

# Cancer Pain

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# Prevalence of the Most Common Symptoms in Advanced Cancer (1000 Adults)

Symptom	%	Symptom	%
Pain	82	Lack of Energy	59
Easy Fatigue	67	Dry Mouth	55
Weakness	64	Constipation	51
Anorexia	64	Dyspnea	51
>10% Wt Loss	60	Early Satiety	50

*Donnelly and Walsh  
Semin Oncol, 1995*

# Pain definition

Pain is an emotional and  
sensory experience or  
described in those terms

# Incidence Of Cancer Pain

- 50 % of all cancer patients
- 70-80 % of all advanced cancer patients
- 50 % will have moderate to severe pain
- 30 % will have severe pain

# Types Of Pain in Cancer

- Related to direct **tumor** involvement-60-65 %
- Related to **cancer treatment**-20-25 %
- Unrelated to cancer-10-15 %

# Pain Syndromes

## **NOCICEPTIVE:**

### **A.Somatic:**

Sharp, localized,aching,throbbing,gnawing

### **B.Visceral:**

Dull, poorly localized,crampy,nauseous,squeezy,pressure

## **NEUROPATHIC:**

Burning, tingling, shooting, stabbing,itching,electric like,numb

# Types of pain

- Nociceptive pain
  - somatic;
  - Post-op
  - bone pain
  - chest pain
  - mucositis
- Visceral;
  - PCP, Liver mets,
  - pleural
- Neuropathic pain:
  - Peripheral
    - neuropathy
    - PHN
    - Brachial
    - Lumbosacral
    - plexopathy
  - Central:
    - Stroke&MS,Tum

# Pain Assessment

Detailed pain history-

- Site
- intensity
- Factors influencing pain
- Breakthrough Pain
- Medication history
- Associated neurological deficits
- Psychosocial history
- Assessment of other symptoms



# Intensity Of Pain

**0-10 (Verbal numeric scale)**

**Mild, moderate, severe**

**0-10cm Line (Visual analogue scale)**

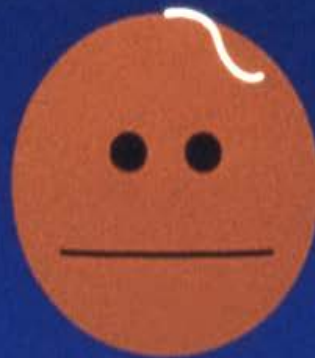
**Faces**

**Fruits**

**Currency**

**Sometimes cannot quantify**

# Happy/Sad Faces



# Assessment Of Pain

## Questionnaires:

### Wisconsin Brief Pain Inventory:(Cleeland)

#### (BPI)

Captures pain at different times

Functional interference is assessed

Other symptoms are assessed

Well tested, easy to administer

# Assessment Of Pain

## **Graphic Scale:**

- Edmonton Symptom Assessment Scale (ESAS) :
- Easy to administer, captures other symptoms on a 0-10 scale format.
- Easy follow through and can act as a flow chart.

# ESAS

THE UNIVERSITY OF TEXAS  
MD ANDERSON  
CANCER CENTER

FOLLOW-UP AND PROGRESS NOTES

PATIENT IDENTIFICATION

DATE

*Death*

**Symptom Control & Palliative Care Symptom Assessment Scale**

Referral Date:  
Date: *March*

	20	21	22	23	24	25														
Pain (0-10)*																				
Fatigue (0-10)*																				
Nausea (0-10)*																				
Depression (0-10)*																				
Anxiety (0-10)*																				
Drowsiness (0-10)*																				
Shortness of Breath (0-10)*																				
Appetite (0-10)*																				
Sleep (0-10)*																				
Feeling of Wellbeing (0-10)*																				
Mini Mental State Score (0 - 30)			8		0															
Assessment from: Pt/SO/HCP (if SO or HCP - use red ink)																				
Total Opioid																				
MEDD: _____ mg/day																				
Staff Initials (Signature & Title Below)																				

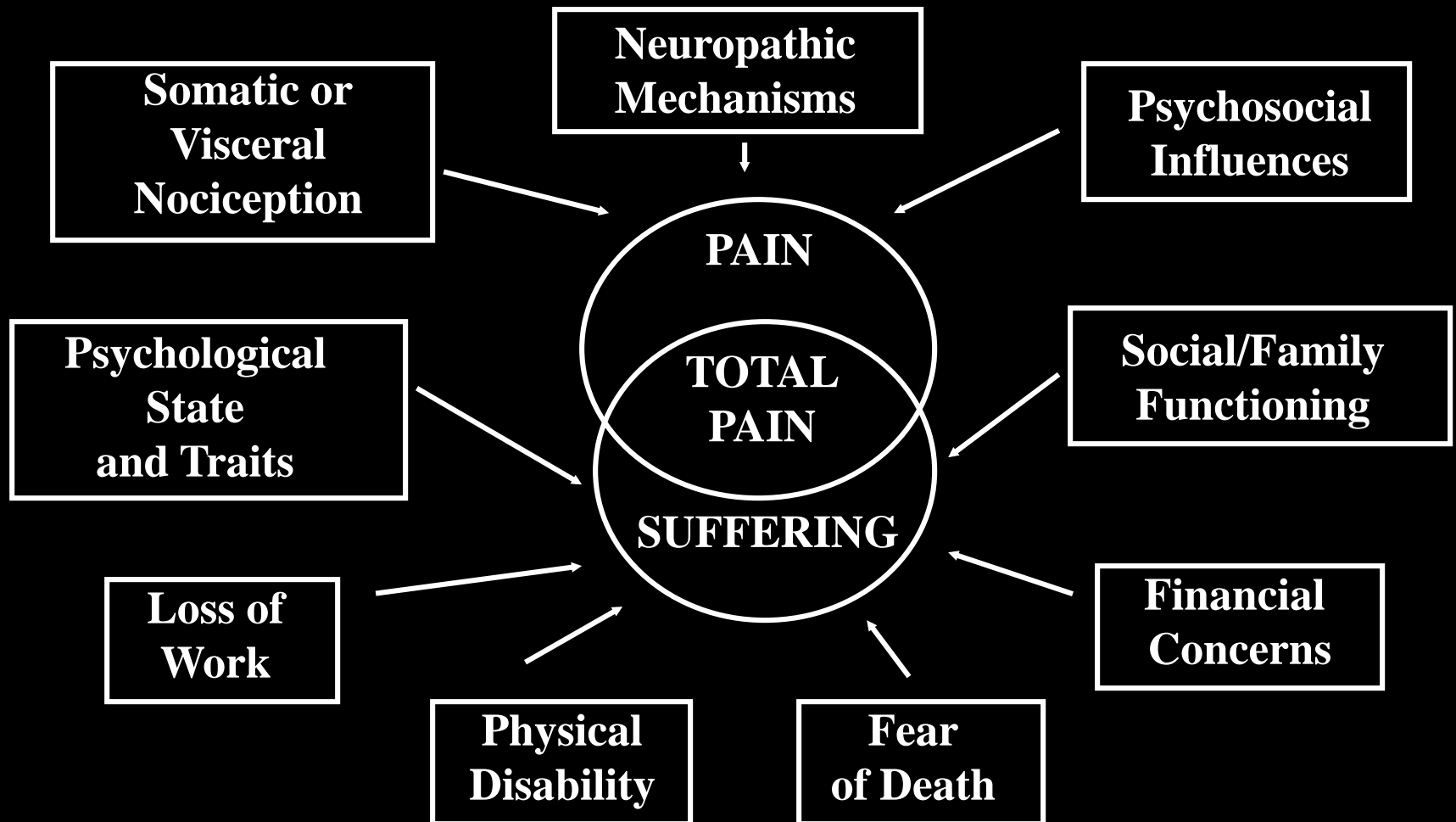
\* 0 = No Symptom/Best      10 = Worst Imaginable

# Assessment Of Cancer Pain

**Pain:**

**“A new pain or a change in character of an old pain in cancer patient is always because of cancer unless otherwise proved”--Reddy**

# Multifactorial Nature of Pain



(Adapted from Portenoy, 1988)

# Treatment of Cancer Pain

Pharmacotherapy

Opioids & Non-opioids

Non-Pharmacotherapy

Behavioral treatment

Physical therapy

Counselling

Anesthetic procedures



# Pharmacotherapy of cancer pain

## Non-opioid drugs:

NSAIDS

Antidepressants

Anticonvulsants

Corticosteroids

Phenothiazines

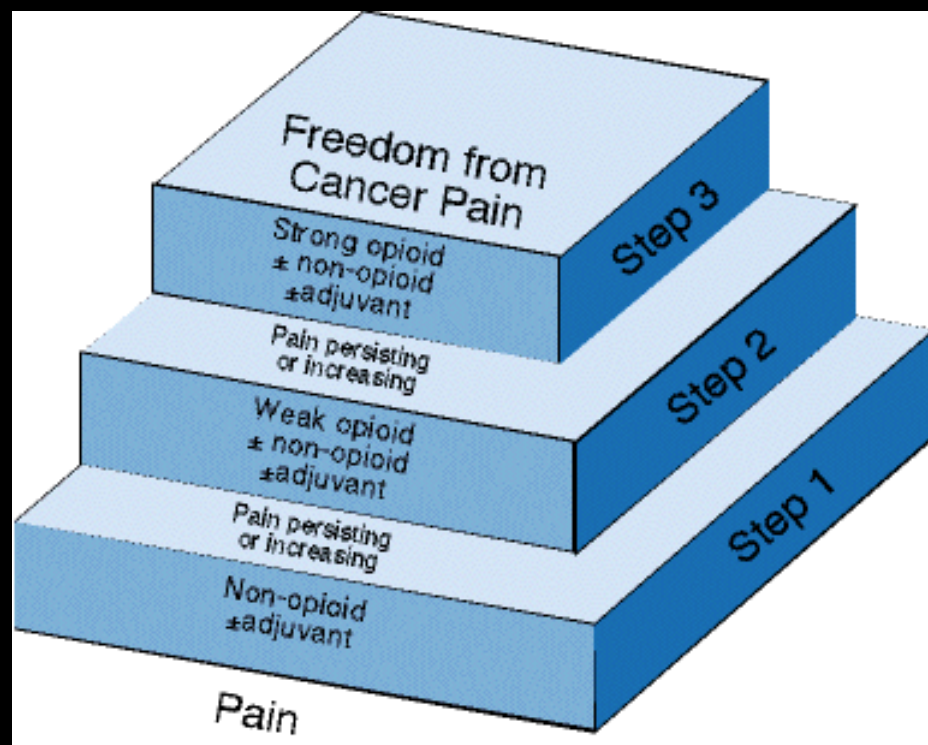
Benzodiazepines

## Opioid drugs:

Weak opioids

Strong opioids





# Adjuvant Analgesics(Step 1 WHO)

Non-Steroidal anti-inflammatories (NSAIDs)

Antidepressants(TCA)

Anticonvulsants/Anti-epileptics(AEDs)

Corticosteroids

Bisphosphonates

Anesthetics-Lidoderm Patch

N-Methyl D-aspartate antagonists(NMDA)

Radiopharmaceuticals

Phenothiazines

Benzodiazepines

# NSAIDS

- Acetaminophen (Paracetamol) can cause liver damage if dose exceeds 3-4 gm a day
- Liver damage risk increased in alcoholics and pre-existing liver damage.
- Acetaminophen (Paracetamol) has been shown to cause renal damage



# NSAIDS(Ibuprofen,Naprosyn)

- Acts by inhibiting cyclooxygenase to decrease prostaglandin synthesis
- May have central action at the spinal cord level
- Exhibit ceiling effect
- Tolerance and physical dependence is not seen
- Cause end organ toxicity
- Cox -2 inhibitors cause less GI and Platelet dysfunction ( Other side-effects same)(Celecoxib)
- Vane JR: Inhibition of prostaglandin synthesis as mechanism of action of aspirin like drugs.

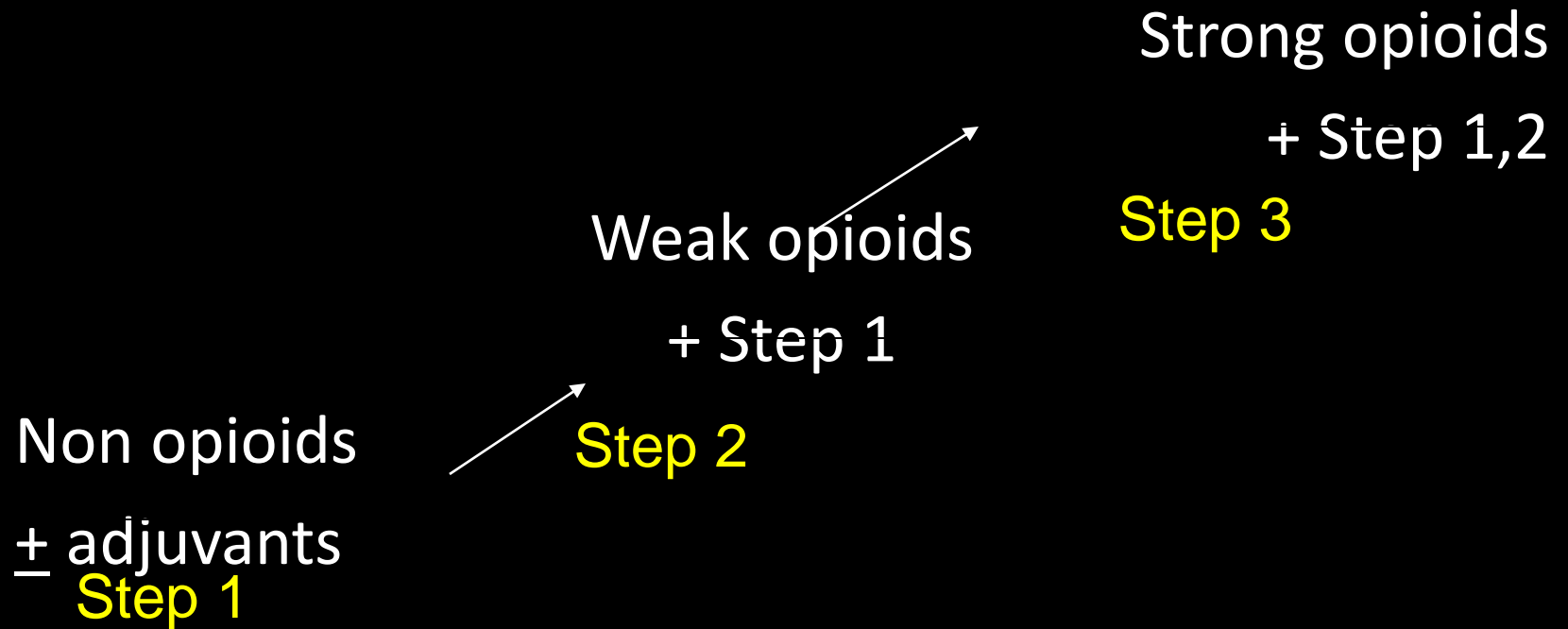
# Weak opioids/Step2 WHO/C3

- Codeine
  - Hydrocodone
  - (Propoxyphene)
  - Tramadol
- Used for mild to moderate pain
  - Not available as a single agents
  - Dose limited by acetaminophen dose



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# WHO Analgesic Ladder



# Agonists-Antagonists

- Pentazocine
- Nalbuphine
- Butorphanol
- Buprenorphine
- Demonstrate ceiling effect
- Precipitate withdrawal symptoms
- Dose-dependent psychotomimetic effects



# Strong opioids(Step 3 WHO )

- Used for all pain types
- Available as short acting and long acting
- Opioids with long half-life not the 1st choice
- Morphine -drug of first choice, different formulations available
- SRM-15, 30, 60,100 and 200mg.
- M.S. -10,15,30,60mg.

# WHO Ladder

## Step 1:

Pain syndrome: Any or specific type of pain

Pain intensity:mild,0-4/10

Medications used: acetaminophen, anti-inflammatory, /TCA/AED

Response: somatic/neuropathic pain syndromes respond mildly.

# WHO Ladder

## Step 2:

**Pain syndrome: Any or specific type**

**Pain intensity: moderate, 4-7/10**

**Medications: Mild opioids/NSAID's /TCA/AEDs**

**Response:Varies.**

# WHO Ladder

## Step 3:

**Pain syndrome-Any or Specific**

**Pain intensity:moderate to severe,7-10/10**

**Medications:Strong**

**opioid(*Morphine***

**class)+NSAIDs,AEDs,TCAetc**

**Response:Good,80-90 %**

# Incidence Of Cancer Pain

- 50 % of all cancer patients
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# WHO Ladder Principles

The five essential concepts in the WHO approach to drug therapy of cancer pain are:

By the mouth

By the clock

By the ladder

For the individual

With attention to detail

# Morphine

**Gold standard for opioids**

**Acts as mu agonist in spinal cord, brain, and periphery**

**Metabolized to M6G, and M3G (May be responsible for excitatory side-effects)**

**Metabolites accumulate in renal dysfunction-  
Hence adjust the dose**

**Available in all formulations and all routes**

**Start with 10-15 mg q 4 hrs initially and titrate the dose. Introduce sustained release form once pain is stable**

**Use IV for acute titration**

# Transdermal Fentanyl

Fentanyl in a patch form

Forms depot under the skin and releases fentanyl slowly into the system

Takes 18 hrs to form depot

Changed every 72 hrs, in some every 48 hrs-convenient

Useful for stable pain

Difficult to titrate in acute situations

?causes less constipation



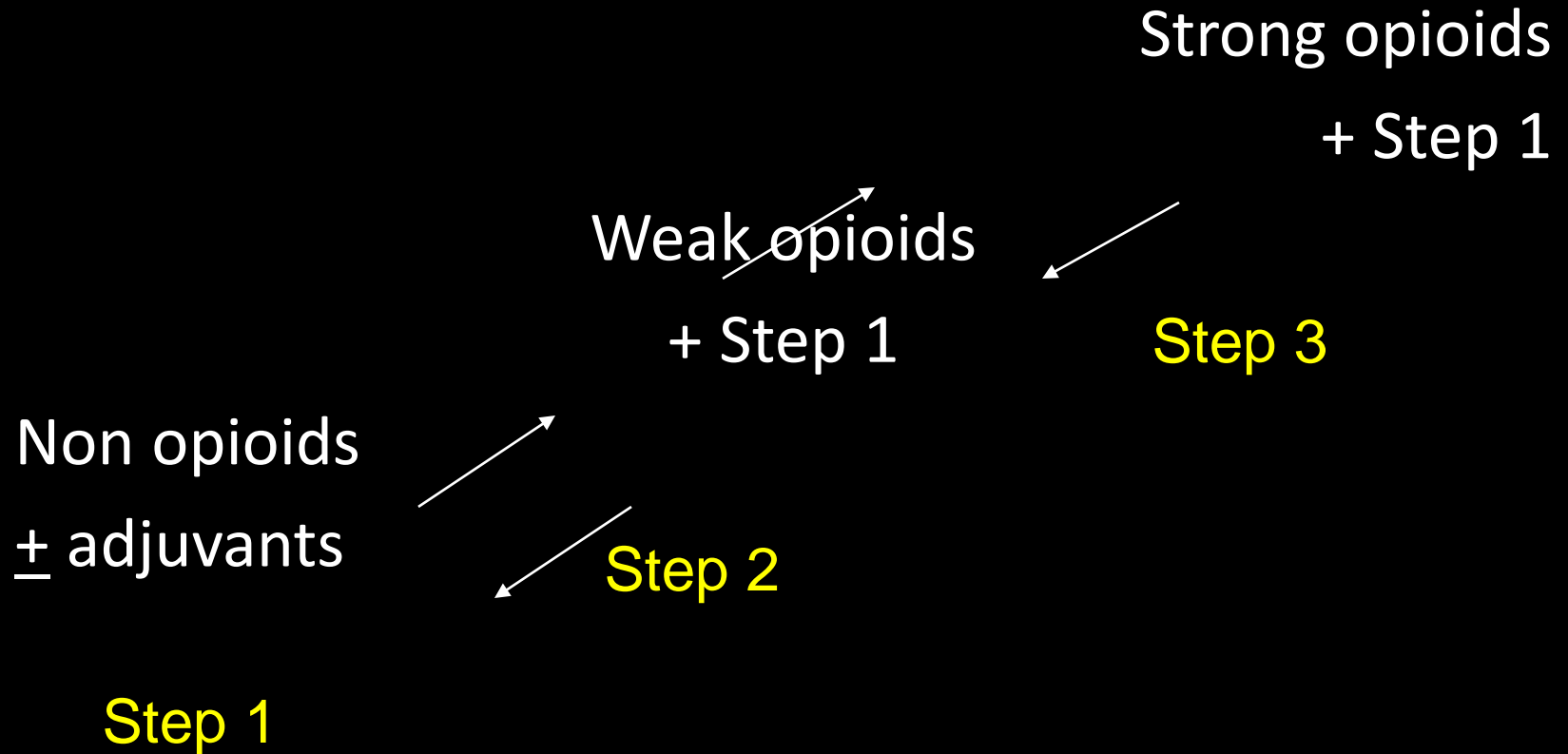
# Selecting The Route

- Oral is the preferred route
- Transdermal route useful in patients with stable pain and cannot swallow, due to oral pathology or intractable nausea / vomiting
- Rectal route used for short term if N/V is due to GI pathology. M.S. can be given rectally
- IV Route for acute pain situations



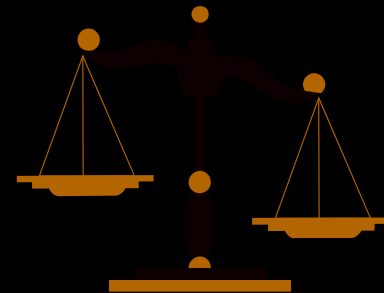
# WHO Analgesic Ladder

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# PRINCIPLES OF PHARMACOTHERAPY

- Match drug to pain syndrome
- Have low threshold to prescribe opioids
- Add adjunct medications where appropriate
- Oral route should be the route of choice
- Use IV route for acute titration
- Treat side-effects before switching opioids



# Treatment of somatic pain

- NSAIDs
- Mild opioids
- Physical modalities
- Psychotherapy
- Stronger opioids
- Interventions

# Treatment of Neuropathic pain

- Adjuvants:TCA,Gabapentin, Steroids, NSAID
- Stronger opioids
- Methadone
- IV Lidocaine/Mexilitene
- NMDA receptor antagonist-Ketamine/Dextromethorphan
- Interventions:Regional,Sympathetic blocks,
- Neuro-axial medications:opioids, clonidine,local anesthetic

# Difficult Pain Syndrome/Intractable Pain

**Intractable pain  
syndrome is defined  
as persistent pain  
despite reasonable  
efforts to treat it.**

# Adverse-effects of opioids

## Common:

- Constipation
- Nausea/vomiting
- Somnolence
- Cognitive effects
- Dysphoria
- Myoclonus
- Itching
- Urinary retention

## Rare:

- Histamine release
- Chest wall rigidity
- Decreased immunity
- Headaches
- Blurring of vision
- Respiratory depression
- Seizures





# Practice

- **Pharmacotherapy treats majority of pain(90%).**
- **Occasionally need anesthetic intervention either as an adjunct or prime reliever of pain(10%).**
- **Define pain syndrome before block.**
- **Never deny a patient of alternative pain therapy.**

# Principles of anesthetic procedures in cancer pain

- **Usually reserved for patients who fail extensive pharmacological trials**
- **Should fail to show any dose response or develop dose limiting side-effects, which are resistant to treatment**
- **Neurolytic or destructive procedures are usually done in terminal patients due to adverse effects**

# Anesthetic Procedures

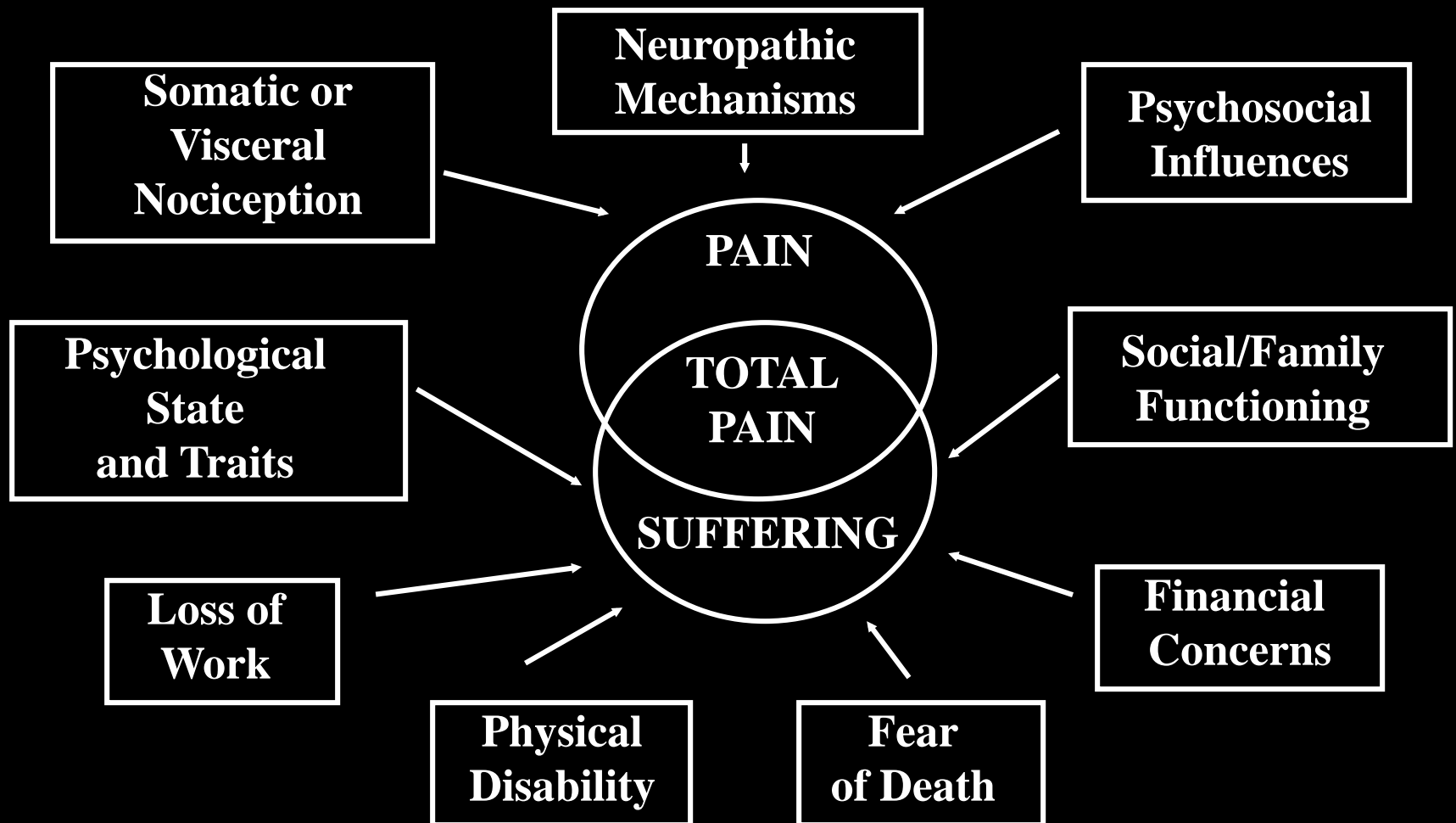
The most useful Procedures:

- 1. Celiac plexus block**
- 2. Epidural infusions**
- 3. Vertebroplasty**
- 4. Intra-thecal neurolytic blocks**
- 5. Intrathecal pumps**

# Issues in patients on chronic opioid medications

- 1. Tolerance**
- 2. Physiological dependence**
- 3. Psychological dependence**

# Multifactorial Nature of Pain



(Adapted from Portenoy, 1988)