

Optimizing the Management of Opioid Tolerant Patients in the Perianesthesia Setting

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PHYSIOLOGIC & HUMAN IMPACT FACTORS

Chronic / Persistent Pain

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Incidence

- In 2019, 20.4% of adults had chronic pain and 7.4% of adults had chronic pain that frequently limited life or work activities (high impact chronic pain) in the past 3 months
- Chronic pain and high-impact chronic pain both increased with age and were highest among adults aged 65 and over
- Non-Hispanic white adults (23.6%) were more likely to have chronic pain compared with non-Hispanic black (19.3%), Hispanic (13.0%), and non-Hispanic Asian (6.8%) adults


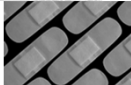


NCHS Data Brief No. 390, November 2020
<https://www.cdc.gov/nchs/products/databriefs/db390.htm>

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Incidence of chronic pain (continued)

- The percentage of adults with chronic pain and high-impact chronic pain increased as place of residence became more rural
- Women were more likely to have chronic pain (21.7%) and high-impact chronic pain (8.5%) compared with men
- 19.0% and 6.3%, respectively

NCHS Data Brief No. 390, November 2020
<https://www.cdc.gov/nchs/products/databriefs/db390.htm>

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Anatomy and physiology of pain neural pathways

Stimuli → 1. Transduction → 2. Transmission → 4. Modulation → 2. Transmission → 3. Perception

Cooney & Quintan-Colwell, 2021

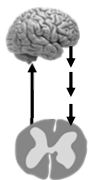
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Chronic changes in neural pathways: Central sensitization

If transmission of pain signals from periphery to spinal cord persists, changes may occur in the CNS and produce central sensitization.

Pain hypersensitivity may arise

- Decreased threshold for activation and abnormal amplification of sensory signaling within the CNS
- While nociceptive stimulation from periphery may initially be increased and prolonged, the pain experience is disconnected from the peripheral pathology
- Process of central sensitization initially may be reversible - can also become permanent
- Effect at central sites can lead to establishment of co-morbidities (depression, anxiety), hypersensitivity to other stimuli (allodynia), development of more diffuse pain states



Pergolizzi J et al. The development of chronic pain: physiological CHANGE necessitates a multidisciplinary approach to treatment. *Current Medical Research and Opinion*, 2013;29(9):1127-35. doi:10.1185/03007965.2013.810815

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Mechanisms underlying the development of chronic pain

"Many investigators now believe that chronic pain is itself a disease, and the location of the body where it arises may not be as relevant as an individual's genetically determined pain sensitivity, combined with neuroplastic changes that can occur in the central nervous system (CNS) that lead to augmented pain transmission."

Phillips & Clauw, 2011, p.1

Chronic pain syndromes

- Pain can be sole or leading concern
- need special treatment / care

Fibromyalgia, Nonspecific low-back pain

- chronic pain, in its own right, may be conceived as a disease


Other subgroups

- Pain secondary to underlying disease
- cancer, neuropathic, visceral, posttraumatic/postsurgical pain, headache, orofacial pain, musculoskeletal

Treede, Rolf-Detlef et al. Chronic pain as a symptom or a disease: the IASP Classification of Chronic Pain for the International Classification of Diseases (ICD-11). Pain, 2019;60(1):19-27. doi:10.1097/j.pain.0000000000001384

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Mechanisms : development of chronic pain



Chronic pain defined
Pain that persists or recurs for longer than 3 months.

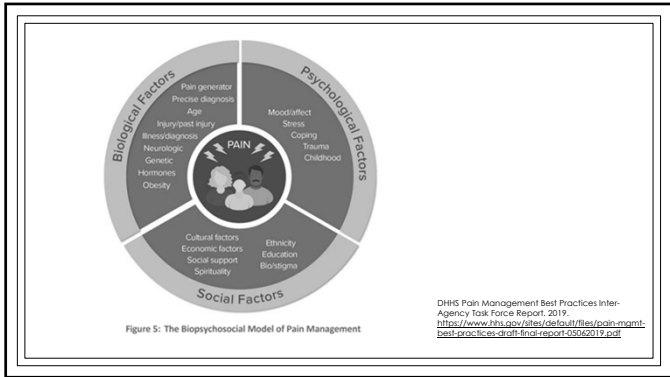
Treede et al. 2019

New postsurgical pain or persistent postsurgical pain→ pain symptoms experienced for at least 3 months after surgery

- Risk factor = the severity of immediate postoperative pain

Pergolizz et al., 2013

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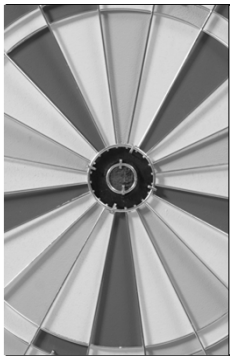
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Association between negative affective states and chronic pain

Depression	Anxiety	Unhappiness	Personality disorders
Decreased coping skills	Damaged relationships	Psychosis	

Coluzzi et al., 2017

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Acute pain in the presence of chronic pain treatment


- Both acute and chronic pain symptoms need to be treated
- Assessment for past history of acute postoperative pain/outcomes key to planning
- Requires thorough assessment of meds taken and strategies used that work for the patient at home
- Opioid-induced hyperalgesia risk
 - paradoxical condition in which the patient experiences increasing sensitivity to pain when using increasing doses of opioids

Coluzzi et al. 2017

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Impact of acute pain in the presence of chronic pain (cont.)


- Patient fear of under-treatment → possible withdrawal
- Assessment of pain in PACU→ chronic or acute ... or both?
- Inadequate pain mgt → ↑ pulmonary and cardiovascular complications, ↑ hospital LOS
- Is social network assistance available after surgery?



Coluzzi et al. 2017

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Trends in opioid prescribing



- Pervasive/historical post-surgical opioid overprescribing
- Inappropriate opioid weaning in response to opioid crisis
- Lower opioid dosing, prescribing in combination with other adjuncts
- Use of supportive complementary therapies
- Opioid rotation (change prescribed opioid)
- Multimodal pain management
- Adjunct methods of pain management
 - virtual reality showing positive results

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Opioid tolerance and physical dependence

Physical dependence
Is not the same as addiction!

- Occurs due to physiological adaptations from chronic exposure to a drug

Someone physically dependent on opioid medication will experience withdrawal symptoms when the medicine's use is suddenly reduced or stopped, or when an antagonist drug is administered. Withdrawal symptoms can be minor or severe and can usually be managed medically or avoided by doing a slow drug taper.

Tolerance
Present when the same dose of a drug when given repeatedly produces a reduced biological response. In other words, it takes a higher dose of the drug to achieve the same level of response achieved initially.

Pain Management Best Practices Inter-Agency Task Force Report. <https://www.hhs.gov/sites/default/files/pain-mgmt-best-practices-draft-final-report-05062019.pdf>

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Clinical differentiation: chronic pain vs. opioid misuse

	Opioid users for chronic pain	Opioid abusers
Use of opioids	Appropriate, reported	Out of control
Quality of life	Improved by opioids	Impaired by opioids
Awareness of opioid related side effects	Complete	Unconcerned
Diagnosis	Available	Unavailable
Treatment plan & medical prescription	Followed	Unavailable
Opioid medication	Available	Illicit, hidden

Adapted from Coluzzi et al. 2017, p.1165

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Barriers to comprehensive care for chronic pain management



- Clinician & provider knowledge gaps; poor care coordination
- Insurance carriers do not provide coverage for helpful therapies
 - Patients frequently cannot afford helpful pain treatments out of pocket
- Prejudice / bias
- Prescriber cultural beliefs
- Misconceptions
 - Maintenance therapy with buprenorphine or methadone provides analgesia
 - Additional opioids for analgesia may cause addiction relapse
 - Additional opioids for analgesia may cause respiratory & CNS depression
 - PCA is inadequate for post-surgery analgesia in opioid-tolerant patients

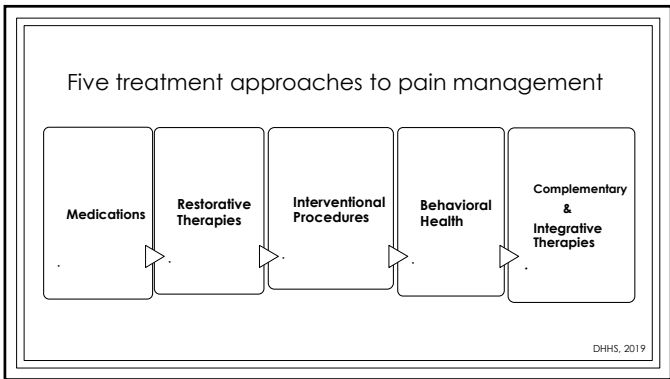
DHHS, 2019

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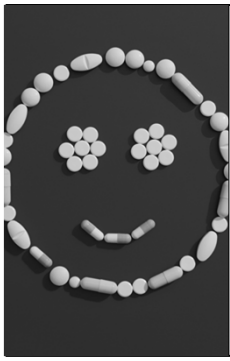
EVIDENCE-BASED APPROACHES

Pain management for the chronic pain patient

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Medications

- Various classes of medications should be considered for use
- Following a thorough history and physical exam, medication choice should be based on
 - pain diagnosis
 - mechanisms of pain
 - related co-morbidities
 - other relevant diagnostic procedures
 - a risk-benefit assessment that shows medication benefits outweighs the risks

DHHS, 2019


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Medications

Goal: limit adverse outcomes while ensuring patients have access to medication-based treatment that can enable a better quality of life and function

Ensure safe medication storage and appropriate disposal of excess medications

Important to ensure best clinical outcomes and to protect the public health



DHHS, 2019

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Restorative and interventional therapies

Restorative treatment

Multidisciplinary, multimodal acute and chronic pain care

- Includes treatments implemented by physical therapists, occupational therapists
 - physiotherapy
 - other movement modalities
 - therapeutic exercise

Interventional approaches

When clinically indicated, available as diagnostic and therapeutic treatment modalities for acute, acute on chronic, and chronic pain


- Includes various image-guided and minimally invasive procedure types
 - trigger point injections
 - radiofrequency ablation
 - cryoneuroablation
 - neuro-modulation

DHHS, 2019

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Behavioral Health

- Approaches for psychological, emotional, behavioral, cognitive, and social aspects of pain may significantly impact treatment outcomes
- Patients with pain and behavioral health comorbidities face challenges that can exacerbate painful conditions as well as function, ADLs, and quality of life



Complementary and Integrative Health


- When clinically indicated should be considered
 - spirituality, massage, acupuncture, movement therapies (yoga, tai chi)

DHHS, 2019

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Emerging evidence

The role of microglial activation and dopamine in fronto-striatal connectivity in emotional-motivational pain processing in patients with chronic pain



Study aims to investigate psychobiological mechanisms underlying the negative hedonic shift in chronic pain


- focus on the causal role of neuroinflammation
- role of dopamine in functional connectivity of fronto-striatal brain networks and their relation to heightened emotional-motivational pain processing

Becker, S. Psychobiological mechanisms underlying chronic pain. *ClinicalTrials.gov* Identifier: NCT04674670. <https://www.clinicaltrials.gov/ct2/show/NCT04674670>

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Emerging evidence

Perceived efficacy, reduced prescription drug use, and minimal side effects of cannabis in patients with chronic orthopedic pain



Medical cannabis use associated with clinical improvements in pain, function, and QOL with reductions in prescription drug use

- 73% stopped or decreased opioid consumption
- 31% discontinued benzodiazepines
- 52% did not experience intoxication as a side effect of cannabis therapy
- Significant clinical benefits occurred within 3 months of initiating cannabis therapy, plateaued at ensuing follow-ups

Greiss A et al. Perceived efficacy, reduced prescription drug use, and minimal side effects of cannabis in patients with chronic orthopedic pain. *Cannabis and cannabinoid research*, 10.1089/can.2021.0088. 12 Nov 2021, doi:10.1089/can.2021.0088


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Mindfulness therapy may reduce opioid misuse and chronic pain

Emerging evidence

Clinical trial demonstrated that 8-week mindfulness-based therapy

- Decreased opioid use and misuse while reducing chronic pain symptoms
- Effects lasted for as long as 9 months
- First large-scale clinical trial to demonstrate that psychological intervention can reduce opioid misuse and chronic pain simultaneously among people who were prescribed opioid pain relievers



Garland EL et al, mindfulness-oriented recovery enhancement vs supportive group therapy for co-occurring opioid misuse and chronic pain in primary care, *JAMA Internal Medicine* (2022), DOI: 10.1001/jamainternmed.2022.0033

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COLLABORATIVE PERIOPERATIVE CARE TEAM APPROACH

Managing the chronic pain patient who will experience acute postoperative pain


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"Health systems and clinicians must consider the pain management needs of the special populations that are confronted with unique challenges associated with acute and chronic pain ... "

DHHS, 2019

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Overcoming barriers to comprehensive perioperative care for chronic pain management patients



- Despite advances in analgesics & multimodal pain regimens, patients still report significant postoperative pain & anxieties related to their pain control in the perioperative period DHHS, 2019
- Early pre-operative identification of opioid-tolerant surgical/procedural patients often lacking
- Often discover the patient has specialized pain management needs too late ... in Preop or PACU!
- What else?

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Gain/maintain knowledge about medications commonly prescribed for chronic pain management

Acetaminophen

NSAIDS

Anticon-vulsants

Antidep-ressants

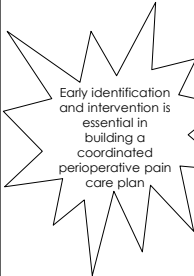
Musculo-skeletal Agents

Anxiolytics

Opioids

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Focus on early identification of surgical patients having opioid tolerant status



Early identification and intervention is essential in building a coordinated perioperative pain care plan.

Identification of opioid-tolerant patients during Pre-anesthesia evaluation encounter

- past medical, surgical history
- medication reconciliation
 - identification of opioid-tolerant patient
- pain history, assessment, report from patient

Obtain & document

- pain management provider consult, notification
- chronic pain manager/opioid prescriber's contact information
 - future coordination purposes

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Preanesthesia phase: pain management plan development

RN/Advanced Practice Provider (APP) documents findings in patient's record, flags patient chart, notifies pain care clinician/team

Pain specialty consult

Call/appointment with patient to further assess pain treatment history, preferences, risk factors, and ensure that collaborative perioperative care coordination happens

- Connect with opioid prescriber
- Discuss perioperative and discharge pain care planning
- Document perioperative pain plan made with the patient and opioid prescriber in record for reference on DOS

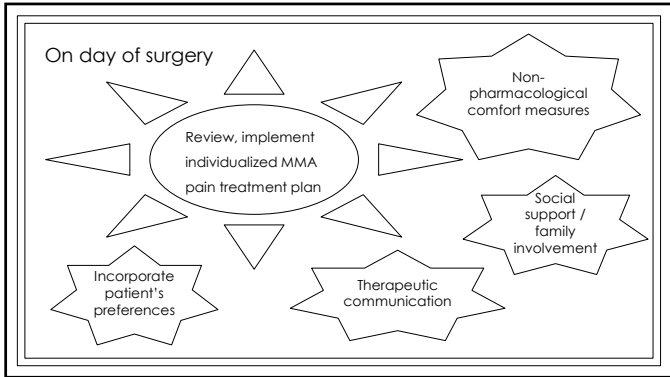


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Communication of the treatment plan across phases of perianesthesia care

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Multimodal analgesia (MMA) provides a balanced and effective approach to perioperative pain management

- Expanding opioid sparing MMA use through ERAS pathway implementation
- Regional analgesia strategies

Multidisciplinary team-based approach for defining pain goals/treatment is essential

- Based on each patient's needs
- incorporating patient, surgical, and social factors

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Perioperative opioid tolerant patient management recommendations

- Preoperatively wean opioids to lowest effective dose depending on underlying condition
- When feasible pursue opioid-sparing intraoperative management
- Use lowest effective opioid dose in postoperative period, avoid opioid dose escalation
- Use the addition of opioids only when suboptimal analgesia achieved after first-line administration of nonopioid options
- Continue multimodal therapy throughout convalescent period and for duration that additional opioids are required
- Strongly recommend limiting discharge opioid prescription to the expected duration of pain that is severe enough to require opioids
- Ensure coordination of postoperative opioid tapering with the patient's outpatient provider

Edwards D et al. American Society for Enhanced Recovery and Perioperative Quality Initiative Joint Consensus Statement on Perioperative Management of Patients on Preoperative Opioid Therapy. *Anesthesia and analgesia*, 2019;129(2): 553-566. doi:10.1213/ANE.0000000000004018

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Pain care service received call from a PACU RN who gave this report:

S: 27 y.o. Caucasian female s/p spinal cord stimulator trial lead placement for failed back syndrome. Scheduled as outpatient procedure, no pre-anesthesia appointment scheduled by surgeon.

B: Married, no children, 10-year history of chronic low back pain due to a traumatic high school gymnastics accident. Taking daily opioid therapy, anxiolytic, antidepressant, and anticonvulsant medication.

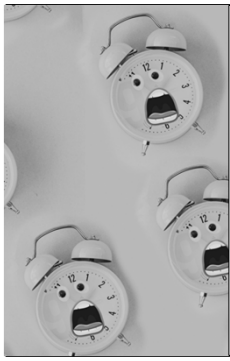
A: Pt is 45 minutes post GA, has received 100mcgs of titrated fentanyl doses since admission. Now sedate (POSS 3), waking periodically and loudly calling out, "Help me! I need more medicine! It hurts so much!" Intermittently crying loudly, then drifts off with eyes closed. Resp rate = 12/minute at rest. ETCO2 = 41.

R: Please come to evaluate this patient and the current pain management plan ASAP.



Case study


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Case study

- The pre-anesthesia unit RN identified a 37 y.o. male patient's opioid tolerant status and complex pain history during their scheduled preoperative telephone call assessment.
- History significant for multiple trauma MVA with severe upper extremity burns at age 19, requiring multiple surgeries and 2 month's treatment in the ICU; subsequently developed chronic pain syndrome.
- Surgery for left wrist burn contracture release scheduled in 3 days. This will be his 27th surgical procedure related to the MVA.
- Patient medical record number was referred to pain care team for preoperative pain management plan follow-up.

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The importance of self care


- Important to "team debrief" after challenging patient encounters
 - second victim
- Healthy coping mechanisms
- Seek out employee support resources

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Selected resources for self learning

The National Institutes of Health (NIH) HEAL Initiative
Clinical Research in Pain Management | NIH HEAL Initiative

- Supports new clinical research programs to evaluate innovative pain management therapies
- Promotes establishment of evidence-based guidelines for treating pain with non-opioid therapies to reduce use of prescription opioid medications



CHRONIC PAIN PATIENTS ARE OFTEN OVERLOOKED AND UNDERREATED.

US Pain Foundation, 2021
<https://uspainfoundation.org/resources>

U.S. Pain Foundation
<https://uspainfoundation.org>

Support for patients, caregivers, clinicians

Patient resources:
 Multidisciplinary pain care: create your custom plan from treatment options; download & share the plan

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Advocacy group resources

The Alliance to Advance Comprehensive Integrative Pain Management (AACIPM)
<https://painmanagementalliance.org>

- multi-stakeholder collaborative
- funded through grants and contributions

AACIPM comprised of

- people living with pain
- patient and caregiver advocates
- public / private insurers
- government agencies
- researchers
- purchasers of healthcare
- policy experts
- spectrum of healthcare providers involved in delivery of comprehensive integrative pain management

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Question 1

When conducting a pre-anesthesia telephone interview, the perianesthesia nurse notes that the patient takes daily scheduled doses of a long-acting opioid, an anticonvulsant, and an antidepressant medication. The most appropriate action for the nurse to take for this patient is:

- a. Tell the patient to hold these medications on the day of surgery to prevent oversedation.
- b. Document the medication reconciliation list in the patient's record.
- c. Pursue a preoperative specialty care pain consult.
- d. Discuss the need for preoperative opioid dose reductions with the patient.

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Question 2

A patient taking 40mg of long-acting oxycodone TID was recently in an opioid naïve state.

- a. True
- b. False

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Question 3

Chronic pain patients who will experience an acute pain episode:

- a. May exhibit weak coping skills in the PACU.
- b. Require a coordinated multimodal pain management plan, including pre-emptive regional analgesia unless contraindicated.
- c. Often fear poor pain management outcomes.
- d. All of the above.

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Thank you for being here!

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