

# Multidisciplinary Management of Cancer Pain

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- ▶ Why Multidisciplinary is important
- ▶ Understanding of pain in cancer
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- ▶ Goal in cancer pain treatment
- ▶ Concept of pharmacological management
- ▶ Specific treatment for cancer itself
  - ▶ Role of radiotherapy
- ▶ Pain intervention for cancer pain
- ▶ Case based approach

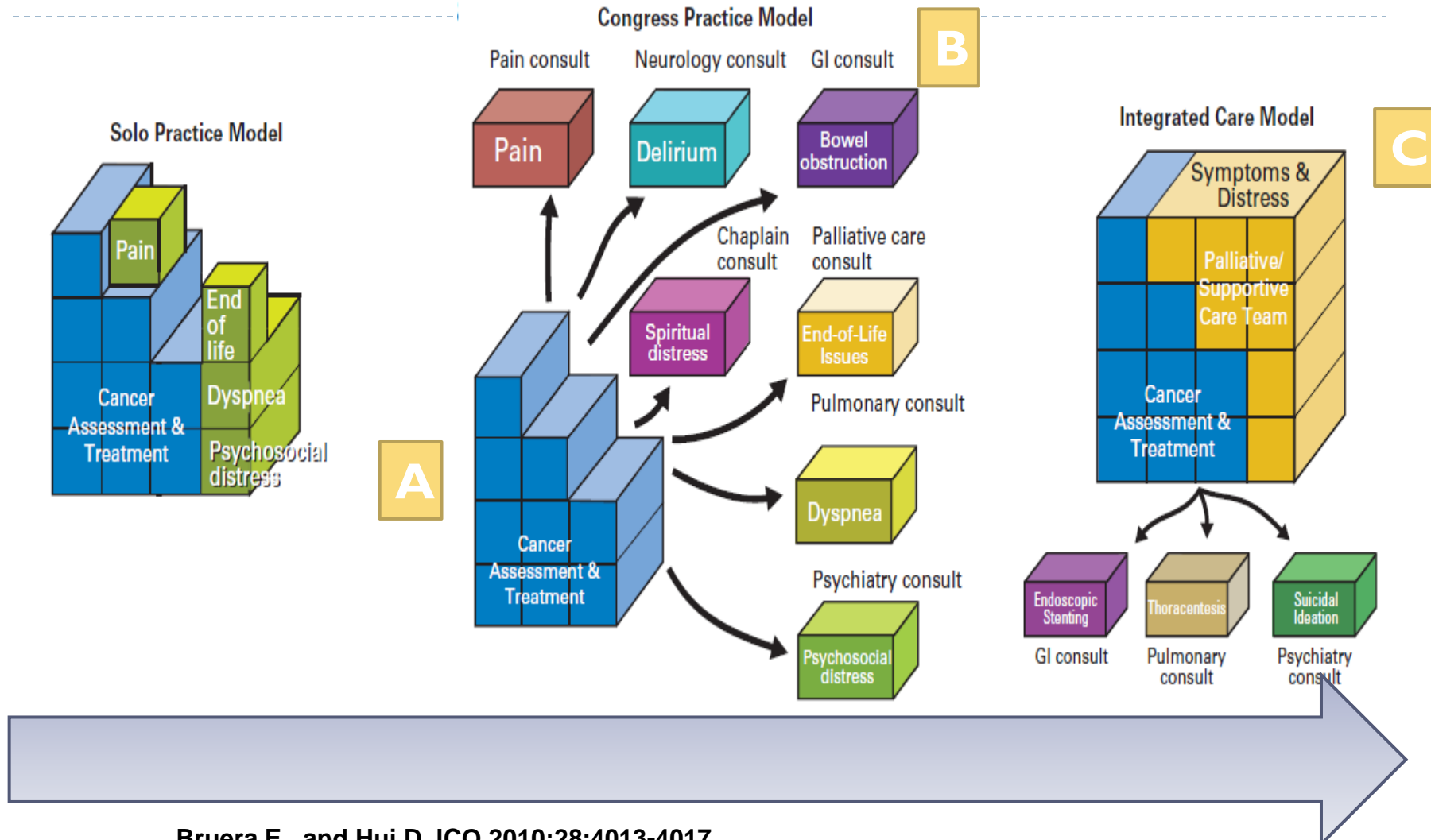


# Multidisciplinary Cancer Care

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- ▶ Patient centered approach
- ▶ Optimum coordination among health professionals, clear communication with patients
- ▶ A team approach; consider all treatment options, evidence indicates - reduce mortality, improve quality of life for the patient
- ▶ Advance, physical sufferings, psycho-social

# Conceptual Model for Integration of Palliative and Supportive Care



Bruera E , and Hui D JCO 2010;28:4013-4017  
 The University of Texas M. D.Anderson Cancer Center.

# Understanding of pain in cancer

## Definitions

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### ▶ Nociceptive pain

- ▶ Pain arising from actual or threatened damage to non-neural tissue and is due to the activation of nociceptors
- ▶ In cancer, it probably involves dynamic interactions and crosstalk between the cancer and the primary afferent nociceptor

### ▶ Neuropathic cancer pain

- ▶ Always in combination with nociceptive pain so is mixed pain
- ▶ Can be related to the cancer itself or to the acute or chronic effects of cancer treatment

### ▶ Associated cancer pain

- ▶ Related to antineoplastic treatment

# Patient Burden Due to Cancer Related Pain

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- ▶ Cancer pain has a significant negative effect on patient quality of life<sup>1-3</sup>
- ▶ Higher levels of pain are associated with poorer quality of life<sup>2</sup>
  - ▶ Decreased social activities
  - ▶ Decreased physical functioning
  - ▶ Impaired cognitive functioning
- ▶ Increased psychological distress is associated with higher levels of pain<sup>4</sup>
- ▶ More than one third of cancer patients with pain rate their pain as **moderate** or **severe**<sup>5</sup>

Increasing cancer pain may be associated with advanced disease with a limited prognosis

# Causes of Cancer-Related Pain

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- ▶ **Cancer related pain may be**
  - ▶ Related directly to the neoplasm
    - ▶ Occurs in roughly 75% of patients
  - ▶ Caused by antineoplastic treatment
    - ▶ Occurs in roughly 25% of patients with cancer

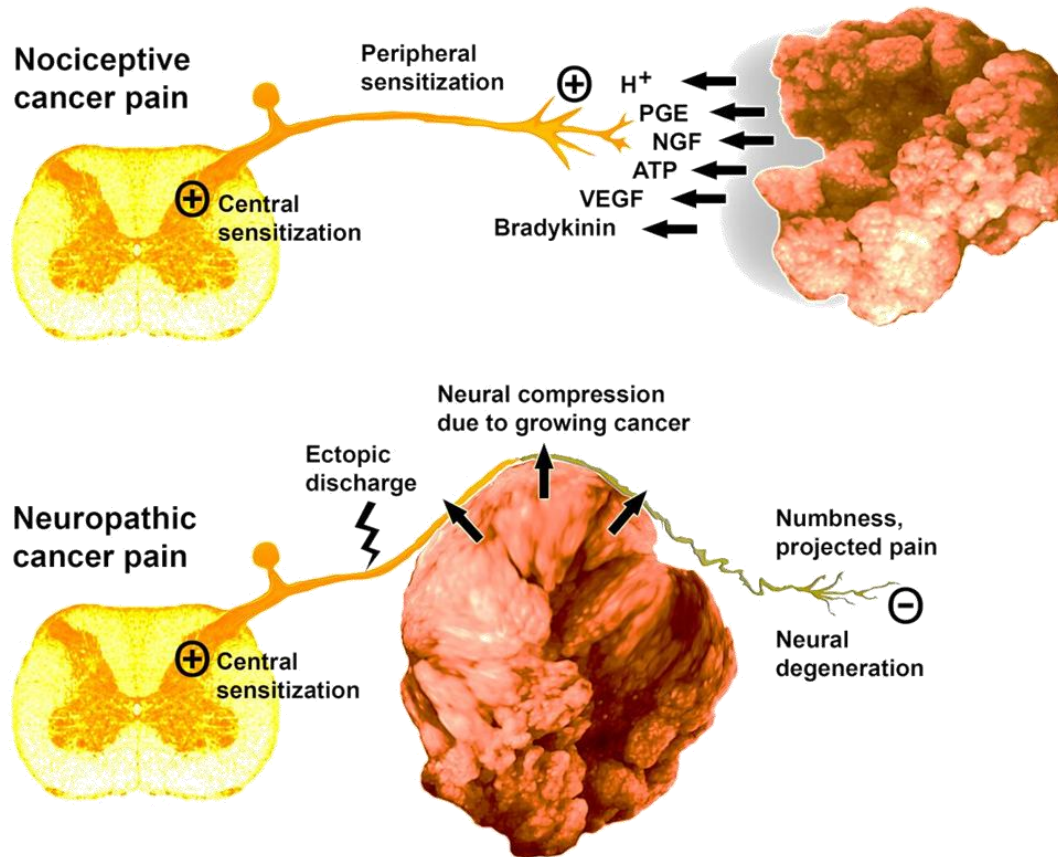


# Nociceptive Cancer Pain Syndromes

Origin of Pain	Pain Syndromes
Visceral	<ul style="list-style-type: none"><li>• Hepatic distension syndrome</li><li>• Midline retroperitoneal syndrome</li><li>• Chronic intestinal obstruction</li><li>• Peritoneal carcinomatosis</li><li>• Malignant perineal pain</li><li>• Adrenal pain syndrome</li><li>• Ureteric obstruction</li></ul>
Somatic	<ul style="list-style-type: none"><li>• Tumor-related bone pain</li><li>• Tumor-related soft tissue pain</li><li>• Paraneoplastic pain syndromes (e.g., muscle cramps)</li></ul>



# Mixed Nociceptive and Neuropathic Pain in Cancer



## **Sensitization**

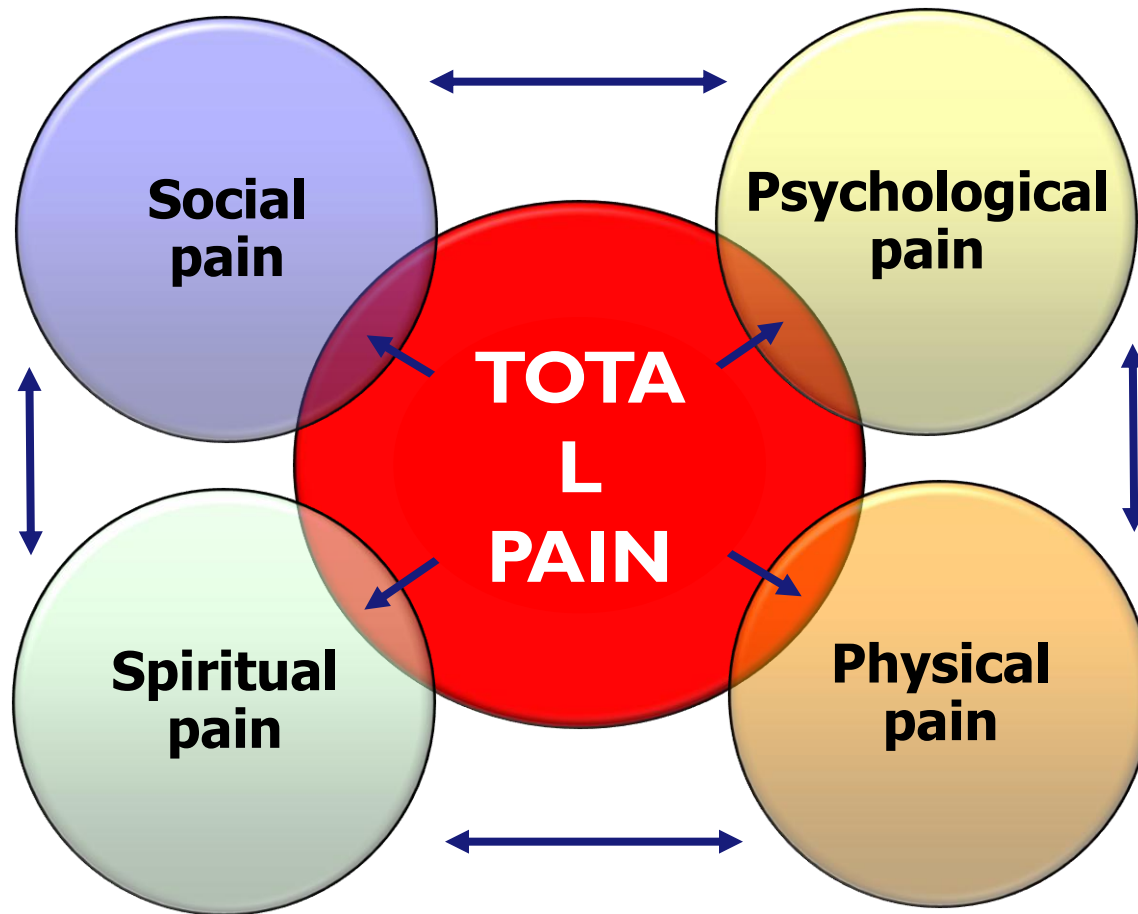
Peripheral and central sensitization

## **Axonal damage**

Degeneration and regeneration

# The “Total Pain” Concept

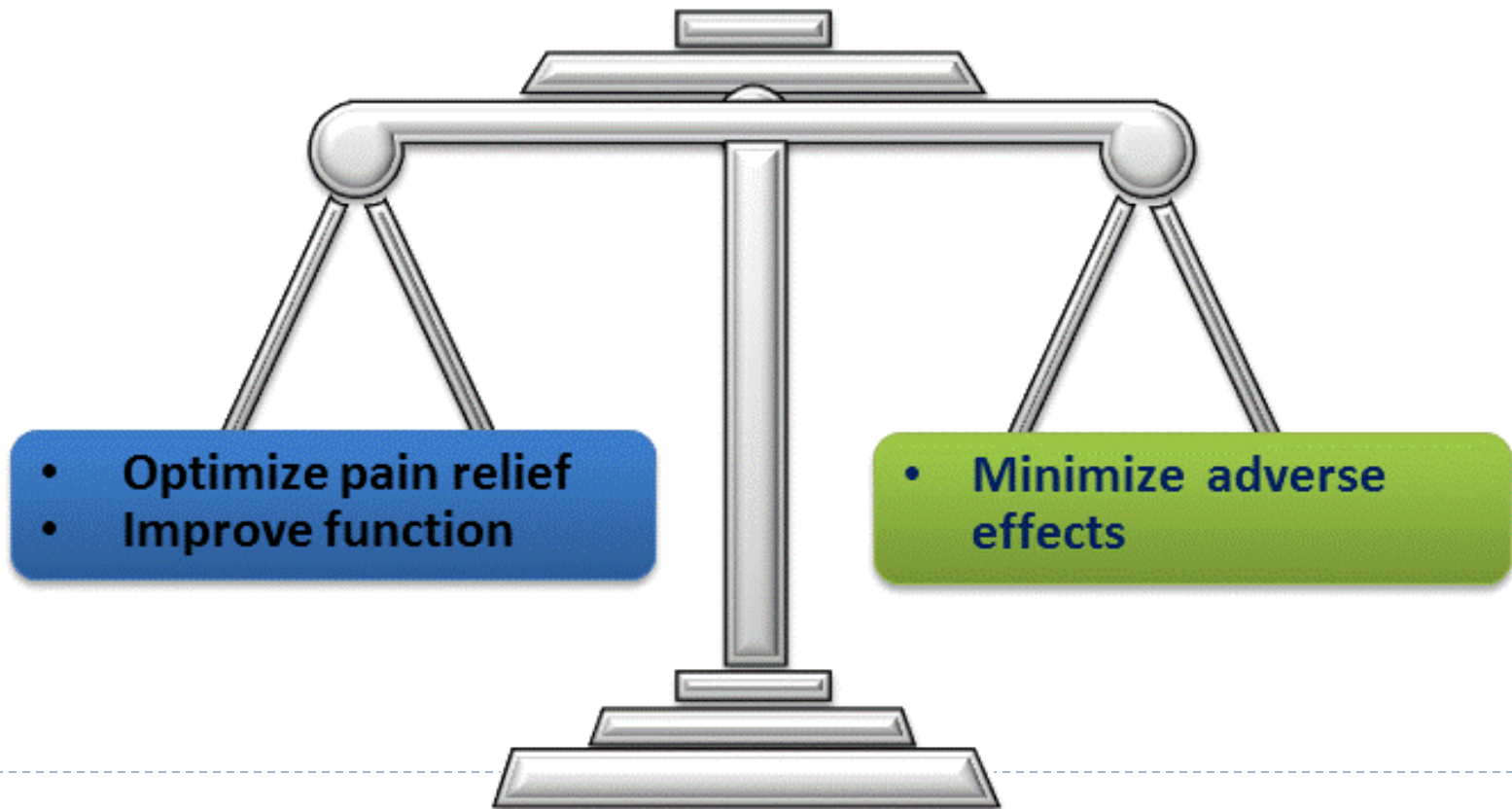
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# Overall Goals in Pain Management

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- ▶ Involve the patient in the decision-making process
- ▶ Agree on realistic treatment goals **before starting** a treatment plan



# Goals in Cancer Pain Management

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- ▶ Goals are improved **comfort, function, and safety**
- ▶ Increase quality of life
  - ▶ Decrease pain
  - ▶ Increase physical functioning
  - ▶ Increase social functioning
  - ▶ Restore normal sleep patterns
- ▶ Comprehensive pain management is needed
- ▶ Prevention of expected analgesic side effects is important
- ▶ Optimize patient and family education and physical and cognitive integrative interventions

# Management of Cancer Pain

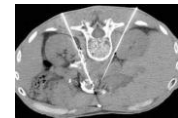
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**Pharmacological**



**Non-pharmacological**



**Invasive treatments**

Specific oncologic measures; radiotherapy, chemotherapy, targeted therapy etc

**Cancer pain can be managed through a variety of approaches**

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# Non-pharmacological Therapy for Cancer-related Pain

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**Psychotherapy**



**Physiotherapy**



**Social services/support**

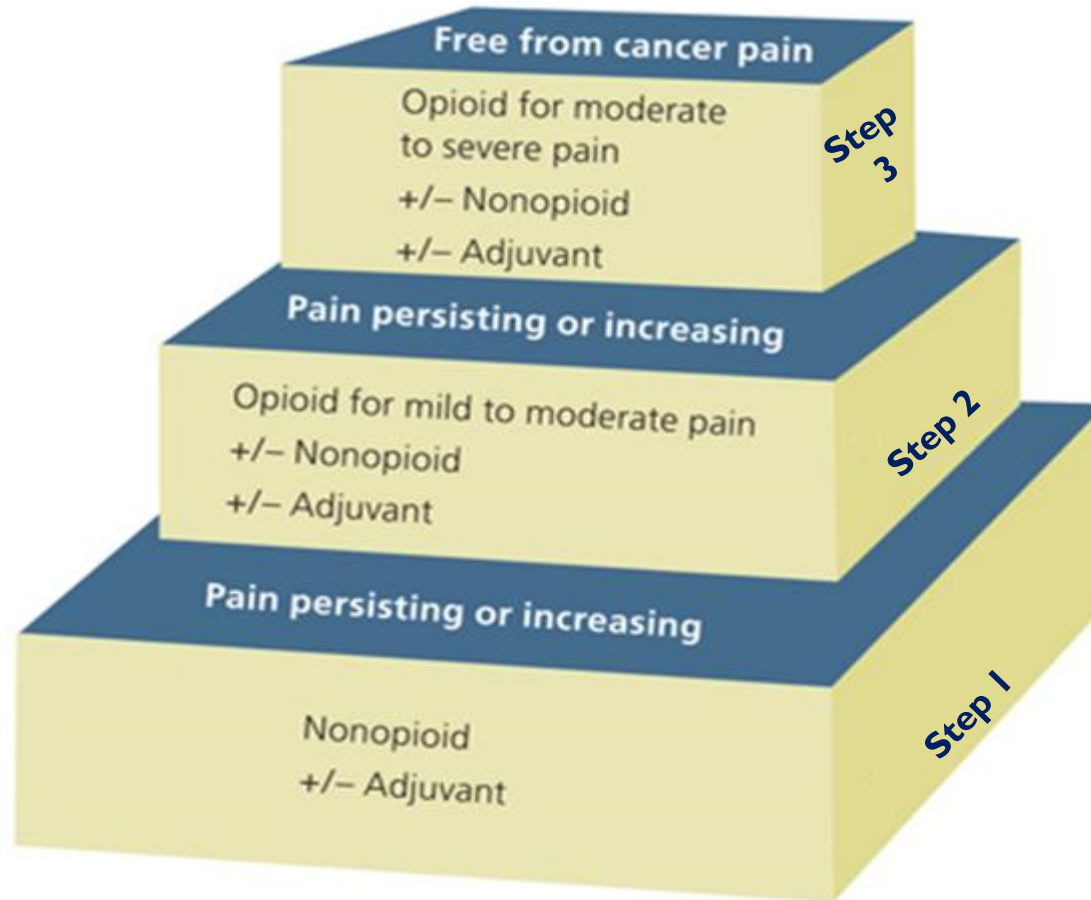
**Non-pharmacological therapies should be used in conjunction with pharmacotherapies to manage the overall condition of the patient**

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# Pharmacological Management of Cancer Pain

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# NSAIDs for Cancer Pain

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- ▶ Weigh risks against benefits
- ▶ Side effects include<sup>1</sup>
  - ▶ Gastrointestinal risks
  - ▶ Cardiovascular risks
  - ▶ Renal risks
- ▶ For patients with cancer pain, NSAIDs are conventionally used for<sup>2</sup>
  - ▶ Mild pain
  - ▶ Moderate pain
- ▶ NSAIDs can be considered for bone pain<sup>2</sup>





# Opioids for Cancer Pain

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**Opioid-based pharmacotherapy is the mainstay of symptomatic treatment for cancer pain**

- ▶ Are safe for the management of cancer pain
- ▶ Provide a good balance between efficacy (pain relief) and side effects
- ▶ Misuse, addiction, and diversion are not relevant concerns in patients with cancer pain

# Use of Opioids for Cancer Pain

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- ▶ Skilled use of opioids is crucial to relief of cancer pain
- ▶ Mild to moderate/uncontrolled pain with acetaminophen or NSAID: add a step 2 or 3\* opioid given orally
- ▶ Immediate-release and slow-release oral formulations of morphine, oxycodone, and hydromorphone can be used for dose titration
- ▶ Transdermal fentanyl and buprenorphine are alternatives to oral opioids
- ▶ Breakthrough pain should be treated with additional doses of immediate-release oral opioids

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\*Refers to the World Health Organization pain ladder for cancer  
NSAID = non-steroidal anti-inflammatory drug  
Caraceni A *et al. Lancet Oncol.* 2012;13(2):e58-68.

# Adverse Effects of Opioids

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- Nausea
- Vomiting
- Constipation

- Respiratory depression



- Cognitive impairment
- Sedation
- Lightheadedness
- Dizziness

- Orthostatic hypotension
- Fainting



## Other

- Itching
- Miosis
- Sweating
- Urinary retention

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CNS = central nervous system

Moreland LW, St Clair EW. *Rheum Dis Clin North Am* 1999; 25(1):153-91; Yaksh TL, Wallace MS. In: Brunton L *et al* (eds). *Goodman and Gilman's The Pharmacological Basis of Therapeutics*. 12th ed. (online version). McGraw-Hill; New York, NY: 2010.

# Opioids Used for Cancer Pain

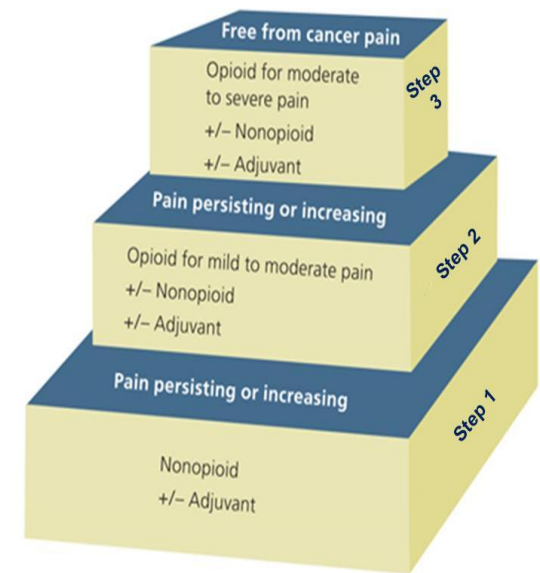
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- Tramadol
- Codeine
- Hydromorphone
- Levorphanol
- Methadone

- Morphine
- Oxycodone
- Hydrocodone
- Oxymorphone
- Fentanyl

# Adjuvant Therapies in Cancer Pain

- ▶ Can be used with other drugs at any level of the WHO pain ladder
- ▶ Examples
  - ▶ Antidepressants
  - ▶ Anticonvulsants
  - ▶ Muscle relaxants
  - ▶ Bisphosphonates
  - ▶ Calcium channel blockers



# Adverse Effects of Antidepressants

System	TCA <sub>s</sub>	SNRI <sub>s</sub>
Digestive system	<ul style="list-style-type: none"> <li>• Constipation</li> <li>• Dry mouth</li> <li>• Urinary retention</li> </ul>	<ul style="list-style-type: none"> <li>• Constipation</li> <li>• Diarrhea</li> <li>• Dry mouth</li> <li>• Nausea</li> <li>• Reduced appetite</li> </ul>
CNS	<ul style="list-style-type: none"> <li>• Cognitive disorders</li> <li>• Dizziness</li> <li>• Drowsiness</li> <li>• Sedation</li> </ul>	<ul style="list-style-type: none"> <li>• Dizziness</li> <li>• Somnolence</li> </ul>
Cardiovascular	<ul style="list-style-type: none"> <li>• Orthostatic hypotension</li> <li>• Palpitations</li> </ul>	<ul style="list-style-type: none"> <li>• Hypertension</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Blurred vision</li> <li>• Falls</li> <li>• Gait disturbance</li> <li>• Seating</li> <li>• Impotence</li> <li>• Reduced libido</li> </ul>	<ul style="list-style-type: none"> <li>• Elevated liver enzymes</li> <li>• Elevated plasma glucose</li> <li>• Sweating</li> <li>• Impotence</li> <li>• Reduced libido</li> </ul>

CNS = central nervous system; TCA = tricyclic antidepressant; SNRI = serotonin-norepinephrine reuptake inhibitor

Attal N, Finnerup NB. Pain Clinical Updates 2010; 18(9):1-8.

# Anticonvulsant Therapy for Cancer Pain

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- ▶ Sodium channel blockers
- ▶  $\alpha_2\delta$  ligands
- ▶ Chemotherapy and radiation therapy are available as adjuvant therapies
  - ▶ May be used before invasive therapies



# Adverse Effects of $\alpha_2\delta$ Ligands

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System	Adverse effects
Digestive system	<ul style="list-style-type: none"><li>• Dry mouth</li></ul>
CNS	<ul style="list-style-type: none"><li>• Dizziness</li><li>• Somnolence</li></ul>
Other	<ul style="list-style-type: none"><li>• Asthenia</li><li>• Headache</li><li>• Peripheral edema</li><li>• Weight gain</li></ul>

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$\alpha_2\delta$  ligands include gabapentin and pregabalin

CNS = central nervous system

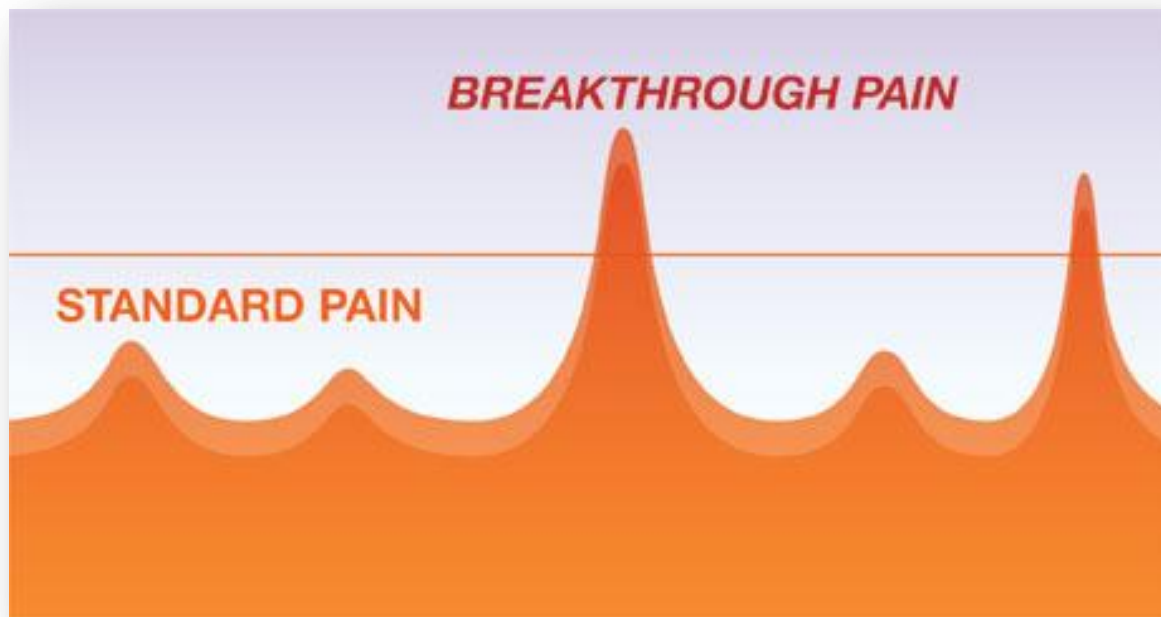
Attal N, Finnerup NB. *Pain Clinical Updates* 2010; 18(9):1-8.



# What Is Breakthrough Pain?

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**In cancer patients, breakthrough pain typically refers to a transitory flare of pain in the setting of chronic pain managed with opioids**



# Management of Breakthrough Pain

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- ▶ Medications for breakthrough pain can be<sup>2</sup>
  - ▶ An immediate release oral or parenteral opioid
  - ▶ An opioid + non-opioid combination
  - ▶ A rapid-onset, transmucosal fentanyl formulation



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Email: [order@allroad-pharmacy.com](mailto:order@allroad-pharmacy.com)

# Management of Metastatic Bone Pain

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- ▶ **Entities include**
  - ▶ Disease modifying treatments
  - ▶ Radiotherapy
  - ▶ Bisphosphates
  - ▶ Symptomatic treatments
    - ▶ NSAIDS/coxibs
    - ▶ Steroids
    - ▶ Opioids

# Pain in Palliative Care

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- Palliative care should be integrated **early** in the cancer management strategy
- Care should be managed by a specialized, **multidisciplinary team** of health care providers
- Emphasis should be placed on the QoL of patient and his or her family

Early palliative care leads to better patient and caregiver outcomes, improvement in symptoms, quality of life, and patient satisfaction and reduces caregiver burden

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QoL = quality of life

Smith TJ *et al.* *J Clin Oncol.* 2012;30(8):880-7; Temel JS *et al.* *N Engl J Med.* 2010;363(8):733-42; Girgis A *et al.* *J Oncol Pract.* 2013; 9(4):197-202; Parikh RB *et al.* *N Engl J Med.* 2013;369(24):2347-51.

# Management of Cancer Pain

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**Cancer pain can be managed through a variety of approaches**



**Pharmacological**



**Non-  
pharmacological**



**Invasive  
treatments**

Specific oncologic measures; radiotherapy, chemotherapy, targeted therapy etc

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# Key Messages

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- ▶ Cancer pain is a common condition
- ▶ Cancer pain severely adversely affects quality of life
- ▶ Cancer pain is a significant burden to the patient and his or her family
- ▶ Careful assessment is a prerequisite for the effective management of cancer pain
- ▶ ***Management of cancer pain requires a multidisciplinary approach***
- ▶ Most cancer pain can be managed safely and effectively using combination therapies with opioids

