

Module 1

Introduction to the Pain
Assessment and
Management Initiative
(PAMI) : A Patient Safety
Project

Basic Principles of Pain
Management in the
Emergency Care Setting:
Introduction, Recognition,
and Assessment



Pain Assessment and Management Initiative

PAMI learning module content will sometimes overlap due to similar topics. The PAMI website offers access to learning module handouts, pain tools, resources, websites, and recent pain news.

We welcome your feedback on all PAMI materials and are interested in how you use them to improve patient safety and clinical care.

Please email emresearch@jax.ufl.edu.

For more information please visit
<http://pami.emergency.med.jax.ufl.edu/>



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Citation for Presentation

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Introduction to Pain Assessment and Management Initiative (PAMI) : A Patient Safety Project

This online module was created to provide general information on recognition, assessment, diagnosis and treatment of pain in the context of an interdisciplinary team. Pain terminology, classification, history-taking, physical diagnosis and treatment considerations are included along with case scenarios.

While multiple disciplines will find this information useful, physician training programs can utilize content to meet ACGME Core Competencies (patient care, medical knowledge, practice-based learning, interpersonal and communication skills, professionalism and systems-based practice).



Introduction

Why is the improvement of pain management in acute care settings important?



Pain is a complex and common complaint that leads to frequent access of the US healthcare system.

- Pain is often under recognized leading to inadequate treatment and numerous patient safety concerns.
- These concerns are amplified in special populations such as the young, old, and cognitively impaired; especially in the chaotic Emergency Department (ED) and Emergency Medical Service (EMS) environments.

Despite its importance, pain management receives little emphasis in the curricula of most healthcare professional education programs.

What is the Purpose of PAMI?

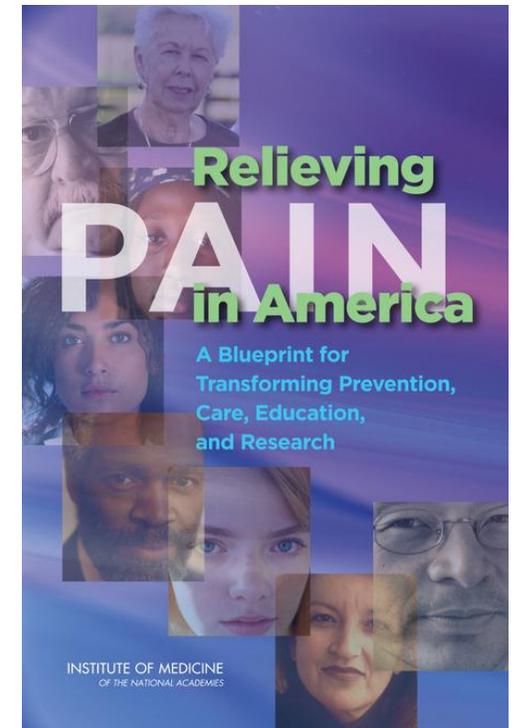
The purpose of the [Pain Assessment and Management Initiative \(PAMI\): A Patient Safety Project](#) is the advancement of pain recognition and treatment in acute care settings to improve patient safety and reduce risk.

This project addresses both acute and chronic pain in all ages including high risk populations and settings such as procedural sedation.



According to the 2011 IOM Report *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education and Research*

- Acute and chronic pain affects large numbers of Americans with approximately 100 million U.S. adults burdened by chronic pain alone.
- The ***estimated annual cost of chronic pain is \$600 billion***, which exceeds the cost of each of the nation's priority health conditions and excludes acute and cancer-related pain.
- Pain is the most common reason for seeking health care, and as a presenting complaint, ***accounts for up to 78% of visits to the ED.***
- Additionally, a conservative estimate is that 20 - 25% of EMS patients have moderate to severe pain. Yet, this report does not address pain management in the ED or prehospital settings.



Deficiencies in Pain Education

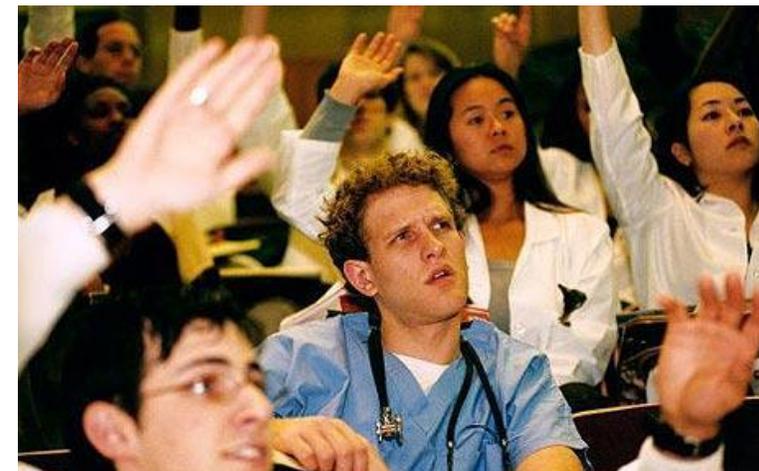
Education regarding the recognition and management of pain is lacking in all healthcare related professions.

A survey of medical schools showed students receive less than 10 hours of pain education. When taught, it was often in the context of a general requirement and only 3.8% reported a required pain course.



Deficiencies in Pain Education

- The recent IOM report and other pain related national events such as the increase in narcotic related deaths, have resulted in a new focus on the need for improved pain education and curricula that is multidisciplinary.
- A recent survey of pain medicine leaders ranked key areas of needed pain education:
 - compassionate care and empathy
 - examination
 - communication and prescribing skills
 - opioids
 - fundamentals of pain neurobiology; and
 - nonpharmacological treatments



To date there has been minimal emphasis on pain education in the ED and EMS settings yet this is often where patients in pain often seek help and relief.

Pain Management and Hospital Operations

- Pain management has been the focus of many regulatory agencies and hospital organizations leading to changes in pain assessment and documentation.
- In 2001, the **Joint Commission** established the standards for pain assessment and in treatment due to the under treatment of pain.
- *“The Joint Commission’s current standards require that organizations establish policies regarding pain assessment and treatment and conduct educational efforts to ensure compliance.”*
- The foundational standards are:
 - The hospital educates all licensed independent practitioners on assessing and managing pain.
 - The hospital respects the patient's right to pain management.
 - The hospital assesses and manages the patient's pain.



For more information visit:

www.jointcommission.org/topics/pain_management.aspx

Pain Management and Hospital Operations

- The Hospital Quality Alliance (HQA) was developed to publicly report data on the quality of patient care in US hospitals via the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey.
- This survey includes three questions related to pain management. **Therefore, patient satisfaction is tied to experiences related to pain while in the hospital setting.**
- These experiences often begin in the ED as many hospital admissions originate in the ED and patients often do not distinguish this setting from inpatient care.
- Whether the requirements set forth by hospital regulatory agencies have led to improvement in pain management and patient satisfaction is debatable; however, it is likely that further changes and guidance will be seen in the future.

For more information visit http://www.qualityreportingcenter.com/wp-content/uploads/2016/01/IQR-VBP_HCAHPS-and-Pain-Management_20160128_vFINAL508.pdf

ED Pain Management Studies



Research has shown that initial ED pain assessments were common but reassessments were not common.

Only 60% of patients in pain received analgesics and this was usually after lengthy delays.

Only 40-50% of trauma patients received pain assessments and analgesics.

Even more concerning was the finding that 74% of patients were discharged home in moderate to severe pain.

Todd KH, Ducharme J, Choiniere M, et al. Pain in the emergency department: Results of the pain in emergency medicine initiative (PEMI) multicenter study. *Journal of Pain*. 2007;8:460-466.

Silka PA, Roth MM, Morena G, Merrill L, Geiderman JM. Pain scores improve analgesic administration patterns for trauma patients in the emergency department. *Acad Emerg Med* 2004;11:264-70

Why the Lack of ED Assessment?

Numbers don't always reflect the whole story...

- The acuity and clinical condition of a patient may explain the lack of assessments- and reassessments especially in patients who have an altered mental status, head injured, are intubated, inebriated, or unstable.
 - *Patients are less likely to be assessed for pain as injury severity increases.*
 - Physiologically unstable patients are least likely to receive a standardized pain assessment and to receive ED opioids.



Spilman SK, et al. Is pain really undertreated? Challenges of addressing pain in trauma patients during prehospital transport and trauma resuscitation. *Injury* (2016), <http://dx.doi.org/10.1016/j.injury.2016.03.012>



Challenges in the Emergency Department Management of Pain

Pain Management Challenges in the ED Setting

1. Under-treatment of pain, termed *oligoanesthesia*, continues to be a major problem in the emergency setting. Pain management practices are often inadequate due to several factors:

- failure to recognize pain or to differentiate between pain from anxiety
- lack of initial and continuing education for healthcare providers and students
- fear of creating or encouraging addiction
- narcotic safety concerns and legal repercussions
- lack of standard assessment, reassessment and management tools especially for pediatric, non-English speaking, nonverbal, elderly or cognitively impaired patients
- Tendency of clinicians to focus on making *the diagnosis* rather than treating the patient as a whole

Many of these concerns are not only experienced by emergency care providers but are also seen in primary care settings.

Pain Management Challenges in the ED Setting

2. Adequate assessment, treatment and reassessment of pain in *ED and prehospital* settings has several unique obstacles including:

- crowded and chaotic settings where treatment teams are forced together and must develop rapid communication between the treatment team, patient, and family or caregivers
- lack of pre-existing physician-patient relationships or knowledge of past medical and medication history
- inadequate discharge plans and treatment resulting in return ED visits or admissions

CHALLENGE ACCEPTED



- pressure to see patients rapidly, especially those perceived to be more critical, which can hinder time for adequate pain reassessments
- bias towards patients with chronic pain being drug-seekers
- difficulty in coordinating care from the ED especially in patients with limited or no funding sources

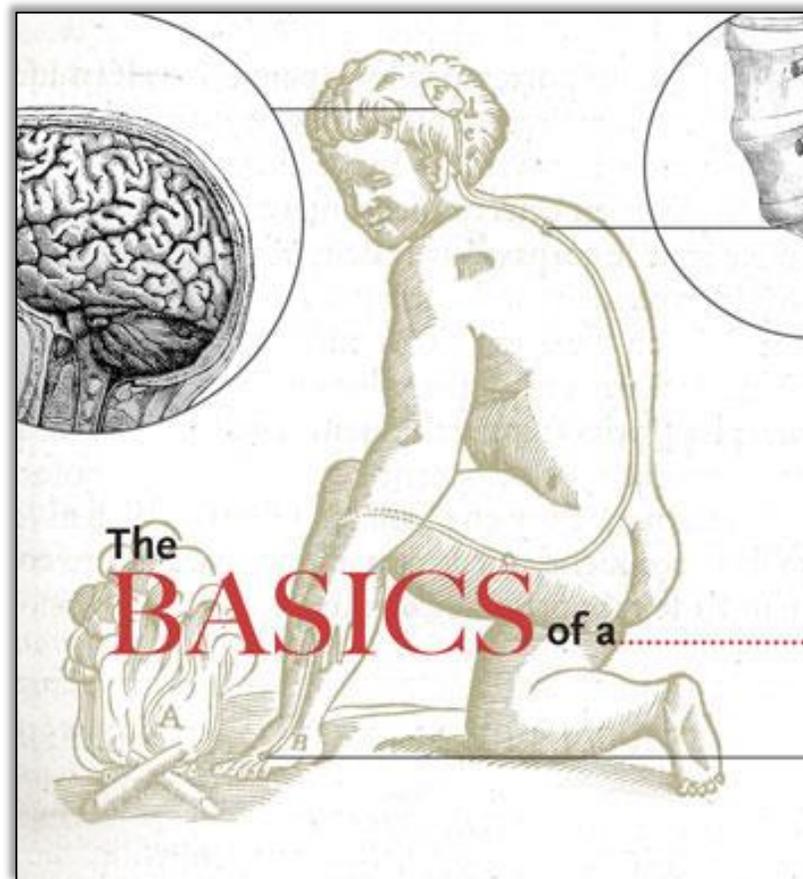
Pain Management ED Discharge Planning

Sound management of pain in the ED and post-discharge is important because:

- it reduces return visits;
- expedites return to normal activities and work;
- helps reduce risk of acute pain progressing to chronic pain; and
- patients who leave the ED with pain often take 4-6 weeks to experience pain reduction after injuries yet average prescriptions are for 3-4 days and follow-up care is rarely available that quickly.



Basic Principles of Pain Management in the Emergency Care Setting.



Learning Objectives for the Basics of Pain

1. Recognize the multi-factorial determinants of pain and contributors to a patient's perceived pain and response to treatment.
2. List the different classifications of pain and how this impacts treatment selection.
3. Discuss the key elements of performing an accurate pain history and examination.
4. Recognize the importance of pain recognition, assessment and re-assessment.
5. Understand the different types of pain scales.
6. Describe the consequences of untreated pain.
7. Name patient safety issues regarding pain management, discharge planning, and transition of care.



Case Scenarios



Case Scenario 1



A 54-year-old non-English speaking male is brought to the ED by EMS after sustaining a motorcycle collision approximately 20 minutes prior to arrival. He has an obvious deformity to his left femur and multiple areas of “road rash.” He received no pain medications prior to arrival. His left leg is splinted. His eyes are closed and he appears to be praying. After physical exam and x-rays, it is determined that he has a left femur fracture and profuse areas of abrasions and denuded skin contaminated with dirt and gravel.

A second patient arrives during your assessment of the first patient. Patient number 2 is a 23 year-old female that was involved in the same accident. She was the restrained backseat passenger in a pick-up truck, reports “pain all over” and is crying hysterically. After a thorough exam she is determined to have mild musculoskeletal strain and one small contusion of her forehead.

- What factors account for the different reactions to pain in these two patients?
- What are the potential barriers to adequately assessing their pain?

Case Scenario 2

A 3 year-old right-handed male presents to the ED with his caregiver who reports that the child has complained of pain in his right arm since yesterday. When questioned the child denies pain but cries and pulls away when any part of the right upper extremity is touched. He has no obvious deformity or swelling to either arm.

- How would your approach to pain assessment in this child differ from that of an adult? From an adolescent?**



Defining and Classifying Pain

Defining Pain



- Determining the context, history of present illness and type of pain is complex and time consuming but is essential to developing a successful management plan.
- There are many types of pain and factors that affect a patient's expression of pain and response to treatment.
- Assessing and evaluating the symptom(s) of pain must be done in a systematic fashion as would be done for any other chief complaint or abnormal vital sign (i.e., hemorrhage, hypertension, etc.)

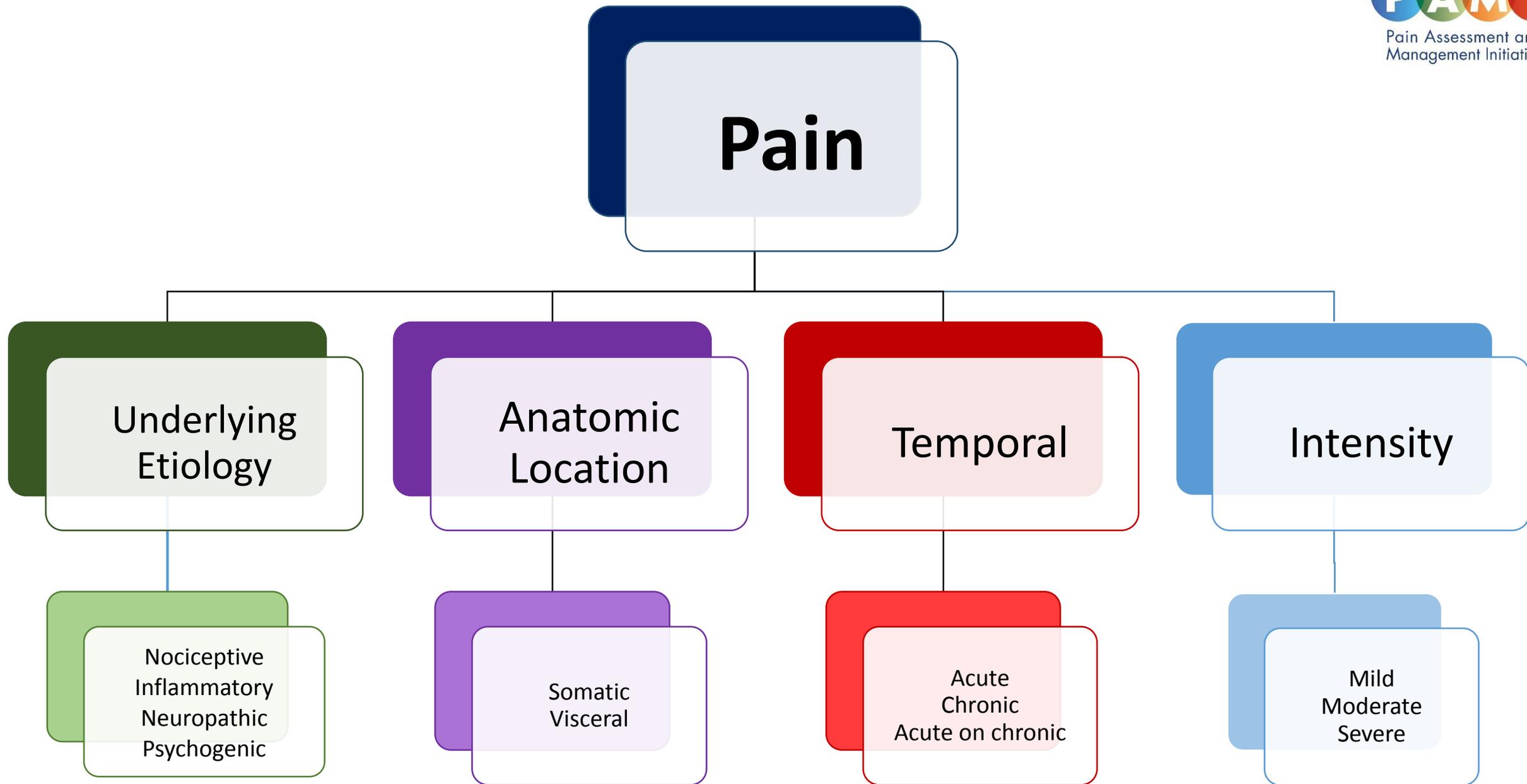


Classification of Pain

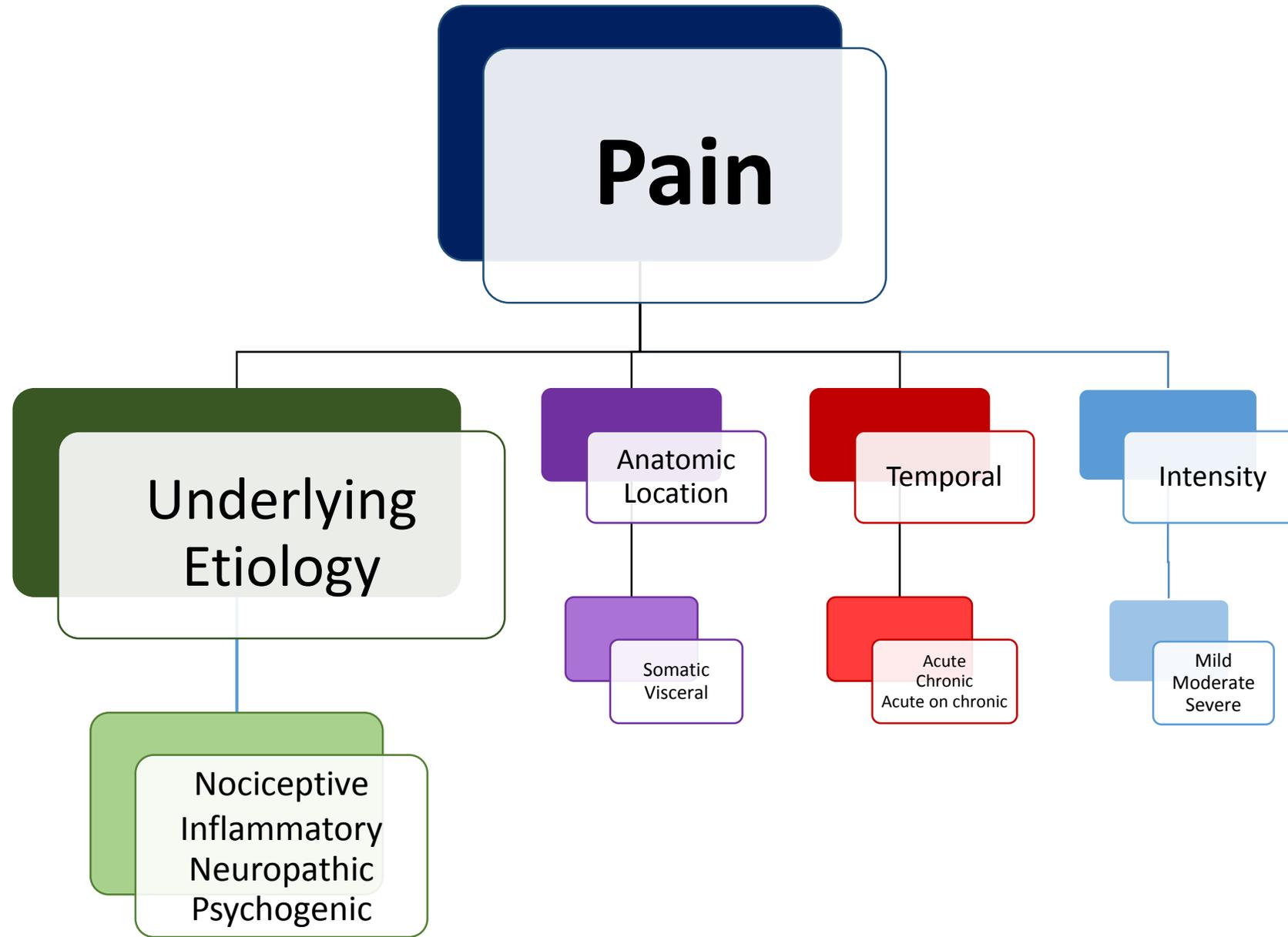
There are multiple ways in which pain may be classified. Within this learning module, pain is broadly classified by **underlying etiology**, **anatomic location**, the **temporal nature**, and **intensity**.

- **Underlying etiology** refers to the source of the experienced pain.
- **Anatomic location** refers to the site of pain within the body and can be divided into **somatic** and **visceral**.
- **Temporal nature** refers to the duration of the pain.
- **Intensity** refers to how the pain experience hurts.





Classifications of Pain: Underlying Etiology



Underlying Etiology

Nociceptive
Inflammatory
Neuropathic
Psychogenic

- **Nociceptive Pain** is the result of direct tissue injury from a noxious stimulus. Examples include bone fracture, fresh surgical incision, and fresh burn injury.
- **Inflammatory Pain** is the result of released inflammatory mediators that control nociceptive input and are released at sites of tissue inflammation. Examples include appendicitis, rheumatoid arthritis, inflammatory bowel disease, and late burn healing.
- **Neuropathic Pain** is the result of injury to nerves leading to an alteration in sensory transmission. It can be central or peripheral in nature. Examples include diabetic peripheral neuropathic pain, postherpetic neuralgia, chemotherapy induced pain, and radiculopathy.
- **Psychogenic pain**, a rare entity, is a somatic manifestation of a psychiatric illness such as depression.
 - A reported 30% of patients with depression complain of chronic pain that resolves with successful treatment of their depression.
 - This is clinically distinct from the more common situation in which the severity of experienced pain is influenced by psychological factors such as previous pain experiences, coping mechanisms, beliefs about condition or medical treatment.

Pain Versus Nociception

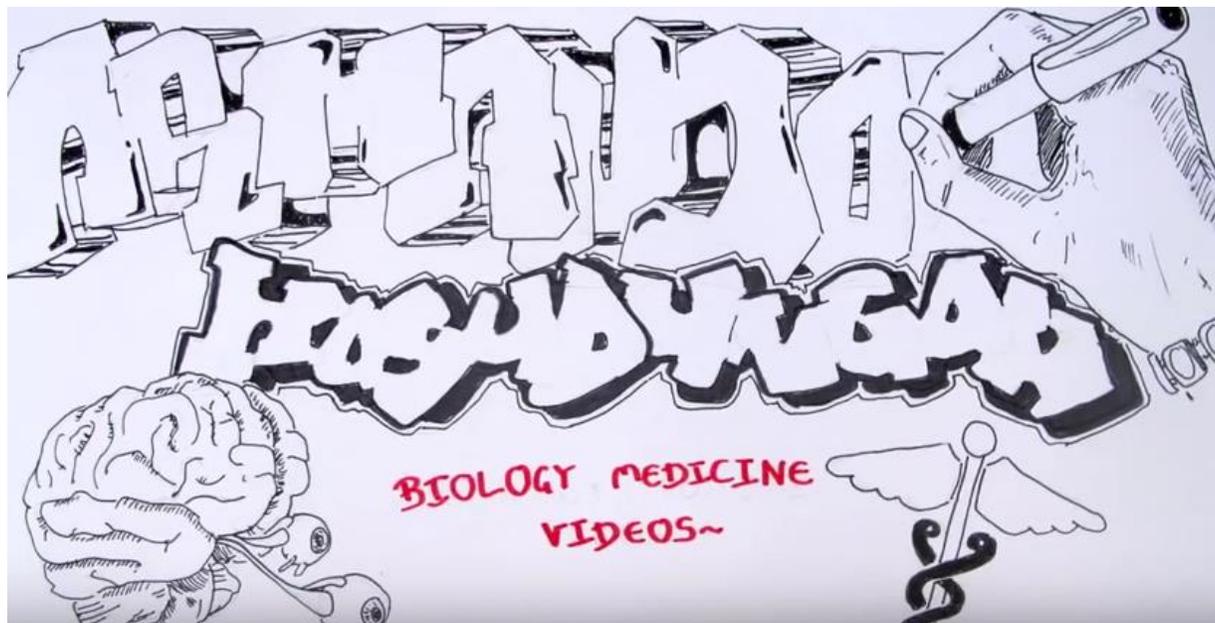
- Pain is an experience that results from brain activity in response to a noxious stimulus and includes the sensory, emotional, and cognitive processes of the brain.
- **Nociception** is the process by which information about a noxious stimulus is conveyed to the brain. It is a sum of neural activity that occurs prior to the cognitive processes that enable humans to identify a sensation as pain.

Question to consider:

- Does an unconscious patient who appears to be clinically unresponsive to pain still need to be treated for pain?
 - Yes: Proper treatment for pain can help prevent sensitization of pain pathways which have been found to cause chronic pain syndromes.

On the next slide there is an optional video that discusses nociception.

YouTube Video: An Introduction to Pain

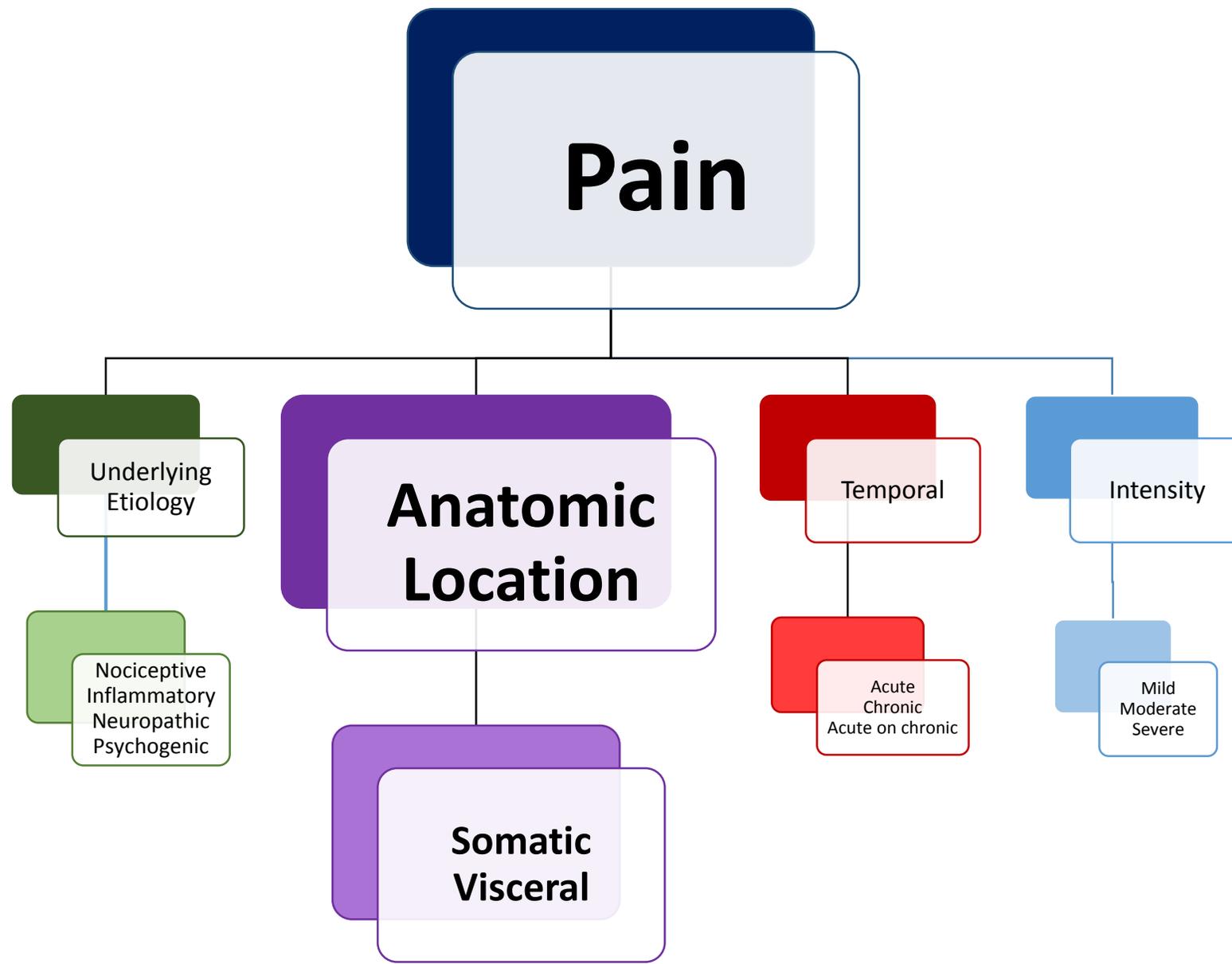


<https://www.youtube.com/watch?v=fUKlpuz2VTs>

Underlying Etiology continued

- **Idiopathic pain** is a term used in situations when there is no apparent cause for a patient's pain, the pain severity, or the resulting disability or impairment:
 - **rarely diagnosed** in the emergency medicine setting
 - could be worsened by psychological distress, and is more common in people who already have a pain disorder such as **temporomandibular joint disorder (TMJ)** and **fibromyalgia**.

Classification of Pain: Anatomic Location



Somatic

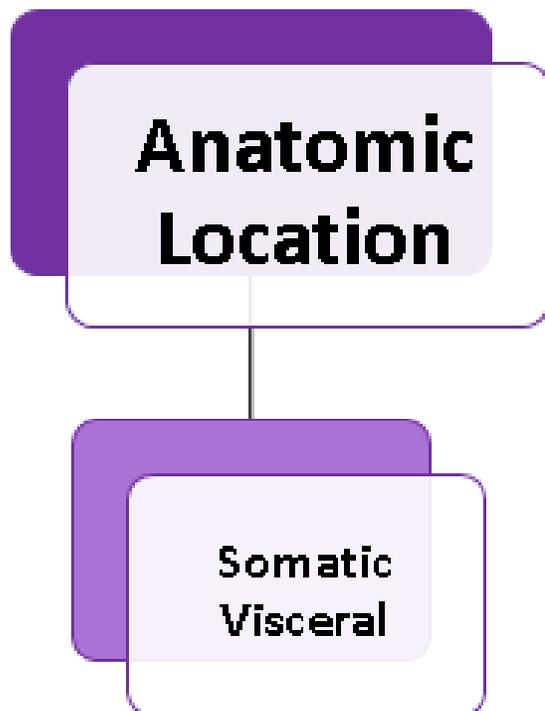
- Pain occurs from injury to skin, muscle, bone, joint, connective tissue and deep tissues
- Is also known as musculoskeletal pain
- Typically pain is well-localized, sharp and worse with movement

Examples include lacerations, fractures, and pelvic pain.

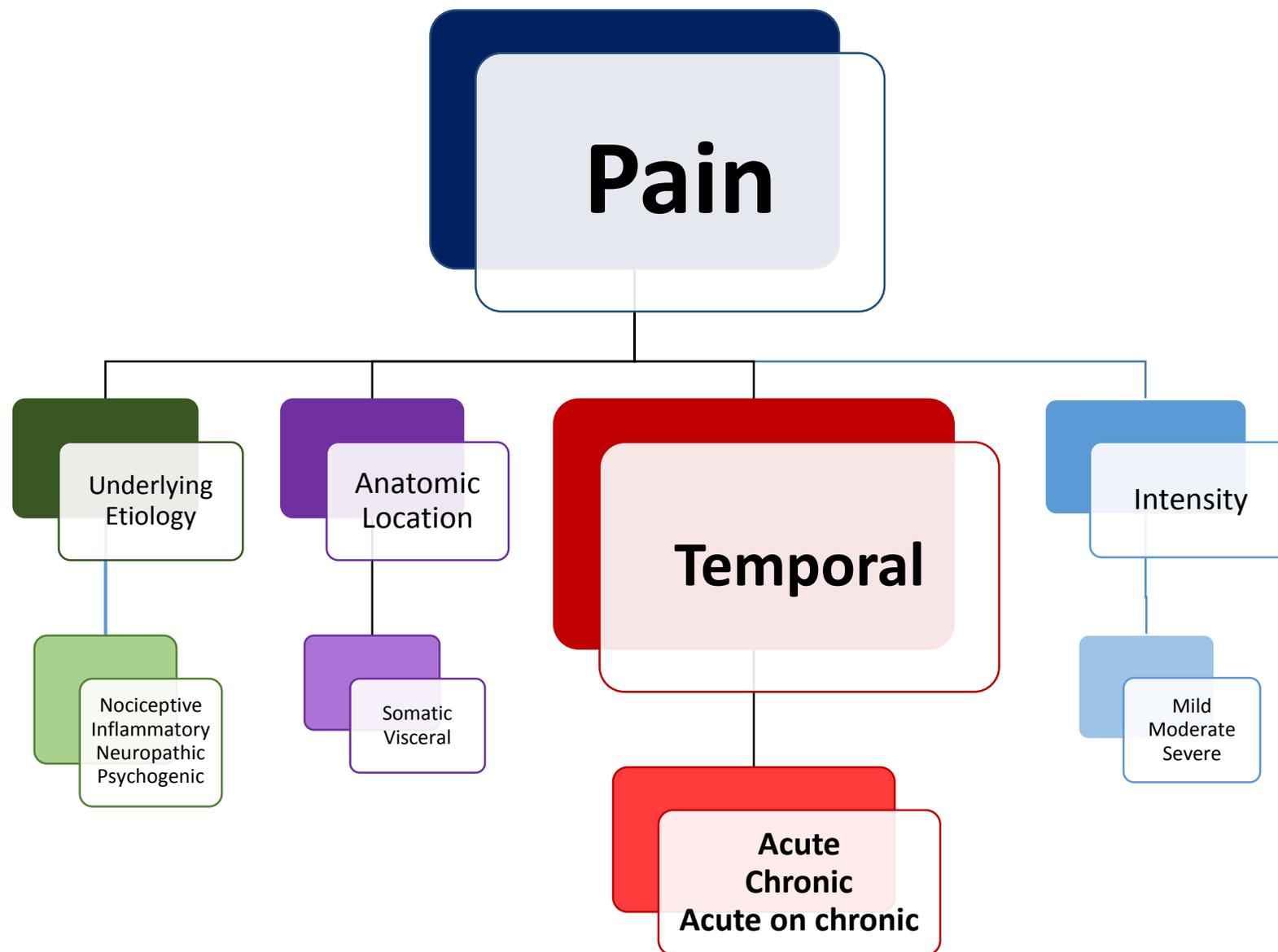
Visceral

- Is internal pain and typically occurs from internal organs or tissues that support them
- Pain sensation is typically vague deep aches, colicky, and/or cramping
- Usually poorly localized

Examples include appendicitis, peptic ulcer disease, diverticulitis, endometriosis, and ureteral stones.



Classification of Pain: Temporal Nature or Duration



Acute pain is defined as lasting less than 3 months.

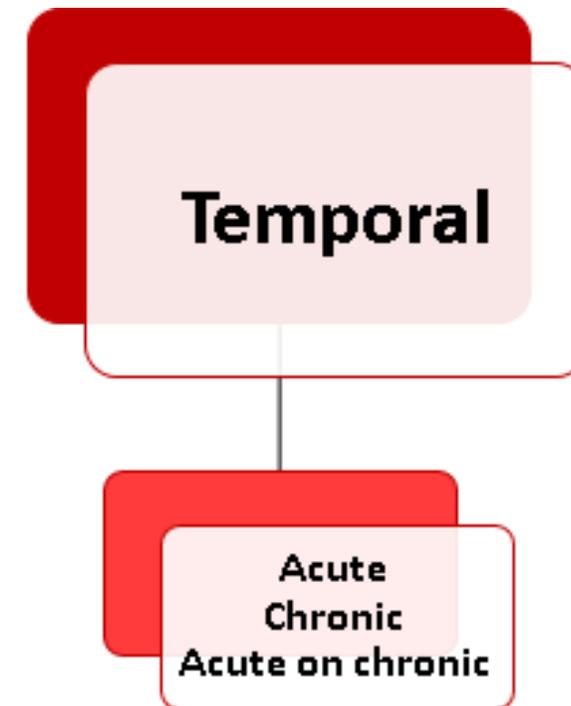
- Acute pain is a neurophysiological response to noxious injury that should resolve with normal wound healing.
- Examples include post-operative pain, fractured bones, appendicitis, smashing finger in door, labor pains.

Chronic pain is defined as lasting more than 3 months or beyond the expected course of an acute disease or after complete tissue healing.

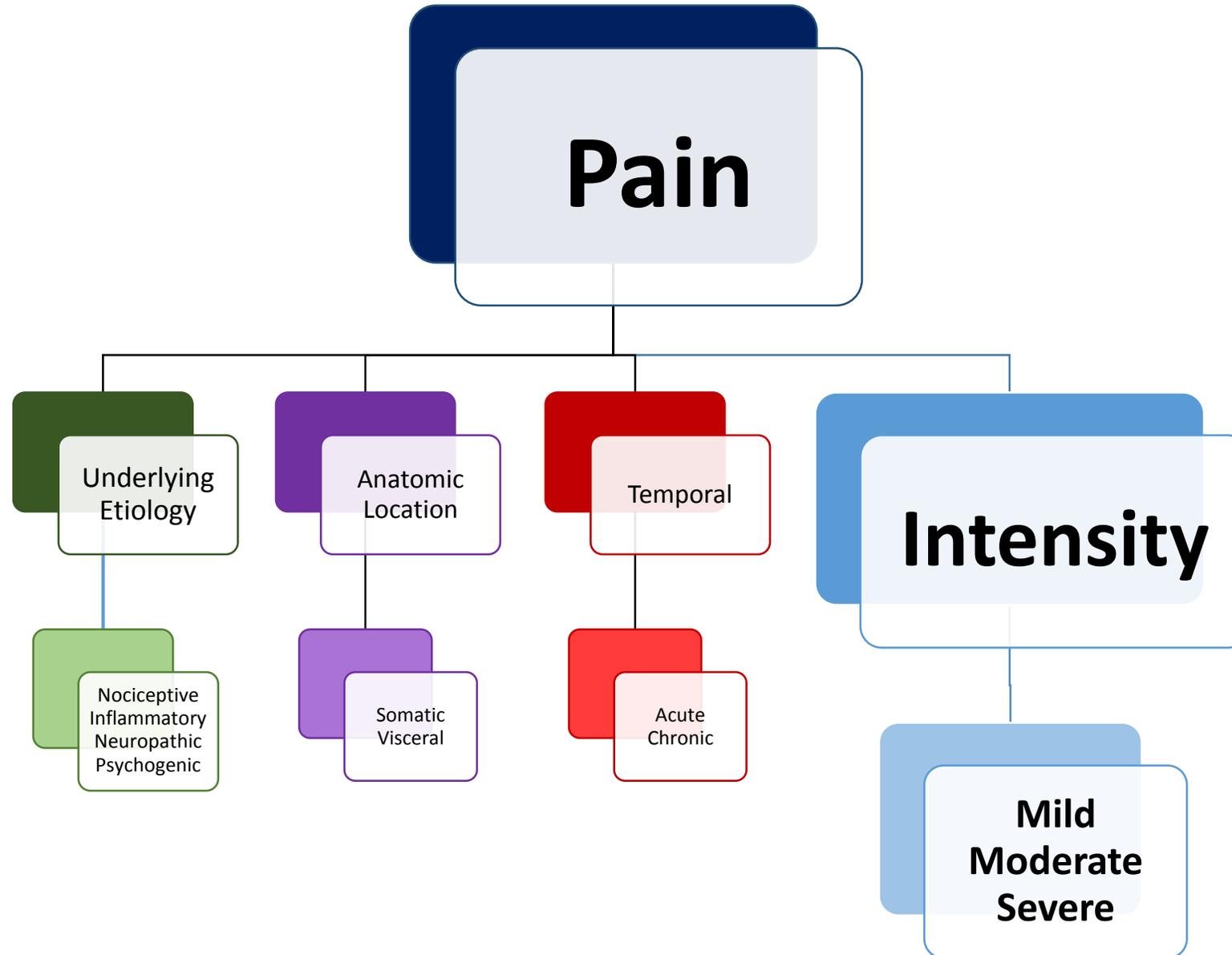
- Chronic pain extends beyond the time of normal wound healing with the development of multiple neurophysiological changes in the central nervous system.
- Examples include low back pain, neck pain, and chronic pancreatitis.

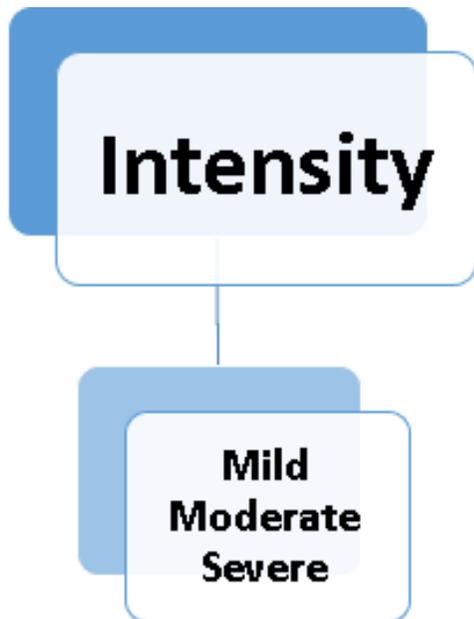
Acute on Chronic pain

- This condition refers to times of acute exacerbations of a chronic painful syndrome or new acute pain in a person suffering from a chronic condition.
- Examples of both situations include a sickle cell exacerbation in a patient with sickle cell disease and an abscess in a patient with sickle cell disease.



Classification of Pain: Intensity





Pain assessment scores, history, and physical exam are used to determine intensity which is subjective and may vary from one provider to another.

Remember that each scale used has its own scoring range and levels for mild, moderate or severe pain intensity.

- Case scenario 1 is an example of the challenges involved in determining intensity where one patient has severe injuries but rates their pain as moderate compared to the patient with minor injuries who complains of severe “pain all over.”
- Multiple factors play a role in the patients’ response to pain. These factors range from age to genetics to culture. Continue reading to understand these factors and how they affect a patients’ response to pain.

Pain intensity can range from:	Scores typically range from:
Mild	1-4
Moderate	5-7
Severe	8-10

In Summary

- **Pain can be:**
 - Nociceptive
 - Inflammatory
 - Neuropathic
 - Psychogenic pain
 - Idiopathic pain
- **Pain may be located:**
 - Somatic
 - Visceral

- **Pain may vary in duration:**
 - Acute
 - Chronic
 - Acute on chronic
- **Pain intensity varies:**
 - Mild
 - Moderate
 - Severe

The following table summarizes types of pain, mechanism of pain, and provides clinical examples.

Table 1. Types of pain, mechanism, and clinical examples

TYPES OF PAIN	MECHANISM	CLINICAL EXAMPLES	PHARMACOLOGICAL TREATMENT OPTIONS*
UNDERLYING ETIOLOGY			
Nociceptive	The result of direct tissue injury from a noxious stimuli.	Bone fracture, fresh surgical incision, and fresh burn injury.	May include both opiate and non-opiate medications depending on injury.
Inflammatory	The result of released inflammatory mediators that control nociceptive input.	Late stages of burn healing, neuritis, and arthritis	Anti-inflammatory agents
Neuropathic	The result of direct injury to nerves leading to an alteration in sensory transmission.	Diabetic neuropathy, peripheral neuropathic pain, and post-herpetic neuralgia.	Tricyclic, selective norepinephrine reuptake inhibitors, gabapentinoids, or antidepressants
Psychogenic	Somatic manifestation of psychiatric illness or exacerbation of pain severity due to previous experience, poor coping mechanisms, social history, etc.		Treating the psychiatric illness may help in certain cases where pain is truly a somatic symptom of depression.
Idiopathic	Unknown	Chronic back pain without preceding trauma or obvious inciting event.	May be difficult to adequately address pain since underlying etiology is unknown
ANATOMIC LOCATION			
Somatic	A-delta-fiber activity located in peripheral tissues	Superficial lacerations, superficial burns, superficial abscess	Topical and/or local anesthetics, opiates, non-opiates
Visceral	C fiber activity located in deeper tissues such as organs	Uterine fibroid pain, pyelonephritis, biliary colic	opiates
TEMPORAL NATURE			
Acute	A neurophysiological response to noxious injury that should resolve with normal wound healing.	Acute fracture, acute knee sprain	Opiate, non-opiates
Chronic	Pain that extends beyond the time for normal wound healing with resultant development of multiple neurophysiological changes	Chronic low back pain, fibromyalgia, arthritis	Depends on the nature of the pain. Please refer to the module on chronic pain for more detailed information.
Acute-on-chronic	An acute exacerbation of a chronic pain syndrome	Sickle cell disease, cancer, rheumatoid arthritis, acute injury in chronic pain patient	

*Nonpharmacological treatments can be considered at any time for any type of pain

Optional Pain Videos

The following videos are **optional** and provide additional information about defining and classifying pain.

Pain Types: Part 1 - Introduction

<https://www.youtube.com/watch?v=9oonDCYwHuU>

Pain Types: Part 2 - Neuropathic

<https://www.youtube.com/watch?v=QPjg6c3Qve4>

Pain Types: Part 3 – Generalized or Central

<https://www.youtube.com/watch?v=ZY3IHjmS32U>

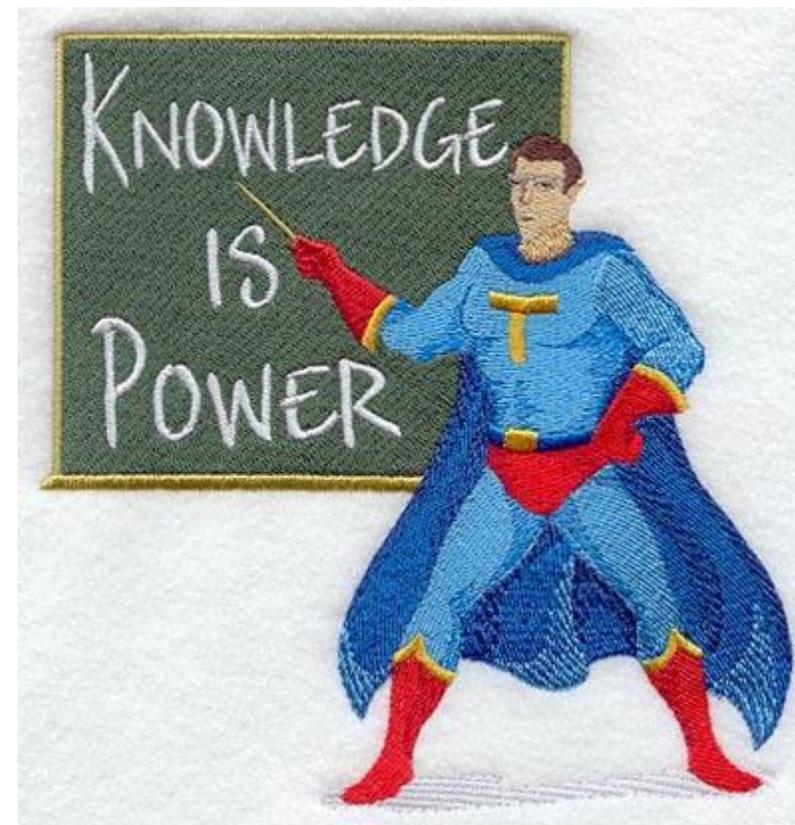
Knowledge Check

Pain lasting **less** than 3 months is known as:

- a) chronic pain
- b) acute pain**
- c) somatic pain

What category of pain is the result of injury to **nerves** leading to an alteration in sensory transmission?

- a) Nociceptive pain
- b) Acute pain
- c) Neuropathic pain**
- d) Inflammatory pain

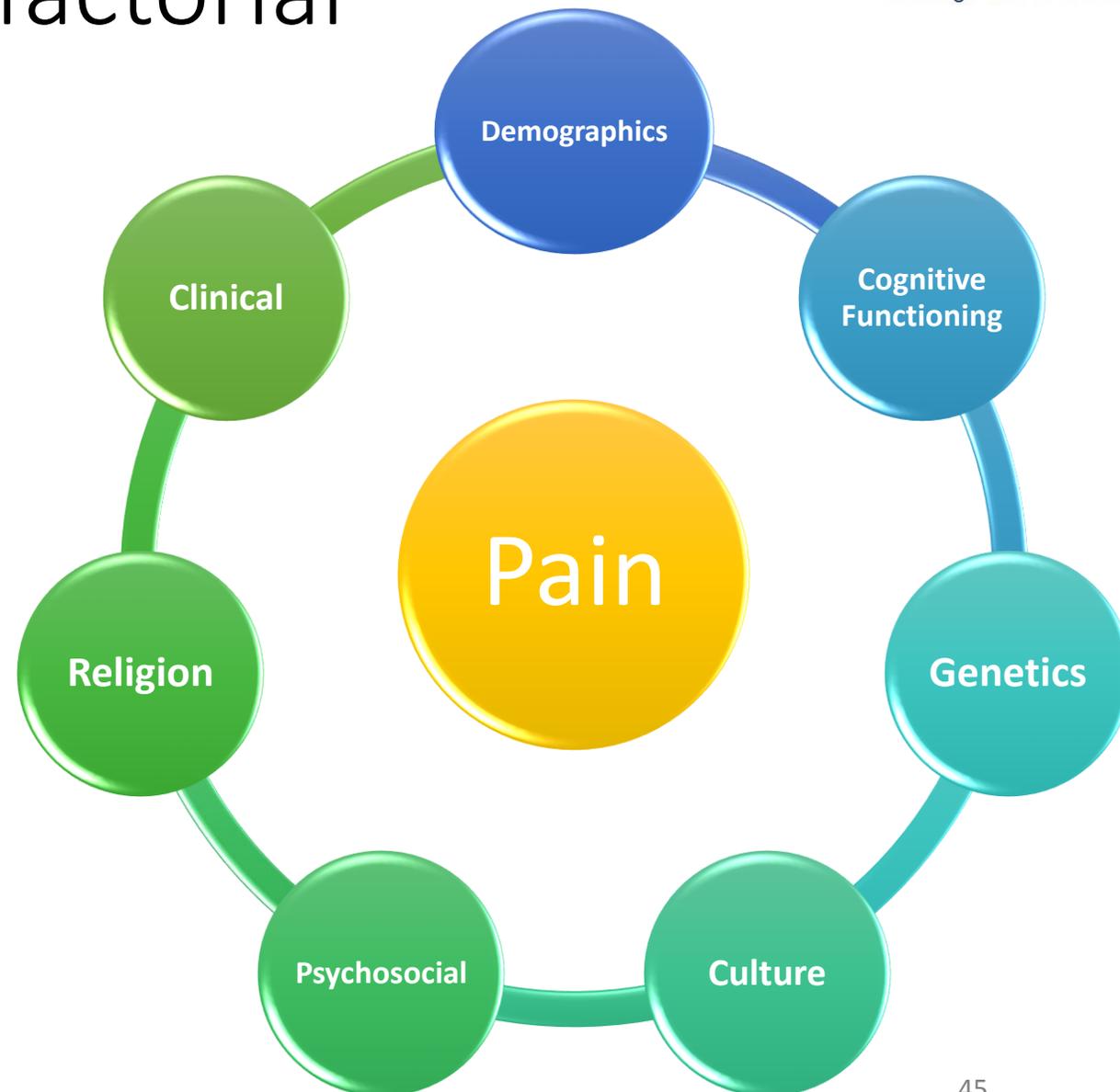


Pain is Multifactorial



Pain is Complex and Multifactorial

- How pain is **perceived** by an individual and how that individual **cope**s with their pain is influenced by several factors.
- These factors can vary from individual to individual and can include the patient's beliefs, previous experiences, demographics, and perceived care by the treating medical team.



Factors Affecting Patient Response to Painful Stimuli

- Age, Gender, Ethnicity
- Socioeconomic and Psychiatric factors
- Catastrophizing
- Culture and Religion
- Genetics
- Previous experiences
- Patient perceptions
- Patient expectations



Patient Response to Pain and Treatment:

Age and Gender

- Demographics such as **age, gender, and ethnicity** have all been reported to influence pain perception.
- Studies on the influences of gender and age have had variable results.
- Overall, females display more sensitivity than males towards most painful conditions. Females also are believed to express their pain more frequently and effectively than males.
- Studies have shown different interpretations by observers for the same facial expressions depending on patient gender.
 - This behavior could explain why patients are managed differently by providers when presenting with the same injury.



Patient Response to Pain and Treatment: Ethnicity

- Ethnicity has been shown to be associated with pain intensity and interference.
 - One study found that African Americans tended to report higher rates of pain and interference with their daily activities such as sleep.



Tips

Consider the impact of age, gender and ethnicity on pain assessment and management but beware of labeling or stereotyping- treat the **individual** patient!

Patient Response to Pain and Treatment: Culture, Religion and Previous Experiences

- **Culture and Religion/Personal values**
 - How patients cope with pain can be influenced by their existing social support system.
 - Those with strong cultural and religious ties tend to have stronger support mechanisms for dealing with their pain.
 - Variations in cultural norms can influence how a patient expresses their pain and how they want their pain to be managed.
- **Previous pain experiences** can alter activity within certain brain regions responsible for pain processing resulting in persistent pain.



Patient Response to Pain and Treatment: Socioeconomic and Psychiatric Factors

- Health disparities research indicate that patients living in **rural** areas and who are of lower **socioeconomic status** tend to report higher levels of chronic pain, pain related disability, and depression. **Depression** and pain often co-exist (30-60% of pain patients also report depression).
- Mood disorders and other psychiatric disorders have been linked to the development of chronic pain.
- This co-existence has important clinical and financial implications:
 - these patients often report more pain, greater functional disability, worse clinical prognosis, and accrue higher healthcare costs.

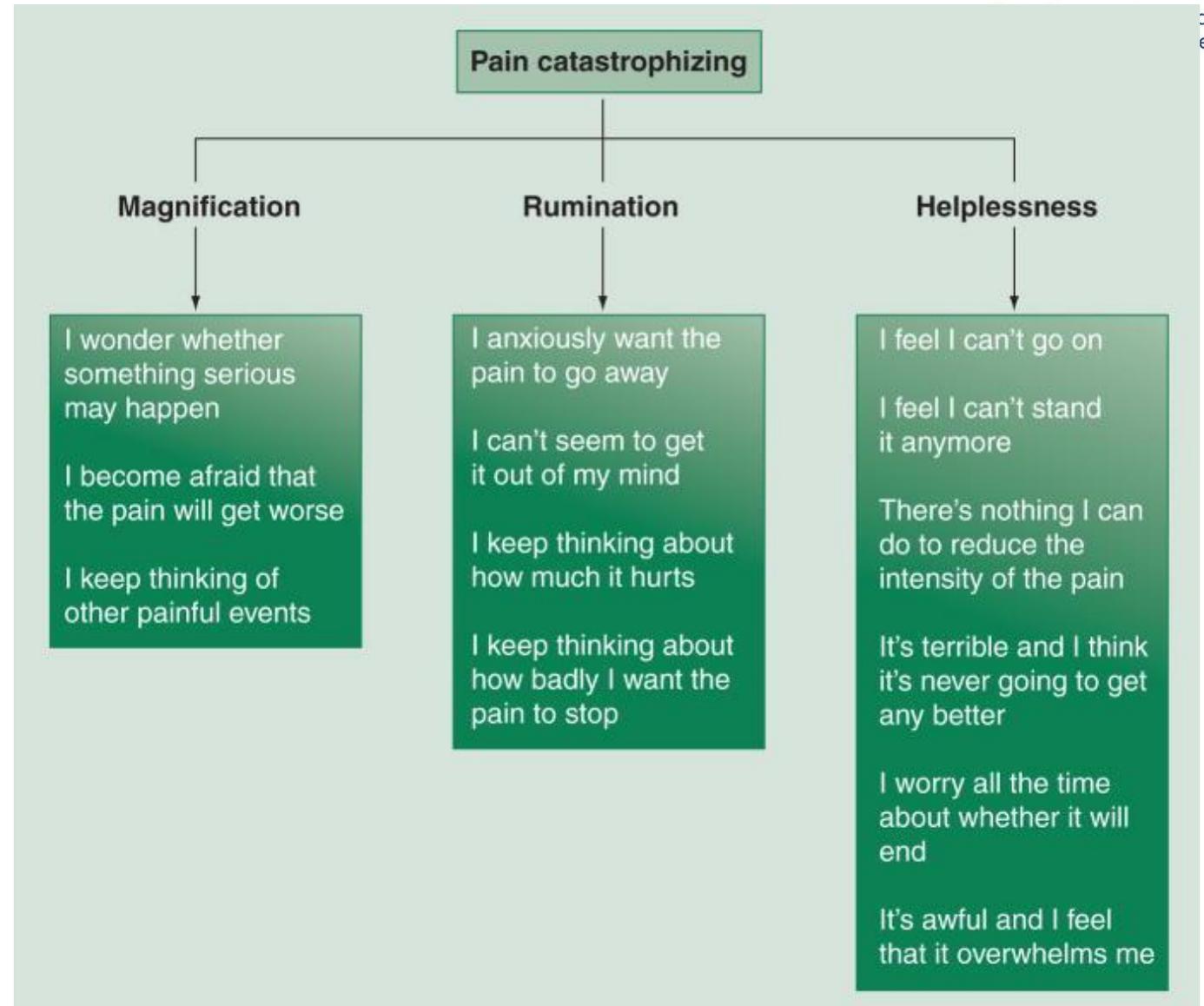
Patient Response to Pain and Treatment: Psychiatric Factors

- **Pain catastrophizing** is an exaggerative cognitive response to an anticipated or actual painful stimulus and affects how individuals experience and express pain.
- People who catastrophize tend to magnify their pain, ruminate about their pain, and feel helpless in managing their pain.
- Pain catastrophizing shares similarities with depression and anxiety. It has been associated with pain-related outcomes such as reported pain severity, activity interference and disability, depression, changes in social support networks, more frequent healthcare visits, and narcotic usage.



Catastrophizing Examples

- **magnification** is "I'm afraid that something serious might happen"
- **rumination** is "I can't stop thinking about how much it hurts"
- **helplessness** is "There is nothing I can do to reduce the intensity of my pain".



Patient Response to Pain and Treatment: Genetics

Current literature indicates that **genetics** also influences how a patient processes painful stimuli and how they respond to treatment.



- **Genetic polymorphisms** play an integral role in how patients respond to painful stimuli and treatment.
 - For example, populations within certain ethnic groups are known to carry genetic mutations of the CYP450 enzymes in the liver responsible for drug metabolism.
- Some of these patients are “**ultra-rapid**” metabolizers of certain drugs such as codeine. This means they convert codeine to morphine more rapidly than other patients resulting in potential supra-therapeutic dosing. Conversely, some patients are “**slow metabolizers**” and therefore do not efficiently metabolize codeine and thus never achieve therapeutic levels.
- Caucasian and African American populations have approximately equal proportions of fast and slow acetylators, whereas oriental groups have almost 90% fast acetylators.

Patient Perceptions

- A patient's response to prescribed treatment can be influenced by factors unrelated to actual pharmacological treatments. These factors include:
 - Perceived **effective communication** with physicians and nurses by the patient
 - Perceived **responsiveness** by the treating team
 - Perceived **empathy** by the treating team



Patient Expectations

- Set yourself up for success by setting reasonable expectations for pain control with the patient. Allow them to be part of the treatment plan. When formulating (or revising) a treatment plan take into account their previous pain experiences, present pain complaints, and response to pain treatments given thus far.



- Also inquire about and consider other related events such as recent stressful events (death of a spouse, car accident, job loss...) or previous family experiences with pain (death of a grandparent with chronic disease and untreated pain).

Clinical Examples: *Get the Complete Picture*

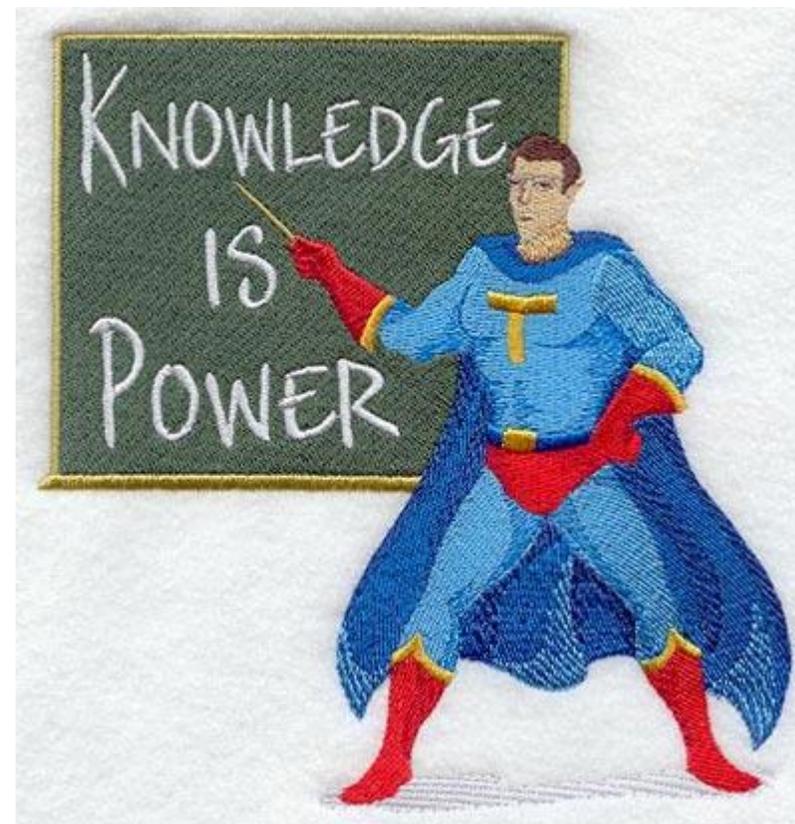
It is difficult to gain a comprehensive understanding of all the factors associated with a patient's pain in one encounter. For example:

- The demanding patient in bed 10 wanting pain medication for her migraine may be anxious to get home to her mother who has end-stage cancer. She has been overwhelmed balancing work, childcare and her mother's care and appointments and forgot to refill her own maintenance medications.
- The “whiner” you are transporting to the ED with sickle cell pain is an honor student who has never called 911 before for pain and accidentally left his medications at his parent's home while on a weekend visit home from college.
- The back pain patient you are triaging tried to get an appointment with his primary care doctor all week and has an important project due for work. He sustained a back injury 3 months ago in a motor vehicle accident. He was hit by a drunk driver with no insurance.

Knowledge Check

Patients respond to pain experience and stimuli in the **same** ways?

- a) True
- b) False



Components of the Pain History



Pain History Elements and Questions

The patient's history and physical exam can be an invaluable source when it comes to determining the proper diagnosis and course of treatment.

Essential elements should include a detailed history of the current pain and, for those that suffer from chronic pain, their previous pain history.

Important elements to ask about include:

Basics

1. Onset of recent pain,
2. aggravating and alleviating factors (is the pain better or worse with...)
3. Quality of pain experience,
4. Location of pain,
5. Severity of pain, and
6. Circumstances of original pain.



Functionality

1. How is pain affecting current level of function?
2. Is patient working?
3. How is patient coping with pain?

Pain History Elements and Questions

Additional important elements to ask about include:

Co-morbidities

1. Significant past medical and/or surgical history
2. Chronic diseases (obesity, hypertension, diabetes, etc.)
3. Psychosocial and/or psychiatric co-morbidities
4. Family history of substance abuse

Psychosocial and psychiatric

1. Depression
2. Suicidal ideation or past suicide attempts
3. Past psychiatric admissions
4. Physical, sexual and/or emotional abuse.

Consider using the mnemonics **OPQRST**, **SOCRATES** and **QISS TAPED** to assess pain.



Tips

Psychogenic pain and malingering are diagnoses of exclusion. *Psychogenic* pain patients make illness and hospitalization their primary goal whereas *malingering* patients make money, avoiding work, or evading law enforcement their primary goal.

There are numerous mnemonics on how to obtain pain history. The three that will be covered in this module include: **OPQRST**, **SOCRATES** and **QISS TAPED**:

OPQRST:

O – Onset of event

- What was the patient doing when it started? Were they active, inactive, and or stressed?
- Did that specific activity prompt or start the onset of pain?
- Was onset of pain sudden, gradual or part of an ongoing chronic problem?



P - Provocation and palliation of symptoms

- Is the pain better or worse with:
 - **Activity**. Does walking, standing, lifting, twisting, reading, etc... have any effect of the pain?
 - **Position**. Which position causes or relieves pain? Provide examples to the patient-- sitting, standing, supine, lateral, etc...
 - **Adjuvant**. Which type of medication relieves the pain (Tylenol, Ibuprofen, etc..)? Does the use of heat or ice packs alleviate pain? What type of alternative therapy (massage, acupuncture) have you used before?
- Does any movement, pressure (such as palpation) or other external factor make the problem better or worse? This can also include whether the symptoms relieve with rest.

OPQRST continued

Q – Quality

- Ask the patient to describe the quality of pain – is it throbbing, dull, aching, burning, sharp, crushing, shooting, etc...?
- Questions can be open ended "Can you describe it for me?" or leading
- Ideally, this will elicit descriptions of the patient's pain: whether it is sharp, dull, crushing, burning, tearing, or some other feeling, along with the pattern, such as intermittent, constant, or throbbing.

R - Region and radiation. Identify the location of pain

- Where pain is on the body and whether it radiates (extends) or moves to any other area? Referred pain can provide clues to underlying medical causes.
- *Location*: body diagrams may help patients illustrate the distribution of their pain.
- *Dermatome map* – may help determine the relationship between sensory location of pain and spinal nerve segment (see figure next slide).
- *Referred vs Localized*: **referred pain** (also known as reflective pain) is feeling pain in a location other than the original site of the painful stimulus. **Localized pain** is when pain typically stays in one location and does not spread.

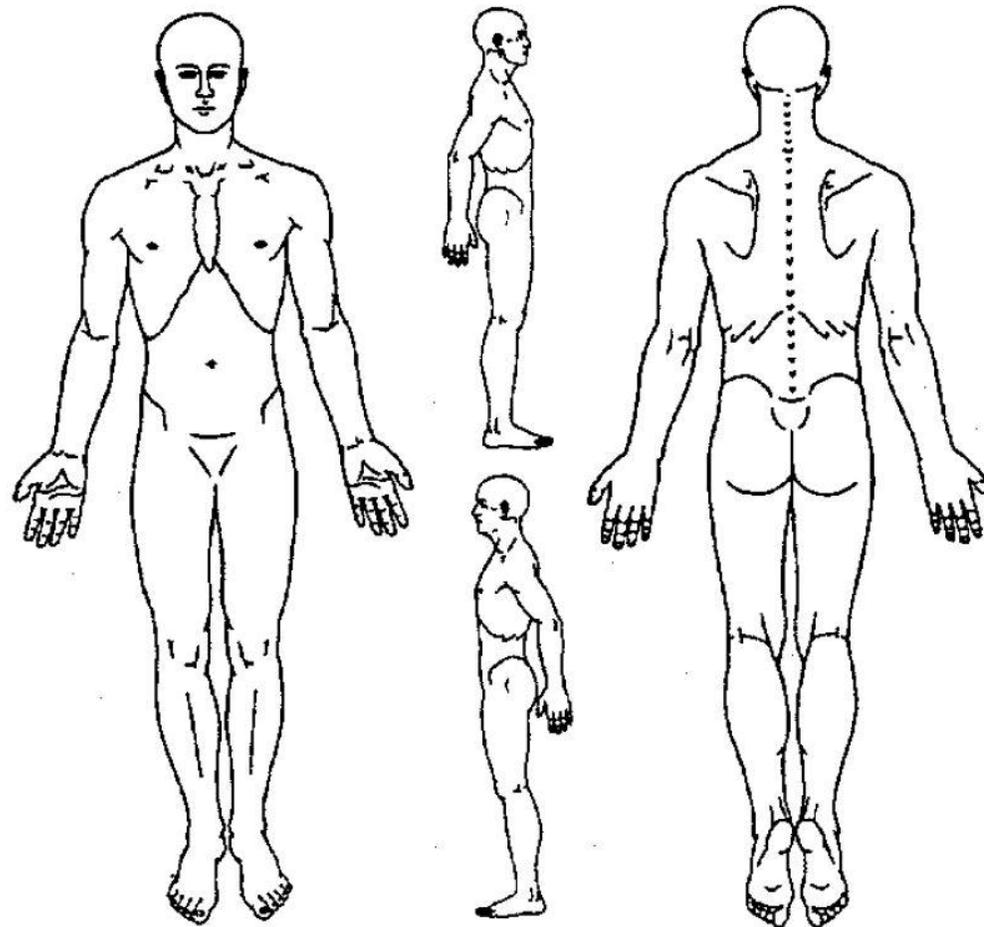


Pain Body Map Example

PAIN DIAGRAM

On the diagrams below mark where you are experiencing pain, right now. Use the letters below to indicate the type and location of your sensations.

Key: A – ACHE
P – PINS & NEEDLES
B – BURNING
S – STABBING
N – NUMBNESS
O – OTHER



OPQRST continued



S – Severity

- Ask the patient to describe the intensity of pain at baseline and during acute exacerbations.
- The pain score (usually on a scale of 0 to 10) where Zero is no pain and Ten is the worst possible pain. This can be comparative (such as "... compared to the worst pain you have ever experienced") or imaginative ("... compared to having your arm ripped off by a bear"). If the pain is compared to a prior event, the nature of that event may be a follow-up question.

T – Timing (history)

- Identify when the pain started, under what circumstances, duration, onset (sudden/gradual), frequency, whether acute/chronic.
- How long the condition has been going on and how it has changed since onset (better, worse, different symptoms)?
- Whether it has ever happened before, and how it may have changed since onset, and when the pain stopped if it is no longer currently being felt?



The clinician must decide whether a score given is realistic within their experience - for instance, a pain score 10 for a stubbed toe is likely to be exaggerated. **This may also be assessed for pain now, compared to pain at time of onset, or pain on movement.** There are alternative assessment methods for pain, which can be used where a patient is unable to vocalize a score. One such method is the [Wong-Baker faces pain scale](#).

Pain Assessment: SOCRATES

The second pain history assessment that will be reviewed is **SOCRATES**:

Site - Where is the pain? Or the maximal site of the pain.

Onset - When did the pain start, and was it sudden or gradual? Include also whether if it is progressive or regressive.

Character - What is the pain like? An ache? Stabbing?

Radiation - Does the pain radiate anywhere? (See also Radiation.)

Associations - Any other signs or symptoms associated with the pain?

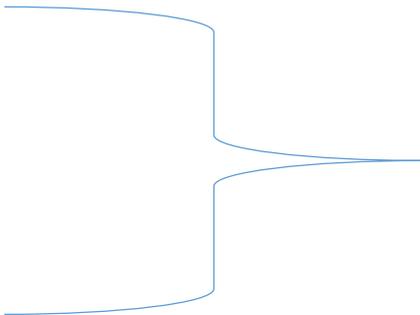
Time course - Does the pain follow any pattern?

Exacerbating/Relieving factors - Does anything change the pain?

Severity - How bad is the pain?

QISS TAPED:

a mnemonic for pain history, assessment and exam

- **Q**uality
 - **I**mpact
 - **S**ite
 - **S**everity
 - **T**emporal
 - **A**ggravating and alleviating
 - **P**ast response and preferences
 - **E**xpectations and goals
 - **D**iagnostics and physical exam
- 

Q	Quality	<p>What were your first symptoms? What words would you use to describe the pain? (achy, sharp, burning, squeezing, dull, icy, etc...)</p> <p>Besides sensations you consider to be "pain," are there other unusual sensations, such as numbness?</p>
I	Impact	<p>How does the pain affect you?</p> <p>How does the pain impact your sleep, activity, mood, appetite (other - work, relationships, exercise, etc.)</p> <p>What does the pain prevent you from doing? (Depression screen) Do you feel sad or blue? Do you cry often? Is there loss of interest in life? Decreased or increased appetite? (Anxiety screen) Do you feel stressed or nervous? Have you been particularly anxious about anything? Do you startle easily?</p>
S	Site	<p>Show me where you feel the pain. Can you put your finger/hand on it?</p> <p>Or show me on a body map?</p> <p>Does the pain move/radiate anywhere? Has the location changed over time?</p>
S	Severity	<p>On a 0-10 scale with 0 = no pain and 10 = the worst pain imaginable, how much pain are you in right now?</p> <p>What is the least pain you have had in the past (24 hours, one week, month)?</p> <p>What is the worst pain you have had in the past (24 hours, one week, month)?</p> <p>How often are you in severe pain? (hours in a day, days a week you have pain)?</p>

T	Temporal Characteristics	<p>When did the pain start? Was it sudden? Gradual? Was there a clear triggering event? Is the pain constant or intermittent? Does it come spontaneously or is it provoked? Is there a predictable pattern? (e.g., always worst in the morning or in the evening? Does it suddenly flare up?)</p>
A	Aggravating and Alleviating Factors	<p>What makes the pain better? What makes the pain worse? When do you get the best relief? How much relief do you get? How long does it last?</p>
P	Past Response, Preferences	<p>How have you managed your pain in the past? (Ask about both drug and non-drug methods) What helped? What did not help? (Be specific about drug trials - how much and how long?) What medications have you tried? Was the dose increased until you had pain relief or side effects? How long did you take the drug? Are there any pain medicines that have caused you an allergic or other bad reaction? How do you feel about taking medications? Have you tried physical or occupational therapy? What was done? Was it helpful? Have you tried spinal or other injections for pain treatment? What was done? Was it helpful?</p>
E	Expectations, Goals, Meaning	<p>What do you think is causing the pain? How may we help you? What do you think we should do to treat your pain? What do you hope the treatment will accomplish? What do you want to do that the pain keeps you from doing? What are you most afraid of? (Uncovers specific fears, such as fear of cancer, which should be acknowledged and addressed.)</p>
D	Diagnostics & Physical Exam	<p>Examine and inspect site Perform a systems assessment and examination as indicated Review imaging, laboratory and/or other test results as indicated</p>

Additional Considerations for Pain History Assessment: Medical and Surgical History

Medical or surgical issues related to patient's pain or treatment may include:

Cancer

Different types of pain may be caused by multiple etiologies:

Tumors – involvement of bone, vessels, nerves, body organs

Diagnostic procedures – may be painful such as biopsies, lumbar punctures, blood draws

Treatment: radiation, chemotherapy, or surgical excision

Recent Surgery

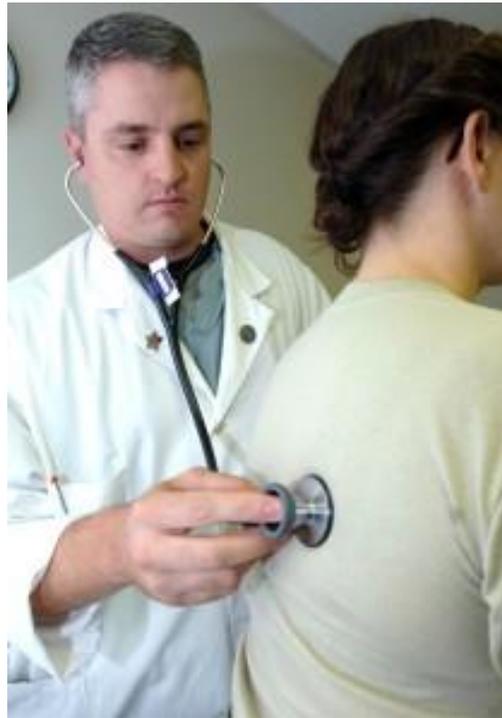
- Incisional pain
- Complications such as anastomotic leak, bleeding, compartment syndrome, etc..



Other Conditions:

- Diabetes which can lead to neuropathic pain
- Herpes zoster which can lead to radicular pain
- Migraines which can lead to mixed etiology

Pain Focused Physical Exam



Pain Assessment: Physical Examination

During initial pain assessment, physical examination of the patient should be conducted.

You should be examining the patient's:	For example
Appearance	obese, emaciated, histrionic, flat affect
Posture	splinting, scoliosis, kyphosis
Gait	antalgic, hemiparetic, using assisting devices
Facial Expression	grimacing, tense, diaphoretic, anxious
Vital Signs	sympathetic overactivity, temperature asymmetries

<p>You should be examining the Painful Area(s):</p>	<p>For example</p>
<p>Inspection</p>	<ul style="list-style-type: none"> • Skin: color changes, hair loss, flushing, goose bumps, sweating • Muscle: atrophy or spasm • Edema
<p>Palpation</p>	<ul style="list-style-type: none"> • Demarcation of the painful area • Detection of changes in pain intensity within the area • Trigger points • Changes in sensory or pain processing
<p>Musculoskeletal system</p>	<ul style="list-style-type: none"> • Flaccidity: extreme weakness (may be from paralysis) • Abnormal movements: neurologic damage or impaired sense of proprioception, reduced sense of light touch • Limit range of motion: disc disease, arthritis, pain
<p>Neurological exam</p>	<ul style="list-style-type: none"> • Cranial nerve exam • Motor strength • Spinal nerve function: deep tendon reflexes, pinprick, proprioception • Coordination: Romberg's test, toe-to-heel, finger-to-nose, rapid hand movement

Physical Examination **TIPS!**

Note the patient's vital signs as they can provide a clue to pain severity:

- **An elevation in blood pressure and heart rate can occur secondary to pain and inadequate control of pain.**
- **However, normal vital signs should not negate a patient's reported pain. Always review triage vital signs.**

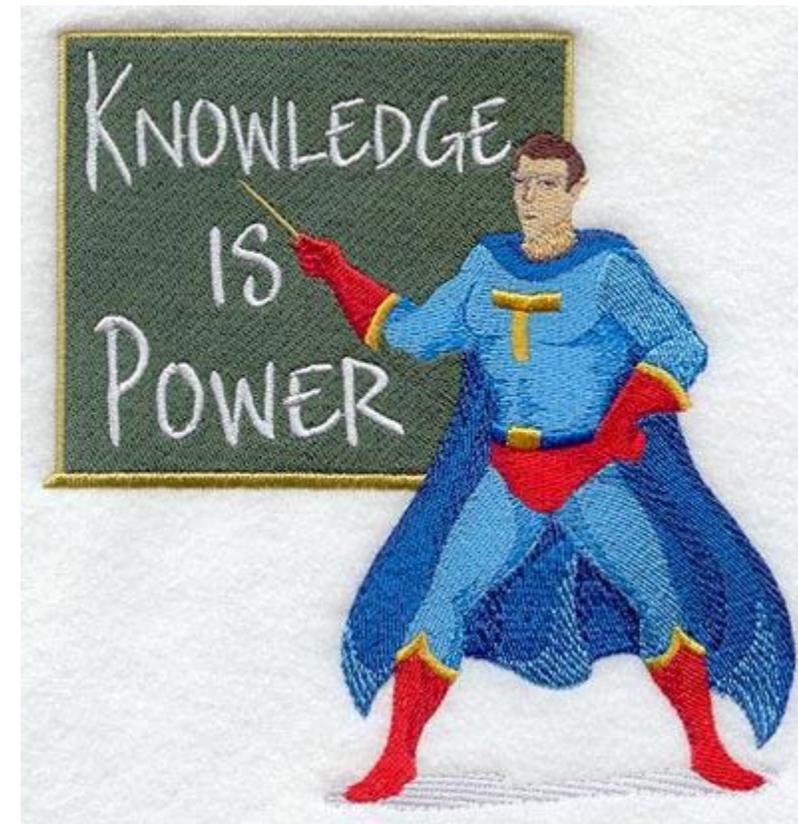
Take cues from your patient. Patient's will often assume a position of comfort. Observe their vocalizations (crying child), facial expressions, body posture and movements, and motor response (decreased movement).

- **Observe physiological clues such as skin flushing, diaphoresis, along with vital sign abnormalities.**
- **Consider the patient's baseline mental status. Are they able to effectively communicate their pain to you?**
- **Perform a focused exam taking into account the information given by the patient. The exam should also assess the patient's functionality.**
- **A sensory exam should always be conducted in patients with pain especially neuropathic pain.**

Knowledge Check

What does the mnemonic **OPQRST** mean?

- a) On time, Practice, Quality, Radar, Severity, Time
- b) Onset, Practice, Query, Rotates, Severity, Tired
- c) **Onset, Provokes, Quality, Radiates, Severity, Time**
- d) On time, Provokes, Query, Radiates, Severity, Time



Pain Assessment Scales

The next section will review the type of pain scales and assessments for adults and pediatrics.

Pain Assessment Scales

As a health care provider it is essential to know and understand which pain assessment tools and scales are used at your institution.

- Pain scales are typically applied to all pain types. However chronic and cancer related pain may require more complex evaluation tools. Although pain is multi-factorial, the majority of pain scales assess pain **intensity**.
- There are different validated pain scales available for a variety of patient populations such as:
 - ✓ **adults**
 - ✓ **pediatrics**
 - ✓ **elderly**
 - ✓ **non-verbal**
- Not all pain scales are created equal and one should be chosen based on the patient.
 - For example, it would be inappropriate to use a pain scale intended for adults, such as the Defense and Veterans Pain Rating Scale 2.0, when assessing a three-year-old child.



Pain Assessment Using Pain Scales

- Once a pain scale is chosen, interpretation of the score is not so straightforward. There is no defined score or threshold for what score correlates to actual pain and to what intensity the pain is felt by the patient. Even using the same scale for two different patients doesn't allow for comparison of pain intensity.
- For example, a patient with a score of 9 on the Numerical Rating Scale may not necessarily be experiencing more pain than one with a score of 6 on the same scale.
- Remember that these scales do not take into account:
 - **patient genetics**
 - **past experiences**
 - **co-morbidities**
 - **other pain influencing factors**
- In patients with preexisting pain it is important to determine their baseline pain level.
- When using a pain scale in a verbal adult it is best to ground the scale by providing context for the patient. For example, ask the patient at which level on the pain scale would they take an over-the-counter pain medication? For those with chronic pain, what level of pain do they experience every day

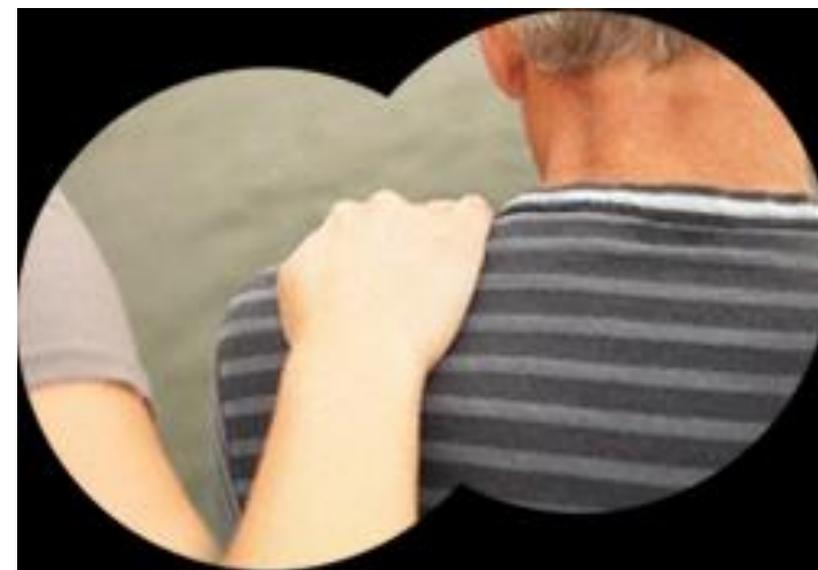


Tips

Select a scale and be consistent!

Pain Assessment Using Pain Scales continued

- Surrogate reporting of a non-verbal patient's pain and behavior or activity changes can also aid in pain assessment.
- Surrogate reporting may be obtained from a parent, caregiver or loved one.
 - Try to determine who really provides the patient's daily care and is knowledgeable about their history, disease, and past pain management or experiences.



Tips

Don't forget that abnormal vital signs **or** a change in vital signs can also serve as an indirect marker for pain.

Examples of Pain Scales

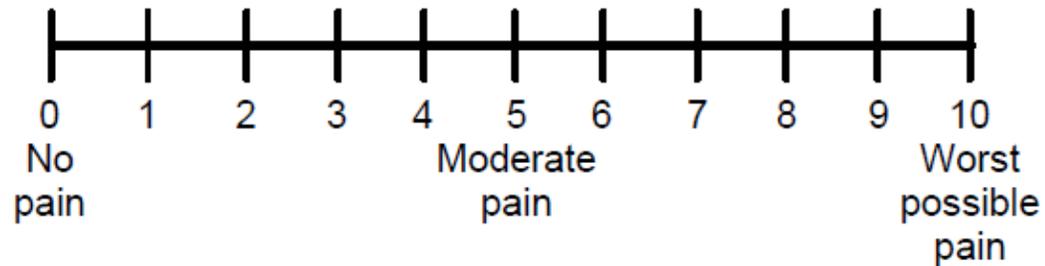
Pain Scales*	Verbal, Alert and Oriented	Non-verbal, GCS <15 or Cognitive Impairment
<u>Adult</u>	<ol style="list-style-type: none"> 1. Verbal Numeric Scale (VNS)/ Numeric Rating Scale (NRS) 2. Visual Analogue Scale (VAS) 3. Defense and Veterans Pain Rating Scale (DVPRS 2.0) 	<ol style="list-style-type: none"> 1. Adult Non-Verbal Pain Scale (NVPS) 2. Assessment of Discomfort in Dementia (ADD) 3. Behavioral Pain Scale (BPS) 4. Critical-Care Observation Tool (CPOT)
<u>Pediatric</u>	<p>3 yo and older</p> <ol style="list-style-type: none"> 1. Wong Baker Faces 2. Oucher (3-12yrs) 3. Numerical Rating Scale (NRS) (7-11yrs) <p>8 yo and older</p> <ol style="list-style-type: none"> 1. Visual Analogue Scale (VAS) 2. Verbal Numeric Scale (VNS)/ Numeric Rating Scale (NRS) 	<p>Birth – 6 mos</p> <ol style="list-style-type: none"> 1. Neonatal Infant Pain Scale (NIPS) 2. Neonatal Pain Assessment and Sedation Scale (N-PASS) 3. Neonatal Facial Coding System (NFCS) 4. CRIES <p>Infant and older</p> <ol style="list-style-type: none"> 1. Revised Faces, Legs, Activity, Cry, and Consolability (r-FLACC) 2. Non Communicating Children’s Pain Checklist (NCCPC-R) 3. Children’s Hospital of Eastern Ontario Pain Scale (CHEOPS) (ages 1-7)

*This is a short list of pain scales. Determine which pain assessment tools are used by your agency or facility.

Measurement Scale	Description
Verbal, Alert and Oriented	
Verbal Numeric Scale (VNS)/ Numeric Rating Scale (NRS)	Self-report scale. Eleven point scale that requires understanding of numbers, addition and subtraction.
Verbal rating scale (VRS)	Five pain levels are indicated in large print on a sheet give to the patient: no, pain, mild pain, moderate pain, severe pain, unbearable pain.
Visual Analogue Scale	A 100-mm rule with a movable cursor: “no pain” is written at he left end of the horizontal line along which the cursor is moved, and “maximal pain” at the right end.
Defense and Veterans Pain Rating Scale 2.0 (DVPRS)	Self-report scale. Eleven point scale that requires the patient to identify pain by numerical rating, color intensity, facial expression, and pain disruption. Followed by four supplemental questions evaluating the biopsychosocial impact of pain.
Non-verbal, GCS <15 or Cognitive Impairment	
Adult Non-Verbal Pain Scale (NVPS)	Behavioral scale. Based on FLACC scale and contain behavioral dimensions and physiology dimensions that are graded by severity.
Assessment of Discomfort in Dementia (ADD)	The ADD Protocol focuses on evaluation of persons with difficult behaviors that may represent discomfort. Assessment of pain and discomfort is addressed by the protocol. ADD encompasses physical, affective and social dimensions of pain.
Behavioral Pain Scale (BPS)	Behavioral scale. Three observational items (facial expression, upper limbs, and compliance with ventilation). Higher score, greater discomfort.
Critical-Care Observation Tool (CPOT)	Behavioral scale. Used for intubated and nonintubated critical care patients. Four domains (facial expressions, movements, muscle tension, and ventilator compliance). Higher score, great pain level

Adult: Verbal, Alert and Oriented

0–10 Numeric Pain Rating Scale

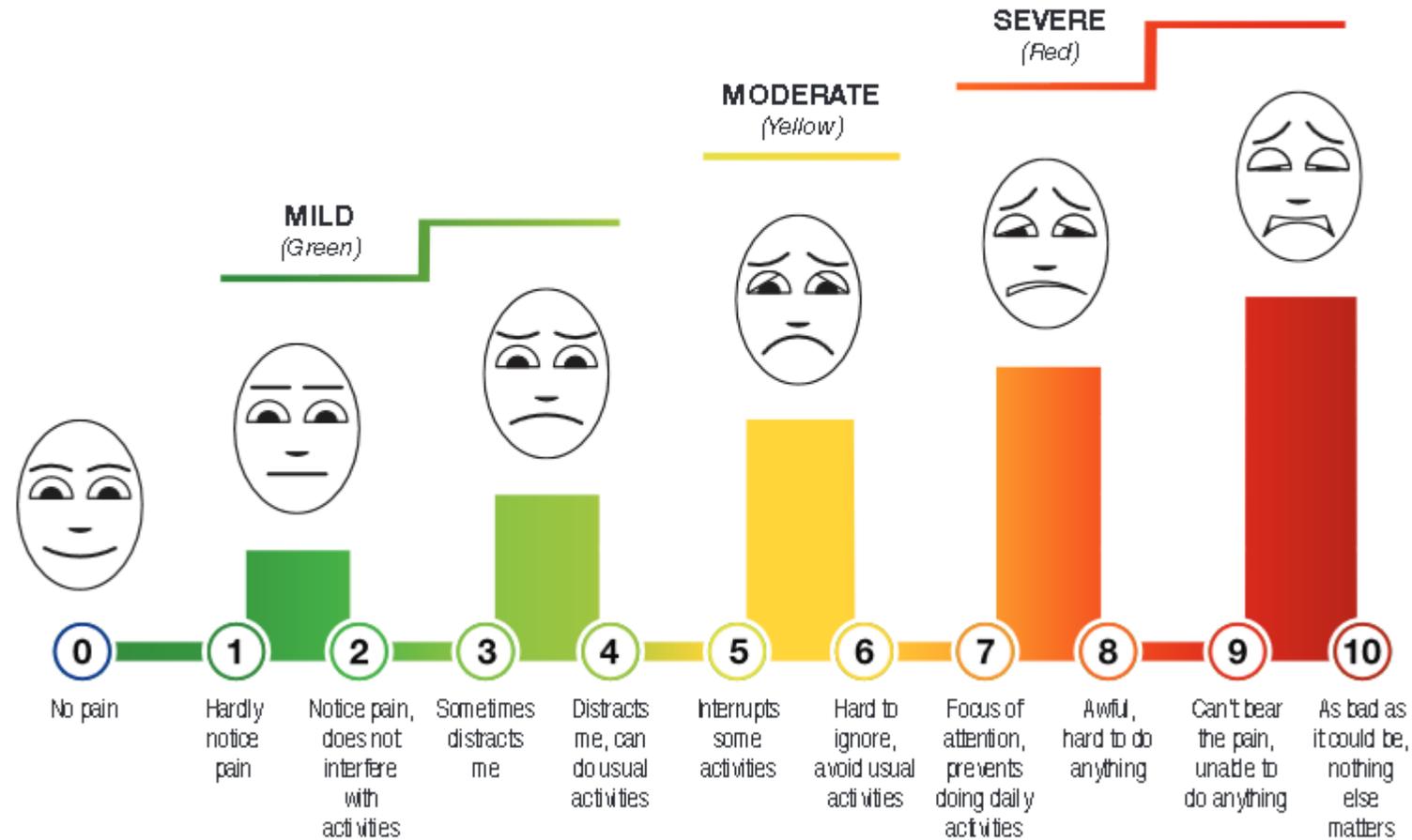


This is a commonly used pain scale that employs a 0-10 rating system that can be used in alert oriented adult patients.

		Comparative Pain Scale	
		0	No pain. Feeling perfectly normal.
Minor Does not interfere with most activities. Able to adapt to pain psychologically and with medication or devices such as cushions.	1 Very Mild	1	Very light barely noticeable pain, like a mosquito bite or a poison ivy itch. Most of the time you never think about the pain.
	2 Discomforting	2	Minor pain, like lightly pinching the fold of skin between the thumb and first finger with the other hand, using the fingernails. Note that people react differently to this self-test.
	3 Tolerable	3	Very noticeable pain, like an accidental cut, a blow to the nose causing a bloody nose, or a doctor giving you an injection. The pain is not so strong that you cannot get used to it. Eventually, most of the time you don't notice the pain. You have <i>adapted</i> to it.
Moderate Interferes with many activities. Requires lifestyle changes but patient remains independent. Unable to adapt to pain.	4 Distressing	4	Strong, deep pain, like an average toothache, the initial pain from a bee sting, or minor trauma to part of the body, such as stubbing your toe real hard. So strong you notice the pain all the time and <i>cannot completely adapt</i> . This pain level can be simulated by pinching the fold of skin between the thumb and first finger with the other hand, using the fingernails, and squeezing real hard. Note how the simulated pain is initially piercing but becomes dull after that.
	5 Very Distressing	5	Strong, deep, piercing pain, such as a sprained ankle when you stand on it wrong or mild back pain. Not only do you notice the pain all the time, you are now so preoccupied with managing it that your normal lifestyle is curtailed. Temporary personality disorders are frequent.
	6 Intense	6	Strong, deep, piercing pain so strong it seems to partially dominate your senses, causing you to think somewhat unclearly. At this point you begin to have trouble holding a job or maintaining normal social relationships. Comparable to a bad non-migraine headache combined with several bee stings, or a bad back pain.
Severe Unable to engage in normal activities. Patient is disabled and unable to function independently.	7 Very Intense	7	Same as 6 except the pain completely dominates your senses, causing you to think unclearly about half the time. At this point you are effectively disabled and frequently cannot live alone. Comparable to an average migraine headache.
	8 Utterly Horrible	8	Pain so intense you can no longer think clearly at all, and have often undergone severe personality change if the pain has been present for a long time. Suicide is frequently contemplated and sometimes tried. Comparable to childbirth or a real bad migraine headache.
	9 Excruciating Unbearable	9	Pain so intense you cannot tolerate it and demand pain killers or surgery, no matter what the side effects or risk. If this doesn't work, suicide is frequent since there is no more joy in life whatsoever. Comparable to throat cancer.
	10 Unimaginable Unspeakable	10	Pain so intense you will go unconscious shortly. Most people have never experienced this level of pain. Those who have suffered a severe accident, such as a crushed hand, and lost consciousness as a result of the pain and not blood loss, have experienced level 10.

Adult: Verbal, Alert and Oriented

Defense and Veterans Pain Rating Scale



v 2.0

This is a pain scale that can be used in alert oriented adult patients.

Adult: Verbal, Alert and Oriented

Defense and Veterans Pain Rating Scale 2.0 (DVPRS) Supplemental Questions

DoD/VA PAIN SUPPLEMENTAL QUESTIONS

For clinicians to evaluate the biopsychosocial impact of pain

1. Circle the one number that describes how, during the past 24 hours, pain has interfered with your usual **ACTIVITY**:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10
 Does not interfere Completely interferes

2. Circle the one number that describes how, during the past 24 hours, pain has interfered with your **SLEEP**:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10
 Does not interfere Completely interferes

3. Circle the one number that describes how, during the past 24 hours, pain has affected your **MOOD**:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10
 Does not affect Completely affects

4. Circle the one number that describes how, during the past 24 hours, pain has contributed to your **STRESS**:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10
 Does not contribute Contributes a great deal

*Reference for pain interference: Cleeland GS, Ryan KM. Pain assessment: global use of the Brief Pain Inventory. *Ann Acad Med Singapore* 23(2): 129-138, 1994.

This is a pain scale that can be used in alert oriented adult patients.

Adult: Non-verbal, GCS <15 or Cognitive Impairment

Categories	0	1	2
Face	No particular expression or smile	Occasional grimace, tearing, frowning, wrinkled forehead	Frequent grimace, tearing, frowning, wrinkled forehead
Activity (Movement)	Lying quietly, normal position	Seeking attention through movement or slow, cautious movement	Restless, excessive activity and/or withdrawal reflexes
Guarding	Lying quietly, no positioning of hands over areas of body	Splinting areas of the body, tense	Rigid, stiff
Physiologic I (Vital Signs)	Stable vital signs (no change in past 4 hrs)	Change over past 4 hrs in any of the following: SBP >20 mm HG, HR >20/min, RR >10/min	Change over past 4 hrs in any of the following: SBP >30 mm HG, HR >25/min, RR >20/min
Physiologic II	Warm, dry skin	Dilated pupils, perspiring, flushing	Diaphoretic, pallor

SBP, systolic blood pressure; HR, heart rate; RR, respiratory rate.

Used to assess adult patients that are nonverbal.

Adult: Non-verbal, GCS <15 or Cognitive Impairment

Pain Assessment in Advanced Dementia Scale (PAINAD)

Instructions: Observe the patient for five minutes before scoring his or her behaviors. Score the behaviors according to the following chart. Definitions of each item are provided on the following page. The patient can be observed under different conditions (e.g., at rest, during a pleasant activity, during caregiving, after the administration of pain medication).

Behavior	0	1	2	Score
Breathing Independent of vocalization	<ul style="list-style-type: none"> Normal 	<ul style="list-style-type: none"> Occasional labored breathing Short period of hyperventilation 	<ul style="list-style-type: none"> Noisy labored breathing Long period of hyperventilation Cheyne-Stokes respirations 	
Negative vocalization	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Occasional moan or groan Low-level speech with a negative or disapproving quality 	<ul style="list-style-type: none"> Repeated troubled calling out Loud moaning or groaning Crying 	
Facial expression	<ul style="list-style-type: none"> Smiling or inexpressive 	<ul style="list-style-type: none"> Sad Frightened Frown 	<ul style="list-style-type: none"> Facial grimacing 	
Body language	<ul style="list-style-type: none"> Relaxed 	<ul style="list-style-type: none"> Tense Distressed pacing Fidgeting 	<ul style="list-style-type: none"> Rigid Fists clenched Knees pulled up Pulling or pushing away Striking out 	
Consolability	<ul style="list-style-type: none"> No need to console 	<ul style="list-style-type: none"> Distracted or reassured by voice or touch 	<ul style="list-style-type: none"> Unable to console, distract, or reassure 	
TOTAL SCORE				

(Warden et al., 2003)

Scoring:

The total score ranges from 0-10 points. A possible interpretation of the scores is: 1-3=mild pain; 4-6=moderate pain; 7-10=severe pain. These ranges are based on a standard 0-10 scale of pain, but have not been substantiated in the literature for this tool.

This is an example of a pain scale that can be used in a patient with dementia

Adult: Non-verbal, GCS <15 or Cognitive Impairment

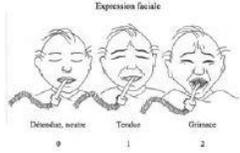
Table 1. Behavioral pain scale

Item	Description	Score
Facial expression	Relaxed	1
	Partially tightened (e.g., brow lowering)	2
	Fully tightened (e.g., eyelid closing)	3
	Grimacing	4
Upper limbs	No movement	1
	Partially bent	2
	Fully bent with finger flexion	3
	Permanently retracted	4
Compliance with ventilation	Tolerating movement	1
	Coughing but tolerating ventilation for most of the time	2
	Fighting ventilator	3
	Unable to control ventilation	4

Used to assess adult patients that are nonverbal.

Adult: Non-verbal, GCS <15 or Cognitive Impairment:

The Critical-Care Pain Observation Tool (CPOT)
(Gélinas et al., 2006)

Indicator	Score	Description	
Facial expression  Caroline Arbour, RN, B.Sc., PhD(student) School of Nursing, McGill University	Relaxed, neutral	0	No muscle tension observed
	Tense	1	Presence of frowning, brow lowering, orbit tightening and levator contraction or any other change (e.g. opening eyes or tearing during nociceptive procedures)
	Grimacing	2	All previous facial movements plus eyelid tightly closed (the patient may present with mouth open or biting the endotracheal tube)
Body movements	Absence of movements or normal position	0	Does not move at all (doesn't necessarily mean absence of pain) or normal position (movements not aimed toward the pain site or not made for the purpose of protection)
	Protection	1	Slow, cautious movements, touching or rubbing the pain site, seeking attention through movements
	Restlessness/Agitation	2	Pulling tube, attempting to sit up, moving limbs/thrashing, not following commands, striking at staff, trying to climb out of bed
Compliance with the ventilator (intubated patients)	Tolerating ventilator or movement	0	Alarms not activated, easy ventilation
	Coughing but tolerating	1	Coughing, alarms may be activated but stop spontaneously
	Fighting ventilator	2	Asynchrony: blocking ventilation, alarms frequently activated
OR Vocalization (extubated patients)	Talking in normal tone or no sound	0	Talking in normal tone or no sound
	Sighing, moaning	1	Sighing, moaning
	Crying out, sobbing	2	Crying out, sobbing
Muscle tension	Relaxed	0	No resistance to passive movements
	Evaluation by passive flexion and extension of upper limbs when patient	Tense, rigid	1

For critically ill patients

Pediatric Pain Scales



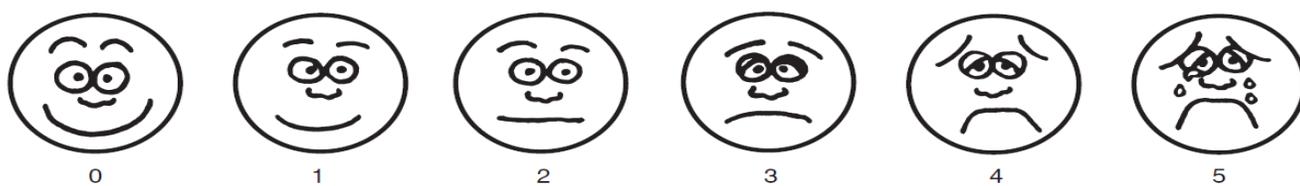
Pediatric Pain Scale Descriptions



Measurement Scale	Age Range	Description
Birth - 6 months		
Neonatal Infant Pain Scale (NIPS)	<i>Preterm and full term neonates</i>	Behavioral scale.
Neonatal Pain Assessment and Sedation Scale (N-PASS)	<i>Preterm and full term neonates</i>	Behavioral and physiologic scale.
Neonatal Facial Coding System (NFCS)	<i>32 weeks gestation to 6 months</i>	Facial muscle group movement, brow budge, eye squeeze, nasolabial furrow, open lips, stretch mouth lip purse, taut tongue, and chin quiver
CRIES	<i>32 weeks gestation to 6 months</i>	Behavioral and physiologic scale.
Infant and older (non-verbal children)		
Revised Faces, Legs, Activity, Cry, and Consolability (r-FLACC)	<i>2 months to 3 years, critically ill, cognitively impaired, and older than three years of age unable to utilize a self-report scale.</i>	Behavioral scale. Note: r-FLACC contains the same core components as the original FLACC therefore the revised scale is still appropriate for non-cognitively impaired children.
Non Communicating Children's Pain Checklist (NCCPC-R)	<i>3-19 years (with cognitive impairment)</i>	30 items that assess seven dimensions: vocal, eating/sleeping, social, facial, activity, body/limb, and physiologic signs
3 years and older		
Wong Baker Faces	<i>3 years and older</i>	Self-report scale. Please refer to specific references for those alternative face scales.
Oucher	<i>3 -12 years</i>	Self-report tool consisting of a vertical numerical scale and a photo scale with expressions of "hurt" to "no hurt."
8 years and older		
Visual Analogue Scale (VAS)	<i>8 years and older</i>	Self-report scale. Consists of pre-measured vertical or horizontal line, where the ends of the line represent extreme limits of pain intensity. Requires understanding of numbers, addition and subtraction.
Verbal Numeric Scale (VNS)/ Numeric Rating Scale (NRS)	<i>8 years and older</i>	Self-report scale. Eleven point scale that requires understanding of numbers, addition and subtraction.

Pediatric: Verbal, Alert and Oriented

Wong-Baker FACES Pain Rating Scale



0 1 2 3 4 5

0 = VERY HAPPY, NO HURT
 1 = HURTS JUST A LITTLE BIT
 2 = HURTS A LITTLE MORE
 3 = HURTS EVEN MORE
 4 = HURTS A WHOLE LOT
 5 = HURTS AS MUCH AS YOU CAN IMAGINE
 (Don't have to be crying to feel this much pain)

Explain to the person that each face is for a person who feels happy because he has no pain (no hurt) or sad because he has some or a lot of pain. Face 0 is very happy because he doesn't hurt at all. Face 1 hurts just a little bit. Face 2 hurts a little more. Face 3 hurts even more. Face 4 hurts a whole lot. Face 5 hurts as much as you can imagine, although you don't have to be crying to feel this bad. Ask the person to choose the face that best describes how he is feeling.

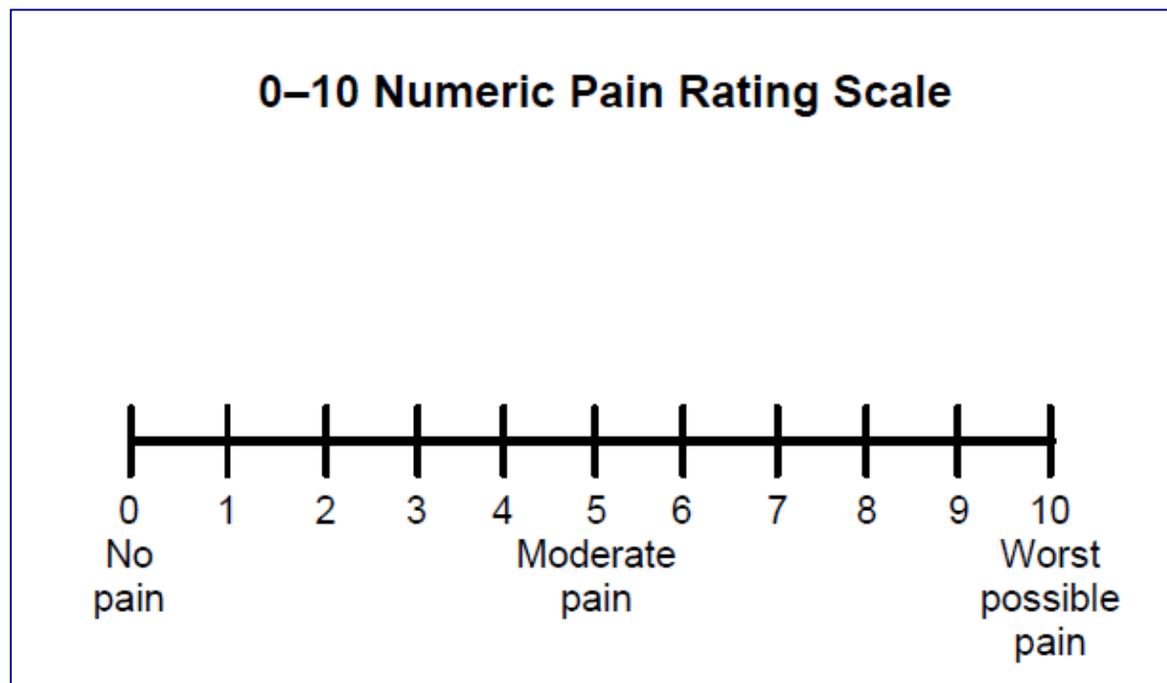
Rating scale is recommended for persons age 3 years and older.

Brief word instructions: Point to each face using the words to describe the pain intensity. Ask the child to choose face that best describes own pain and record the appropriate number.

From Wong D.L., Hockenberry-Eaton M., Wilson D., Winkelstein M.L., Schwartz P.: Wong's Essentials of Pediatric Nursing, ed. 6, St. Louis, 2001, p. 1301. Copyrighted by Mosby, Inc. Reprinted by permission.

This is a pain scale that can be used in alert pediatric patients

Pediatric: Verbal, Alert and Oriented



This is a commonly used pain scale that employs a 0-10 rating system that can be used in alert oriented adult patients.

Pediatric: Non-verbal, GCS <15 or Cognitive Impairment

Neonatal Pain, Agitation, and Sedation Scale (N-PASS)

Assessment Criteria	Sedation		Normal	Pain / Agitation	
	-2	-1	0	1	2
Crying Irritability	No cry with painful stimuli	Moans or cries minimally with painful stimuli	Appropriate crying Not irritable	Irritable or crying at intervals Consolable	High-pitched or silent-continuous cry Inconsolable
Behavior State	No arousal to any stimuli No spontaneous movement	Arouses minimally to stimuli Little spontaneous movement	Appropriate for gestational age	Restless, squirming Awakens frequently	Arching, kicking Constantly awake or Arouses minimally / no movement (not sedated)
Facial Expression	Mouth is lax No expression	Minimal expression with stimuli	Relaxed Appropriate	Any pain expression intermittent	Any pain expression continual
Extremities Tone	No grasp reflex Flaccid tone	Weak grasp reflex ↓ muscle tone	Relaxed hands and feet Normal tone	Intermittent clenched toes, fists or finger splay Body is not tense	Continual clenched toes, fists, or finger splay Body is tense
Vital Signs HR, RR, BP, SaO₂	No variability with stimuli Hypoventilation or apnea	< 10% variability from baseline with stimuli	Within baseline or normal for gestational age	↑ 10-20% from baseline SaO ₂ 76-85% with stimulation - quick recovery ↑	↑ > 20% from baseline SaO ₂ ≤ 75% with stimulation - slow recovery ↑ Out of sync with vent

This is a pain scale that can be used in neonatal patients

Pediatric: Non-verbal, GCS <15 or Cognitive Impairment

Pain Assessment Tools Neonatal/Infant Pain Scale (NIPS)

(Recommended for children less than 1 year old) - A score greater than 3 indicates pain

Pain Assessment		Score
Facial Expression		
0 – Relaxed muscles	Restful face, neutral expression	
1 – Grimace	Tight facial muscles; furrowed brow, chin, jaw, (negative facial expression – nose, mouth and brow)	
Cry		
0 – No Cry	Quiet, not crying	
1 – Whimper	Mild moaning, intermittent	
2 – Vigorous Cry	Loud scream; rising, shrill, continuous (Note: Silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.	
Breathing Patterns		
0 – Relaxed	Usual pattern for this infant	
1 – Change in Breathing	Indrawing, irregular, faster than usual; gagging; breath holding	
Arms		
0 – Relaxed/Restrained	No muscular rigidity; occasional random movements of arms	
1 – Flexed/Extended	Tense, straight legs; rigid and/or rapid extension, flexion	
Legs		
0 – Relaxed/Restrained	No muscular rigidity; occasional random leg movement	
1 – Flexed/Extended	Tense, straight legs; rigid and/or rapid extension, flexion	
State of Arousal		
0 – Sleeping/Awake	Quiet, peaceful sleeping or alert random leg movement	
1 – Fussy	Alert, restless, and thrashing	

The NIPS (Lawrence et al., 1993) was developed at Children’s Hospital of Eastern Ontario. The NIPS assesses six behavioral indicators in response to painful procedures in preterm newborns (gestational age < 37 weeks) and full-term newborns (gestational age > 37 weeks to 6 weeks after delivery).

Pediatric: Non-verbal, GCS <15 or Cognitive Impairment

FLACC Behavioral Pain Assessment Scale			
CATEGORIES	SCORING		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown; withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs; frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to; distractable	Difficult to console or comfort

Pediatric: Non-verbal, GCS <15 or Cognitive Impairment

Children's Hospital of Eastern Ontario Pain Scale (CHEOPS)

Parameter	Finding	Points
cry	no cry	1
	moaning	2
	crying	2
	screaming	3
facial	smiling	0
	composed	1
	grimace	2
child verbal	positive	0
	none	1
	complaints other than pain	1
	pain complaints	2
torso	both pain and non-pain complaints	2
	neutral	1
	shifting	2
	tense	2

Disease Specific Pain Scales

What else!

There are numerous pain scales used for specific conditions and diseases that are beyond the scope of this module- if you find you have patients suffering from specific diseases, you may want to research on your own information related to pain and that specific disease process.

Remember that none of the available pain scales have been validated or created specifically for the ED population.

Neuropathic pain is a different type of pain that should be recognized and referred for additional treatment and evaluation.

Below is an example of a self-assessment for patients suspected of experiencing neuropathic pain, patients can self assess aspects of neuropathic pain.

1. Please use the scale below to tell us how **intense** your pain is. Place an "X" through the number that best describes the intensity of your pain.

No pain	0	1	2	3	4	5	6	7	8	9	10	The most intense pain sensation imaginable
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2. Please use the scale below to tell us how **sharp** your pain feels. Words used to describe "sharp" feelings include "like a knife," "like a spike," "jabbing" or "like jolts."

Not sharp	0	1	2	3	4	5	6	7	8	9	10	The most sharp sensation imaginable ("like a knife")
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3. Please use the scale below to tell us how **hot** your pain feels. Words used to describe very hot pain include "burning" and "on fire."

Not hot	0	1	2	3	4	5	6	7	8	9	10	The most hot sensation imaginable ("on fire")
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4. Please use the scale below to tell us how **dull** your pain feels. Words used to describe very dull pain include "like a dull toothache," "dull pain," "aching" and "like a bruise."

Not dull	0	1	2	3	4	5	6	7	8	9	10	The most dull sensation imaginable
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5. Please use the scale below to tell us how **cold** your pain feels. Words used to describe very cold pain include "like ice" and "freezing."

Not cold	0	1	2	3	4	5	6	7	8	9	10	The most cold sensation imaginable ("freezing")
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6. Please use the scale below to tell us how **sensitive** your skin is to light touch or clothing. Words used to describe sensitive skin include "like sunburned skin" and "raw skin."

Not sensitive	0	1	2	3	4	5	6	7	8	9	10	The most sensitive sensation imaginable ("raw skin")
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7. Please use the scale below to tell us how **itchy** your pain feels. Words used to describe itchy pain include "like poison oak" and "like a mosquito bite."

Not itchy	0	1	2	3	4	5	6	7	8	9	10	The most itchy sensation imaginable ("like poison oak")
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8. Which of the following best describes the **time** quality of your pain? Please check only one answer.

I feel a background pain all of the time and occasional flare-ups (break-through pain) some of the time.

Describe the background pain: _____

Describe the flare-up (break-through) pain: _____

I feel a single type of pain all the time. Describe this pain: _____

I feel a single type of pain only sometimes. Other times, I am pain free.

Describe this occasional pain: _____

9. Now that you have told us the different physical aspects of your pain, the different types of sensations, we want you to tell us overall how **unpleasant** your pain is to you. Words used to describe very unpleasant pain include "miserable" and "intolerable." Remember, pain can have a low intensity, but still feel extremely unpleasant, and some kinds of pain can have a high intensity but be very tolerable. With this scale, please tell us how **unpleasant** your pain feels.

Not unpleasant	0	1	2	3	4	5	6	7	8	9	10	The most unpleasant sensation imaginable ("intolerable")
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10. Lastly, we want you to give us an estimate of the severity of your **deep** versus **surface** pain. We want you to rate each location of pain separately. We realize that it can be difficult to make these estimates, and most likely it will be a "best guess," but please give us your best estimate.

HOW INTENSE IS YOUR DEEP PAIN?

No deep pain	0	1	2	3	4	5	6	7	8	9	10	The most intense deep pain sensation imaginable
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HOW INTENSE IS YOUR SURFACE PAIN?

No surface pain	0	1	2	3	4	5	6	7	8	9	10	The most intense surface pain sensation imaginable
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Summary

How to approach to the patient with pain:

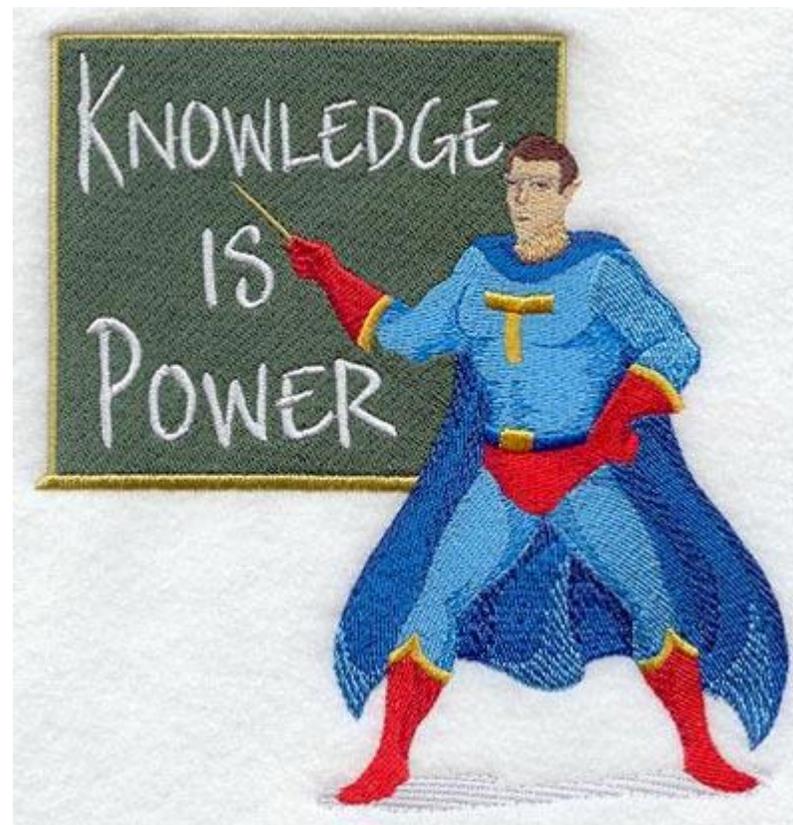
1. Obtain pain history
 - Consider OPQRST or SOCRATES or best applicable to the patient
2. Choose a survey/tool- consider:
 - One-dimensional self-report scale
 - Multidimensional instruments
 - Assessment in special populations
3. Medical/surgical history
4. Medication history
5. Social history
6. Psychiatric history
7. Physical examination



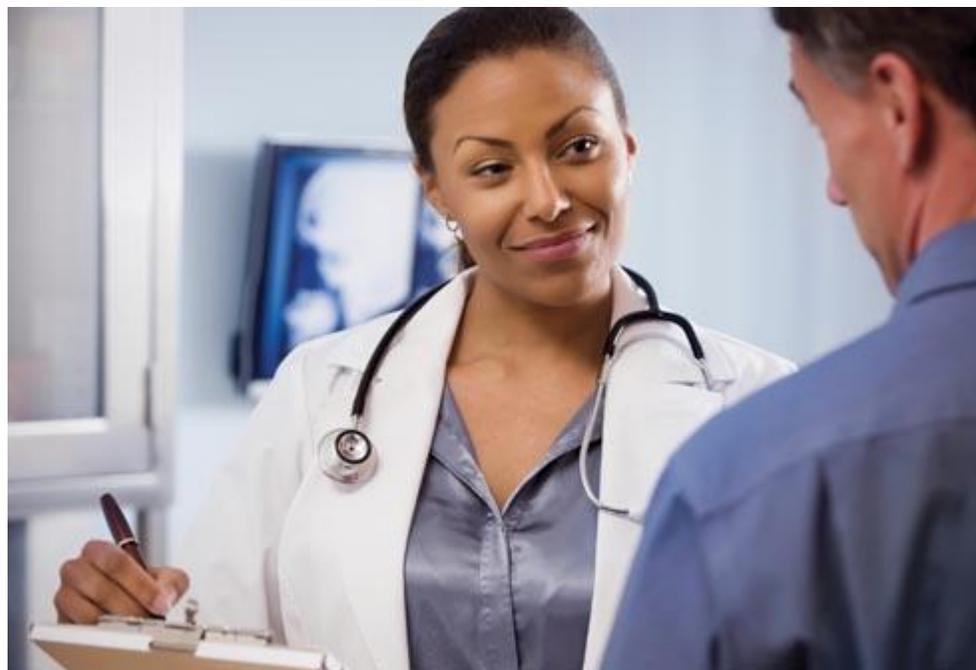
Knowledge Check

There are different types of pain assessments for pediatric and adult populations.

- a) True
- b) False



Treatment of Pain



Treatment

Treatment selection should be determined by:

- type of pain
- type of injury
- the patient's history (including co-morbidities)
- Physical exam



Performing a nerve block may be a better treatment option than an orally administered medication when treating a finger laceration.

Selecting an NSAID medication may not be the optimal treatment in a patient with a history of peptic ulcer disease, heart failure, MI, or kidney disease.

Treatment includes both pharmacological and nonpharmacological options.

Treatment

There are numerous medications that can be administered in a variety of routes for the treatment of pain. For example:

- Nociceptive pain options may include both opiate and non-opiate pharmacological options and nonpharmacologic treatments depending on injury.
- Dental pain responds well to nerve blocks and NSAIDS .
- Neuropathic pain options may include tricyclic, selective norepinephrine reuptake inhibitors, gabapentinoids, or antidepressants.

- Often hospitals encourage use of analgesics to improve patient satisfaction scores related to pain; however, recent studies have found scores are not always associated with administration of pain medications (including opiates).
- Longer ED length of stay and younger age have been associated with lower satisfaction scores.



Nonpharmacological Treatments

- Pain can sometimes be adequately treated using non-pharmacological options such as ice, splinting, distraction (pediatric patients), etc.
- These treatment options can be applied singly or as adjuncts along with pharmacological options.

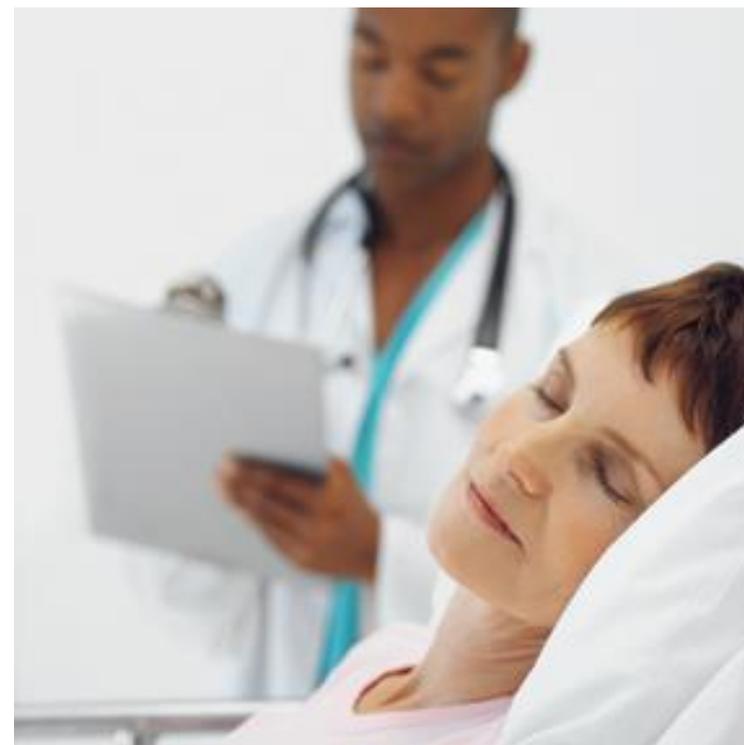
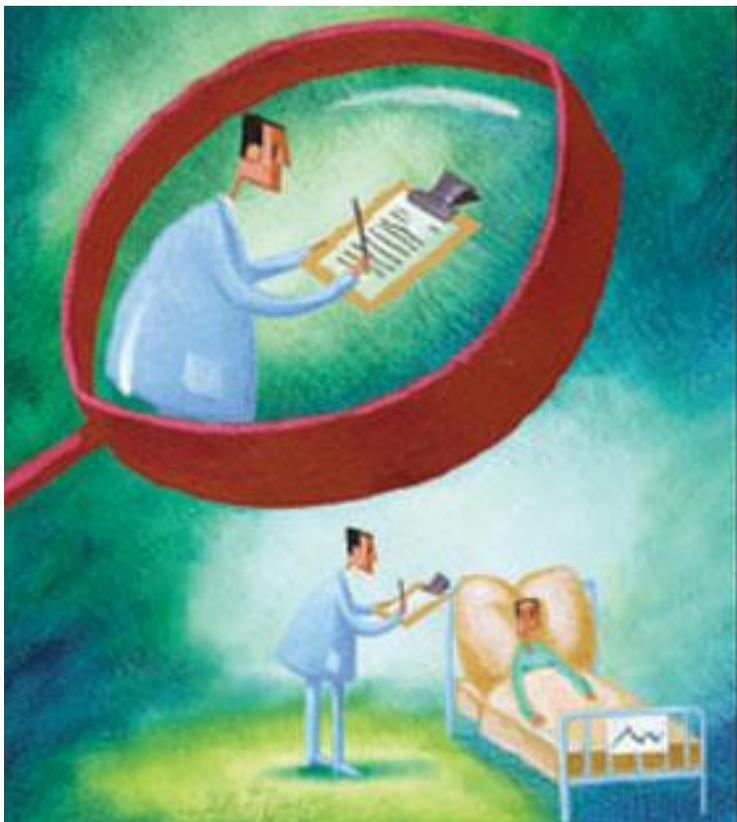
For more detailed information on specific pain management, therapies and treatments refer to the other PAMI modules.

**Click the link below for more information on
nonpharmacological treatments.**

<https://com-jax-emergency-pami.sites.medinfo.ufl.edu/files/2015/03/Nonpharmacologic-management-of-pain-in-adults-and-children-June-2016.pdf>



Re-assessment of Pain



Re-assessment of Pain

Timely reassessment of pain is essential. After an intervention, such as administration of a medication, the pain level should be reassessed once the intervention has had time to exert its effect.

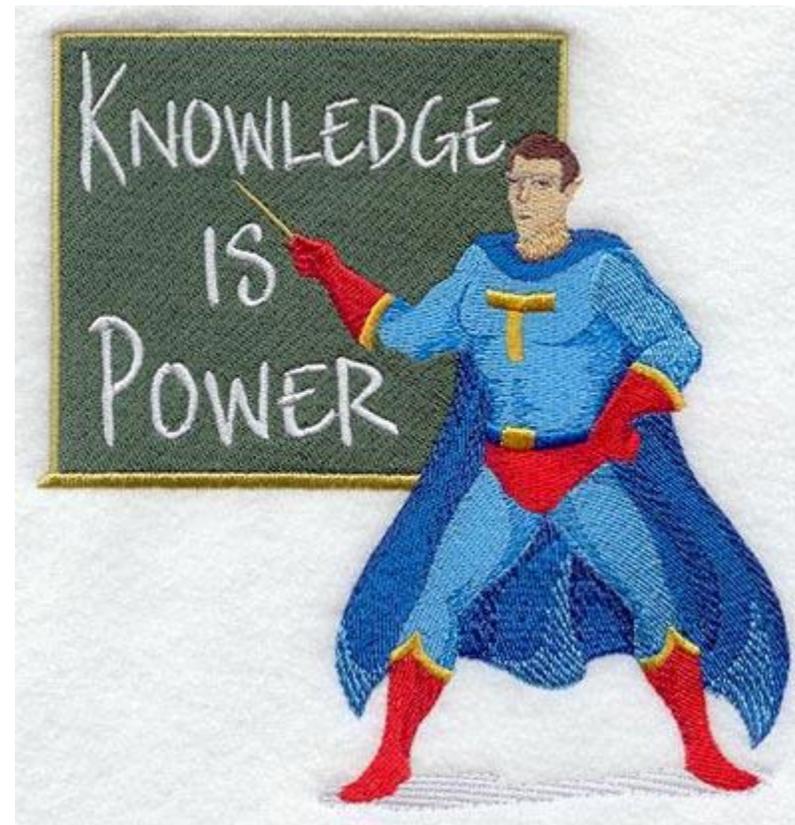
- The same scale or scoring system used previously should be used on re-assessment for consistency. Consider reassessing pain level 15 minutes after IV and 30 minutes after PO administration of a medication.
- All patients do not respond to identical treatment in the same manner due to genetic and other factors.
- Appropriate monitoring for respiratory depression should be used especially when using pain relievers with sedating effects.
- One of the most common mistakes made in pain management is *failure of reassessment* after initial triage or after an intervention. Pain should always be reassessed at time of discharge.

The literature suggests that a 33% to 50% decrease in pain intensity is clinically meaningful from a patient's perspective and represents a reasonable standard of intervention efficacy for acute and chronic pain.

Knowledge Check

As a healthcare provider, it is essential to reassess pain after administration of pain medications?

- a) True
- b) False



Consequences of Unrelieved Pain

The consequences of unrelieved acute pain are numerous and potentially serious

Increased **mortality and morbidity** can result from unrelieved acute pain. This can occur through increased oxygen demand, increased metabolic rate, cardiovascular and pulmonary complications, and impaired immune function.

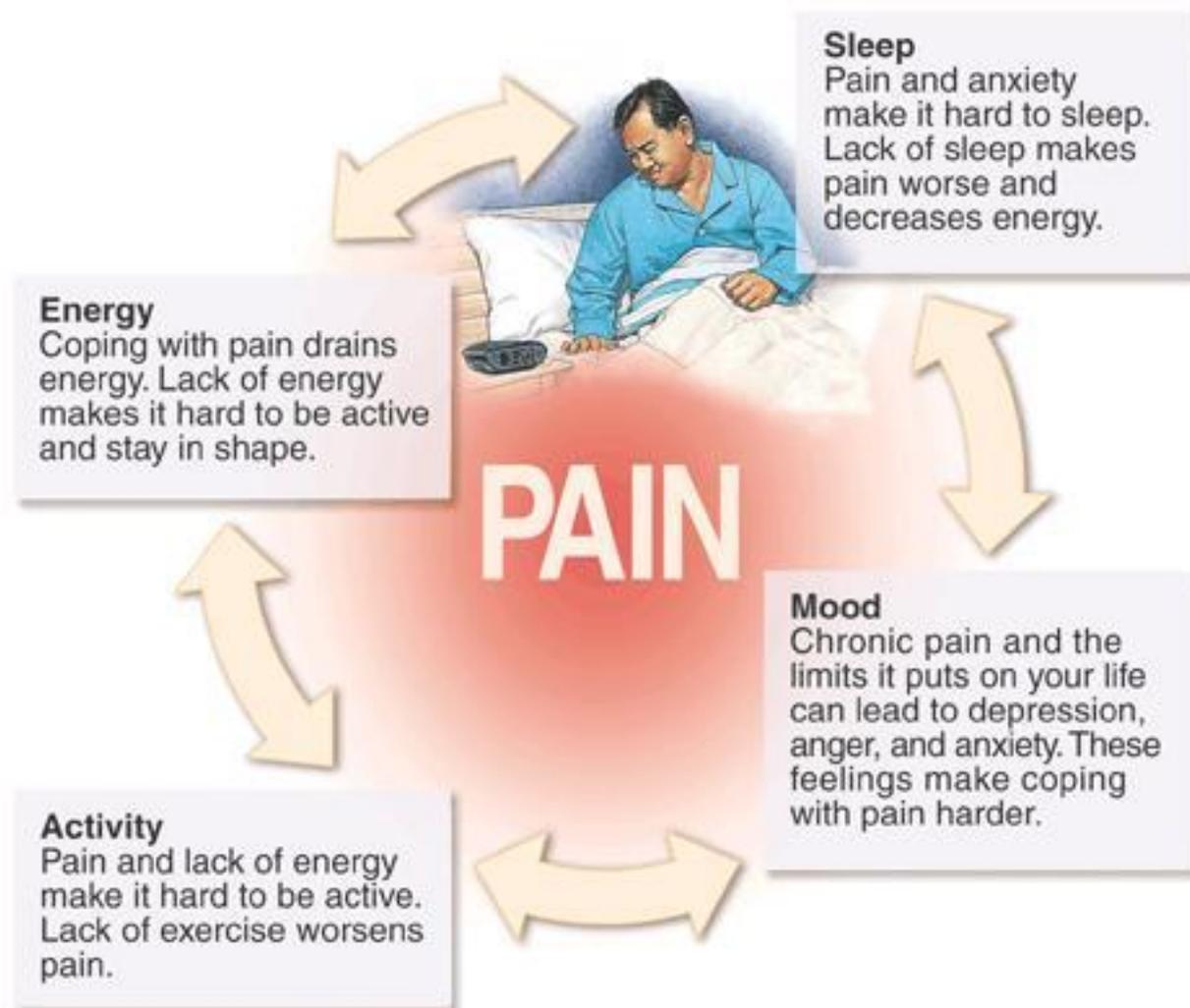
The **psychological impact** of untreated pain can include post-traumatic stress disorder, anxiety, catastrophizing, and depression. Pain catastrophizing is a negative cognitive–affective response to anticipated or actual pain. It influences pain perception through alterations in anticipation of both pain and non-painful perceived threats as well as heightens emotional responses to pain.

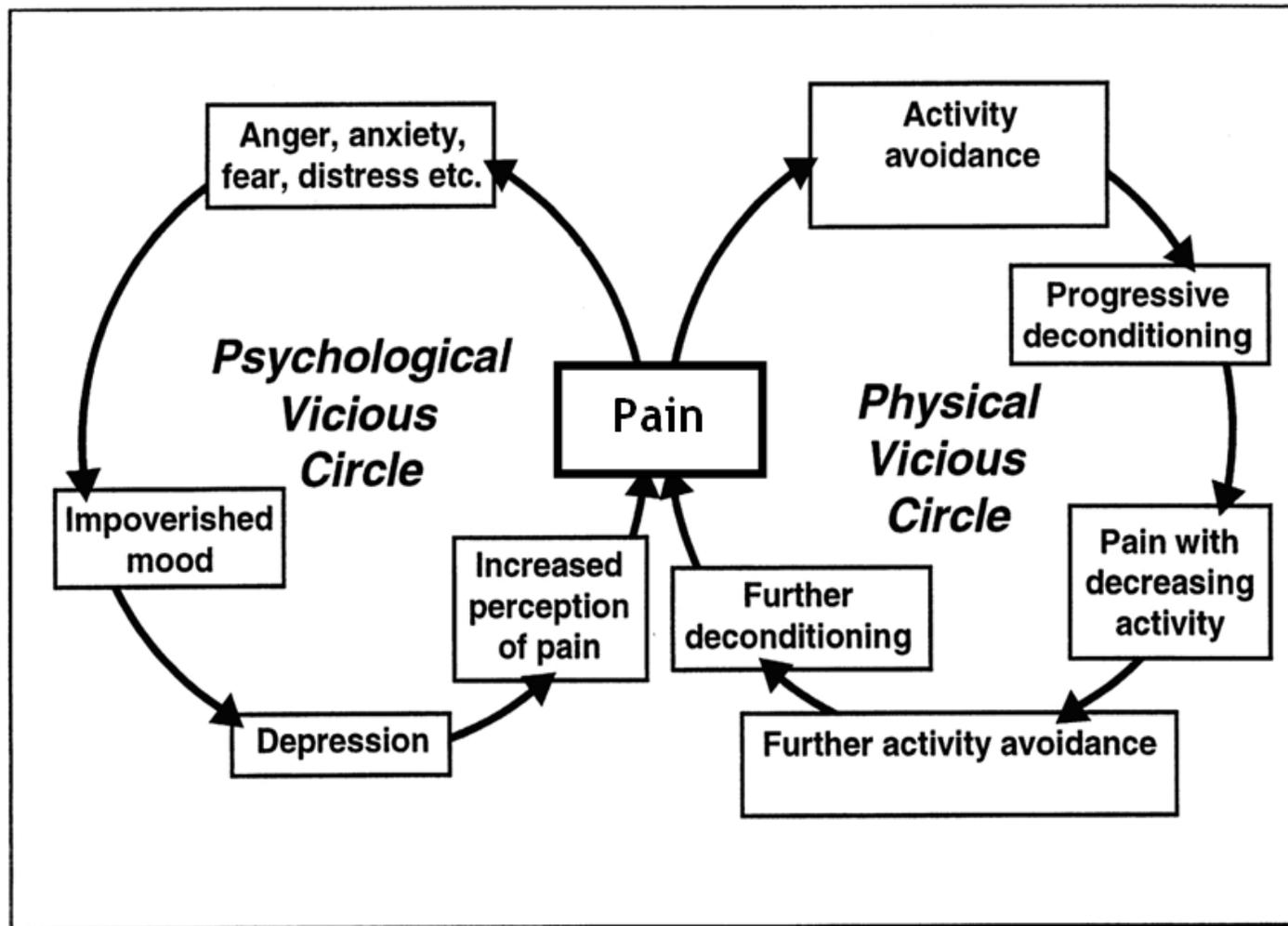
Chronic pain syndromes can develop as a consequence of untreated acute pain mechanisms including spinal cord hyper-excitability.



Chronic Pain Syndrome

Chronic pain can affect sleep, mood, activity, and energy level.

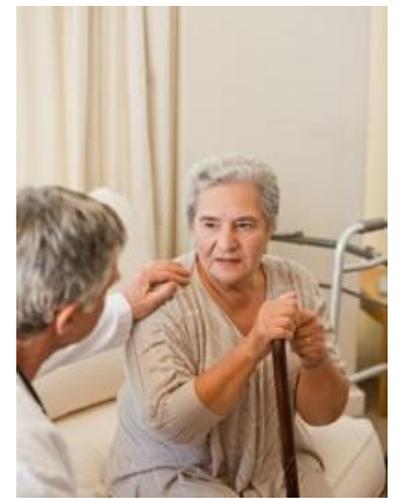




Chronic pain has both physical and psychological affects that can result in a detrimental cycle.

Discharge Planning

Discharge Planning for Patients with Pain



Appropriate discharge planning should take into account what treatments the patient has received during the visit and transportation home.

- How will the patient safely arrive home?
- Are they ambulating at their baseline without assistance?
- Could the treatment or medication still be exerting its effects (i.e. lethargy as a side effect of morphine)?

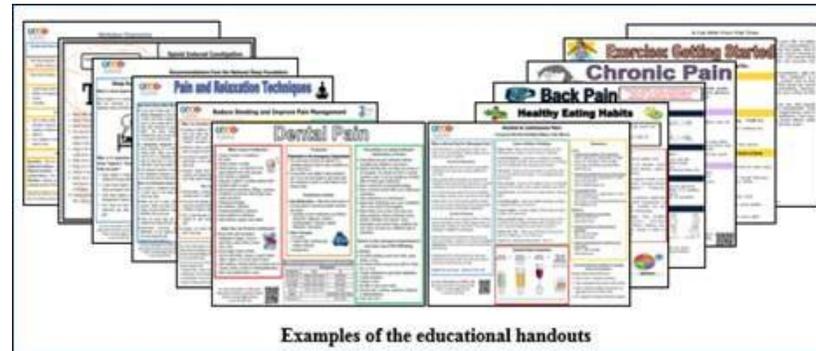
An important consideration is whether the patient will be able to safely take the prescribed medications at home. Patients should be educated on the proper use of their prescribed medications, potential side effects, interactions with other prescribed medications and adverse effects.

- Has the patient been advised **not** to:
 - drive while taking their prescribed opioid
 - combine their medication with alcohol or
 - take more than prescribed especially for acetaminophen containing products

PAMI ED Discharge Planning Toolkit for Pain

Detailed discharge instructions are a key element of reducing risk and return visits for ED patients with painful conditions and those discharged with pain medication prescriptions.

See PAMI website for more information and to download the Discharge Planning Toolkit for Pain

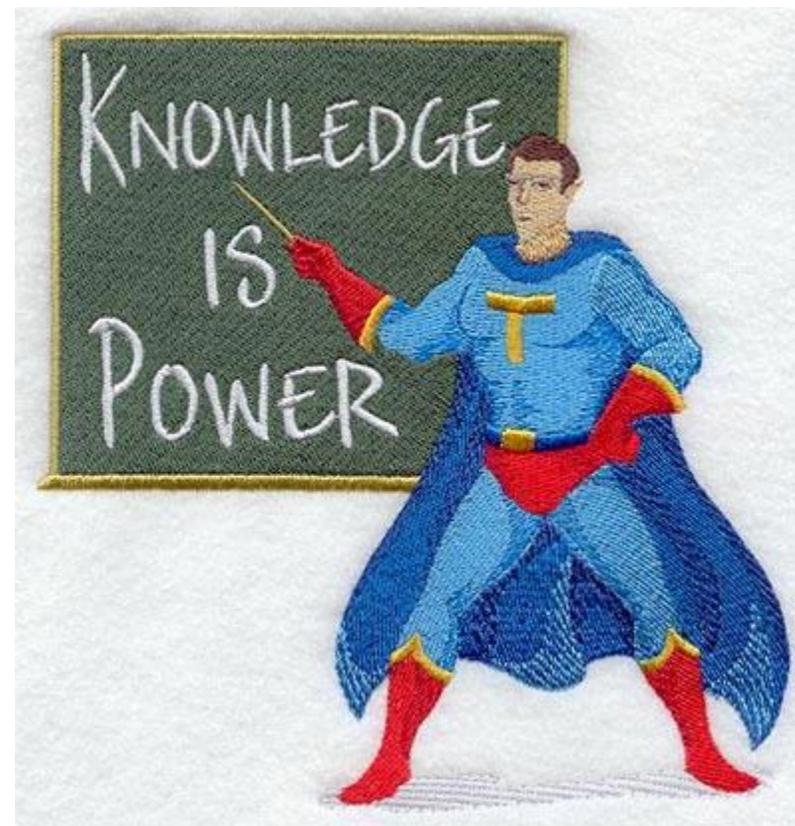


<http://pami.emergency.med.jax.ufl.edu/2016/10/10/introducing-the-pami-ed-discharge-planning-toolkit-for-pain/>

Knowledge Check

Patients should be educated on the proper use of their prescribed medications, potential side effects, interactions with other prescribed medications and adverse effects.

- a) True
- b) False



Regulatory and Legal Aspects of Pain Management

Institution, Local, State, and Federal Regulations

Providers must be familiar with regulations regarding pain management at their institution and at the local, state, and federal levels.



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- At times, the healthcare provider may feel they are being pulled in competing and opposite directions when it comes to these various regulations. Their performance by quality metrics is often partly assessed based on patient satisfaction scores which takes into account only the patients perception of their treatment.
- At the same time the provider must balance being a patient advocate while fearing potential legal and licensure ramifications for “pill pushing” under certain state mandates.
- All of these competing influences can put both the treating provider and patient in a difficult position resulting in an unsatisfactory patient-provider relationship.

See patient safety and risk management module for further information.

Review of Case Scenarios



Case Scenario 1



A 54-year-old non-English speaking male is brought to the ED by EMS after sustaining a motorcycle collision approximately 20 minutes prior to arrival. He has an obvious deformity to his left femur and multiple areas of “road rash.” He received no pain medications prior to arrival. His left leg is splinted. His eyes are closed and he appears to be praying. After physical exam and x-rays, it is determined that he has a left femur fracture and profuse areas of abrasions and denuded skin contaminated with dirt and gravel.

A second patient arrives during your assessment of the first patient. Patient number 2 is a 23 year-old female that was involved in the same accident. She was the restrained backseat passenger in a pick-up truck, reports “pain all over” and is crying hysterically. After a thorough exam she is determined to have mild musculoskeletal strain and one small contusion of her forehead.

- What factors account for the different reactions to pain in these two patients?
- What are the potential barriers to adequately assessing their pain?

Case Scenario 1 Discussion

- Patients respond to and express their degree of pain differently due to a number of psychosocial factors. The severity of injury alone does not always dictate the degree of a patient's pain.
- In this case, patient 1 appears to have sustained more severe injuries, yet patient 2 has a more intense and dramatic response to her injury and situation.
- There are many barriers the treatment team faces when assessing and treating these two patients including language barriers (patient 1), lack of previous physician-patient relationship, simultaneous evaluation of potentially critical patients, lack of knowledge regarding past pain experiences and others.

Case Scenario 2

A 3 year-old right-handed male presents to the ED with his caregiver who reports that the child has complained of pain in his right arm since yesterday. When questioned the child denies pain but cries and pulls away when any part of the right upper extremity is touched. He has no obvious deformity or swelling to either arm.

- How would your approach to pain assessment in this child differ from that of an adult? From an adolescent?**



Case Scenario 2 Discussion

- Pediatric patients require a different pain assessment approach from adults as they often cannot adequately communicate their pain symptoms or the severity. There are several resources clinicians can use in addition to patient report. These include pediatric pain scales, observation of the patient's behavior, and questioning caregivers.
- In this case although the child is attempting his normal behaviors (such as playing) he is doing so through compensation. You notice the patient to be playful and interactive but not using his right arm. The caregiver confirms this by providing the additional history that he has been favoring his left arm. You hand him two toys and he attempts to hold both toys using his left hand. As he is distracted with the toys you are able to palpate his entire upper extremity and determine that his pain is localized to the elbow.

Case Scenario 2 Discussion

- Through the use of observation, surrogate history provided by the caregiver, and distraction you are able to localize the patient's pain
- See pediatric and procedural sedation modules for further information on pain management in pediatric patients





- ✓ Pain is complex and multifactorial.
- ✓ **There are several different classifications of pain depending on location and etiology.**
- ✓ Successful treatment of pain relies on a thorough pain history and exam, timely re-assessments, and appropriate selection of pharmacological and non-pharmacological treatment(s).
- ✓ **There is no test that can adequately identify or measure pain.**
- ✓ Chronic pain is a potential outcome of untreated acute pain.
- ✓ **Discharge planning must take into account several safety concerns and should be centered on patient education.**

Future Directions

- Pain management remains a controversial and rapidly changing topic in healthcare. Providers must keep abreast of new regulations and treatment options.
- The PAMI website will post late breaking pain related news on a regular basis and update modules accordingly. Each patient is a new “puzzle” to compassionately sort out with differing needs and issues.
- This is exemplified in the Hippocratic Oath:

“I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug”.





Pain Assessment and Management Initiative

PAMI learning module content will sometimes overlap due to similar topics. The PAMI website offers access to learning module handouts, pain tools, resources, websites, and recent pain news.

We welcome your feedback on all PAMI materials and are interested in how you use them to improve patient safety and clinical care.

Please email emresearch@jax.ufl.edu.

For more information please visit

<http://pami.emergency.med.jax.ufl.edu/>



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