
Preoperative optimization
(Clearance suggests No risk)
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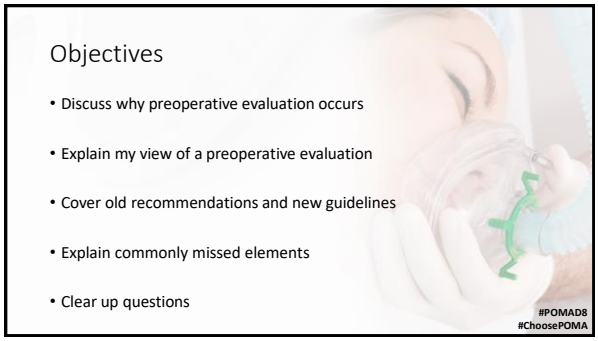
Objectives
• Discuss why preoperative evaluation occurs
• Explain my view of a preoperative evaluation
• Cover old recommendations and new guidelines
• Explain commonly missed elements
• Clear up questions
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Why preop??
• You know the patient's better in most situations
• Increased luxury of time
• Often this gets a patient to see a practitioner
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What do Anesthesiologist do in preop eval

- Assessing the airway
- Formulating an anesthetic plan / surgical
- Assessing patients cardiac & pulmonary risk
- Assessing patient tolerance to stress
- Considering patient conditions that can be optimized
- Assessing postoperative pain risk

- And oh yeah convince them to trust the anesthesia team with their life

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The ASA Physical Status Classification

ASA 1	Normal healthy patient	Mortality
ASA 2	Mild systemic disease - no impact on daily life	0.1%
ASA 3	Severe systemic disease - significant impact on daily life	0.2%
ASA 4	Severe systemic disease that is a constant threat to life	1.8%
ASA 5	Moribund, not expected to survive without the	7.8%
ASA 6	Declared brain-dead patient - organ donor	9.4%
E	Emergency surgery	

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Mets - physical stamina

Metabolic equivalents - 3.5 ml O2·kg−1·min−1

- 4+ mets
  - Good exercise tolerance
    - Climbing 2flights of stairs 4
    - Gardening - 4
    - Snow shoveling -5
    - Golf carrying clubs – 5
    - Push mowing - 6
    - Jogging – 10
    - Basketball – 11
- <4 mets
  - Sitting – 1
  - Cooking – 2.5
  - Walking 2.5mph/4kph – 2.5
  - Golf riding cart - 3
  - Bowling - 3
  - Very light exercise - 3.3

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What we DON’T want

- Stating the % risk or telling us a patient is high risk but not why
- Telling us the patient is CLEARED
- Telling us how to manage a ventilator
  OR
- How to dose medications etc.
- ** Stating what anesthetic technique to use **

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Cardiac

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Perioperative MI

- 1-5% non-cardiac surgery
- Higher mortality and morbidity than non-surgical ACS
- More difficult to treat perioperative ACS

- Revised Cardiac risk index (RCRI)

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Practical Cardiac Preop

- IS the patient "as good as they can be"
- IS there any further testing that would change anesthetic management
- Is the patient aware of their risk
- Have there been any recent changes in angina or exercise tolerance

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Cardiac preop

ECG

- Once was standard by age 40
- Increased abnormalities with age
- Several older practitioners still order for all patients
- For patient high risk of perioperative ACS
- 1-3M pre-operative
- MAY be indicated for patients with known cardiovascular risk factors or for patients with risk factors identified in the course of a preanesthetic evaluation.
- MAY be indicated in high risk surgery
- Age alone is not an indication for ECG.

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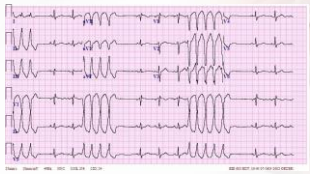
ECG

- Abnormal in 40-70% of patients
- Abnormal ECG changed anesthesia <5% of time



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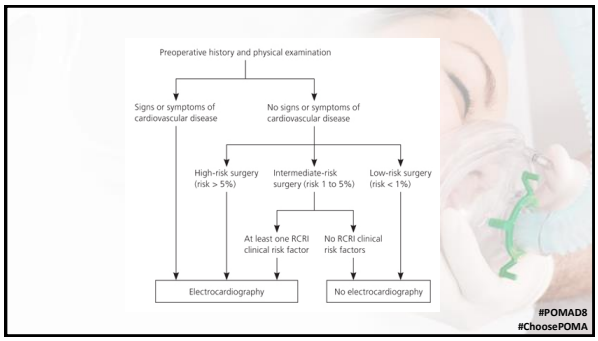

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Surgical risk

Low-risk < 1%	Intermediate-risk 1–5%	High-risk > 5%
▪ Breast ▪ Dental ▪ Endocrine ▪ Eye ▪ Gynaecology ▪ Reconstructive ▪ Orthopaedic—minor (knee surgery) ▪ Urologic—minor	▪ Abdominal ▪ Carotid ▪ Peripheral arterial angioplasty ▪ Endovascular aneurysm repair ▪ Head and neck surgery ▪ Neurological/ orthopaedic—major (hip and spine surgery) ▪ Pulmonary renal/ liver transplant ▪ Urologic—major	▪ Aortic and major vascular surgery ▪ Peripheral vascular surgery

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Echocardiogram

- Is there reason to believe the echo changed since last
- Does the patient have sig valve ds.
- Has the patient recently had an exacerbation of CHF suspect EF<35%
- If sig ds. (suspect moderate +) and echo 1+ years may consider

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Stress testing

- Other than surgery would this patient warrant a stress test
- Would the testing get the patient an urgent or elective cath prior to surgery
- You know this better than I

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Cardiac evaluation

- Urgent or emergent surgery?
- Does the patient have an active cardiac condition?
- What is the surgical risk?
- What is the patient's exercise tolerance?

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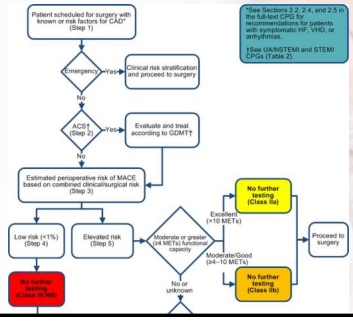

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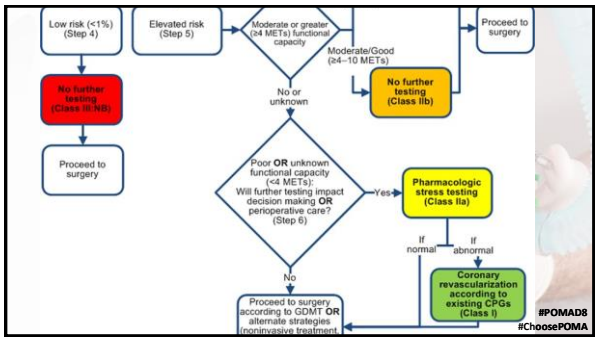
Low risk (<1%) (Step 4)
Elevated risk (Step 5)
Moderate or greater (≥4 METs) functional capacity
Moderate/Good (≥4–10 METs)
Proceed to surgery
No further testing (Class III:NB)
No or unknown
No further testing (Class IIb)
Proceed to surgery
Poor OR unknown functional capacity (<4 METs): Will further testing impact decision making OR perioperative care? (Step 6)
Yes
Pharmacologic stress testing (Class IIa)
If normal
If abnormal
No
Coronary revascularization according to existing CPGs (Class I)
Proceed to surgery according to GDMT OR alternate strategies (noninvasive treatment
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Pulmonary
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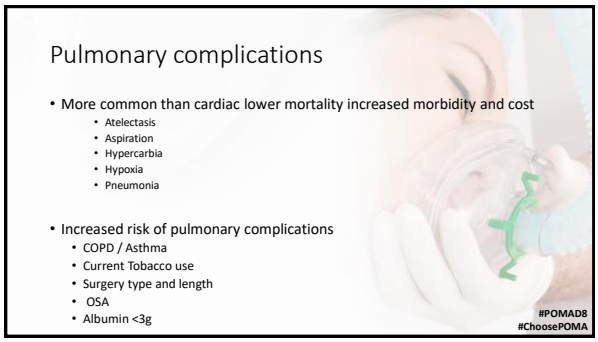
Pulmonary complications
• More common than cardiac lower mortality increased morbidity and cost
• Atelectasis
• Aspiration
• Hypercarbia
• Hypoxia
• Pneumonia
• Increased risk of pulmonary complications
• COPD / Asthma
• Current Tobacco use
• Surgery type and length
• OSA
• Albumin <3g
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Smoking

- Once considered increased risk if quit < 1week prior
- Benefits occur at 1 month
- Use anything to get patients to cut down and quit
- Looks awful

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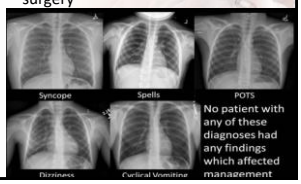
Pulmonary Testing

CXR
- Once every patient over 60
- No good evidence for screen cxr
- New / changed resp condition

- Pulmonary or intrathoracic
- High risk resp failure

Pulmonary function test
- not ness unless sig pulmonary surgery



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Polysomnography

- Anesthesia diagnoses a lot of it
- Not indicated prior to surgery
- May be method to get a patient into busy service

- Not shown to change outcomes
- Don't delay surgery for testing

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Laboratory analysis

Avoid routine preoperative testing unless indicated

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Urinalysis

- Indicated for surgeries involving implantation of prosthetic material
  OR
- if patient has UTI symptoms, increases fall risk postop

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CBC

- Baseline hemoglobin helpful in patients at risk for sig surgical bleeding
- Anemia occurs in 1% of asymptomatic surgical patients
- Assess anemia is it correctable?
- Does this warrant a Type and Screen?

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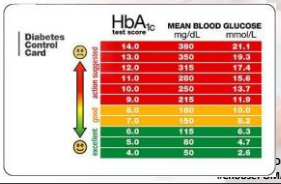
Glucose

- Not routinely indicated
- If patient poorly controlled then A1C be necessary (delay TKA, THA)

- How well is control
- Hyper and hypo symptoms

- Possibly cancel at 10+



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Diabetics

- Poor control causes end organ dysfunction
- Increased diuresis

- Easier to treat hyper than hypo intraop
- Cancel at 290+ fasting

- Type 2 – ½ evening dose insulin, PM before
- Type 1 diabetics should receive some baseline insulin

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Intraocular lens (IOL)

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Preop testing for IOL

- VERY low risk
- Minimal physiological effects
- Some anesthesiologists prefer ECG's - low cost
- Current recommendations – no testing unless ACS at time of preop

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Meds Briefly

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Antiplatelet and anticoagulation

Could talk for hours

ASA – d/c depending on surgical risk of bleeding

Stent? – BMS – 1 month, DES 8-12 months

Anticoagulation – pt risk of clot / thrombosis

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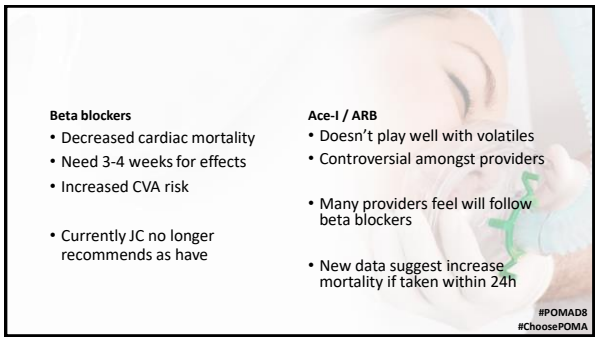
Beta blockers
• Decreased cardiac mortality
• Need 3-4 weeks for effects
• Increased CVA risk
• Currently JC no longer recommends as have
Ace-I / ARB
• Doesn't play well with volatiles
• Controversial amongst providers
• Many providers feel will follow beta blockers
• New data suggest increase mortality if taken within 24h
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Questions??
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