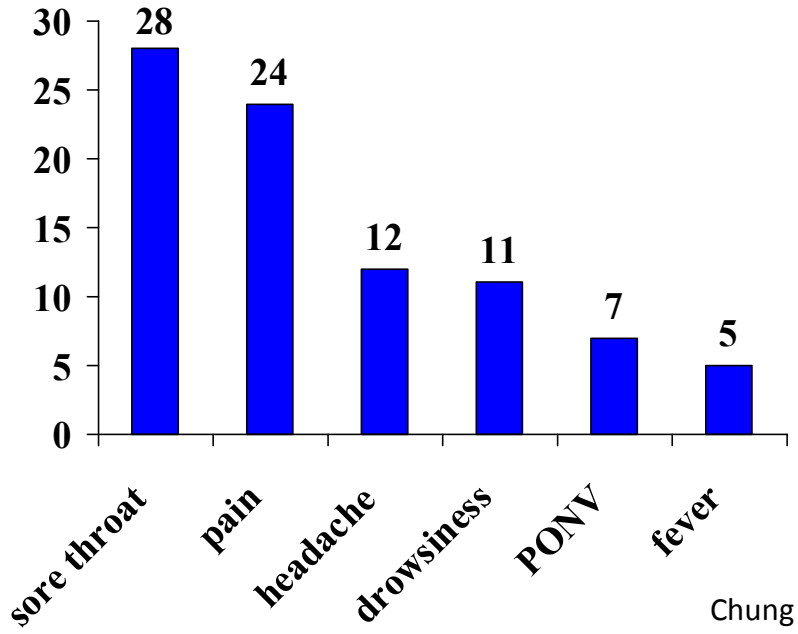
Anesthesie voor ambulante chirurgie

Januari 2018

CDZ UZ Gent

Coppens M

Postoperative symptoms



Added value of the anesthesiologist

Chung F, Un V, Su J. Postoperative symptoms 24 hours after ambulatory anaesthesia. *Can J Anaesth* 1996; **43**: 1121-7

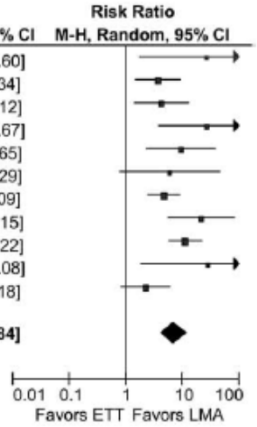
Teunkens A, Vanhaecht K, Vermeulen K, et al.
Measuring satisfaction and anesthesia related outcomes in a surgical day care centre
J Clin Anesth 2017; **43**: 15-23

LMA: Risk Reduction coughing 7.12

A

Study or Subgroup	ETT Events	ETT Total	LMA Events	LMA Total	Weight	Risk Ratio M-H, Random, 95% CI
Akhtar 1992[16]	13	15	0	15	3.0%	27.00 [1.75, 416.60]
Amjad 2001[17]	15	20	4	20	12.8%	3.75 [1.51, 9.34]
Cork 1994[18]	13	22	3	22	10.7%	4.33 [1.43, 13.12]
Denny 1993[19]	24	37	1	42	5.2%	27.24 [3.87, 191.67]
Dyer 1995[21]	19	50	2	50	8.2%	9.50 [2.33, 38.65]
Idrees 2000[26]	6	25	1	25	4.8%	6.00 [0.78, 46.29]
Maltby 2000[32]	38	48	8	48	16.1%	4.75 [2.48, 9.09]
Maltby 2002[33]	48	55	2	50	8.5%	21.82 [5.59, 85.15]
Maltby 2003[34]	91	104	8	104	15.9%	11.38 [5.82, 22.22]
Thomson 1992[41]	13	14	0	15	3.0%	28.80 [1.87, 443.08]
Webster 1999[43]	17	66	4	35	11.7%	2.25 [0.82, 6.18]
Total (95% CI)		**456**		**426**	**100.0%**	**7.12 [4.28, 11.84]**
Total events	297		33			

Heterogeneity: Tau² = 0.31; Chi² = 19.34, df = 10 (P = .04); I² = 48%
Test for overall effect: Z = 7.56 (P < .00001)



- RR laryngospasm 3.16
- RR hoarse voice 2.59
- RR sore throat 1.67

- Nausea =
- Vomiting=
- Regurgitation=

Yu SH, Beirne OR.
Laryngeal mask airways have a lower risk of airway complications compared with endotracheal intubation: a systematic review.
J Oral Maxillofac Surg 2010; **68**: 2359-76

Postoperative sore throat

Table 1 Potential risk reduction interventions for postoperative sore throat.

Tracheal intubation	SADs	Children
Smaller tube size [5–7]	Use of i-gel [50, 63–65]	SAD rather than tracheal tube [121, 122]
Video laryngoscopy [9, 10]	90° rotational insertion technique, use of introducing stylet for ProSeal LMA laryngeal mask [81–85]	Oral rather than nasotracheal intubation [124]
Limiting cuff pressure [32–34]	Cuff pressure limitation $\leq$ 60 cmH_2O [88–93, 96]	Cuffed rather than uncuffed tubes [125]
Intravenous, topical or inhaled steroids [22–25]	Topical steroids, NSAIDs, tramadol [98, 101, 102]	Limiting tracheal tube cuff pressure [126]
Topical NSAIDs [27–29, 31]	Propofol induction and maintenance [106, 107]	SAD cuff pressure limitation $\leq$ 60 cmH_2O [130–133]
Liquorice, magnesium and ketamine gargle [35–40]		

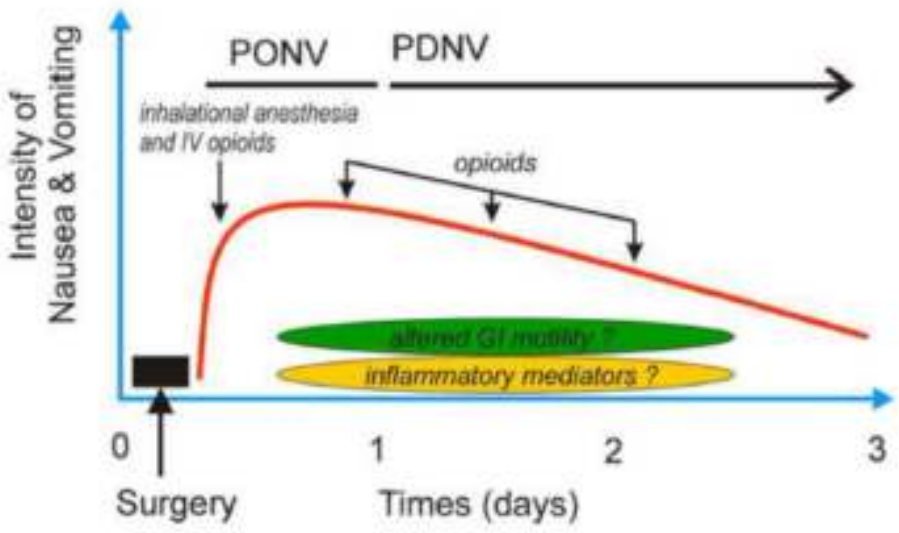
NSAIDs, non-steroidal anti-inflammatory drugs; SAD, supraglottic airway device.

Laryngeal mask

We have three decades of experience with the laryngeal mask airway (LMA) , yet most of us do not use it optimally.

Bick E, Bailes I, Patel A, Brain AI.
Fewer sore throats and a better seal: why routine manometry for laryngeal mask airways must become the standard of care.
Anaesthesia 2014; **69**: 1304-8

PONV-PDNV



General anaesthesia is the clinical use of potent and *potentially lethal* drugs, to produce a state of controlled, reversible *poisoning* to achieve narcosis, analgesia and reflex suppression administered with professional skill,…

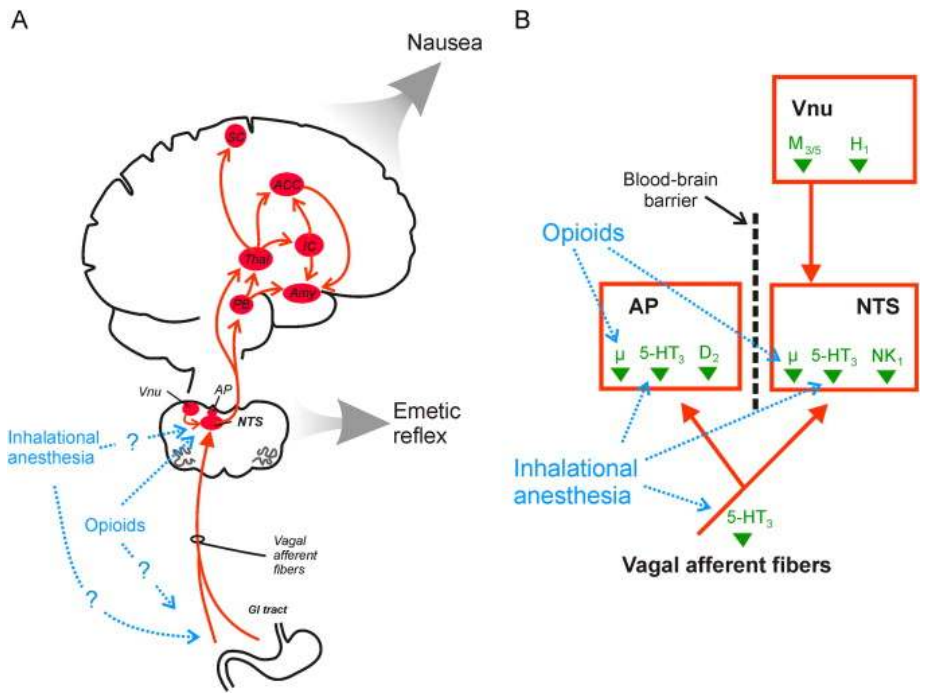


Table 2

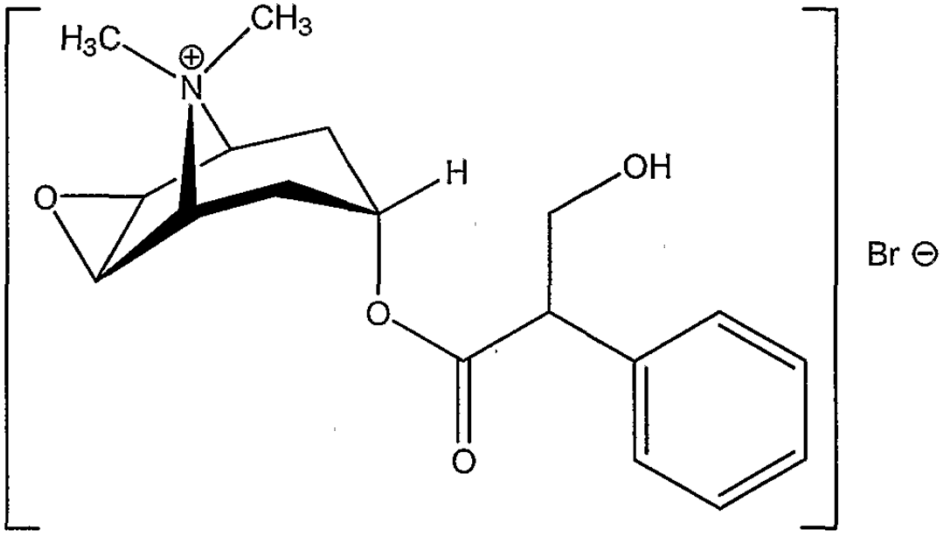
Common antiemetic drugs used to control PONV and their adverse effects*

Class	Representative agent	Potential adverse effects
H_1 receptor antagonists	Dimenhydrinate (Dramamine) Diphenhydramine (Benadryl) Cyclizine (Marezine) Promethazine (Phenergan)	Drowsiness, urinary retention, dry mouth, blurred vision, extrapyramidal symptoms, vascular necrosis (promethazine)
M receptor antagonists	Scopolamine (transdermal patch, Scopoderm)	Blurred vision, dry mouth, dizziness, agitation
D_2 receptor antagonists	Metoclopramide (Reglan) Droperidol (Inapsine) Haloperidol (Haldol) Prochlorperazine (Compazine)	Sedation, cardiac arrhythmia
Corticosteroids	Dexamethasone (Decadron)	
5-HT_3 receptor antagonists	Ondansetron (Zofran) Granisetron (Kytril) Tropisetron (Navoban) Dolasetron (Anzemet) Palonosetron (Aloxi)	QT prolongation
NK_1 receptor antagonists	Aprepitant (Emend)	

*This list does not represent all antiemetics and not all drugs listed are specific to one receptor target (e.g., Sanger and Andrews, 2006)

Horn CC, Wallisch WJ, Homanics GE, Williams JP.
Pathophysiological and neurochemical mechanisms of postoperative nausea and vomiting.
Eur J Pharmacol 2014; **722**: 55-66

Anticholinergic agents



- Scopoderm patch
- Prevention of PONV

Butylscopolamine: 1,5 mg over 72 hrs

Risk factors for PDNV

Female	1,54
< 50 yrs	2,17
History PONV	1,5
Opioid in PACU	1,93
Nausea in PACU	3,14

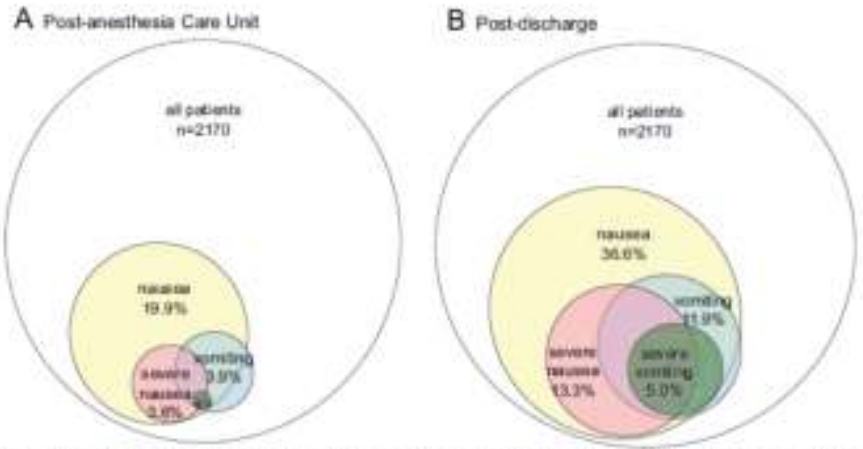


Fig. 1. Percentage of patients who experienced nausea and/or vomiting (A) in the postanesthesia care unit and (B) postdischarge. The incidence of severe vomiting (SV) in the postanesthesia care unit was 0.2%.

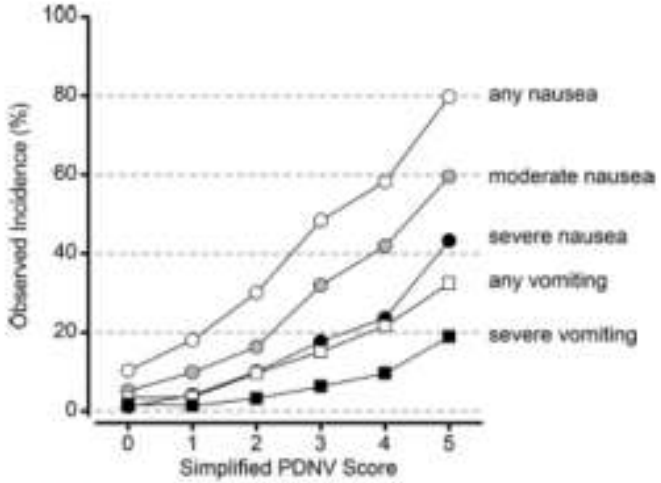


Fig. 6. Relationship between the simplified postdischarge nausea and vomiting (PDNV) risk score and the incidence of PDNV in the validation dataset.

PDNV: unrecognized and undertreated

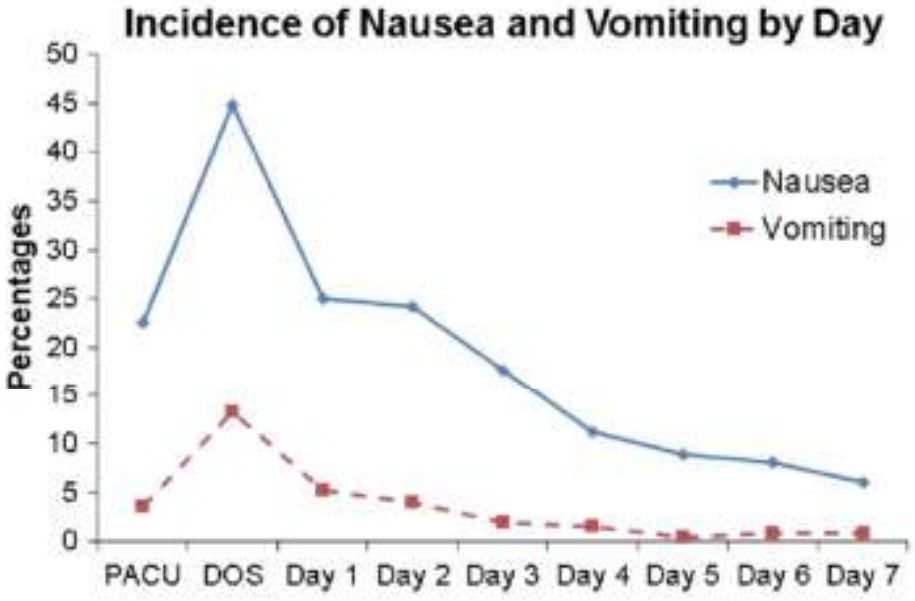


Fig. 1 Incidence of nausea and/or vomiting in the Postanesthesia Care Unit (PACU), and from the day of surgery (DOS) to postoperative day 7. Solid line=nausea; dotted line=vomiting.

	PACU	Ride Home	Day 0 home
Nausea	22,6%	34,7%	44,8%
Vomiting	19,4%	8,1%	13,3%

Odom-Forren J, Jalota L, Moser DK, et al.
Incidence and predictors of postdischarge nausea and vomiting in a 7-day population.
J Clin Anesth 2013; **25**: 551-9

Kumar G, Stendall C, Mistry R, et al.
A comparison of total intravenous anaesthesia using propofol with sevoflurane or desflurane in ambulatory surgery: systematic review and meta-analysis.
Anaesthesia 2014; **69**: 1138-50

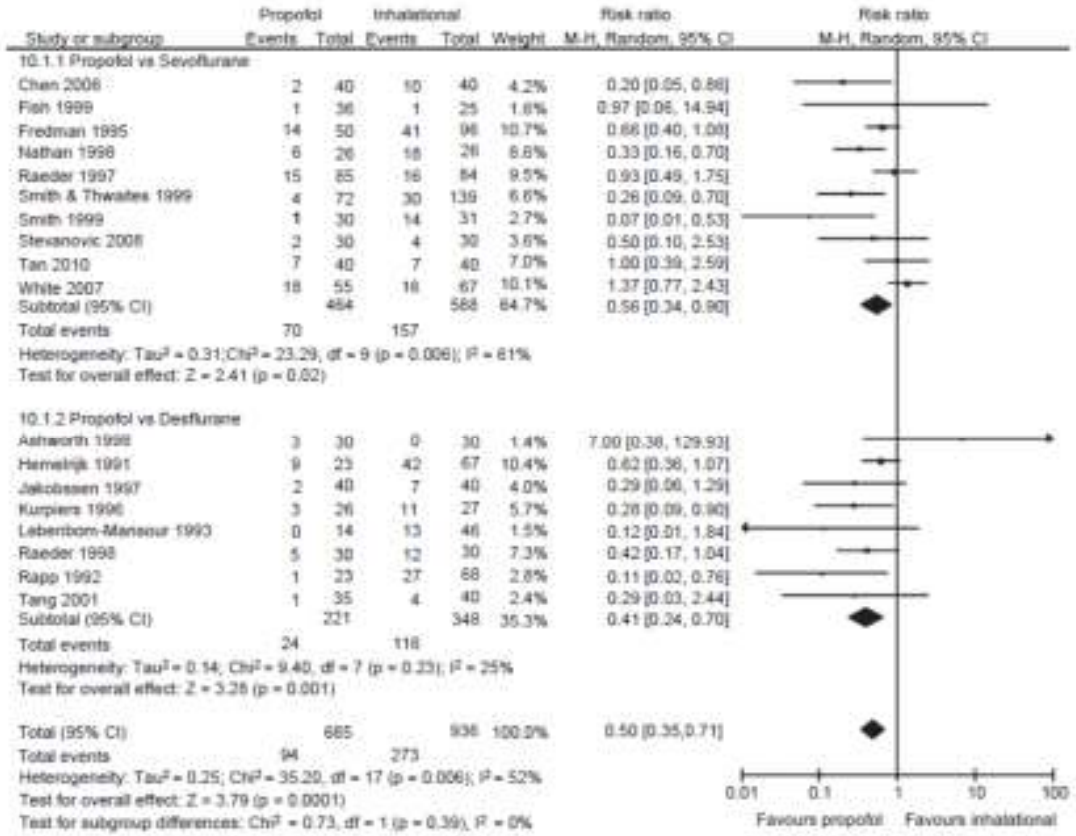


Figure 4 Postoperative nausea and vomiting in propofol vs inhalational anaesthesia.

ORIGINAL ARTICLE

Post-discharge nausea and vomiting after total intravenous anaesthesia and standardised PONV prophylaxis for ambulatory surgery

U. Bruderer[1], A. Fisler[1], M. P. Steurer[2], M. Steurer[3] and A. Dullenkopf[1]

- On the day of surgery
  - 10,4% severe nausea
  - 6,3% vomiting
- POD 1
  - Nausea 11,3%
- POD2
  - Nausea 2,7%

Bruderer U, Fisler A, Steurer MP, Steurer M, Dullenkopf A.
PONV after total IV anaesthesia and standardised PONV prophylaxis for ambulatory surgery.
Acta Anaesthesiol Scand 2017; **61**: 758-66

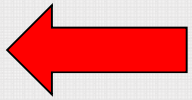
Additional protection against PONV

- Regional anesthesia
- Wound infiltrations
- Reducing anxiety
- Shortening time without fluids preoperatively
- Proper hydration
- Avoidance of blood pressure drops
- Not forcing eating and drinking after surgery

Fasting recommendations for healthy patients undergoing elective procedures.

Ingested material	Minimal Fasting Period (applied to all ages)
Clear liquids (water, fruit juices without pulp, carbonated beverages, clear tea, black coffee)	2 hours
Breast milk	4 hours
Infant formula	6 hours
Non-human milk	6 hours
Light meal (toast and clear liquids)	6 hours

- Adults and children should be encouraged to drink clear fluids up to 2h before surgery (including caesarean section)
  - Water, pulp-free juice, tea, coffee without milk
  - Milk added up to about one fifth of total V = clear

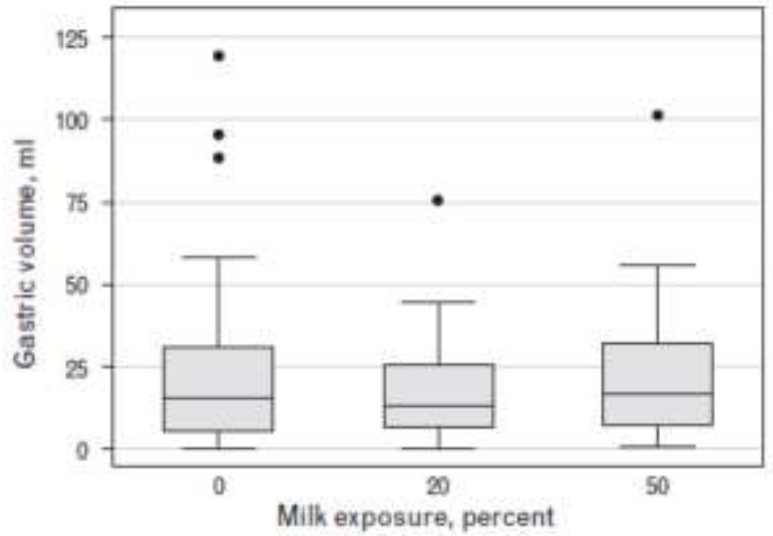


- Patients should not have their operation delayed just because they are chewing gum, sucking a boiled sweet, smoking prior to induction

- Obesity, gastro-oesophageal reflux, diabetes, pregnant women not in labour: same guidelines

Perioperative fasting Guidelines ESA, Eur J Anaesthesiol 2011

Preoperative fasting



Gastric volume distribution at three milk exposure levels.

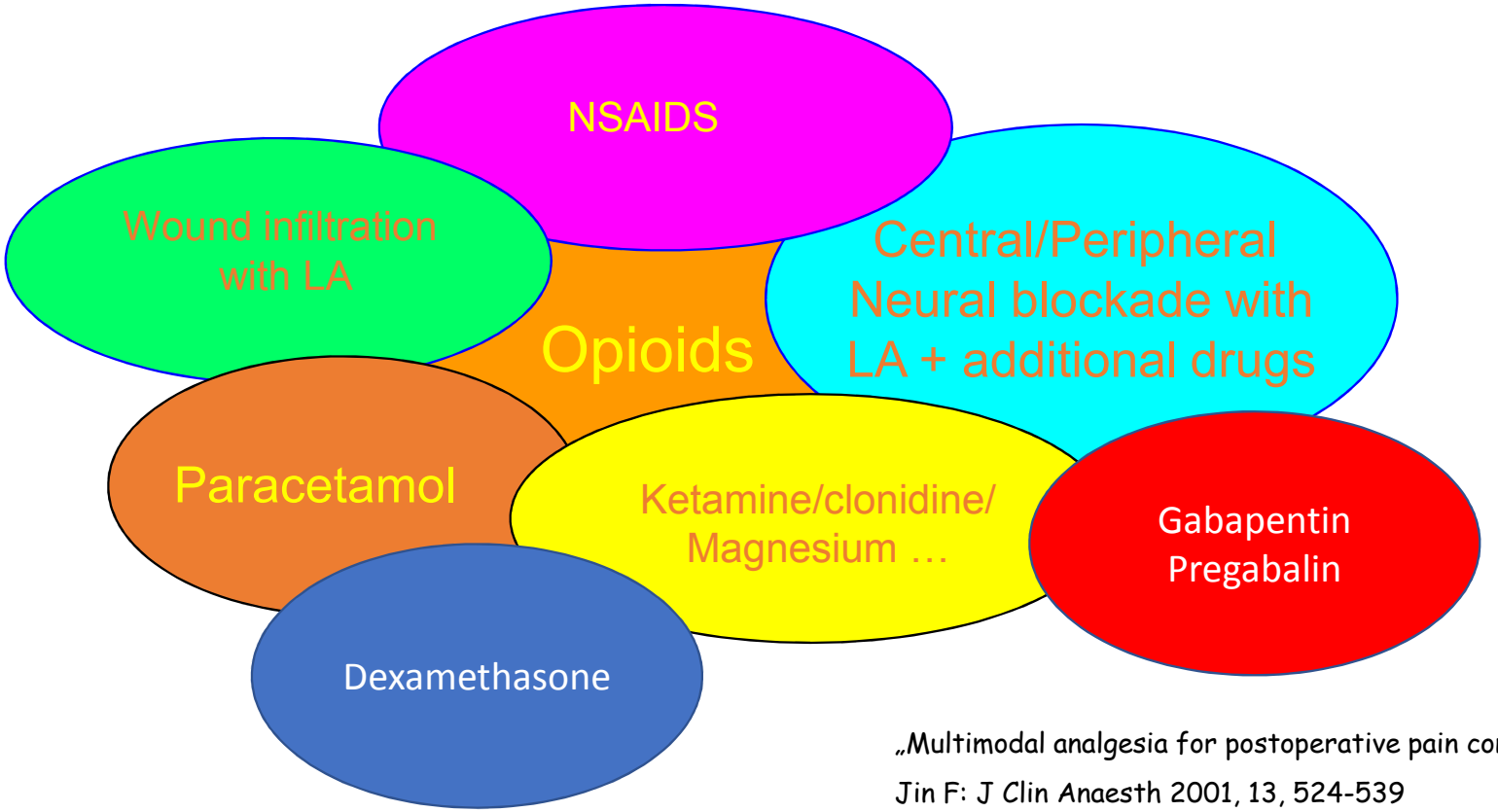
Larsen B, Larsen LP, Sivesgaard K, Juul S.
Black or white coffee before anaesthesia?: A randomised crossover trial.
Eur J Anaesthesiol 2016; **33**: 457-62

Making the experience of elective surgery better

1. Make waiting times shorter
2. Better disseminate information
3. Reduce ‘nil per mouth’ times

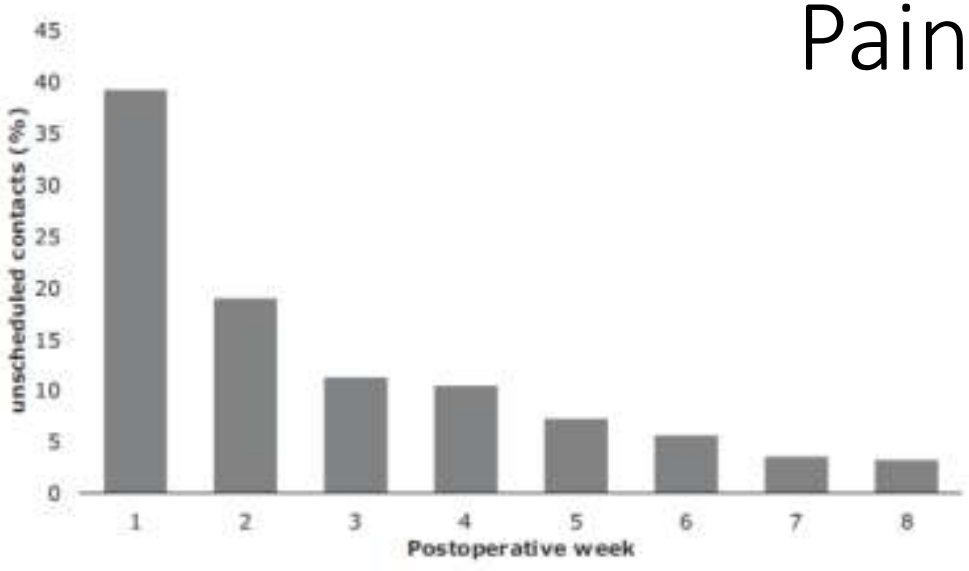
Fregene T, Wintle S, Venkat Raman V, Edmond H, Rizvi S.
Making the experience of elective surgery better.
BMJ Open Qual 2017; **6**: e000079

Multimodal analgesia for postoperative pain control



„Multimodal analgesia for postoperative pain control"
Jin F: J Clin Anaesth 2001, 13, 524-539
„Anaesthesia, surgery, and challenges in postoperative recovery"
Kehlet H et al. Lancet 2003, 362, 1921-28

Pain



General Practitioner	46 %
Day care unit	26%
GP on call	10,1%
Emergency Department	9,1%
Hospital Department	9,1%

Further information

- Prescriptions not properly explained to the patient
- Patients waited too long to take medication
- Patients were afraid to take pain medication (addiction)

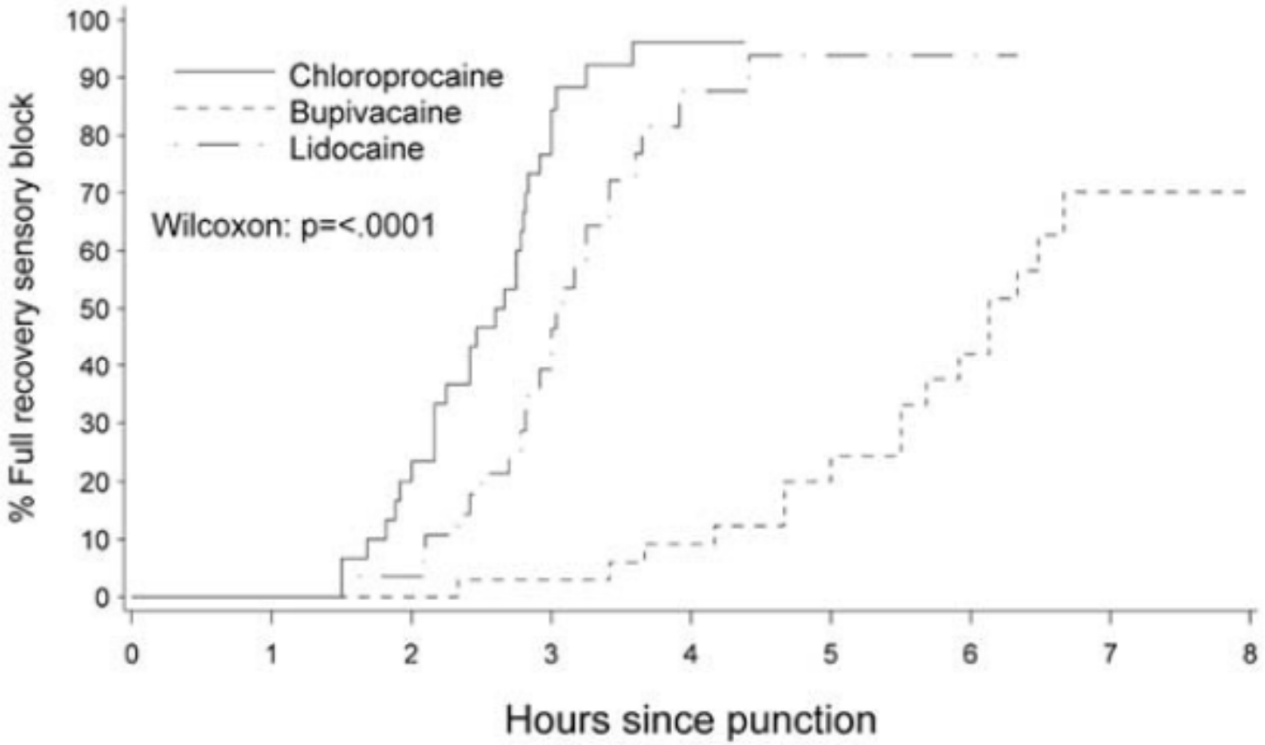
McGrath B, Elgendy H, Chung F, Kamming D, Curti B, King S.
Thirty percent of patients have moderate to severe pain 24 hr after ambulatory surgery
Can J Anaesth 2004; **51**: 886-91

Brix LD, Bjornholdt KT, Thillemann TM, Nikolajsen L.
Pain-related unscheduled contact with healthcare services after outpatient surgery.
Anaesthesia 2017; **72**: 870-8

Dexamethasone at doses more than 0.1 mg/kg is an effective adjunct in multimodal strategies to reduce postoperative pain and opioid consumption after surgery.

- Lower pain scores at 2h and 24 h
- Less opioid use at 2h and 24h
- Longer time to first analgesic dose
- Shorter stay in PACU
- No increase in infection, delayed wound healing
- Higher glucose levels
- More perineal pruritus when pre-induction

De Oliveira GS, Jr., Almeida MD, Benzon HT, McCarthy RJ.
Perioperative single dose systemic dexamethasone for postoperative pain: a meta-analysis of RCT's.
Anesthesiology 2011; **115**: 575-88



Teunkens A, Vermeulen K, Van Gerven E, Fieuws S, Van de Velde M, Rex S.
Comparison of 2-Chloroprocaine, Bupivacaine, and Lidocaine for Spinal Anesthesia in an Outpatient Setting
Reg Anesth Pain Med 2016; **41**: 576-83

Short-acting local anesthetic

	Heavy prilo
• Rapid onset	14,5 min
• Predictable duration of sensory block	205 min
• Rapid recovery of motor block	
• Minimal side effects:	
• Hypotension	0
• TNS, transient neurologic symptoms	0
• Urinary retention	0

Tachipri

Guntz. *Canadian journal of anaesthesia* 2014; **61**: 801-7

TNS

=

Sixteen trials reporting on 1467 patients, 125 of whom developed TNS, were included in the analysis. The use of lidocaine for spinal anaesthesia increased the risk of developing TNS. There was no evidence that this painful condition was associated with any neurologic pathology; the symptoms disappeared spontaneously by the fifth postoperative day. The relative risk (RR) for developing TNS after spinal anaesthesia with lidocaine as compared to other local anaesthetics (bupivacaine, prilocaine, procaine, levobupivacaine, ropivacaine, and 2-chloroprocaine) was 7.31 (95% confidence interval (CI) 4.16 to 12.86). Mepivacaine was found to give similar results as lidocaine and was therefor omitted from the overall comparison to diminish the heterogeneity.

Zaric D, Pace NL. *The Cochrane database of systematic reviews* 2009: CD003006

Real KPI – kwaliteits performantie indicatoren

Escalating telephone call

Postdischarge nausea vomiting – pain – late recovery

Postoperative recovery: mobile phone app

- Control (paper questionnaire) vs Intervention (mobile app)
- QoR, Quality of recovery score (lists 24 items)
- Result
  - Sleeping difficulties
  - Not having a general feeling of wellbeing
  - Having difficulty feeling relaxed
  - Dizziness
  - Headache
  - Pain in surgical wound
  - Swollen surgical wound

Jaensson M, Dahlberg K, Eriksson M, Nilsson U.
Evaluation of postoperative recovery in day surgery patients using a mobile phone application: a multicentre randomized trial.
Br J Anaesth 2017; **119**: 1030-8