


# Psychosocial Risk Factors in the Transition from Acute to Chronic Pain



Updated Slides



A movie poster for 'Monty Python and the Holy Grail'. The background is a bright blue sky with a few white clouds. In the upper right, a purple castle with spires and flags is visible. A large, golden chalice is held by a hand in the foreground, with several knights from the film appearing to be inside or around it. The knights are dressed in medieval-style clothing, some with armor and surcoats. The title 'MONTY PYTHON and the Holy Grail' is written in a golden, serif font on the left side. The word 'MONTY PYTHON' is on one line, 'and the' is smaller and on the next line, and 'Holy Grail' is the largest word on the third line.

MONTY PYTHON  
and the  
Holy Grail

(Bouter et al., 2003)

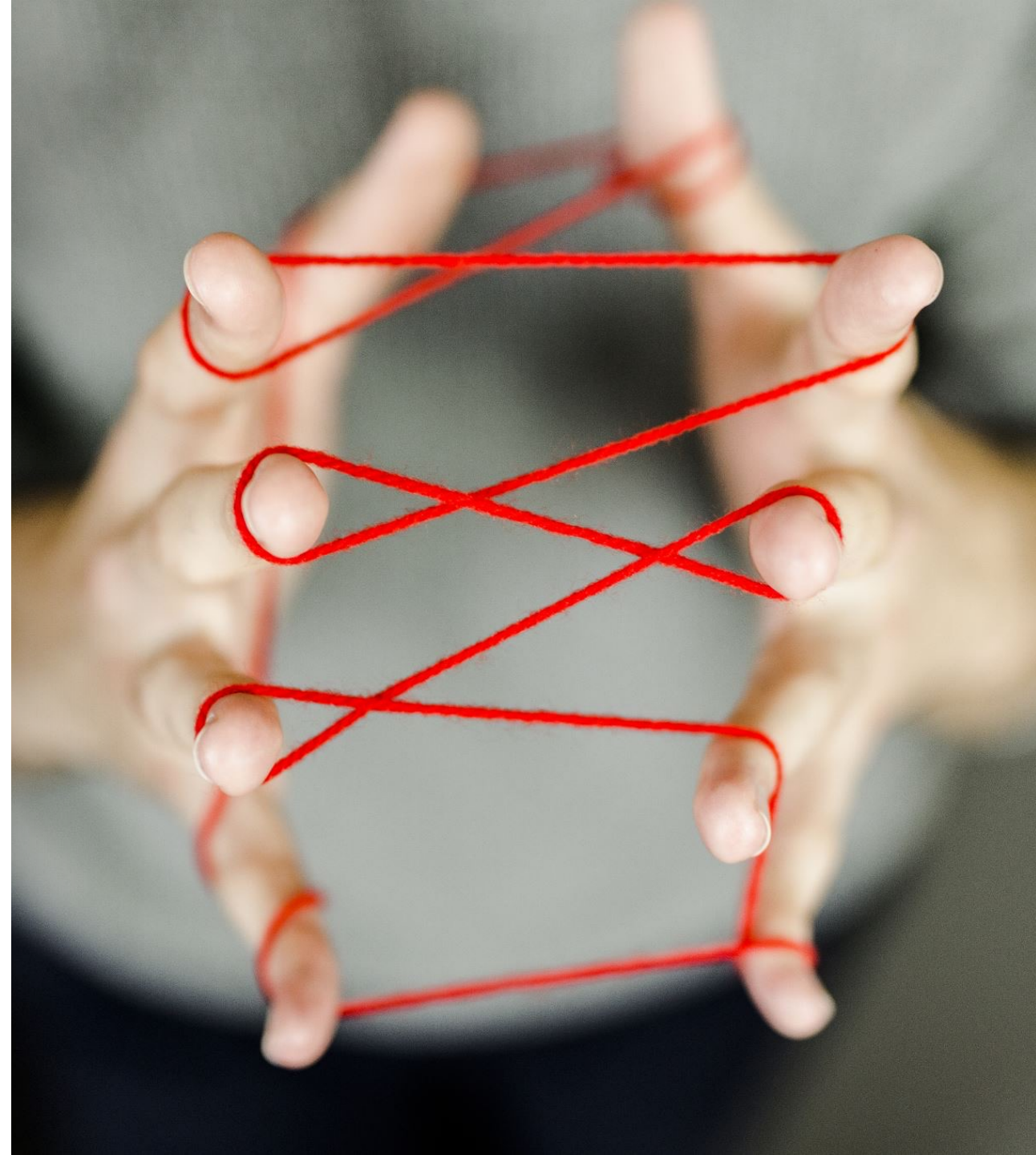
A red pushpin is stuck into a map, which is the background of the image. The map shows various lines and shapes, likely representing roads, rivers, or geographical features. The text "How Do We Get There?" is written in white, bold, sans-serif font across the center of the image, partially overlapping the pushpin and the map.

How Do We Get There?

# 3 Things

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- Chronic Pain is a HUGE Problem
- Pain is an Emotion
- Communication Reveals Pain Drivers





★ OFFICIAL ★  
MAJOR LEAGUE BASEBALL  
*Allen H. Luby*  
LAWRENCE, MA
















Pain is a  
Huge  
Problem

# How Did We Get Here?



- 1.9 Billion Daily Facebook Users
- + 500 Million with Chronic Pain

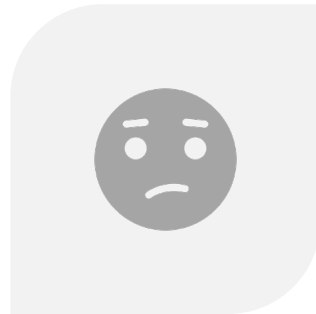


Photo by [Tamas Tuzes-Katai](#) on [Unsplash](#)

# NATIONAL DATA



PT REFERRAL RATE:  
7-20%



INCIDENCE OF CHRONIC  
PAIN AT 1 YEAR: 28-46%





Pain is a  
Huge  
Problem

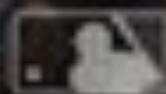


Pain is an Emotion









31

bank bank bank bank bank

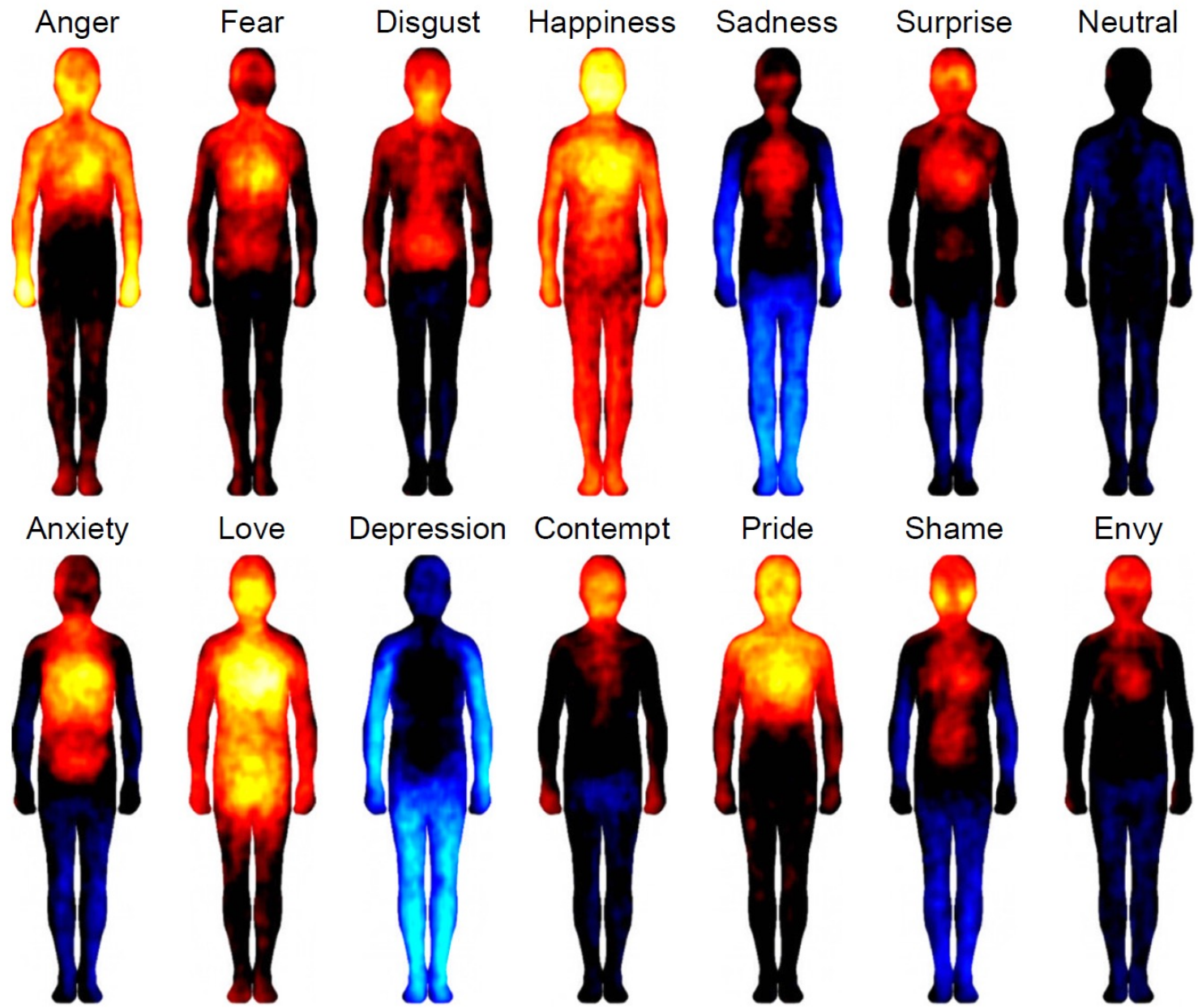






Where do you Feel It?



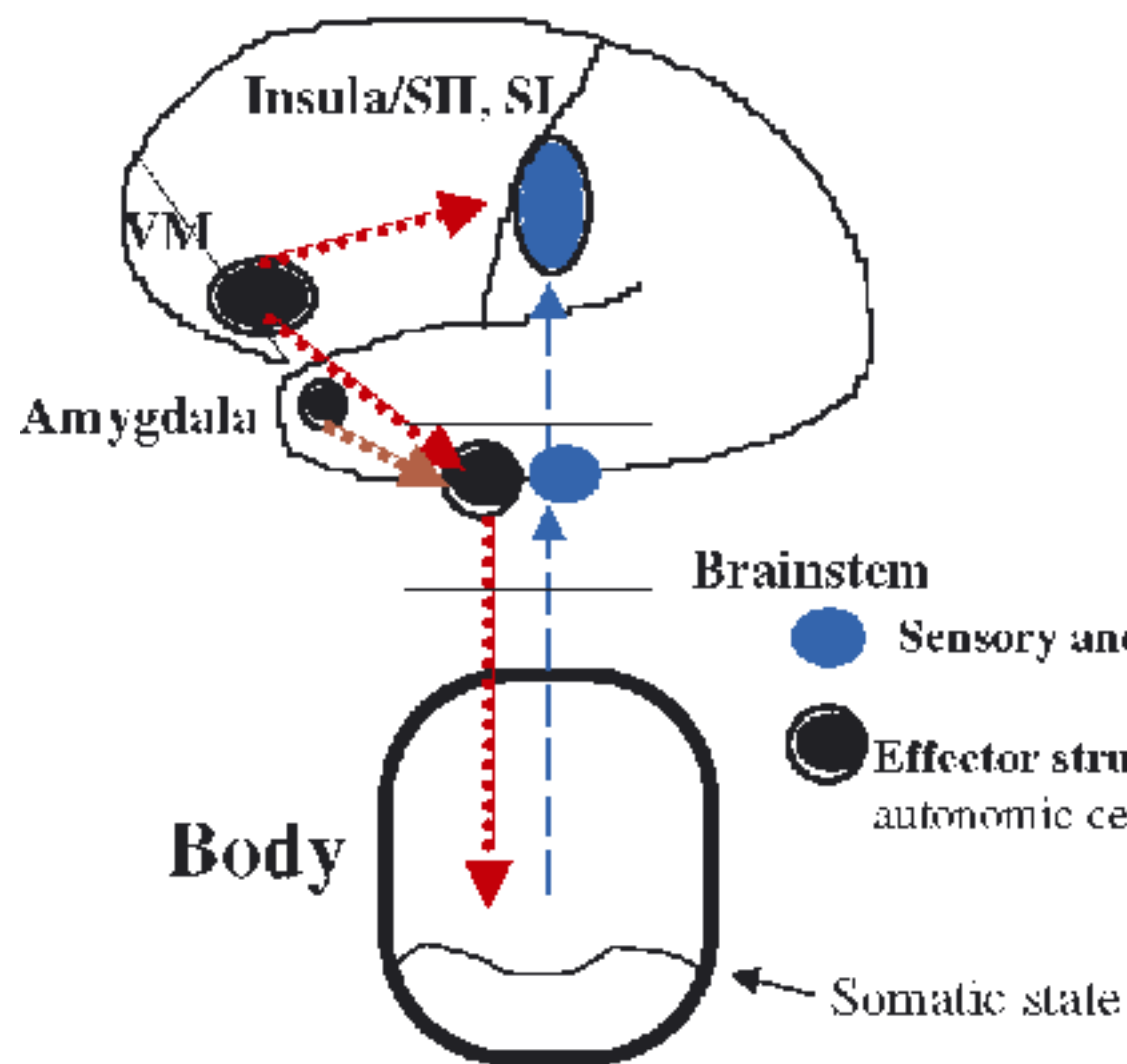


Where do you feel it?

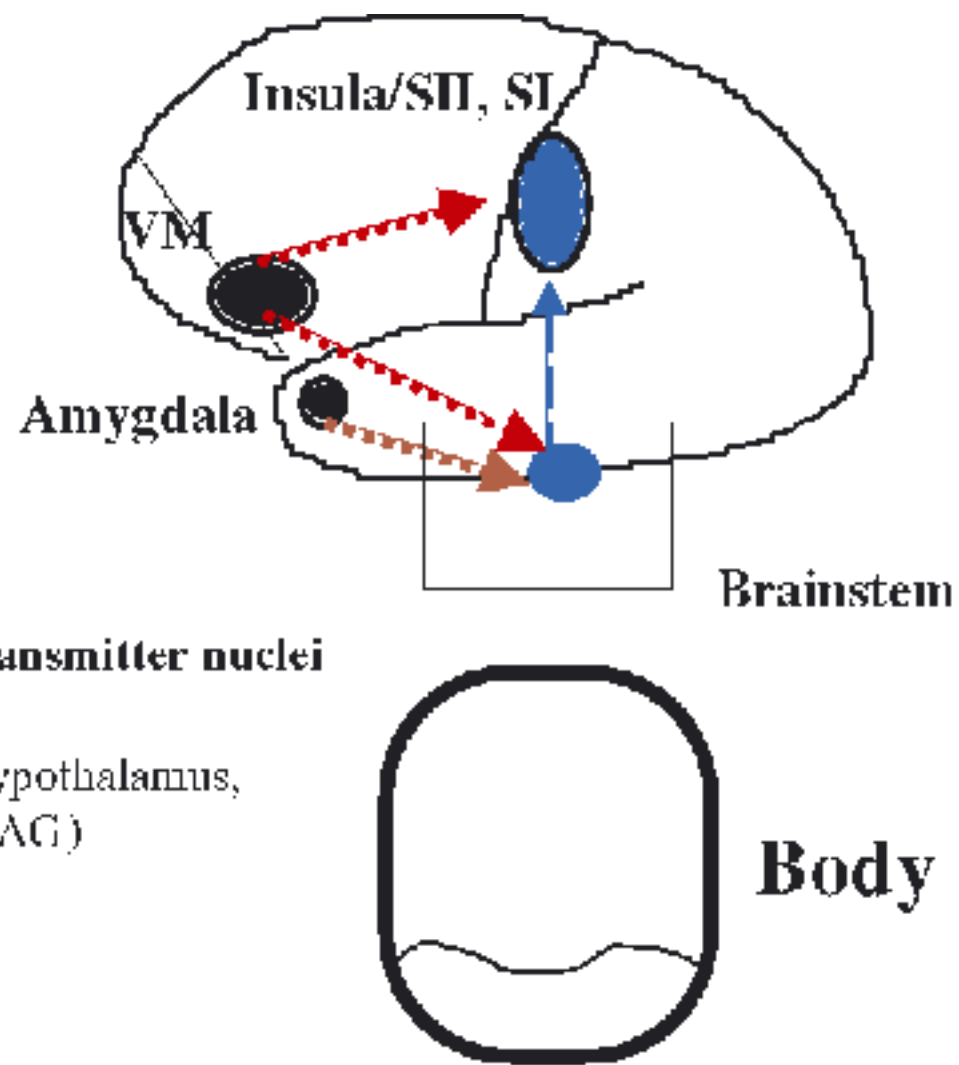
A close-up photograph of a mechanical watch movement, showing intricate gears and components. The text "This is How it Works" is overlaid in white, centered on the image. The background is a light-colored metal plate with various holes and markings.

This is How it Works





**"Body Loop"**



**"As If Body Loop"**

# Somatic Marker Hypothesis

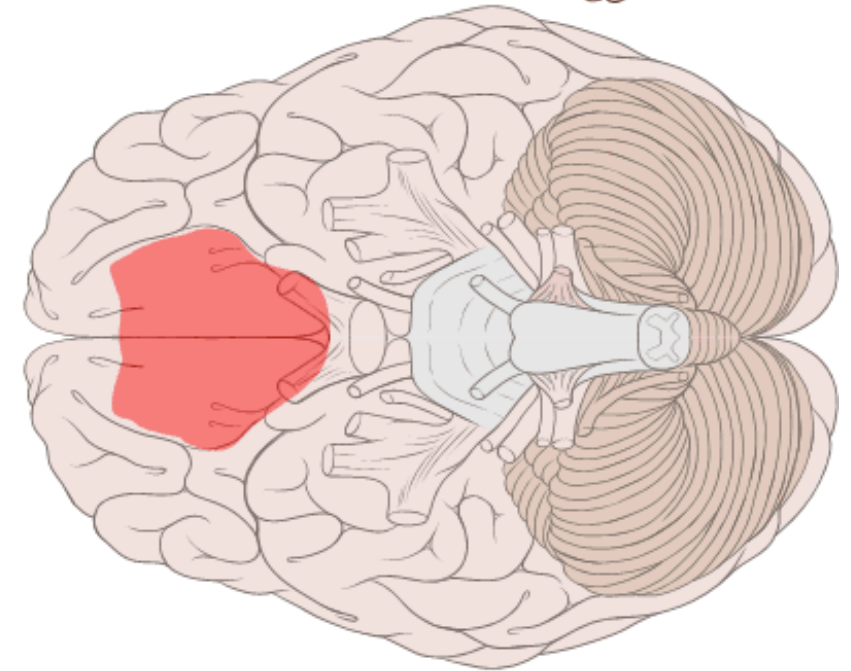
- A neural theory of economic decision-making.
- Economic decision-making models ignored emotional integration
- Decision-making is a process that depends on emotion and that both the amygdala and the orbitofrontal cortex are parts of a neural circuit critical for judgment and decision-making.



# Ventromedial Prefrontal Cortex

## Frontal lobe damage

- Difficulty with:
  - organizing and planning behaviors
  - learning from previous mistakes
  - **Expressing and experiencing appropriate emotions**
- Retained:
  - working memory
  - attention
  - language comprehension
  - Language expression.



# What are emotions?

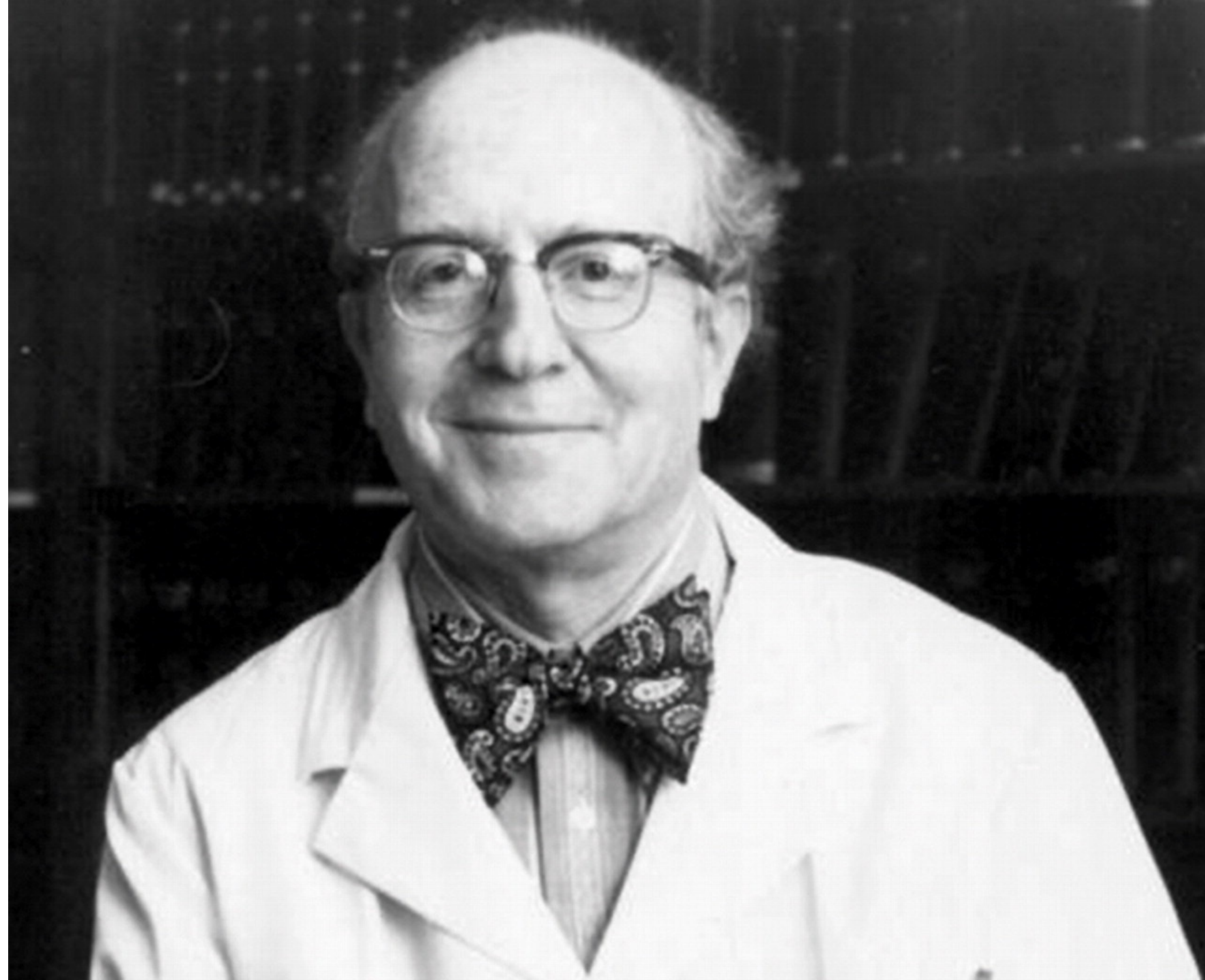
- According to Damasio:
  - Changes in body and brain states in response to stimuli
- **WITH REPETITION**, emotions and corresponding bodily changes become associated with particular situations and past outcomes.
  - *Conscious or unconscious association to past outcomes*

# Pain (rev. 2020)

- An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.

## Notes:

- Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors.
- Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons.
- Through their life experiences, individuals learn the concept of pain.
- A person's report of an experience as pain should be respected.
- Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological well-being.
- Verbal description is only one of several behaviors to express pain; inability to communicate does not negate the possibility that a human or a non-human animal experiences pain.



- Incidence at 6 months: 32%
- -Women (58%)
- -Overweight (31%)
- -Obese (44%)
- -Baseline disability: aOR 1.16 higher for moderate disability, 1.82 for severe disability, and 2.08 for very severe disability vs. minimal disability.
- Health Insurance
- -BMI
- -Smoking Status
- -Diagnosis
- -Psychological comorbidities
- **exposure to non-concordant care**

February 16, 2021

## **Risk Factors Associated With Transition From Acute to Chronic Low Back Pain in US Patients Seeking Primary Care**

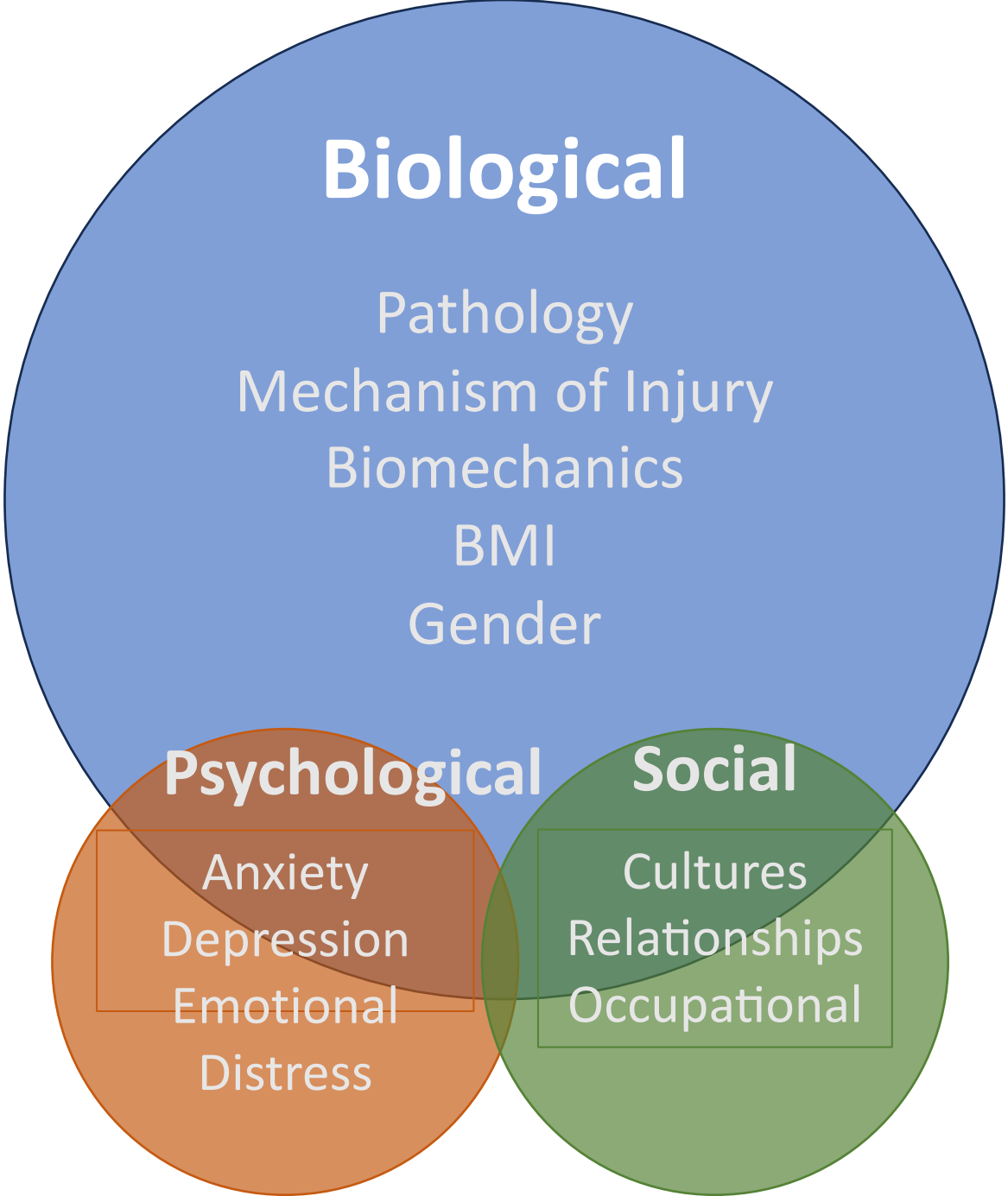
Joel M. Stevans, DC, PhD<sup>1</sup>; Anthony Delitto, PT, PhD<sup>1</sup>; Samannaaz S. Khoja, PT, PhD<sup>1</sup>; [et al](#)

[» Author Affiliations](#) | [Article Information](#)

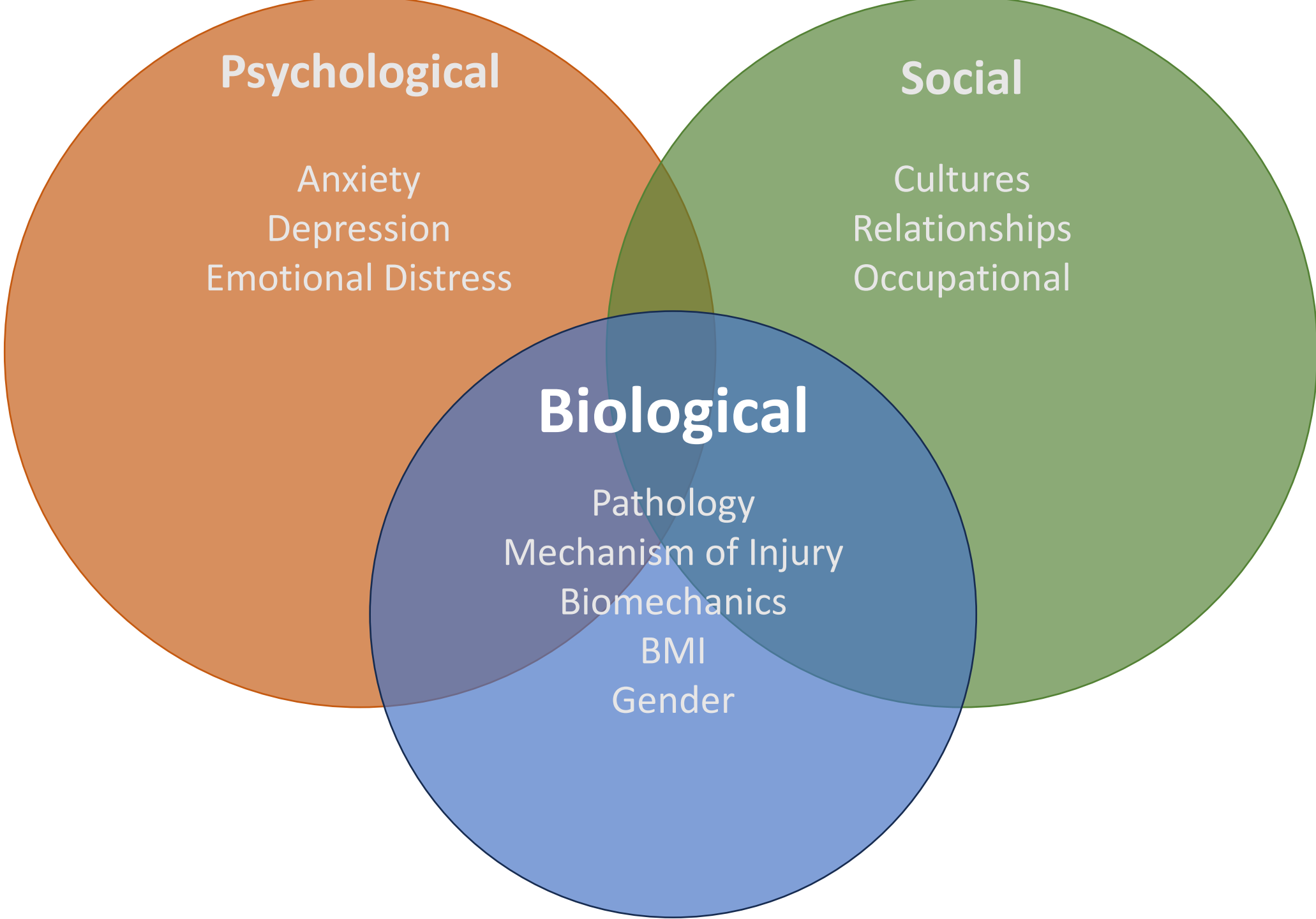
*JAMA Netw Open.* 2021;4(2):e2037371. doi:10.1001/jamanetworkopen.2020.37371

### **Biological**

- Age, Gender, Genetics
- Physiologic Reactions
- Tissue Health







# Psychological Factors

- General Factors
  - Negative Affect
  - Depression
  - Anxiety
  - Emotional Distress

- Pain-Specific Factors
  - Pain Catastrophizing
  - Self-Efficacy
  - Active Coping
  - Pain Science Knowledge



# ACEs and PTSD



# Social Factors



Photo by [Jordan Whitt](#) on [Unsplash](#)

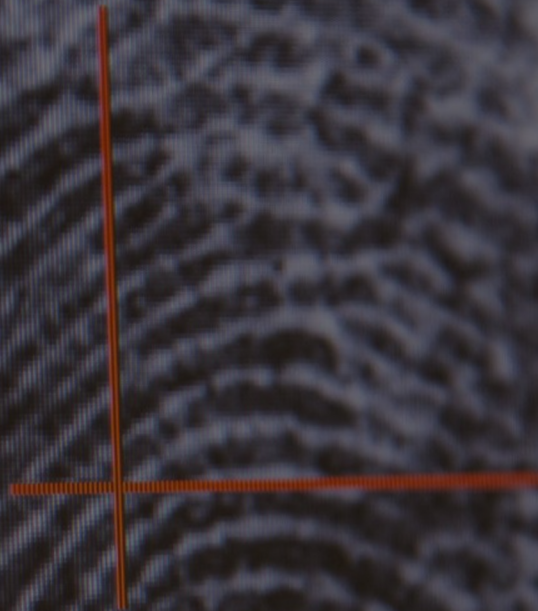




Pain is an Emotion

# Factors to Consider

- Depression, Anxiety, Emotional Distress
- Interpersonal conflict
- Pain-related fear
- Job dissatisfaction
- Low job control
- Minimal social support
- Self-efficacy
- Litigation/Victimhood
- Previous traumatic experience (ACEs, PTSD)
- Cultural and Religious Factors (e.g., Guilt, Shame)
- Meaning in Life/Life Purpose
- Patient-Clinician Collaboration (Therapeutic Alliance)



# Communication Reveals The Pain Drivers

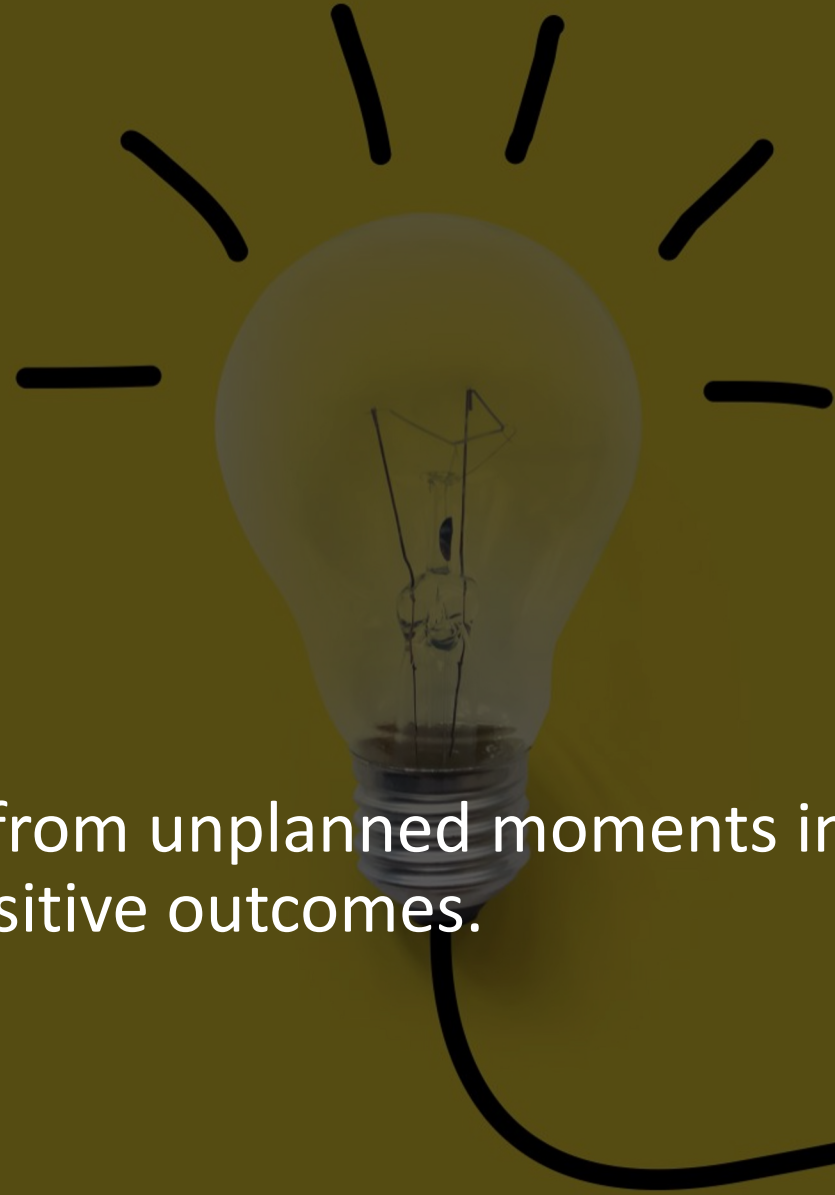


# HIDDEN BRAIN





# *Serendipity*



- The unexpected good luck resulting from unplanned moments in which proactive decisions lead to positive outcomes.

# Serendipitous Hooks

- What excites you right now?
- What are you looking forward to?
- What's the best thing that's happened to you this year?
- Where did you grow up?
- What do you do for fun?
- Who is your favorite superhero?
- Is there a charitable cause you support?
- What's the most important thing I should know about you?



# What is an addiction?



## HHS Public Access

Author manuscript

*Pain*. Author manuscript; available in PMC 2020 May 01.

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*Pain*. 2019 May ; 160(Suppl 1): S37–S48. doi:10.1097/j.pain.0000000000001529.

## **Deconstructing biomarkers for chronic pain: context and hypothesis dependent biomarker types in relation to chronic pain**

**Diane Reckziegel<sup>1,2</sup>, Etienne Vachon-Preseau<sup>1</sup>, Bogdan Petre<sup>1</sup>, Thomas J. Schnitzer<sup>2,3,4</sup>, Marwan Baliki<sup>1</sup>, and A. Vania Apkarian<sup>1,2,4,5</sup>**



# Comprehensive Spine Ecosystem

Direct Access to Multidisciplinary Care

# Right Care-Right Time

## The Spine Care Evolution

# Consequences of “Wait-and-See” Approach

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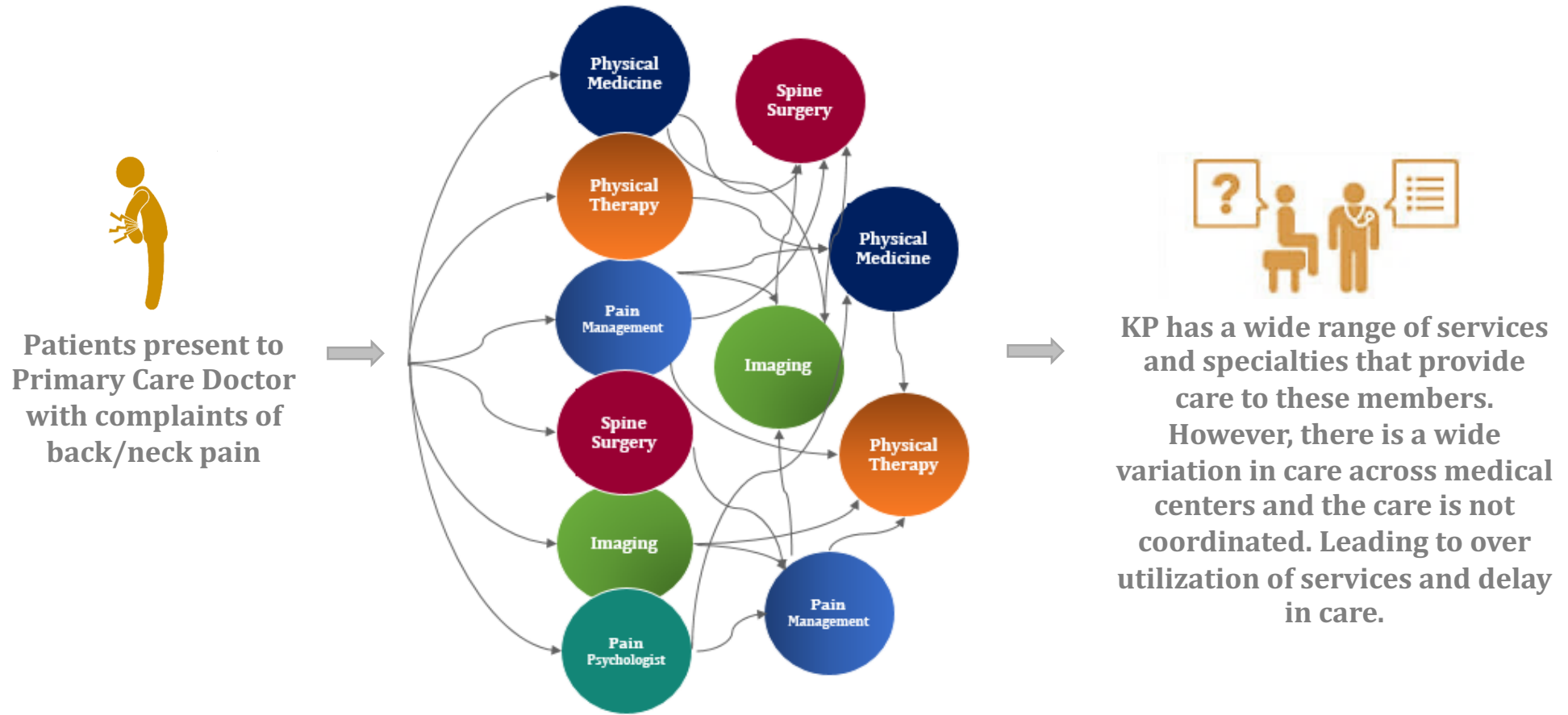
- What are the consequences of delaying physical therapy *just* 4 days?
- **130% increase in spine surgery**
- *Number of spine surgery increases nearly 5-fold increase when delaying physical therapy 15 days*

Virtual Care Goal: < 3 days

*Liu et al., 2018. Immediate Physical Therapy Initiation in Patients with Acute Low Back Pain is Associated with a Reduction in Downstream Healthcare Utilization and Costs. Physical Therapy Journal, 98(5), 336-347*



# Traditional Spine Care pre-2016



# Spine Center Model of Care- 2016



Over **55,000 members** have been seen in one of the thirteen Spine Centers



The revised model offers personalized and immediate access to spine care. The PA/RNP, Physical Therapist and Physician In Charge coordinate access to care and procedures based on the members clinical presentation.



# Spine Center Model of Care- 2016

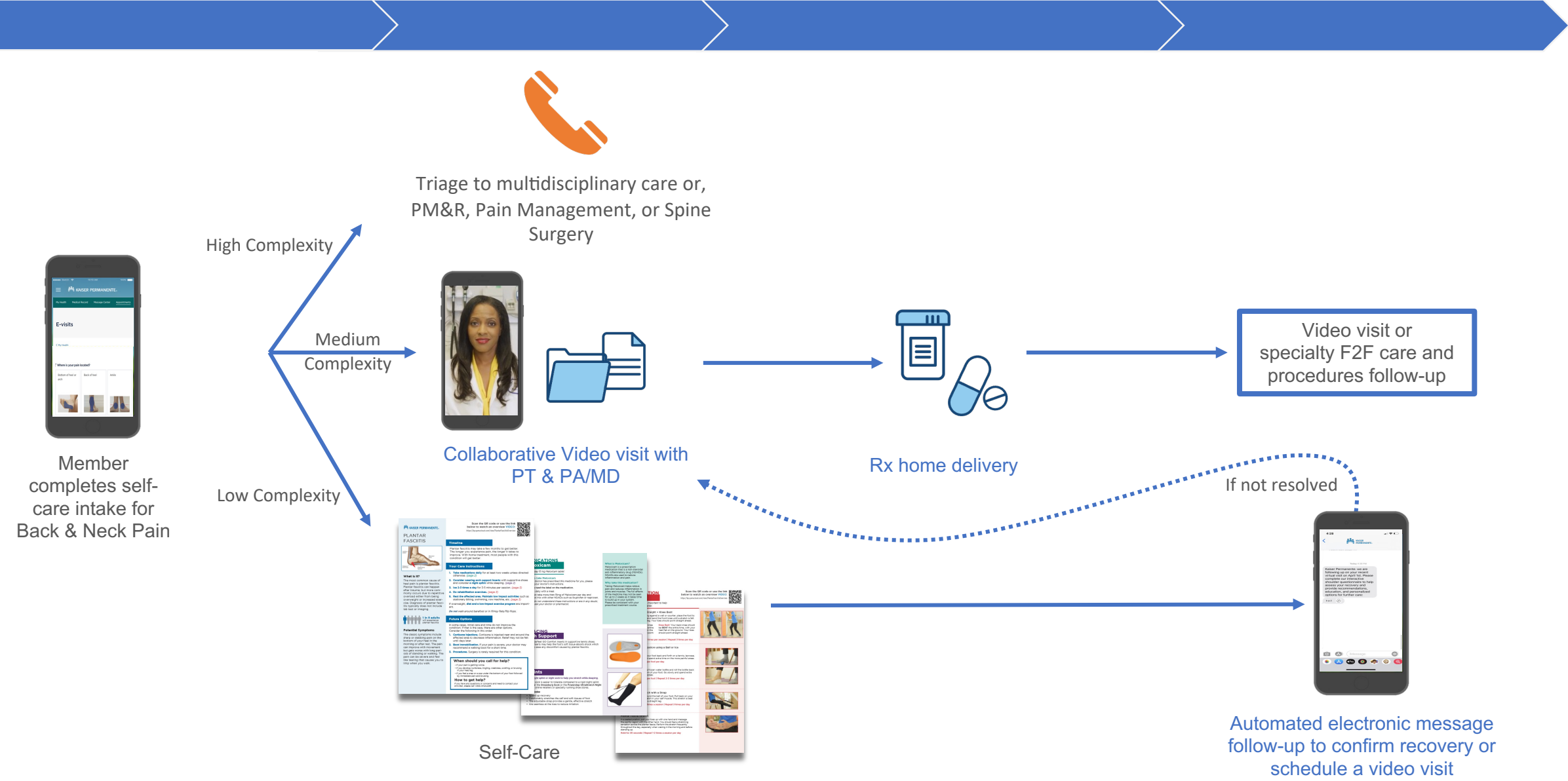


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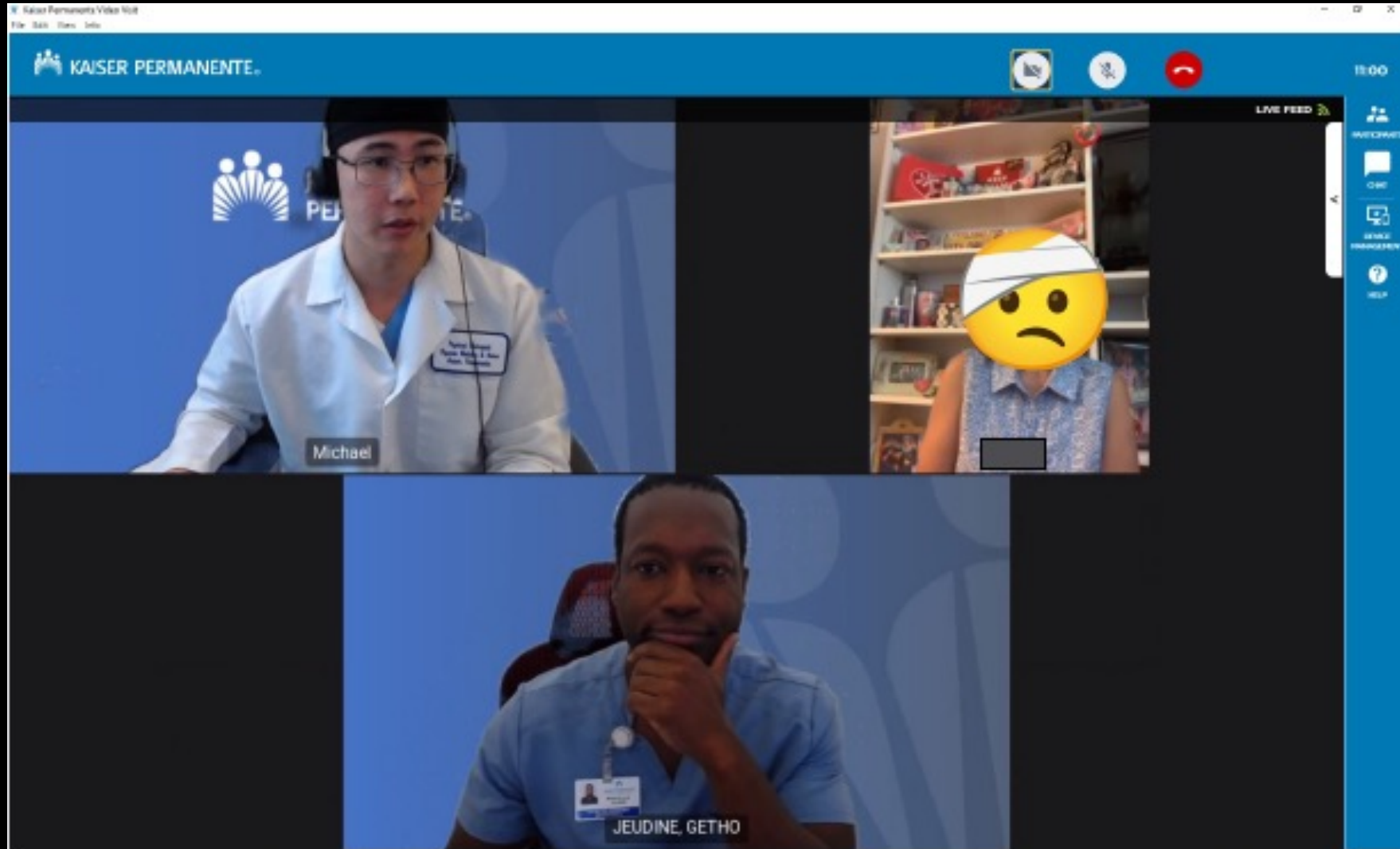


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# Comprehensive Spine Ecosystem 2022



# Virtual Staffing Model- Physical Therapy-led Multidisciplinary Care



The 3:1 Model

# Changing consumption of healthcare: Millennials and Gen Z are now the largest segment. Their healthcare needs, and the way they consume healthcare, are different

## Largest segment



**BORN**



**THE MOST**

## Burdened economically, looking for convenience and value



**MONEY**



**VALUE**

## Population is underserved and unhealthy



**LIFESTAGE**



**HEALTH NEEDS**

**M**

Millennials

(1996-1981)  
25-40 years old

**The largest generation.** They make up more than 1/3 of the workforce (~35%)

**Burdened by student debt.** Millennials are financially worse off than baby boomers & Gen X was at their age

**Convenient, easy to access care<sup>®</sup>** cited by 51% of Millennials as the #1 factor in their healthcare decision-making

**Family planning stage.** Millennial women accounted for 82% of all births in 2016

**Top 4 healthcare needs:**  
1. OBGYN/sexual health  
2. Mental Health  
3. Dermatology  
4. MSK

**Z**

Gen Z

(2012-1997)  
9-24 years old

The country's **most racially and ethnically diverse** generation

**Young entrepreneurs.** 62% would like to start their own companies instead of working for an established company

**Socially responsible.** 68% of Gen Z wants brands to be more socially conscience

**College years.** Gen Z is on the way to becoming the most educated generation yet

16-24 year olds are **3x likely to be lonely** as those over 64 years of old.

In 2018 about 37% of 12<sup>th</sup> graders reported **vaping**

Changing consumption of healthcare: Millennials are looking for convenient, technology-first solutions to access healthcare

**36%**

Prefer self-diagnosis and home treatment to in-person doctor visits

**70%**

Would rather have an online visit with a doctor than travel to an office appointment

**93%**

Do not schedule preventative doctor's visits

**50%**

Have no personal relationship with a primary care physician. Only 19% of millennials said they will “definitely” or “most likely” stay with their current PCP for at least the next 12 months





2007



2023

A hand holding a glowing lightbulb with a network of white nodes and lines above it, set against a dark blue background. The lightbulb is illuminated from within, casting a warm glow. The network of nodes and lines is composed of small white dots connected by thin white lines, forming a complex, interconnected structure that resembles a neural network or a data network. The background is a solid, dark blue color.

# The TTT- Back and Neck Triage Tool

# TTT Design

- 11-item questionnaire
- Psychological/Social factors associated with chronic pain
  - Depression
  - Anxiety
  - Pain-Catastrophizing
  - Fear/Avoidance of physical activities (kinesiophobia) and work
  - Self Efficacy
  - Financial Distress
  - History of Traumatic Experience and Residual Impact
  - Personal Relationship Distress
  - Occupational Distress
  - Pain Intensity



# Future Considerations

- Passive Data Collection from Electronic Medical Records:
  - Age
  - Gender
  - Ethnicity
  - BMI
  - Smoking and Alcohol consumption
  - Comorbidities
    - E.g., DM2 (controlled vs. uncontrolled)
- Previous visit(s) for similar condition (recurrence)

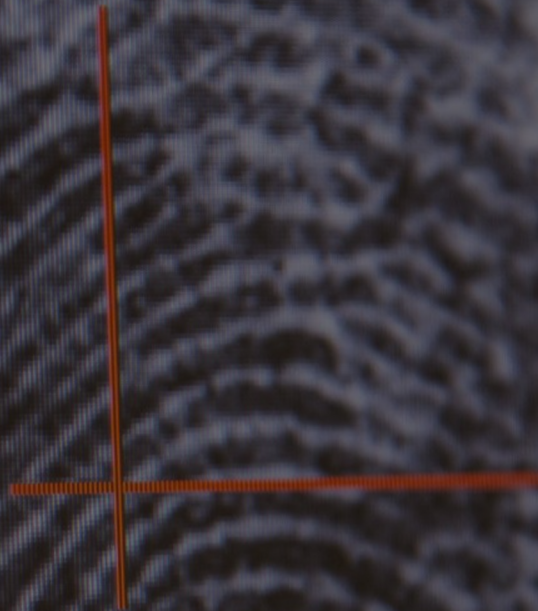




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Pain is an Emotion



# Communication Reveals The Pain Drivers

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