

## Definisjoner:

### OPIOID epidemi, også i Norge?

Hva er problemet?  
og

Hvordan bør vi håndtere det?

Klækken, 9.mars – 2023  
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#### Opiat:

- Et opiat er et legemiddel fremstilt fra opium (valmue, som dyrkes og høstes)
- A) Naturlige
- B) Semisyntetiske (kan fremstilles fra opium)



Opater  
Papaverin  
Noskapin



Austgulen Westin A: Opiat eller opioid?  
Tidsskr Nor Legeforen 2011;131: 1320-1

#### Opioid:

→ stoffer som *likner* på opium, eller nærmere bestemt:  
stoffer med morfinliknende effekt, uavhengig av stoffets kjemiske opphav eller molekylstruktur



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#### Epidemi

«Epidemi er en auka førekost av ein spredning samanlikna med kva som er vanleg eller forventa»  
(Store Norske Leksikon)

Spredning er en feilfølgje føregående på tilstander som kjennetegnes ved forstyrrelser i kroppens normale organiske eller mentale funksjoner og forandrer dem på en skadelig måte.

Webster:  
**Epidemic** (adjective):

affecting or tending to affect a disproportionately large number of individuals within a population, community, or region at the same time

**Epidemic** (noun):

an outbreak of disease that spreads quickly and affects many individuals at the same time : an outbreak of epidemic disease

Annet: endemisk, pandemisk

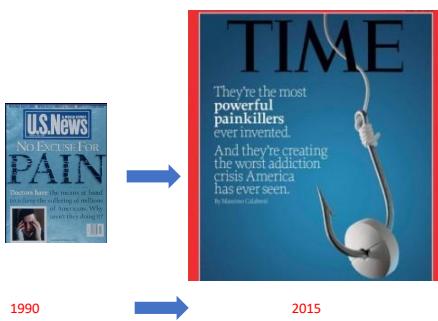


1990:

Articles promoted a more liberal use of opioid

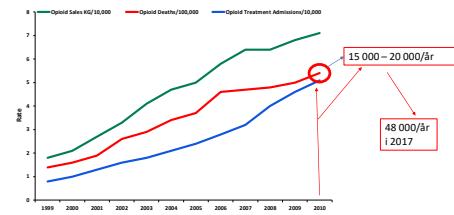
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1990

2015



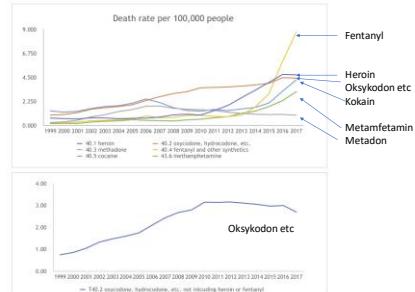
CDC. MMWR 2011. [http://www.cdc.gov/mmwr/preview/mmwhtml/mm60e1101a1.htm?s\\_cid=mm60e1101a1\\_w](http://www.cdc.gov/mmwr/preview/mmwhtml/mm60e1101a1.htm?s_cid=mm60e1101a1_w). Updated with 2009 mortality and 2010 hospital admission data.

2010 treatment admission data.

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# Aftenposten

Nyheter Mening Podkast A-magasinet Virk

Det er på råde å sette lokk på pilleboksen

Christine Petten  
Kommunikasjon



Denne tabletterne har krevet flere hundre tilsen i USA. Nå må selskapene baki motte i retten.

Bildet fra EPA  
Walmart saksøker staten for å unngå opioid-ansvar

Verden  
Sjef i legemiddelfirma domt for opioid-krisen USA



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## Hva med andre land enn USA?

**HEALTH POVERTY ACTION**  
BRIEFING | FEBRUARY 2019

## The hidden opioid crisis

How the so-called 'war on drugs' leaves patients to die in pain

This is illustrated clearly in India's opioid paradox: the country is among the largest opioid medicine producers, yet its patients die in pain.

They are afraid of getting morphine into hospitals because of the fear of addiction and stigma around the medical use of opioids. Some doctors call it 'the collateral damage of the war on drugs.'

**Introduction**

They are afraid of getting morphine into hospitals because of the fear of addiction and stigma around the medical use of opioids. Some doctors call it 'the collateral damage of the war on drugs.'

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Table XIV1.a. All countries:<sup>a</sup> levels of consumption of narcotic drugs, in defined daily doses for statistical purposes per million inhabitants per day (continued)  
Average consumption of narcotic drugs (including preparations in Schedule II) and consumption of buprenorphine,<sup>b</sup> 2018-2020

Country	Defined daily dose (DDO)	Consumption of narcotic drugs (mg DDO per capita per day)									
		1	2	3	4	5	6	7	8	9	10
1 Norway	100	—	—	—	—	—	—	—	—	—	—
2 USA	100	—	—	—	—	—	—	—	—	—	—
3 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
4 Sweden	100	—	—	—	—	—	—	—	—	—	—
5 Australia	100	—	—	—	—	—	—	—	—	—	—
6 Canada	100	—	—	—	—	—	—	—	—	—	—
7 France	100	—	—	—	—	—	—	—	—	—	—
8 Italy	100	—	—	—	—	—	—	—	—	—	—
9 Spain	100	—	—	—	—	—	—	—	—	—	—
10 Ireland	100	—	—	—	—	—	—	—	—	—	—
11 New Zealand	100	—	—	—	—	—	—	—	—	—	—
12 Norway	100	—	—	—	—	—	—	—	—	—	—
13 United States	100	—	—	—	—	—	—	—	—	—	—
14 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
15 Australia	100	—	—	—	—	—	—	—	—	—	—
16 Canada	100	—	—	—	—	—	—	—	—	—	—
17 France	100	—	—	—	—	—	—	—	—	—	—
18 Italy	100	—	—	—	—	—	—	—	—	—	—
19 Spain	100	—	—	—	—	—	—	—	—	—	—
20 Ireland	100	—	—	—	—	—	—	—	—	—	—
21 New Zealand	100	—	—	—	—	—	—	—	—	—	—
22 Norway	100	—	—	—	—	—	—	—	—	—	—
23 United States	100	—	—	—	—	—	—	—	—	—	—
24 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
25 Australia	100	—	—	—	—	—	—	—	—	—	—
26 Canada	100	—	—	—	—	—	—	—	—	—	—
27 France	100	—	—	—	—	—	—	—	—	—	—
28 Italy	100	—	—	—	—	—	—	—	—	—	—
29 Spain	100	—	—	—	—	—	—	—	—	—	—
30 Ireland	100	—	—	—	—	—	—	—	—	—	—
31 New Zealand	100	—	—	—	—	—	—	—	—	—	—
32 Norway	100	—	—	—	—	—	—	—	—	—	—
33 United States	100	—	—	—	—	—	—	—	—	—	—
34 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
35 Australia	100	—	—	—	—	—	—	—	—	—	—
36 Canada	100	—	—	—	—	—	—	—	—	—	—
37 France	100	—	—	—	—	—	—	—	—	—	—
38 Italy	100	—	—	—	—	—	—	—	—	—	—
39 Spain	100	—	—	—	—	—	—	—	—	—	—
40 Ireland	100	—	—	—	—	—	—	—	—	—	—
41 New Zealand	100	—	—	—	—	—	—	—	—	—	—
42 Norway	100	—	—	—	—	—	—	—	—	—	—
43 United States	100	—	—	—	—	—	—	—	—	—	—
44 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
45 Australia	100	—	—	—	—	—	—	—	—	—	—
46 Canada	100	—	—	—	—	—	—	—	—	—	—
47 France	100	—	—	—	—	—	—	—	—	—	—
48 Italy	100	—	—	—	—	—	—	—	—	—	—
49 Spain	100	—	—	—	—	—	—	—	—	—	—
50 Ireland	100	—	—	—	—	—	—	—	—	—	—
51 New Zealand	100	—	—	—	—	—	—	—	—	—	—
52 Norway	100	—	—	—	—	—	—	—	—	—	—
53 United States	100	—	—	—	—	—	—	—	—	—	—
54 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
55 Australia	100	—	—	—	—	—	—	—	—	—	—
56 Canada	100	—	—	—	—	—	—	—	—	—	—
57 France	100	—	—	—	—	—	—	—	—	—	—
58 Italy	100	—	—	—	—	—	—	—	—	—	—
59 Spain	100	—	—	—	—	—	—	—	—	—	—
60 Ireland	100	—	—	—	—	—	—	—	—	—	—
61 New Zealand	100	—	—	—	—	—	—	—	—	—	—
62 Norway	100	—	—	—	—	—	—	—	—	—	—
63 United States	100	—	—	—	—	—	—	—	—	—	—
64 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
65 Australia	100	—	—	—	—	—	—	—	—	—	—
66 Canada	100	—	—	—	—	—	—	—	—	—	—
67 France	100	—	—	—	—	—	—	—	—	—	—
68 Italy	100	—	—	—	—	—	—	—	—	—	—
69 Spain	100	—	—	—	—	—	—	—	—	—	—
70 Ireland	100	—	—	—	—	—	—	—	—	—	—
71 New Zealand	100	—	—	—	—	—	—	—	—	—	—
72 Norway	100	—	—	—	—	—	—	—	—	—	—
73 United States	100	—	—	—	—	—	—	—	—	—	—
74 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
75 Australia	100	—	—	—	—	—	—	—	—	—	—
76 Canada	100	—	—	—	—	—	—	—	—	—	—
77 France	100	—	—	—	—	—	—	—	—	—	—
78 Italy	100	—	—	—	—	—	—	—	—	—	—
79 Spain	100	—	—	—	—	—	—	—	—	—	—
80 Ireland	100	—	—	—	—	—	—	—	—	—	—
81 New Zealand	100	—	—	—	—	—	—	—	—	—	—
82 Norway	100	—	—	—	—	—	—	—	—	—	—
83 United States	100	—	—	—	—	—	—	—	—	—	—
84 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
85 Australia	100	—	—	—	—	—	—	—	—	—	—
86 Canada	100	—	—	—	—	—	—	—	—	—	—
87 France	100	—	—	—	—	—	—	—	—	—	—
88 Italy	100	—	—	—	—	—	—	—	—	—	—
89 Spain	100	—	—	—	—	—	—	—	—	—	—
90 Ireland	100	—	—	—	—	—	—	—	—	—	—
91 New Zealand	100	—	—	—	—	—	—	—	—	—	—
92 Norway	100	—	—	—	—	—	—	—	—	—	—
93 United States	100	—	—	—	—	—	—	—	—	—	—
94 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
95 Australia	100	—	—	—	—	—	—	—	—	—	—
96 Canada	100	—	—	—	—	—	—	—	—	—	—
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100 Ireland	100	—	—	—	—	—	—	—	—	—	—
101 New Zealand	100	—	—	—	—	—	—	—	—	—	—
102 Norway	100	—	—	—	—	—	—	—	—	—	—
103 United States	100	—	—	—	—	—	—	—	—	—	—
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107 France	100	—	—	—	—	—	—	—	—	—	—
108 Italy	100	—	—	—	—	—	—	—	—	—	—
109 Spain	100	—	—	—	—	—	—	—	—	—	—
110 Ireland	100	—	—	—	—	—	—	—	—	—	—
111 New Zealand	100	—	—	—	—	—	—	—	—	—	—
112 Norway	100	—	—	—	—	—	—	—	—	—	—
113 United States	100	—	—	—	—	—	—	—	—	—	—
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118 Italy	100	—	—	—	—	—	—	—	—	—	—
119 Spain	100	—	—	—	—	—	—	—	—	—	—
120 Ireland	100	—	—	—	—	—	—	—	—	—	—
121 New Zealand	100	—	—	—	—	—	—	—	—	—	—
122 Norway	100	—	—	—	—	—	—	—	—	—	—
123 United States	100	—	—	—	—	—	—	—	—	—	—
124 United Kingdom	100	—	—	—	—	—	—	—	—	—	—
125 Australia	100	—	—	—	—	—	—	—	—	—	—
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128 Italy	100	—	—	—	—	—	—	—	—	—	—
129 Spain	100	—	—	—	—	—	—	—	—	—	—
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136 Canada	100	—	—	—	—	—	—	—	—	—	—
137 France	100	—	—	—	—	—	—	—	—	—	—
138 Italy	100	—	—	—	—	—	—	—	—	—	—
139 Spain	100	—	—	—	—	—	—	—	—	—	—
140 Ireland	100	—	—	—	—						

Tabell 2. Dødsårsaker for narkotikautleste dødsfall 2012-2021. Prosent.

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Prosent.
Andre opidier	20%	22%	25%	24%	35%	24%	28%	35%	30%	26%	%
Hørvin	25%	28%	34%	35%	27%	15%	23%	20%	23%	23%	%
Syntetiske opidier	7%	8%	12%	12%	11%	18%	17%	18%	15%	17%	%
Metamfetamin	24%	20%	16%	15%	13%	22%	13%	14%	14%	17%	%
Stimuleranter	6%	7%	6%	6%	5%	7%	8%	8%	10%	9%	%
Ashengighet	13%	10%	6%	9%	7%	7%	9%	7%	8%	7%	%
Andre stoffer	4%	4%	2%	2%	1%	3%	2%	2%	2%	2%	%

83% knyttet til bruk av opidier

**Aftenposten**

Nyheter



Kommis

Flera der av smertestillende midler  
forskrivet av leger em av heroin kjøpt  
på gaten. Noe må gjøres.



Trude Vestli

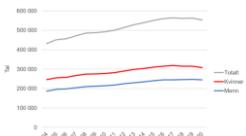
Trafikkulykker, hepatitis, HIV mm IKKE med her!

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- Det gode ved det helle er at totalbruken av midla ikke har auka i Noreg, seier Steinar Madsen, medisinsk fagdirektør i Legemiddelverket.

- Bruken var faktisk høgare for noko få år sidan enn det var i 2020. Totalt sett så har vi ialts ikkje fått ein auke i bruken, men vi har fått ei forskjning mellom forskjellige legemiddel, legg Madsen til.



Overikt over tal på brukarar av opioid per år. I 2020 felte over 150 000 norkinger seg til å bruke en eller flere opidier, men det er ikke dette talet som gav forskjogene størst bekymring.



- Det er særleg tre forhold eg vil trekka fram, seier Skurup og peiker på:

1. Ein auke i bruken av det sterke opidiet oxikodon.
2. Ein auke i talet på langvarige smertepasientar som blir behandla med opioid på blå resept.
3. Ein auke i talet på overdosereddøsfall som er skulda av ferenskrivne opioid, og ikkje heroin.

Sveinbjørn Skurup seier at det er viktig å følge opp brukaren av opioidene og følgje utviklingen i Noreg også.

**Reseptregisteret****Reseptregisteret****Paralgin/Pinex Forte**

Reduksjon med  
**20 brukere/1000**  
= 25% reduksjon

AT10000-vergen: 2021

Valgt måltid:  
Brukes per 1000 innbyggereValgt subaktsjoner:  
Lokalt helseforet og akutsyklospesialist  
NEDKAN helseforet og paracenter  
NEDKAN helseforet**Reseptregisteret**

Økning med  
**9 brukere/1000**  
= 700% økning

AT10000-vergen: 2021

Valgt måltid:  
Brukes per 1000 innbyggereValgt subaktsjoner:  
Legemiddelverket  
NEDKAN akutsyklospesialist  
NEDKAN helseforet  
Periode: 2021-2024

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**Hvorfor bruker vi opidier?****Hvorfor/når blir dette problematisk?**

- Smertelinndring: ≈ all akutt smerte hvis dosen er høy nok
- Rus: eupfori, somnolens
- (anti-hoste)
- (anti-diare)ø

**Bivirkninger (doseavhengige):**

- kvalme
- tretthet, konstransjonsvansker, «sløvv»
- dårlig sovnkvalitet
- klo
- urinretension
- obistapsjon
- respirasjonsdepresjon (pustefrekvens↓)
- immunsupresjon (cancer, infeksjoner)

Hyperalgesi  
Toleranse  
Abstrens v/nedtrapping/avslutning

**Avhengighet:**

- «kick» av innsettende effekt
- «psykisk» – rus oppleves bra
- «angst-fordriver» – flukt fra problem
- «fysisk» – abstinens/hyperalgesi ved forsøk på nedtrapping/slutt

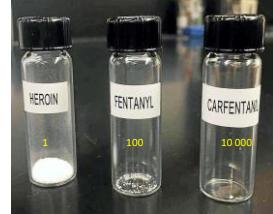
**De aller fleste dødsfall er utilikset overdose!**

- I forhold til hva man tåler akkurat der og da!

- Balanse i forhold til smerte intensitet
- Genetiske forskjeller i følsomhet
- Alder
- Utviklet toleranse

**Faktorer:**

- Rask/langsom effekt?
- Fare for overdose ved fel dosering?
- Fare for overdose selv ved små mengder?
- Diagnostikk:
  - Langsom pust
  - Små pupiller
- Behandling:
  - Pustehjelp
  - Antidot



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40 + 130 (?250?) døde, storming dag 4



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## OPIOID epidemi, også i Norge?

→ Ikke epidemi!

...men:

→ Opioid problemer

### Hvordan bør vi håndtere det?

- Riktig bruk (pasientutvalg, indikasjoner, dosering, tidsperspektiv...)
- Smertertil (smertefysiologi, smertebehandling)

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### Hva er riktig forbruk av opioider?

LESEN

JØHAN RÆDER

Publisert: 5. september 2016 | Tekst: Trond Haug Engemoen, DOI: 10.4204/tidsskriftet.2016.00005



### Hva gjør vi:

- 1) Opioid fri/besparende anestesi på operasjonsstuen?
- 2) Optimisere smertelindring

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### Hvorfor skal vi nå spare på opioider under en operasjon?

- Lettere å vekke (=få i gang respirasjon) etter kirurgi slutt
- Mindre postoperativ kvalme
- Mindre hypotensjon;bradykardi
- Mindre hyperalgesi (smerte rett etterpå)
- Enklere regnskap / fare for svinn el. Misbruk
- Mindre kostnader
- Mindre smerte og opioidbruk for pasienten gjennom dager/uker etterpå

En kvinne i 40-årene som brukte vanedannende legemidler i svært høye doser



2 Jan - 2020

Anne Thordalen Hellef, Trond Odar Aune, Joachim Paul Øen og kolleger

ARTIKKEL | DISPUTAT | LITTERATUR | KOMMENTAR OG

En kvinne i 40-årene som brukte vanedannende legemidler i svært høye doser

In kvinnen var innen få år kommet oppdøpt i forbindelse med et operativt inngrep til bekymringen eksakte tidsrekke til eneste dobbelt som viste seg å klage utstyrslignende i den videre behandlingsdøsopptak.

[Læs artikkelen](#)

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## Opioid free anaesthesia

- Benefits have been shown in studies!

J Clin Anesth. 2008; 20: 20–30. <https://doi.org/10.1016/j.jca.2007.09.005>  

**Opioid-Free Anesthesia Benefit-Risk Balance: A Systematic Review and Meta-Analysis of Randomized Controlled Trials**

Author Selection: <sup>a,b,c</sup>Dakota Huthwaite,<sup>a,d</sup>Desirée Pichler,<sup>a</sup> and Valeria Marinelli,<sup>a,c</sup>\*

**Abstract**

→ No clinically significant benefits were observed with OFA in terms of pain and opioid use after surgery.

→ A clear benefit of OFA use was observed with respect to a reduction in PONV

**Keywords:** Opioid-free general anaesthesia; Benefit-risk balance; Systematic review; Postoperative nausea and vomiting; Analgesics

**DOI:** <https://doi.org/10.1016/j.jca.2007.09.005>  

**REVIEW ARTICLE**

**Total opioid-free general anaesthesia can improve postoperative outcomes after surgery, without evidence of adverse effects on patient safety and pain management: A systematic review and meta-analysis**

Alexander Olofsson<sup>a</sup> | Carl-Johan Hammarlund<sup>b</sup> | Per-Olof Asplund<sup>c</sup> |  
Peter Blennow<sup>a,b,c,d</sup> | Sven-Erik Thorsen<sup>a</sup> | Axel Wengle<sup>e</sup>

**There is firm evidence that opioid-free anaesthesia significantly reduced adverse postoperative events mainly driven by decreased nausea and vomiting**

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## Opioid free anaesthesia

- Benefits have been shown in studies!

→ Do we need any more or better evidence?

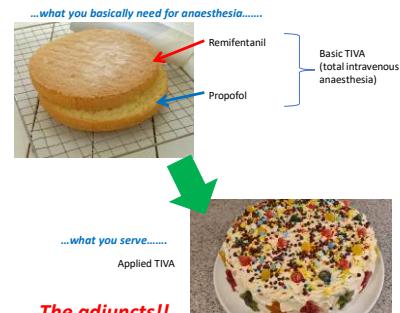
<p><b>PERIOPERATIVE MEDICINE</b></p> <p><b>ANESTHESIOLOGY</b></p> <p><b>Balanced Opioid-free Anesthesia with Dexmedetomidine vs Balanced Anesthesia with Remifentanil for Major or Intermediate Noncardiac Surgery</b></p> <p>The Postoperative and Opioid-Anesthesia (POFO) Randomized Clinical Trial</p> <p>Robert Mekhora, M.D., Ph.D.; Michael G. Miller, M.D.; John D. Hwang, M.D.; Daniel J. Siewers, M.D.; Alan Birkett, M.D.; Andrew Bourne, M.D.; Michael J. Cuthbertson, M.D.; Timothy Stothard, M.D.; Michael M. McManus, M.D.; Michael A. Pernow, M.D.; Peter J. Perner, M.D.; Parveen Mehta, M.D.; Christopher J. P. Tait, M.D.; Michael J. Venn, M.D.; Matthew Evans, M.B.B.S.; Emanuele Falanga, M.D.; and Michael J. Finsen, M.D.</p> <p>From the SPRI Research Network</p> <p>Anesthesiology 2012; 116:484–495</p>	<p><b>EDITOR'S PERSPECTIVE</b></p> <p><b>What We Already Know About This Topic</b></p> <ul style="list-style-type: none"> <li>It is hoped but not proven that opioid-free anesthesia provides adequate postoperative analgesia and reduced opioid-related side effects</li> <li>Dexmedetomidine is sometimes used to replace opioids in balanced opioid-free anesthetics</li> </ul> <p><b>What This Article Tells Us That Is New</b></p> <ul style="list-style-type: none"> <li>In a randomized, blinded, multicenter trial, study patients undergoing noncardiac surgery received a standard anesthetic featuring lidocaine and ketamine, plus either remifentanil or an alternative anesthetic where dexmedetomidine was substituted for remifentanil</li> <li>The primary outcome, composed of postoperative hypoxemia, ileus, and cognitive dysfunction, was more common among patients receiving remifentanil</li> <li>Importantly, opioid-free anesthesia with dexmedetomidine was associated with fewer hypoxic events, and the study was terminated early for that reason</li> </ul> <p><b>SUMMARY OF THE ARTICLE</b></p> <p><b>What We Already Know About This Topic:</b></p> <p>A balanced anesthetic is one that uses multiple drugs to provide analgesia without using an opioid. The goal of balanced anesthesia is to provide effective analgesia with minimal side effects. Opioids are potent analgesics but can cause respiratory depression, sedation, and other side effects like nausea and constipation. Dexmedetomidine is a sedative-hypnotic drug that has been used as an alternative to opioids in balanced anesthesia. It has been shown to provide effective analgesia and reduce opioid-related side effects.</p> <p><b>What This Article Tells Us That Is New:</b></p> <p>This article reports the results of a randomized controlled trial comparing balanced anesthesia with remifentanil versus balanced anesthesia with dexmedetomidine in patients undergoing noncardiac surgery. The primary outcome was a composite of postoperative hypoxemia, ileus, and cognitive dysfunction. The study found that patients receiving remifentanil had a higher rate of these complications compared to those receiving dexmedetomidine. Specifically, the rate of hypoxemia was significantly lower in the dexmedetomidine group. The study was terminated early due to this finding.</p>
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34



...both have adequate taste and function  
but not identical characteristics



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## Modern surgery: → Anaesthesia AND Analgesia

- Pre/per-op:
  - Paracetamol, NSAID, glucocorticoid, (...more nausea prophylaxis?)
- Per-op:
  - Propofol TIVA
  - Remifentanil TIVA (+fentanyl?)  
or: inhalational agent
  - (muscle relaxant)
- End of case:
  - Local anaesthesia in wounds
  - Small dose mediumacting opioid (i.e. fentanyl)
- Post-operatively:
  - Baseline medication: paracetamol + NSAID
  - Opioid «on-top» as needed

## Mulier «opioid free» protocol for general anaesthesia

- 1 hr before: Pregabalin 150-300 mg orally
- 15 min before: dexametomidine 0.25 mcg/kg
- Mixture:
  - Lidocaine 1 mg/kg
  - Dexametomidine 0.1 mcg/kg
  - Ketamine 0.1 mg/kg
- Then:
  - Propofol 2.5 mg/kg
  - Rocuronium 1 mg/kg → intubation
- Continues with:
  - Sevoflurane or desflurane (1 MAC)  
or propofol (BIS) or mixture
  - Magnesium sulfate 40 mg over 15 min
  - Dexamethasone and/or NSAID as needed
- Rescue drugs:
  - Nicardipine, metoprolol, ephedrine, phenylephrine

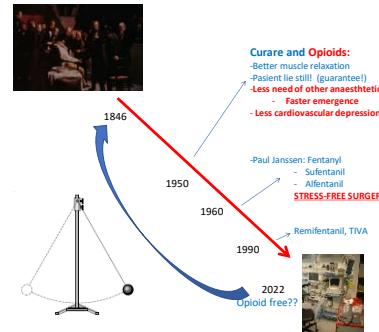
Versus

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## Opioids.....

- Part of our endogenous homeostasis:
- We are never opioid free!
- ...and:
- Opioids represented a huge progress to anaesthesia when introduced!



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## Hva gjør vi:

- 1) Opioid fri/besparende  
anestesi på operasjonsstuen?
- 2) Optimalisere smertelindring



Johan Ræder  
Avd. for Anestesiologi /  
Oslo Universitets Sykehus, L

mail: johan.raeder@medisin.uio.no

## Modern surgery: → Anaesthesia AND Analgesia

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**Does this create opioid «problems»?**

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...opioid problems caused by opioids during general anaesthesia....

- 1) Postoperative nausea/vomiting
- 2) Hypersalgesia
- 3) Addiction

### Opioid problems in anaesthesia: PONV

(postoperative nausea and/or vomiting)

- Worse than with inhalational agents?  
???
- Problem after stop of remifentanil (or end of opioid effect)?  
???
- Easy access to dedicated prophylaxis?  
Yes! (steroid, 5HT-3 block, neuroleptics, antihist....)

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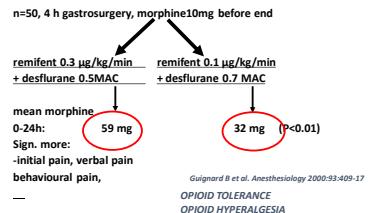
44

### Opioid problems in anaesthesia: Hyperalgesia

- Seen after end of opioid analgesic effect

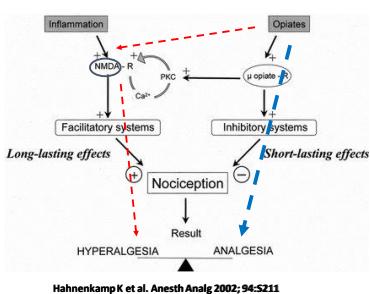
(worse with remifentanil??)

### Postoperative pain. Remifentanil, intermediate versus low dose:



45

46



### Opioid problems in anaesthesia: Hyperalgesia

- Seen after end of opioid analgesic effect
  - Limited duration
  - Prophylaxis often used (without knowing...)
  - (Tapering doses may be an option)
  - «Bridging» with a medium duration opioid dose at stop of remifentanil  
(e.g. fentanyl 0.05-0.10 mg)

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## Two options of NO help.....

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*doi: 10.1111/j.1365-2701.2007.01471.x*

**Administration of fentanyl before remifentanil-based anaesthesia has no influence on post-operative pain or analgesic consumption**

H. Lenz<sup>1</sup>, J. Ræder<sup>2</sup> and S.C. Hvoslef<sup>2</sup>

<sup>1</sup>Department of Anaesthesia, Faculty Division Ullevaal University Hospital, University of Oslo, Oslo, Norway

and <sup>2</sup>Department of Anaesthesia and Intensive Care, Akers og Eidsvold Hospital, Oslo, Norway

**Group Pre:** fentanyl 1.5 µ/kg at start - 1.5 µ/kg at surgery end

**Group Post:** placebo at start - 3.0 µg at surgery end

- Per-op remifentanil at nurse discretion (double-blinded)
- Post-op patient PCA with fentanyl, 0-4 hrs (double-blinded)
- Oral oxycodone as needed 4-24 hrs (double blinded)

→ No difference in mean remifentanil dose (0.043 µg/kg/min) during 90 min surgery

→ No difference in post-op rescue opioid 0-24 hrs

→ No difference in pain 0-4 hrs, sign.less in group post 4-24 hrs

Lenz et al. 2008

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## Two options of NO help.....

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**Additional post-operative analgesic effect of dexamethasone when given together with paracetamol and codeine before breast surgery**

Hal K. Thøgård KS, Schlichting E, Ræder J. Dept of Anesthesiology and Gentic Surgery\*, Ullevaal University Hospital, Oslo, Norway

**Adding dexamethasone 16 mg to paracetamol and NSAID and local anaesthesia**

Remifentanil TIVA

Propofol TIVA

Fentanyl 0.05-0.1 mg at end

Anesthesia Analgesia 2007;105:481-6.

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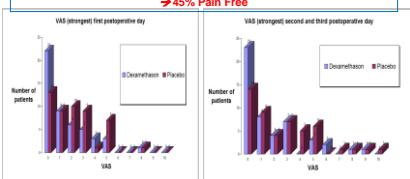
52

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**Adding dexamethasone 16 mg to paracetamol and NSAID and local anaesthesia**

→ 45% Pain Free



## Risk of addiction

53

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## Perioperative opioids as a «gateway» to an abuse problem....

- Pre-op opioid for pre-op pain
- Per-op opioid for general anaesthesia
- Immediate post-op opioid (recovery unit)
- Opioid for post-op pain 0-7 days
- Prolonged opioid use for weeks, months....

55

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### ORIGINAL ARTICLE

#### Patient Factors Associated with Opioid Consumption in the Month Following Major Surgery

Daniel R. Lanzich, MD, MTR, MA,\* Michael J. Salazar, BA,† Steven A. Sauer, MD, MPH,‡ Stephanie E. Moser, PhD,§ Andrew G. Ugnat, MD,§ Iader Lin, MD,¶ Alton L. Hassett, PsyD,|| Joseph A. Wakeford, BS,|| Daniel J. Clancy, MD,§ Jennifer F. Woljee, MD, MPH, MS,¶ and Chad M. Brummett, MD,||

*Annals of Surgery* • Volume XX, Number XX, Month 2019

→ We included opioid-naïve patients undergoing hysterectomy, thoracic surgery, and total knee and hip arthroplasty in a single-center prospective observational cohort study.

→ We enrolled 1181 patients

57

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- Younger age,
- non-white race
- lack of a college degree,
- higher anxiety
- greater sleep disturbance
- heavy alcohol use, current tobacco use
- larger initial opioid prescription size

significantly associated with increased opioid consumption.

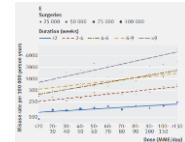
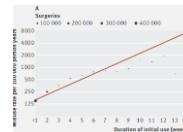
58

### RESEARCH

#### Post-surgical prescriptions for opioid naïve patients and association with overdose and misuse: retrospective cohort study

Gabriel Rizk,\*, Daria Agapi,\*, Brian Hopkins,\*, Mark Rovner,\*, Mark Horowitz,\*, Kalvin P. Fox,\*, Samuel D. Krestan,\*, David N. McDonald McNamee,\*, Nathan Parikh,\*, Isaac Kohane,†

| BMJ 2018;360:j5790 | doi: 10.1136/bmj.j5790



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## Opioid problems in anaesthesia: Addiction

- Related to opioid use after surgery
- Increased incidence with use for more than 1 week postoperatively
- Approach:
  - Always multimodal, optimal non-opioids as baseline + first line rescue
  - Then (if needed) titration of opioid on top
  - Limit post-discharge prescription and use
  - Careful with opioid in addicts/previous addicts

#### Opioids and hospital readmission after ambulatory surgery

BJA

Association between intraoperative opioid administration and 30-day readmission: a pre-specified analysis of registry data from a healthcare network in New England  
D. A. Long, A. L. Ulrich, K. Freedman, F. T. Scheinfeld, D. C. Balfour,  
S. M. Rosen, J. M. Hwang, J. M. Kornblith, J. T. Doherty, and  
M. Ellermann,\*,†

Department of Anesthesia, Critical Care and the Medical Intensive Care Unit, Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA; Department of Anesthesiology, Harvard University Hospital, Boston, MA, USA; Department of Anesthesia, Critical Care and the Medical Intensive Care Unit, Brigham and Women's Hospital, Boston, MA, USA; Department of Anesthesia, Critical Care and the Medical Intensive Care Unit, Tufts University School of Medicine, Boston, MA, USA; Department of Anesthesia, Critical Care and the Medical Intensive Care Unit, Massachusetts General Hospital, Boston, MA, USA

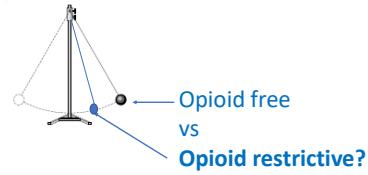
High intraoperative opioid dose was found to have a strong association with 30-day readmission( $P<0.001$ ).

Association  
≠  
Cause-relationship

60

## Perioperative opioids as a «gateway» to an abuse problem....

- Pre-op opioid for pre-op pain
- Per-op opioid for general anaesthesia
- Immediate post-op opioid (recovery unit)
- Opioid for post-op pain 0-7 days
- Prolonged opioid use for weeks, months....  
→ well documented



61

62



→ No difference in post-op pain, rescue analgesia



- Opioid free anaesthesia is more complex, many drug combinations → pitfalls
- Opioid free anaesthesia NOT (so far) proven to improve clinical outcomes
- High opioid dose peroperatively? Postop breathing? Nausea? Hyperalgesia?
- Opioid free in postoperative pain control?
  - Yes, if possible:
    - No new, problematic side-effects
    - Not at the expense of more pain
  - if opioid: Should be shortlasting, dose-minimizing, individualized!

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## Postoperative smerte:

Hvorfor får vi det ikke til?

## Postoperativ smerte hos pasienter innlagt i norske sykehus

Tidsskr Nor Legforen nr. 18, 2011; 131: 1763 - 7

Første post.op døgn:

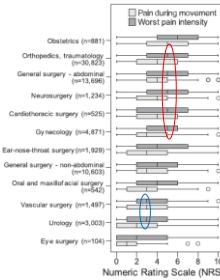
- 38 % av pasientene rapporterte gjennomsnittlig smerte ≥ 4.
- 11 % rapporterte gjennomsnittlig smerte ≥ 6.
- 8 % av pasientene rapporterte at selv drøkkest smerte i øj hadde vært ≥ 4.

65

66



→ Hver 10. nordmann opereres hvert år  
→ ≈ alle vil ha behov for postoperativ  
smertelindring



Gerbershagen et al. Anesthesiology 2013;118:934-44

67

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https://www.postopain.org

New: Total Knee Arthroplasty 2020  
Abdominal Hysterectomy 2006  
Cesarean Section 2020  
Complex Spine Surgery 2020  
Haemorrhoidectomy 2016  
Hallux Valgus Repair Surgery 2019  
Inguinal Hernia Repair 2019  
Lamectomy 2020  
Laparoscopic Cholecystectomy 2017  
Laparoscopic Hydrocelectomy 2018  
Laparoscopic Sleeve Gastrectomy 2018  
Oncological Breast Surgery 2019  
Open Colorectal Surgery 2016

Open Liver Resection 1999  
Prostatectomy 2020  
Rotator Cuff Repair Surgery 2019  
Thoracotomy 2015  
Tonsillectomy 2019  
Total Hip Arthroplasty 2019  
Video-Assisted Thoracoscopic Surgery 2021

≈ alle disse:  

- Paracetamol
- NSAID/cox-II
- Lokal anestesi infiltrasjon
- Glukokortikoid
- Tittret opioid etter behov
- + evt: blokade, gabapentinoid, spি opioid, ..... iv lidokain? Ketamin? Klönidin?....

## Hvorfor prosedyre spesifik analgesi?

- Type kirurgisk traume
  - Inflammasjon
  - Nerveskade
  - Invasivitet, vevsskade
- Lokalisasjon i kroppen
- Pre-operativ smerte ja/nei
- Mulighet for lokal/regional an
- Psyko-sosiale aspekter

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## Postoperative smerte:

Hvorfor **får vi det ikke til?**

**Stemmer det, da??**

- 1) Mange har mye vondt etter inngrepet
- 2) En del får smerte de ikke hadde før
  - «kronisk/langvarig smerte» > 3mnd
- 3) En del/enkelte får et annet nytt problem:
  - opioid avhengighet

.....4 (opioid) item multimodal analgesia – still some with much pain

**So What??**

- 1) Høyere dose av multimodale komponenter (paracet, NSAID, lok.an) ?
- 2) Bedre timing av smertelindringen
- 3) Mer opioid profylakse?
- 4) Mer opioid ved behov?
- 5) Nye «modaliteter» ?
  - a) Til alle?
  - b) Plukke ut risikopasienter ?
    - i) Ut fra innrep
    - ii) Ut fra smerte forløp
    - iii) Ut fra pre-operativt identifiserbar risiko
- 6) Hva har vi av «nye» verktøy i kassen?



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Studien inkluderte 40 voksne pasienter som hadde store skader og var bevisste ved innleggene.

KORT RAPPORT  
Smerte og smertebehandling de første to ukene etter store skader

Publisert: 25. januar 2020  
Oppgradert: 2. februar 2020  
Tidsskriftet Nor Lægeforening  
doi: 10.4245/tidsskr/nl20020

38 % var gjennomsnittlig smerteskårl i hvile høyere enn 3 i toukersperioden etter skaden  
48 % oppga å ha hatt skår høyere enn 3 over halvparten av denne tiden.

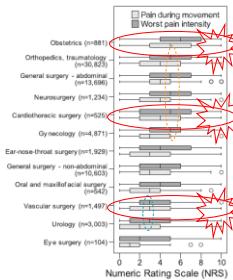
All pasientene ble behandlet med opioider og paracetamol  
78 % epiduralkanalgesi eller nerveblokkader,  
35 % IRK-kontamin,  
28 % ikke-steroide antiinflammatoriske midler (NSAID),  
23 % alfa-2-agonister  
10% gabapentinoider.

78 % ble utskrevet med opioider, uten at det var nedfelt en plan for nedtrapping i noen epikriser.

73

74

## Variasjon mellom pasienter



Gerbershagen et al. Anesthesiology 2013;118:934-44

75

76

## 10-20% har MYE vondt.....

Konsekvenser:

- 1) 80-90% klarer seg bra med standard profylakse + behandling (paracet+NSAID+localan + steroid)
  - ingen grunn til at disse skal få mer
- 2) Gjøre noe «ekstra» for de siste 10-20% !!!

## Måle smerteterskel?



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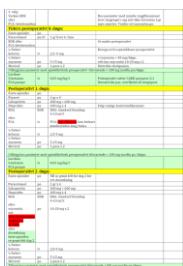
85



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# Postoperative smerter: Hvordan bli bedre?

- 1) Multimodal standardisering av basisregime ut fra prosedyre (paracetamol, NSAID/Cox-II, Steroid, Lokal infiltr + ??)
  - 1) «Jakte på» risikopasienten  
kir.poliklin, preop evaluering, før innledning
  - 3) Følge opp på post-op, (sengepost, utskrivelse)
  - 4) Utvide «sortimentet»  
pregabalin/gabapentin, iv lidokain, iv ketamin/S-ketamin, klonidin, blokader, amitriptilin/vesp
  - 5) Opioid «on-top», OBS hvis utever dag 5



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