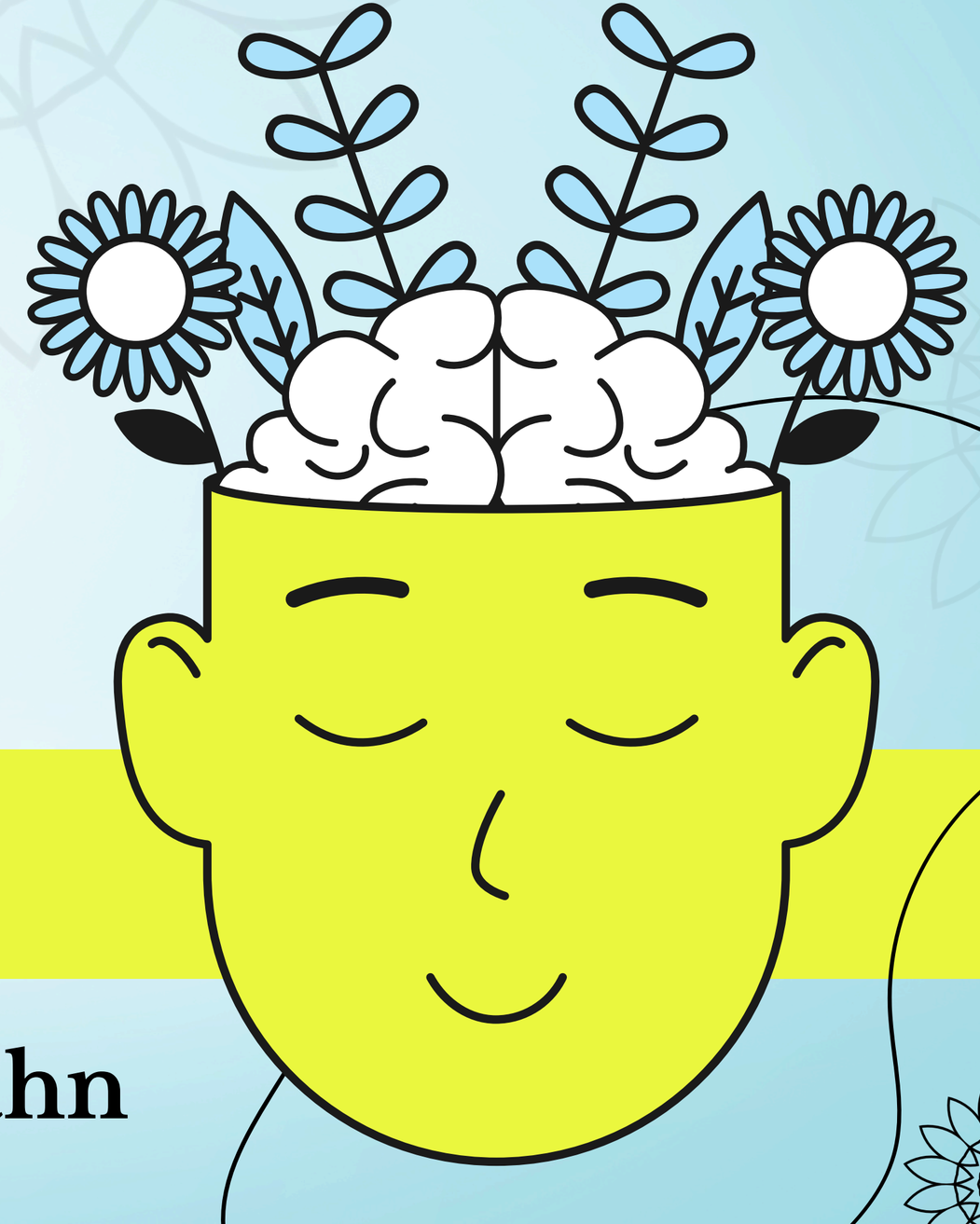
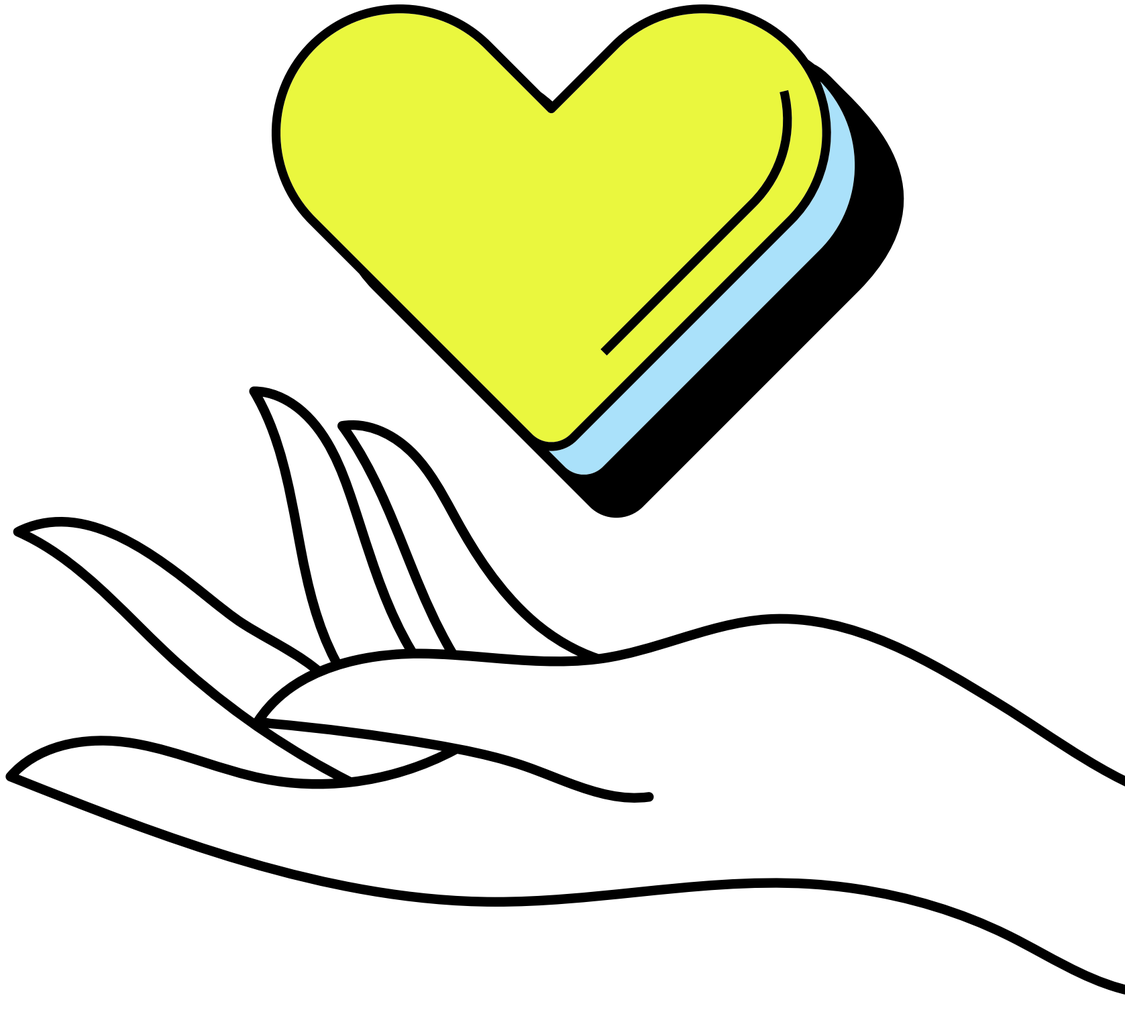
# Relationship Between Mental and Physical Health

By: Madison Hahn



# TOPICS BEING DISCUSSED

- The basic relationship
- Influences on children
- The affect of stress on the body
- Obesity and depression
- Chronic pain/illness
- How individuals can improve their well-being



# The Basic Relationship

## THE MIND BODY CONNECTION

How these two factors are connected

## THE EFFECTS OF BAD MENTAL HEALTH

Depression and anxiety and the physical effects of each

THE BASIC RELATIONSHIP

# The Mind-Body Connection

- The mind and the body are interconnected in a close knit relationship
- The brain areas that control movement are connected to areas pertaining to thinking and planning
  - It is also connected to blood pressure and heart rate
    - SOME EXAMPLES
      - **anxiety makes people pace**
      - **stimulating vagus nerve regulates heartrate or digestion**
      - **daily exercise improves mental health**
  - **Meditation**
    - calming the mind can also calm the body
- research in relation to “mind-body” started with Penfield
- a recent study used fMRI to look at the brains motor strip
  - the brain is designed to help one survive
- pain is the most powerful feedback compared to happiness or sadness.

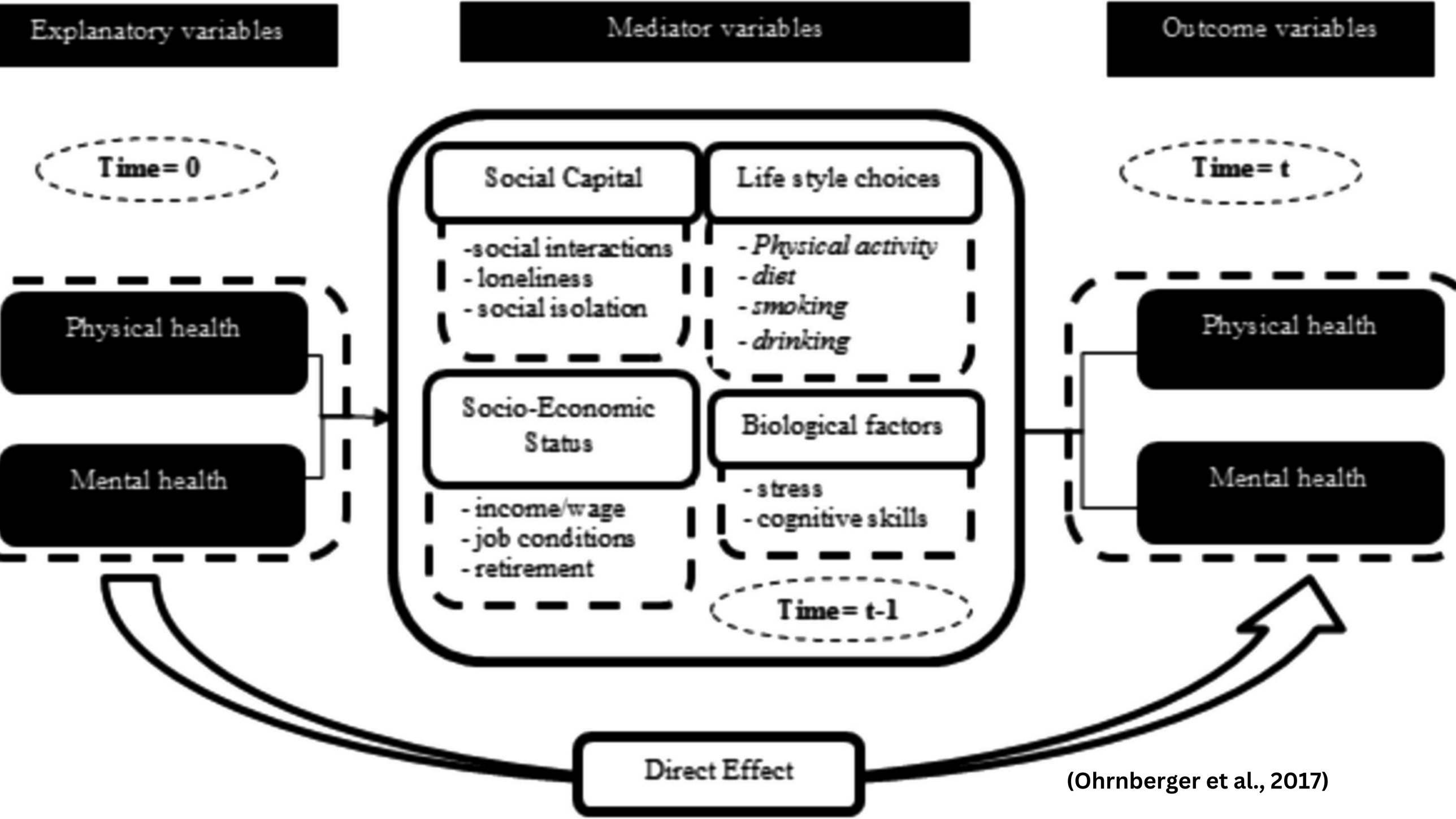
**(Bhandari, 2023)**

THE BASIC RELATIONSHIP

# The Mind-Body Connection Cont.

- 55% of the burden of disease amongst the population aged 60+ is avoidable by change in lifestyle
  - changing diet
  - exercising more
  - sleeping 8+ hours a night
- Health is directed by medical care and lifestyle
- **Physical and mental health can be impacted by employment**
- Mental health can effect the physical health
  - Ex: depression makes it hard to go to doctor visits causing impact on physical health
- lifestyle choices
- low-quality diet, lonliness and social isolation< mortality risk

**(Ohrnberger et al., 2017)**




(Ohrnberger et al., 2017)

# Influences of Chronic Conditions in Children

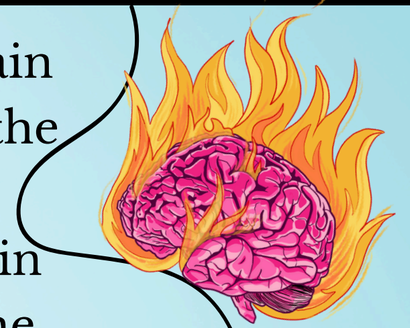
(Schuchard et al., 2022)

- **children and adolescents have slightly different statistics than adults when comparing the relationship between mental and physical health**
- most common conditions are ADHD and asthma
- **children with either a physical or mental health condition have a similar overall life satisfaction compared to children who don't have a chronic condition**
- **CHRONIC PAIN AND DEPRESSION RESULT IN LOWER LIFE SATISFACTION**
- In a study, **95% of children with depression had another chronic condition accompanying it**
  - this might be due to an increase in persistent emotional distress
- children with chronic conditions are more likely to develop mental health conditions
  - depression, anxiety, OCD
- **lower income=lower health=lower life satisfaction**

JOURNAL ANALYSIS

# Stress-Induced Depression

(Seo et al., 2016)



- Long-term stress can make a specific brain protein called p11 disappear in a part of the brain
- The **p11 protein** is mainly found in certain neurons in a region of the brain called the **medial prefrontal cortex.**
- When exposed to prolonged stress, the levels of p11 decrease in specific neurons in the prelimbic cortex
- Blocking the production of p11 in the prelimbic cortex also causes people to exhibit behaviors associated with depression.
- **Using antidepressant medications can restore the levels of p11 in the prelimbic cortex and improve depression-like behaviors**
- Although stress-related depression symptoms can last for a while, they can eventually get better over time, and the levels of p11 in the brain return to normal.

JOURNAL ANALYSIS

# Obesity and Depression

**Treatment Strategies:**

- Combining lifestyle interventions
- Research on metabolic and neurobiological mechanisms connecting obesity and mental health

**(Fulton et al., 2022)**

**Link between Obesity and Depression/Anxiety:**

- Bidirectional association between being overweight (BMI ⩾ 25–29.99) and depression, stronger for obesity (BMI ⩾ 30).
- Obese adults have 23–36% increased odds of developing depressed mood
- Longitudinal analysis suggests a 40% increased risk of depression in obese adolescents
- Obesity increases the odds of anxiety disorder or symptoms by 30–40%, with a stronger relationship in severe obesity (BMI ⩾ 35)

**Impact on Mental and Physical Health:**

- Depression and anxiety in obese individuals have significant mental and physical consequences.
- Cognitive impairments
- poorer performance on cognitive tasks, comorbid depression.

**Physical Activity and Sedentary Lifestyle:**

- Mood disorders can lead to reduced physical activity, contributing to obesity and cardiovascular issues.
- A sedentary lifestyle contributes to vascular problems, inflammation, reduced brain blood flow, and neuroinflammation.

# Chronic Pain

(Crofford, 2015)

## Introduction to Chronic Pain:

- Chronic pain is a feared and challenging symptom for both patients and clinicians.
- It demands attention, intruding into every aspect of a person's life, and often makes clinicians feel helpless.

## Definition of Pain:

- Defined by the International Association for the Study of Pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective, influenced by individual experiences, and not always linked to tissue damage.

# Chronic Pain Conte.

(Crofford, 2015)

**Dimensions of Pain:**

- Sensory dimension: Where and how much does it hurt?
- Emotional dimension: How unpleasant is the experience?
- Cognitive dimension: Interpretation based on past experiences, causing fear, anxiety, and influencing responses.

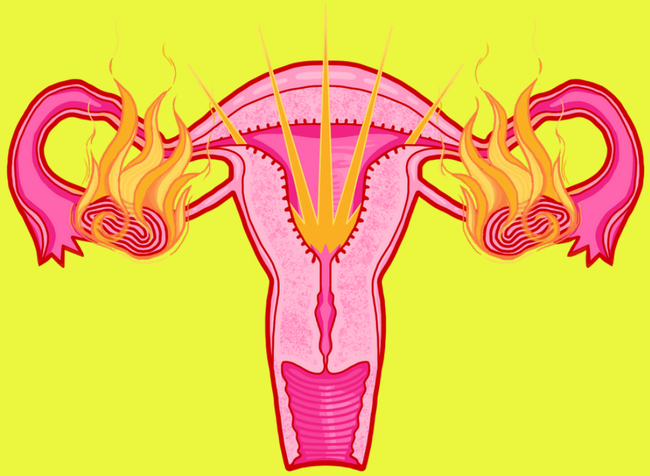
**Classification of Chronic Pain:**

- Acute pain arises from tissue damage (nociceptive pain).
- Neuropathic pain results from lesions or diseases of the somatosensory nervous system.
- Chronic pain lasts more than 3 months, often involving central sensitization.

**Prevalence and Clustering:**

- Chronic regional pain affects 20-25% of the population, while chronic widespread pain affects around 10%.
- Pain conditions often cluster

# Chronic Pain Conte.



(Crofford, 2015)

**Body and Brain Connection:**

- Historical view shows the interplay between musculoskeletal pain and psychological distress.
- Fibromyalgia, involves higher symptom levels without consistent tissue abnormalities.

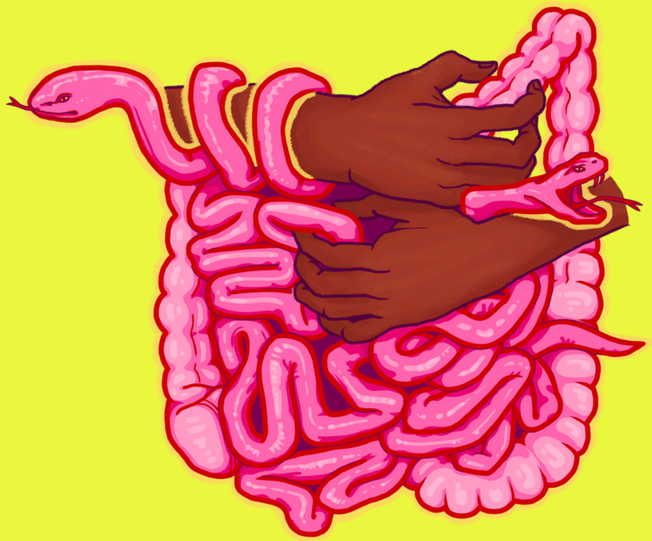
**Genetic and Environmental Factors:**

- anxiety and depression contribute to an individual's predisposition to central pain amplification
- Environmental triggers can lead to the transition from acute to chronic pain

**Stress, Arousal, and Chronic Pain:**

- Centrally mediated chronic pain is associated with stressful events, and symptoms fluctuate based on perceived stress.
- Studies focus on the hypothalamic-pituitary-adrenal axis (HPA) and autonomic nervous system (ANS) alterations

# Chronic Pain Conte.



(Crofford, 2015)

**Self-Regulation in Chronic Pain:**

- Successful adaptation depends on an individual's ability to self-regulate.
- Patients with chronic pain may display adverse health behaviors due to depleted self-regulatory strength.

**Treatment Approaches:**

- Analgesics, antidepressants, and agents reducing neuronal excitability are common treatments.
- Opioids are often ineffective and pose societal issues; there is a need for better understanding and development of new treatment strategies.
- Empathy and time from clinicians play a crucial role in supporting patients with chronic pain.

**Conclusion:**

- While complete elimination of chronic pain may not be achievable, empathetic understanding and behavioral guidance from clinicians are essential for improving patients' well-being.

PRETITLE

# How Individuals can Improve their Well-being

Footer

- Get at least eight hours of sleep every night
- Eat foods in moderation and keep a balanced diet
- seek proper treatment of mental and physical illnesses
  - seek mental health treatment if needed
  - mindfulness
- Workout for at least 60 minutes three times a day
- find ways to reduce stress
- be resilient

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# Thank you!