



Management of Pain in Elderly

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Disclosures

- **Nothing to disclose**

Objectives

- **Become familiar with the numerous hurdles that need to be overcome when treating the elderly**
- **Understand how changes in physiology affect our perception of pain as we age**
- **Discuss specific diagnoses which are common in elderly patients and how they are treated**
- **Review recommendations for pharmacological and nonpharmacological management of pain in the elderly**
- **Chronic opioid management with summary of the experts consensus as well as WHO recommendations**



Definition of Pain

- International Association for the Study of Pain
 - An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.
- Sensory, affective, and autonomic components

Types of Pain

- **Nociceptive**
 - **Somatic**
 - **Arises from injury to body tissues**
 - **Well localized but variable in description and experience**
 - **Visceral**
 - **Arises from the viscera mediated by stretch receptors**
 - **Poorly localized, deep, dull and cramping**

Types of Pain

- **Nociceptive**
 - **Musculoskeletal, inflammatory**
 - **Inflammatory arthropathies, postoperative pain, tissue injury, infection**
 - **Mechanical/compressive**
 - **Low back pain, neck pain, visceral pain from expanding tumors**

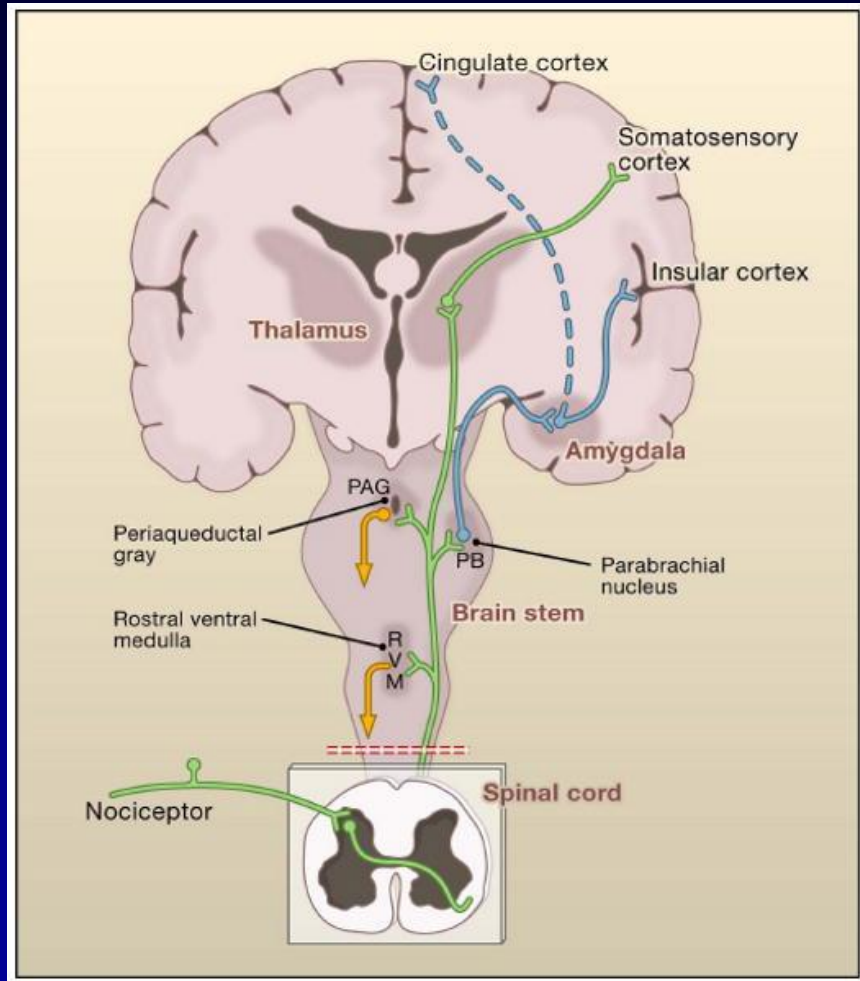
Types of Pain

- **Neuropathic**
 - **Arises from abnormal neural activity secondary to disease, injury, or dysfunction of the nervous system**
 - **Commonly persists without ongoing disease**

Neuropathic Pain

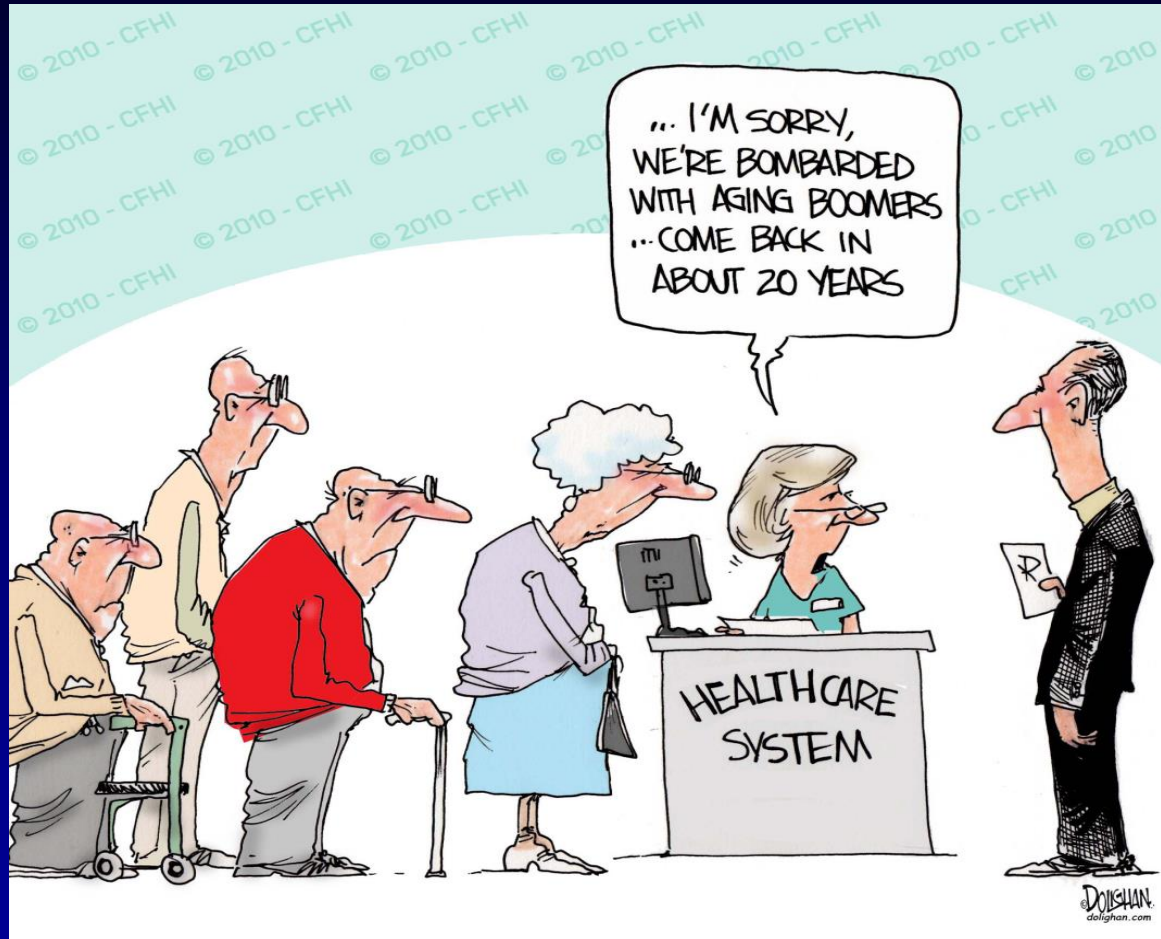
- **Sympathetically mediated pain**
 - **Arises from a peripheral nerve lesion and associated with autonomic changes**
- **Peripheral neuropathic pain**
 - **Due to damage to a peripheral nerve without autonomic change**
- **Central pain**
 - **Arises from abnormal central nervous system activity**

Pain Pathways



- **First Order Neuron**
 - Convey sensation from the periphery to the spinal cord
- **Second Order Neuron**
 - Convey information to the thalamus and reticular formation
- **Third Order Neuron**
 - Convey information to the cortex

The Elderly Population



The Elderly Population

- Usually defined as age 65 or more.
- Fastest growing population in the world
- In 2008 - 506 million people over age 65
- By 2040, the elderly population is estimated to exceed 1.3 billion
- *US population age 65 and older were 38.9 million in 2008, out of those 5.6 million were over age 85, and still growing.*

“Kaye, et al the Ochner Journal 10:179-187, 2010”
Census.Gov

Figure 7.

Percent Distribution of the U.S. Population by Age Group: 2010, 2030, and 2050



Source: U.S. Census Bureau, 2012 Population Estimates and 2012 National Projections.

Barriers to effective management

- **Challenges to proper assessment of pain**
- **Underreporting by patients**
- **Atypical manifestation of pain in elderly**
- **Pharmacokinetics and pharmacodynamics changes of aging**
- **Misconceptions about opioid addiction and tolerance**

The Elderly Pain Assessment

- **Many elderly patients who suffer from chronic pain go untreated because of lack of proper assessment.**
 - **One study showed that 66% of nursing home patients had chronic pain, but it was only detected by the treating physician in about half of them (34%)**

Special Concerns while assessing pain

- **Many elderly underreport their pain simply because they believe their pain is a natural part of aging, and will not be as concerned**
- **This misconception can lead to inadequate detection and management of pain.**
- **As a consequence, pain will become more severe and further associated with**
 - **Impairment in ADL's**
 - **Depression**
 - **Strain on the healthcare economy**

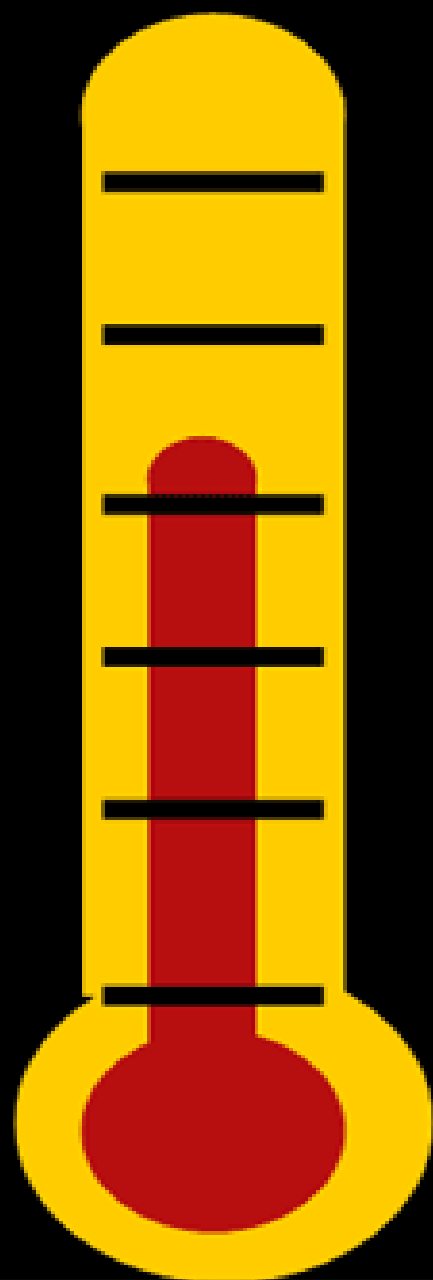
How to Assess?!

- **Careful detailed history and physical examination by far are the most sensitive tool to assess pain.**
- **Identifying the underlying etiology of pain is the key for success.**
- **The use of different scales to assess pain intensity.**
- **Screen for depression and screen for cognitive impairment.**

Cavalieri, JAOA volume 107 June 2007
Alan D Kaye, et al
The Ochsner Journal 10:179-187, 2010

How to Assess?!

- Review of patient's ADLs, both personal and instrumental.
- Careful review of medication history.
- Once diagnosis and treatment plan established, assess effectiveness of therapy by using pain log or diary.



Pain as bad as it could be

Extreme pain

Severe pain

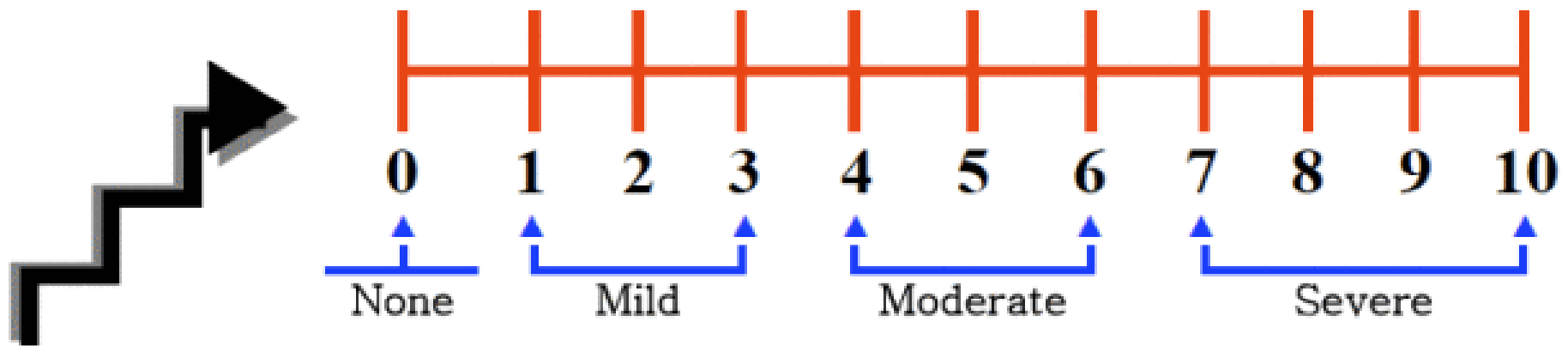
Moderate pain

Mild pain

Slight pain

No pain

Numerical pain scale

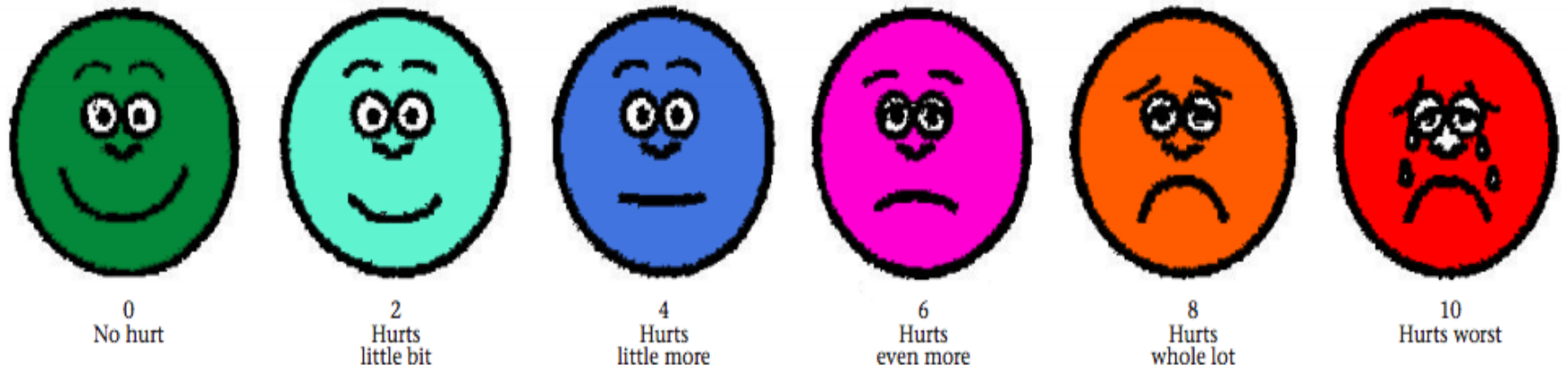


Universal Pain Assessment Tool

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use the 0 to 10 scale for patient self-assessment. Use the faces or behavioral observations to interpret expressed pain when patient cannot communicate his/her pain intensity.



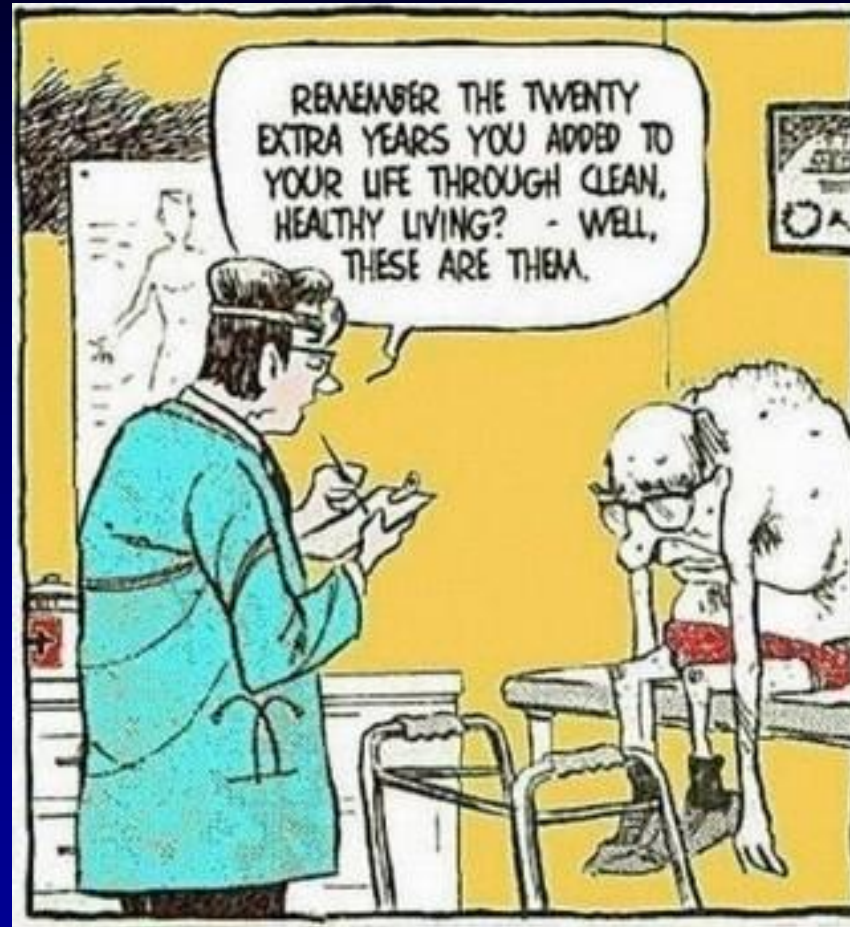
Wong-Baker Facial Grimace Scale



Activity Tolerance Scale – English

No Pain	Can Be Ignored	Interferes With Tasks	Interferes With Concentration	Interferes With Basic Needs	Bedrest Required
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What happens as we age?



What happens as we age?

- Numerous physiological and psychological changes take place which can alter our perception and treatment of pain
- Pharmacokinetics and pharmacodynamics changes
- Reduction in hepatic and renal functions
- Presence of other medical problem and polypharmacy increase chance of drug drug interaction

Aging and pharmacokinetics

- Increased fat mass, decreased muscle mass, decreased body water
- Lipophilic meds (e.g. lidocaine and fentanyl) have increased durations of action
- Water soluble drugs will not be distributed evenly, which may result in toxicity

Aging and pharmacokinetics

- **Decreased serum albumin → increased drug availability of highly protein-bound analgesics (e.g. NSAIDS and anti-epileptic drugs)**

Aging and pharmacokinetics

- Decreased level and function of cytochrome P450 (phase I reaction, oxidation, reduction and hydroxylation)
 - SSRI's and SNRI's further inhibit the cytochrome P450 system and can lead to toxic buildups of other medications

CNS changes

- **Increased incidence of dementia, strokes, TIA's, and other diseases**
- **Decreased ability to regenerate damaged neurons**

"Pain Management in the Elderly Population: A Review"
Alan D Kaye, MD, PhD, Amir Baluch, MD, Jared T Scptt, MD
The Ochner Journal 10:179-187, 2010

CNS changes

- **Cognitive Decline and Dementia**
 - Can lead to accidents, injuries, and other forms of self-harm
 - Makes compliance with treatment regimens very difficult

Renal changes

- **Starting at age 40, GFR decreases by ~1% per year**
- **Decreased renal blood flow**
- **Decreased free water absorption**
- **Accelerated HTN, CHF, and atherosclerosis**

Hepatic changes

- **-33% decreased blood flow over age 65**
- **Decreased demethylation, which can prolong drug clearance and cause medication intoxication**
- **LFT's are often normal**

Hepatic changes

- Decreased level and function of cytochrome P450 (phase I reaction, oxidation, reduction and hydroxylation) however there is relative preservation of phase II reaction.
- This will results in increase bioavailability of drugs metabolized by liver and increase chance of toxicity.
- SSRI's and SNRI's further inhibit the cytochrome P450 system and can lead to toxic buildups of other medications

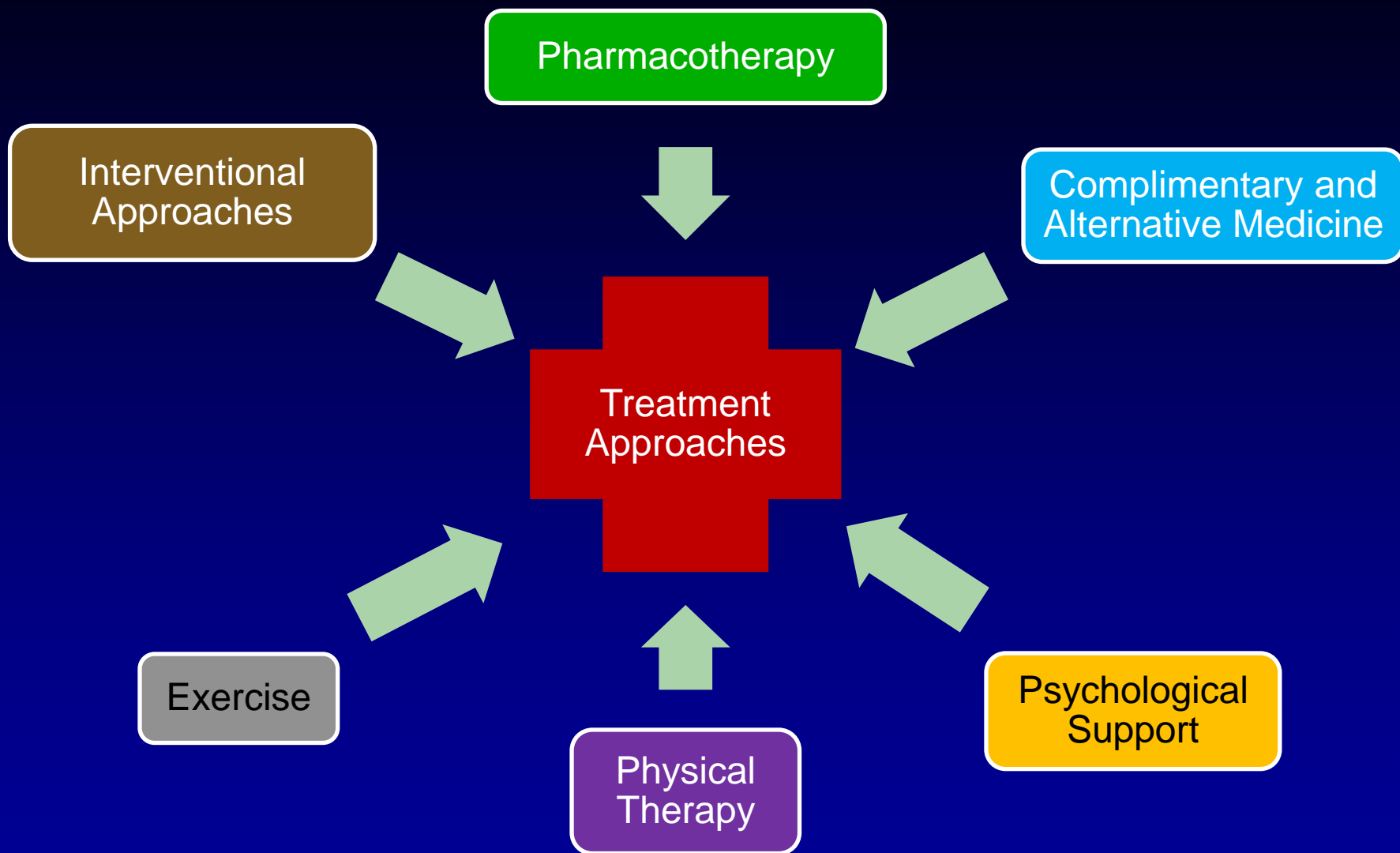
Hepatic changes

In elderly patients with chronic hepatic disease, dosage reduction, or prolongation of dosing intervals are essential to prevent drug accumulation.

“Pain practice, volume 8, issue 4, 2008 287-313

Management of Pain in Elderly

- **Pharmacotherapy (most commonly used)**
- Physical rehabilitation
- **Psychological support**
- **Interventional**

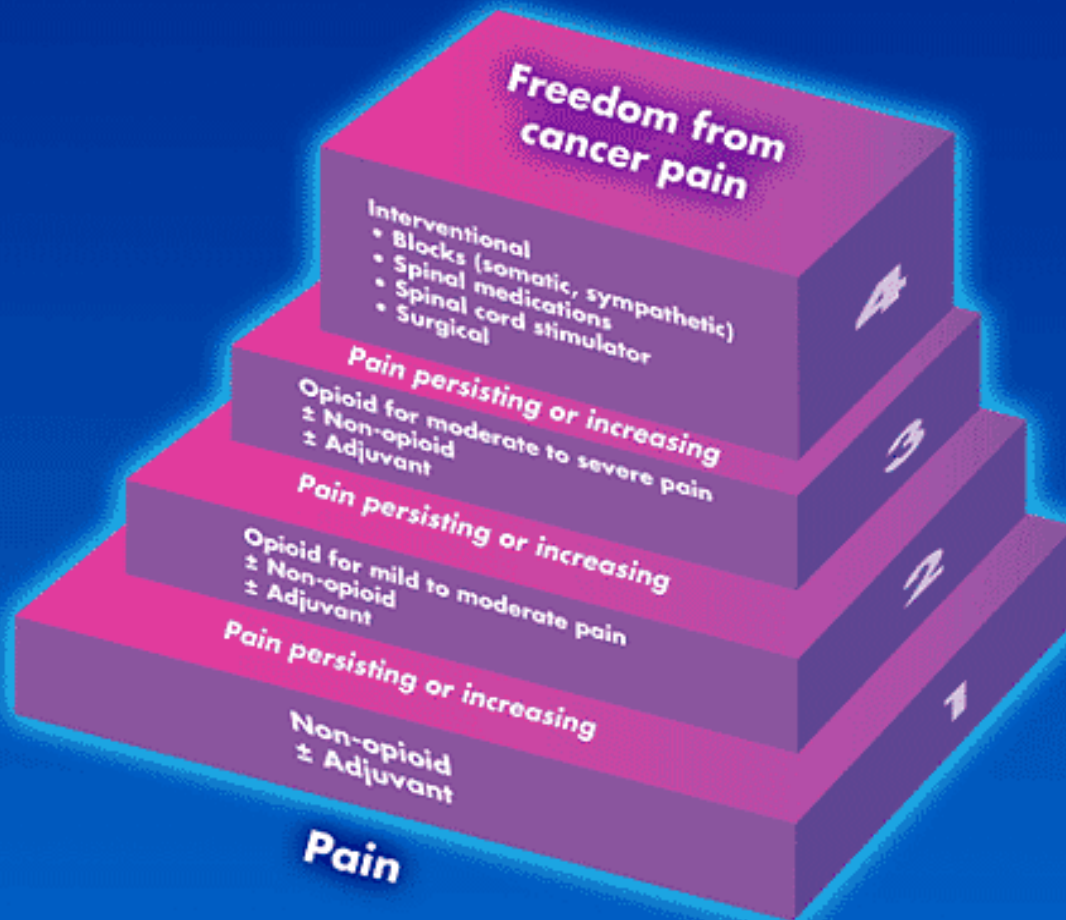


WHO LADDER

Medscape®

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Treatment of Cancer Pain



American Geriatric Society Recommendations

- **Nonopioid**
- **Opioids**
- **Adjuvant Analgesic Drugs**
- **Other Drugs**

Pain Management in the Elderly Population:
Kaye, et al, The Ochsner Journal 10:179-187, 2010

Nonopioid

2009 American Geriatric Society Recommendations

1- Acetaminophen:

- It should be considered as first line and ongoing therapy as it is safe and effective
- Maximum daily dose should not exceed 4 gram daily including all other hidden sources.
- There are contraindications

Pain Management in the Elderly Population:
Kaye, et al, The Ochsner Journal 10:179-187, 2010

Nonopioid

2009 American Geriatric Society Recommendations

2- NSAIDs or COX-2 selective inhibitors

- May be considered rarely with extreme caution in highly selected individuals
- PPI or misoprostol should be started
- Patient on BASA should not use ibuprofen
- Routinely assess for GI or renal toxicity, HTN, heart failure, and drug interactions

Opioid

2009 American Geriatric Society Recommendations

- Consider for moderate to severe pain, pain-related functional impairment, or decreased quality of life
- Use ER formula for patient with continuous pain
- Monitor for opioid-associated adverse effects

Opioid

2009 American Geriatric Society Recommendations

- When prescribing long-acting opioids, treat breakthrough pain with short-acting opioids
- Reassess these patients often for (efficacy, adverse effects, safe and responsible use, function

Adjuvant Analgesic Drugs

2009 American Geriatric Society Recommendations

- Recommended for neuropathic pain, fibromyalgia, and other types of refractory persistent pain
- Avoid TCAs due to adverse effects (anticholinergic effects, cognitive impairment)
- Begin at lowest possible dose, and increase slowly

Other Drugs

2009 American Geriatric Society Recommendations

- Long-term systemic corticosteroids: reserved for inflammatory disorders or metastatic bone pain (NOT including osteoarthritis)
- Topical lidocaine: for localized neuropathic pain
- Topical NSAID's: for localized nonneuropathic persistent pain
- Topical capsaicin or menthol: regional pain syndromes



Polypharmacy

- Elderly patients are hospitalized due to adverse drug reactions four times more than younger patients
 - Prescribing cascades
 - Drug-drug interactions
 - Drug-disease interactions
 - Inappropriate dosing

“Pain Management in the Elderly Population: A Review”
Alan D Kaye, MD, PhD, Amir Baluch, MD, Jared T Scptt, MD
The Ochner Journal 10:179-187, 2010

Polypharmacy

Methods of prevention:

- Periodic review of current drug therapy
- Discontinue unnecessary medications
- Consider non-pharmacologic alternatives
- Consider safer alternative medications
- Use the lowest possible effective dose
- Prescribing only necessary beneficial medications

“Pain Management in the Elderly Population: A Review”

Alan D Kaye, MD, PhD, Amir Baluch, MD, Jared T Scptt, MD

The Ochner Journal 10:179-187, 2010

Expert opinion on opioid use

- **In may 2005, experts from 8 countries gathered in Sofia, Bulgaria and came up with a consensus statement that addressed the following:**
 - 1. The use of opioids in cancer pain**
 - 2. The use of opioids in noncancer-related pain**
 - 3. The use of opioids in neuropathic pain**
 - 4. The use of opioid in elderly with impaired hepatic and renal functions**
 - 5. Opioids and respiratory depression**
 - 6. Opioids and immunosuppression**
 - 7. Safety and tolerability profile of opioids**

Expert opinion on opioid use

- **Opioid Treatment for Cancer Pain**
 - All opioids have been shown to be effective, but there have been no well-designed studies specifically in elderly populations
 - Morphine has been most commonly used and most thoroughly researched
 - Transdermal fentanyl and Buprinorphine both are effective with low toxicity and good tolerability.

Expert opinion on opioid use

- **Opioid Treatment for Non-Cancer Pain**
 - Growing amount of evidence for the efficacy of opioids, but there are no elderly-specific studies
 - Doses need to be individually titrated and side effect profiles must be considered

Expert opinion on opioid use

- **Opioid Treatment for Neuropathic Pain**
 - **Becoming more widely accepted, especially with buprenorphine**
 - **Requires higher doses than nociceptive pain**
 - **Incorporation of opioids earlier on might be beneficial.**

Expert opinion on opioid use

- **Opioid Treatment in Patients with Impaired Hepatic or Renal Function**
 - Half-life of active drug and metabolites is increased
 - Doses must be reduced, longer time interval between doses, and monitor Cr clearance
 - *Buprenorphine is the exception to this rule*

Expert opinion on opioid use

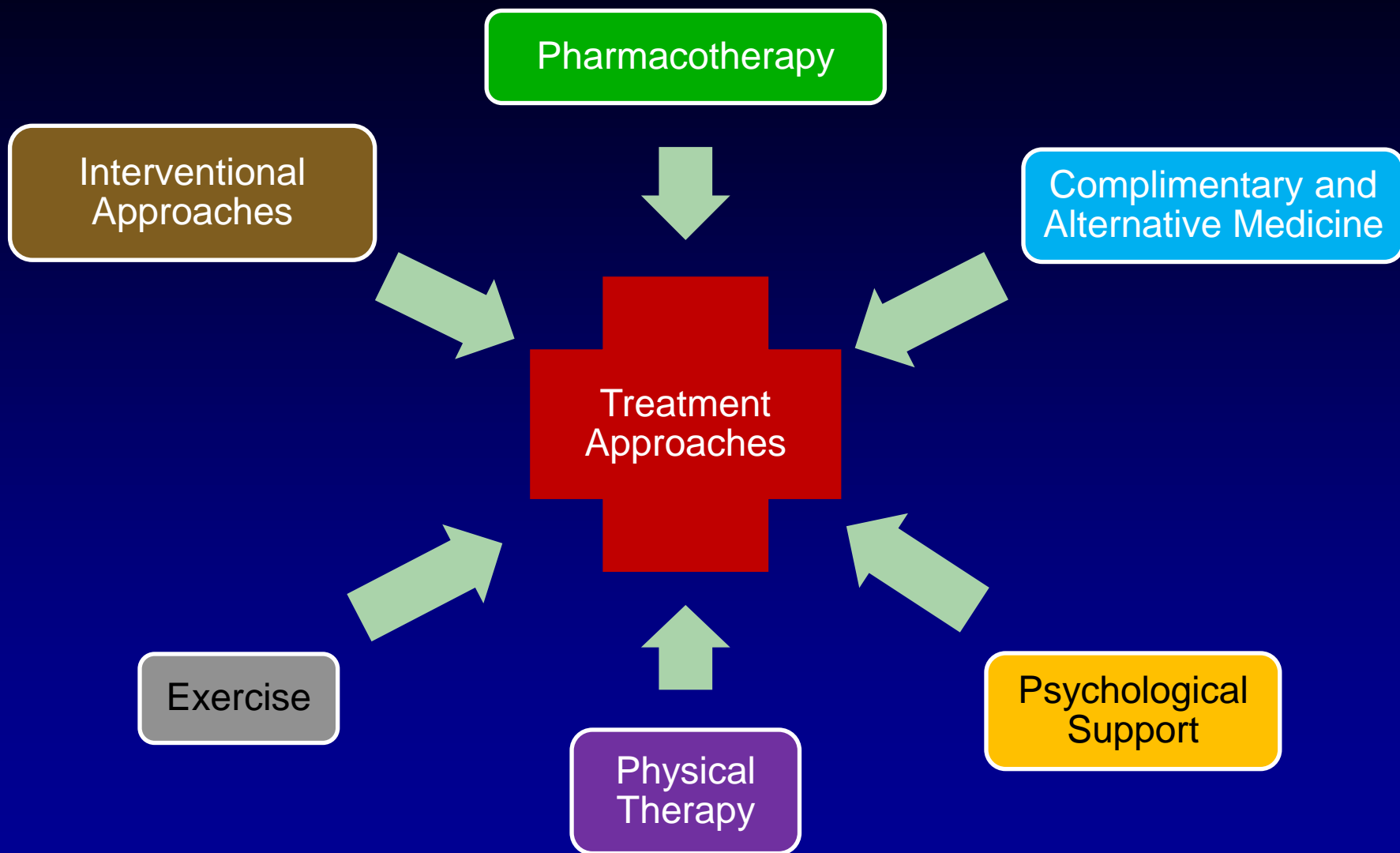
- **Opioid Treatment in Patients with Respiratory Depression**
 - Different opioids have different effects on respiratory depression, and so they require careful dosing
 - Buprenorphine is the only opioid demonstrating a ceiling for respiratory depression when used without other CNS depressants

Expert opinion on opioid use

- **Opioid Treatment in Patients with Immunosuppression**
 - There is some evidence that higher doses of opioids contribute to higher levels of immunosuppression
 - There is very little evidence, but it seems that buprenorphine is recommended while morphine and fentanyl are not

Expert opinion on opioid use

- **Safety and tolerability of opioids:**
 - **Slow dose titration helps reduce adverse effects.**
 - **Long acting formula including transdermal formulations increase patient compliance.**



Physical Rehabilitation

- **Help patient live independently and have functional life**
- **Stabilize 1ry disorder, prevent 2ry disorder, decrease pain perception, treating functional impairment and adapt to current disabilities.**

Pain Management in the Elderly Population:
Kaye, et al, The Ochsner Journal 10:179-187, 2010

Psychological Therapy

- Pain is always associated with complex sensory and emotional experience.
- Psychological modalities must be incorporated in the treatment plan
- Depression and anxiety must be addressed with psychotherapy.
- Solid support system should be established, e.g., relatives and caregivers

Intervention Modalities

- Could be diagnostic as well as therapeutic.
- Potential to decrease the need for heavy medication use and development of side effects

New Regulations and law

- **No more than 7 days of opioids can be prescribed for adults and no more than 5 days of opioids can be prescribed for minors**
 - **Opioids may be prescribed in excess of the day supply limits ONLY with specific documentation in the patient's medical record**
- **The total morphine equivalent dose (MED) for a prescription for acute pain cannot exceed an average of 30 MED per day**
 - **The MED can be exceeded if determined to be clinically necessary AND the appropriate documentation is provided in the patient's medical record**

New Regulations and law

- The above rules apply to the first opioid analgesic prescription written for the treatment of an episode of acute pain
- For the treatment of acute pain, extended-release or long-acting opioid analgesics SHALL NOT be prescribed
 - These include medications labeled as extended-release or controlled release, administered via transdermal route, or methadone

New Regulations and law

- **Opioids prescribed for cancer, palliative care, end-of-life/hospice care, medication-assisted treatment for addiction, chronic pain, or orders during an inpatient admission are not included in the new limits.**

Veterinarians are exempt from these rules, but Dentists, Physician Assistants, and Advanced Practice Registered Nurses will have to follow the new rules.

New Regulations and law

- **RALI (RX Abuse Leadership Initiative)**
- **Alliance of local, state and national organization have come together to form RALI of OH.**
- **RALI will address the challenges and needs of the state's opioid and substance misuse Epidemic**

New Regulations and law

- **RAI will support Prevention, Education, Treatment, and Recovery programs.**
- **Visit ralioh.org for more information.**

New Regulations and law

- **On 12/23/2018, Ohio physicians became subject to new rules governing prescription of opioids to address chronic pain.**
- **The new rules does not set limits for dispensing of opioids but instead set up certain safety checkpoints based on dosages.**

New Regulations and law

- **New rules does not apply to opioid prescriptions by physicians to patients in Hospice, inpatients, terminal cancer or terminal conditions.**
- **<http://med.ohio.gov/Portals/0/Laws%20%26%20Rules/Newly%20Adopted%20and%20Proposed%20Rules/4731-11-01%2C%204731-11-02%2C%204731-11-14>**

Conclusion

- **Pain in elderly is inevitable part of aging and often poorly addressed**
- **Multiple barriers for proper pain assessment in elderly.**
- **Take into consideration physiologic , pharmacokinetics and pharmacodynamics of aging**
- **Follow guide lines for proper management**
- **Opioids can be used safely in select elderly population**
- **Monitor safety , efficacy and functional outcome when using opioids**
- **Using multidisciplinary approach for pain management would improve outcome and significantly decrease potential adverse effects**

References

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Thank You

A photograph of the Cleveland Clinic Sybil & Arnold Miller Family Pavilion, a modern building with a curved glass facade and a grey stone section. The building is reflected in a large, shallow pond in the foreground, which is filled with large, smooth, dark rocks. The pond is surrounded by a green lawn and young trees. The sky is blue with white clouds. The text "Every Life deserves world class care." is overlaid in yellow on the pond.

**Every Life deserves world
class care.**