Kingston Health Sciences Centre
Centre des sciences de la santé de Kingston

Pain and Substance Use: Meeting the nursing care challenges for complex patients

Rosemary Wilson RN(EC) PhD
Associate Professor, School of Nursing/ DAPM
NP Chronic Pain Management

CFPC CoI Templates: Slide 1

Faculty/Presenter Disclosure

- **Faculty:** Rosemary Wilson
- **Relationships with commercial interests:**
  - Faculty, Queen's University School of Nursing
    - Joint appointment: Department of Anaesthesiology and Perioperative Medicine
  - Practice contract at KHSC – HDH Site

CFPC CoI Templates: Slide 2

Disclosure of Commercial Support

- **This program has received financial support from: none to disclose**
- **This program has received in-kind support from Queen's University in the form of** faculty preparation time
- **Potential for conflict(s) of interest:**
  - None to disclose
- Mitigating potential bias
  - Every attempt will be made to be objective in presenting information and as much as possible, information presented will be based on evidence-based research

Topics for discussion

- The substance use challenge
- Patients in pain
- Addiction, dependence, tolerance
- Assessment of withdrawal and risk
- Principles and guidelines
- Resources

Substance use: the scope of the North American experience

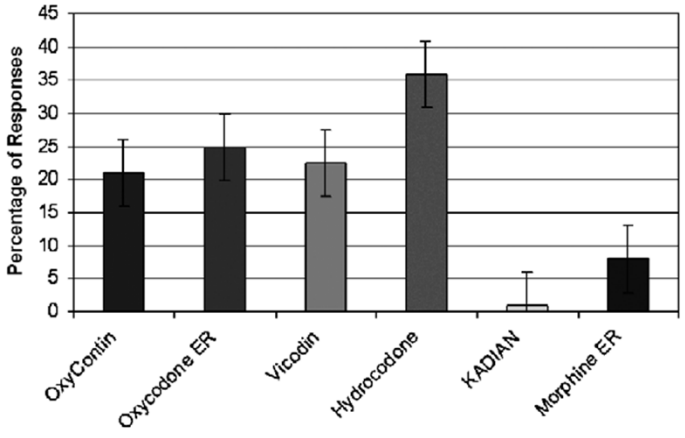
- 21-29% misuse in patients prescribed opioids for chronic pain Vowles KE, McEntee ML, Julnes PS, Frohe T, Ney JP, van der Goes DN. Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis. *Pain*. 2015;156(4):569-576.
- 8-12% develop opioid use disorder Carlson RG, Nahhas RW, Martins SS, Daniulaityte R. Predictors of transition to heroin use among initially non-opioid dependent illicit pharmaceutical opioid users: A natural history study. *Drug Alcohol Depend*. 2016;160:127-134.

Edmonton police seize $3.2-million stash of carfentanil in record bust

'The ingestion of these substances even in trace amounts can be lethal'

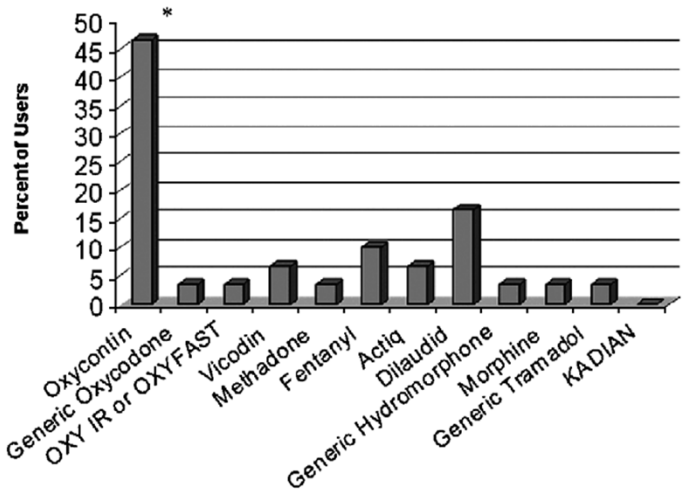
CBC News · Posted: Feb 02, 2018 10:46 AM MT | Last Updated: February 2

Nonmedicinal use of opioids in last 30 days



Katz, N., Fernandez, K., Change, A., Benoit, C. & Butler, S. (2008). Internet-based survey of nonmedicial prescription opioid use in the United States. *Clinical Journal of Pain, 24*(6), 528-535.

Products respondents 'most enjoy using' among respondents who use OxyContin, Vicodin and KADIAN



Katz, N., Fernandez, K., Change, A., Benoit, C. & Butler, S. (2008). Internet-based survey of nonmedicial prescription opioid use in the United States. *Clinical Journal of Pain, 24*(6), 528-535.

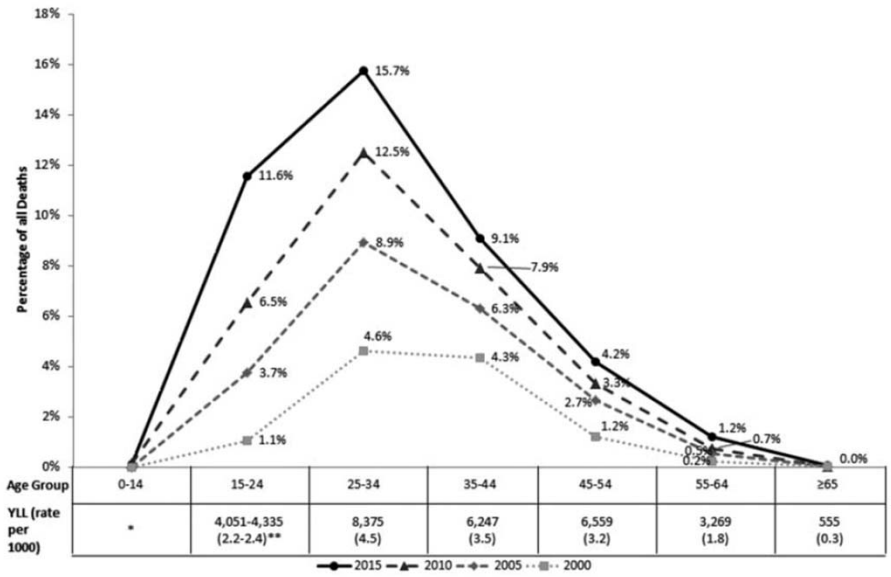
Substance use: the scope of the North American experience

2010: 1 in 170 deaths in Ontario related to opioids

Gomes T, Mamdani MM, Dhalla IA et al. The burden of premature opioids-related mortality. Addiction 2014; 109: 1482-1488.

2000-2015: opioid related death rate tripled (19.3 to 53.1/1 million pop) Gomes T, Greaves S, Tadrous M, Mamdani MM, Paterson JM, Juurlink D. J Addict Med 2018; ePUB ahead of print

- Absolute largest increase in 25-34y age group: 4.6% to 15.7%
- 2010-2015 15-24y age group: 6.5% to 11.6% of ALL deaths



*Censored to avoid disclosure of small cell size; **Censoring to avoid residual disclosure of small cell size*
YLL: years of life lost

Opioids and risk: Ontario context

- 1991-2004: 1095 deaths by overdose
  - 56% had been given opioid Rx in the previous 4 weeks

    Dhalla, I., Mamdani, M., Siviliotti, M., Kopp, A., Qureshi, O. & Juurlink, D. (2009). Prescribing of opioid analgesics and related mortality before and after the introduction of long-acting oxycodone. *Canadian Medical Association Journal, 184*, E852-E856.

- Opioid dependent patients: CAMH
  - 37% from Rx, 26% from Rx & street, 21% from street

    Sproule, B., Brands, B., Li, S. & Catz-Biro, L. (2009). *Canadian Family Physician, 55*(1), 68-69.

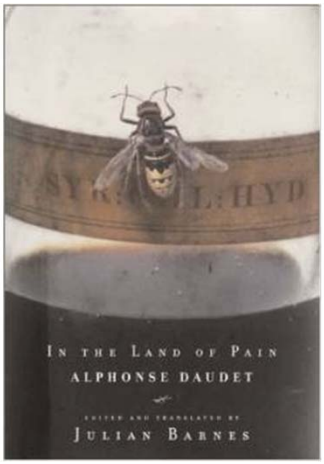
- 2005-2006 & 2010-2011: 250% increase in ED visits related to:
  - Withdrawal
  - Overdose
  - Intoxication
  - Related psychosis
  - Other related issues

    Expert Working Group on Narcotic Addiction. (2012). *The way forward: Stewardship for prescription narcotics in Ontario*. Toronto: Author.

Substance use: the scope of the North American experience

- 2013: 11% of Canadians >15y used cannabis at least once in past year
  - Most common psychoactive substance after alcohol
  - 28% of those who used in past 3 months used almost every day Statistics Canada 2015
- Concerning consistency with models of addiction
  Zehra et al. Cannabis addiction and the brain: A review. J Neuroimm Pharm 2018: ePub ahead of print
  - DSM-5 Cannabis Use Disorder: includes withdrawal

Patients in pain



Rural

Female

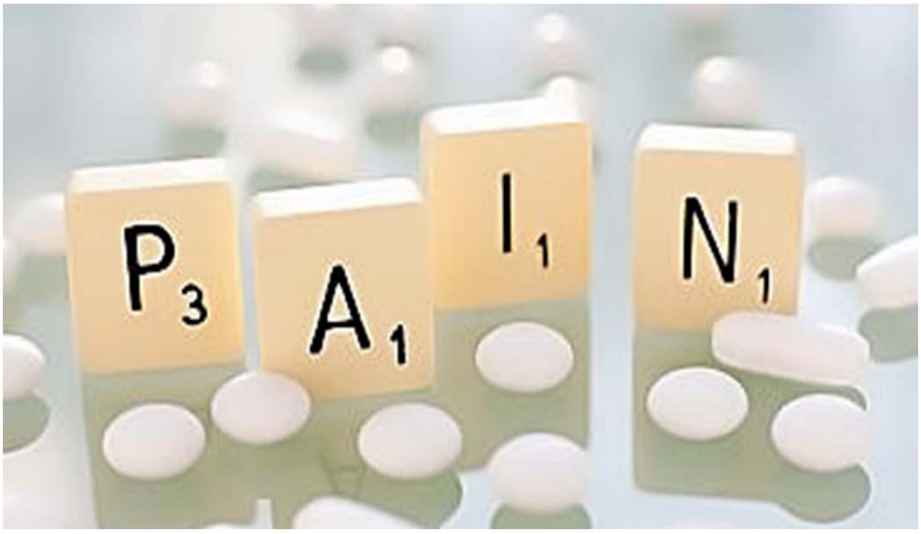
Depression

Unhealthy

<20K

35-64

Medications at baseline

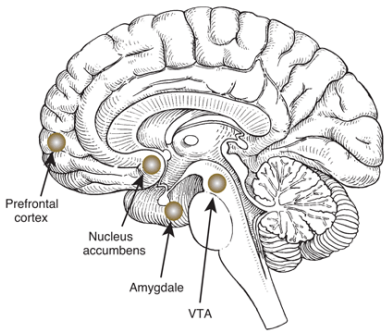


Definitions: Addiction, Dependence, Tolerance

- **Addiction** is a primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.
- **Physical dependence** is a state of adaptation that is manifested by a drug class specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist.
- **Tolerance** is the body's physical adaptation to a drug: greater amounts of the drug are required over time to achieve the initial effect as the body adapts to the intake.

Definitions Related to the Use of Opioids for the Treatment of Pain. American Academy of Pain Medicine; American Pain Society; American Society of Addiction Medicine. 2001.

Addiction – proposed mechanisms

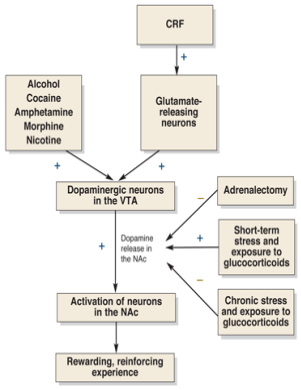


Mesocorticolimbic dopamine system

- Incentive sensitization
  - Casual use sensitizes reward system
  - high motivation to repeat rewarding behaviour for pleasurable experience
- Hedonic allostasis
  - Chronic exposure and production of stress factors and negative emotional state, withdrawal and anxiety
  - Use to avoid negative-affect state

Wand, G. (2010). The influence of stress on the transition from drug use to addiction. National institute on alcohol abuse and alcoholism: National Institute of Health.

Addiction – proposed mechanisms



- Positive reward
  - Reward system responds – corticotropic releasing factors and stress factors reduced
- End of drug salience
  - Dopamine reward threshold increases, pleasure decreases
- Drug use based on negative affect and stress
  - Modulation of withdrawal, stress and anxiety

Wand, G. (2010). The influence of stress on the transition from drug use to addiction. National institute on alcohol abuse and alcoholism: National Institute of Health.

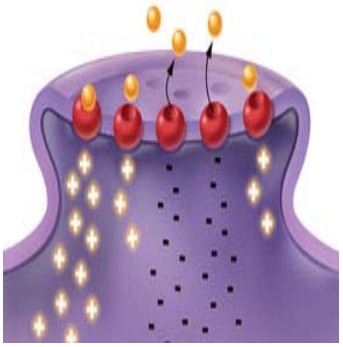
Dependence and Tolerance

- Opioids bind to Mu receptor [all are Mu agonists]
- Dopamine release into Nucleus Accumbens

Dependence and Tolerance

- Repeated use – Mu receptors become downregulated
- Same mechanism as end of drug salience – tolerance

Dependence and Tolerance



- More receptors created to accommodate chronic use = more that become unbound when brain/blood levels decrease
- Excessive norepinephrine release & low dopamine levels
- Withdrawal occurs

Kosten, T., George T. (2001). The neurobiology of opioid dependence: implications for treatment. Science & Practice Perspectives, 1, 13-20.

Assessment: Opioid withdrawal

Resting Pulse Rate: _____beats/minute *Measured after patient is sitting or lying for one minute* 0 pulse rate 80 or below 1 pulse rate 81-100 2 pulse rate 101-120 4 pulse rate greater than 120	**GI Upset**: *over last 1/2 hour* 0 no GI symptoms 1 stomach cramps 2 nausea or loose stool 3 vomiting or diarrhea 5 multiple episodes of diarrhea or vomiting
Sweating: *over past 1/2 hour not accounted for by room temperature or patient activity.* 0 no report of chills or flushing 1 subjective report of chills or flushing 2 flushed or observable moistness on face 3 beads of sweat on brow or face 4 sweat streaming off face	**Tremor** *observation of outstretched hands* 0 no tremor 1 tremor can be felt, but not observed 2 slight tremor observable 4 gross tremor or muscle twitching
Restlessness *Observation during assessment* 0 able to sit still 1 reports difficulty sitting still, but is able to do so 3 frequent shifting or extraneous movements of legs/arms 5 unable to sit still for more than a few seconds	**Yawning** *Observation during assessment* 0 no yawning 1 yawning once or twice during assessment 2 yawning three or more times during assessment 4 yawning several times/minute
Pupil size 0 pupils pinned or normal size for room light 1 pupils possibly larger than normal for room light 2 pupils moderately dilated 5 pupils so dilated that only the rim of the iris is visible	**Anxiety or Irritability** 0 none 1 patient reports increasing irritability or anxiousness 2 patient obviously irritable or anxious 4 patient so irritable or anxious that participation in the assessment is difficult
Bone or Joint aches *If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored* 0 not present 1 mild diffuse discomfort 2 patient reports severe diffuse aching of joints/muscles 4 patient is rubbing joints or muscles and is unable to sit still because of discomfort	**Gooseflesh skin** 0 skin is smooth 3 piloerrection of skin can be felt or hairs standing up on arms 5 prominent piloerrection
Runny nose or tearing *Not accounted for by cold symptoms or allergies* 0 not present 1 nasal stuffiness or unusually moist eyes 2 nose running or tearing 4 nose constantly running or tears streaming down cheeks	Total Score _____ The total score is the sum of all 11 items Initials of person completing assessment: _____

Score: 5-12 = mild; 13-24 = moderate; 25-36 = moderately severe; more than 36 = severe withdrawal

This version may be copied and used clinically.

Source: Wesson, D. R., & Ling, W. (2003). The Clinical Opiate Withdrawal Scale (COWS). J Psychoactive Drugs, 35(2), 253–9.

Assessment: Benzo withdrawal CIWA-B

Person Report:

For each of the following items, circle the number that best describes how you feel.

Do you feel irritable?	0 Not at all	1	2	3	4 Very much so
Do you feel fatigued?	0 Not at all	1	2	3	4 Unable to function
Do you feel tense?	0 Not at all	1	2	3	4 Very much so
Do you have difficulties concentrating?	0 Not at all	1	2	3	4 Unable to concentrate
Do you have any loss of appetite?	0 Not at all	1	2	3	4 No appetite, unable to eat
Have you any numbness or burning on your face, hands or feet?	0 No numbness	1	2	3	4 Intense burning/numbness
Do you feel your heart racing? (palpitations)	0 No disturbance	1	2	3	4 Constant racing
Does your head feel full or achy?	0 Not at all	1	2	3	4 Severe headache

Do you feel muscle aches or stiffness?	0 Not at all	1	2	3	4 Severe stiffness or pain
Do you feel anxious, nervous or jittery?	0 Not at all	1	2	3	4 Very much so
Do you feel upset?	0 Not at all	1	2	3	4 Very much so
How restful was your sleep last night?	0 Very restful	1	2	3	4 Not at all
Do you feel weak?	0 Not at all	1	2	3	4 Very much so
Do you think you didn't have enough sleep last night?	0 Very much so	1	2	3	4 Not at all
Do you have any visual disturbances? (sensitivity to light, blurred vision)	0 Not at all	1	2	3	4 Very sensitive to light, blurred vision
Are you fearful?	0 Not at all	1	2	3	4 Very much so
Have you been worrying about possible misfortunes lately?	0 Not at all	1	2	3	4 Very much so

Busto, U.E., Sykora, K. & Sellers, E.M. (1989). A clinical scale to assess benzodiazepine withdrawal. Journal of Clinical Psychopharmacology, 9 (6), 412–416.

Assessment: Benzo withdrawal CIWA-B

Clinician Observations

Observe behaviour for sweating, restlessness and agitation		Observe tremor		Observe feel palms	
0	None, normal activity	0	No tremor	0	No sweating visible
1		1	Not visible, can be felt in fingers	1	Barely perceptible sweating, palms moist
2	Restless	2	Visible but mild	2	Palms and forehead moist, reports armpit sweating
3		3	Moderate with arms extended	3	Beads of sweat on forehead
4	Paces back and forth, unable to sit still	4	Severe, with arms not extended	4	Severe drenching sweats

Total Score Items 1 – 20

1–20 = mild withdrawal

41–60 = severe withdrawal

21–40 =moderate withdrawal

61–80 = very severe withdrawal

Assessment: Alcohol withdrawal CIWA-Ar

Agitation (0-7) - Observation
Anxiety (0-7) - Observation
Auditory disturbances (0-7) - Self report
Clouding of Sensorium (0-4) - Self report
Headache (0-7) - Self report
Nausea/Vomiting (0-7) - Self report
Paroxysmal Sweats (0-7) - Observation
Tactile disturbances (0-7) - Self Report
Tremor (0-7) - Observation
Visual disturbances (0-7) – Self Report

Assessment: Risk – Opioid Risk Tool

Mark each box that applies	Female	Male
Family history of substance abuse		
Alcohol	1	3
Illegal drugs	2	3
Rx drugs	4	4
Personal history of substance abuse		
Alcohol	3	3
Illegal drugs	4	4
Rx drugs	5	5
Age between 16—45 years	1	1
History of preadolescent sexual abuse	3	0
Psychological disease		
ADD, OCD, bipolar, schizophrenia	2	2
Depression	1	1
Scoring totals		

Webster LR, Webster R. Predicting aberrant behaviors in Opioid-treated patients: preliminary validation of the Opioid risk too. Pain Med. 2005; 6 (6) : 432

Risk Evaluation and Mitigation (REM): Strategies to Promote the Safe Use of Opioids

Low Risk

1. Continue Monitoring safe use of Opioids
   - A. Reconcile opioids every RN visit
   - B. Safe storage
   - C. Review safety plan PRN

All Patients Receiving Opioids

1. Conduct Opioid Risk Assessment
2. Identify who will control medication administration
3. Opioid Safety Education
   - A. Side Effects
   - B. Use as prescribed
   - C. One prescriber only
   - D. Secure storage
   - E. Driving and other limitations
   - F. Who to call with questions
   - G. Safe disposal
4. Safety Plan Agreement Signed

Highest Risk

Defined as currently abusing or noncompliant with established opioid safety plan.

1. Inform the patient & family that the plan has been violated and that the hospice must evaluate its options
2. Immediate IDT review
3. New Plan
   - A. Identify safety issue, consider family meeting
   - B. Identify reasons for ongoing opioid use
   - C. Safety Plan Options
     - i. Prevent abuser's access to opioids
     - ii. Admit patient to controlled environment
     - iii. Reduce limited supply further
     - iv. Single reliable person to administer opioids
4. Additional Considerations
   - A. Ethics consult
   - B. Hospice will no longer manage/supply opioids
   - C. Hospice will discharge patient
   - D. Contact law enforcement and/or adult or child protective services

Moderate & High Risk

For Patients

Ask:
-How recent is the substance abuse?
-Which substance(s) are being abused?
-How significant is the abuse?
Action:
-Reconcile opioids every visit
-Up to 2 weeks maximum supply
-Avoid benzodiazepines, consider alternatives such as antidepressants, anxiolytics
-Treat associated mental health issues

For Family Member

Ask:
-Who is abusing substances?
-Ask the same 3 questions asked for patients
-Is the abuser involved in care giving?
Action:
-Same as patient actions
-Emphasize safety for identified individual
-Deny access to individual
-Install lock box

Additional Step for High Risk

1. Emphasize safety
2. Express concerns explicitly
3. Limit supply to 1 week or less
4. Frequent evaluations
5. Identify family member to control opioid administration
6. Consider the use of:
   - A. Prescription Monitoring Program (PMP)
   - B. Urine drug-screen
   - C. Long-acting opioids without short-acting breakthrough opioids

~Developed by the Public Policy Committee of the Virginia Association for Hospices & Palliative Care

https://c.ymcdn.com/sites/www.virginiahospices.org/resource/resmgr/REM_Folder/Final_REM_Tool_Kit_for_elect.pdf

What do the guidelines say?

2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain: National Pain Centre

Initiation and dosing of opioids in patients with chronic non-cancer pain - *Recommendations 3 & 5*

Recommendation 3: For patients with chronic noncancer pain with an active substance use disorder STRONG RECOMMENDATION AGAINST

Recommendation 5: For patients with chronic noncancer pain with a history of substance use disorder, whose nonopioid therapy has been optimized and who have persistent problematic pain WEAK RECOMMENDATION

Acute pain & drug dependency: Patient concerns

- Fear of withdrawal
- Fear of not being taken seriously/pain left untreated
- Fear of discrimination/ distrust of clinicians
- Fear of relapse

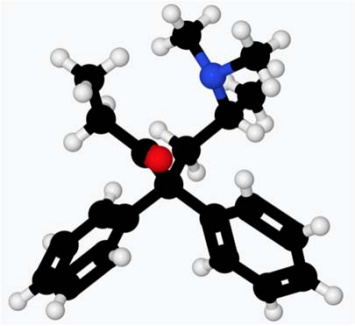
Acute pain & drug dependency: Clinician concerns

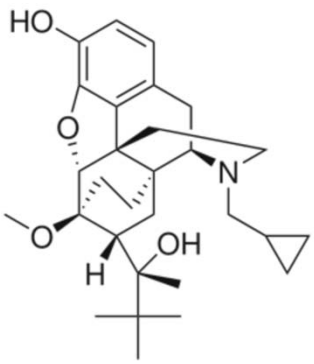
- Mistrust
- Overtreatment of pain
- Diversion
- Fear of patients leaving AMA/ not completing treatment
- 'Drug seeking'

Acute pain & drug dependency: Principles

- Create a supportive, non-judgmental environment
- Establish if other drugs are misused
- Analgesic plan
  - Optimize nonopioid analgesia
  - Monitor - increased doses may be required
  - Change from parenteral to oral ASAP
- Withdrawal management plan
  - Continue opioid substitution therapy
  - Assess for other drug withdrawal syndrome
- Minimize stress
- Interdisciplinary discharge planning

Opioid substitution therapy





What can be done before or alongside medications?

Nutritional supplementation

- Magnesium, Vitamin D_3, CoEnzyme Q10

Address for dehydration

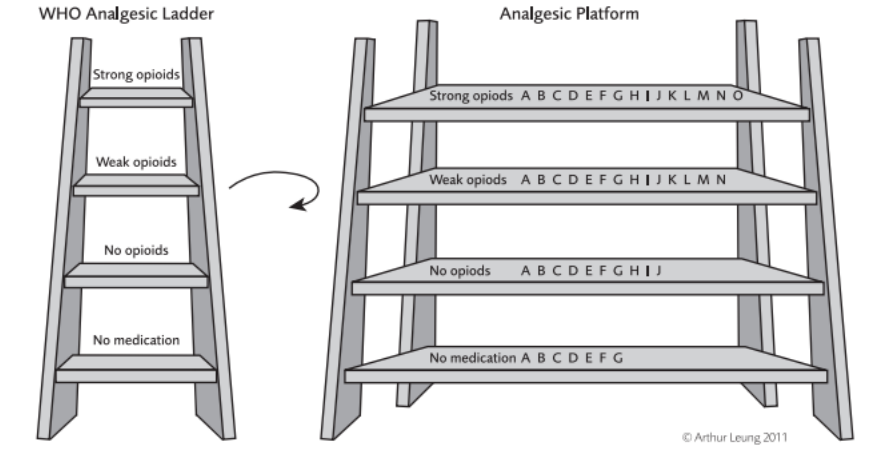
- Armstrong et al. (2012). J Nutr: 142(2); 382-288. (>1% body mass loss)
  - Increased headache compared with euvolemic volunteers
- Bellisle et al. (2010). Eur J Clin Nutr: 64; 350-5.
  - 1306 mL/day {<50% water, >50% alcohol, hot, dairy, juice and sodas}

Smoking cessation

Other Therapeutic approaches

- CBT and Mindfulness (coping skills protocol, biofeedback)
- Acceptance and Commitment Therapy (ACT)
- Mindfulness-Based Cognitive Therapy (MBCT)
- Therapeutic use of *SELF*

WHO Pain Ladder



A—Physiotherapy and physical therapy | **B**—Mind–body integration (e.g. yoga, meditation and religious support) | **C**—Hypnosis and relaxation therapy | **D**—Acupuncture | **E**—Chiropractic | **F**—External rub/lotions | **G**—Other CAM options (Tai chi, Tui Na) | **H**—Muscle relaxants (e.g. cyclobenzaprine, baclofen and dantrolene) | **I**—Injectable agents (steroids, local anaesthetics) | **J**—Interpersonal reinforcement (e.g. support group) | **K**—Anticonvulsants (e.g. gabapentin, pregabalin and lamotrigine) | **L**—Antidepressants (e.g. tricyclics, SSRI, SNRI) | **M**—Compounds that act synergistically with opioids like cannabinoids (nabilone) | **N**—Cognitive behaviour therapy and psychological counselling | **O**—Surgical and neurosurgical procedures (e.g. spinal cord stimulation, deep brain stimulation, spinal delivery of opioids, ganglion ablation by phenol or electrofrequency, sympathectomy)

Resources

- 2017 Canadian Opioid Use Guidelines
- Canadian Centre on Substance Use and Addiction
- CASN Controlled Substances eResource for Nurses
- Addiction behaviours checklist
  - Wu SM, Compton P, Bolus R, et al. The addiction behaviors checklist: validation of a new clinician-based measure of inappropriate opioid use in chronic pain. J Pain Symptom Manage. 2006;32(4):342-351.
- Current Opioid Misuse Measure
  - Butler SF, et al. Development and validation of the Current Opioid Misuse Measure. Pain. 2007;130(1-2):144-156. Epub 2007 May 9. Erratum in: Pain. 2009;142(1-2):169.