

# PAIN MANAGEMENT IN THE ELDERLY



**AGS**

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Geriatrics Health Professionals.

Leading change. Improving care for older adults.

# OBJECTIVES

- Discuss sources of pain in the elderly patient
- Review methods for evaluating pain in the elderly patient
- Describe therapeutic regimes for the older adult

# WHY IS THIS IMPORTANT?

- Pain is common in the elderly
- Pain is under-recognized and undertreated
- JCAHO, ACGME/RRC requirements
- Lack of formal education on pain control

# WHY IS PAIN CONTROL OFTEN NOT OPTIMAL?

- Clinician unfamiliarity with assessment and treatment
- Misconceptions about opioids by patients, families, and clinicians
  - Fear of side effects
  - Concerns about addiction, regulatory reprimands, and lawsuits

# SOURCES OF PAIN IN THE ELDERLY

- Degenerative joint disease
- Spinal stenosis
- Fractures
- Pressure ulcers
- Neuropathic pain
- Urinary retention
- Post-stroke syndrome
- Improper positioning
- Fibromyalgia
- Cancer pain
- Contractures
- Postherpetic neuralgia
- Oral/dental sources
- Constipation

# CONSEQUENCES OF UNRELIEVED PAIN

- Sleep disturbance
- Functional decline
- Depression, anxiety
- Polypharmacy
- Malnutrition
- Prolonged hospital stay
- Challenging behaviors
- Increased healthcare utilization
- Lawsuits

# AGE DIFFERENCES IN PAIN: CHANGES IN PERCEPTION

- Decrease in pain receptors at the skin are a possible mechanism, but no uniform consensus among studies
- Regardless of number, **function in pain receptors is decreased** (both C and A $\delta$ )
- Conduction velocities are impaired in both myelinated and unmyelinated fibers at the CNS
- Loss of neurons at dorsal horns has been documented

# AGE DIFFERENCES IN PAIN: CHANGES IN BRAIN PERCEPTION

- Decrease in EEG amplitude and increase in latency to painful stimuli have been reported
- Painful thermal stimuli activates midline and central cortical regions in young and old, but older adults show activation of frontal and lateral sites
  - This implies wider recruitment of neurons and slower cognitive processing
- The elderly have been shown to be more reluctant than young people to report painful stimuli



# AGE DIFFERENCES IN PAIN: OTHER CHANGES

- Normal aging may be associated with impairment in descending endogenous pain inhibition networks
- This suggests that adaptation to painful stimuli is reduced in the elderly with age-related dysfunction of both opioid and hormonal systems

# AGE DIFFERENCES IN PAIN: PRESENTATION

- What may be painful to a young adult may present in the elderly as behavioral changes such as confusion, restlessness, aggression, anorexia, and fatigue
- When pain is reported, it may be referred from the site of origin in an atypical manner
  - Example: Atypical or asymptomatic MI is rare in younger pts; in elderly survivors, 30% do not report acute symptoms, and 30% have atypical presentations
- Elderly women are more likely than elderly men to present with atypical pain

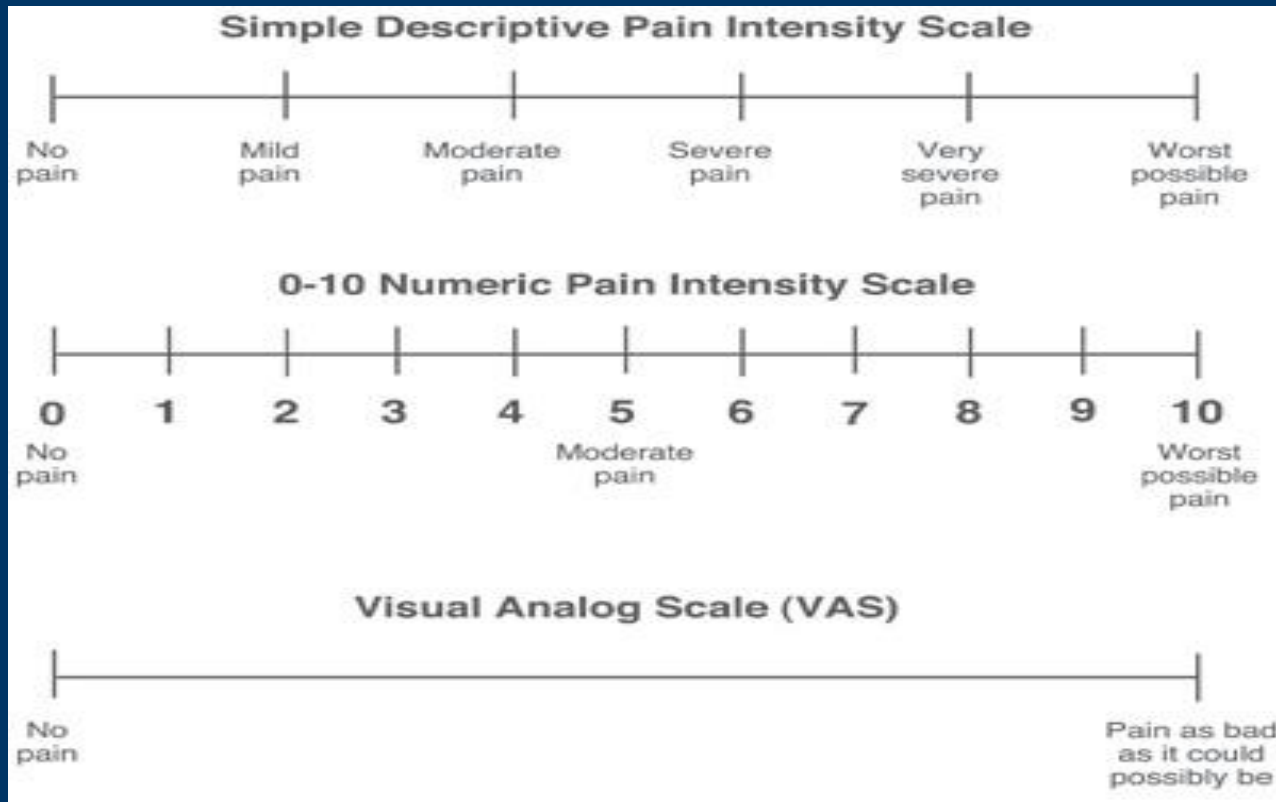
# PAIN IN THE SETTING OF COGNITIVE IMPAIRMENT (1 of 2)

- The intensity of painful conditions and the administration of analgesic medication seem to be inversely related as dementia progresses
- Patients may have difficulty expressing the experience or inability to associate the actual experience due to neuropathological changes
- **In response to pain, cognitively impaired people might show more facial expressiveness**
  - This might be related to generalized emotional and behavioral disinhibition rather to pain per se

# PAIN IN THE SETTING OF COGNITIVE IMPAIRMENT (2 of 2)

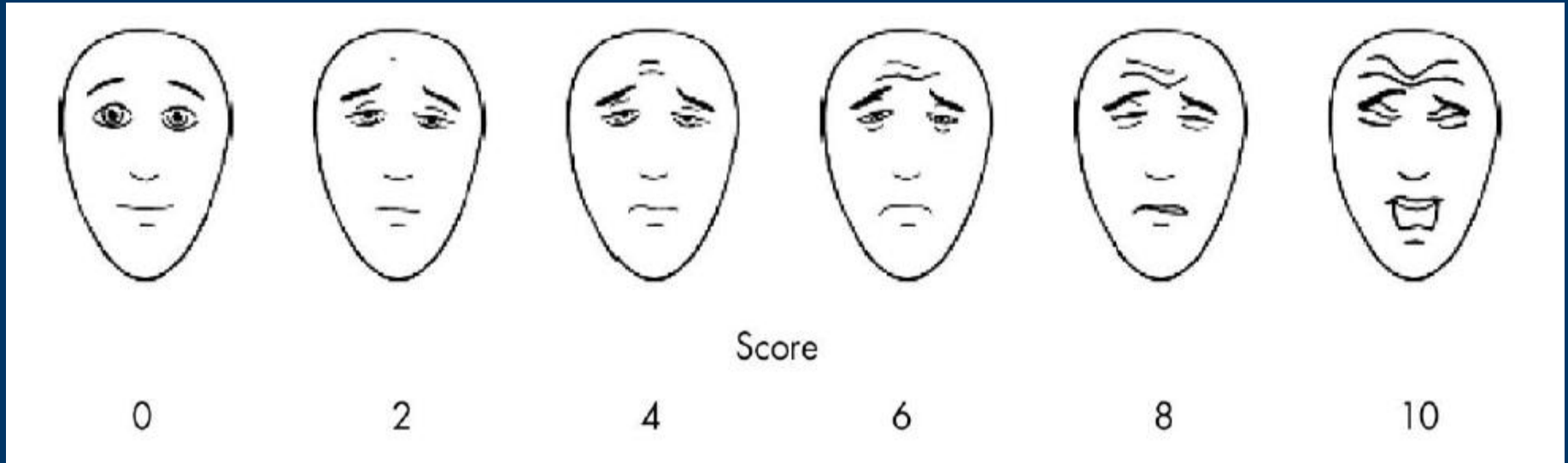
- As dementia worsens, self-report becomes impossible and it is necessary to rely on pain behaviors and facial expressions
- Abrupt changes in behavior and function might be the best indicators of pain
  - Family members and frequent caregivers can aid in obtaining this information

# ONE-DIMENSIONAL PAIN SCALES



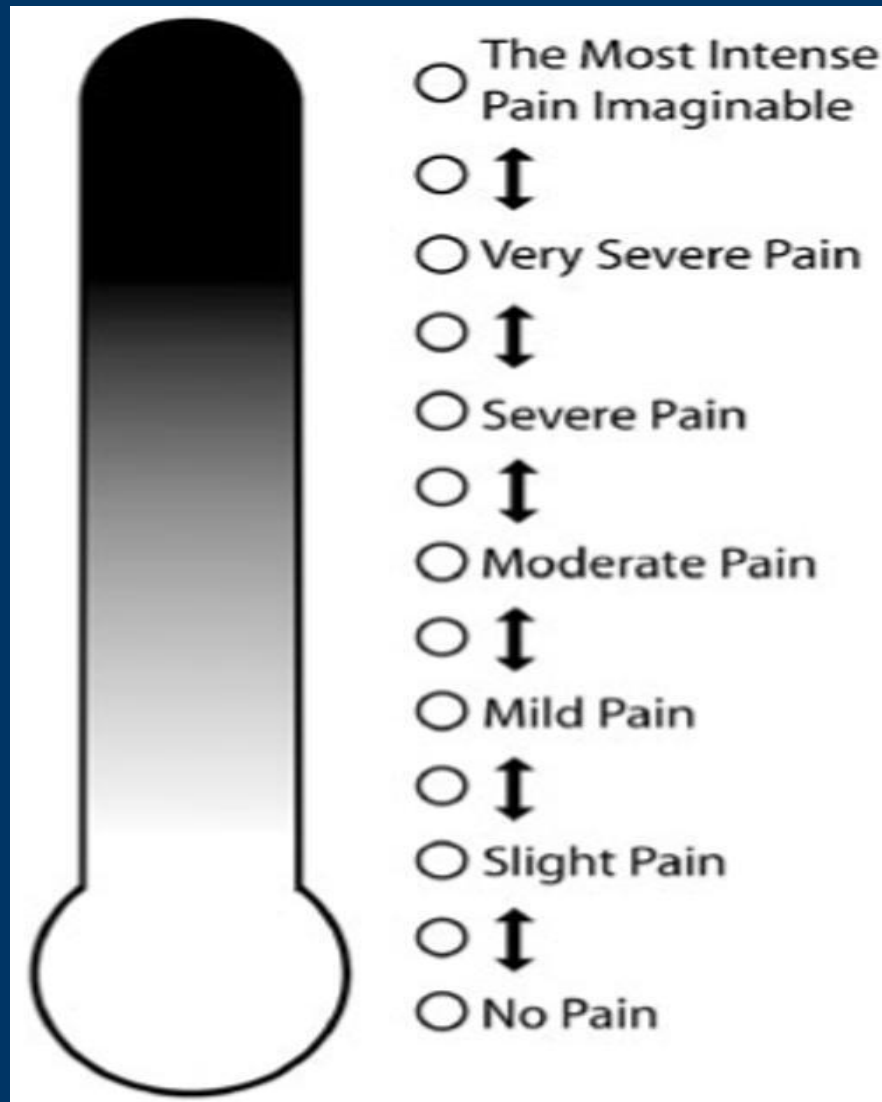
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# FACES PAIN SCALE



Hicks CL, von Baeyer CL, Spafford P, et al. The Faces Pain Scale-Revised: Toward a common metric in pediatric pain measurement. *Pain*. 2001;93:173-183.

# IOWA PAIN THERMOMETER



# NONVERBAL PAIN INDICATORS (1 of 2)

- **Facial expressions:** grimacing
  - **Less obvious:** slight frown, rapid blinking, sad/frightened, any distortion
- **Vocalizations:** crying, moaning, groaning
  - **Less obvious:** grunting, chanting, calling out, noisy breathing, asking for help
- **Body movements:** guarding
  - **Less obvious:** rigid, tense posture, fidgeting, pacing, rocking, limping, resistance to moving



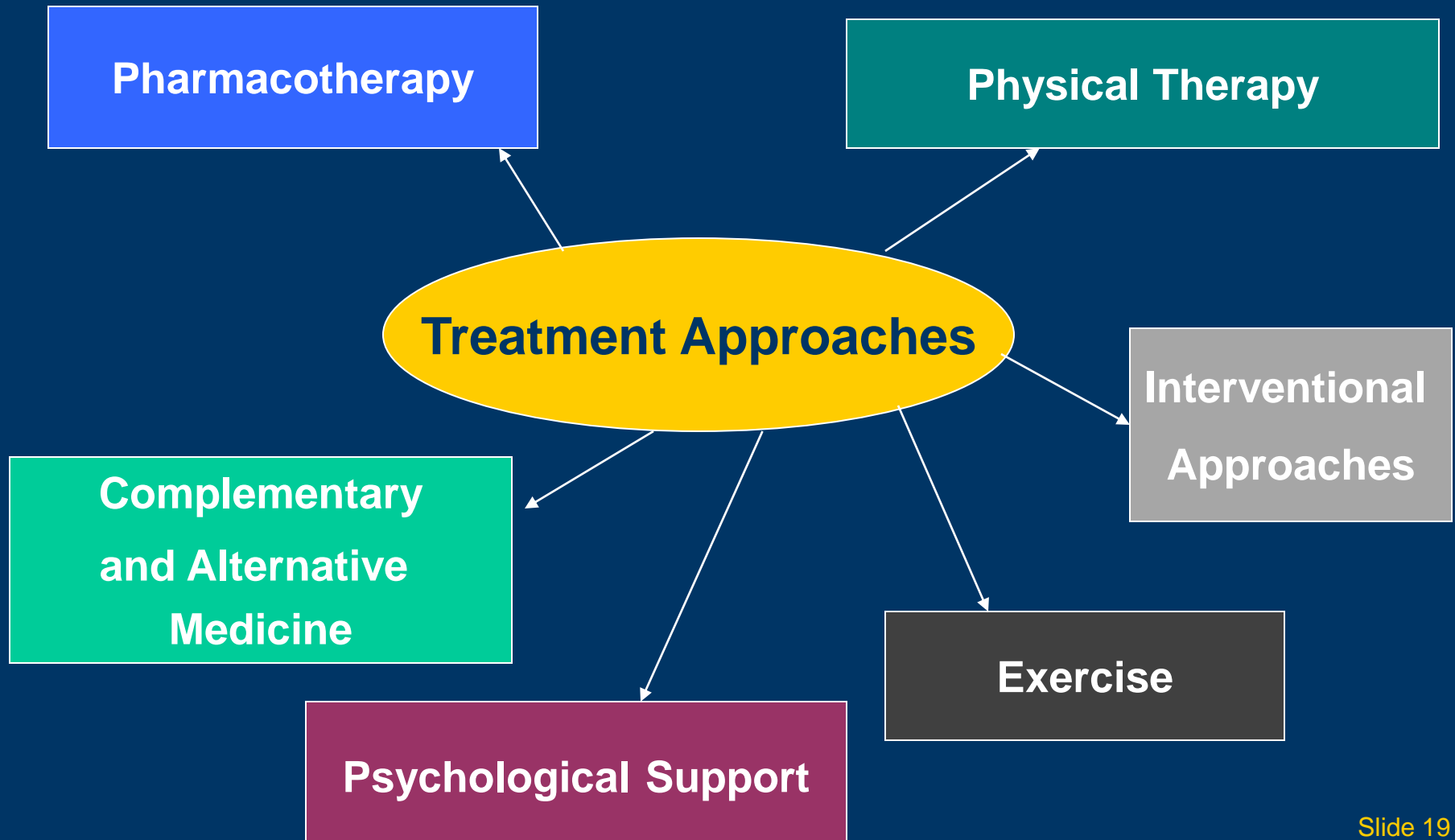
# NONVERBAL PAIN INDICATORS (2 of 2)

- Changes in interpersonal interactions
  - Combative, disruptive, resisting care, decreased social interactions, withdrawn
- Changes in mental status
  - Confusion, irritability, agitation, crying
- Changes in usual activity
  - Refusing food/appetite change, increased wandering, change in sleep habits

# ASSESSING PAIN: NONVERBAL, MODERATE TO SEVERE IMPAIRMENT (AGS PANEL 2002)

- Presence of nonverbal pain behaviors?
  - Assess at rest and with movement
- Timely, thorough physical exam
- Ensure basic comfort needs are being met (eg, hunger, toileting, loneliness, fear)
- Rule out other causative pathologies (eg, urinary retention, constipation, infection)
- Consider empiric analgesic trial

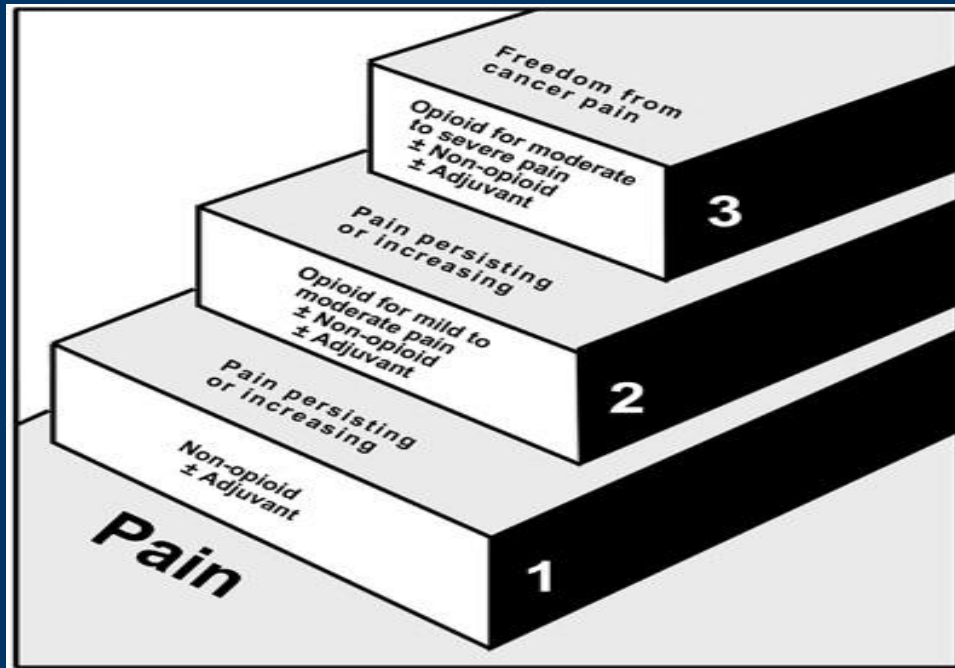
# MULTIMODAL APPROACH TO PAIN MANAGEMENT



# MEDICATION SELECTION

- Good pain history
- Target to the type of pain
  - Neuropathic, nociceptive
- Consider non-pharmacologic or non-systemic therapies alone or as adjuvant therapy
- Use the WHO 3-step ladder

# WHO 3-STEP LADDER



World Health Organization. Technical Report Series No. 804, Figure 2. Geneva: World Health Organization; 1990.

# ADJUVANTS

- Topical preparations
  - Lidocaine patch, capsaicin
- Acetaminophen
- NSAIDs
  - Celecoxib, steroids
- Anticonvulsants
- Antidepressants
- Non-pharmacologic (TENS, PT/OT)

# STEP 1 (MILD PAIN): NON-OPIOIDS

- Acetaminophen
- NSAIDs
- Cox-2 inhibitors
- Non-systemic therapies
- Non-medication modalities
- ± Other adjuvants

## STEP 2 (MODERATE PAIN): MILD OPIOIDS, OPIOID-LIKE

- Codeine (eg, Tylenol No. 3 with codeine)
- Hydrocodone (eg, Vicodin)
- Oxycodone (eg, Percocet)
- Tramadol (eg, Ultram)
- ± Adjuvants



## STEP 3 (SEVERE PAIN): STRONG OPIOIDS

- Morphine
- Oxycodone
- Hydromorphone (Dilaudid)
- Fentanyl
- Oxymorphone
- Methadone
- ± Adjuvants

# TRANSDERMAL FENTANYL

- Duration 24–72 hours
- 12–24 hours to reach full analgesic effect
- Not recommended as first-line treatment in opiate-naive patients
- Lipophilic
- Simple conversion rule:
  - 1 mg PO morphine = 0.5 mcg fentanyl  
(60 mg morphine roughly = 25-mcg patch)

# OTHER FENTANYL

- Intravenous
  - Equivalent to patch dose  
(eg, Duragesic 100 mcg / 72 = 100 mcg/hr IV)
- Transmucosal
  - Actiq
  - Fentora
- Iontophoretic fentanyl patch
  - Ionsys

## METHADONE (1 of 2)

- A complicated drug—should be used only by those with experience!
- Mu, kappa, delta agonist
- Inhibits reuptake of serotonin and norepinephrine
- NMDA antagonist (neuropathic pain)
- Significant inter-individual variability
- Drug interactions (Coumadin-like)

## METHADONE (2 of 2)

- Initial rapid tissue distribution
- Slow elimination phase
- Long and variable half-life (13–58 hours)
- Dose interval is variable (q6h or q8h)
- Dose usually adjusted every 4–7 days
- Minimally impacted by renal disease
- Inexpensive; less street value than other opioids

# DRUGS TO AVOID IN THE ELDERLY

- Meperidine
  - Demerol
- Mixed agonist-antagonists
  - eg, Pentazocine (Talwin)

Propoxyphene

- Darvon, Darvocet

# OPIOID PHARMACOLOGY

- Block the release of neurotransmitters in the dorsal horn of spinal cord
- Mu, delta, kappa expressed differently, depending on opioid medication
- Conjugated in liver
- Excreted via kidney (90%–95%)
- Exception: methadone is excreted fecally

# OPIOID USE IN RENAL FAILURE

- Avoid meperidine, codeine, dextropropoxyphene, morphine
- Use with caution: oxycodone, hydromorphone
- **Safest: fentanyl, methadone**
- Opioid dosing by creatinine clearance:
  - >50 mL/min      Normal dose
  - 10–50 mL/min    75% of normal dose
  - <10 mL/min      50% of normal dose



# CLEARANCE CONCERNS

- Dehydration, renal failure, severe hepatic failure:
  - ↓ dosing interval (extend time)
  - or
  - ↓ dosage size
- With oliguria or anuria:
  - Stop around-the-clock dosing of opioids
  - Use **only** PRN

# OPIOID ADVERSE EFFECTS

## Common

- Constipation
- Dry mouth
- Nausea/vomiting
- Sedation
- Sweats

## Uncommon

- Bad dreams/hallucinations
- Dysphoria/delirium
- Myoclonus/seizures
- Pruritus/urticaria
- Respiratory depression
- Urinary retention
- Hypogonadism
- SIADH

# GI SIDE EFFECTS OF OPIOIDS

- Constipation

- Never resolves
- Prevent with scheduled softeners **plus** stimulants
- Avoid bulking agents (eg, Metamucil)

- Nausea and vomiting

- Encourage patients to eat frequent, small meals
- Treat with:
  - Pro-motility agents (metoclopramide)
  - Serotonergic blocking agents (ondansetron)
  - Dopaminergic blocking agents (haloperidol, metoclopramide, prochlorperazine)

# SEDATION AND DELIRIUM WITH OPIOIDS

- Consider trying one of the following:
  - If pain control is adequate, decrease dose by 25%
  - Rotate to a different opioid preparation
  - Use small dose of a psychostimulant (2.5–5 mg methylphenidate or dextroamphetamine) for excessive somnolence
- Use nonsedating antipsychotics for delirium (haloperidol, risperidone)

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