



	Objectives
	 Recognize impact of pain on cancer patients Discuss influence of perioperative anesthetic management on cancer outcomes Discuss analgesic benefits of regional and neuraxial anesthesia
	 Discuss concepts of peripheral and central sensitization in development of chronic pain Address incidence and causative factors contributing to Persistent Postsurgical Pain (PPSP)
UNC	 Define concepts of preemptive versus preventive analgesia and use of multimodal analgesia in PPSP prevention























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Occurrence of Persistent Postsurgical Pain			
Procedure	Chronic pain	Severe >5/10	Surg #
Amputation	30 - 80%	5 -10%	159,000
Mastectomy	20 - 30%	5 -10%	479,000
Thoracotomy	30 - 50 %	10%	?
Low GI surgery	10 %	2-4 %	609,000
Sternotomy	30 -50 %	5 - 10%	598,000
Kehlet H. Lancet;1618-1625:2006			

































































Copioids are not evil but... Opioids remain the mainstay therapy for acute

- mainstay therapy for acute postoperative painSide effect limitation
- Should not be used as a sole agent
- Long term risks





Benzonana et al. Isoflurane, a commonly used volatile anesthetic, enhances renal cancer growth and malignant potential via the hypoxia inducible factor cellular signaling pathway in vitro. Anesthesiology. 2013 Sep;119(3):593-605.





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Lidocaine IV vs Placebo

- Cochrane Review
- Kranke et al. Continuous intravenous perioperative lidocaine infusion for postoperative pain and recovery. Cochrane Database Syst Rev. 2015
- 45 trials, 2802 patients
- Results:
- Improved analgesia for abdominal surgery only
- Reduction in length of hospital stay, PONV & opioid requirements

- Cochrane Review
- Weibel et al. Continuous intravenous perioperative lidocaine infusion for postoperative pain and recovery in adults. Cochrane Database Syst Rev. 2018
- 68 trials, 4525 patients
- Results: "Due to variation in the SD in the studies, we are uncertain whether IV lidocaine improves postoperative pain compared to placebo"

UNC The Gold Standard **NSAIDs** Acetaminophen » analgesia and » first-line treatment for inflammatory and antipyresis with nociceptive pain minimal antiinflammatory » powerful COX » devoid of renal, inhibitors – both platelet, and peripheral and central gastrointestinal toxicity inhibitors of PGs » MAX dose 3000 synthesis mg/day

NSAIDS Improve Cancer Outcomes Chronic aspirin use decreases risk of colon cancer COX 2 enzyme tumor overexpression COX-2 inhibitors induce tumor cell apoptosis COX-2 inhibitors improve response to chemotherapy in lung cancer Ketorolac and diclofenac improve disease free survival in breast cancer NSAIDs appear to improve disease free survival and overall survival after cancer surgery





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Improved functional outcomes

UNC **Multimodal Pain Management** Opioids Nonopioid analgesics Tramadol, Nucynta » Acetaminophen/NSAIDs » Anticonvulsants Other modalities » Antidepressants (TCAs, » TENS unit Duloxetine) » Relaxation techniques » Amantadine, Dextromethorphan » Hypnosis Topical pharmacological Muscle relaxants agents » Tizanidine » Capseicin Intraoperative » Lidoderm patches » Lidocaine gtt » Voltaren gel » Ketamine gtt Flector patches

- » Dexmedetomidine
- » Clonidine

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- » Caffeine
- » Ketamine patches



















































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