

# PAIN

Definition:

- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

[www.nurseinfo.in](http://www.nurseinfo.in)

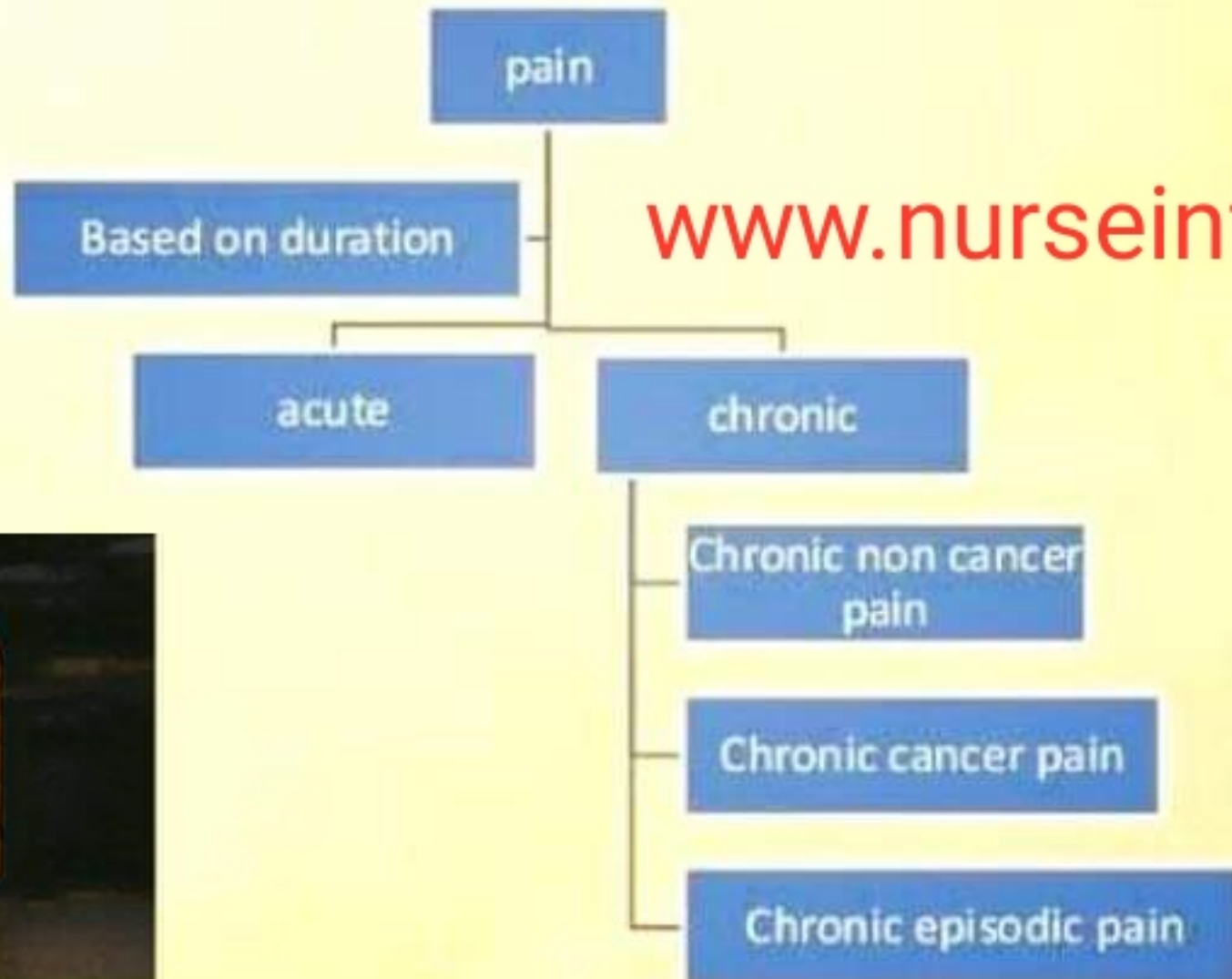
# Nature of pain

- Pain is subjective and highly individualized.
- Its stimulus is physical and/or mental in nature.
- It interferes with personal relationships and influences the meaning of life.
- Only the patient knows whether pain is present and how the experience feels.
- May not be directly proportional to amount of tissue injury

## Signs and symptoms of pain:

- Increased respiratory rate
- Increased heart rate
- Peripheral vasoconstriction
- Pallor
- Elevated B.P.
- Increased Blood Glucose Levels
- Diaphoresis
- Dilated pupils

# Types of pain



# Types of pain

Pain is  
classified

```
graph TD; A[Pain is classified] --> B[Based on duration]; A --> C[based on location]; A --> D[Based on intensity]; A --> E[Based on etiology];
```

Based on  
duration

based on  
location

Based on  
intensity

Based on  
etiology



## Signs and symptoms of pain:

- MOANING
- GUARDING THE AREA
- RESTLESSNESS
- IRRITABILITY

# Acute pain

- When pain lasts only through the expected recovery period, it is described as **acute pain**.
- **Acute pain is protective, has an identifiable** cause, is of short duration, and has limited tissue damage and emotional response.
- It eventually resolves, with or without treatment, after an injured area heals.

## Acute pain

- Complete pain relief is not always achievable, but reducing pain to a tolerable level is realistic.
- Unrelieved acute pain can progress to chronic pain.



# Chronic pain

- Chronic pain is the pain that lasts longer than 6 months and is constant or recurring with a mild-to-severe intensity.
- It does *not* always have an identifiable cause and leads to great personal suffering.

Examples: arthritic pain, head ache, peripheral neuropathy.

# Chronic pain

## **Chronic non cancer pain:**

- The chronic pain that resulted due to non cancer disease conditions is termed as chronic non cancer pain.

# Chronic pain

CHRONIC PAIN MAY BE :

- Chronic non cancer pain
- Chronic cancer pain
- Chronic episodic pain.

# Chronic pain

- The possible unknown cause of chronic pain, combined with the unrelenting nature and uncertainty of its duration, frustrates a patient, frequently leading to psychological depression and even suicide.
- Associated symptoms of chronic pain include fatigue, insomnia, anorexia, weight loss, hopelessness, and anger.

# Chronic pain

## **Chronic cancer pain:**

- Cancer pain is the pain that is caused by tumor progression and related pathological processes, invasive procedures, toxicities of treatment, infection, and physical limitations.
- Approximately 70% to 90% of patients with advanced cancer experience pain.



# Chronic pain

## **Chronic episodic pain:**

- Pain that occurs sporadically over an extended period of time is episodic pain.
- Pain episodes last for hours, days, or weeks. Examples are migraine headaches.

## Based on intensity:

### Mild pain:

- Pain scale reading from 1 to 3 is considered as mild pain

### Moderate pain:

- Pain scale reading from 4 to 6 is considered as moderate pain

### severe pain:

- Pain scale reading from 7 to 10 is considered as severe pain

# Classification based on location:

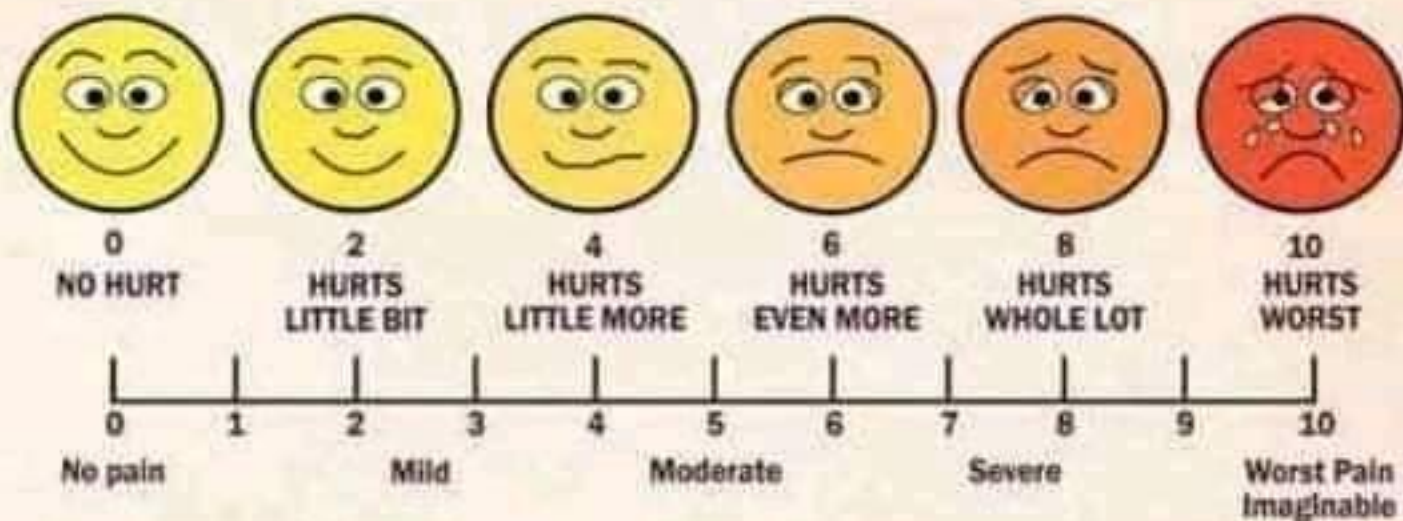
- This is based on the site at which the pain is located. Egs:
  - Headache
  - Back pain
  - Joint pain
  - Stomach pain
  - Cardiac pain
- Referred pain: pain due to problems in other areas manifest in different body part.
- For example, cardiac pain may be felt in the shoulder or left arm, with or without chest pain.

[www.nurseinfo.in](http://www.nurseinfo.in)



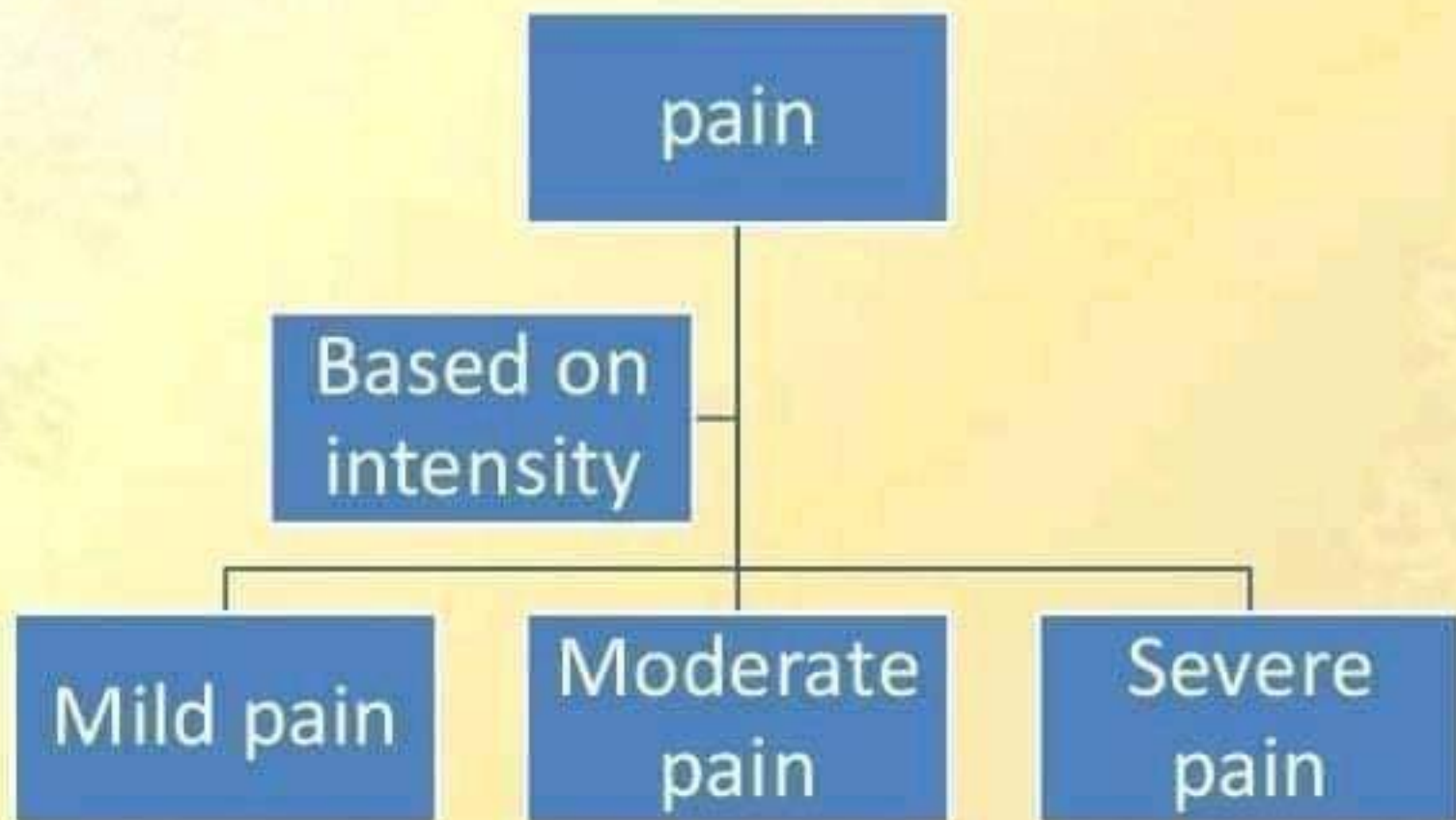
# Pain scale

## PAIN MEASUREMENT SCALE



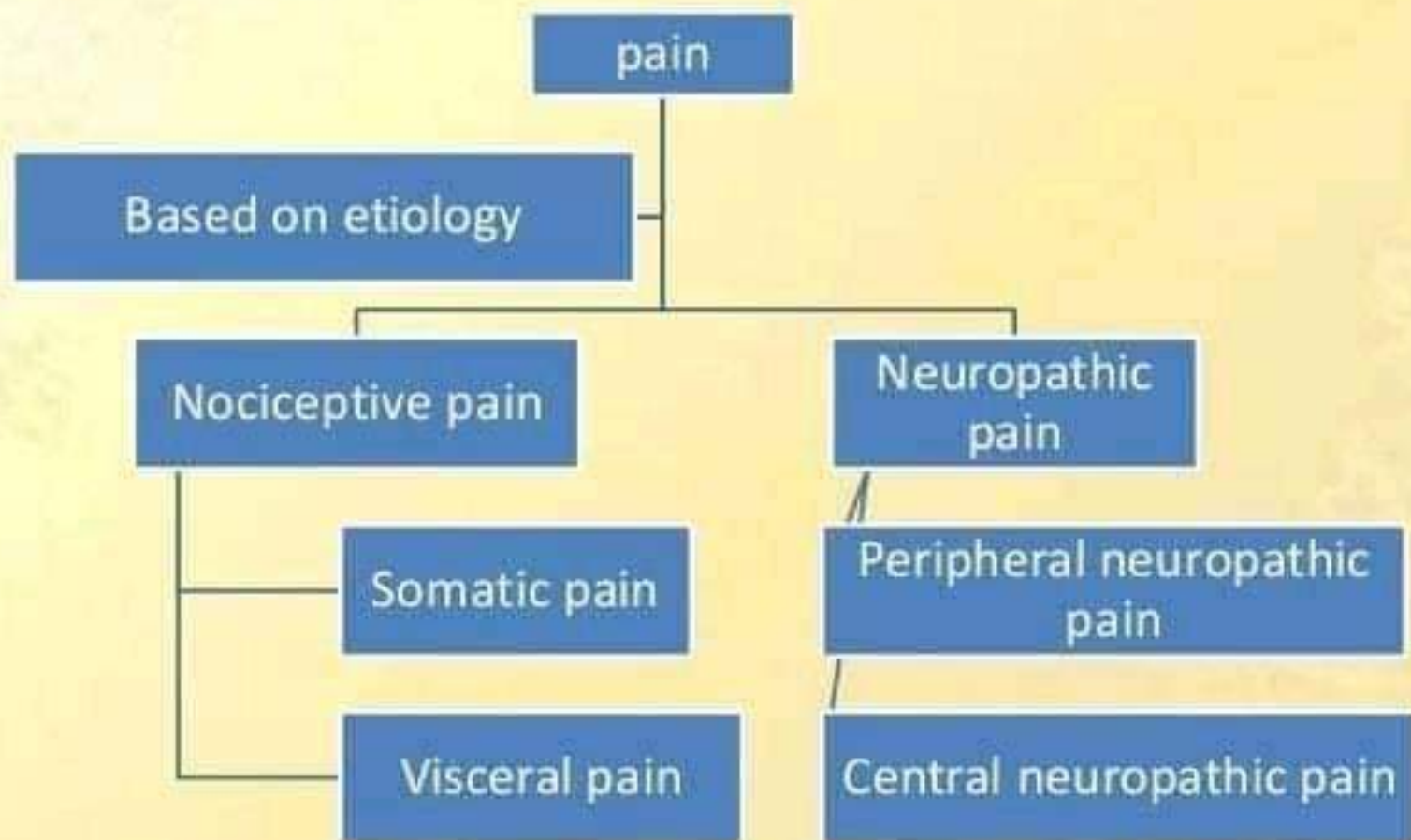


## Based on intensity:





## Classification of pain based on etiology:



# Classification of pain based on etiology:

## Nociceptive pain:

- Nociceptive pain is experienced when an intact, properly functioning nervous system sends signals that tissues are damaged, requiring attention and proper care.
- For example, the pain experienced following a cut or broken bone alerts the person to avoid further damage until it is properly healed.
- Once stabilized or healed, the pain goes away

# Nociceptive Pain

- **Somatic pain:**
- This is the pain that is originating from the skin, muscles, bone, or connective tissue.
- The sharp sensation of a paper cut or aching of a sprained ankle are common examples of somatic pain

## .....Nociceptive Pain

### Visceral pain:

- **Visceral pain** is pain that results from the activation of nociceptors of the thoracic, pelvic, or abdominal viscera (organs).
- Characterized by cramping, throbbing, pressing, or aching qualities.
- Examples: labor pain, angina pectoris, or irritable bowel.



## .....Neuropathic pain

- Neuropathic pain is associated with damaged or *malfunctioning nerves* due to illness , injury, or undetermined reasons.
- **Examples:**
- Diabetic peripheral neuropathy
- Phantom limb pain
- Spinal cord injury pain



## .....Neuropathic pain

- It is usually chronic.
- it is described as burning, “electric-shock,” and/or tingling, dull, and aching.
- Neuropathic pain tends to be difficult to treat.
- Neuropathic pain is of two types based on which parts of the nervous system is damaged.
  - 1. Peripheral Neuropathic Pain
  - 2. Central Neuropathic Pain.

## .....Neuropathic pain

- It is usually chronic.
- it is described as burning, “electric-shock,” and/or tingling, dull, and aching.
- Neuropathic pain tends to be difficult to treat.
- Neuropathic pain is of two types based on which parts of the nervous system is damaged.
  - 1. Peripheral Neuropathic Pain
  - 2. Central Neuropathic Pain.

## .....Neuropathic pain

- Peripheral neuropathic pain:
  - Due to damage to peripheral nervous system
  - Eg: phantom limb pain
- Central neuropathic pain:
  - Results from malfunctioning nerves in the central nervous system (CNS).
  - Eg: spinal cord injury pain,
  - Post-stroke pain.

# Factors Influencing Pain

1. *Developmental factors*
2. *Physiological factors*- fatigue, genes, neurological functioning
3. *Social factors*- attention, previous experience, family and social support, spiritual factors.
4. *Psychological factors*- anxiety, coping style.
5. *Cultural factors*



# Developmental factors

## Age:

- Age influences pain, particularly in infants and older adults.
- Young children have trouble understanding pain and the procedures that cause it.
- If they have not developed full vocabularies, they have difficulty verbally describing and expressing pain to parents or caregivers.



# Physiological Factors

## 1. *Fatigue.*

- Fatigue heightens the perception of pain and decreases coping abilities.
- If it occurs along with sleeplessness, the perception of pain is even greater.
- Pain is often experienced less after a restful sleep than at the end of a long day.

## .....Physiological Factors

### *2. Genes.*

- Research on healthy human subjects suggests that genetic information passed on by parents possibly increases or decreases the person's sensitivity to pain and determines pain threshold or pain tolerance.

## .....Physiological Factors

### *3. Neurological Function.*

- Any factor that interrupts or influences normal pain reception or perception (e.g., spinal cord injury) affects the patient's awareness of and response to pain.

# Social Factors

## *1.Attention.*

- The degree to which a patient focuses attention on pain influences pain perception. Increased attention is associated with increased pain, whereas distraction is associated with a diminished pain response



## .....Social Factors

### *2.Previous Experience.*

- If a person repeatedly experiences the same type of pain that was relieved successfully in the past, the patient finds it easier to interpret the pain sensation.
- If a person is having worst previous experience he may experience much pain.



# Social Factors

## *3. Family and Social Support*

- The presence of family or friends can often make the pain experience less stressful.
- The presence of parents is especially important for children experiencing pain.

# Social Factors

## 4. *Spiritual Factors.*

- Spiritual questions include “Why has this happened to me?” “Why am I suffering?” Spiritual pain goes beyond what we can see. “Why has God done this to me?” “Is this suffering teaching me something?”
- If the person is experiencing like this feelings it makes much painful

# Psychological Factors

## 1. *Anxiety:*

- Anxiety often increases the perception of pain, and pain causes feelings of anxiety.
- Critically ill or injured patients who perceive a lack of control over their environment and care have high anxiety levels. This anxiety leads to severe pain

## **,.....Psychological Factors**

### ***2.Coping Style.***

Persons with better coping levels perceives lessa pain than the person with lower coping levels.



## Cultural Factors.

- Cultural beliefs and values affect how individuals cope with pain.
- Individuals learn what is expected and accepted by their culture, including how to react to pain.
- Culture affects pain expression. Some cultures believe that it is natural to be demonstrative about pain. Others tend to be more introverted.



[www.nurseinfo.in](http://www.nurseinfo.in)

# Pain Assessment and Management



# Pain Assessment

- **P** recipitating/Alleviating Factors:
  - What causes the pain? What aggravates it? Has medication or treatment worked in the past?
- **Q** uality of Pain:
  - Ask the patient to describe the pain using words like “sharp”, dull, stabbing, burning”
- **R** adiation
  - Does pain exist in one location or radiate to other areas?
- **S** everity
  - Have patient use a descriptive, numeric or visual scale to rate the severity of pain.
- **T** iming
  - Is the pain constant or intermittent, when did it begin.

## .....Pain Assessment

- Assess for **objective** signs of pain:
  - **Facial expressions** – facial grimacing (a facial expression that usually suggests disgust or pain), frowning (facial expression in which the eyebrows are brought together, and the forehead is wrinkled), sad face.
  - **Vocalizations** - crying, moaning
  - **Body movements** – guarding , resistance to moving

## **Pain Assessment Tools:**

- These are various tools that are designed to assess the level of pain. The most commonly used tools are:
  1. Verbal Rating Scale
  2. Numeric Rating Scale
  3. Wong Baker's Faces Pain Scale



# Management Of Pain:

Pain can be managed through:

1. Pharmacological interventions
2. Non pharmacological interventions



# Pharmacological interventions

- Pharmacological therapy is given by using Analgesics.
- The analgesics may be NON OPIOIDS (NSAIDS) OR OPIOIDS OR ADJUVANTS
- **NSAIDS**: Non steroidal anti inflammatory drugs
- **Opioids**: Opioids are medications that relieve pain. Derived from opium.

## Pharmacological interventions

- **Adjuvants** : Adjuvants are drugs originally developed to treat conditions other than pain but also have analgesic properties.

# Pharmacological Interventions

- **Nonopioids:**

- Used alone or in conjunction with opioids for mild to moderate pain
- Eg; NSAIDS- paracetamol, aspirin.

- **Opioids:**

- for moderate or severe pain
- Eg: morphine, codeine

## ...WHO Pain Management Ladder

**Pain scale reading**

**WHO steps**

- 1 -3  STEP1
- 4-6  STEP2
- 7-10  STEP3



# Pharmacological interventions

- **WHO Pain Management Ladder**



## ..Pharmacological Interventions

- **Adjuvants:**

- Used for analgesic reasons and for sedation and reducing anxiety.

- Eg:

- Tri-cyclic antidepressants

- Anti epileptics

- Cortico steroids

## ***Patient-Controlled Analgesia***

- A drug delivery system called patient-controlled analgesia (PCA) is a safe method for pain management that many patients prefer.
- It is a drug delivery system that allows patients to self-administer opioids (morphine and fentanyl) with minimal risk of overdose.

## ***Patient-Controlled Analgesia***

- PCA infusion pumps are portable and computerized and contain a chamber for a syringe or bag that delivers a small, preset dose of opioid .
- To receive a demand dose, the patient pushes a button attached to the PCA device.



## Topical Analgesics

- Topical analgesics are applied over the patients skin either in the form of topical ointments or transdermal patches.
- The patches will be sticking to the skin and delivers a small amount of dosage continuously.

# ***Patient-Controlled Analgesia***



© Mayo Foundation for Medical Education and Research. All rights reserved.

# TRANS DERMAL PATCH



# Local Anesthesia

- **Local anesthesia** is the **local** infiltration of an anesthetic medication to induce loss of sensation to a body part.
- Health care providers often use local anesthesia during brief surgical procedures such as removal of a skin lesion or suturing a wound by applying local anesthetics topically on skin to anesthetize a body part.
- The drugs produce temporary loss of sensation by inhibiting nerve conduction



# Local Anesthesia



## **Regional Anesthesia**

- **Regional anesthesia is the injection of a local anesthetic to block a group of sensory nerve fibers.**
- **Examples of regional anesthesia include epidural anesthesia and spinal anesthesia.**

## Non-Pharmacological Pain Management

- For many individuals, the use of non-pharmacologic methods enhances pain relief.
- These nonpharmacologic strategies are often used in combination with medication

## Non-Pharmacological therapies:

The methods are:

1. Heat & Cold applications
2. Meditation
3. Distraction
4. Imagery



## ..Non-Pharmacological therapies

5. TENS application
6. Music therapy
7. Massage
8. Yoga
9. Acupuncture
10. Herbal therapy- Garlic, Echinacea, Ginseng.