

# Evidence-based analgesia prescribing to prevent opioid harms after surgery: A call to action

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## Disclosures

**I currently receive research funding from:**

- Canadian Institutes of Health Research (CIHR)
- Merck Canada Inc. (Investigator-Initiated Study Grant)
- Mitacs Canada (Accelerate Program)
- Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)

**I currently receive salary support from:**

- Fonds de recherche du Québec - Santé (FRQS)

## Main message

- Risk of opioid misuse and addiction should be taken into account when managing postoperative pain.
- There is very limited evidence supporting the benefits of using opioids after surgical discharge.



- I am **not** a pharmacist nor a pharmacologist;
- I am **not** a prescriber;
- I **am** a PhD scientist focused on surgical outcomes research.



- Comparative-effectiveness research
- Postoperative clinical outcomes



Focus on **opioid prescription after postoperative discharge**, with very limited attention to analgesia delivered during hospital stay.



## Evidence-based analgesia prescribing to prevent opioid harms after surgery

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- 2 Postoperative opioid prescribing: US and Canada 🇨🇦🇺🇸 versus The World 🌍
- 3 Why do clinicians in 🇨🇦🇺🇸 prescribe opioids after surgical discharge?
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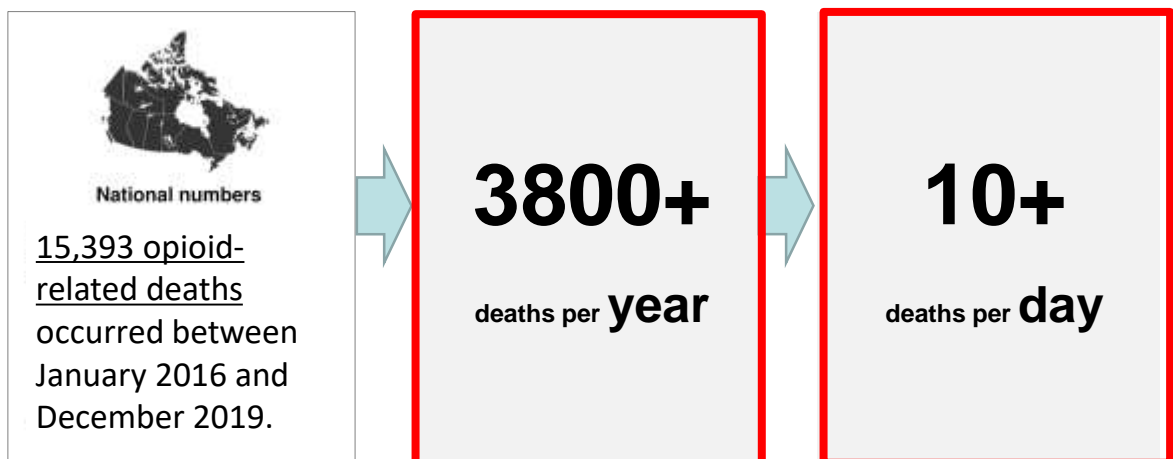
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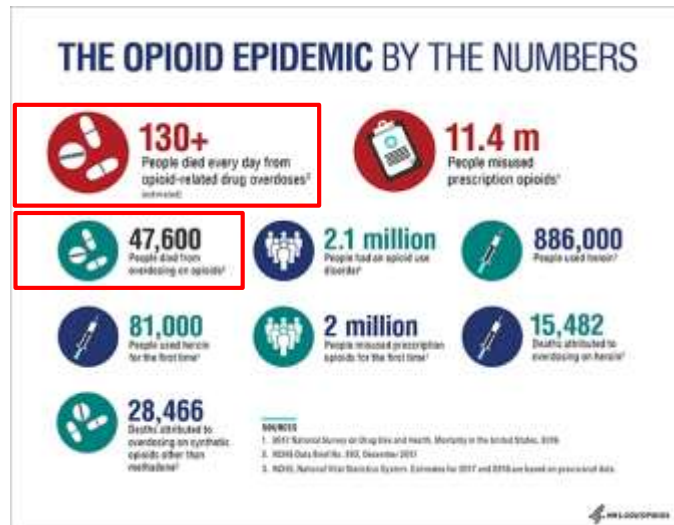
## Good intentions gone wrong: Surgery and the opioid crisis

### Opioid Epidemic in Canada 🇨🇦



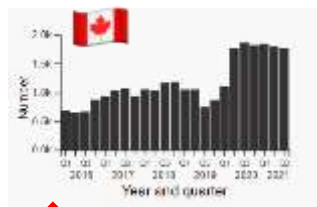
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### Opioid Epidemic in the US

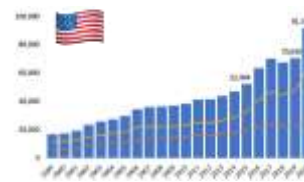


<https://www.hhs.gov/opioids/about-the-epidemic/index.html>

### OPIOIDS and COVID-19: the Nation's "Twin-Demic"



↑ ~ 6500 deaths/year  
~20 deaths/day



↑ ~ 75500 deaths/year  
~200 deaths/day

#### POTENTIAL CAUSES:

- Pandemic-related stress and social isolation leading to changes in drug use behaviors.
- Erratic and volatile drug supply due to border and travel restrictions.
- Reduced accessibility to addiction, mental health, and harm reduction services.



## Are we facing an opioid crisis in Europe?

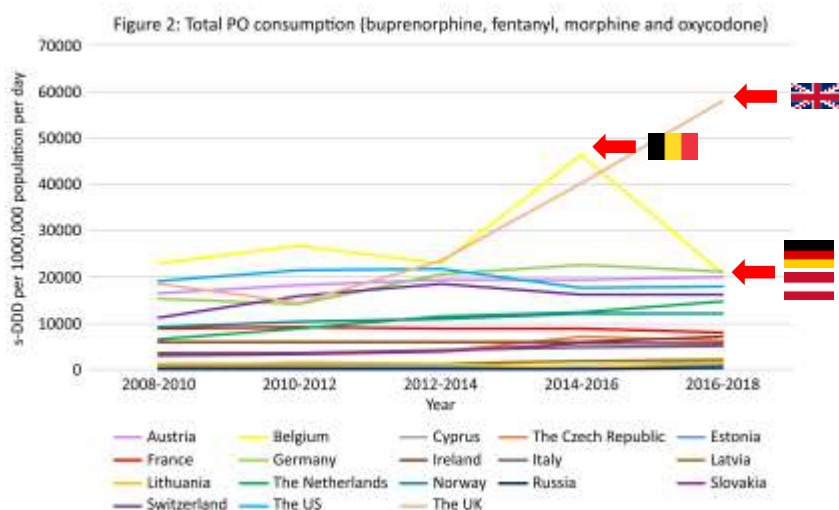
\*Katia M C Verhamme, Arthur M Bohnen



Verhamme KMC, Bohnen AM. Are we facing an opioid crisis in Europe? Lancet Public Health. 2019 Oct;4(10):e483-e484.



Is Europe facing an opioid crisis like the United States? An analysis of opioid use and related adverse effects in 19 European countries between 2010 and 2018.



Pierce M, et al. Is Europe facing an opioid crisis like the United States? An analysis of opioid use and related adverse effects in 19 European countries between 2010 and 2018. Eur Psychiatry. 2021 Jun 21;64(1):e47.

THE LANCET

"It would be a major contribution if  
patients in need of the  
North American opioids could be  
provided by the Lancet."



## Responding to the opioid crisis in North America and beyond: recommendations of the Stanford-Lancet Commission

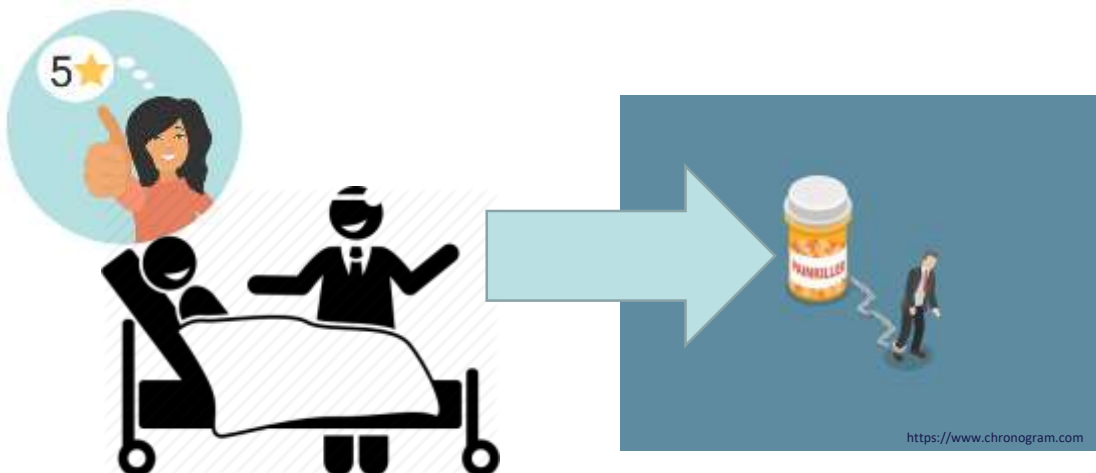
Keith Humphreys, Chelsea L. Shover, Christina M. Andrews, Amy S.B. Bohner, Margaret L. Brandeau, Jonathan P. Caulkins, Jonathan H. Chen, Mariano-Florentino Cuellar, Yasemin E. Hurd, David N. Juergens, Howard K. Koh, Erin E. Krebs, Anna Lembke, Sean C. Mackey, Lisa Larimón Ouellette, Brian Suffoletto, Christine Timko

### Domain 7: Prevent opioid crises beyond the USA and Canada

- Prevent pharmaceutical companies in the USA from exporting fraudulent and corrupting opioid promotion practices
- Distribute free, generic morphine for analgesia to hospitals and hospices in low-income nations

Kalkman GA, et al. Trends in use and misuse of opioids in the Netherlands: a retrospective, multi-source database study. *Lancet Public Health*. 2019 Oct 11(10):e498-e505

## Good intentions gone wrong: Surgery and the opioid crisis



Makary MA, Overton HN, Wang P. Overprescribing is major contributor to opioid crisis. *BMJ*. 2017;359:j4792.

## Good intentions gone wrong: Surgery and the opioid crisis



Surgeons are the **2<sup>nd</sup>** largest subgroup of specialist involved in opioid prescribing

Levy et al. *Am J Prev Med.* 2015;49(3):409-413



**6-17%** of patients become chronic opioid users after surgery

Brummett CM, et al. *JAMA Surgery.* 2017;152(6):e170504.  
Brescia AA, et al. *Ann Thorac Surg.* 2019; 108(4):1107-1113.



**40-70%** of opioid pills prescribed for surgical patients go unused

Bicket MC, et al. *JAMA Surgery.* 2017; 152(11):1066-1071

<https://janaburson.wordpress.com/>

## Good intentions gone wrong: Surgery and the opioid crisis



### Inappropriate opioid prescription after surgery

Mark D Neuman, Brian T Bateman, Hannah Wunsch

**The impact of surgery on the opioid crisis cannot be underestimated...**

Neuman MD, Bateman BT, Wunsch H. Inappropriate opioid prescription after surgery. *Lancet.* 2019;393(10180):1547-1557.



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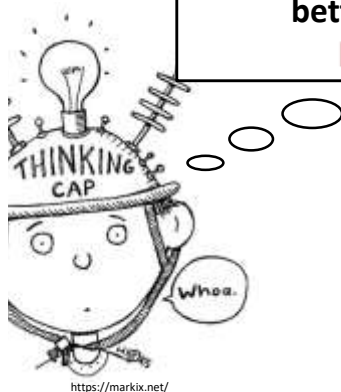
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## Postoperative opioid prescribing: US and Canada 🇨🇦🇺🇸 versus The World 🌐



## Postoperative opioid prescribing: US and Canada 🇨🇦🇺🇸 versus The World 🌐

	Population	Opioid prescription after discharge	
 <p>Differences in Prescription of Narcotic Pain Medication After Operative Treatment of Hip and Ankle Fractures in the United States and the Netherlands</p> <p>Annelouk L. C. Lindenhovius, MSc; Gjin T. T. Heisterhorst, MSc; Alessandra C. Schrefflen, MSc; Mark Vrahas, MD; David Ring, MD, and Peter Kloen, MD, PhD</p> <p><i>J Trauma.</i> 2009;67: 160–164</p>	Hip/Ankle fracture repair	USA 84% (n=190)	Netherlands 5% (n=116)
 <p>Comparison of Opioid Utilization Patterns After Major Head and Neck Procedures Between Hong Kong and the United States</p> <p>Ryan J. Li, MD; Myriam Loyo Li, MD; Emique Leon, MS; Cherrie W. K. Ng, BA; Masae Shindo, MD; Katie Minziane; Peter Andersen, MD; Daniel Clayburgh, MD, PhD; Mark Wax, MD; Jason Y. K. Chan, MBBS</p> <p><i>JAMA Otolaryngol Head Neck Surg.</i> 2018;144(11):1060-1065.</p>	ENT	USA 86% (n=567)	Hong Kong 0.5% (n=263)
 <p>Opioids After Surgery in the United States Versus the Rest of the World</p> <p>The International Patterns of Opioid Prescribing (IPOP) Multicenter Study</p> <p>Kaafarani H, Han K; Mohamad EM, et al.</p> <p><i>(Ann Surg</i> 2020;272:879–886)</p>	Appendectomy Cholecistectomy Inguinal hernia rep. (Lap, open)	USA 92% (n=655)	'Rest of the World' 5% (n=4035)



Maybe patients  
better care



## Quality of Postoperative Pain Management in American Versus European Institutions

C. Richard Chapman, Duncan A. Stevens, and Arthur G. Lipman

*Journal of Pain & Palliative Care Pharmacotherapy*, 2013;27:350–358.

sizes). Overall, the results are clear in demonstrating much better pain control in the ensemble of European countries as compared to the United States.



## Satisfaction with pain relief after operative treatment of an ankle fracture

Gijs T.T. Helmerhorst<sup>2†</sup>, Anneluuk L.C. Lindenhovius<sup>3,c</sup>, Mark Vrahas<sup>1</sup>, David Ring<sup>6,\*</sup>, Peter Kloen<sup>4</sup>

*Injury, Int. J. Care Injured* 43 (2012) 1958–1961

Conclusions: Pain and satisfaction with pain relief are culturally mediated. Patients that use non-opioid pain medication report less pain and greater satisfaction with pain relief than patients managed with opioid pain medication.



## Pain after orthopaedic surgery: differences in patient reported outcomes in the United States vs internationally. An observational study from the PAIN OUT dataset

R. Zaslansky<sup>1,\*</sup>, W. Meissner<sup>1</sup> and C. R. Chapman<sup>2</sup>

*British Journal of Anaesthesia*, 120 (4): 790–797 (2018)

Conclusions: Three PROs differed between international and US patients, with higher 'worst pain' for US patients. Neither risk factors, nor patient mix accounted for the observed differences for 'worst pain'.



Why do clinicians in  prescribe so much opioids after surgical discharge?



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## Why clinicians in prescribe opioids?

**Established prescribing behaviours**

**Convenience**

**Ensure patient satisfaction**

**Unfounded pharma industry claims**

Moore PA, et al. Why do we prescribe Vicodin? J Am Dent Assoc. 2016;147(7):530-3.

## Why clinicians in prescribe opioids?

**Established prescribing behaviours**

**Convenience**

**Ensure patient satisfaction**

**Unfounded pharma industry claims**

- Learned in medical school and specialty training:

**“Opioids are the most effective oral analgesics for managing acute pain”**



Moore PA, et al. Why do we prescribe Vicodin? J Am Dent Assoc. 2016;147(7):530-3.

## Why clinicians in prescribe opioids?

Established prescribing behaviours

Convenience

Ensure patient satisfaction

Unfounded pharma industry claims

- Analgesia prescribing for the most severe outcome (i.e. for the few patients who will have a 'painful recovery')
- Avoids receiving a phone call or patients returning to the hospital/clinic



Moore PA, et al. Why do we prescribe Vicodin? J Am Dent Assoc. 2016;147(7):530-3.

## Why clinicians in prescribe opioids?

Established prescribing behaviours

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- Especially when patient satisfaction is linked to hospital reimbursement



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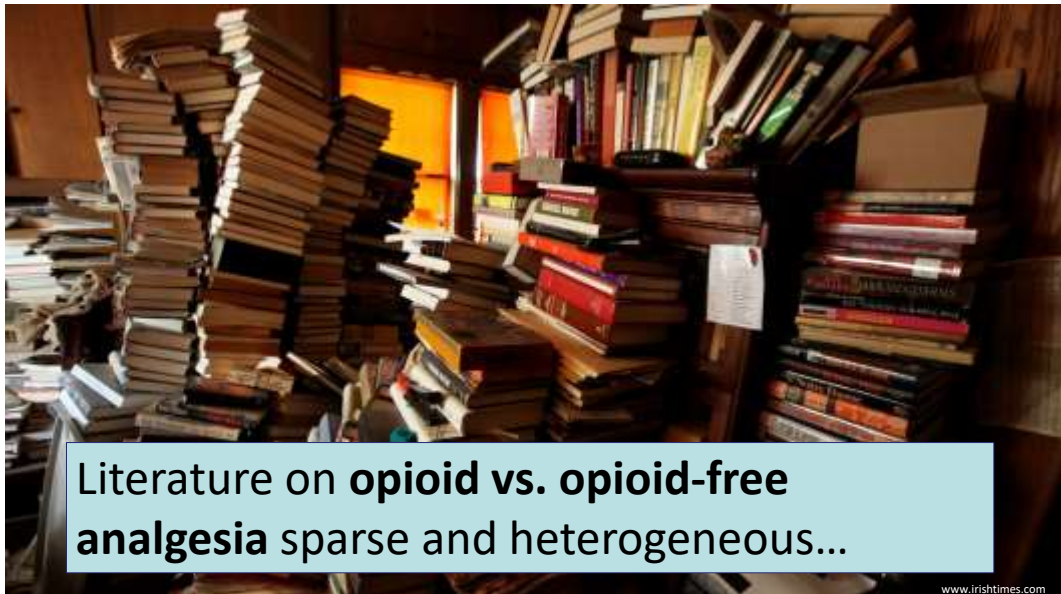
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The decision to prescribe opioids after surgical discharge largely depends on **surgeons' preference, habits, and prescribing culture**

There is an urgent need for robust trials comparing **opioid vs. opioid-free analgesia** to guide clinical decision-making!



Literature on **opioid vs. opioid-free analgesia** sparse and heterogeneous...

[www.irishtimes.com](http://www.irishtimes.com)



## Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia



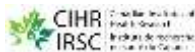
Julio F. Fiore Jr.<sup>1,3,4,6,\*,†</sup>, Ghadeer Olleik<sup>2,4,†</sup>, Charbel El-Kefraoui<sup>1</sup>, Bernardo Verdolin<sup>1,4</sup>, Araz Kouyoumdjian<sup>1,7</sup>, Allison Alldrit<sup>1,8</sup>, Ana G. Figueiredo<sup>1,4</sup>, Sofia Valanci<sup>1,4</sup>, Javier A. Marquez-GdeV<sup>1</sup>, Matthew Schulz<sup>7</sup>, Dan Moldoveanu<sup>3,4</sup>, Philip Nguyen-Powanda<sup>9</sup>, Gordon Best<sup>7</sup>, Alexander Banks<sup>7</sup>, Tara Landry<sup>2</sup>, Nicolò Pecorelli<sup>1</sup>, Gabriele Baldini<sup>4,5</sup> and Liane S. Feldman<sup>1,3,4,8</sup>

### Review aim:

To assess the extent, range and nature of the literature addressing opioid-free analgesia after major surgery\*

\*WHO definition: any surgery conducted in a hospital operating room

### Funding:



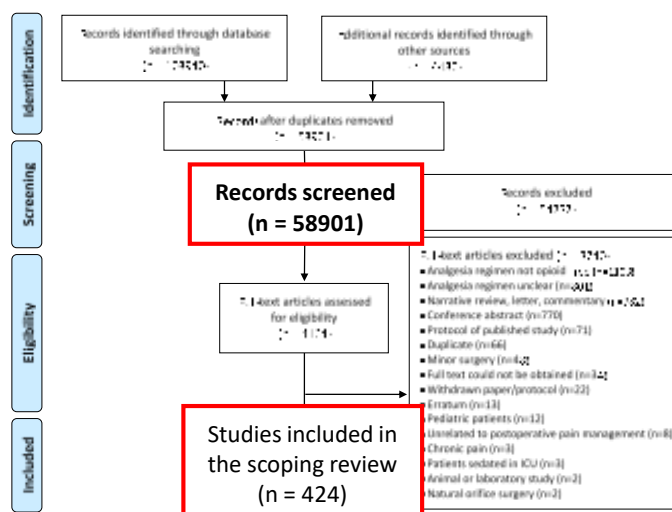
## Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia

### Review methods

- Inclusion criteria:
  - Studies addressing **opioid-free analgesia after surgery**
  - **Any type of study design** (from case studies to RCTs)
- We extracted **study characteristics** including design, country, year, surgical procedure(s) and interventions.

## Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia

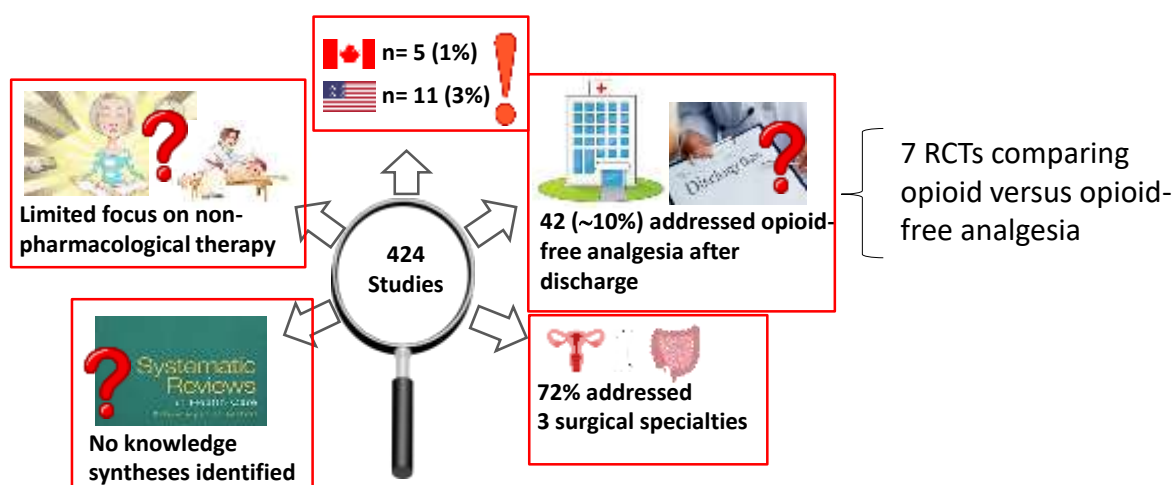
### Results



Fiore JF Jr, Olleik G, El-Kefraoui C, et al. Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia. *Br J Anaesth.* 2019;123(5):627-636.

## Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia

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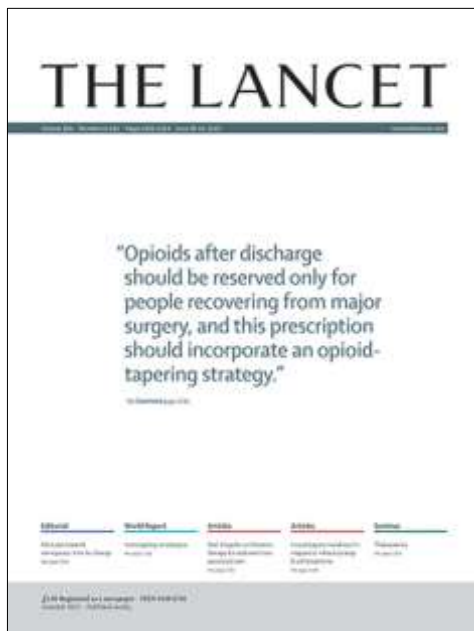
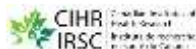
# Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

Julia F Fiore Jr\*, Charbel El-Kefraoui\*, Marc-Aurele Chay, Philip Nguyen-Powanda, Uyen Du, Ghadeer Olfek, Fateme Rajabiyyazi, Araz Kouyoumdjian, Alexa Derksen, Tara Landry, Alexandre Amar-Zifkin, Amy Bergeron, Agruhotram V Ramanakumar, Marc Martel, Lawrence Lee, Gabriele Baklini, Liane S Feldman

## Review aim:

To summarize the evidence regarding the comparative-effectiveness of opioid versus opioid-free analgesia after postoperative discharge.

## Funding:





Downloaded from <http://ajph.org/> at National Taiwan University on June 11, 2015



This research, published in *The Lancet*, suggests communities are no longer as healthy as they once were, despite the fact that smoking rates have fallen and obesity rates have risen.



**Journal Watch**

## Post-surgery opioids at home can do more harm than good, study says

Spring Field • Montreal Gazette

Jan 24, 2022 - Jan 24, 2022 - 3 minutes read -  Join the conversation



## Methods

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# Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

## Methods



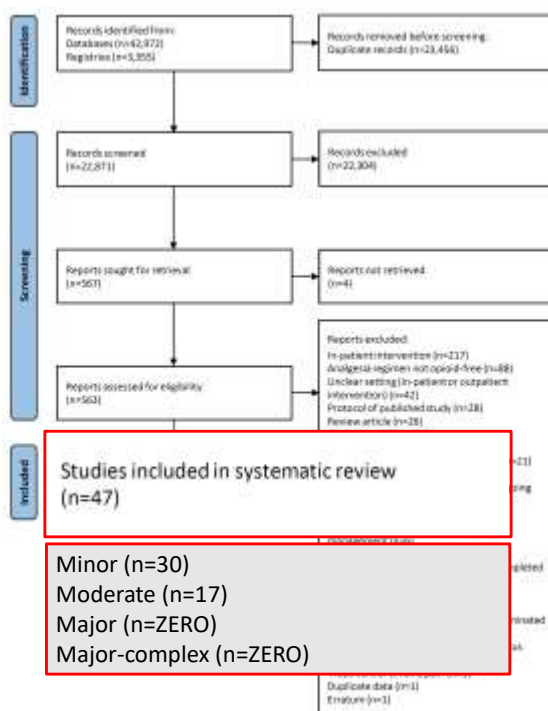
### The POSSUM System of Surgical Audit

Arch Surg. 2002;137(1):15-19.

Surgery extent	Examples
<b>Minor</b> (clinic/day surgery)	Dental, eye, hand surgeries
<b>Moderate</b> (OR/day surgery)	General abdominal, thyroid, breast surgery
<b>Major</b> (OR/in-patient/short LOS)	Colon, liver, kidney resections
<b>Major-complex</b> (extensive tissue trauma/impairment)	APR, Whipple's, thoraco-abdominal procedures

Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022; 399 (10343): 2280-2293.

## Search results





Regression:  $\hat{y} = 121.71 + 38(\mu + 0.12z)$ ,  $r^2 = 91.34\%$   
 Test for overall effect:  $2 = 0.04$ ,  $p = 0.81$

## Pain on day 1 post-discharge (VAS 10-cm)

Test for overall effect:  $Z = 121.71$ ,  $df = 10$  [ $p < 0.001$ ],  $I^2 = 91.34\%$   
Test for heterogeneity:  $\chi^2 = 121.71$ ,  $df = 10$  [ $p < 0.001$ ],  $I^2 = 91.34\%$

High risk of bias ~60%



### Pain on day 1 post-discharge (VAS 10-cm)

The diagram illustrates a regression discontinuity design. A horizontal axis represents the change in the number of opioid prescriptions (MID) in centimeters, ranging from -4 to 4. A vertical line at 0 represents the threshold. To the left of 0, the region is labeled "Favors opioids", and to the right, it is labeled "Favors opioid-free". A blue diamond at the threshold (0) indicates the estimated treatment effect. Two vertical blue lines are drawn at -1 and 1, both labeled "MID = 1cm". The text "0.01 [-0.26, 0.27]" is displayed above the threshold, representing the estimated effect and its confidence interval.



Pain on day 1 post-discharge (VAS 10-cm)

Minor surgery	✖	Moderate surgery
Day surgery	✖	In-patient surgery
High risk-of-bias	✖	Lower risk-of-bias
Opioids 'as needed'	✖	Around-the-clock
Strong opioids (morphine, oxycodone)	✖	Weak (codeine, tramadol)
Multimodal analgesia	✖	Unimodal analgesia
Industry funding	✖	No industry funding
Published data	✖	Unpublished data



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## Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

### Pain on other days after discharge (VAS 10-cm)



	No. of trials	No. of patients	Effect size [WMD (95% CI)]	Evidence supports	Quality of evidence
Post-discharge day 0	21	2317	-0.25 (-0.74, 0.24) <sup>a</sup>	No difference	Low
Post-discharge day 2	29	3054	0.01 (-0.26, 0.28) <sup>a</sup>	No difference	Moderate
Post-discharge day 3	26	2321	0.44 (0.18, 0.70) <sup>a</sup>	No difference	Moderate
Post-discharge day 4-7 <sup>c</sup>	22	1946	0.23 (-0.01, 0.47) <sup>a</sup>	No difference	Low
Post-discharge day 8-30 <sup>d</sup>	9	677	0.33 (-0.32, 0.99) <sup>a</sup>	No difference	Very low

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## Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

### Other postoperative outcomes



	No. of trials	No. of patients	Effect size [WMD (95% CI)]	Evidence supports	Quality of evidence
Pain interference (first week post-discharge) <sup>a</sup>	6	657	3.51 (1.01, 6.02) <sup>a</sup>	No difference	Low
Quality of recovery (post-discharge day 2) <sup>f</sup>	2	156	-0.34 (-0.87, 0.19) <sup>a</sup>	No difference	Moderate
Patient dissatisfaction	14	1750	1.14 (0.67, 1.94) <sup>b</sup>	No difference	Low
Healthcare reutilization	8	778	0.88 (0.30, 2.61) <sup>b</sup>	No difference	Very low

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## Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

### Adverse events



	No. of trials	No. of patients	Effect size [WMD (95% CI)]	Evidence supports	Quality of evidence
Nausea	21	3544	2.37 (1.59, 3.55)	Opioid-free	High
Vomiting (co-primary outcome)	12	2789	1.63 (1.04, 2.57)	Opioid-free	High
Constipation	16	2227	1.63 (1.04, 2.57)	Opioid-free	High
Dizziness	14	2878	2.22 (1.20, 4.08)	Opioid-free	High
Drowsiness	14	1695	1.57 (1.02, 2.42)	Opioid-free	Moderate
Pruritus	10	1730	1.27 (0.73, 2.21)	No difference	Low

Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022 (Accepted).

## Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

### Conclusion

- Findings from this meta-analysis support that **opioid prescribing** at surgical discharge **does not reduce pain intensity** but does **increase adverse events**.
- Evidence relied on trials focused on **surgeries of minor and moderate extent**, suggesting that clinicians can **consider prescribing opioid-free analgesia** in these surgical settings.
- Data were largely derived from low quality trials  $\Rightarrow$  **there is a great need to advance the quality of research in this field**.

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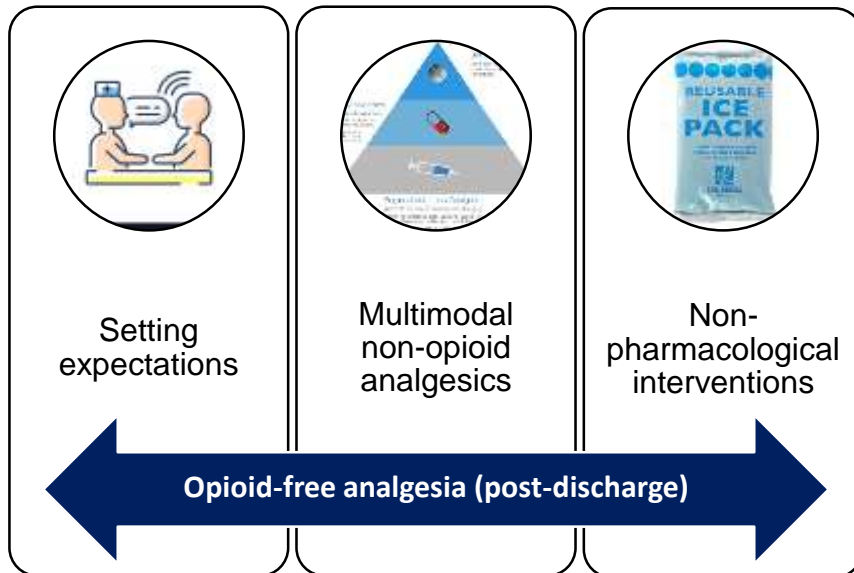
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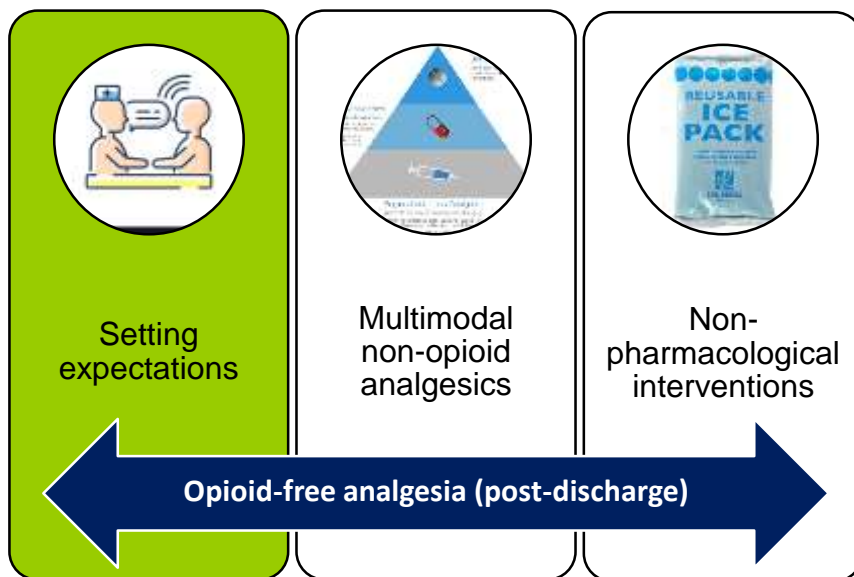
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## What does post-discharge opioid-free analgesia look like?



## What does post-discharge opioid-free analgesia look like?



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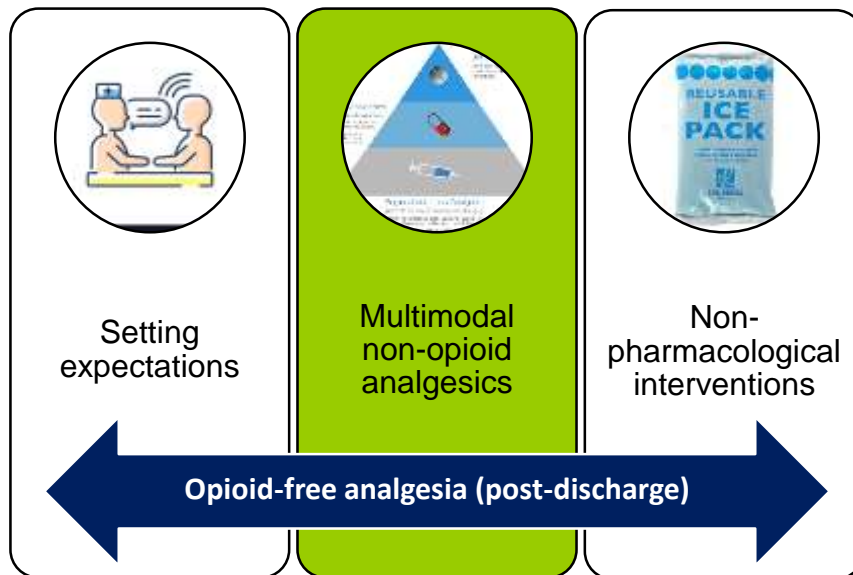
### Setting expectations



**OPEN**

<https://opioidprescribing.info/>

## What does post-discharge opioid-free analgesia look like?

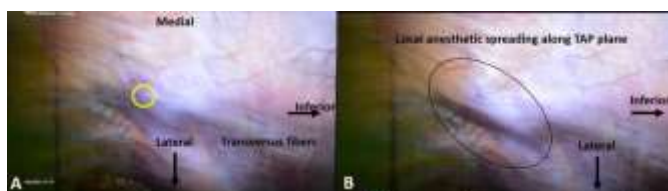


## In-hospital: Regional analgesia



### Transversus abdominis plane block versus local anesthetic wound infiltration for optimal analgesia after laparoscopic cholecystectomy: A systematic review and meta-analysis with trial sequential analysis

Sina Grape<sup>a,\*</sup>, Kyle Robert Kirkham<sup>b</sup>, Liliane Akiki<sup>c</sup>, Eric Albrecht<sup>d</sup>



Grape S, et al. Transversus abdominis plane block versus local anesthetic wound infiltration for optimal analgesia after laparoscopic cholecystectomy: A systematic review and meta-analysis with trial sequential analysis. J Clin Anesth. Epub 2021; PMID: 34243030.

## Discharge prescription: Around-the-clock non-opioids

### Paracetamol



### Ibuprofen



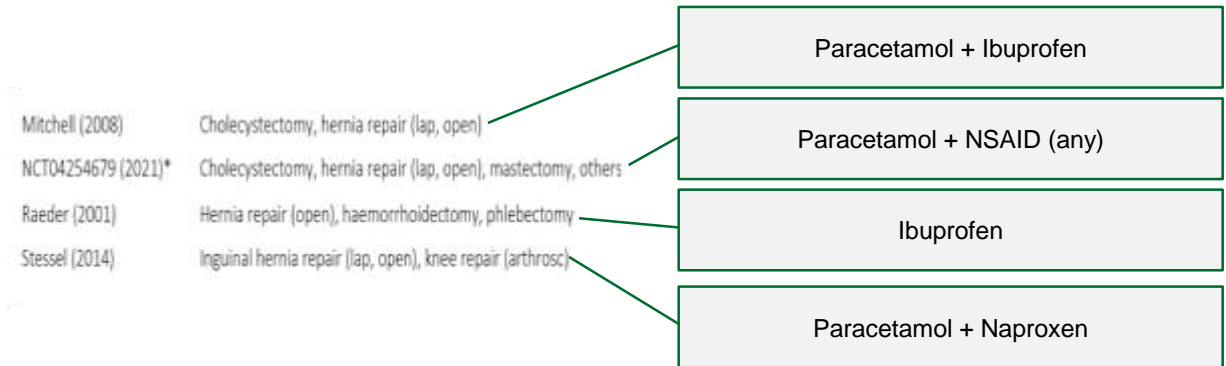
OR

### Other NSAIDs

Naproxen  
Celecoxib  
Diclofenac  
Etodolac  
Indomethacin  
Ketoprofen  
Ketorolac  
Meloxicam  
Piroxicam

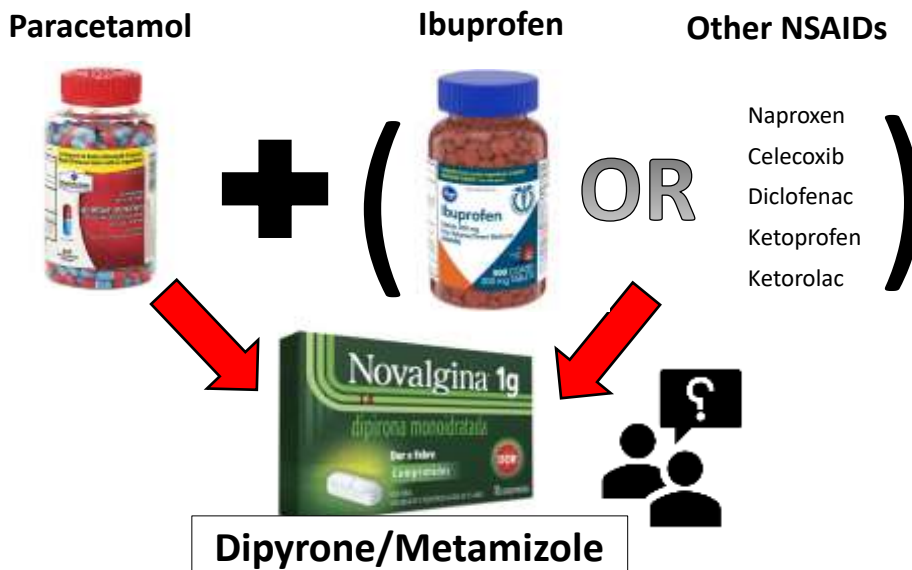
## Discharge prescription

Opioid versus opioid-free analgesia after surgical discharge:  
A systematic review and meta-analysis of randomized trials



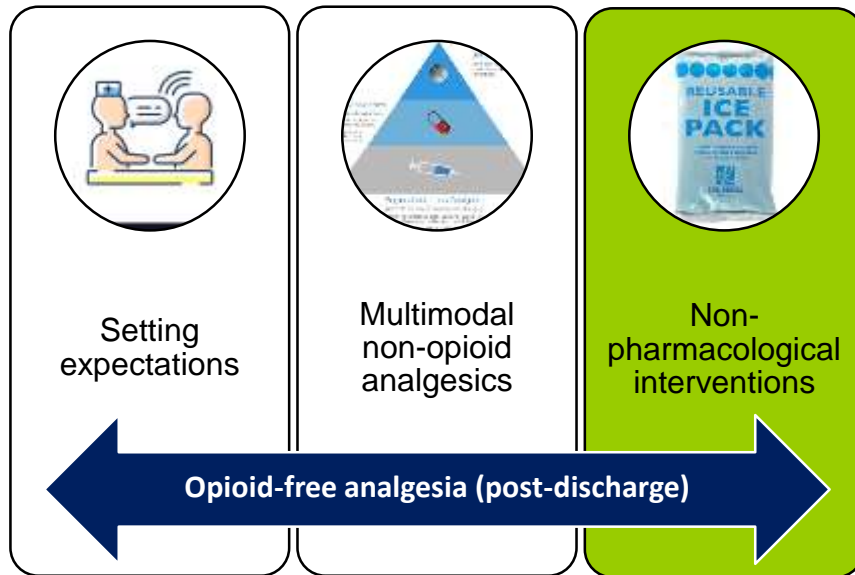
Fiore JF, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials (manuscript under review)

## Discharge prescription: Around-the-clock non-opioids

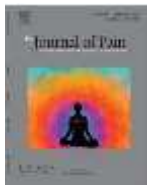




## What does post-discharge opioid-free analgesia look like?



## Non-pharmacological pain interventions



### Guidelines on the Management of Postoperative Pain

Management of Postoperative Pain: A Clinical Practice Guideline From the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council



Cognitive-behavioral modalities	Physical modalities
<ul style="list-style-type: none"> <li>• Relaxation therapy</li> <li>• Guided imagery</li> <li>• Music</li> <li>• Hypnosis</li> </ul>	<ul style="list-style-type: none"> <li>• Transcutaneous electrical nerve stimulation</li> <li>• Acupuncture</li> <li>• Massage</li> <li>• Cold therapy (ice packs)</li> </ul>

**Weak recommendation, low-quality evidence**

Chou R, et al. J Pain. 2016 Feb;17(2):131-57.

## Non-pharmacological pain interventions

### Cognitive-behavioral modalities

- Relaxation therapy
- Guided imaginary
- Music
- Hypnosis

### Physical modalities

- Transcutaneous electrical nerve stimulation
- Acupuncture
- Massage
- Cold therapy (ice packs)

**Fortunately, the tide started shifting recently with new studies providing more robust evidence...**

## Non-pharmacological pain interventions

### Cognitive-behavioral modalities

- Relaxation therapy
- Guided imaginary
- Music
- Hypnosis

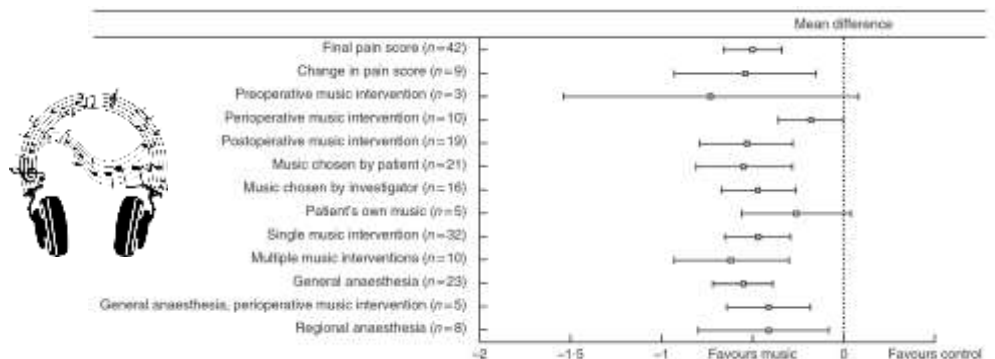
### Physical modalities

- Transcutaneous electrical nerve stimulation
- Acupuncture
- Massage
- Cold therapy (ice packs)



### Meta-analysis evaluating music interventions for anxiety and pain in surgery

A. Y. R. Kühlmann<sup>1</sup>, A. de Rooij<sup>2</sup>, L. E. Kroese<sup>3</sup>, M. van Dijk<sup>1,4</sup>, M. G. M. Hunink<sup>5,6,7</sup> and J. Jeekel<sup>1</sup>



Kühlmann AYR, de Rooij A, Kroese LF, van Dijk M, Hunink MGM, Jeekel J. Meta-analysis evaluating music interventions for anxiety and pain in surgery. Br J Surg. 2018 Jun;105(7):773-783.

## Non-pharmacological pain interventions

### Cognitive-behavioral modalities

- Relaxation therapy
- Guided imaginary
- Music
- Hypnosis

### Physical modalities

- Transcutaneous electrical nerve stimulation
- Acupuncture
- Massage
- Cold therapy (ice packs)



### The Effect of Cryotherapy Application on Post-operative Pain

#### A Systematic Review and Meta-analysis

Muaddi, Hala<sup>1\*</sup>; Lillie, Erin<sup>2</sup>; Silva, Stephanie<sup>3</sup>; Cross, Jori-Lee<sup>4</sup>; Ladha, Karim<sup>5</sup>; Choi, Stephen<sup>6,7</sup>; Mocon, Aaron<sup>8</sup>; Karanickolas, Paul<sup>1,2,8\*\*</sup>



#### Results:

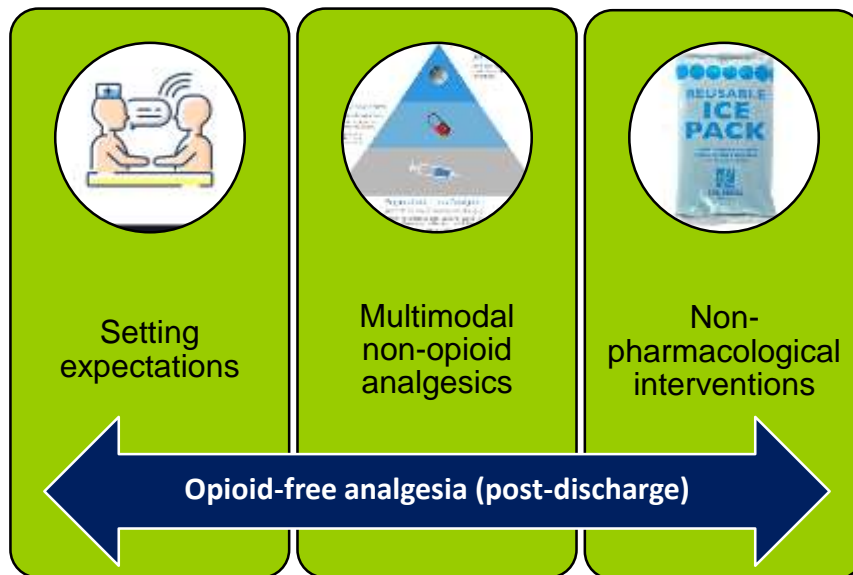
Fifty-one RCTs (N = 3445 patients) were included. With moderate certainty evidence, patients treated with cryotherapy experienced a reduction in pain on **postoperative day 1 (standardized mean differences -0.50, 95% CI -0.71 to -0.29, I<sup>2</sup> = 74%)** and day 2 (standardized mean differences -0.63, 95% CI -0.91 to -0.35, I<sup>2</sup> = 83%) relative to without cryotherapy application. With moderate certainty of evidence, cryotherapy reduces opioid consumption in morphine milliequivalents and rocephine milliequivalents/kg, (mean differences -7.43, 95% CI -12.42, -2.44, I<sup>2</sup> = 96%) and (mean differences -0.89, 95% CI -1.45, -0.33, I<sup>2</sup> = 99%), respectively. With low certainty evidence, cryotherapy does not affect hospital LOS or rate of SSI.

#### Conclusion:

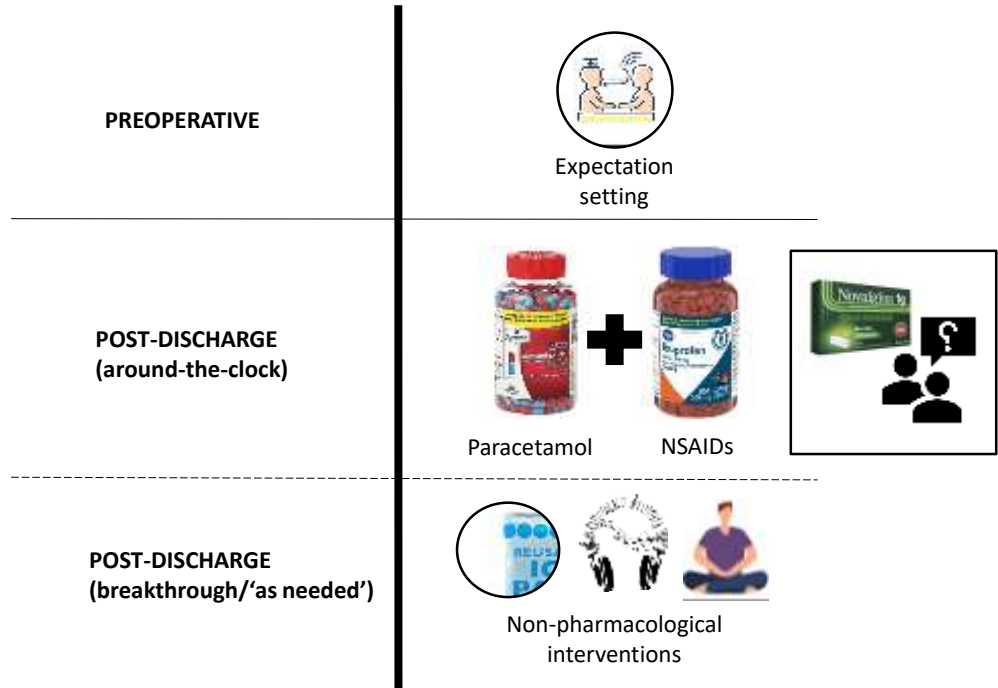
**Cryotherapy is a pragmatic, noncostly intervention that reduces postoperative pain and opioid consumption with no effect on SSI rate or hospital LOS.**

Muaddi H, Lillie E, Silva S, Cross JL, Ladha K, Choi S, Mocon A, Karanickolas P. The Effect of Cryotherapy Application on Post-operative Pain: A Systematic Review and Meta-analysis. Ann Surg. 2021 Epub ahead of print.

## What does post-discharge opioid-free analgesia look like?



## Post-discharge opioid-free analgesia after general abdominal surgery



### Evidence-based analgesia prescribing to prevent opioid harms after surgery

- 1 Good intentions gone wrong: Postoperative analgesia and the opioid crisis
- 2 Postoperative opioid prescribing: US and Canada 🇨🇦🇺🇸 versus The World 🌍
- 3 Why do clinicians in 🇨🇦🇺🇸 prescribe opioids after surgical discharge?
- 4 Current evidence regarding opioid analgesics after postoperative discharge
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- 6 Our current research
- 7 Summary and conclusions

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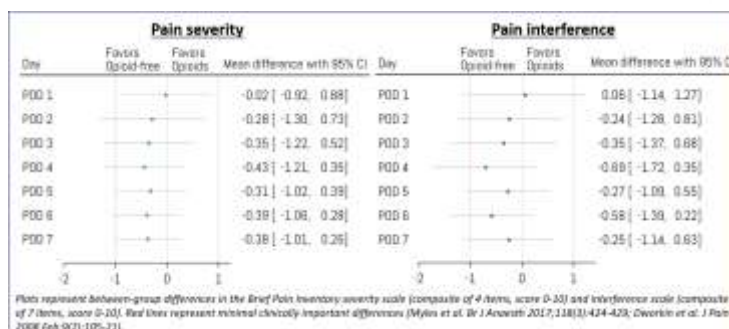


Original Investigation | Surgery

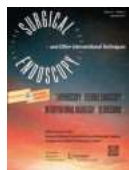
### Feasibility of Prospectively Comparing Opioid Analgesia With Opioid-Free Analgesia After Outpatient General Surgery A Pilot Randomized Clinical Trial

Uyen Do, MSc; Charbel El-Kefraoui, BSc; Makena Pook, BHS; Saba Balvardi, MD, MSc; Natasha Barone, MSc; Philip Nguyen-Powanda, BSc; Lawrence Lee, MD, PhD; Gabriele Baldini, MD, MSc; Liane S. Feldman, MD; Julio F. Fiore Jr, PhD; and the McGill Better Opioid Prescribing Collaboration

- Feasibility of recruitment, randomization, interventions, and data collection ✓
- Supported equipoise. ✓

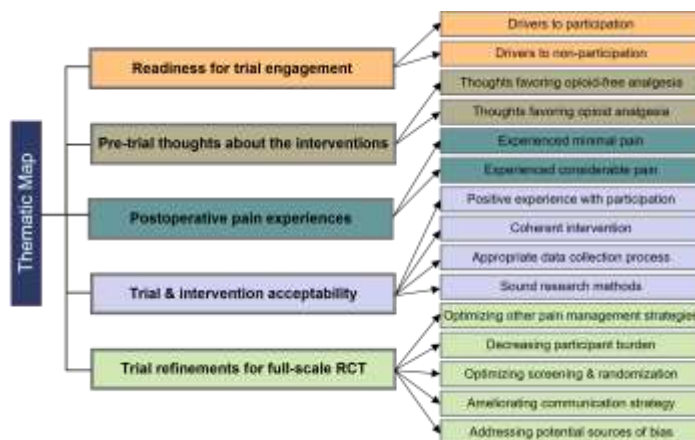


Do U, El-Kefraoui C, Pook M, Balvardi S, Barone N, Nguyen-Powanda P, Lee L, Baldini G, Feldman LS, Fiore JF Jr. Feasibility of Prospectively Comparing Opioid Analgesia With Opioid-Free Analgesia After Outpatient General Surgery: A Pilot Randomized Clinical Trial. JAMA Netw Open. 2022 Jul 1;5(7):e2221430.



## S110—Opioid-free analgesia after outpatient general surgery: A qualitative study focused on the perspectives of patients and clinicians involved in a pilot trial

Uyen Do<sup>1,2</sup>, Makena Pook<sup>1,2</sup>, Tahereh Najafi<sup>1</sup>, Fateme Rajabiyazdi<sup>3</sup>, Charbel El-Kefraoui<sup>1,2</sup>, Saba Salvardi<sup>1,4</sup>,  
Natasha Barone<sup>5</sup>, Hiba Elhaj<sup>1</sup>, Philip Nguyen-Powanda<sup>1,2</sup>, Lawrence Lee<sup>1,2,4,6</sup>, Gabriele Baldini<sup>1,7</sup>,  
Liane S. Feldman<sup>1,2,4,6</sup>, Julio F. Fiore<sup>1,2,4,6,8</sup> on Behalf of The McGill Better Opioid Prescribing (MBOP)  
Collaboration



Do, U, et al. Opioid-free analgesia after hospital discharge following outpatient general surgery: A qualitative study focused on the perspectives of patients and clinicians involved in a pilot trial. Surg Endosc 2022, Online ahead of print

## Opioid-free analgesia after outpatient general surgery: A randomized controlled trial

Postoperative Analgesia Intervention with Non-opioid Alternatives II (PAIN-Alt II)

<b>Opioid analgesia</b>	Around-the-clock non-opioid analgesics (paracetamol and/or NSAIDs) and opioid tablets 'as needed' for breakthrough pain.
<b>Opioid-free analgesia</b>	Around-the-clock non-opioid analgesics and, in the case of breakthrough pain, rescue analgesia will be provided by increasing doses and/or adding non-opioid drugs or non-pharmacological interventions.

### Targeted funding:



CIHR  
IRSC

Project Grant Program



US Department of Defense Medical Research Program



## Evidence-based analgesia prescribing to prevent opioid harms after surgery



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## Summary and conclusions

- Although opioids are the mainstay treatment for acute pain in   , current evidence supports that opioid prescribing at surgical discharge **does not improve pain outcomes** but **does increase adverse events**.
- There is still a **great need to advance the quality and scope of research in this field**

**Postoperative analgesia prescribing should be guided by evidence rather than by tradition and dogma.**





## Perioperative Care and Outcomes Research (PCOR) Lab



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Postdoctoral Fellow



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**Makena Pook, BSc**  
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Thank you!



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