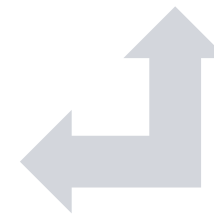
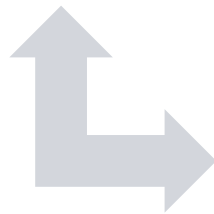
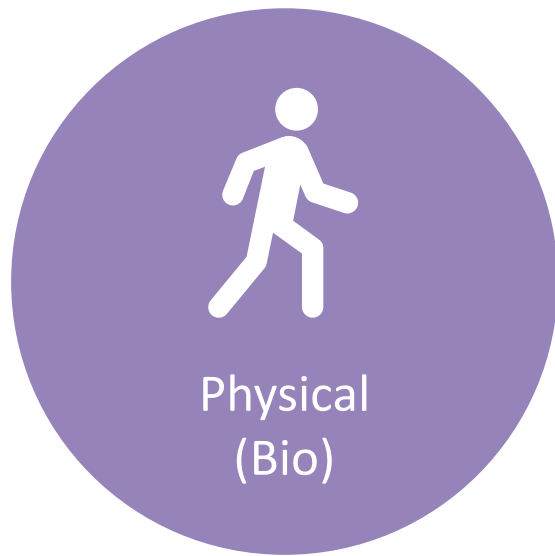
 **KAISER PERMANENTE**®

| Quote of the Week

“It always seems impossible until it is done.”

- Nelson Mandela

Biopsychosocial Model of Pain



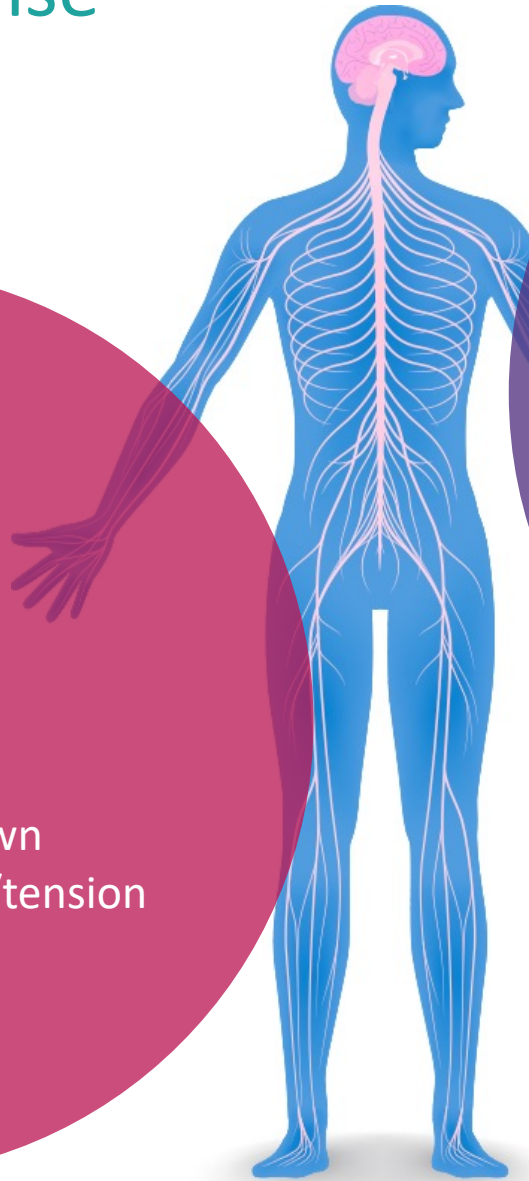
Acute vs. Chronic Pain

	Acute Pain	Chronic Pain
Duration	Short or time-limited	Long term. Lasts beyond the usual time for healing and recovery (> 3-6 months)
Intensity	Often intense, depending on the cause	Varies in intensity from mild to very severe; fluctuates
Location	Most often felt in one body area	Felt in one or many body areas (deferred/diffuse pain)
Emotional response	Associated with anxiety and fear but these feelings go away	Associated with ongoing irritability, fatigue, isolation, depression, anxiety, etc. Chronic pain is like a form of chronic stress.
Purpose	Has survival value: Warns of danger and harm and causes us to take action	Has no survival value: It no longer warns of immediate danger

Acute vs. Chronic Pain

	Acute Pain	Chronic Pain
Cause	Biological mechanisms of acute pain are well understood and it's usually due to tissue damage	Biological mechanisms of pain are amplified and exaggerated. The brain is misinterpreting nerve impulses as "danger" but often body tissues have healed.
Diagnosis	Common and accurate	Often difficult
Treatment	Usually effective, cure is common	Many treatments are used but there is no cure. The goal is to calm the nervous system and retrain the brain.
Role of medication	Helpful and easily managed	Effects are variable and often less effective over time
Role of activity and exercise	Rest is often best and allows healing to begin	Activity and exercise, balanced with rest, are essential. Healing of damaged tissue has already occurred.

Stress Response



Stress Response

- ↑ Heart rate
- ↑ Pulse
- ↓ Blood vessel size
- ↑ Blood pressure
- ↑ Shallow breathing
- ↓ Digestion slows down
- ↑ Muscle contraction/tension
- ↓ Skin temperature

Relaxation Response

- ↓ Heart rate
- ↓ Pulse
- ↑ Blood vessel size
- ↓ Blood pressure
- ↑ Deep abdominal breathing
- ↑ Digestion improves
- ↓ Muscle contraction/tension
- ↑ Skin temperature

Stress Response

Three ways our bodies react to chronic stress:

Fight-or-flight response

- Our body's automatic responses to REAL or PERCEIVED danger, or threats to survival.

The Freeze Reaction

- Depression, anxiety, or feeling overwhelmed.

The Relaxation Response

- Body turns down the pain and stress response alarms.
- Not automatic, need to practice this!

What can help you manage your pain ?

Learning the
pain science
facts about
persistent pain.

Slowly reengaging
in life activities by
identifying what
matters most to
you.

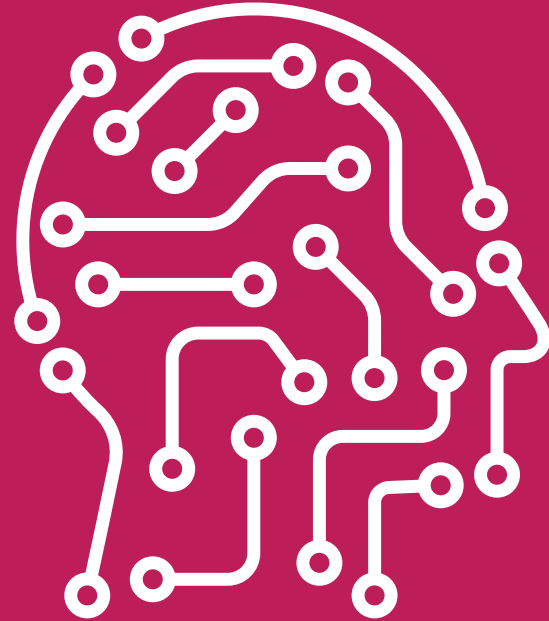
Applying
active skills to
rewire the
brain.

Reminding
yourself you
are safe.

Neuroplasticity

The brain's
ability to rewire
itself by forming
new connections

You can
retrain your
brain



MINDFULNESS MEDITATION PRACTICE

| Mindful Breath



Diaphragmatic breathing

- Sit or lie flat in a comfortable position.
- Put one hand on your belly just below your ribs and the other hand on your chest.
- Take a deep breath in through your nose, and let your belly push your hand out. Your chest should not move.
- Breathe out through pursed lips, as if you were whistling, as you push all the air out slowly. Feel the hand on your belly go in as the air goes out.
- Do this breathing 3 to 10 times. Take your time with each breath.
- Notice how you feel at the end of the exercise.

Home Practice

Worksheet
complete Factors
that Change the
Pain Experience

Mindful Breath
Practice



Watch video
of neuroplasticity
(Sentis)

- Discuss with
family and friends

