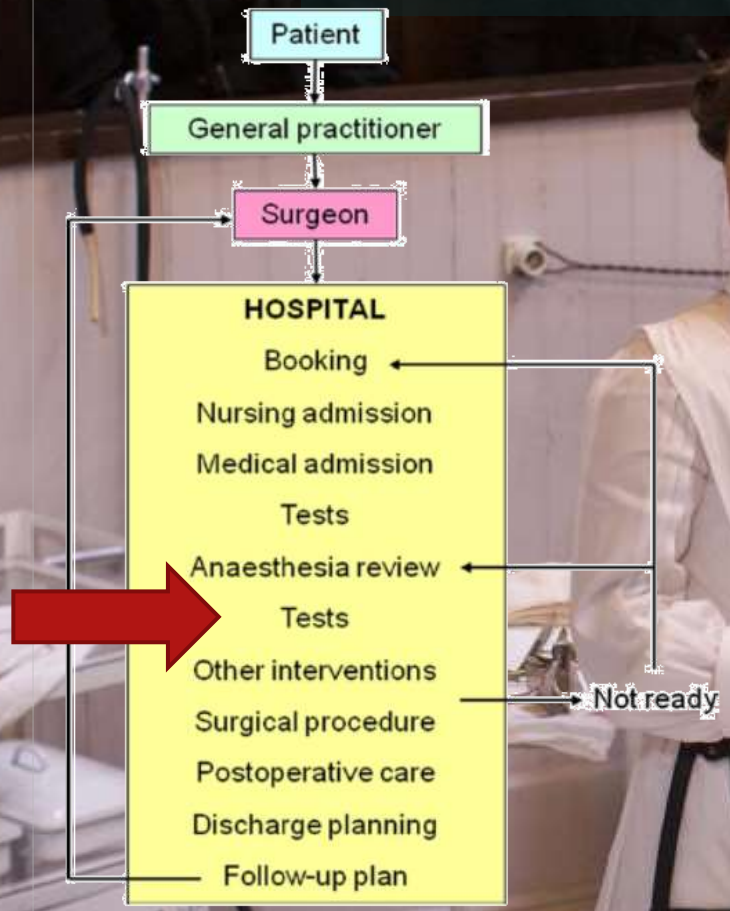
BAAS
Belgian Association of Ambulatory Surgery

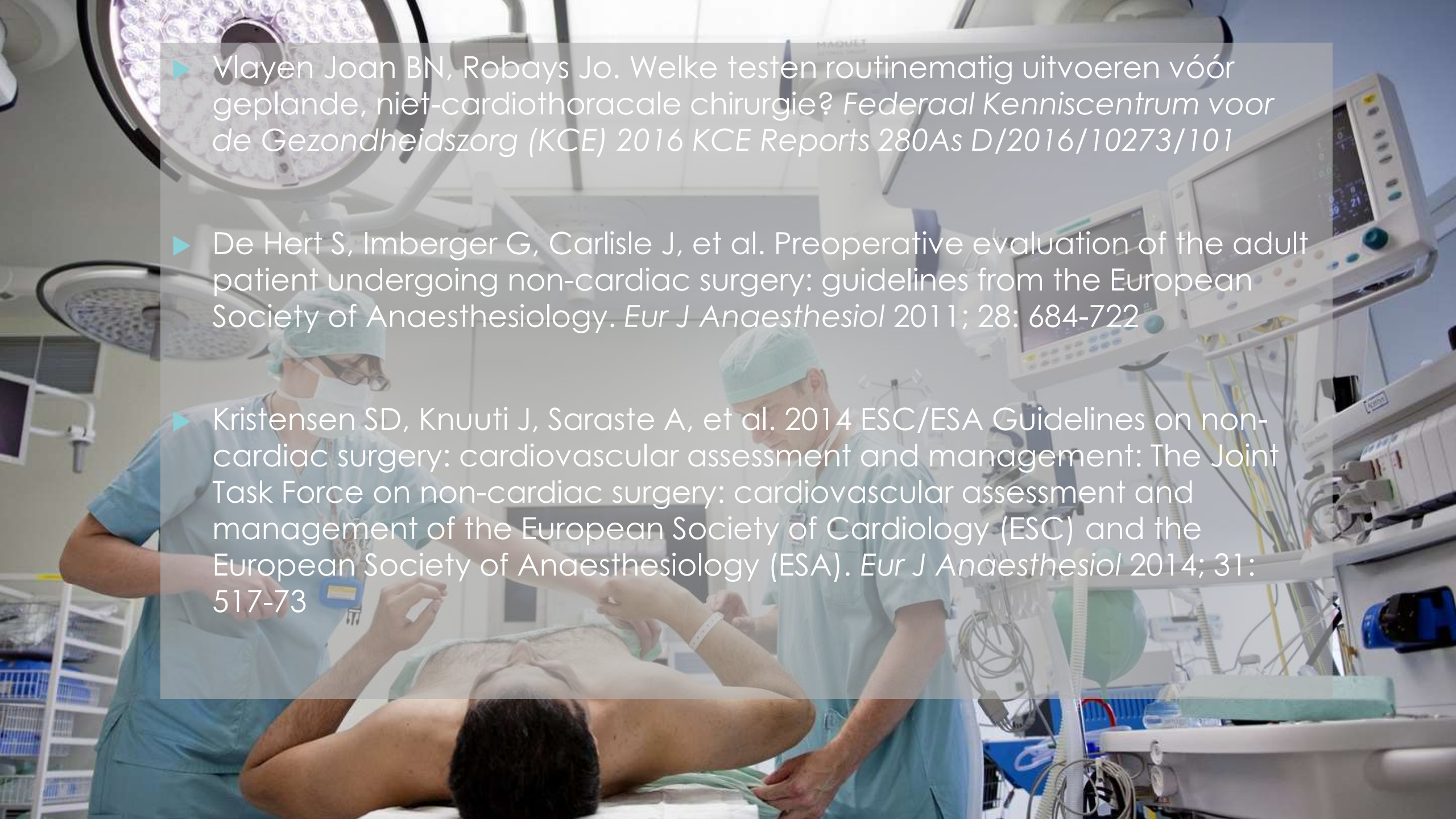
Improving Quality in Anaesthesia: Preoperative Evaluation and Optimisation: What,when and how ?

Marc COPPENS
University Hospital Gent

Traditional system of surgical care



Lee A, Kerridge RK, Chui PT, Chiu CH, Gin T.
Perioperative Systems as a quality model of perioperative medicine and surgical care.
Health Policy 2011; **102**: 214-22



- Vlayen Joan BN, Robays Jo. Welke testen routinematig uitvoeren vóór geplande, niet-cardiothoracale chirurgie? *Federaal Kenniscentrum voor de Gezondheidszorg (KCE) 2016 KCE Reports 280As D/2016/10273/101*

- De Hert S, Imberger G, Carlisle J, et al. Preoperative evaluation of the adult patient undergoing non-cardiac surgery: guidelines from the European Society of Anaesthesiology. *Eur J Anaesthesiol* 2011; 28: 684-722

- Kristensen SD, Knuuti J, Saraste A, et al. 2014 ESC/ESA Guidelines on non-cardiac surgery: cardiovascular assessment and management: The Joint Task Force on non-cardiac surgery: cardiovascular assessment and management of the European Society of Cardiology (ESC) and the European Society of Anaesthesiology (ESA). *Eur J Anaesthesiol* 2014; 31: 517-73

Preoperative anaesthesia clinic

- Identifying patients at increased risk for perioperative complications
- Risk reduction to improve patient outcome
  - Pharmacologic interventions preoperatively
  - Choice of anesthetic technique + consent
    - Neuraxial/locoregional vs general
    - Airway evaluation
    - Total intravenous vs inhalational anaesthesia (PONV risk)
    - Monitoring depth of anaesthesia
- Accepting for surgery or referring for more conventional treatment if patient's risk does not match the benefit of the procedure

ASA
NSQIP Surgical Risk

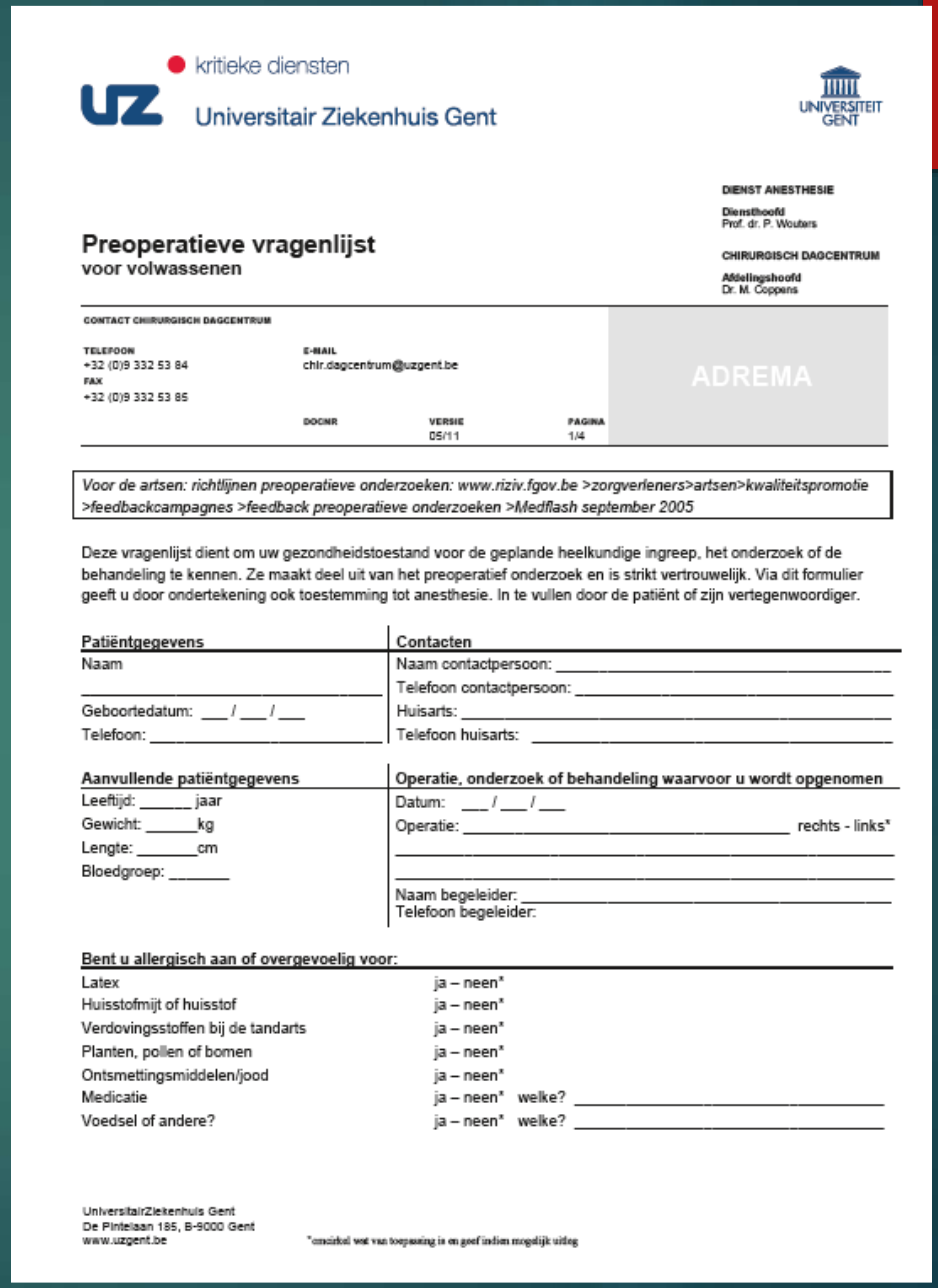
Informed consent / Patiëntenparticipatie

- Het team hanteert een beleid met betrekking tot informed consent dat voldoet aan vigerende wet- en regelgeving.
- De teamleden informeren cliënten en familieleden tijdig, volledig en nauwkeurig om hen te helpen keuzes te maken ten aanzien van de behandeling.
- Het team controleert of de cliënt en zijn familie de verstrekte informatie over de behandeling begrijpen en legt de uitkomst van die controle vast in het dossier van de cliënt.

ASA Classification		Examples:
ASA I	A normal healthy patient	Healthy; no smoking, no or very minimal drinking.
ASA II	A patient with mild systemic disease	Smoker; more than minimal drinking; pregnancy; obesity; well controlled diabetes, well controlled hypertension; mild lung disease.
ASA III	A patient with severe systemic disease, not incapacitating	Diabetes, poorly controlled hypertension; distant history of MI, CVA, TIA, cardiac stent; COPD, ESRD; dialysis; active hepatitis; implanted pacemaker; ejection fraction below 40%; congenital metabolic abnormalities.
ASA IV	A patient with severe systemic disease that is a constant threat to life	Recent history of MI, CVA, TIA, cardiac stent; Ongoing cardiac ischemia or severe valve dysfunction; implanted ICD; ejection fraction below 25%.
ASA V	A moribund patient who is not expected to survive without the operation	Ruptured abdominal or thoracic aneurism; intracranial bleed with mass effect; ischemic bowel in the face of significant cardiac pathology..
ASA VI	A patient who has already been declared brain-dead and whose organs are being removed for transplant.	
The addition of an 'E' indicates emergency surgery.		

Cruciaal

- Preoperatieve vragenlijst: alle antwoorden zijn neen bij een ASA 1 gezonde patiënt
- Optimalisatie van de toestand van de patiënt
- Voldoende op voorhand



kritieke diensten
UZ Universitair Ziekenhuis Gent
UNIVERSITEIT GENT

DIENST ANESTHESIE
Diensthoofd
Prof. dr. P. Wouters

CHIRURGISCH DAGCENTRUM
Afdelingshoofd
Dr. M. Coppens

Preoperatieve vragenlijst
voor volwassenen

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DOCNR VERSIE 05/11 PAGINA 1/4

ADREMA

Voor de artsen: richtlijnen preoperatieve onderzoeken: www.riziv.fgov.be >zorgverleners>artsen>kwaliteitspromotie >feedbackcampagnes >feedback preoperatieve onderzoeken >Medflash september 2005

Deze vragenlijst dient om uw gezondheidstoestand voor de geplande heelkundige ingreep, het onderzoek of de behandeling te kennen. Ze maakt deel uit van het preoperatief onderzoek en is strikt vertrouwelijk. Via dit formulier geeft u door ondertekening ook toestemming tot anesthesie. In te vullen door de patiënt of zijn vertegenwoordiger.

Patiëntgegevens
Naam _____
Geboortedatum: ___ / ___ / ___
Telefoon: _____

Contacten
Naam contactpersoon: _____
Telefoon contactpersoon: _____
Huisarts: _____
Telefoon huisarts: _____

Aanvullende patiëntgegevens
Leeftijd: _____ jaar
Gewicht: _____kg
Lengte: _____cm
Bloedgroep: _____

Operatie, onderzoek of behandeling waarvoor u wordt opgenomen
Datum: ___ / ___ / ___
Operatie: _____ rechts - links*
_____
_____
Naam begeleider: _____
Telefoon begeleider:

Bent u allergisch aan of overgevoelig voor:

Latex	ja – neen*
Huisstofmijt of huisstof	ja – neen*
Verdovingsstoffen bij de tandarts	ja – neen*
Planten, pollen of bomen	ja – neen*
Ontsmettingsmiddelen/jood	ja – neen*
Medicatie	ja – neen* welke? _____
Voedsel of andere?	ja – neen* welke? _____

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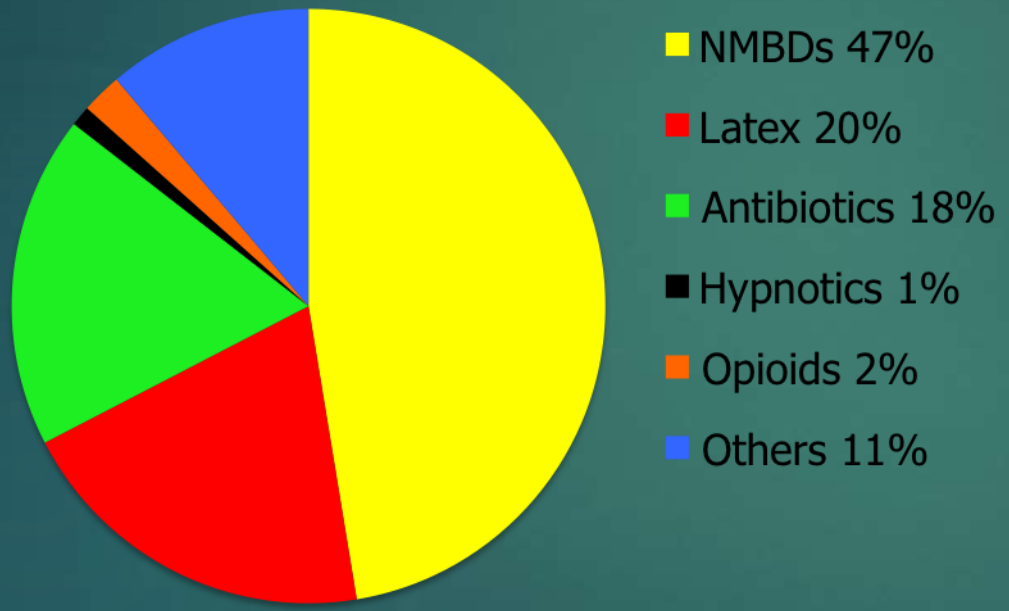
www.uzgent.be

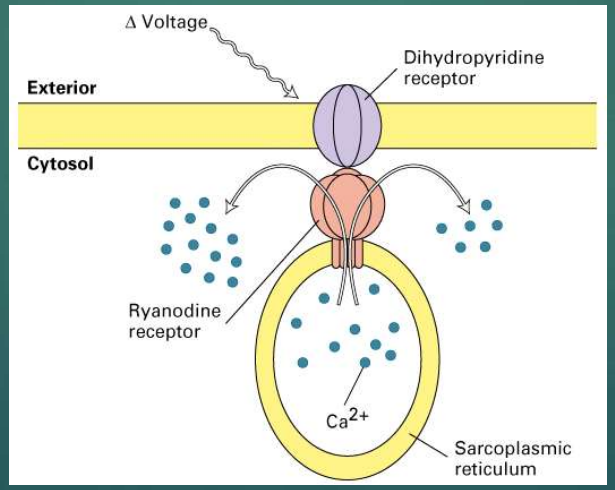
*onzinkel wat van toepassing is en geef indien mogelijk uitleg

Anafylactische shock

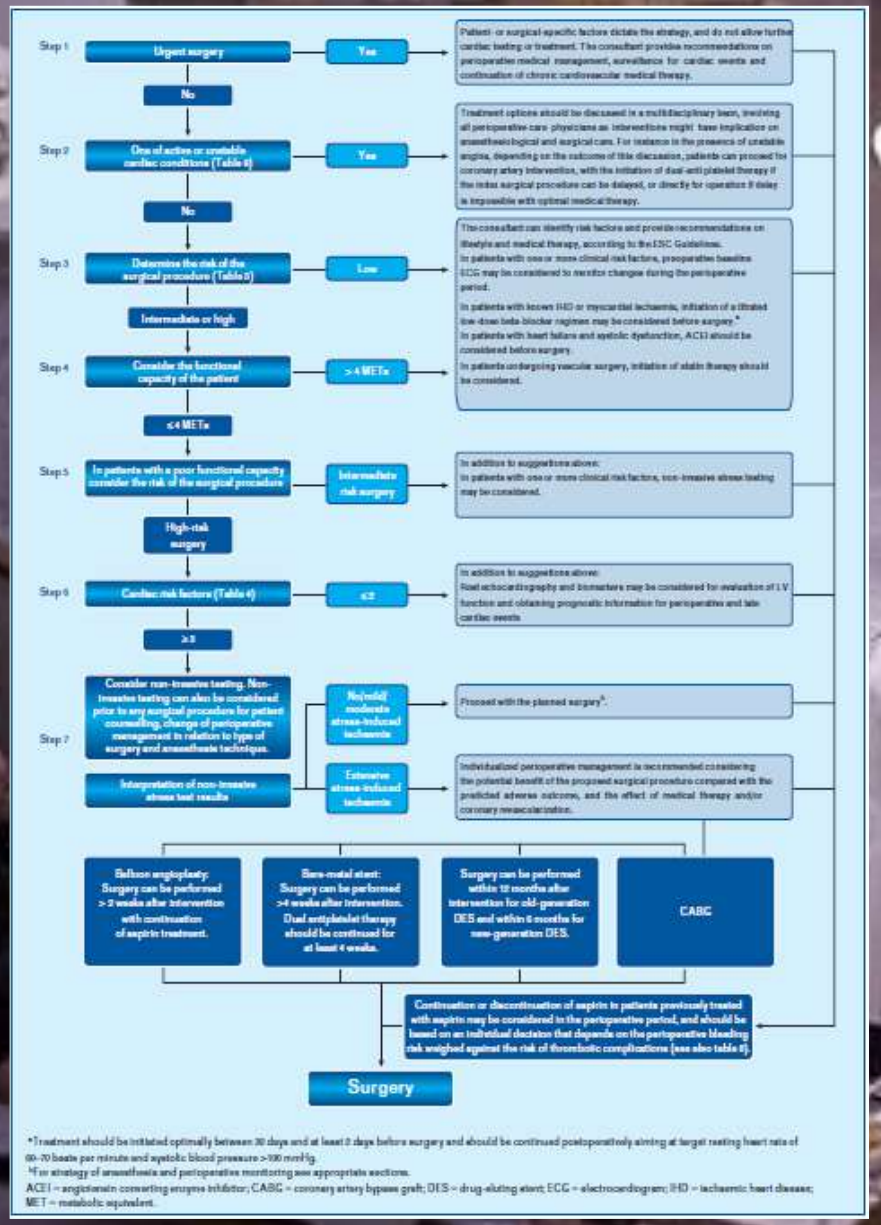


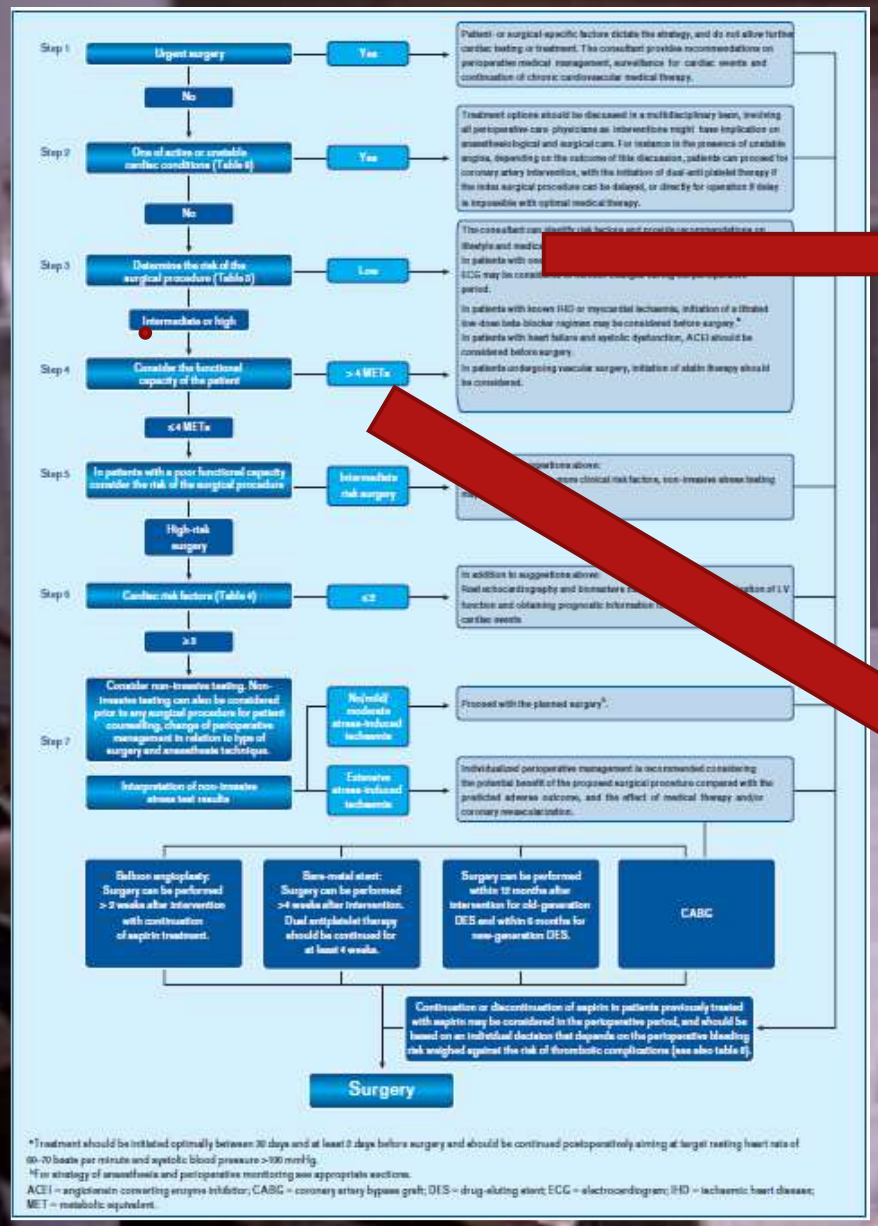
Maligne hyperthermie

- Pharmacogenetic disorder of calcium homeostasis in skeletal muscle
- Prevalence 1:15000-1:50000
- Accumulation of Ca in the sarcolemma: sustained contractures of skeletal muscle



Practical stepwise evaluation integrating clinical risk factors and test results with the estimated stress of the planned procedure



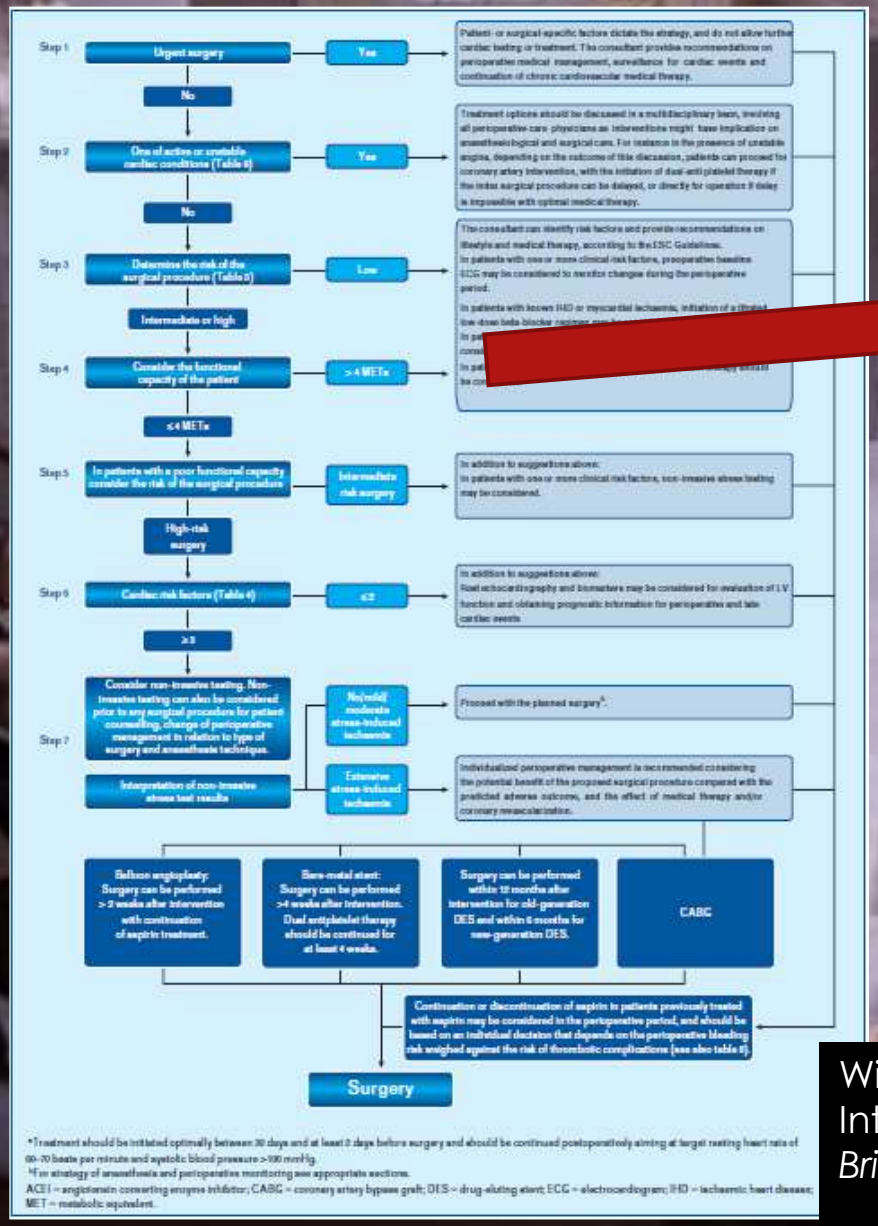


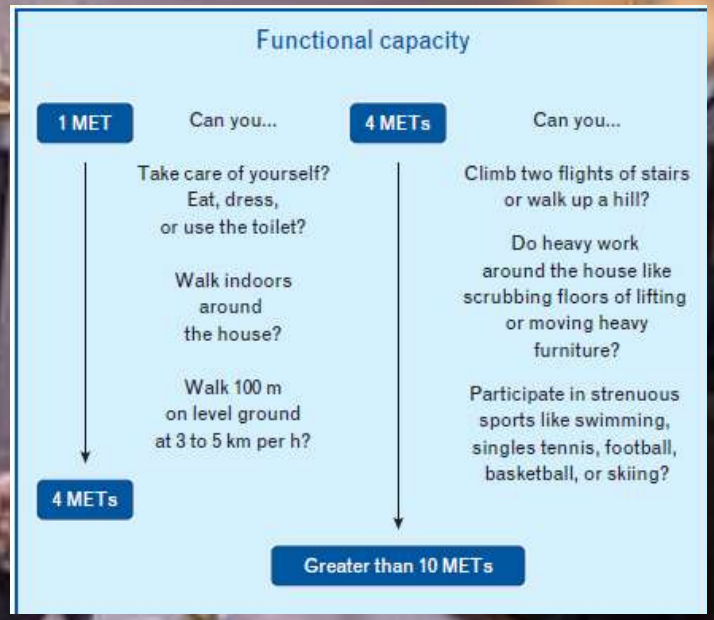
- Unstable angina pectoris
- Acute heart failure
- Significant cardiac arrhythmias
- Symptomatic valvular heart disease
- Recent myocardial infarction[a] and residual myocardial ischaemia

Low-risk: <1%	Intermediate-risk: 1–5%	High-risk: >5%
• Superficial surgery • Breast • Dental • Endocrine: thyroid • Eye • Reconstructive • Carotid asymptomatic (CEA or CAS) • Gynaecology: minor • Orthopaedic: minor (meniscectomy) • Urological: minor (transurethral resection of the prostate)	• Intraperitoneal: splenectomy, hiatal hernia repair, cholecystectomy • Carotid symptomatic (CEA or CAS) • Peripheral arterial angioplasty • Endovascular aneurysm repair • Head and neck surgery • Neurological or orthopaedic: major (hip and spine surgery) • Urological or gynaecological: major • Renal transplant • Intra-thoracic: non-major	• Aortic and major vascular surgery • Open lower limb revascularization or amputation or thromboembolectomy • Duodeno-pancreatic surgery • Liver resection, bile duct surgery • Oesophagectomy • Repair of perforated bowel • Adrenal resection • Total cystectomy • Pneumonectomy • Pulmonary or liver transplant

CAS, carotid artery stenting; CEA, carotid endarterectomy. [a]Surgical risk estimate is a broad approximation of 30-day risk of cardiovascular death and myocardial infarction that takes into account only the specific surgical intervention without considering the patient's comorbidities. [b]Adapted from Glance *et al.*[11]

The majority of patients with stable heart disease can undergo low and intermediate risk surgery without additional evaluation





Duke activity index
> 34

Wijeysundera et al.
Integration of the Duke Activity Status Index into preoperative risk evaluation
British journal of anaesthesia 2020; **124**: 261-70

Q of the consultation

- The actual anaesthesia provider has to trust the anaesthesia consultant
- The PAC-file has to reflect sufficient and adequate information
- Consensus based guidelines

Kristensen SD, Knuuti J, Saraste A, et al. 2014
ESC/ESA Guidelines on non-cardiac surgery: cardiovascular assessment and management: The Joint Task Force on non-cardiac surgery: cardiovascular assessment and management of the European Society of Cardiology (ESC) and the European Society of Anaesthesiology (ESA).
Eur J Anaesthesiol 2014

De Hert S, Imberger G, Carlisle J, et al.
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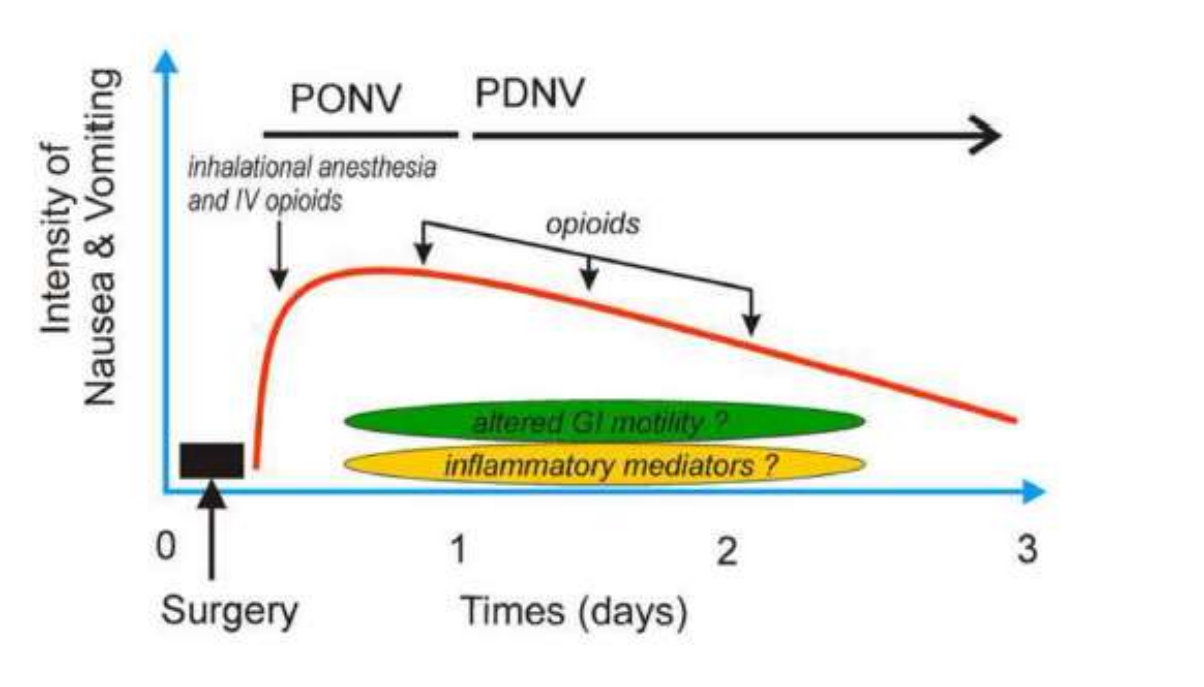
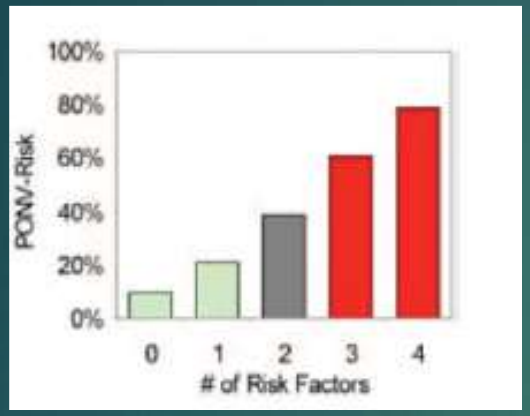
Eur J Anaesthesiol 2011; **28**: 684-722

PONV-PDNV



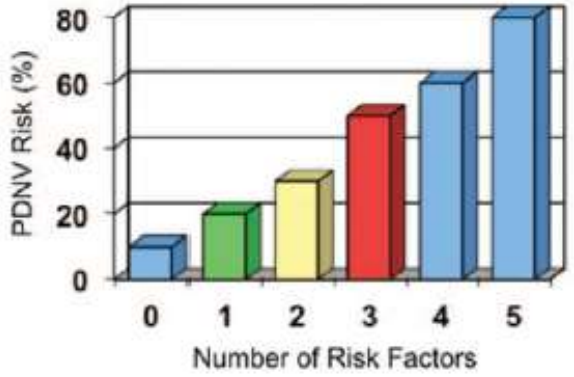
General anaesthesia is the clinical use of potent and *potentially lethal* drugs, to produce a state of controlled, reversible *poisoning* to achieve narcosis, analgesia and reflex suppression administered with professional skill,…

Risk scores for PONV and PDNV



Risk Factors	Points
Female Gender	1
Non-Smoker	1
History of PONV	1
Postoperative Opioids	1
Sum =	0 ... 4

Figure 1. Risk score for PONV in adults. Simplified risk score from Apfel et al.[9] to predict the patient's risk for PONV. When 0, 1, 2, 3, and 4 of the risk factors are present, the corresponding risk for PONV is about 10%, 20%, 40%, 60%, and 80%, respectively. PONV = postoperative nausea and vomiting.



Risk Factors	Points
Female sex	1
History of PONV	1
Age <50 years	1
Use of opioids in the PACU	1
Nausea in the PACU	1
Sum	**0...5**

Figure 2. Simplified risk score for PDNV in adults. Simplified risk score from Apfel et al.[19] to predict the risk for PDNV in adults. When 0, 1, 2, 3, 4, and 5 risk factors are present, the corresponding risk for PDNV is approximately 10%, 20%, 30%, 50%, 60%, and 80%, respectively. PDNV = postdischarge nausea and vomiting; PONV = postoperative nausea and vomiting; PACU = postanesthesia care unit.

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

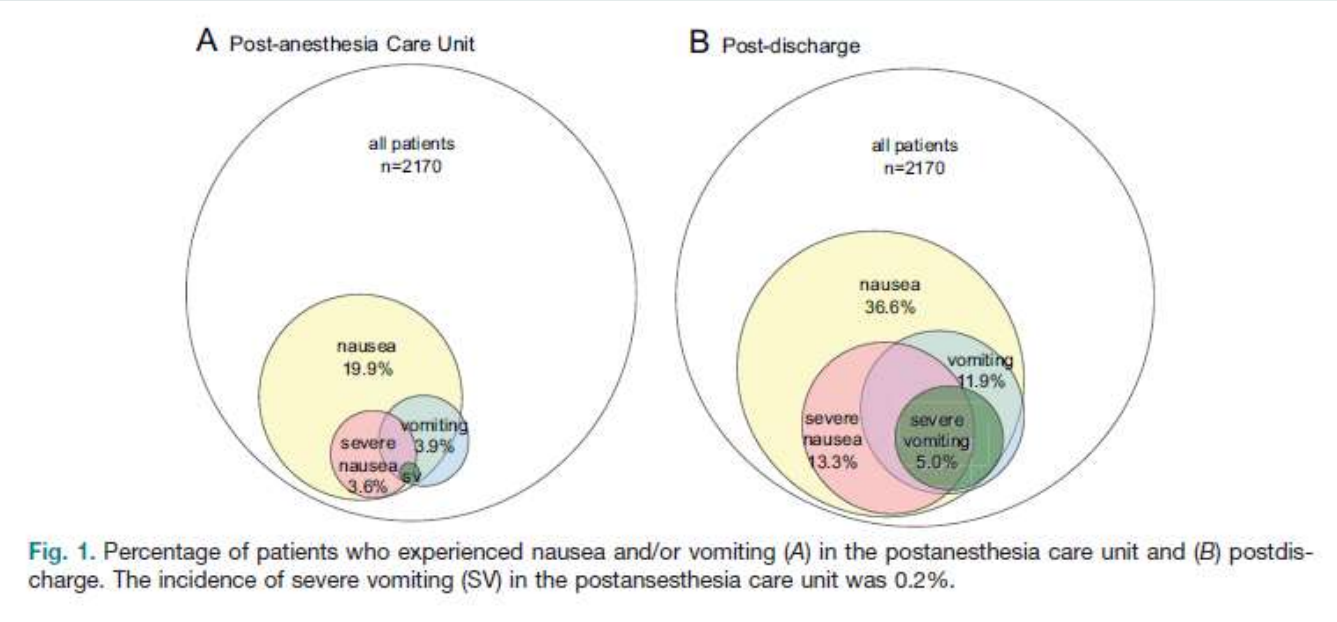


Fig. 1. Percentage of patients who experienced nausea and/or vomiting (*A*) in the postanesthesia care unit and (*B*) postdischarge. The incidence of severe vomiting (SV) in the postansesthesia care unit was 0.2%.

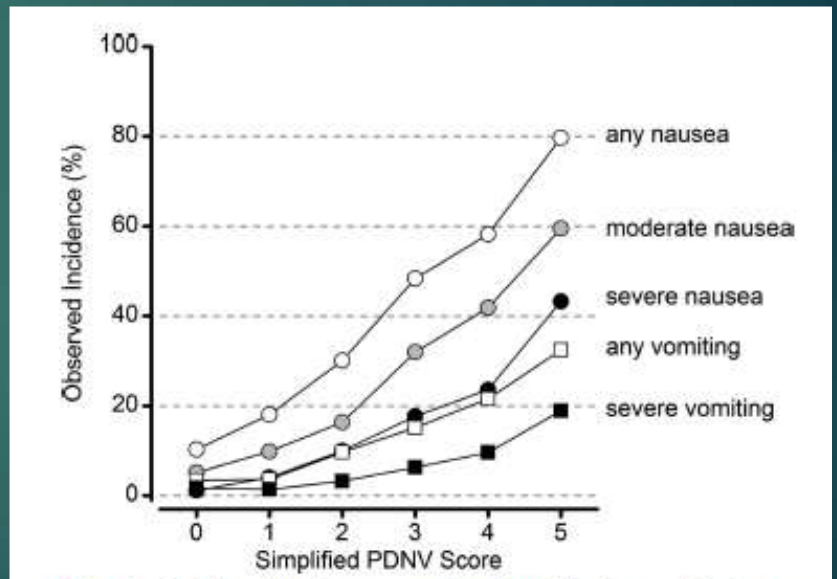
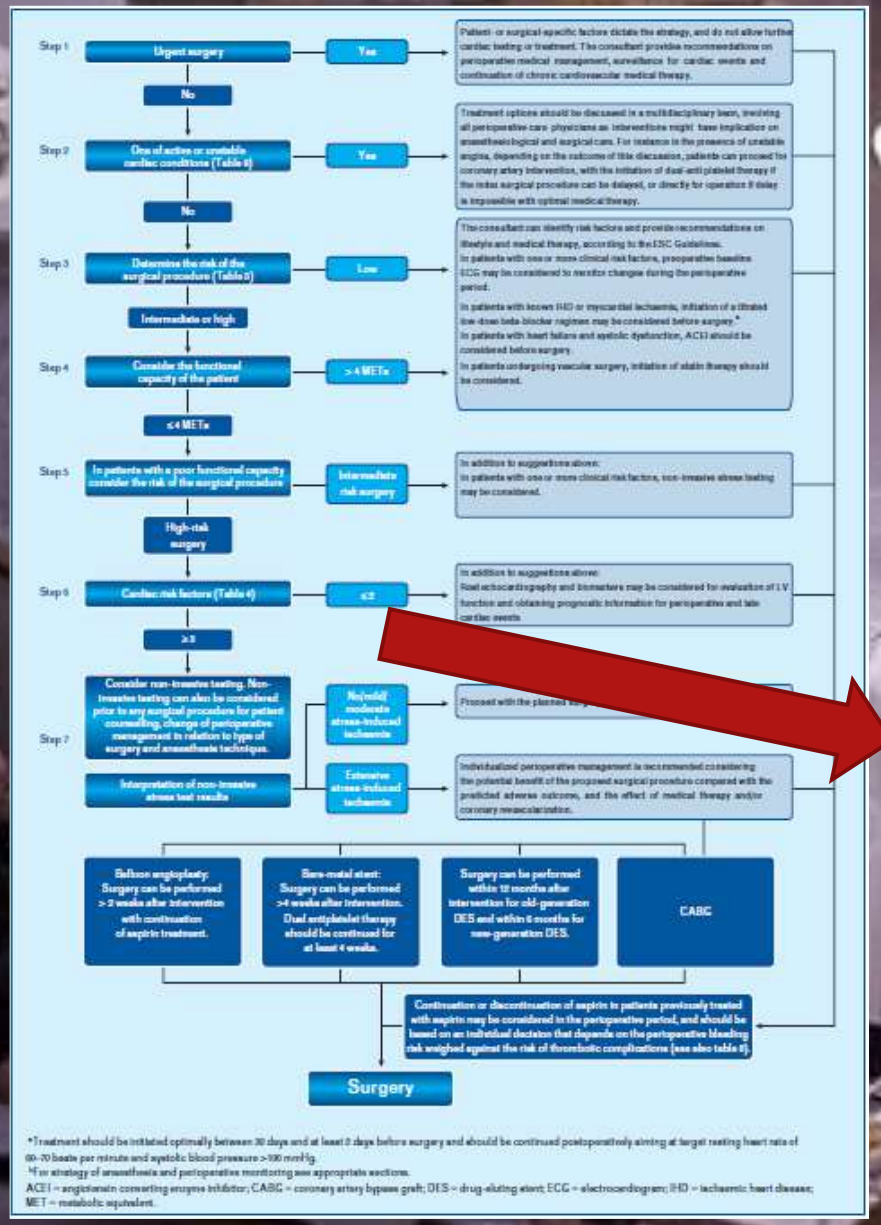


Fig. 6. Relationship between the simplified postdischarge nausea and vomiting (PDNV) risk score and the incidence of PDNV in the validation dataset.



Revised Cardiac Risk Index
1. History of ischemic heart disease
2. History of congestive heart failure
3. History of cerebrovascular disease (stroke or transient ischemic attack)
4. History of diabetes requiring preoperative insulin use
5. Chronic kidney disease (creatinine > 2 mg/dL)
6. Undergoing suprainguinal vascular, intraperitoneal, or intrathoracic surgery
Risk for cardiac death, nonfatal myocardial infarction, and nonfatal cardiac arrest: 0 predictors = 0.4%, 1 predictor = 0.9%, 2 predictors = 6.6%, ≥3 predictors = >11%

ARISCAT – Using the Model

Predictor	Multivariate Analysis OR	Risk score
Age 51-80	1.4	3
Age >80	5.1	16
Preop SpO2 91-95	2.2	8
Preop SpO2 <= 90	10.7	24
Resp infection w/in 1 mo	5.5	17
Preop hemoglobin <=10	3.0	11
Upper abdominal incision	4.4	15
Intrathoracic incision	11.4	24
Surgery >2-3 hrs	4.9	16
Surgery >3 hrs	9.7	23
Emergency procedure	2.2	8

Risk category	PPC rate
Low risk <26 points	1.6%
Intermediate risk 26-44 points	13.3%
High risk >= 45 points	42.1%

Back

Frailty as independent risk factor

- Adverse health outcome
- Mortality
- Increased length of stay
- Inability to be discharged home : institutionalization

- Many frailty assessment tools: > Edmonton Frailty Scale

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Surgical Risk Calculator

Procedure 27447 - Arthroplasty, knee, condyle and plateau; medial AND lateral compartments with or without patella resurfacing (total knee arthroplasty) **Clear**

Begin by entering the procedure name or CPT code. One or more procedures will appear below the procedure box. You will need to click on the desired procedure to properly select it. You may also search using two words (or two partial words) by placing a '+' in between, for example: "cholecystectomy+cholangiography"

Reset All Selections

Are there other potential appropriate treatment options? ☐ Other Surgical Options ☐ Other Non-operative options ☐ None

Please enter as much of the following information as you can to receive the best risk estimates.
A rough estimate will still be generated if you cannot provide all of the information below.

Age Group	75-84 years	Diabetes	Oral
Sex	Female	Hypertension requiring medication	Yes
Functional status	Independent	Previous cardiac event	No
Emergency case	No	Congestive heart failure in 30 days prior to surgery	No
ASA class	III - Severe systemic disease		
Wound class	Clean	Dyspnea	With Moderate exertion
Steroid use for chronic condition	Yes	Current smoker within 1 year	No
Ascites within 30 days prior to surgery	No	History of severe COPD	Yes
Systemic sepsis within 48 hours prior to surgery	None	Dialysis	No
		Acute Renal Failure	No
Ventilator dependent	No	BMI Calculation: Height (in)	67
Disseminated cancer	No	Weight (lbs)	209

Procedure 27447 - Arthroplasty, knee, condyle and plateau; medial AND lateral compartments with or without patella resurfacing (total knee arthroplasty) **Change Patient Risk Factors**

Risk Factors Age: 75-84, Female, ASA III, Chronic steroids, Diabetes (oral), HTN, Dyspnea with exertion, COPD, Obese (Class I)

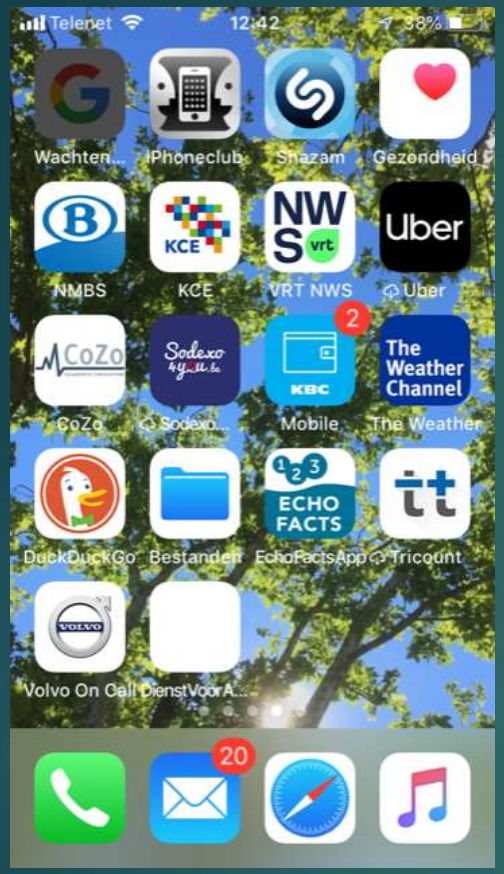
Outcomes	Estimated Risk	Chance of Outcome
Serious Complication	6%	Above Average
Any Complication	11%	Above Average
Pneumonia	1%	Above Average
Cardiac Complication	1%	Above Average
Surgical Site Infection	1%	Above Average
Urinary Tract Infection	2%	Above Average
Venous Thromboembolism	3%	Above Average
Renal Failure	<1%	Above Average
Return to OR	1%	Above Average
Death	1%	Above Average
Discharge to Nursing or Rehab Facility	57%	Above Average

0% (Better) 100% (Worse)

Predicted Length of Hospital Stay: 4.5 days

How to Interpret the Graph Above:
Your Risk | Average Patient Risk | Your % Risk
X%

Surgeon Adjustment of Risks
This will need to be used infrequently, but surgeons may adjust the estimated risks if they feel the calculated risks are underestimated. This should only be done if the reason for the increased risks was NOT already entered into the risk calculator.
1 - No adjustment necessary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The Weather
DuckDuckGo
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Welke testen routinematig uitvoeren bij volwassenen vóór geplande, niet-cardiothoracale chirurgie ?
Aanbevolen
Worden niet aanbevolen:
Cardiopulmonale inspanningstest
Röntgenopname van de thorax
Polysomnografie of slaaptest
Geglyceerd hemoglobine (HbA1c)
Leverfunctietesten
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1
Normale gezondheid
2
Niet-ernstige systemische aandoening
een aandoening of gewoonte waarvan de patiënt in het dagelijkse leven niet veel hinder ondervindt, maar die problemen kan veroorzaken bij een ingreep.
Voorbeelden: roken; regelmatig alcoh...
3
Ernstige systemische aandoening
een aandoening die de normale activiteiten van de patiënt verhindert, maar die niet levensbedreigend is.
Voorbeelden: slecht gecontroleerde ...
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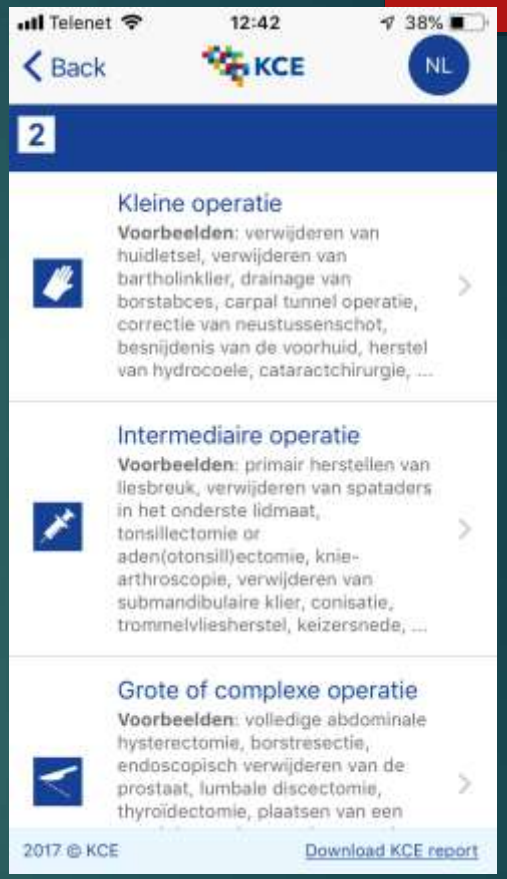
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2
Kleine operatie
Voorbeelden: verwijderen van huidletsel, verwijderen van bartholinklier, drainage van borstabces, carpal tunnel operatie, correctie van neustussenschot, besnijdenis van de voorhuid, herstel van hydrocoele, cataractchirurgie, ...
Intermediaire operatie
Voorbeelden: primair herstellen van liesbreuk, verwijderen van spataders in het onderste lidmaat, tonsillectomie or aden(otonsill)ectomie, knie-arthroscopie, verwijderen van submandibulaire klier, conisatie, trommelvliesherstel, keizersnede, ...
Grote of complexe operatie
Voorbeelden: volledige abdominale hysterectomie, borstresectie, endoscopisch verwijderen van de prostaat, lumbale discectomie, thyroïdectomie, plaatsen van een
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2
Bijkomende vragen
Uw patiënt heeft minstens één risicofactor volgens de hartrisico index
• Is minstens één van de volgende puntjes van toepassing op uw patiënt?
Uw patiënt is minstens 65 jaar oud
Uw patiënt heeft een geschiedenis van abnormale bloedingen, spontaan, of na trauma of chirurgie
Bij uw patiënt kan een nierfunctiestoornis worden vermoed
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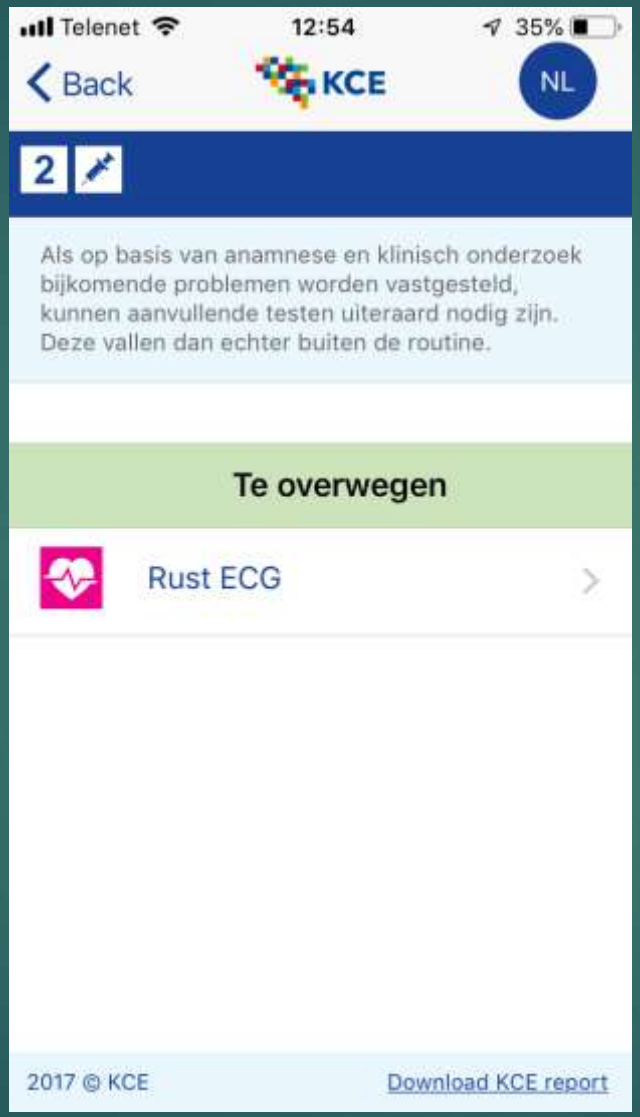
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Als op basis van anamnese en klinisch onderzoek bijkomende problemen worden vastgesteld, kunnen aanvullende testen uiteraard nodig zijn. Deze vallen dan echter buiten de routine.
Te overwegen
Rust ECG
2017 © KCE
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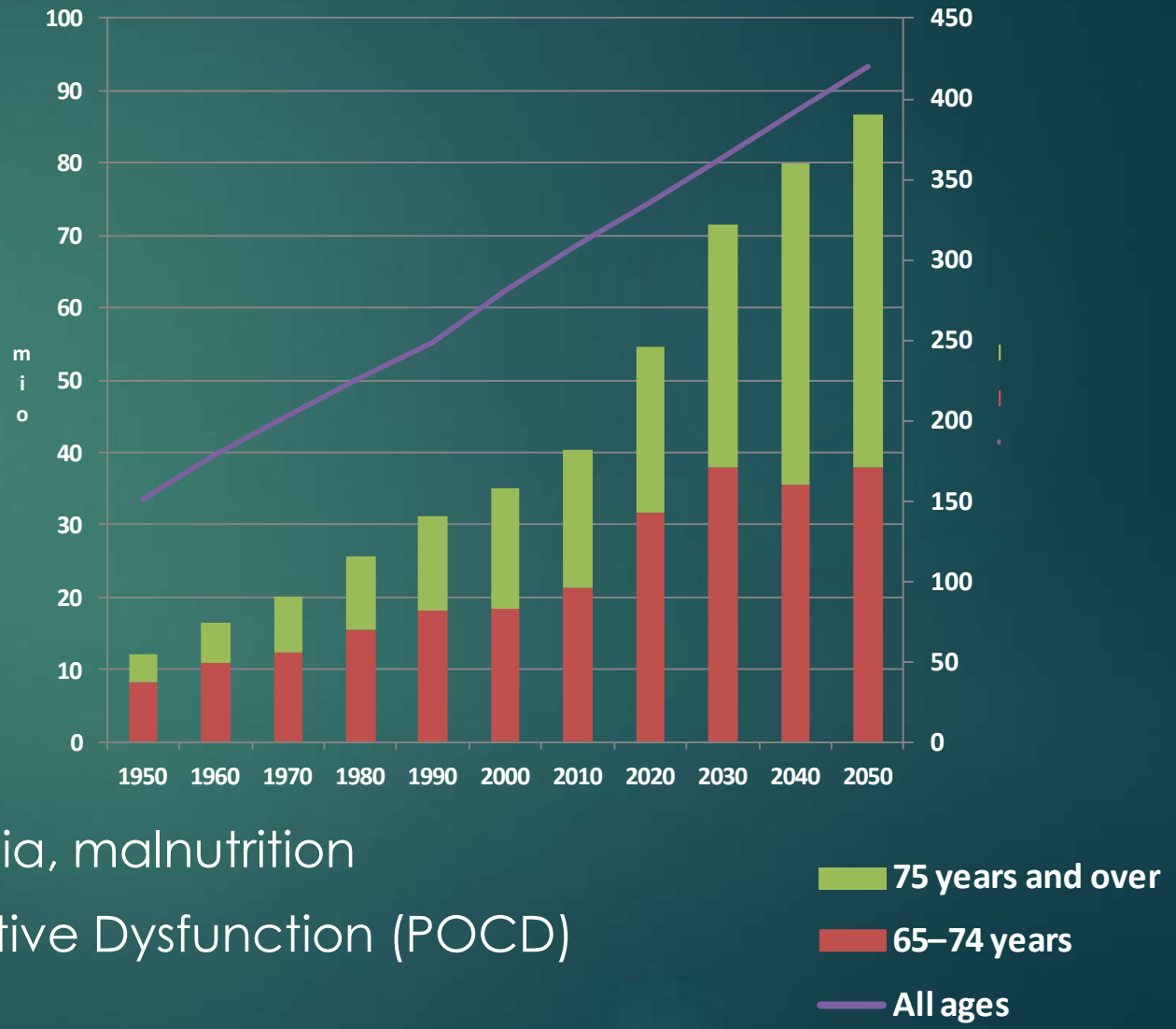
Reduced mortality and morbidity

- Medical optimisation
  - Statins
  - B-blockers
  - …
- Smoking cessation
- Alcohol abstinence
- Incentive spirometry
- Screening for OSAS
- Screening for ‘frailty’
- Preoperative correction of anaemia, malnutrition
- Reduction of Postoperative Cognitive Dysfunction (POCD)



Vragenlijsten voor anamnese medicatie anamnese (accreditering)

- Het team verifieert samen met de cliënt de medicatie bij opname in de instelling (inclusief de spoedeisende hulp of intramurale afdeling).
- Het protocol omvat een lijst van de meest actuele medicatie die de cliënt gebruikt (de best mogelijke medicatiegeschiedenis).
- Het protocol omvat een vergelijking van deze medicatielijst vóór opname met de nieuwe door de instelling voorgeschreven medicatie.
- Het protocol stelt duidelijk dat medicatieafstemming een gedeelde verantwoordelijkheid is van de cliënt en de zorgverlener.

Cardiac risk factors

- Refer to cardiologist

  β blockers and statins should be started between 30 days and at least 1 week before surgery

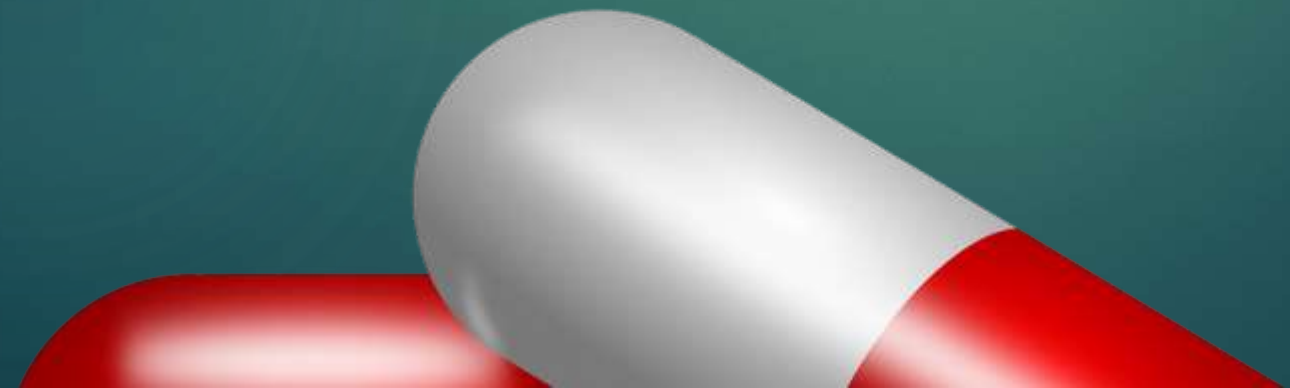
- In patients currently taking β blockers and statins: continue !

Statins

- Lipid-lowering effect
- Coronary plaque stabilisation
  - Decreased lipid oxidation
  - Decreased inflammation
  - …

Lipitor
Pravastatine
Crestor
Simvastatine
Zocor
…

Non-lipid or pleiotropic effects may prevent plaque rupture and subsequent MI and stroke



Short term mortality & statins

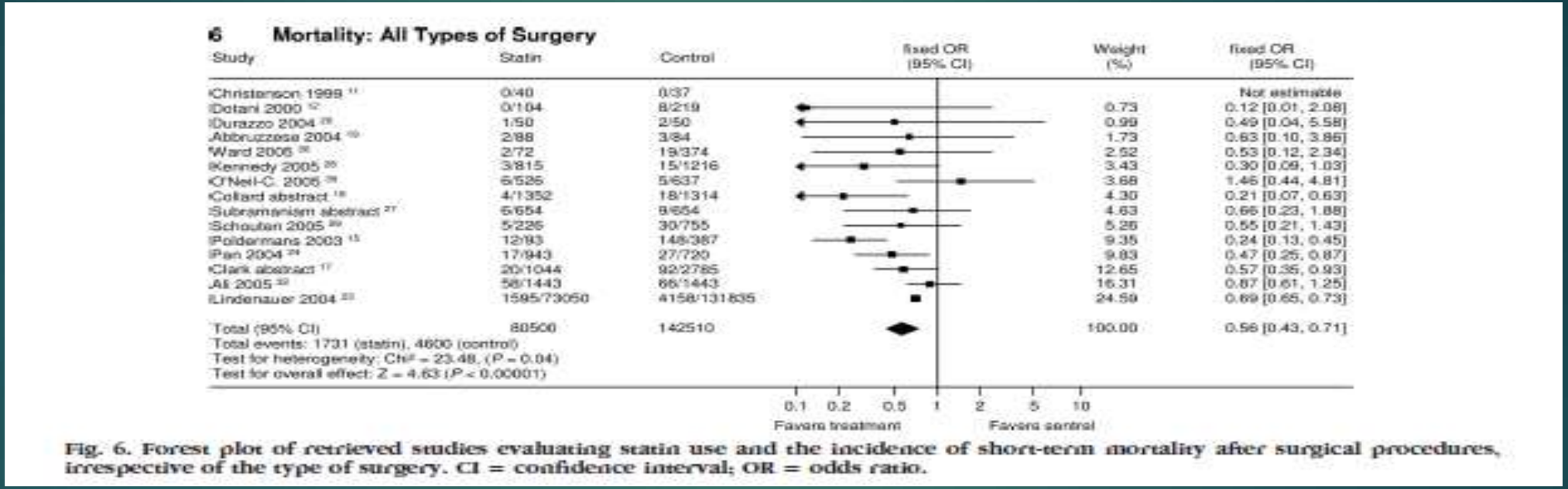


Fig. 6. Forest plot of retrieved studies evaluating statin use and the incidence of short-term mortality after surgical procedures, irrespective of the type of surgery. CI = confidence interval; OR = odds ratio.

Hindler, Anesthesiology 2006

ACE inhibitors

- Blood-pressure lowering effects
- Preserve organ function
  - Improvement of endothelial function
  - Ant-inflammatory effects
  - Direct interference with atherogenesis
  - ….

Capoten
Inhibace
Zestril
Coversyl
Tritace
….

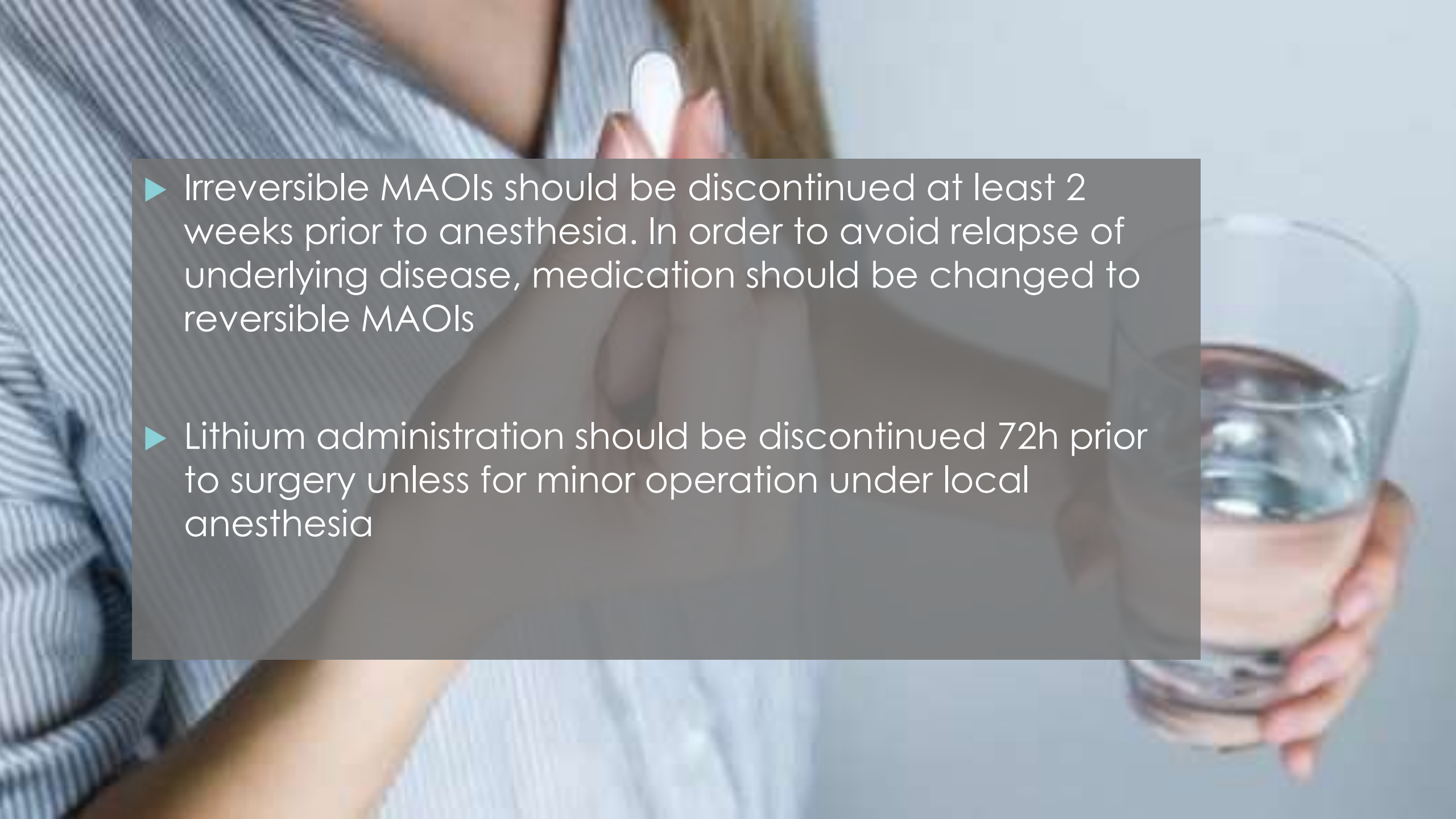
ACE inhibitors

- It is recommended that ACE inhibitors be continued in stable patients with LV systolic dysfunction
- ACE inhibitors should be considered in stable patients with LV systolic dysfunction for low/intermediate risk surgery
- Discontinuation should be considered before non-cardiac surgery in hypertenion

Tricyclic antidepressants

- Patients chronically treated with TCAs should undergo cardiac evaluation prior to anesthesia:
  - Effects on the cardiac conduction system
  - Potentation of (nor-) epinephrine: hypertensive crisis
  - Discontinuation can lead to cholinergic symptoms, movement disorders, cardiac arrhytmia
  - Relapse rate (X 2 to X4)

Redomex
Prothiaden
Tofranil
Cymbalta
Trazolan
....



- Irreversible MAOIs should be discontinued at least 2 weeks prior to anesthesia. In order to avoid relapse of underlying disease, medication should be changed to reversible MAOIs

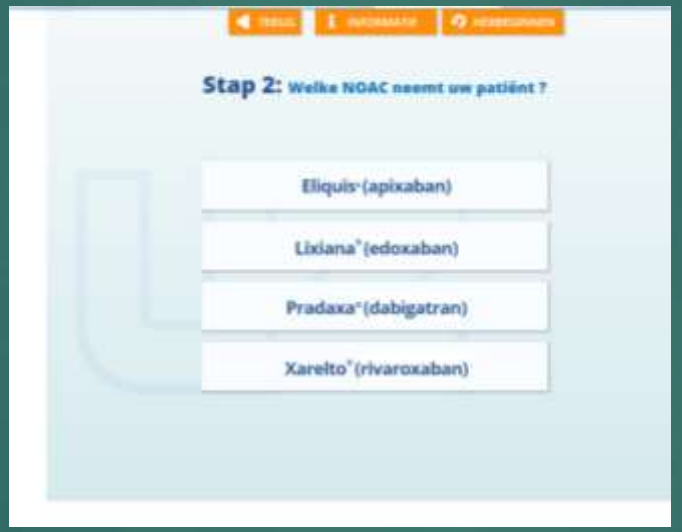
- Lithium administration should be discontinued 72h prior to surgery unless for minor operation under local anesthesia

Herbal medication

herb	effect	stop
Echinacea (48%)		
Aloe vera (30%)		
Ginseng (28%)	Bleeding/effect VKA ↓	-24 hrs
Garlic (27%)	bleeding	-7 days
Ginkgo biloba (22%)	bleeding	-36 hrs
St-John's wort	Enzyme induction	-5 to -9 days

- Patients chronically treated with TCAs should undergo cardiac evaluation prior to anesthesia
- Antidepressant treatment should not be discontinued prior to anesthesia
- Discontinuation of SSRI treatment perioperatively is not recommended
- Antipsychotic medication should be continued in patients with chronic schizophrenia perioperatively.

www.thrombosiscare.be




INFORMATIE
HERBEGINNEN
UZ GENT
Peri-operatieve richtlijnen
Peri-operatieve overbruggingstherapie
ANTI-AGGREGANTIA
ANTI-COAGULANTIA VKA
ANTI-COAGULANTIA NOACs
Deze widget is enkel bestemd voor medische zorgverleners

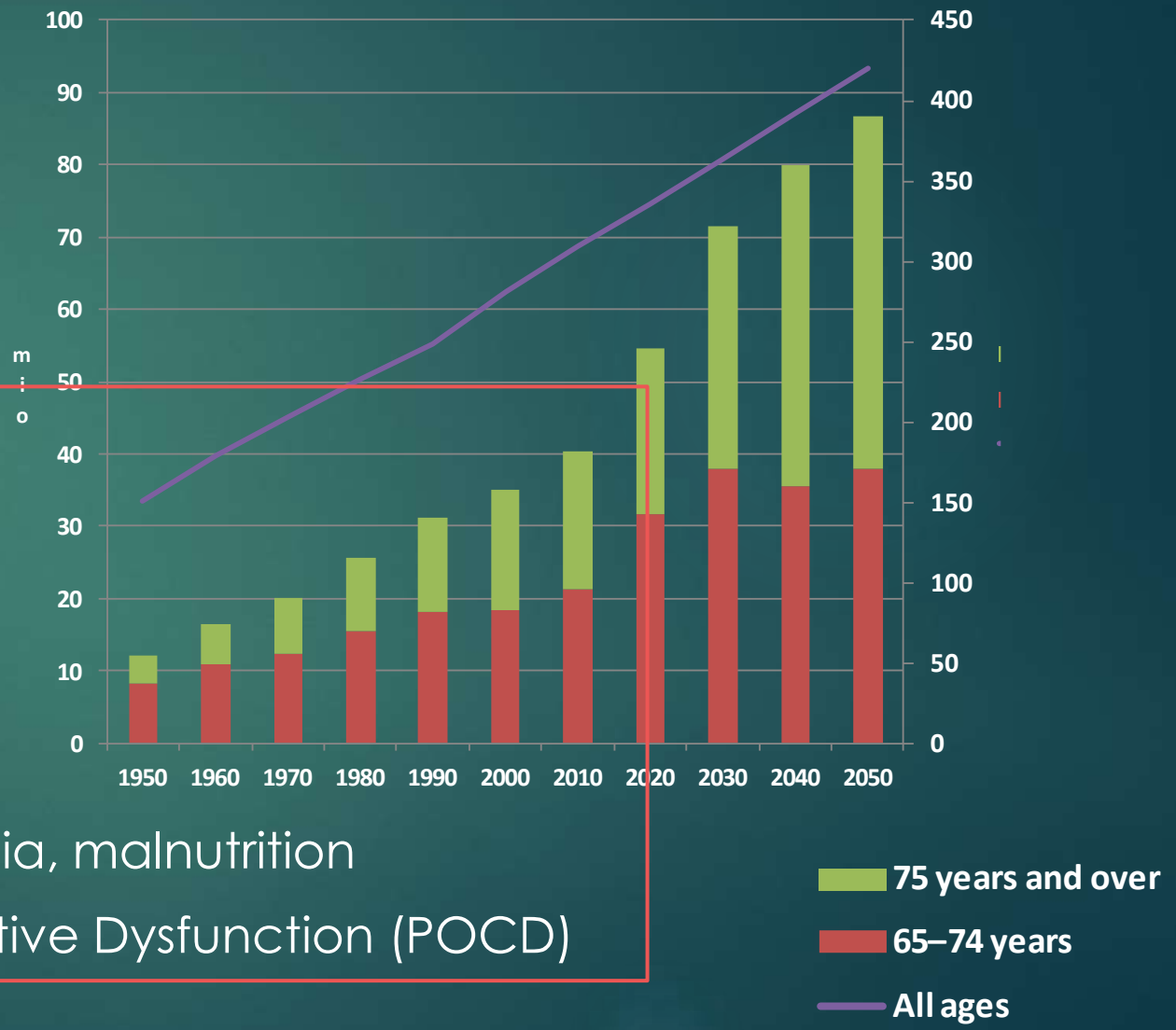

TERUG
INFORMATIE
HERBEGINNEN
Stap 1: Bloedingsrisico ingreep of patiënt
Ingreep EN patiënt LAAG bloedingsrisico
Ingreep OF patiënt HOOG bloedingsrisico

Preanesthesia evaluation and optimisation (perioperative medicine)

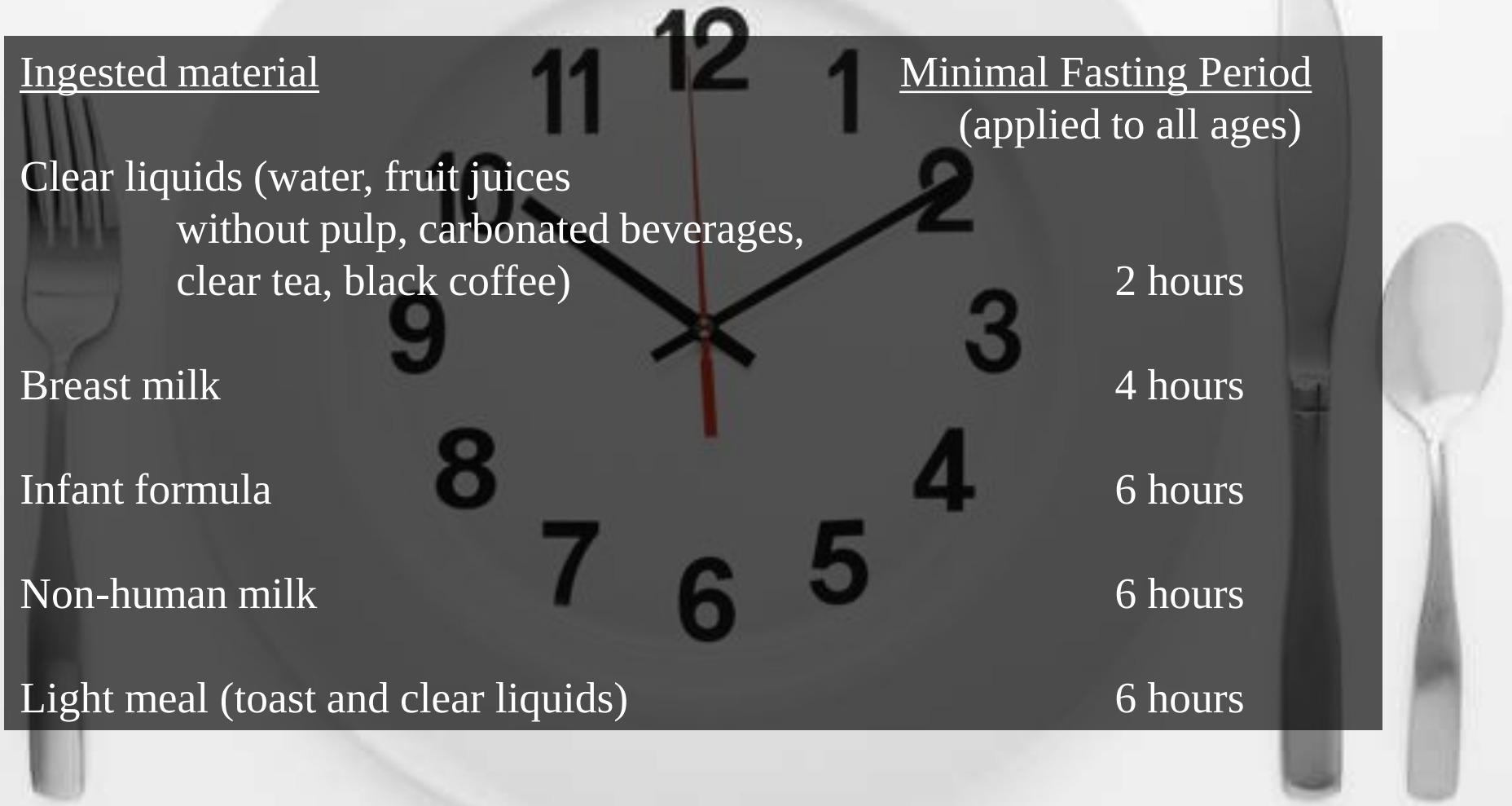
- ASA III and IV
- At least 8 days before surgery (optimisation and additional investigations)
- Locoregional – general anesthesia
- In/Out the hospital
- In hospital patient and ambulatory patient
- Anesthesiologist as perioperative physician

Reduced mortality and morbidity

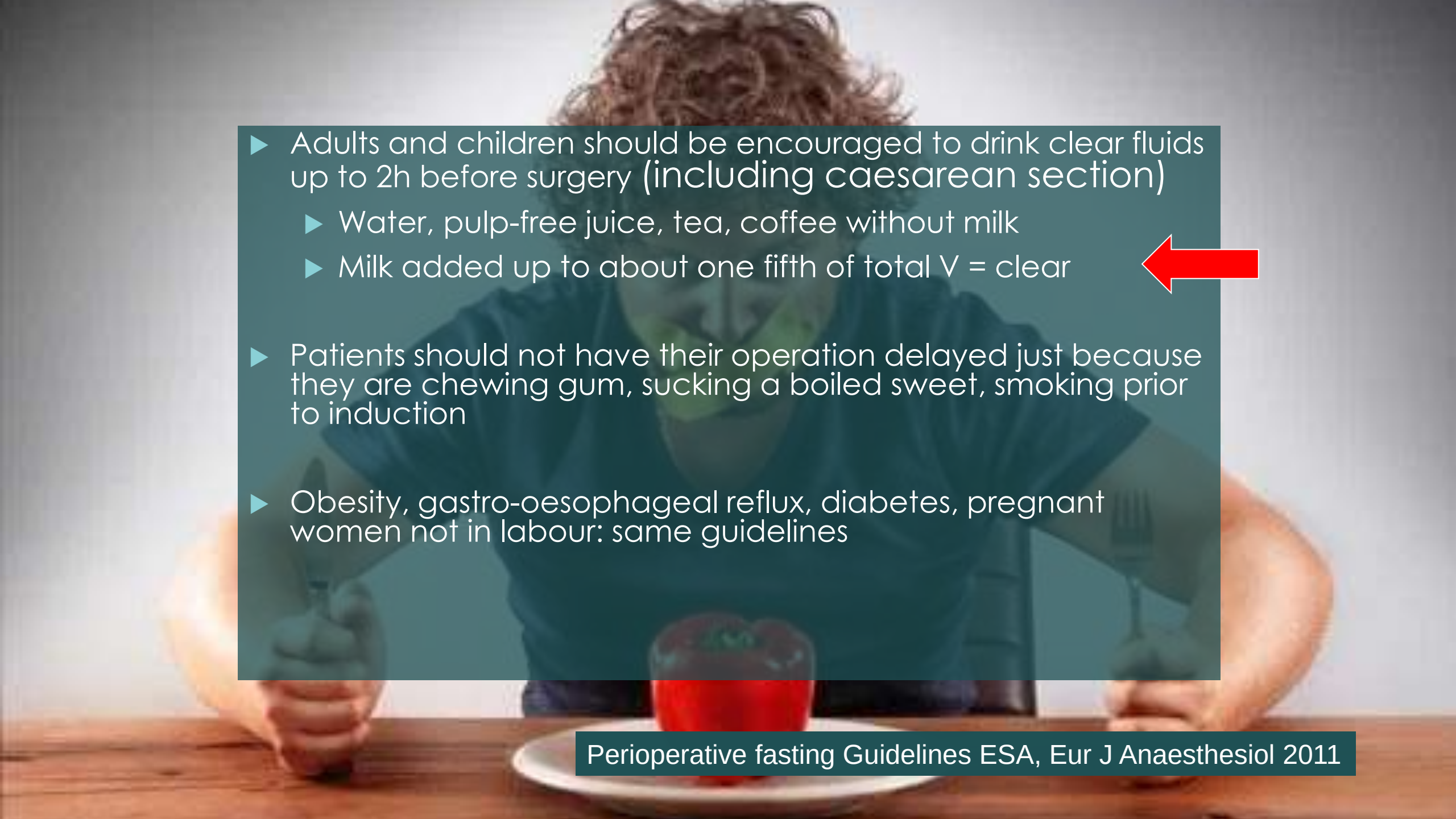
- Medical optimisation
  - Statins
  - B-blockers
  - …
- Smoking cessation
- Alcohol abstinence
- Incentive spirometry
- Screening for OSAS
- Screening for ‘frailty’
- Preoperative correction of anaemia, malnutrition
- Reduction of Postoperative Cognitive Dysfunction (POCD)



Fasting recommendations for healthy patients undergoing elective procedures:



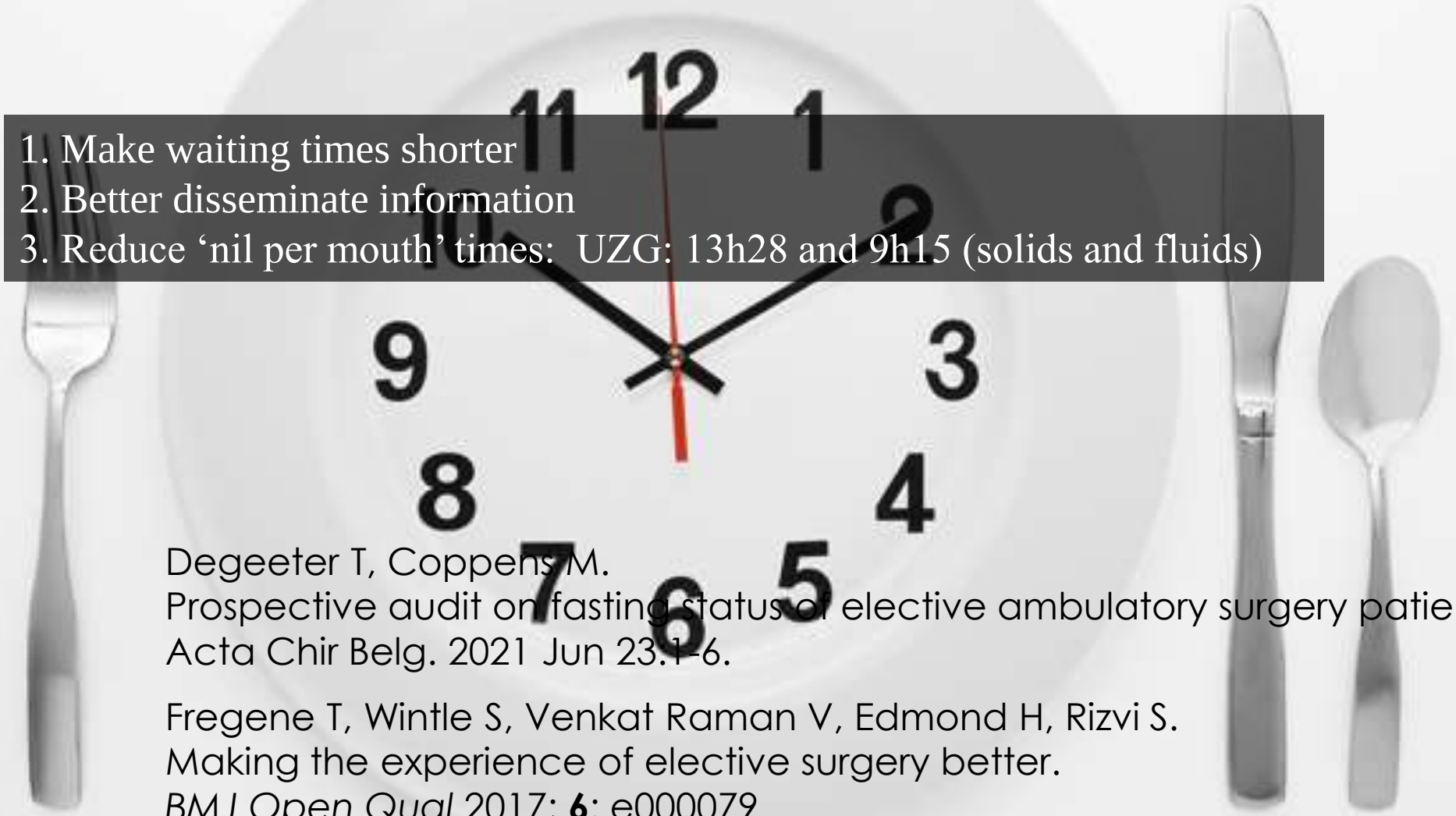
Ingested material	Minimal Fasting Period (applied to all ages)
Clear liquids (water, fruit juices without pulp, carbonated beverages, clear tea, black coffee)	2 hours
Breast milk	4 hours
Infant formula	6 hours
Non-human milk	6 hours
Light meal (toast and clear liquids)	6 hours



- 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

Making the experience of elective surgery better

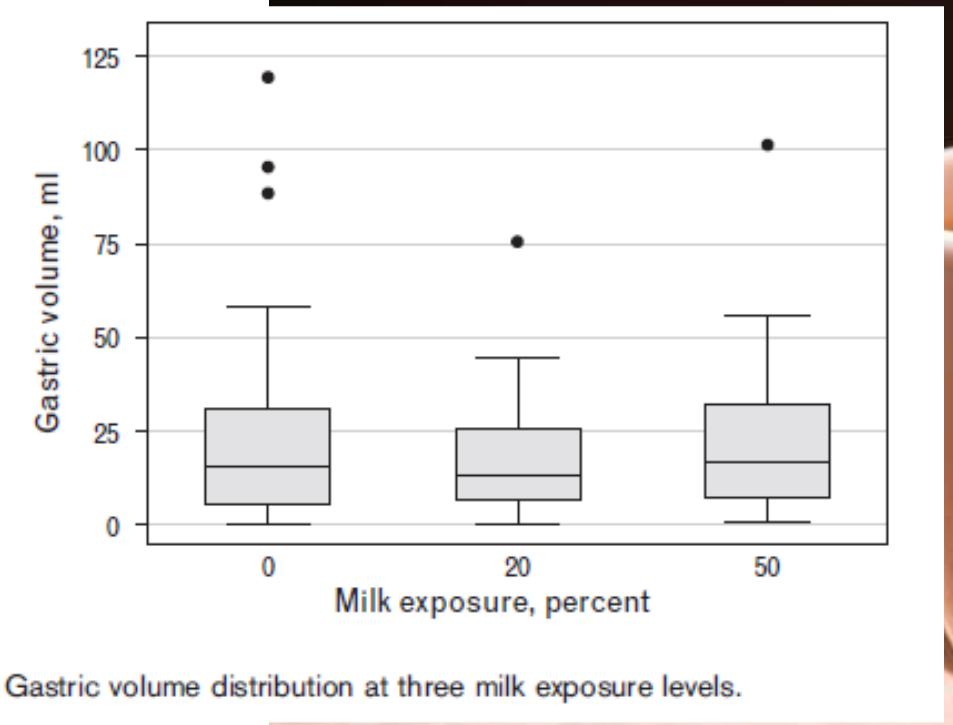


1. Make waiting times shorter
2. Better disseminate information
3. Reduce ‘nil per mouth’ times: UZG: 13h28 and 9h15 (solids and fluids)

Degeeter T, Coppens M.
Prospective audit on fasting status of elective ambulatory surgery patients,
Acta Chir Belg. 2021 Jun 23:1-6.

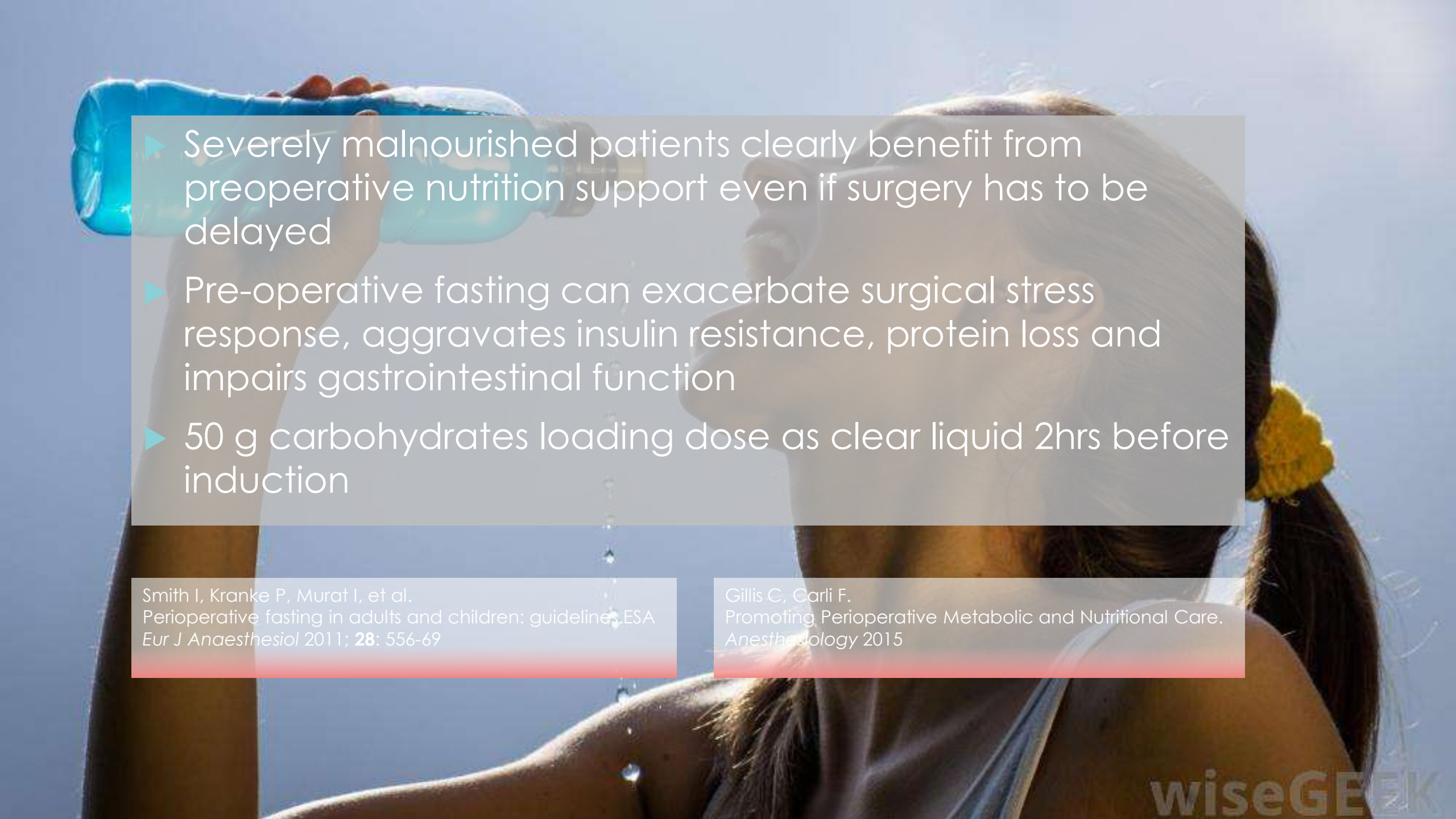
Fregene T, Wintle S, Venkat Raman V, Edmond H, Rizvi S.
Making the experience of elective surgery better.
BMJ Open Qual 2017; **6**: e000079

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 crosso
Eur J Anaesthesiol 2016; **33**: 457-62



- Severely malnourished patients clearly benefit from preoperative nutrition support even if surgery has to be delayed
- Pre-operative fasting can exacerbate surgical stress response, aggravates insulin resistance, protein loss and impairs gastrointestinal function
- 50 g carbohydrates loading dose as clear liquid 2hrs before induction

Smith I, Kranke P, Murat I, et al.
Perioperative fasting in adults and children: guidelines.ESA
Eur J Anaesthesiol 2011; **28**: 556-69

Gillis C, Carli F.
Promoting Perioperative Metabolic and Nutritional Care.
Anesthesiology 2015

Unexpected preoperative anemia should be considered an indication for rescheduling any elective major surgical procedure until evaluation and treatment are completed.

Munoz M, Gomez-Ramirez S, Kozek-Langeneker S, et al.
'Fit to fly': overcoming barriers to preoperative haemoglobin optimization in surgical patients.
British journal of anaesthesia 2015; **115**: 15-24

A standardized, complete preoperative assessment of the vulnerable patient by the anesthesiologist with subsequent preoperative risk reduction:

Saves lives
Improves quality of live

I'm taking you home tonight !!!

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Workshops
FREE PAPERS
Social program
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