Pain Management in Hospice and Palliative Care

Mary Lynn McPherson, PharmD, MA, MDE, BCPS

Overall Learning Objectives

1. Define pain and provide examples of how common advanced illnesses are associated with pain.
2. Given a simulated patient with a complaint of pain, use a uni- and multidimensional pain assessment instrument to assess complaint.
3. Given an assessment of a simulated patient's pain complaint, determine the most likely pathogenesis of the complaint.
4. Given a simulated patient with a complaint of pain, recommend an appropriate treatment regimen.
5. Recommend subjective and objective monitoring parameters to assess therapeutic efficacy and potential toxicity of an analgesic regimen.

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Module 1 – Principles of Pain Management

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Objectives

- Define and differentiate between hospice and palliative care.
- Define pain as described by IASP and a common clinical definition.
- Describe the prevalence and nature of pain associated with common terminal diagnoses.
- Differentiate between acute and chronic pain.
- List and explain three principles of pain management in advanced illness.

What is palliative care?

- Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

https://www.who.int/cancer/palliative/definition/en/

What is hospice?

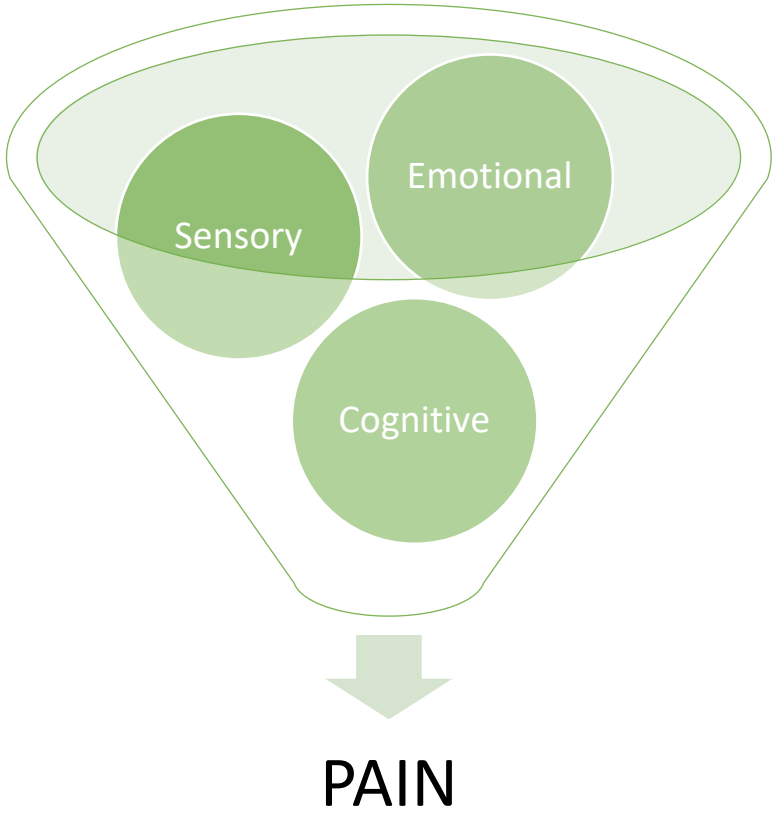
- “Hospice affirms the concept of palliative care as an intensive program that enhances comfort and promotes the quality of life for individuals and their families.
- When cure is no longer possible, hospice recognizes that a peaceful and comfortable death is an essential goal of health care.
- Hospice believes that death is an integral part of the life cycle and that intensive palliative care focuses on pain relief, comfort and enhanced quality of life as appropriate goals for the terminally ill.
- Hospice also recognizes the potential for growth that often exists within the dying experience for the individual and his/her family and seeks to protect and nurture this potential.”

https://www.nhpco.org/ethical-and-position-statements/preamble-and-philosophy

What is pain? What is total pain?

What is pain?

- An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (IASP).
- “Pain is whatever the person experiencing it says it is” (McCaffery)



https://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698;

McCaffery M, Pasero C. Pain: Clinical Manual, 2nd ed. St. Louis, MO: Mosby; 1999

Is pain SUBJECTIVE or OBJECTIVE?

- *"Subjective* data are information from the client's point of view ("symptoms"), including feelings, perceptions, and concerns obtained through interviews.
- *Objective* data are observable and measurable data ("signs") obtained through observation, physical examination, and laboratory and diagnostic testing."
- So which is it – subjective or objective?
- Pain is ALWAYS subjective!

http://www.delmarlearning.com/companions/content/0766838366/students/ch11/faq.asp

How common is pain?

- 65-80% of patients with terminal cancer
- 71-83% of nursing home residents
- 25-50% of community-dwelling elderly have pain that interferes with their daily activity

American Geriatrics Society. JAGS 2002;50 Suppl:6:1-20.

Causes of Pain at End of Life: Focus on Cancer

- Pain that is totally unrelated to the cancer
- Pain caused by the tumor invasion
  - Bone pain
  - Neurogenic pain (e.g., spinal cord compression, peripheral neuropathy, brachial plexopathy, lumbosacral plexopathy)
  - Visceral pain (including referred pain)
- Pain caused by the cancer therapy

Johnson BW, Parris WCV. Mechanisms of cancer pain. In: Parris WCV, Cancer Pain Management, 1997, Butterworth-Heinemann.

Cancer Pain Due to Therapy

- Postsurgical pain syndromes
- Postamputation pain
- Post thoracotomy pain syndrome
- Post mastectomy pain syndrome
- Post radiation pain syndrome
  - Post radiation plexopathy
  - Post radiation myelopathy
  - Radiation-induced nerve tumors
- Post chemotherapy pain syndrome
  - Peripheral neuropathic pain
  - Steroid-induced aseptic necrosis of the bone
  - Steroid withdrawal syndrome
  - Mucositis
  - Herpes Zoster and Postherpetic Neuralgia

Johnson BW, Parris WCV. Mechanisms of cancer pain. In: Parris WCV, Cancer Pain Management, 1997, Butterworth-Heinemann.

Audience Response

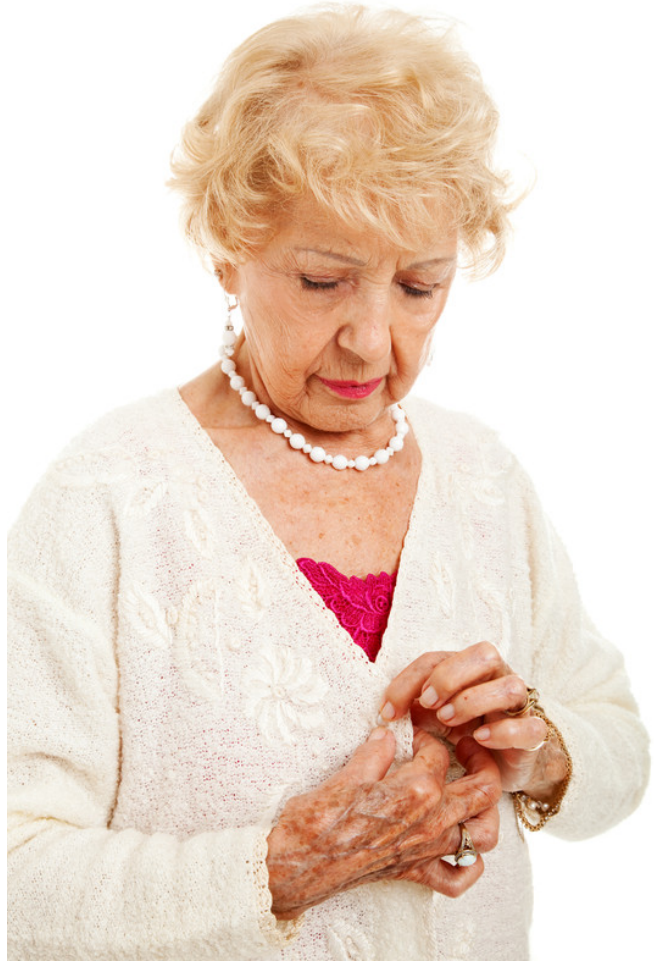
- BF is a 72 year old man diagnosed with prostate cancer. He has had surgery, chemo and radiation, and he complains of moderate to severe pain. Which of the following could be causes of his pain?
  a. Pain from the tumor (e.g., metastatic bone pain)
  b. Post-surgical pain
  c. Post-radiation pain syndrome
  d. Post chemotherapy pain syndrome
  e. Pain unrelated to his cancer process (e.g., chronic low back pain)
  f. All of the above are potential causes of his pain!

Heart Disease

- Coronary artery disease – angina
- Heart failure
  - Pain affects up to 80% patients with ES HF
  - Pain may be due to angina/ischemic, diabetic neuropathy, osteoarthritis, gout, muscular pain
  - Pain may be due to peripheral edema, post-herpetic neuralgia
  - Has a deleterious effect on quality of life
  - NSAIDs are relatively contraindicated

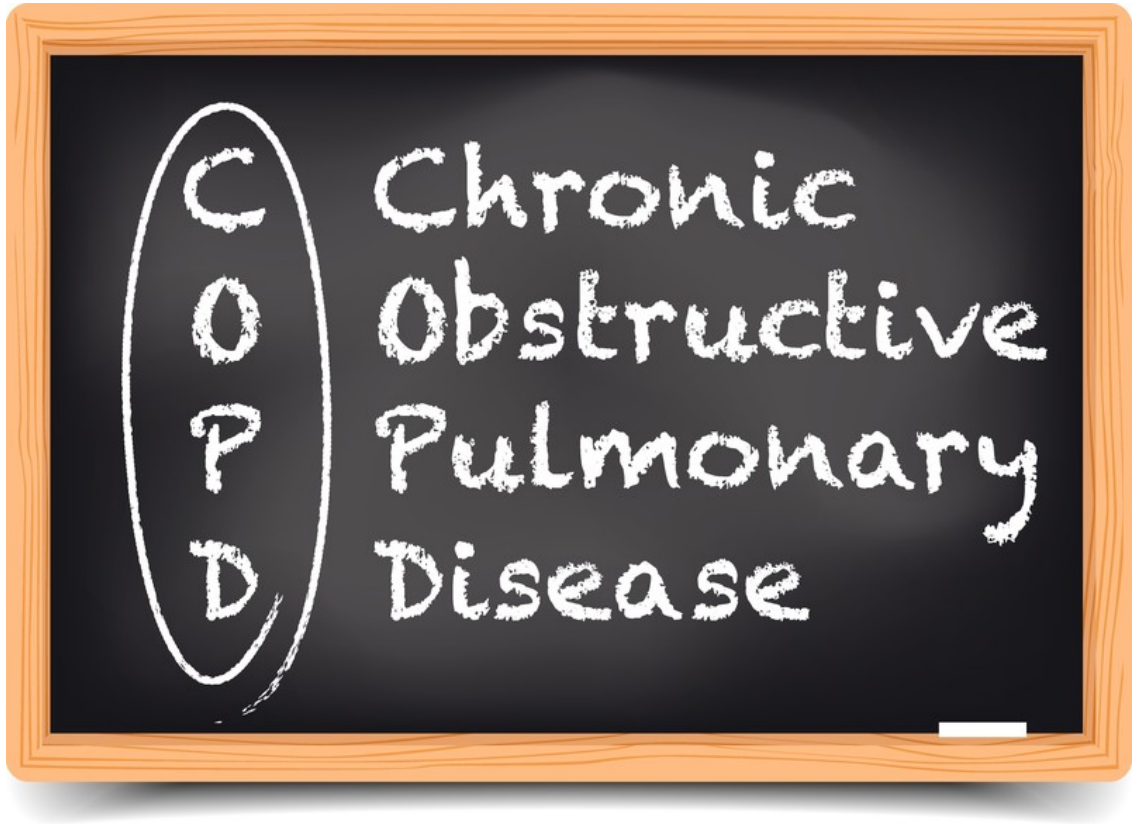
Debility / FTT / Dementia / Malnutrition

- Older adults, particularly those with these diagnoses, are at high risk of under-recognition and under-treatment of pain.
- Assessment
  - Behavioral changes
  - Mood changes
  - Facial expression
  - Body language
  - Speech
  - Physical examination



End Stage / Advanced COPD

- 100 patients with advanced COPD were surveyed
  - 41% reported non-chest pain
  - 37% reported chest pain or pressure
- Prevalence thought to be equivalent in magnitude to other chronically ill patients, including ambulatory patients with cancer and community-dwelling patients with advanced heart failure



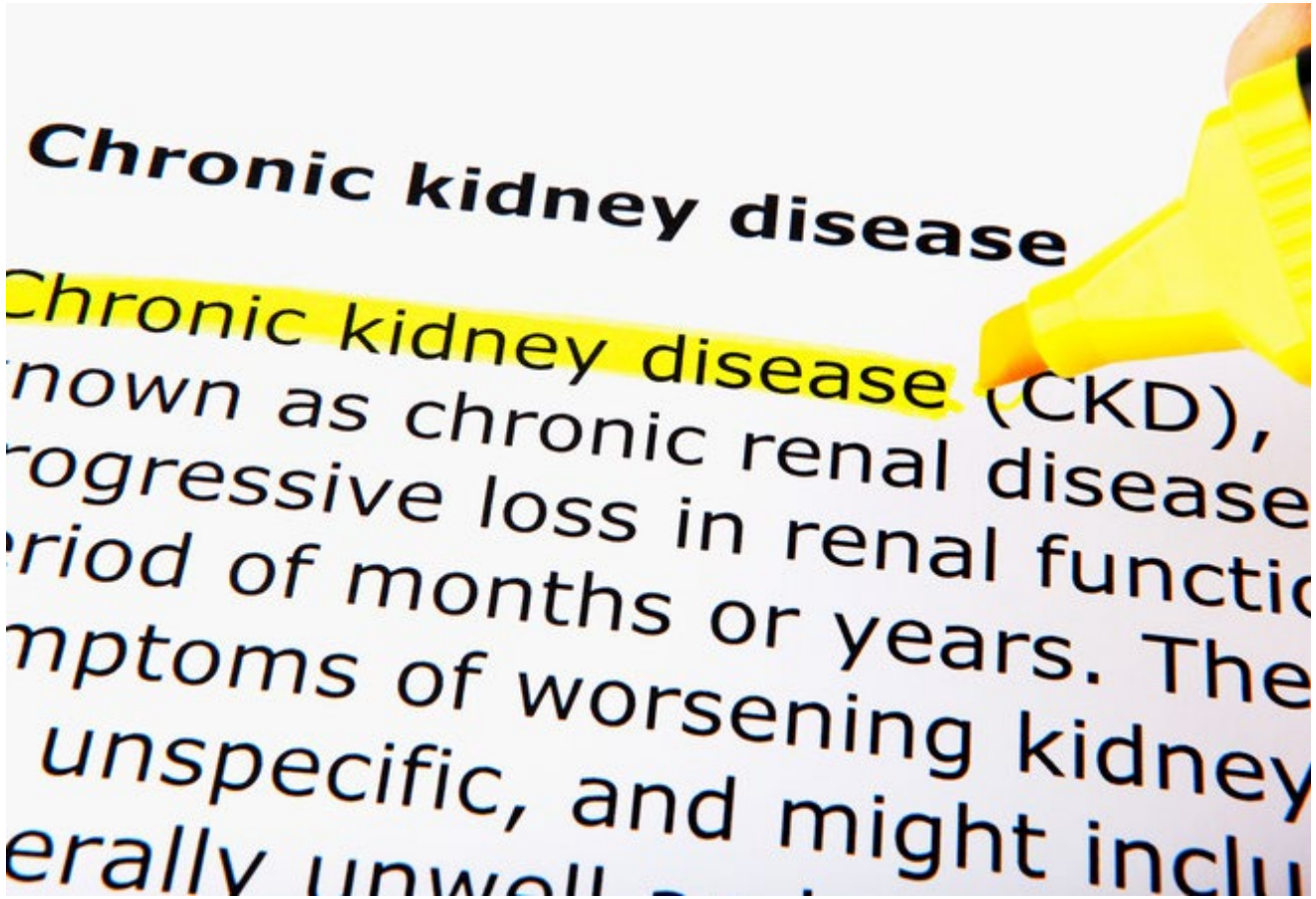
Blinderman CD et al. J Pain Symptom Manage 2009;38:115-123.

Pain After Stroke (CVA)

- AKA thalamic pain, neurogenic pain, central pain syndrome
- Composed of pre-stroke pain, post-stroke functional recovery, and mood disorders
- Characteristics
- Explaining this to patients – stroke survivors with central pain manifest in different ways
- Chronic central pain has residual effects

Kidney disease / ESRD

- National Kidney Foundation – 5 CKD stages
  - Stage 1 – normal renal function
  - Stage 5 – GFR < 15 ml/min and approaching or receiving dialysis or renal transplantation
  - ESRD – older term = Stage 5
- Stage 5 CKD patients have a high incidence of pain and other debilitating symptoms
- Underlying causes of CKD
- Co-morbid conditions
- Metabolic derangements common in dialysis patients



Kidney disease / ESRD – Pain

Analgesic Selection

- NSAIDs
  - Inhibit prostaglandin synthesis and reduce inflammation
  - Adverse effects – GI bleeding (increased risk in Stage 5 CKD with uremic platelet dysfunction)
- Acetaminophen – good for mild-mod pain
  - No dosage adjustment needed for renal disease in the absence of liver disease
- Tramadol – on dialysis, do not exceed 50-100 mg BID
- Opioids
- Adjuvant agents

Amyotrophic Lateral Sclerosis (ALS)

- Cramps
- Spasticity
- Numbness or burning sensation in legs, feet or hands
- Immobility can cause pain along pressure or bony areas (sacral area, heels, elbows, hips)
- Joint contractures

Parkinson's Disease Pain

- Parkinson's Disease causes a gait disturbance
- Possibly a higher incidence of rheumatic diseases
- Limb rigidity
- Dystonia
- Sleep disorders
- Gastrointestinal problems
- Neck pain, headache
- Overall pain disorder

Waseem S, Gwinn-Hardy K. Postgrad Med 2001;110(6):33-40, 46.

Objectives

- Define and differentiate between hospice and palliative care.
- Define pain as described by IASP and a common clinical definition.
- Describe the prevalence and nature of pain associated with common terminal diagnoses.
- Differentiate between acute and chronic pain.
- List and explain three principles of pain management in advanced illness.

Acute vs. Chronic Pain

ACUTE PAIN

- Occurs suddenly (illness, injury or surgery)
- Short-lived
- Resolves as acute issue heals

CHRONIC PAIN

- Pain that lasts longer than the expected healing process (> 3 months)
- Pain IS the disease
- Affects a person's activities of daily living
- Major cause of disability worldwide
- Frequently caused by inadequately treated acute pain

Do patients with advanced illness have…

- Acute pain?
- Chronic pain?
- BOTH acute and chronic pain?

Principles of Pain Management

- Non-drug pain management strategies
- Principles of pain management
  - World Health Organization
  - How to select medications, when to administer
- Medications used to treat pain
  - Non-opioids, opioids, adjuvant analgesics
- Assessing adherence to pain management interventions, and the goals of pain management
- Opioid myths and misconceptions

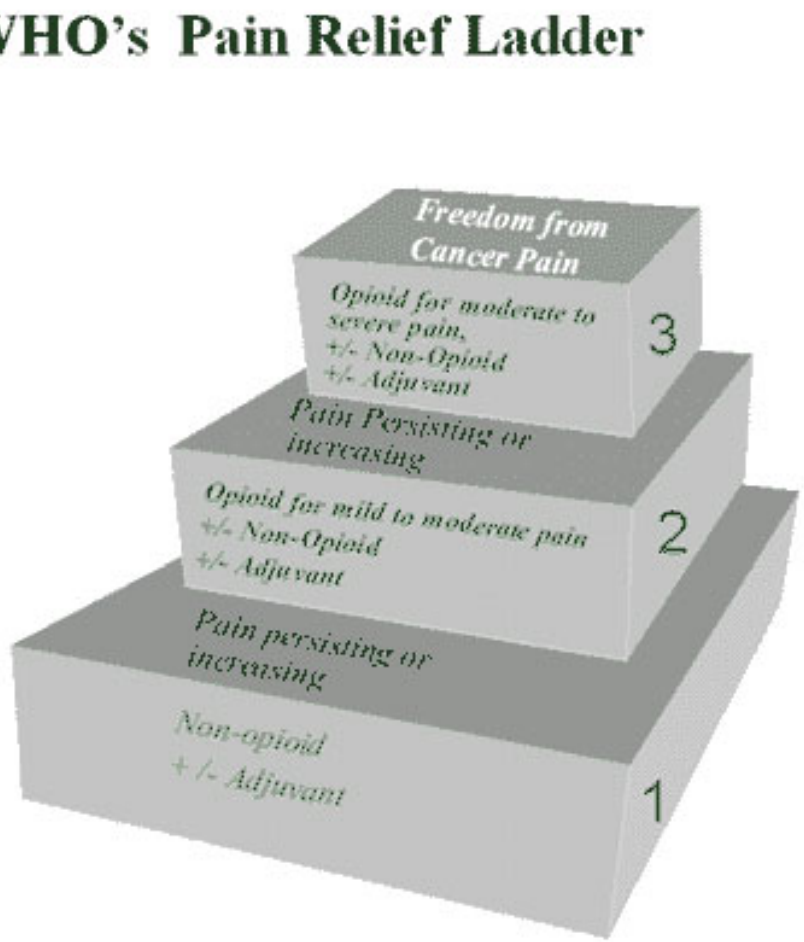
Non-Pharmacologic Pain Management Strategies

- Distraction, relaxation, imagery, meditation
- Heat, cold application
- Massage, physical therapy, acupuncture
- Controlled breathing, distraction
- Music therapy, pet therapy, art therapy
- Comfort foods
- Energy therapy
- Exercise, positioning, pacing

Principles of Pain Management

- Pain medications are generally used in a stepwise approach
- Match the analgesic to the degree of pain
  - Pain that presents as mild to moderate, start with a nonprescription medication such as acetaminophen (Tylenol)
    Pain that presents as, or progresses to severe pain may require treatment with an opioid
- More than one medication may be used at a time
  - Co-analgesics, or adjuvant analgesics, can be very useful
  - Antidepressants (e.g., nortriptyline, duloxetine), anticonvulsants (gabapentin, pregabalin)
  - Always use RATIONAL polypharmacy

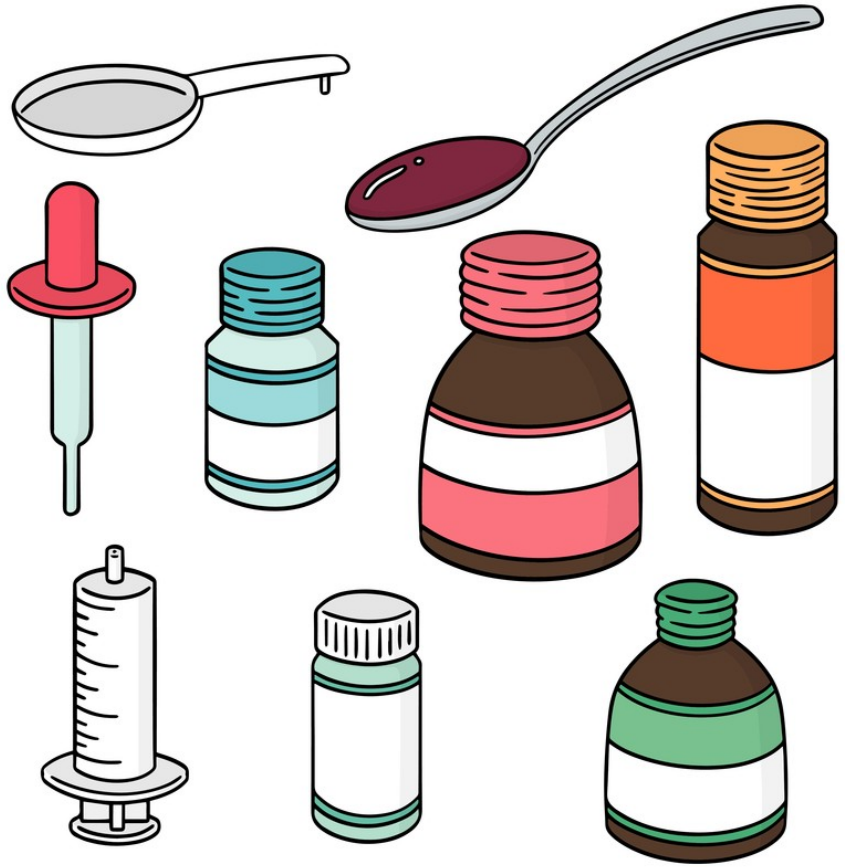
Principles of Pain Management



https://www.who.int/cancer/palliative/painladder/en/

Principles of Pain Management

- There are many ways to give pain medication
  - By mouth (oral) – PREFERRED ROUTE
  - Under the tongue (sublingual)
  - Inside the cheek (buccal)
  - Rectal
  - Into the skin (subcutaneous)
  - Through the vein (intravenous)
  - Through the skin (transdermal)
  - Through the spine (epidural, intraspinal)

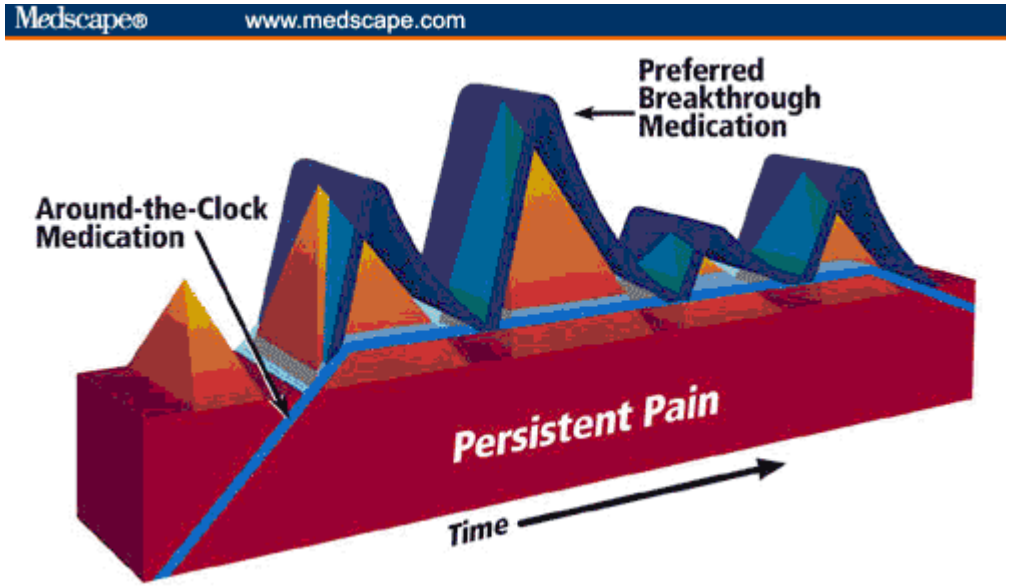


Principles of Pain Management

- Intermittent pain – discrete episodes of pain; painful between episodes
  - Generally treated as needed (per episode)
  - May be premedicated if predictable
- Persistent pain – frequent or constant pain (at least 12 hours/day)
  - Generally treated with scheduled doses of pain medications
- It takes less medication to prevent pain than to treat it
  - Every 4, 6, 8, 12 or 24 hours (tablets or capsules)
    - Some are long-acting
    - Long-acting is preferred for persistent pain
  - Every 3 or 7 days (transdermal fentanyl or buprenorphine)

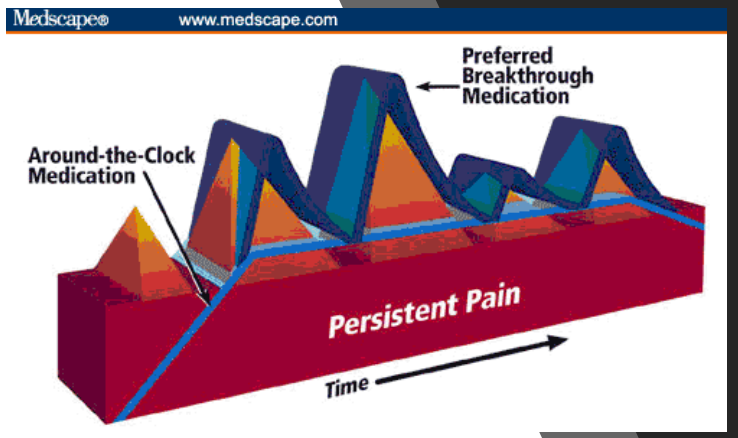
Principles of Pain Management

- When persistent pain is controlled, but the patient has “breakthrough” pain episodes, these additional painful episodes are treated either as they occur, or before the pain (if you can predict it)
  - Quick-onset, short-acting pain medications



https://www.medscape.org/viewarticle/507483_5

Principles of Pain Management



- Examples include oral morphine, oxycodone or hydromorphone tablets, capsules or oral solution
- Usually dosed as 10-15% of the scheduled, long-acting opioid
  - For example, a patient receiving MS Contin 30 mg po q12h
  - An appropriate dose of oral morphine solution would be 5 or 10 mg every 2, 3 or 4 hours as needed for additional pain
- Do NOT dose short-acting opioids “every 4-6 hours” prn
  - They don’t last more than 3-4 hours
- If patient needs 3-4 or more doses per day, consider increasing the long-acting opioid.

Principles of Pain Management

- Maximize dose and schedule before adding or changing drugs
  - It makes no sense to have a patient on more than one long-acting opioid
- Opioids have no ceiling effect, or maximum dose
  - BUT, re-evaluate if oral morphine equivalent per day approaches 100 mg/day
- There is significant inter-patient variability with opioid dosing
- If increasing the dose doesn’t work, consider switching to a different opioid
  - Evaluate appropriateness of an adjuvant analgesic

Back to the salt mine for you!

- A patient is taking long-acting morphine 60 mg by mouth every 12hours.
- What would be an appropriate dose of oral morphine solution (Roxanol) to treat breakthrough pain?
  - Roxanol 5 mg by mouth every 2 hours as needed
  - Roxanol 10 mg by mouth every 6 hours as needed
  - Roxanol 15 mg by mouth every 2 hours as needed
  - Roxanol 30 mg by mouth every 4 hours as needed

Principles of Pain Management

- Anticipate adverse effects
  - Some adverse effects will occur reliably (e.g., opioid-induced constipation)
- Evaluate frequently
  - Patients on oral medications should be evaluated once or twice daily to assure breakthrough doses are adequate and that pain is controlled
  - Assess patient response at the appropriate time
  - Patients on oral opioid therapy who use more than 3-4 doses of breakthrough opioid daily should contact the hospice
  - Patients with severe pain on an IV opioid should be evaluated every few hours

Goal Setting

- Establish realistic pain goals
- Educate the patient and their family
- Consider both pharmacologic and non-pharmacologic options
  - Ensure appropriate routes of administration of medications
- Assess, reassess, reassess, and reassess!!!

Pain Management in Hospice and Palliative Care

Module 2 – Pain Assessment

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Objectives

- Use a unidimensional pain assessment scale, including the VAS, NRS, and Wong-Baker Faces and Word Descriptors.
- Perform a multidimensional pain assessment including all eight elements of symptom analysis.
- Use the PAINAD and Checklist of Nonverbal Pain Indicators for nonverbal patients suspected of having pain.
- List the two elements of a therapeutic goal for a patient in pain.

Steps for Appropriate Treatment

1. **Problem identification and assessment**
2. Define the therapeutic objective
3. Identify available modalities
4. Identify variables that affect drug selection
5. Select appropriate pharmacologic agent(s)
6. Identify expected/potential toxicities
7. Administer therapy
8. Monitor patient response
9. Adjust regimen as appropriate

Why do we assess pain?

Pain is a personal and subjective experience

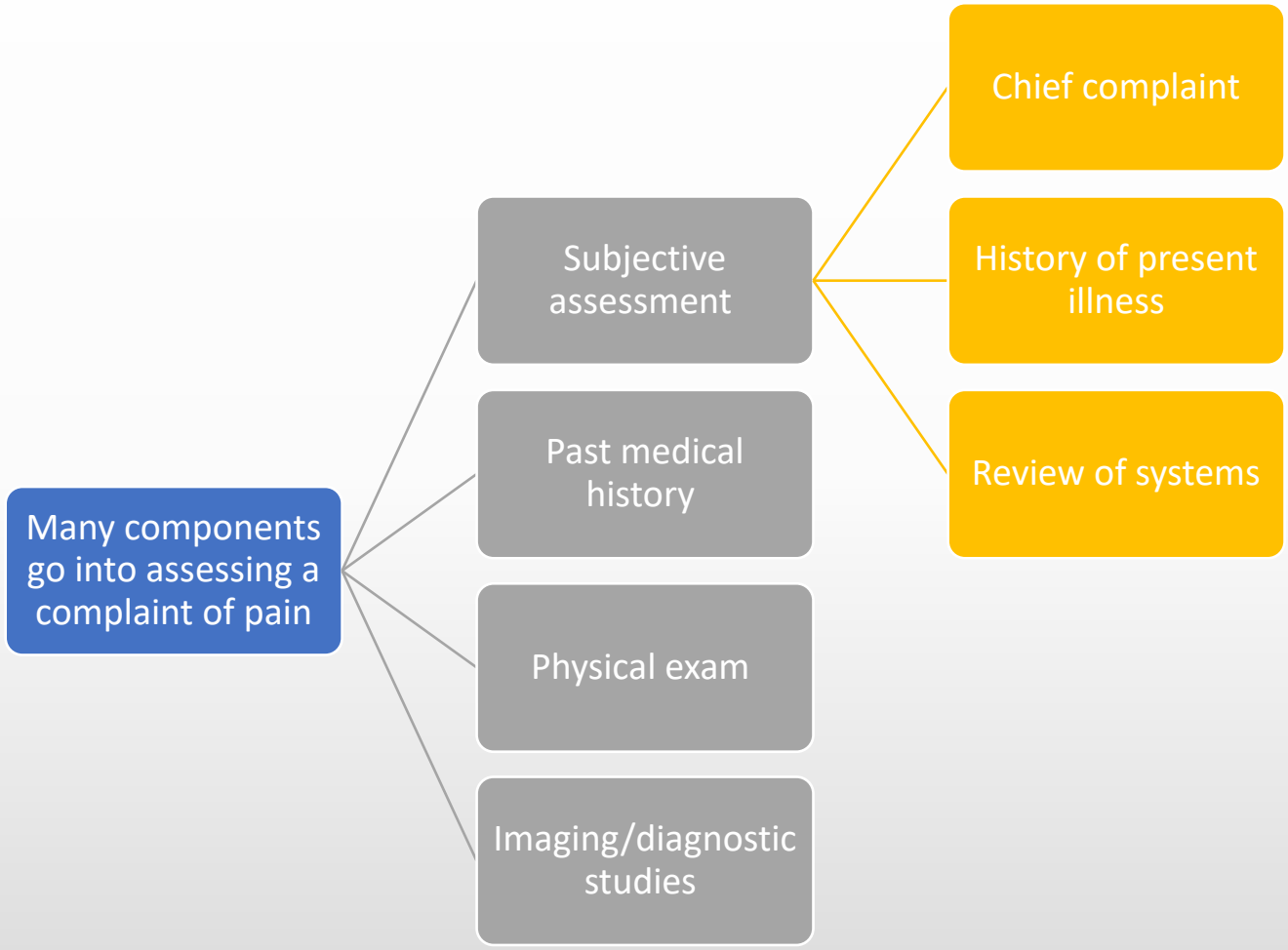
Clinical presentation of pain can be very complex with many qualitative factors to consider

Comprehensive assessment of pain complaint allows practitioner to determine the most likely pathogenesis of the pain

Clearly defined pathogenesis will help guide appropriately treatment

Assessment and reassessment allows practitioners to determine if a given therapy is effective

How do we assess pain?



Unidimensional vs. Multidimensional Assessment

Unidimensional Assessment Tools

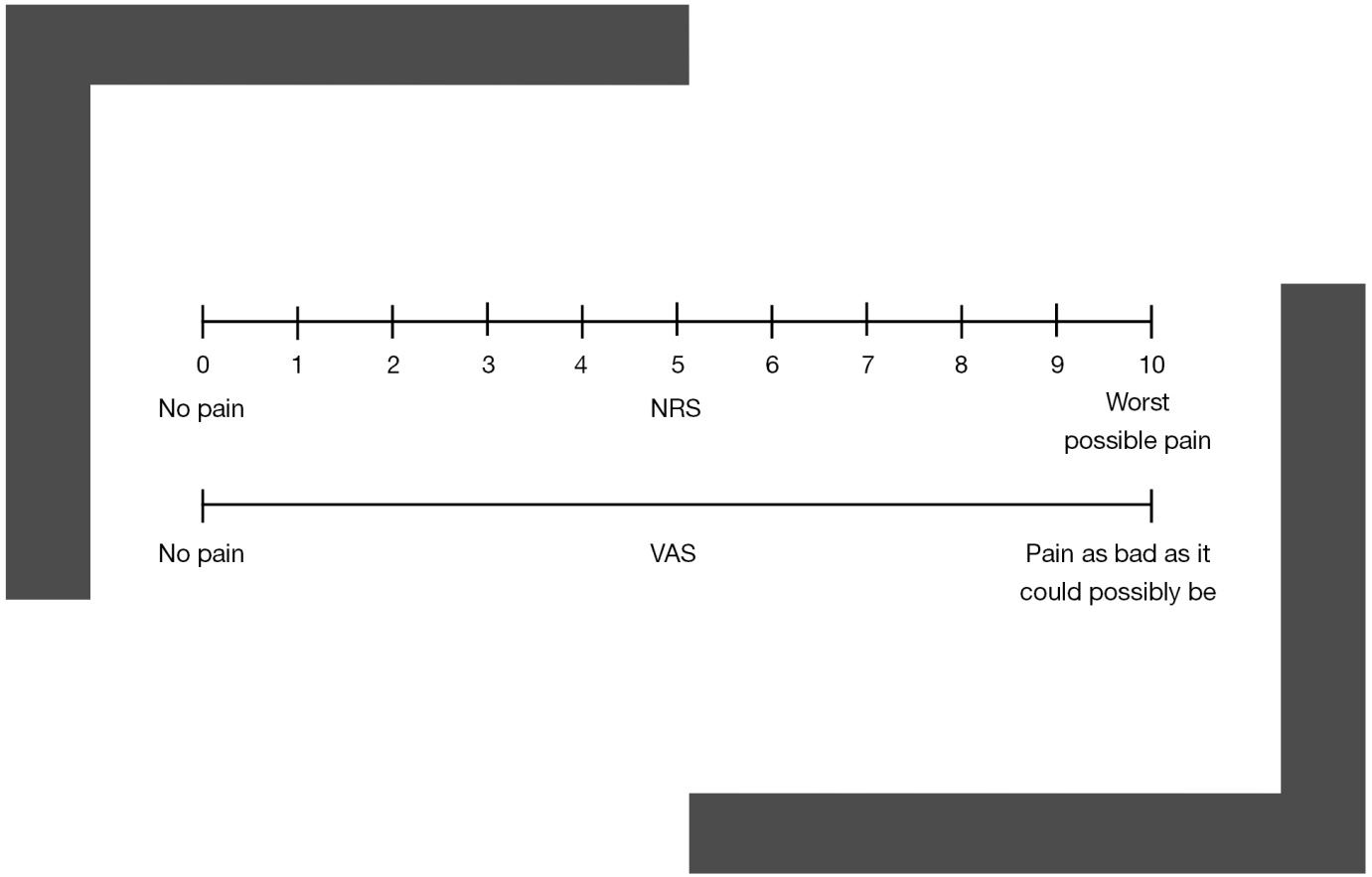
Unidimensional

A single item	Usually pain intensity alone	Scales are easy and quick to administer	Requires little training

Reasonably valid and reliable results

VAS (visual analog scale), NRS (numeric rating scale), VDS (verbal descriptor scale), Faces Scale

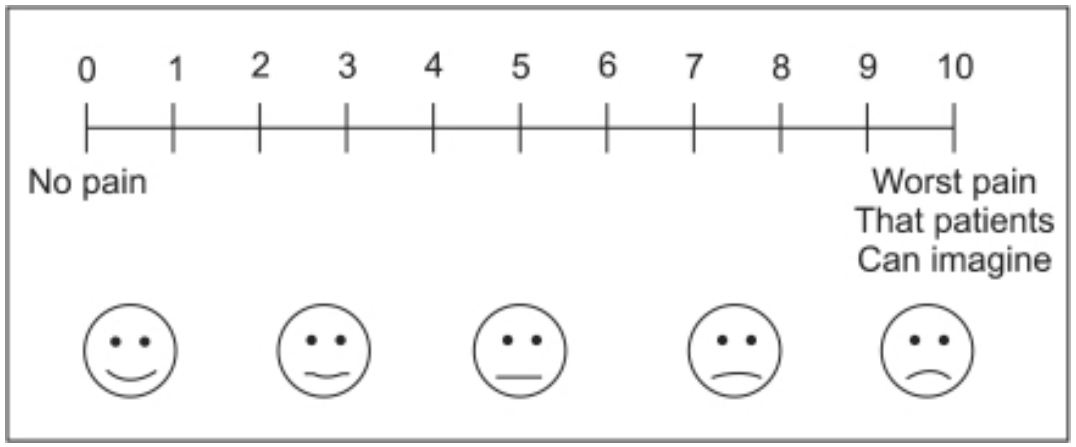
Unidimensional Pain Assessment Tools



- Visual Analog Scale (VAS)
- Numeric Pain Intensity Scale
- Verbal Descriptor Scale
  - None, mild, moderate, severe, pain as bad as it could be

http://rebelem.com/rebel-cast-episode-49-pediatric-pain-management-pearls-with-sebrina-perkins/visual-analog-scale/

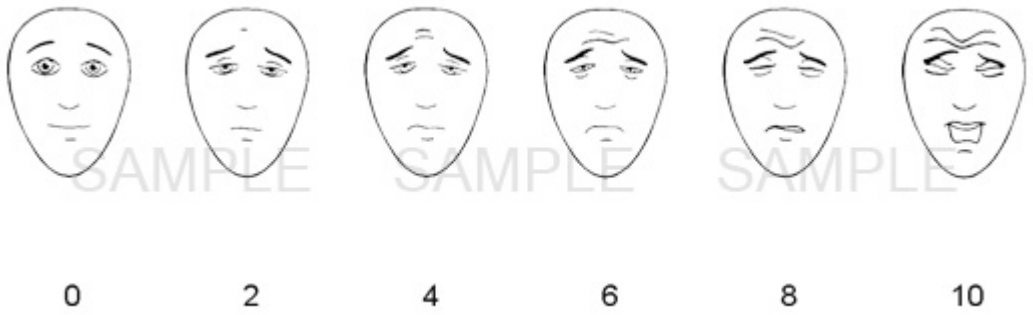
Unidimensional Pain Assessment Tools



- Faces Scale

https://openi.nlm.nih.gov/detailedresult.php?img=PMC3151631_kju-52-452-g001&req=4

Unidimensional Pain Assessment Tools



https://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1519

- Albanian
- Arabic
- Bulgarian*
- Catalan
- Cebuano (Philippines)
- Chichewa
- Chinese
- Croatian*
- Czech*
- Dutch (Belgium)*
- Dutch (Netherlands)*
- English
- Estonian
- Filipino (Philippines)
- Finnish*
- French (Belgium)*
- French (Canada)*
- French (France)
- French (Switzerland)*
- German (Austria)*
- German (Germany)*
- German (Switzerland)*
- Greek
- Hebrew
- Hindi
- Hungarian*
- Indonesian
- Italian*
- Japanese
- Kannada*
- Korean*
- Lao
- Latvian*
- Lithuanian*
- Malagasy
- Malaysian*
- Mandarin (Malaysia)*
- Mandarin (Taiwan)*
- Mongolian
- Nepali
- Norwegian
- Persian
- Polish*
- Portuguese (Brazil)
- Portuguese (Portugal)*
- Romanian*
- Russian (Russia)
- Russian (Ukraine)*
- Serbian
- Slovak*
- Slovenian*
- Spanish (Argentina)
- Spanish (Chile)*
- Spanish (Colombia)*
- Spanish (Costa Rica)*
- Spanish (Mexico)*
- Spanish (Peru)*
- Spanish (Spain)*
- Spanish (USA)*
- Swahili
- Swedish*
- Tamil (Malaysia)*
- Telugu*
- Thai
- Turkish
- Ukrainian*
- Wallisian (Uvean)

Multidimensional Assessment Tools

- Multidimensional
  - Evaluation of pain in several different domains
  - Captures a more comprehensive understanding of the pain complaint
  - Intensity, affect, sensation, location, impact on ADLs, etc...
  - Takes longer to administer
  - Requires training of personnel to perform
  - More challenging to 'score' or 'document' than unidimnensional

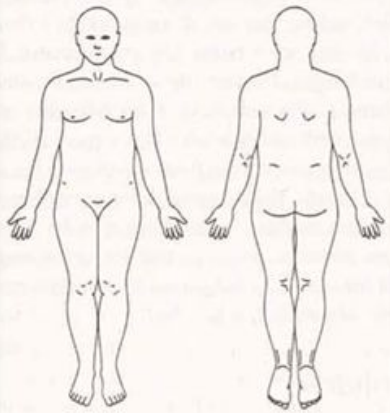
- McGill Pain Questionnaire
- Wisconsin Brief Pain Inventory

Short Form McGill Pain Questionnaire

FIGURE 10-2 | The McGill Pain Questionnaire

Part 1 Where Is Your Pain?

Please mark on the drawing below, the areas where you feel pain. Put E if external, or I if internal, near the areas which you mark. Put EI if both external and internal.



Part 2 What Does Your Pain Feel Like?

1 Flickering Quivering Pulsing Throbbing Beating Pounding	2 Jumping Flashing Shooting	3 Pricking Boring Drilling Stabbing Lancinating	4 Sharp Cutting Lacerating
5 Pinching Pressing Gnawing Cramping Crushing	6 Tugging Pulling Wrenching	7 Hot Burning Scalding Searing	8 Tingling Itchy Smarting Stinging
9 Dull Sore Hurting Aching Heavy	10 Tender Taut Rasping Splitting	11 Tiring Exhausting	12 Sickening Suffocating
13 Fearful Frightful Terrifying	14 Punishing Grueling Cruel Vicious Killing	15 Wretched Blinding	16 Annoying Troublesome Miserable Intense Unbearable
17 Spreading Radiating Penetrating Piercing	18 Tight Numb Drawing Squeezing Tearing	19 Cool Cold Freezing	20 Nagging Nauseating Agonizing Dreadful Torturing

Part 3 How Does Your Pain Change With Time?

1. Which word or words would you use to describe the pattern of your pain?

1	2	3
Continuous Steady Constant	Rhythmic Periodic Intermittent	Brief Momentary Transient

2. What kind of things relieve your pain?

3. What kind of things increase your pain?

Part 4 How Strong Is Your Pain?

People agree that the following 5 words represent pain of increasing intensity. They are:

1	2	3	4	5
Mild	Discomforting	Distressing	Horrible	Excruciating

To answer each question below, write the number of the most appropriate word in the space beside the question.

1. Which word describes your pain right now? _____
2. Which word describes it at its worst? _____
3. Which word describes it when it is least? _____
4. Which word describes the worst toothache you ever had? _____
5. Which word describes the worst headache you ever had? _____
6. Which word describes the worst stomach-ache you ever had? _____

Source: Reprinted from *McGill Pain Questionnaire from PAIN, V1:* 277-299, © 1975 with permission from International Association for the Study of Pain.

SHORT-FORM McGILL PAIN QUESTIONNAIRE

RONALD MELZACK

PATIENT'S NAME: _____ DATE: _____

	NONE	MILD	MODERATE	SEVERE
THROBBING	0)	1)	2)	3)
SHOOTING	0)	1)	2)	3)
STABBING	0)	1)	2)	3)
SHARP	0)	1)	2)	3)
CRAMPING	0)	1)	2)	3)
GNAWING	0)	1)	2)	3)
HOT-BURNING	0)	1)	2)	3)
ACHING	0)	1)	2)	3)
HEAVY	0)	1)	2)	3)
TENDER	0)	1)	2)	3)
SPLITTING	0)	1)	2)	3)
TIRING-EXHAUSTING	0)	1)	2)	3)
SICKENING	0)	1)	2)	3)
FEARFUL	0)	1)	2)	3)
PUNISHING-CRUEL	0)	1)	2)	3)

NO PAIN ——— WORST POSSIBLE PAIN

PPI

0 NO PAIN _____
1 MILD _____
2 DISCOMFORTING _____
3 DISTRESSING _____
4 HORRIBLE _____
5 EXCRUCIATING _____

© R. Melzack, 1984

https://slideplayer.com/slide/5699552/

Wisconsin Brief Pain Inventory

Brief Pain Inventory (Short Form)

Study ID#_____ Hospital# _____

Do not write above this line.

Date: _____

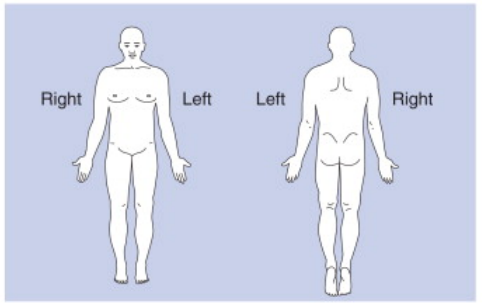
Time: _____

Name: _____
Last First Middle initial

1) Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?

1. yes 2. no

2) On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.



3) Please rate your pain by circling the one number that best describes your pain at its **WORST** in the past 24 hours.

0 1 2 3 4 5 6 7 8 9 10
No Pain — Pain as bad as you can imagine

4) Please rate your pain by circling the one number that best describes your pain at its **LEAST** in the past 24 hours.

0 1 2 3 4 5 6 7 8 9 10
No Pain — Pain as bad as you can imagine

5) Please rate your pain by circling the one number that best describes your pain on the **AVERAGE.**

0 1 2 3 4 5 6 7 8 9 10
No Pain — Pain as bad as you can imagine

6) Please rate your pain by circling the one number that tells how much pain you have **RIGHT NOW.**

0 1 2 3 4 5 6 7 8 9 10
No Pain — Pain as bad as you can imagine

7) What treatments or medications are you receiveing for your pain?

_____

8) In the past 24 hours, how much **RELIEF** have pain treatments or medications provided? Please circle the one percentage that most shows how much relief you have received.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
No Relief — Complete Relief

9) Circle the one number that describes how, during the past 24 hours **PAIN HAS INTERFERED** with your:

A. General Activity:

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

B. Mood

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

C. Walking Ability

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

D. Normal work (includes both work outside the home and housework)

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

E. Relation with other people

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

F. Sleep

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

G. Enjoyment of life

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

https://www.sciencedirect.com/topics/medicine-and-dentistry/brief-pain-inventory

Tell me true…

- Which of the following statements is true regarding the use of unidimensional and multidimensional pain assessment tools? (select all that apply)
  - A unidimensional scale assesses a single element of the complaint, usually the severity
  - A unidimensional pain assessment is too brief to provide any meaningful clinical information
  - A multidimensional pain assessment evaluates several elements of the complaint including intensity, sensation, location, impact on ADLs and more.

Elements of Symptom Analysis

P - (palliative/precipitating factors and previous therapy)

Q - (quality)

R - (region/radiating)

S - (severity)

T - (temporal)

U - (YOU- associated symptoms, impact on ADL's)

P - Precipitating factors

- What brings on the pain or makes it worse?
  - Position changes, weight bearing
  - Certain activities, cough ing, bowel movements
  - Changes in weather
  - Personal care
  - Light touch

P – Palliating factors

- What helps relieve the pain (from a non-medication perspective)?
  - Heat, cold application
  - Position change (standing, lying down, rolling over)
  - Coping strategies (prayer, meditation)
  - Distraction (listening to music, watching TV, looking at photographs)
  - Energy therapy
  - Surgery

P – Previous Therapy

- What methods of pain relief have been tried previously?
  - Medications
    - OTC
    - Prescription
    - Injections
  - Herbal and natural products
- Did you have any side effects?
- How well did they work?

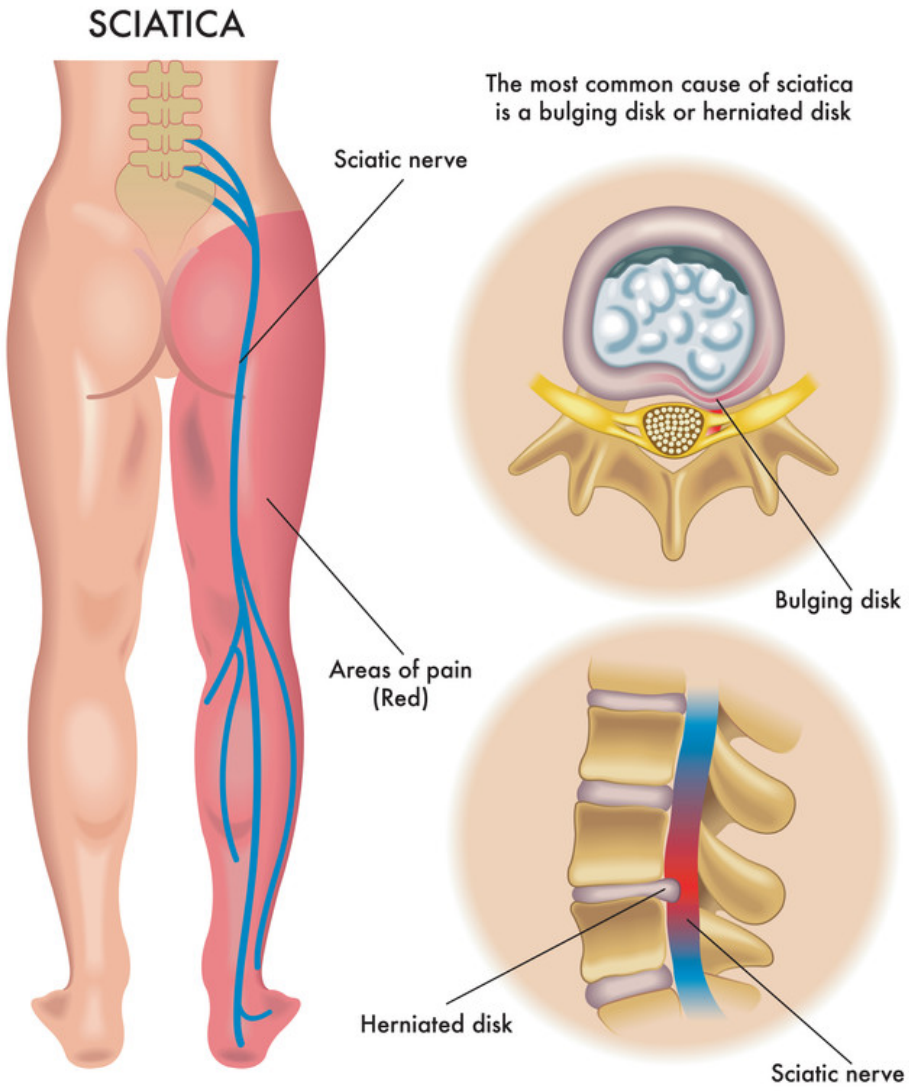
Q - quality

- What does the pain feel like?
  - Somatic nociceptive pain: aching, deep, dull, throbbing, sharp, well localized
  - Visceral nociceptive pain: diffuse, gnawing, cramping, squeezing, pressure
  - Neuropathic pain: burning, numbness, radiating, shooting, tingling

- Use the patient's own words!
- Don't prompt them with words listed above unless necessary
- Their own description of the pain is often the most helpful in determining the pathogenesis

R - Region/radiation

- Where does it hurt?
  - Can the patient point to it?
  - Is it localized or referred?
  - Superficial or deep beneath the skin?
- Does it spread or radiate to other areas?
- Does it stay in one place?
- Can the pain be duplicated?
  - Touch, pressure or specific movements



S - Severity

The most commonly defined element on a given scale

Same scale should be used with each reassessment of the pain

How much does it hurt?

- Pain right now?
- Pain at its worst?
- Pain at its best?
- Pain on average?
- Tolerable pain level?

How does the pain change with activity or rest? Before and after medication administration?

T - Temporal

- Onset
- Duration
- Variation (pain course/changes)
- Frequency
- Patterns (persistent/intermittent)
- Acute vs. chronic

U - You! Associated symptoms - How does pain effect your life

- How does the pain affect:
  - Mood/emotional state
  - Ability to work
  - Activities of daily living
  - Personal relationships
  - Ability to sleep
  - Quality of sleep
  - Appetite

Knowledge Question

- A patient you are caring for tells you: “My pain is about a 5 on a scale of 0-10 right now. If I lie perfectly still the pain is tolerable and I'm okay, but when I roll over in bed it skyrockets." Which two elements of symptom assessment are addressed in this statement?
  - Quality and severity
  - Temporal and quality
  - Severity and precipitating events
  - Quality and palliating events
  - Impact on ADLs and severity

How can you tell if the patient is experiencing pain?

Assessing pain in a nonverbal patient

Checklist of Nonverbal Pain Indicators

Behavior	w/movement score	at rest score
Nonverbal Vocalization: sighs, gasps, moans, groans, cries		
Facial Expression: furrowed brow, narrowed eyes, clenched teeth, tightened lips, jaw drop, distorted expressions		
Bracing: clutching or holding onto furniture, equipment or area of the body		
Restlessness: constant or intermittent shifting of position, rocking, intermittent or constant hand motions, unable to keep still		
Rubbing: repeated massaging of body in same area(s)		
Verbal Complaints: words expressing discomfort or pain [e.g., "ouch," "that hurts"]; cursing during movement; exclamations of protest [e.g., "stop," "that's enough"]		
Subtotal		
Scoring: 0=not present; 1=present **Total**		

https://paincommunity.org/education/the-pain-assessment/

PAINAD

PAIN ASSESSMENT IN ADVANCED DEMENTIA (PAINAD) SCALE

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

Note. Total scores range from 0 to 10 (based on a scale of 0 to 2 for each of five items), with a higher score indicating more behaviors indicating pain (0 = no observable pain *to 10 =* highest observable pain*).*

Adapted from Warden, V., Hurley, A.C., & Volicer, L. (2003). Development and psychometric evaluation of the Pain Assessment in Advanced Dementia (PAINAD) scale. Journal of the American Medical Directors Association, 4, *9-15.*

https://www.cheatography.com/davidpol/cheat-sheets/pain-assessment-in-advanced-dementia/?prsrc=3

Steps for Appropriate Treatment

1. Problem identification and assessment
2. **Define the therapeutic objective**
3. Identify available modalities
4. Identify variables that affect drug selection
5. Select appropriate pharmacologic agent(s)
6. Identify expected/potential toxicities
7. Administer therapy
8. Monitor patient response
9. Adjust regimen as appropriate

Setting Functional Goals

- Understanding impact on function and setting functional goals are important in treating pain
- "What would you like to be able to do that you can't do now because of you pain?"
  - "I want to go back to work"
  - "I want to be able to play with my grandchildren"
  - "I want to be able to sleep through the night"
  - "I want to finish my needlework"
  - "I want to walk to the bathroom – alone"

Pain Management in Hospice and Palliative Care

Module 3 – Pain Pathogenesis

Mary Lynn McPherson, PharmD, MA, MDE, BCPS

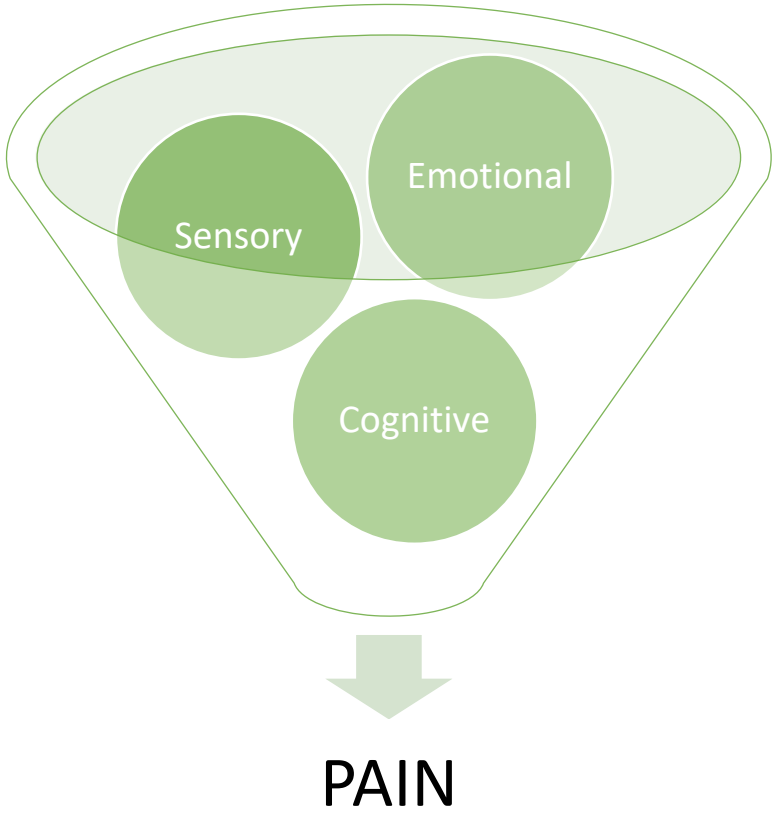
Objectives

Given a patient's history, comprehensive pain assessment, and physical exam…

- Differentiate between nociceptive and neuropathic pain
- Differentiate between nociceptive somatic and nociceptive visceral pain.

What is pain?

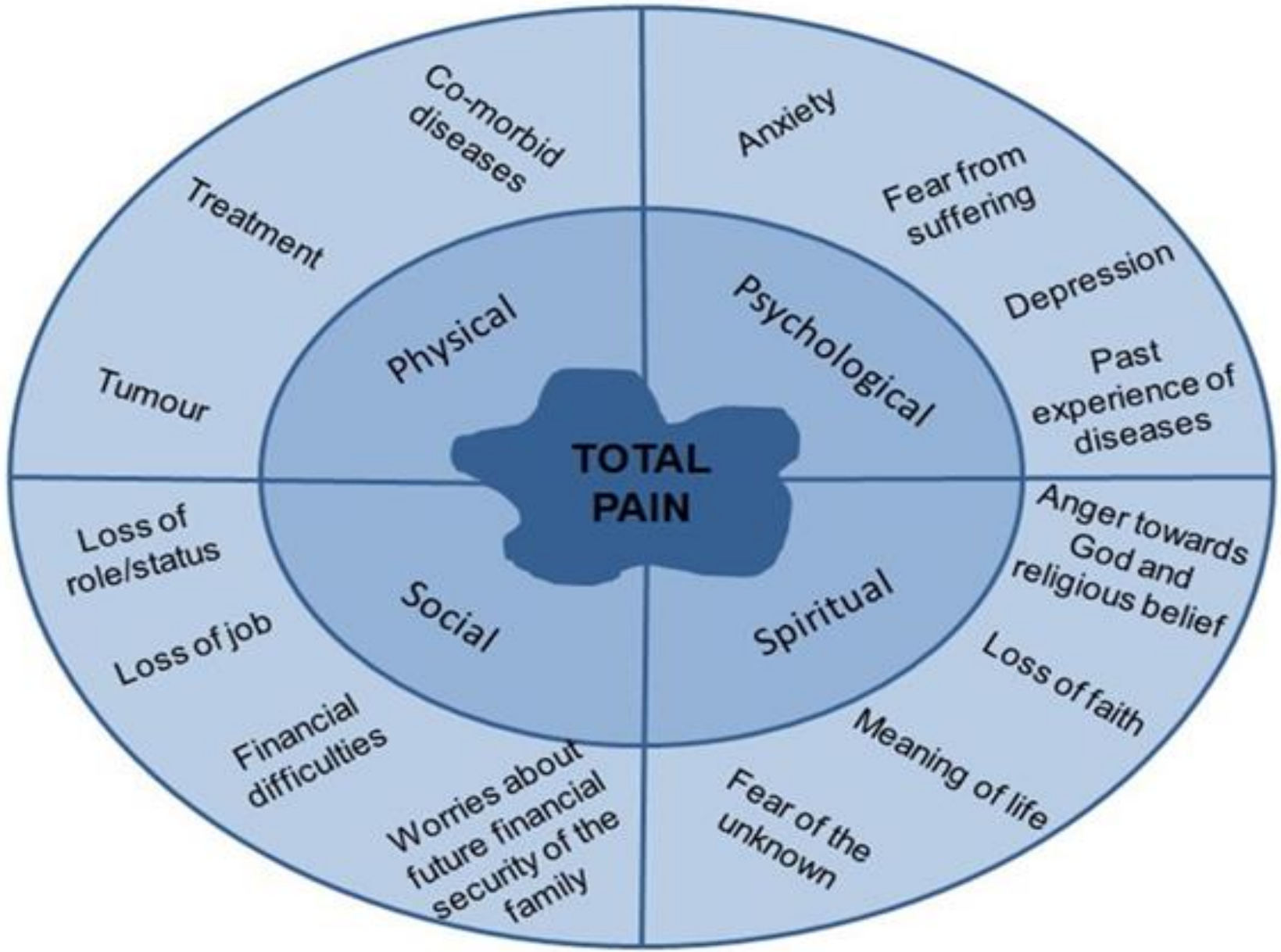
- An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (IASP).
- “Pain is whatever the person experiencing it says it is” (McCaffery)



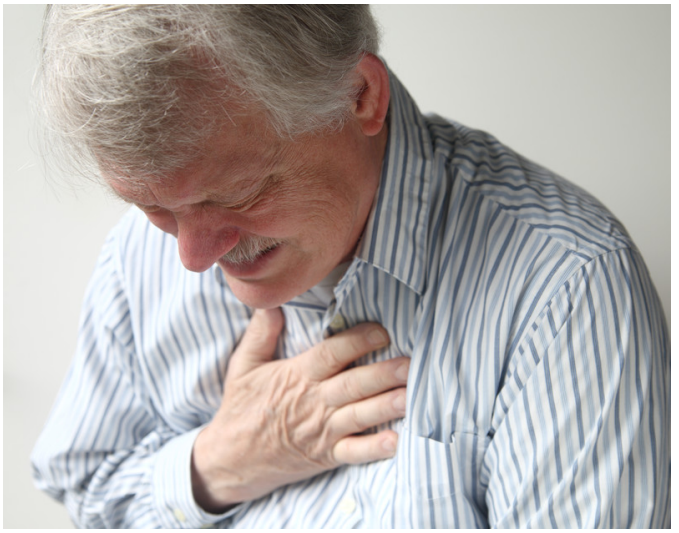
https://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698;
McCaffery M, Pasero C. Pain: Clinical Manual, 2nd ed. St. Louis, MO: Mosby; 1999

Pain is....

- Objective
- Only physical
- Normal part of aging
- Improves character
- Only treated if severe
- A combination of the awareness of painful stimuli and the emotional impact of the experience


TOTAL PAIN
Physical
Psychological
Social
Spiritual
Co-morbid diseases
Treatment
Tumour
Anxiety
Fear from suffering
Depression
Past experience of diseases
Loss of role/status
Loss of job
Financial difficulties
Worries about future financial security of the family
Anger towards God and religious belief
Loss of faith
Meaning of life
Fear of the unknown

Acute vs. Chronic Pain



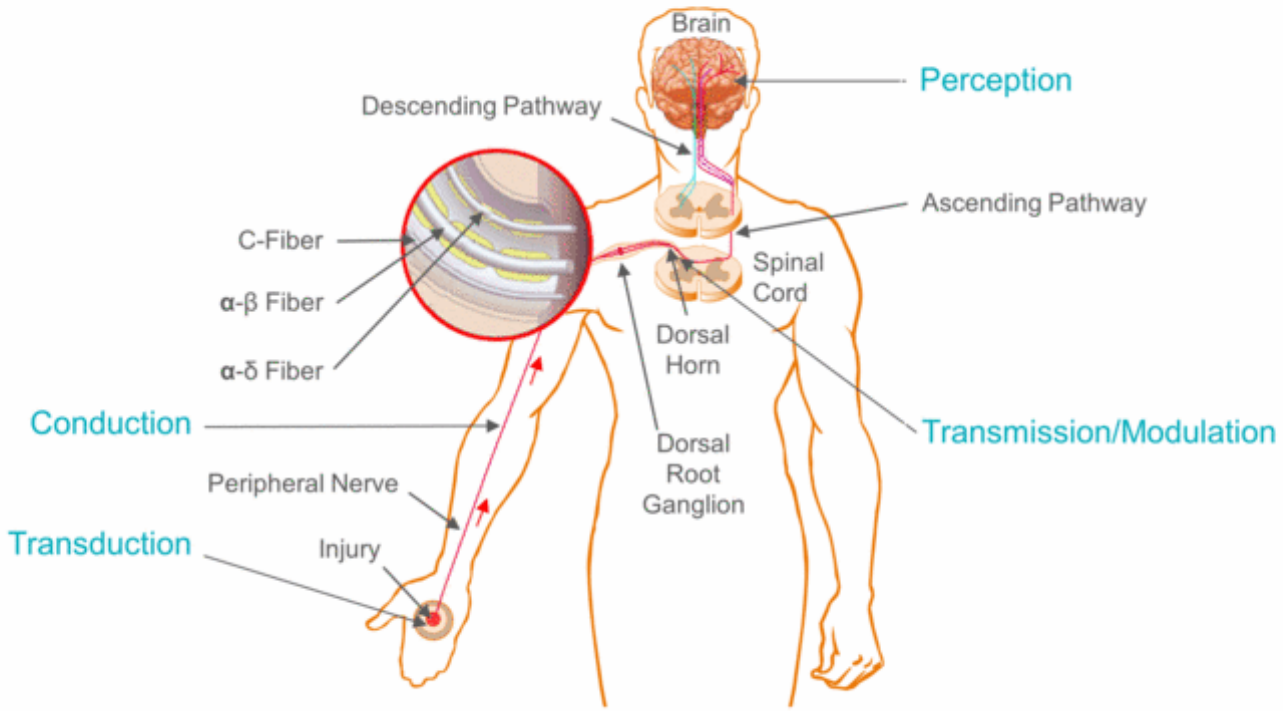
Acute pain

- Occurs suddenly (illness, injury or surgery)
- Short-lived
- Resolves as acute issue heals

Chronic pain

- Pain that lasts longer than the expected healing process (> 3 months)
- Affects a person's activities of daily living
- Major cause of disability worldwide
- Frequently caused by inadequately treated acute pain

Most Pains are Multi-factorial Due to the Anatomy and Physiology of Pain Transmission



Raffa R, Tallarida,R, Pergolizzi J. *J Pain*, 2010;11(8): 701-709.

DEPOMED

Pain Processing Pathway

- Transduction
- Conduction
- Transmission
- Perception
- Modulation

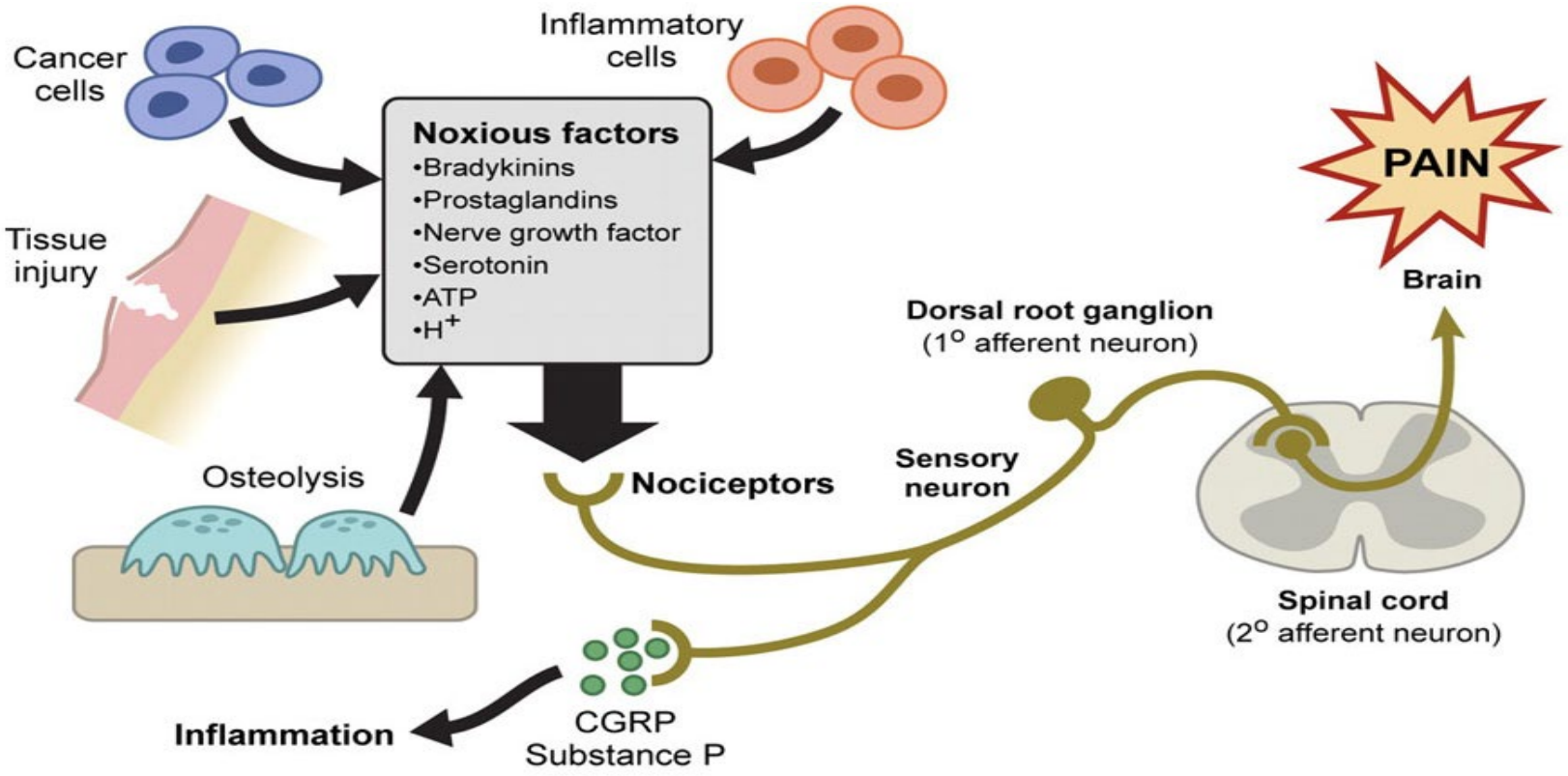
Pain Processing Pathway

1. Transduction

- Injury from a thermal, chemical or mechanical source that stimulates peripheral endings of sensory neurons (nociceptors)
- Nociceptors translate (transduce) a physical stimulus into an electrical signal (also called an action potential)

- Local Inflammation
  - Trauma triggers damaged cells to release inflammatory substances that increase sensitivity to pain
    - Prostaglandins, substance P, bradykinin, serotonin, histamine etc.
    - Increases skin sensitivity

Transduction (cont'd)



Pain Processing Pathway

2. Conduction

- Pain signals are conducted along the nerve fibers
- A-delta fibers (sharp, well-localized pain)
- C fibers (poorly localized burn and ache)

3. Transmission

- Where one nerve conduction pathway ends and another begins
- Neurotransmitters transmit signals across a synaptic cleft
  - Glutamate, norepinephrine, dopamine,
  - Serotonin, etc...
- Occurs at three major junctions
  - Nociceptor and dorsal horn of the spinal cord
  - Spinal cord and thalamus and brainstem
  - Thalamus into the cerebral cortex

Pain Processing Pathway

4. Perception

- Pain signal ultimately enters the brain through the thalamus
  - "Relay station of the brain"
- Signals are routed to regions of the brain involved with sensation, autonomic nervous system, motor response, emotion, stress, behavior

5. Modulation

- Adjustment of pain intensity
- Performed by anti-nociceptive system

The process of converting physical stimuli into an electrical stimulus is _____.

A) Transduction
B) Conduction
C) Transmission
D) Perception

The process of converting physical stimuli into an electrical stimulus is _____.

A) Transduction
B) Conduction
C) Transmission
D) Perception

Knowledge Question

The passage of a signal (action potential) along the A-delta and C fibers is known as which process?

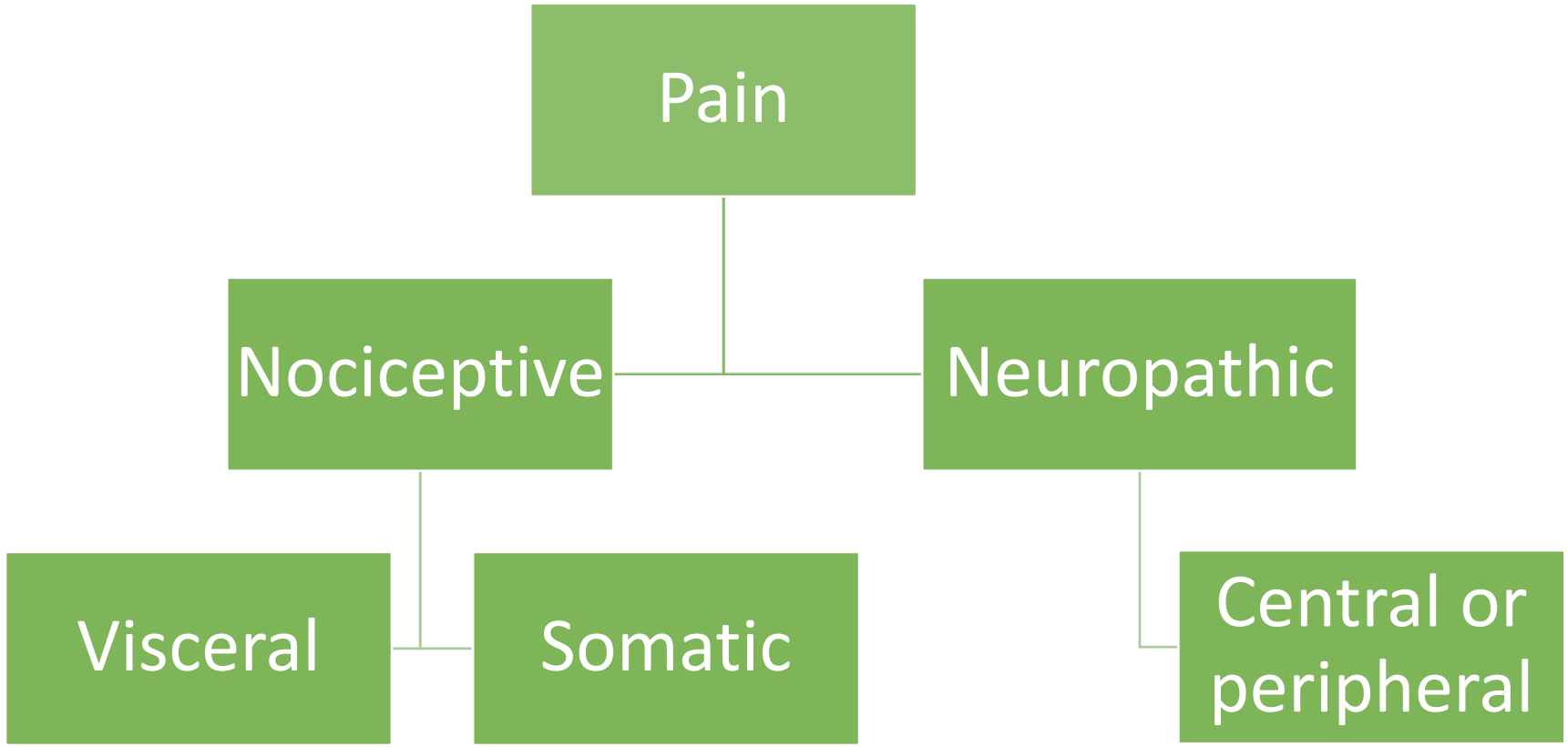
A. Transduction
B. Conduction
C. Transmission
D. Perception
E. Modulation

Knowledge Question

The passage of a signal (action potential) along the A-delta and C fibers is known as which process?

A. Transduction
B. Conduction
C. Transmission
D. Perception
E. Modulation

Different Kinds of Pain

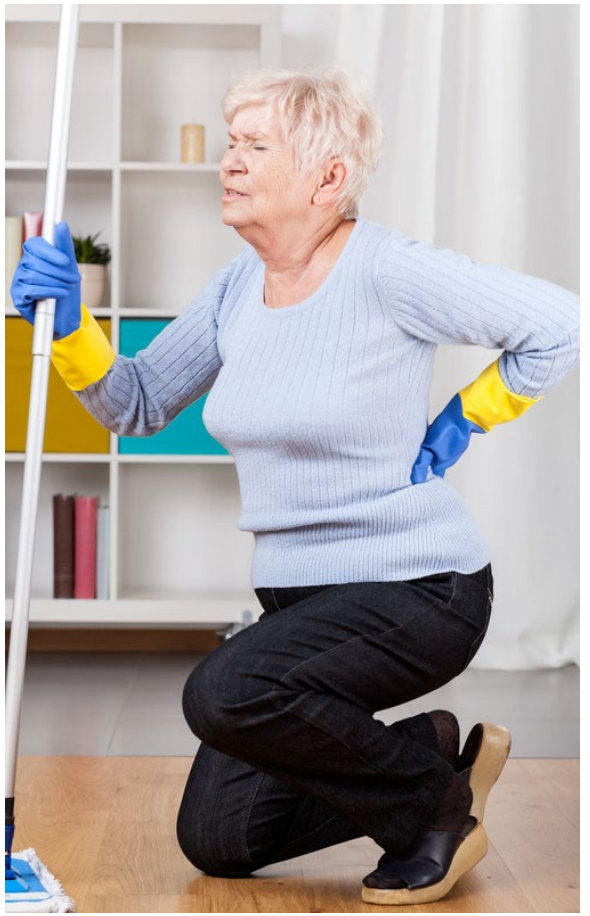


Nociceptive Visceral Pain

- Arises from direct stimulation of afferent nerves due to tumor infiltration of the soft tissue or viscera (cardiac, lung, GI tract)
- Stretching, distention or ischemia of the viscera may also cause this type of pain
- Tends to be poorly localized and often ill defined
- May be described as deep, aching, colicky

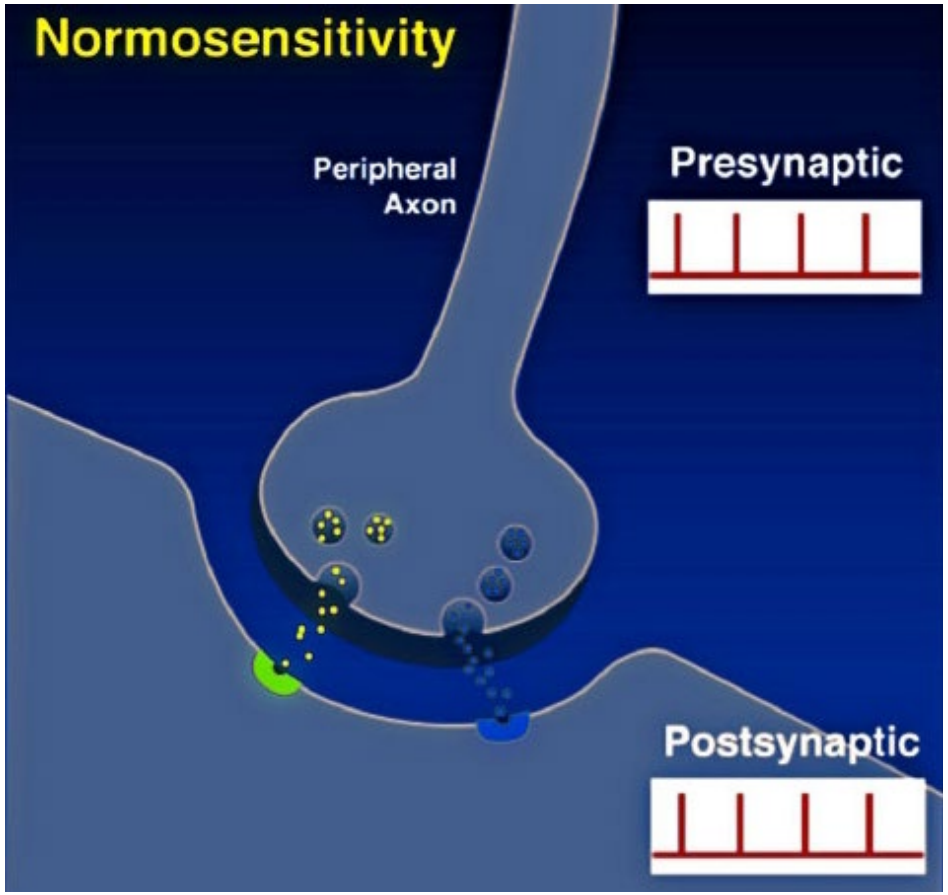
Nociceptive Somatic Pain

- Involves injury to the skin, bones, joints or soft tissue
- Pain tends to be well localized (patient can point directly to the site of pain) and is usually constant
- Often pain increases or worsens with movement
- May be described as sharp, aching or throbbing



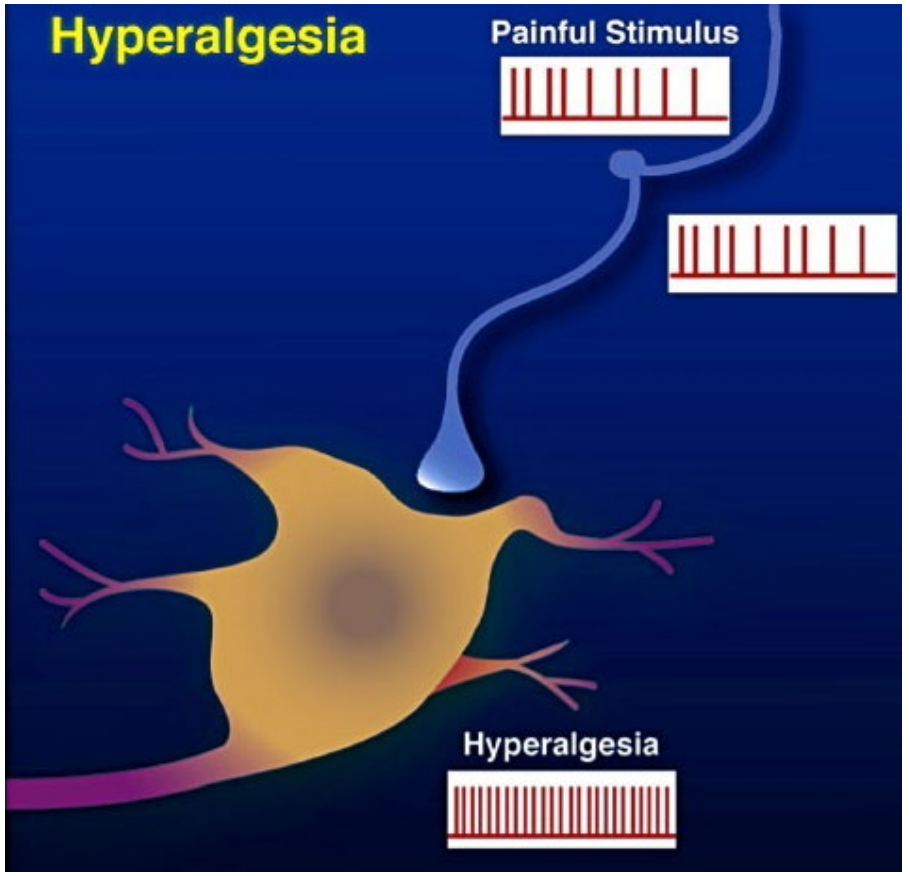
Normal Signaling

- Postsynaptic action potentials are equivalent to presynaptic potentials



Hyperalgesia

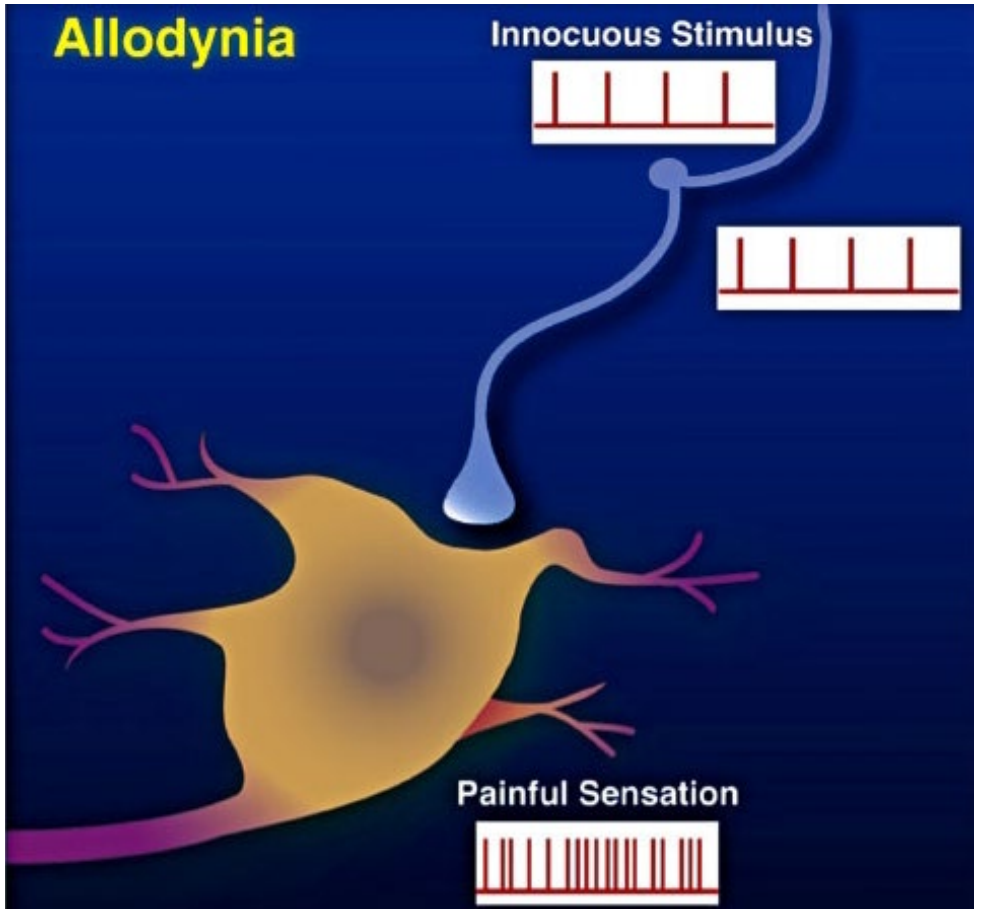
- Amplification of painful response relative to the stimuli



http://www.practicalpainmanagement.com/pain/demystifying-pain-pathways

Allodynia

- Non-painful stimuli perceived as painful



http://www.practicalpainmanagement.com/pain/demystifying-pain-pathways

Neuropathic Pain

Neuropathic Pain

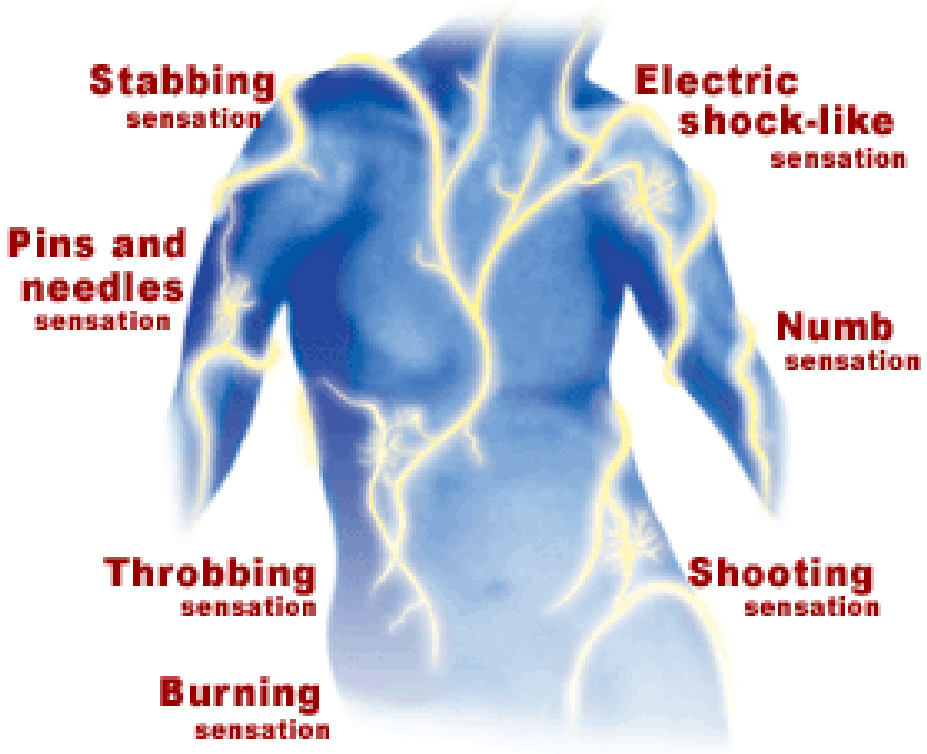
- Damage to or dysfunction of peripheral or central nerves
  - May be direct or secondary to damage to non-neuronal tissue
  - Lesion may occur at any point

Nerve Injury

- Post-herpetic neuralgia
- HIV
- Diabetes
- Trauma
- Multiple sclerosis
- Metabolic abnormalities
- Malignancy
- Drugs!

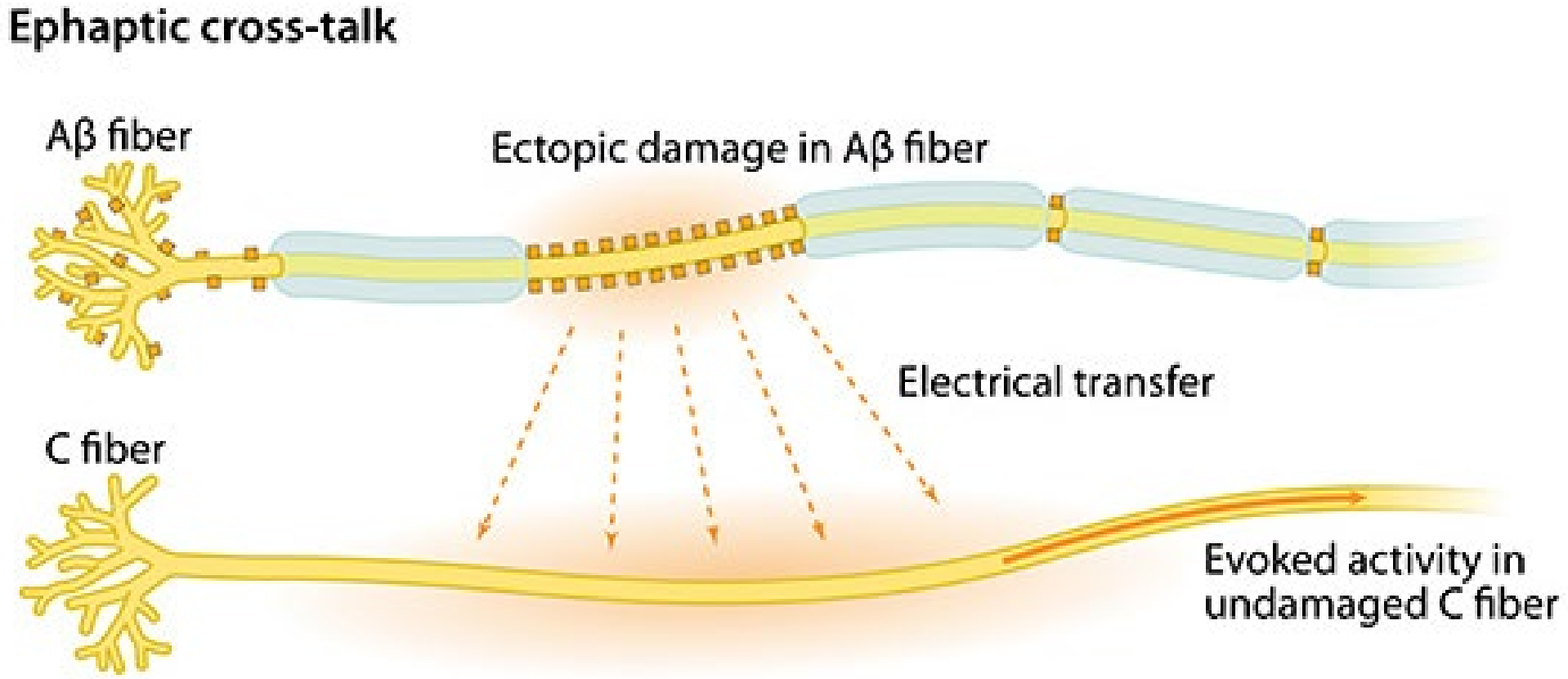
Neuropathic Pain

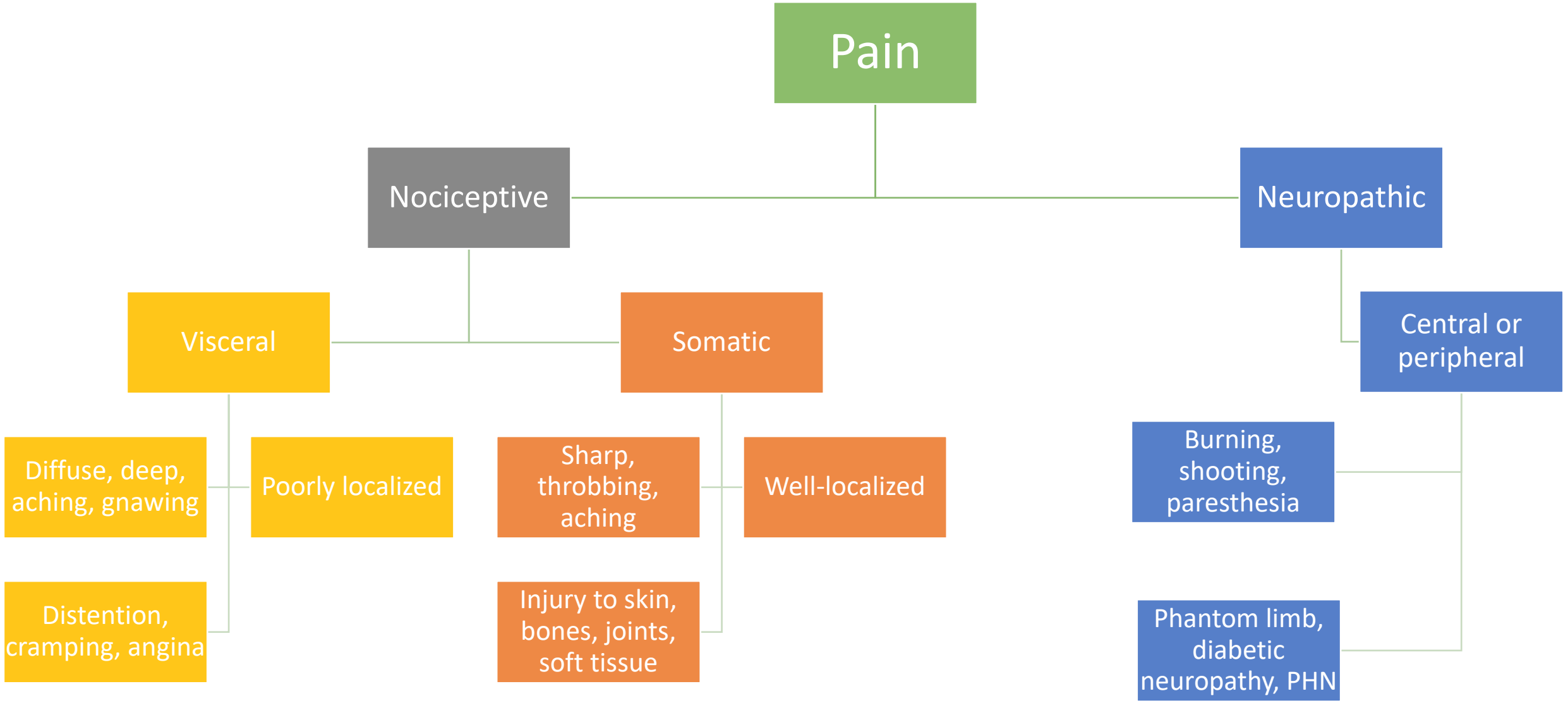
- Clinical presentation may include
  - Spontaneous pain
  - Paresthesia and dysethesia
  - Causalgia
  - Paroxysmal pain
  - Hyperalgesia
  - Allodynia



Neuropathic Pain

Cross-talk - Development of atypical connections between demyelinated nerves at sites of damage




Pain
Nociceptive
Neuropathic
Visceral
Somatic
Central or peripheral
Diffuse, deep, aching, gnawing
Poorly localized
Sharp, throbbing, aching
Well-localized
Burning, shooting, paresthesia
Distention, cramping, angina
Injury to skin, bones, joints, soft tissue
Phantom limb, diabetic neuropathy, PHN

Patient Case

- MG is a 47 y/o female who presents with a complaint of back pain. MG describes the pain as radiating from her shoulders to the small of her back, and says that it feels “like lightning shooting down my back.” She rates the pain as 7/10 and says it has been constant for about 3 weeks.

  - What other information would you like to know?
  - What therapies would you recommend?

Knowledge Question

Your patient tells you they fell trying to get out of bed and landed on their hip. Imagining shows R hip fracture and the area is swollen and tender. Which of the following terms most likely describe the pain? (select all that apply)

- Acute pain
- Chronic pain
- Nociceptive visceral pain
- Nociceptive somatic pain
- Neuropathic pain

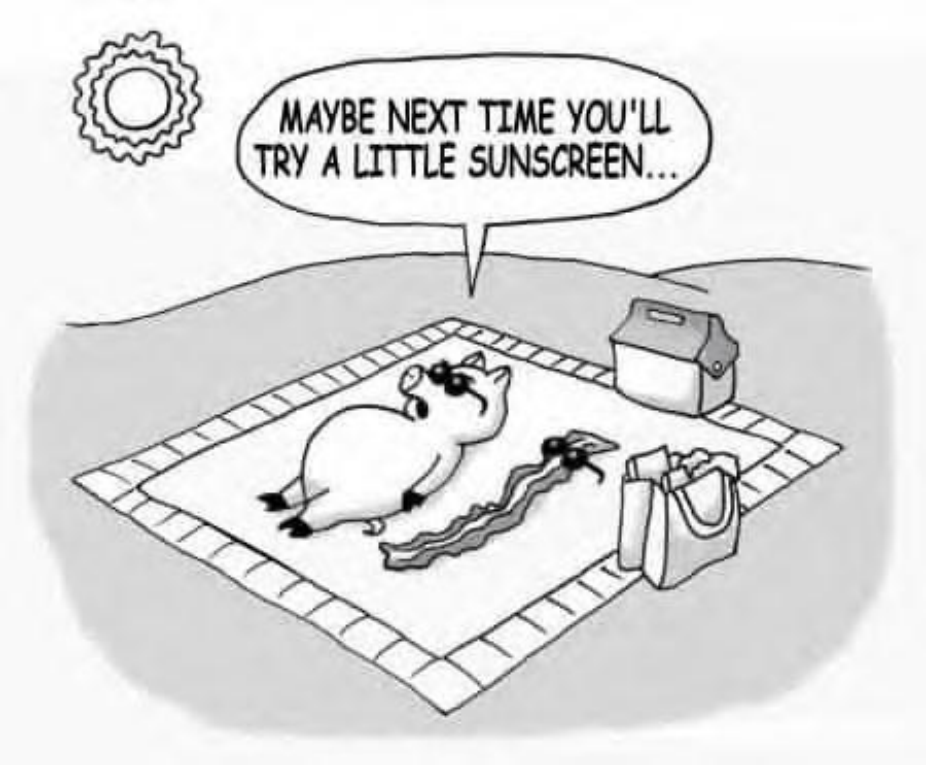
Knowledge Question

Your patient tells you they fell trying to get out of bed and landed on their hip. Imagining shows R hip fracture and the area is swollen and tender. Which of the following terms most likely describe the pain? (select all that apply)

- **Acute pain**
- Chronic pain
- Nociceptive visceral pain
- **Nociceptive somatic pain**
- Neuropathic pain

Summary

- Pain is a complex, multidimensional phenomenon
  - Numerous pathways with numerous targets for intervention
- Not limited to a physical experience



Pain Management in Hospice and Palliative Care

Module 4 – Medication Management

Mary Lynn McPherson, PharmD, MA, MDE, BCPS

Objectives

- Select an analgesic based on the severity and pathogenesis of pain (e.g., non-opioid, opioid, vs. adjuvant analgesic).
- Given a simulated patient with a complaint of pain, recommend an appropriate analgesic to treat the complaint of pain.

Steps for Appropriate Treatment

1. Problem identification and assessment
2. Define the therapeutic objective
3. Identify available modalities
4. Identify variables that affect drug selection
5. Select appropriate pharmacologic agent(s)
6. Identify expected/potential toxicities
7. Administer therapy
8. Monitor patient response
9. Adjust regimen as appropriate

1. Problem Identification and Assessment

- Accurate history of present illness
- Physical exam
- Diagnostic studies or imaging (if applicable)
- Risk assessment of substance abuse, misuse or addiction
- Screener and Opioid Assessment for Patients with Pain (SOAPP)
- Opioid Risk Tool (ORT)

2. Define the Therapeutic Objective

- Reduce suffering – pain and associated emotional distress
  - Pain ratings (presently, at best, at worst, breakthrough, at rest, with movement)
- Increase physical, social, vocational and recreational function
- Optimize health
- Optimize psychological well-being
- Improve coping abilities
  - Self-care strategies, reduce dependence on medications
- Improve relationships with others

Case Example

- Mrs. Smith is a 58 year old woman admitted to hospice with end-stage breast cancer. She complains of pain in her right axilla (a numb-type feeling), an erratically-occurring shooting pain down her right arm, flying out her thumb and pointer finger, and extremely painful ribs on her right side (where she has metastatic bone pain).
- How do you determine her therapeutic goal in treating her pain?
- Two parts!
  - Pain rating – at rest, with movement, best, worst, average
  - Functional goals

Case Example

- **Pain rating** – she tells you she could tolerate an average of all her pains of 4-5 (on a 0-10 scale) or less)
  - Pain #1 – axilla pain – Less than 4-5 would probably be ok, no worse than 8
  - Pain #2 – shooting down arm – this pain makes her cry, less than 6-7 would be a good first step
  - Pain #3 – right ribs – this pain is horrendous and usually > 10 so she'd be happy if we could get it below 5-6 for now as a first step. Her current rating of this pain (greater than 10) has a huge impact on her life.

Pain Rating Goals:

1. Overall rated on average as 4-5 or less.
2. Shooting pain down arm less than 6-7.
3. Rib pain less than 5-6 on average.

Case Example

- **Functional status** – “What would you like to be able to do that you can’t do now because of the pain?”
  - Pain #1 – axilla pain – it’s just annoying and always there; doesn’t really prevent any activities
  - Pain #2 – shooting down arm – it’s the constant worry of when it will hit – when it occurs she drops anything she’s holding in her right hand, so she’d be happy if it happened less often and was less impactful (e.g., stop dropping her coffee mug)
  - Pain #3 – right ribs – keeps her from sleeping well. She’s be ecstatic if she could sleep at least 6 hours in a row, and NOT wake up wincing in pain when she rolls over on the right side.
  - Total pain picture – she is very unhappy over her pain situation and cries frequently. She would like to stop crying so often and enjoy the time she has left.

Functional Goals:

1. Reduce frequency of shooting pains down right arm so she stops dropping whatever is in her hand.

2. Allow 6 or more hours of sleep and not awaken in horrible pain in right ribs.

3. Reduce crying and general unhappiness due to pain.

3. Identify Available Modalities

Non-pharmacologic

- Heat, cold
- Electrical/energy therapies
- Rehabilitative therapy (PT/OT)
- Patient education
- Reconditioning
- Cognitive behavioral therapy

Interventional

- Surgery
- Spinal cord stimulation

Pharmacologic

4. Identify Variables for Appropriate Drug Selection

Patient-related variables

- Pre-existing conditions that may alter the expected effects and dosing of the drug that is administered
  - Renal and hepatic function
  - Comorbid conditions
  - Adherence issues
  - Patient age, size, support systems, health literacy, manual dexterity

Drug-related variables

- Cost
- Convenience
  - Dosage forms
  - Dosing schedule
- Efficacy
  - Targets pain
- Toxicity
  - Drug-drug/drug-food interactions

Case Example

- Mrs. Smith lives alone and has no one to help her with medication management.
- She gets very upset about frequent dosing of analgesics (oxycodone 5 mg/acetaminophen 325 mg, 1-2 tablets every 4 hours, with oxycodone 5 mg every 2 hours for breakthrough pain [and she's using every 2 hours])
- She feels like the current analgesics are not targeting her pain
- She has type 2 diabetes, but it's diet controlled and she's been losing weight because she's not eating very much
- What patient- and drug-related variables are present in this case?

Case Example of Mrs. Smith

Patient-Related Variable	Explanation
Patient is unhappy with her pain situation and scores positively on the Beck depression scale	If we are selecting a medication for her neuropathic pain (pain #2 – shooting pain down her arm) some antidepressants are preferred over others to treat BOTH neuropathic pain and depression
Patient has type 2 diabetes	When we think of her metastatic bone pain in right ribs, we are automatically considering a steroid vs. a NSAID. Steroids increase blood glucose.
She lives alone and has to self-manage her medications	Patient is taking multiple short-acting opioids throughout the day. From a convenience and cost-effectiveness perspective it would be preferable to use a long-acting opioid to treat the majority of her pain (but still have a short-acting opioid for breakthrough pain)
Based on assessment data, we are not using the BEST analgesics to treat her pain.	She has neuropathic and somatic pain; opioids are partially effective for BOTH of these types of pain. There are better choices (e.g., antidepressants/anticonvulsants for neuropathic pain; steroid/NSAID for somatic pain)

Case Example of Mrs. Smith

Drug-Related Variable	Explanation
SNRI's and TCA's both treat depression and neuropathic pain.	But we would lean toward an SNRI (venlafaxine or duloxetine) because we really don't use TCAs for depression (risk of toxicity and death with suicide attempts)
Steroids increase blood glucose	Even though steroids increase blood glucose, it doesn't completely rule out selecting a steroid. She is diet-controlled and is actually losing weight.
There are short- and long-acting opioids, and once a day adjuvant agents.	Opioids – MS Contin, OxyContin, methadone are all long-acting Opioids – Roxanol, oxycodone, hydromorphone are all short-acting Antidepressants – duloxetine and venlafaxine are once a day (XR) Dexamethasone is once or twice a day (and less toxicity than prednisone) NSAIDS – there are once or twice a day NSAIDs
We can select more targeted drug therapy – opioids plus adjuvant analgesics	Antidepressants target neuropathic pain and depression. Steroids and NSAIDs target somatic pain. Opioids are helpful with both pains; methadone may bring a little more to the picture targeting nociceptive and neuropathic pain.

5. Select Appropriate Pharmacologic Agent

- Start with simplest approach to pain management if possible
  - Oral route with optimized dosing interval
- Consider combinations of analgesics to allow lower total daily dosages and fewer adverse effects (rational polypharmacy), examples include:
  - Morphine + gabapentin
  - Nortriptyline + pregabalin
- Inhibit nociceptive processing at multiple levels to enhance analgesia

Acetaminophen (Tylenol)

- Indicated for mild to moderate non-inflammatory, nociceptive pain
- Role in therapy:
  - Self-limiting conditions such as headache, musculoskeletal pain, dental pain
  - Lower back pain, osteoarthritis

- Mechanism of action – acts centrally
- Analgesic and anti-pyretic - TWO P's!
  - Inhibits COX enzymes in the CNS, interactions with NO pathways, blocks action of substance P
  - Lacks anti-inflammatory activity

Acetaminophen (Tylenol)

- Dosing
  - Non-prescription use: maximum daily dose of 3,000 mg
  - Prescription use: maximum daily dose of 4,000 mg
  - Combination analgesics: maximum 325 mg/dose

- Adverse effects
  - Very well tolerated
  - Hepatotoxic with high doses acutely and with chronic use
  - Rarely rash (but very serious if it occurs)

NSAIDs

- Non-Steroidal Anti-Inflammatory Drugs
- Indicated for mild-moderate pain that is inflammatory in nature
- Role in therapy:
  - Acute and chronic pain, opioid-sparing effects
  - Somatic pain such as muscle/joint pain, post-operative pain, gout, sprains, toothache, headache
- Mechanism of action
  - Inhibition of COX enzymes resulting in the blockage of prostaglandin synthesis
  - COX 1: particularly important role in GI tract, kidneys and platelet aggregation
  - COX 2: expressed in renal vasculature; minimal effect on platelets
- Four P's – analgesic, antipyretic, anti-inflammatory, anti-platelet

NSAIDs

- Dosing
  - Multiple dosage forms available
    - Tablets/capsules, injectable, patches, gels, solutions
  - Multiple different drugs
    - Aspirin (used primarily for anti-platelet effect)
    - Ibuprofen (Motrin, Advil), Naproxen (Naprosyn, Aleve), Celecoxib (Celebrex)
    - Diclofenac topical (Voltaren)
- Adverse Effects
  - Risk is related to dose and duration of therapy; special consideration in children and pregnant/lactating women
  - GI bleeding, abdominal pain, cardiovascular complications (HTN/MI), hepatotoxicity, impaired renal function, clotting dysfunction

Corticosteroids

- Indicated for moderate-severe inflammatory pain or for pain from boney metastasis
- Role in therapy
  - Acute and chronic pain, opioid-sparing effects
  - More common in acute pain compared to chronic pain due to adverse effect profile
  - When used acutely, often administered in a taper

- Mechanism of action
  - Decrease in production of heat shock proteins intracellularly leading to a decrease in systemic inflammation

Corticosteroids

- Dosing
  - Multiple drugs
    - Prednisone (Deltasone), dexamethasone (Decadron), methylprednisolone (Medrol [dose-pak])
  - Multiple dosage forms
    - Oral (tablets, liquids), IV, IM, intra-articular, topical

5 mg prednisone = 0.75 mg dexamethasone

Dexamethasone far less likely to cause sodium and fluid retention (hypertension, heart failure)

- Adverse effects
  - Insomnia, edema, hypertension, hyperglycemia, delirium, skin irritation (topical)

Opioids

- Indicated for treatment of moderate-severe pain that does not respond to non-opioid analgesics alone
  - Also indicated for cough, diarrhea, dyspnea, opioid dependence
- Role in therapy:
  - Acute pain (trauma/post-operative pain)
  - Cancer pain
  - Chronic non-cancer pain
  - Breakthrough pain
  - Visceral and somatic pain
  - Frequently given with non-opioids to have an opioid-sparing effect

Opioids

- Mechanism of Action
  - Bind to opioid receptors in the CNS to inhibit the transmission of nociceptive input from the periphery to the spinal cord
  - Activation of the descending inhibitory pathways that modulate transmission in the spinal cord
  - Alteration of the limbic system
  - Opioids modify sensory and affective aspects of pain

What's in a name??

1. Dilaudid
2. Kadian
3. Lortab
4. Duragesic
5. Dolophine
6. MS Contin
7. OxyContin
8. Percocet
9. Percodan
10. Roxanol
11. Vicodin
12. Ultram
13. Actiq

A. Morphine
B. Fentanyl
C. Oxycodone
D. Tramadol
E. Hydromorphone
F. Methadone
G. Hydrocodone

1. Dilaudid – E - hydromorphone
2. Kadian – A – morphine (long-acting)
3. Lortab – G – hydrocodone/acetaminophen
4. Duragesic – B – fentanyl (transdermal)
5. Dolophine – F - methadone
6. MS Contin – A – morphine (long-acting)
7. OxyContin – C – oxycodone (long-acting)
8. Percocet – C – oxycodone/acetaminophen
9. Percodan – C – oxycodone/aspirin
10. Roxanol – A – morphine (oral intensol solution)
11. Vicodin – G – hydrocodone/acetaminophen
12. Ultram – D - tramadol
13. Actiq – B – fentanyl (transmucosal)

A. Morphine
B. Fentanyl
C. Oxycodone
D. Tramadol
E. Hydromorphone
F. Methadone
G. Hydrocodone

Who's the bigger dog??

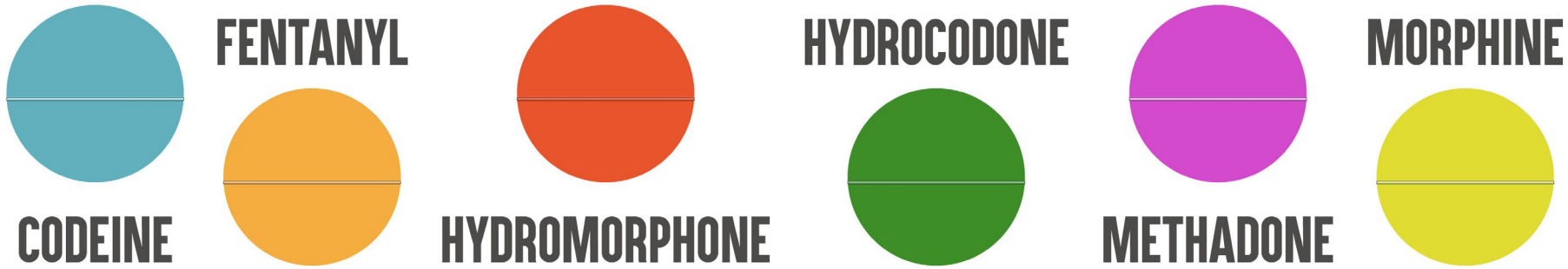
- Put the opioids in order from MOST to LEAST potent (on a mg-per-mg basis)
    - Morphine
    - Hydromorphone
    - Fentanyl
    - Hydrocodone
    - Codeine
    - Oxycodone

Who’s the bigger dog?

Fentanyl > Hydromorphone > Oxycodone > Morphine = Hydrocodone > Codeine

Opioids

- Opioids with different receptor activity
  - Full agonists – morphine (MS Contin, Roxanol), oxycodone (OxyContin, oxycodone/acetaminophen [Percocet]), hydromorphone (Dilaudid), fentanyl (Duragesic), methadone
  - Weak agonists – tramadol (Ultram), tapentadol (Nucynta)
  - Partial agonists - buprenorphine (Butrans)
  - Antagonists - naloxone, naltrexone



Opioids

- Adverse effects
  - Somnolence, fatigue, nausea, confusion, constipation, respiratory depression
- Opioids have no ceiling effect, or maximum dose
- There is significant inter-patient variability with opioid dosing

- Physical dependence
  - State of adaptation that is manifested by a specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, and/or administration of an antagonist
- Tolerance
  - State of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug's effects over time

Adjuvants or Coanalgesics

- Tricyclic antidepressants (TCAs)
- Serotonin norepinephrine reuptake inhibitors (SNRIs)
- Calcium channel ligands (gabapentin and pregabalin)
- Other classes
  - Anticonvulsants
  - Anti-arrhythmics
  - Capsaicin
  - Ketamine
  - Skeletal muscle relaxants
  - Bisphosphonates

Neuropathic Pain

- First Line
  - TCAs (amitriptyline [Elavil], nortriptyline [Pamelor])
  - SNRIs (duloxetine [Cymbalta], venlafaxine [Effexor], milnacipran [Savella])
  - Calcium channel ligands (gabapentin [Neurontin], pregabalin [Lyrica])
  - Topical lidocaine preparations (Lidoderm)

- Second/third line
  - Tramadol (Ultram)
  - Other antidepressants (mirtazapine [Remeron])
  - Other anticonvulsants (phenytoin [Dilantin], carbamazepine [Tegretol)
  - Topical low-concentration capsaicin

Adjuvant Analgesic Side Effects

- First Line
  - TCAs (amitriptyline [Elavil], nortriptyline [Pamelor])
    - Dry mouth, blurred vision, constipation, urinary retention, delirium
  - SNRIs (duloxetine [Cymbalta], venlafaxine [Effexor], milnacipran [Savella])
    - Nausea, headache, drowsiness, fatigue, dry mouth
  - Calcium channel ligands (gabapentin [Neurontin], pregabalin [Lyrica])
    - Somnolence, ataxia, dizziness, peripheral edema
  - Topical lidocaine preparations (Lidoderm)
    - Redness or irritation at application site

Somatic Pain

- Bone Pain
  - Corticosteroids (dexamethasone [Decadron])
  - Bisphosphonates (alendronate [Fosamax])

- Musculoskeletal Pain
  - Muscle relaxants (methocarbamol [Robaxin], carisoprodol [Soma], cyclobenzaprine [Flexeril])

Knowledge Question

JH is a 82 year old man with metastatic lung cancer with severe pain which he describes as "burning, radiating around my chest, that gets worse when I take a deep breath". He is already on opioids that his oncologist prescribed but this pain doesn't seem to respond well to that medication. What kind of pain is JH most likely describing?

A. Somatic
B. Neuropathic
C. Visceral

Knowledge Question

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A. Somatic
B. Neuropathic
C. Visceral

Knowledge Question

What is the most likely side effect of acetaminophen therapy?

A. Liver toxicity
B. Kidney toxicity
C. Bloody stools
D. Difficulty breathing
E. GI upset

Knowledge Question

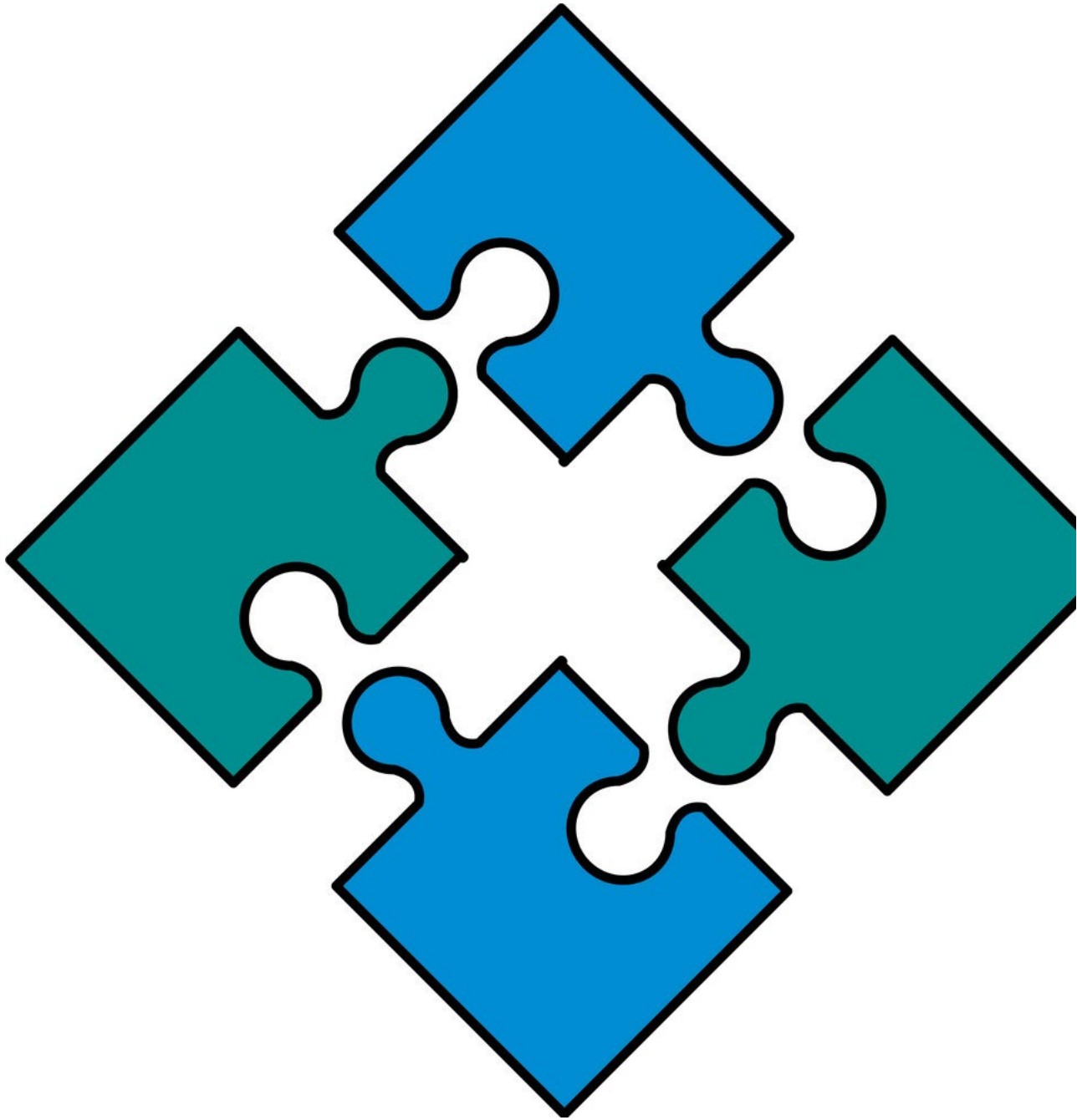
What is the most likely side effect of acetaminophen therapy?

A. **Liver toxicity**
B. Kidney toxicity
C. Bloody stools
D. Difficulty breathing
E. GI upset

Rational Polypharmacy

- Polypharmacy is common in elderly patients with multiple, chronic comorbidities

- Rational polypharmacy for pain management
  - Drugs from different medication classes
  - Drugs that treat different kinds of pain
  - Drugs that have shown to be opioid sparing



Which one is IRRATIONAL polypharmacy?

1. Morphine and gabapentin
2. Oxycodone and ibuprofen
3. Capsaicin and acetaminophen
4. Ibuprofen and naproxen
5. Morphine (long-acting) and transdermal fentanyl
6. Duragesic and oxycodone (for breakthrough pain) and pregabalin
7. Kadian and dexamethasone
8. Acetaminophen and oxycodone for breakthrough pain
9. Oxycodone for breakthrough pain and morphine for breakthrough pain
10. Methadone and ibuprofen and morphine for breakthrough pain

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Case Example – so what do we do with Ms. Smith?

- Which of the following options seem reasonable at this time?
  A. Start methadone 7.5 mg by mouth every 12 hours
  B. Start oral morphine solution (Roxanol) 20 mg by mouth every 2 hours as needed for additional pain
  C. Start dexamethasone 4 mg by mouth once a day in AM
  D. Start duloxetine 30 mg by mouth once daily and increase to 60 mg by mouth once daily in about a week if tolerated
  E. Discontinue previous orders
  F. All of the above !!

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  F. All of the above !!

Pain Management in Hospice and Palliative Care

Module 5 – Therapeutic Monitoring

Mary Lynn McPherson, PharmD, MA, MDE, BCPS

Objectives

Given a simulated patient receiving an analgesic regimen…

- Select discriminating subjective and objective monitoring parameters to assess if the patient has met their therapeutic goal.
- Select discriminating subjective and objective monitoring parameters to assess for potential toxicity.
- Document subjective and objective findings of the complaint, an assessment (including pathogenesis of pain) and a plan.

Steps for Appropriate Treatment

1. Problem identification and assessment
2. Define the therapeutic objective
3. Identify available modalities
4. Identify variables that affect drug selection
5. Select appropriate pharmacologic agent(s)
6. Identify expected/potential toxicities
7. Administer therapy
8. Monitor patient response
9. Adjust regimen as appropriate

6. Identify expected/potential toxicities

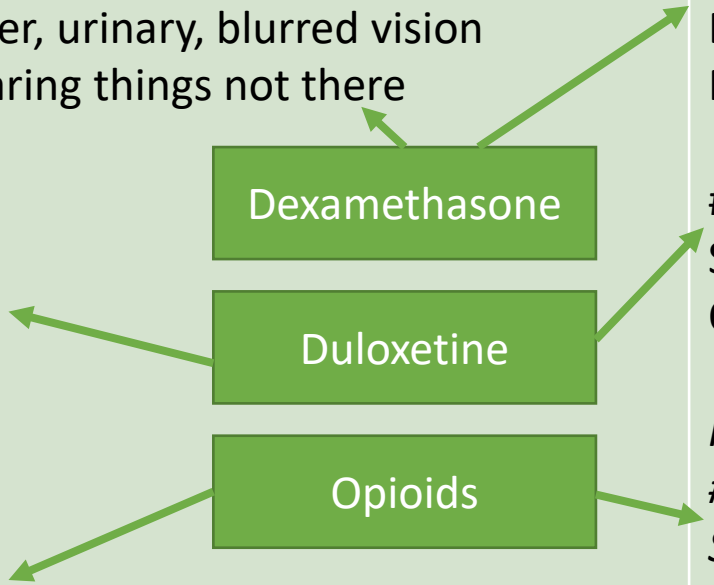
- You MUST do this prospectively
- Insufficient to claim “oh, I’ll know it when I see it” – you won’t
- What are the potential or expected toxicities of:
  - Methadone
  - Morphine
  - Dexamethasone
  - Duloxetine

Side effects associated with Ms. Smith's analgesics:

- Dexamethasone - Insomnia, edema, hypertension, hyperglycemia, delirium,
- Duloxetine - Nausea, headache, drowsiness, fatigue, dry mouth
- Opioids - Somnolence, fatigue, nausea, confusion, constipation, respiratory depression
  - Methadone – increasing somnolence, snoring

- Dexamethasone - Insomnia, edema, hypertension, hyperglycemia, delirium,
- Duloxetine - Nausea, headache, drowsiness, fatigue, dry mouth
- Opioids - Somnolence, fatigue, nausea, confusion, constipation, respiratory depression
  - Methadone – increasing somnolence, snoring, unexplained syncopal events

Subjective Monitoring Parameters for Potential Toxicity	Objective Monitoring Parameters for Potential Toxicity
c/o poor sleep	Number of hours sleeping (in one stretch, in total 24 hrs)
c/o swollen ankles	Pitting edema
c/o increased thirst, hunger, urinary, blurred vision	Blood glucose
c/o confusion, seeing/hearing things not there	Mini-Mental State Exam / CAM
c/o nausea or vomiting	# episodes of vomiting
c/o headache	Sedation rating scale
c/o sedation/drowsiness	Observed dry mucous membranes
c/o tiredness	
c/o dry mouth	*Number of hours sleeping (in one stretch, in total 24 hrs)*
	# episodes of vomiting
c/o sedation/drowsiness	*Sedation rating scale*
c/o nausea or vomiting	*Mini-Mental State Exam / CAM*
c/o confusion, seeing/hearing things not there	Bowel movement frequency / Bristol Stool Assessment
c/o constipation and/or abdominal discomfort	Observed snoring or syncopal events (fainting, falling)



- Dexamethasone - Insomnia, edema, hypertension, hyperglycemia, delirium,
- Duloxetine - Nausea, headache, drowsiness, fatigue, dry mouth
- Opioids - Somnolence, fatigue, nausea, confusion, constipation, respiratory depression
  - Methadone – increasing somnolence, snoring, unexplained syncopal events

Subjective Monitoring Parameters for Potential Toxicity	Objective Monitoring Parameters for Potential Toxicity
c/o poor sleep c/o swollen ankles c/o increased thirst, hunger, urinary, blurred vision c/o confusion, seeing/hearing things not there c/o nausea or vomiting c/o headache c/o sedation/drowsiness c/o tiredness c/o dry mouth c/o constipation and/or abdominal discomfort	Number of hours sleeping (in one stretch, in total 24 hrs) Pitting edema Blood glucose Mini-Mental State Exam / CAM # episodes of vomiting Sedation rating scale Observed dry mucous membranes Bowel movement frequency / Bristol Stool Assessment Observed snoring or syncopal events (fainting, falling)

7. Administer therapy

- When should Ms. Smith start the methadone relative to stopping the oxycodone/acetaminophen and prn oxycodone?
- When should she start the dexamethasone and duloxetine?
- Let’s assume the medications are delivered at 4 pm on Tuesday
- What say you?

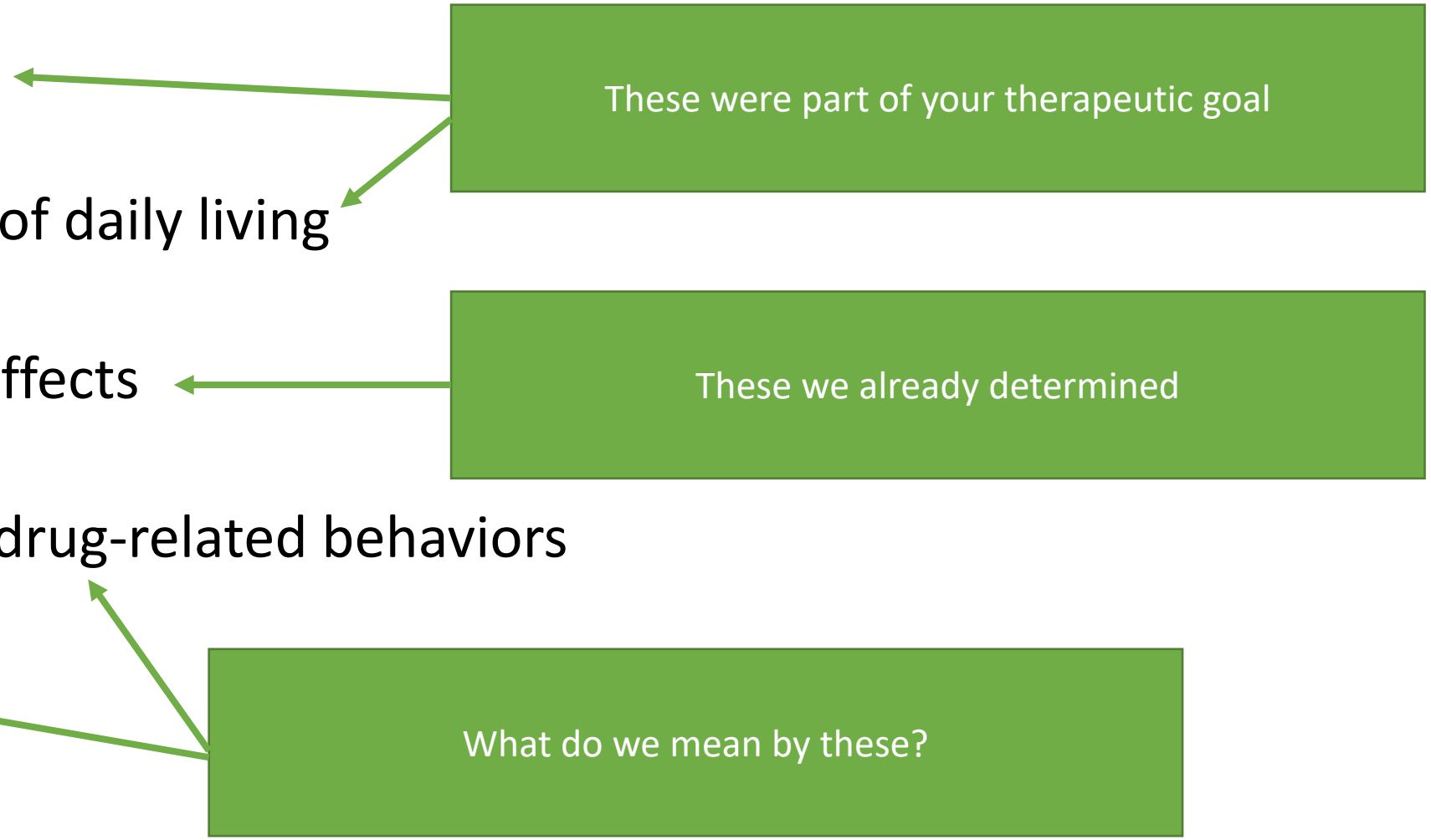
7. Administer therapy

- When should Ms. Smith start the methadone relative to stopping the oxycodone/acetaminophen and prn oxycodone?
- When should she start the dexamethasone and duloxetine?
- Let's assume the medications are delivered at 4 pm on Tuesday
- What say you?
  - Start methadone Tuesday evening – pick a time (7 pm, then 7 am/7 pm?) – 7 pm
  - DC oxycodone for breakthrough and begin morphine oral solution immediate
  - Start dexamethasone Wednesday morning (after eating)
  - Start duloxetine Tuesday evening (after dinner) because it can cause sedation

8. Monitor Patient Response

Five A's

1. Analgesia
2. Activities of daily living
3. Adverse effects
4. Aberrant drug-related behaviors
5. Affect



Analgesia and Activities of Daily Living (Functional Goals)

Pain Rating Goals:

1. Overall rated on average as 4-5 or less.
2. Shooting pain down arm less than 6-7.
3. Rib pain less than 5-6 on average.

Functional Goals:

1. Reduce frequency of shooting pains down right arm so she stops dropping whatever is in her hand.
2. Allow 6 or more hours of sleep and not awaken in horrible pain in right ribs.
3. Reduce crying and general unhappiness due to pain.

1. Analgesia
   - Is the pain relief clinically significant? Pain level on average? At its best? At its worst?
2. Activities of daily living
   - Physical function, mood, sleep, work, social/family relationships

Subjective Parameters of Therapeutic Effect
• Pain rating – best in day, worst in day, average in day • Expresses subjective lessening of shooting arm pain • States able to sleep better/longer • States less crying and generally happier
Objective Parameters of Therapeutic Effect
• # episodes of shooting arm pain/day • # episodes of dropping things/day • # hours sleeping (at one time/in total in 24 hours) • # episodes of crying/day • Beck depression score • # doses of prn analgesic per day

5A's – Adverse effects

Subjective Monitoring Parameters for Potential Toxicity	Objective Monitoring Parameters for Potential Toxicity
c/o poor sleep	Number of hours sleeping (in one stretch, in total 24 hrs)
c/o swollen ankles	Pitting edema
c/o increased thirst, hunger, urinary, blurred vision	Blood glucose
c/o confusion, seeing/hearing things not there	Mini-Mental State Exam / CAM
c/o nausea or vomiting	# episodes of vomiting
c/o headache	Sedation rating scale
c/o sedation/drowsiness	Observed dry mucous membranes
c/o tiredness	Bowel movement frequency / Bristol Stool Assessment
c/o dry mouth	Observed snoring or syncopal events (fainting, falling)
c/o constipation and/or abdominal discomfort	

8. Monitor Patient Response

4. Aberrant drug-related behaviors

- Purposeful misuse for sedation, negative mood changes, increasingly impaired/intoxicated, modified route of admin, using for non-approved reasons, selling or giving away for illicit use

Subjective Parameters Aberrant Drug-Related Behavior	Objective Parameters Aberrant Drug-Related Behavior
• Family/CG c/o excessive sedation or impairment • Family/CG reports missing medications, misuse of medications, altering dosage formulations	• Observed excessive sedation; inability to arouse patient or observed impairment • Pill count

5. Affect

- Is the pain effecting emotional tone? Is affect appropriate? Blunted vs. exaggerated?

Subjective Parameters Affect	Objective Parameters Affect
• Patient, family, caregiver c/o significant change in affect	• Observed significant change in affect

Subjective Parameters of Therapeutic Effectiveness	Objective Parameters of Therapeutic Effectiveness
• Pain rating – best in day, worst in day, average in day • Expresses subjective lessening of shooting arm pain • States able to sleep better/longer • States less crying and generally happier	• # episodes of shooting arm pain/day • # episodes of dropping things/day • # hours sleeping (at one time/in total in 24 hours) • # episodes of crying/day • Beck depression score • # doses of prn analgesic per day
Subjective Parameters of Potential Toxicity	**Objective Parameters of Potential Toxicity**
• c/o poor sleep • c/o swollen ankles • c/o increased thirst, hunger, urinary, blurred vision • c/o confusion, seeing/hearing things not there • c/o nausea or vomiting • c/o headache • c/o sedation/drowsiness • c/o tiredness • c/o dry mouth • c/o constipation and/or abdominal discomfort • Family/CG c/o excessive sedation or impairment • Family/CG reports missing medications, misuse of medications, altering dosage formulations • Patient, family, caregiver c/o significant change in affect	• Number of hours sleeping (in one stretch, in total 24 hrs) • Pitting edema • Blood glucose • Mini-Mental State Exam / CAM • # episodes of vomiting • Sedation rating scale • Observed dry mucous membranes • Bowel movement frequency / Bristol Stool Assessment • Observed snoring or syncopal events (fainting, falling) • Observed excessive sedation; inability to arouse patient or observed impairment • Pill count • Observed significant change in affect

Allergy vs. Intolerance

- Identifying between an allergy and intolerance is important for healthcare professionals to distinguish
- Optimize available drug therapies
- Common manifestations of intolerance
  - Nausea/vomiting
  - Localized itching
  - Drowsiness/sedation
  - Mild confusion
  - Appropriate counseling

Anaphylaxis

- A rapidly progressing, life-threatening allergic reaction
- Can occur within minutes or seconds
- Can result in airway constriction, skin and intestinal irritation, and altered heart rhythms, shock, death

9. Adjust Therapy as Appropriate

- Continue therapy as prescribed; goals being met
- Adjust analgesic dose (increase or decrease) and/or route of administration/formulation
- Switch to different drug within the same therapeutic class (e.g., opioid rotation)
- Switch to or add an additional agent from another therapeutic class
- Add rescue/breakthrough analgesia if not already prescribed
- Adjust rescue/breakthrough dose, frequency

9. Adjust Therapy as Appropriate

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- Adjust rescue/breakthrough dose, frequency

- Consider a dose change if...
  - Is pain control not at goal ALL the time?
    - Should we adjust long-acting analgesic/opioid?
    - Increase to incorporate use of breakthrough opioid dose
    - Increase 25-50% for moderate pain; 50-100% for severe pain
  - Assess effectiveness of PRN dose
    - Is patient using PRNs? What's the pain rating before they take PRN medication, and one hour later?
    - How long does the effect last? Does the medication wear off too soon?
  - Adverse effects are causing harm or discomfort to patient (dose-related?)
    - Confusion or sedation that is bothersome to the patient/family

9. Adjust Therapy as Appropriate

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- Switch to different drug within the same therapeutic class (e.g., opioid rotation)
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- Opioid rotation

SELECTED EQUIVALENCIES

	Equianalgesic Equivalence (mg)	
OPIOID	PARENTERAL	ORAL
Morphine	10	25
Fentanyl	0.15	NA
Hydrocodone	NA	25
Hydromorphone	2	5
Oxycodone	10 *(not in US)*	20
Oxymorphone	1	10

- Changing to a different steroid, adjuvant analgesic

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- Continue therapy as prescribed; goals being met
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- Adjust rescue/breakthrough dose, frequency

- Target the pain
- Switch to methadone
- Add adjuvant analgesic
  - Antidepressant
  - Anticonvulsant
  - Steroid
  - Bisphosphonate
  - Etc.

9. Adjust Therapy as Appropriate

- Continue therapy as prescribed; goals being met
- Adjust analgesic dose (increase or decrease) and/or route of administration/formulation
- Switch to different drug within the same therapeutic class (e.g., opioid rotation)
- Switch to or add an additional agent from another therapeutic class
- Add rescue/breakthrough analgesia if not already prescribed
- Adjust rescue/breakthrough dose, frequency

- Transmucosal fentanyl – very expensive
- Morphine, oxycodone, hydromorphone → 10-15% of total daily dose scheduled long-acting opioid
  - MS Contin 60 mg po q12h
  - Roxanol 12-18 mg po q1, 2, 4 h prn
  - e.g., Roxanol 15 mg po q2h prn
- Assess pain before PRN dose and one hour after PRN dose
  - Want 30-50% reduction in pain

Knowledge Question

Patient CS is a 87-year-old female with newly diagnosed metastatic cancer. She is having new-onset, severe pain and presents to the inpatient hospice unit. Her EMR lists an allergy to morphine. Upon questioning the patient and her family you discover that her reaction to morphine was localized itching and nausea. The MD has ordered IV Hydromorphone for pain management. You know that morphine and hydromorphone are cross-allergens in someone with a true morphine allergy. You should:

A. Do not administer any of medication and wait for the MD to change the order on rounds tomorrow.
B. Alert the doctor that the patient has a reported allergy on EMR but you confirmed with the patient/family that it is an intolerance and not a true allergy.
C. Alert the doctor that the patient has a true morphine allergy and agree with his decision to avoid all potential cross-reactive opioids

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C. Alert the doctor that the patient has a true morphine allergy and agree with his decision to avoid all potential cross-reactive opioids

Appropriate documentation

- If it wasn't documented, it didn’t happen!

- The most important communication tool we have collectively as healthcare professionals is **high quality documentation**

- How?
  - Every organization has different templates
  - Progress notes, SOAP notes, care note, medication action note
  - **Comprehensive care plan – should include the 5 A’s!**

Comprehensive Care Plan

- Information should be comprehensive and concise
- Neat and organized
- Accurate, timely
- Reflects complexity of patient's case
- Avoids judgmental language or personal opinions
- Free of spelling/grammatical errors
  - This is an official legal document
- Provide supporting evidence when applicable
- DO NOT COPY AND PASTE PREVIOUS NOTES

Documenting Pain Encounter – SOAP Note

Section	Content	
S – Subjective	• Chief complaint (patient's complaint in their own words with a time element) • Symptom analysis of chief complaint • Review of systems for system in which the complaint is • Meds if per patient recall • Social history	• Pain rating (**A**nalgesia) • **A**ctivities of daily living • **A**dverse effects from analgesics • **A**berrant behavior • **A**ffect
O – Objective	• Meds if from MAR • Physical exam data / including observation of behavior	• Imaging • Labs and urine toxicology • Pill counts if appropriate
A – Assessment	• Why now? Etiology? How severe? • Controlled/uncontrolled? Stable/unstable? • Therapeutic effectiveness / progress toward goals	• Toxicity • Abuse and diversion • Adherence
P - Plan	• Medication changes (be specific) • Non-medication recommendations • Recommendations for follow-up	• Referrals • Patient education provided

Pain Management in Hospice and Palliative Care

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