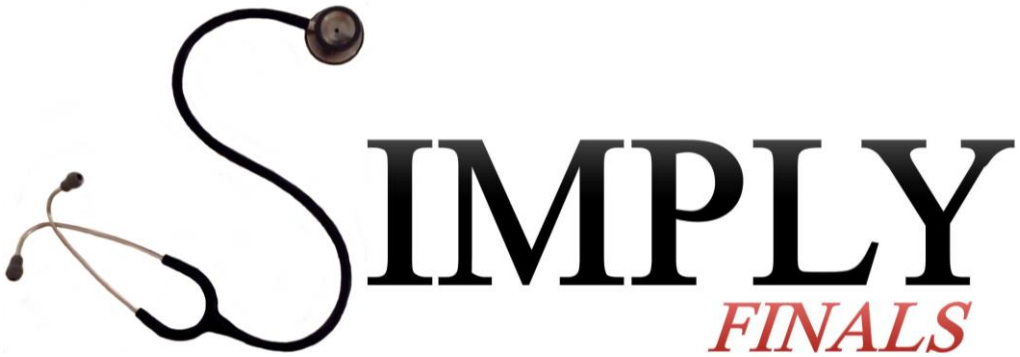
Pre-operative Assessment

Dr Will Dooley



Plan

- Assessment structure
- Investigation options
- **Exam format**

Why is it important??

- Reduce morbidity and mortality
- Risk management
- Keep surgeon/anaesthetist happy & reduce cancellations
- **Commonly examined in Finals…**

SIMPLY FINALS

How do you structure a pre-op assessment?

Please perform a pre-operative assessment on this 85yo life long smoker who has been booked for transurethral resection of prostate (TURP) .

- History
- Examination
- Investigation
- Management

What further investigations and management options would you consider?

Communication Skills OSCE Station

Please TAKE A HISTORY from this 85yo life long smoker who has been booked for transurethral resection of prostate (TURP) .

Background

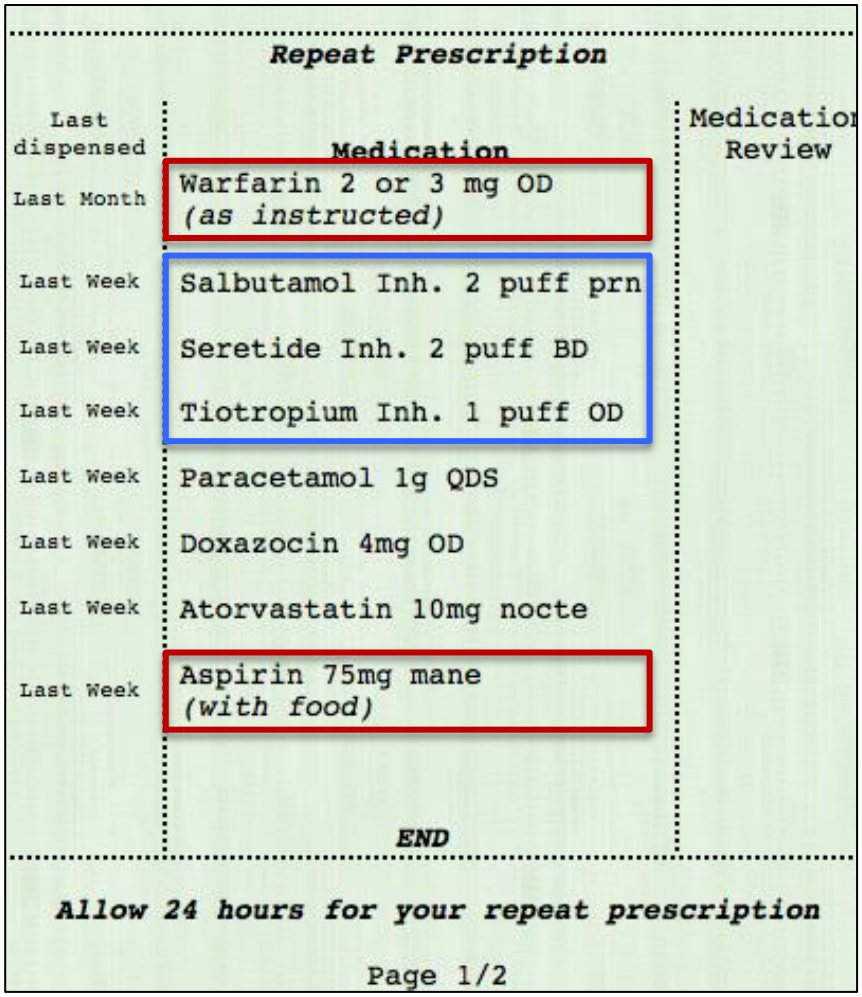
Mr Griffin has been admitted twice for urinary retention in the past year before being discharged an indwelling catheter with a leg bag.
PR revealed smooth enlarged prostate.
PSA was only marginally elevated.

SIMPLY FINALS

85yo for TURP

Mr Griffin has suffered two "mini-strokes" in the past two years, since which he taken "blood thinning tablets". He has never had a heart attack and has had no previous operations. He has smoked twenty cigarettes a day since aged 15. He is a retired shopkeeper.

He lives in a warden controlled flat and has 'meals-on-wheels'. He can get around the home with a frame but is limited by his breathing. He states his breathing has been "bad for years" and he has a cough productive of clear sputum all year round. He states he gets a bad acidic taste when he ties his laces.



Repeat Prescription

Last dispensed	Medication	Medication Review
Last Month	Warfarin 2 or 3 mg OD *(as instructed)*	
Last Week	Salbutamol Inh. 2 puff prn	
Last Week	Seretide Inh. 2 puff BD	
Last Week	Tiotropium Inh. 1 puff OD	
Last Week	Paracetamol 1g QDS	
Last Week	Doxazocin 4mg OD	
Last Week	Atorvastatin 10mg nocte	
Last Week	Aspirin 75mg mane *(with food)*	

END

Allow 24 hours for your repeat prescription

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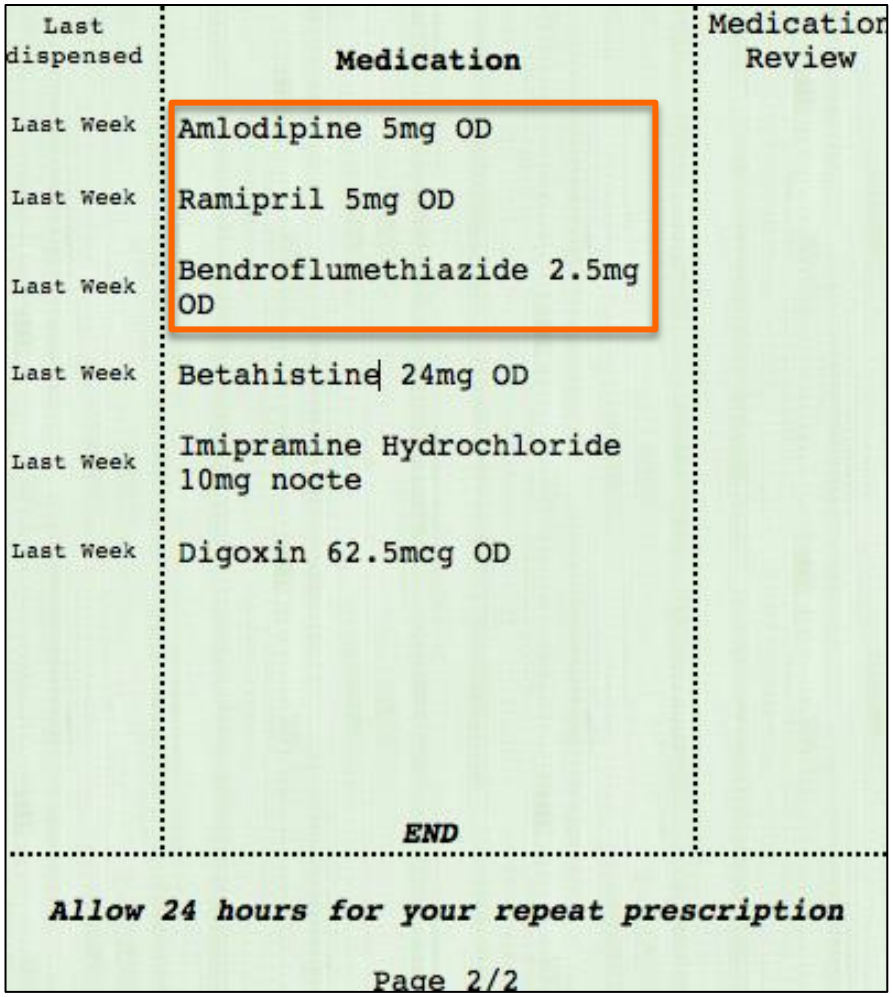

Last dispensed	Medication	Medication Review
Last Week	Amlodipine 5mg OD	
Last Week	Ramipril 5mg OD	
Last Week	Bendroflumethiazide 2.5mg OD	
Last Week	Betahistine 24mg OD	
Last Week	Imipramine Hydrochloride 10mg nocte	
Last Week	Digoxin 62.5mcg OD	

END

Allow 24 hours for your repeat prescription

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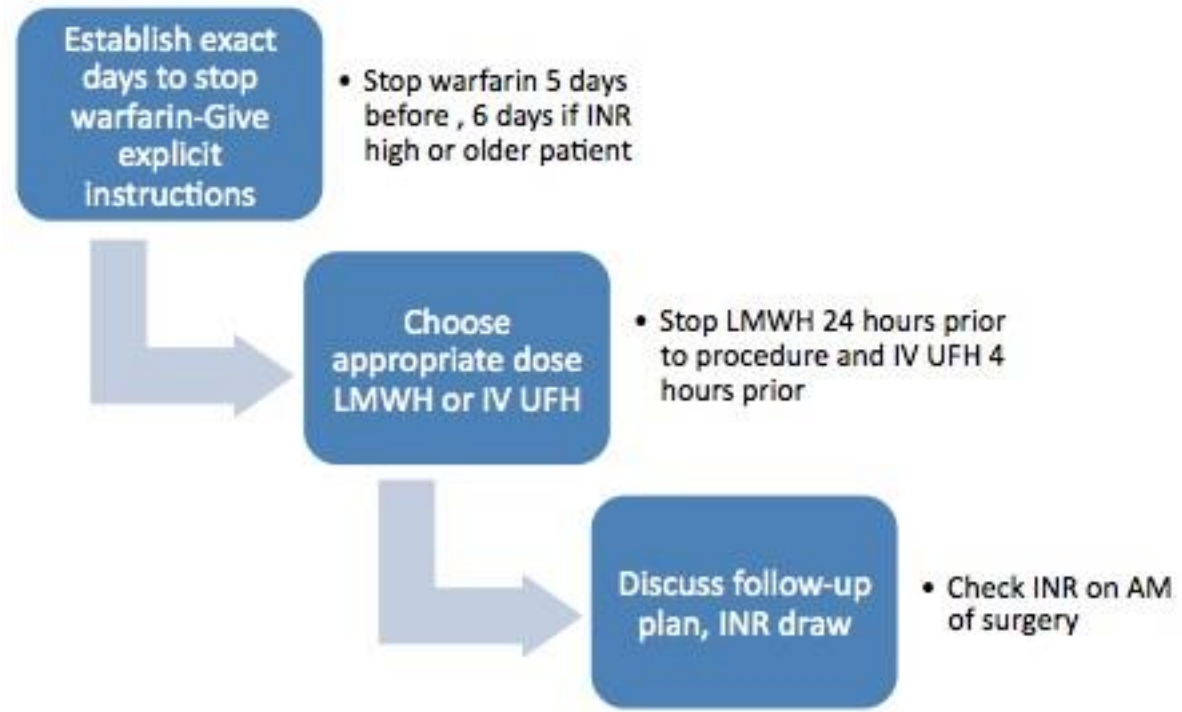
SIMPLY FINALS

“Bridging” Warfarin



Douketis JD, Spyropoulos AC, Spencer FA et al. Perioperative management of antithrombotic therapy: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest 2012;141

SIMPLY FINALS

Other medications to consider

- **Aspirin/clopidogrel**
  - Stop 7 days pre-op (unless high risk such as valvular stent)
- **Therapeutic LMWH**
  - Stop 2 days pre-op (unless high risk indication)
- **Insulin**
  - Consider sliding scale
- **Oral hypoglyaemics / metformin**
  - Avoid on day of operation (consider insulin)
  - Stop metformin 2 days before/2 days after (risk of lactic acidosis)
- **Diuretics/ACEi**
  - Avoid on day of operation
- **Other meds e.g. steroids/oral contraceptive pill**
  - Liaise with anaesthetic team if any concerns

History structure

Current state
- Baseline
- Recent condition
- What operation / anaesthetic planned

Past Medical History
- Especially cardiovascular and respiratory
- Current control of medical conditions

Past Surgical History / Previous anaesthetic
- Any anaesthetic or surgical complications

Drug history
- Including allergies

Family history
- Anaesthetic e.g. malignant hyperthermia

Social history
- Smoking
- Dependence
- Exercise Tolerance

Anaesthetic specifics
- Dentition / Dentures

Clinical Skills OSCE Station

Please EXAMINE from this 85yo life long smoker who has been booked for transurethral resection of prostate (TURP) .

SIMPLY FINALS

Examination

Tar staining

CV : Pulse irregularly irregular
HS- I+II+ ES murmur loudest aortic region no radiation to carotid

RS : Widespread wheeze

Observations
BP 125/80
HR 78
RR 14
Sats 91%

Examination

A

- Any intubation concerns (including dentures)
- Review mouth opening (Mallampati classification)

B

- Examine respiratory system

C

- Examine cardiovascular system
- **Any signs of heart failure or respiratory distress**

D

- BM
- BMI

E

Practical Skills OSCE Station

What investigations would you order for this patient?

Anything else you may consider doing?

NICE Guideline

Age: 85

ASA Grade: Grade 3

System of major comorbidity
- [x] Cardiovascular
- [x] Respiratory
- [ ] Renal

Calculate

Recommended Tests

- **ECG**
- **Full Bloodcount**
- **Renal Function**

Tests to consider if clinically indicated

- **Chest X-Ray**
- **Haemostasis**
- **Urine Analysis**
  Dipstick urine testing in asymptomatic individuals is not recommended (UK National Screening Committee)
- **Blood Gases**
- **Random Glucose**
- **Lung Function**

Investigations

Bedside

- ECG
- Random blood glucose
- Urine Analysis (if symptomatic)
- Peak Flow

Bloods

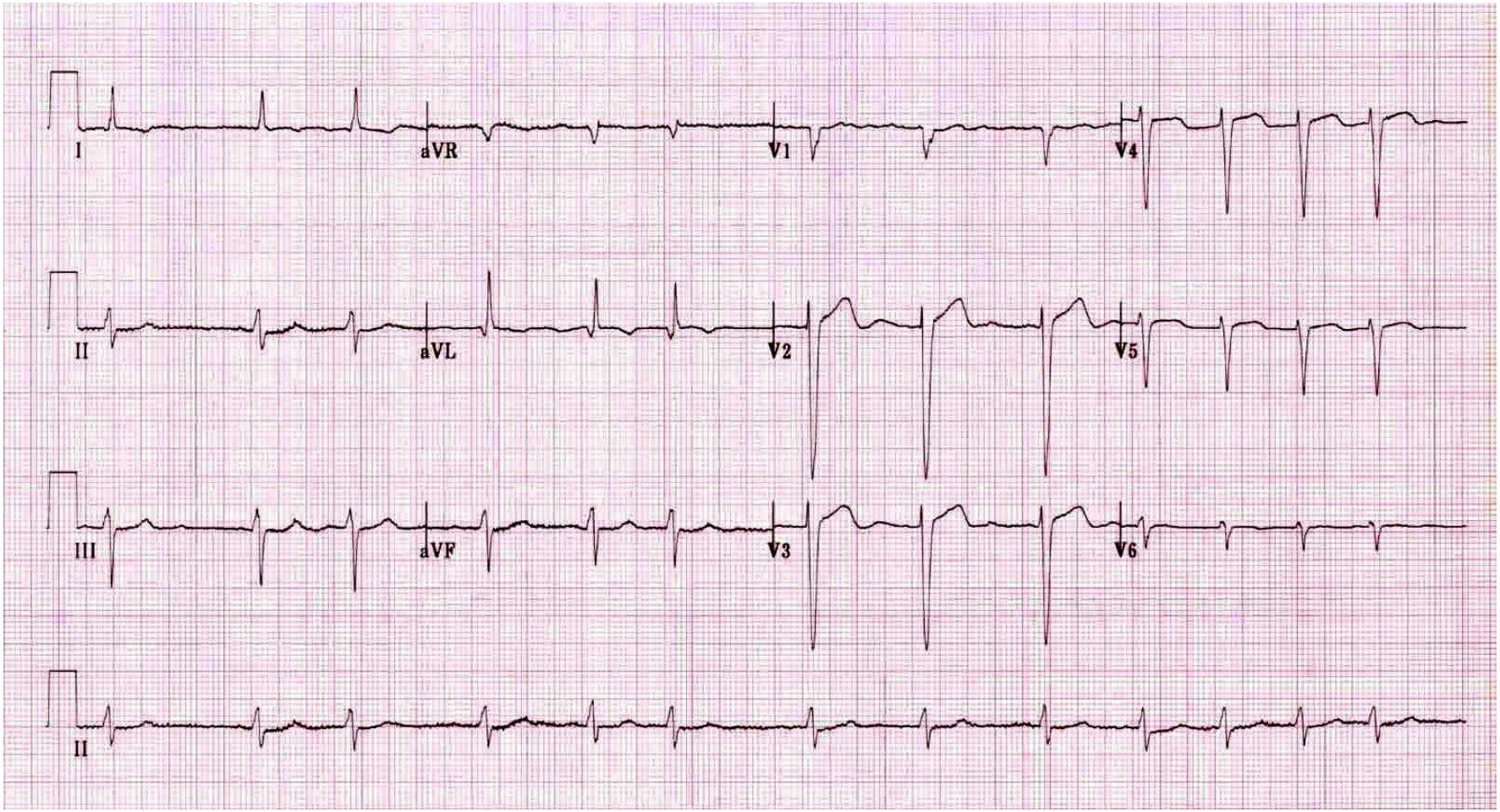
- FBC
- U+E
- Clotting– e.g. PT / APTT / INR

Imaging

- Chest X-ray

Special tests (for ASA 2/3 consider):

- ABG
- Lung Function Tests
- Echocardiogram



Rate: 78bpm (60-100bpm)
Rhythm: Irregularly irregular
Axis: LAD

Atrial fibrillation

SIMPLY FINALS

Investigations

PH	7.37	7.35-7.45
PO_2	7.8	>10.6 kPa
PCO_2	4.5	4.7-6 kPa
HCO_3^-	24.6	
BE	0.6	
S_pO_2	91%	
HB	16.7	
GLUC	5.6	

Type 1 respiratory failure

APTT	32	30-45 sec
PT	31	10-12 sec
TT	6.9	10-15 sec
INR	2.6	

INR in therapeutic range

Hyperexpansion
Flat diaphragms
Bullae

SIMPLY FINALS

Height: 1.72m Weight:58 Age: 86 Gender: Male
Date: One year ago Race: Cauc Doctor: Dr Wilson-Brown

SPIROMETRY

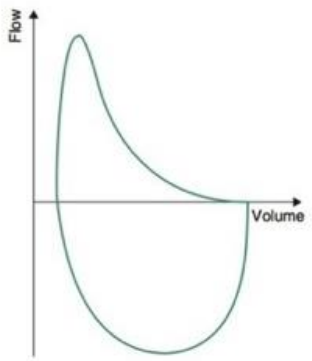
		Ref	Pre Meas	% Pred	Post Meas	% Pred	% Chg
FVC	Litres	3.61	**1.23**	34			
FEV1	Litres	2.73	**1.98**	72			
FEV1/FVC	%	80	**38**				
FEF25-75%	L/sec	2.8	0.8	28			
FEF50%	L/sec	3.84	2.8	73			
FEF75%	L/sec	6.75	5.5	85			
PEF	L/sec	439	210	48			
MVV	L/min						
MVV Length							

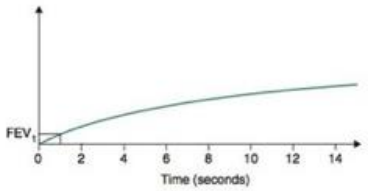
PLETHYSMOGRAPH LUNG VOLUMES

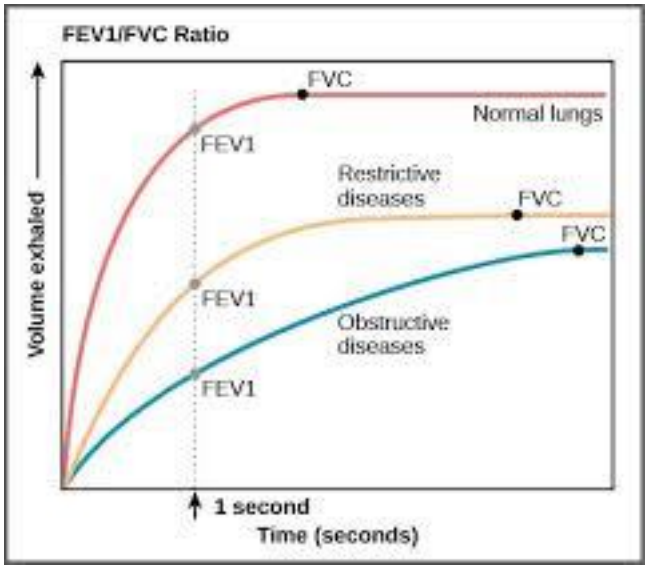
		Ref	Pre Meas	% Pre Ref
TLC	Litres	6.63	6.9	104
Vt	Litres	416	370	89
RV	Litres	2.67		
FRC	Litres	3.61		
VC	Litres			
IC	Litres	3.7		
ERV	Litres			
Raw	$cmH_2O/L/sec$			
RV/TLC%	%	55.9	-	73

DIFFUSING CAPACITY

		Pre Meas	Ref	% Pre Ref
DLCO	mL/min/mmHg			
VA	Litres			
DLCO/VA	1/min/mmHg			





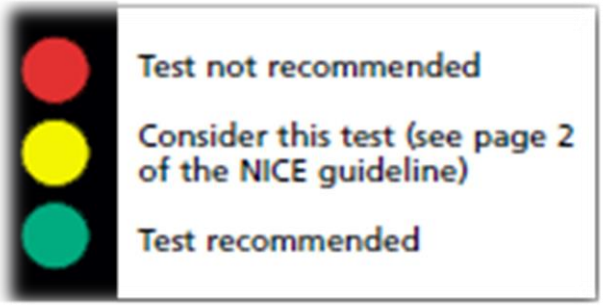


Obstructive disease

SIMPLY FINALS

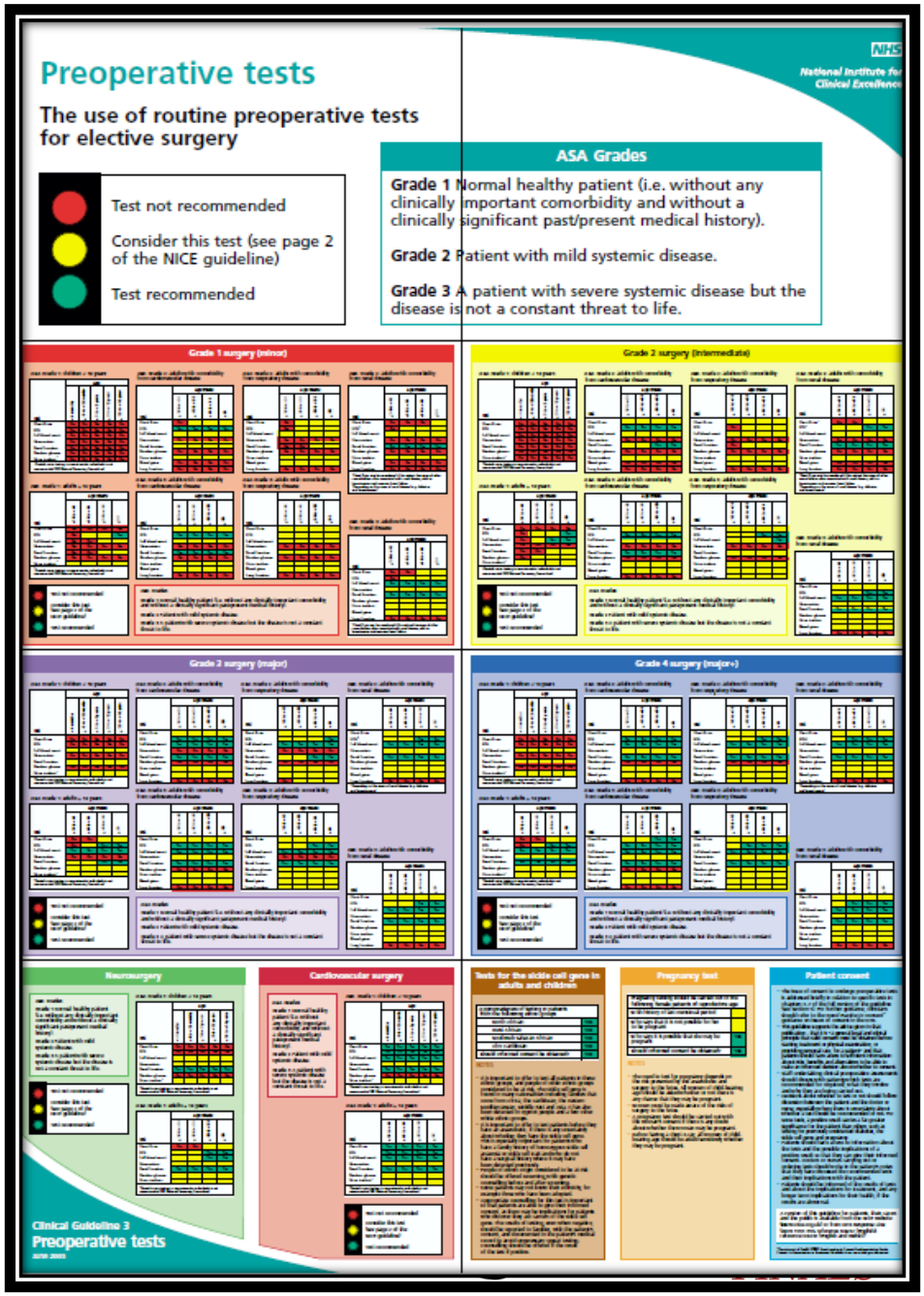
NICE Guideline

?Nice



ASA Grade 1: adults ≥ 16 years

Test	Age (years) 16 to <40 N	40 to <60 N	60 to <80 N	≥80 N
Chest X-ray	No	No	No	No
ECG	No			Yes
Full blood count	No	No		
Haemostasis	No	No	No	No
Renal function	No	No		
Random glucose	No	No	No	No
Urine analysis*				



Which tests?

- Depends on …

1. **The Patient**
   - Age
   - Co-morbidities and Risk grading

2. **The Operation**
   - Severity / complexity

The operation…

Grading system of severity

Grade 1	Minor
Grade 2	Intermediate
Grade 3	Major
Grade 4	Major +

Neurosurgery

Cardiovascular surgery

The operation…

Total joint replacement

Tonsillectomy

Grading system of severity

Total Abdominal Hysterectomy

Grade 1 Minor

Drainage of breast abscess

Grade 2 Intermediate

Excision of skin lesion

Grade 3 Major

Grade 4 Major +

Varicose veins excision

Neurosurgery

Cardiovascular surgery

Lung operation

Prostate resection

Thyroidectomy

Hernia repair

The operation…

Grading system of severity

Grade 1	Minor	Excision of skin lesion, drainage of breast abscess
Grade 2	Intermediate	Hernia repair, varicose veins excision, tonsillectomy
Grade 3	Major	Total Abdominal Hysterectomy, **prostate resection**, thyroidectomy
Grade 4	Major +	Total joint replacement, lung operation

Neurosurgery

Cardiovascular surgery

The patient…

American **S**ociety of **A**nesthesiologists

		Mortality (%)
ASA Grade 1	Normal Healthy Patient	0.1
ASA Grade 2	A patient with **mild** systemic disease	0.2
ASA Grade 3	A patient with **severe** systemic disease	1.8
ASA Grade 4	A patient with **severe** systemic disease that is a constant **threat to life**	**7.8**
ASA Grade 5	**A moribund patient unlikely to survive 24hrs with or without surgery**	**9.4**
ASA Grade 6	A brain dead patient who's organs are for donor purposes	

ASA 1

ASA 2

ASA 3

ASA 4

ASA 5

ASA 6

Patient with Asthma and well controlled DM

Current smoker

BMI 29

Minimal ETOH

Healthy with HTN

Declared brain dead

Poorly controlled with DM and HTN meds

BMI 32

Patient in ICU

Ruptured aneurysm

MI 1 week ago

PMH: HTN/IHD

Ongoing valve dysfunction

ASA Grade 2/3 – What is mild/severe?

Current angina	Occasional use of GTN spray (2–3 times per month). Does not include patients with unstable angina who would be ASA 3	Regular use of GTN spray (2–3 times per week) or unstable angina

Angina

Hypertension

Hypertension	Well controlled using a single anti-hypertensive medication	Not well controlled, requiring multiple anti-hypertensive medications

Diabetes	Well controlled, no obvious diabetic complications	Not well controlled, diabetic complications (e.g. claudication, impaired renal function)

DM

COPD

COAD/COPD	Productive cough; wheeze well controlled by inhalers; occasional episodes of acute chest infection	Breathlessness on minimal exertion (for example, stair climbing, carrying shopping); distressingly wheezy much of the time; several episodes per year of acute chest infection

Asthma	Well controlled by medications/inhalers; not limiting life-style	Poorly controlled; limiting life-style; on high dose of inhaler/oral steroids; frequent hospital admission on account of asthma exacerbation

Asthma

Renal disease

Renal disease		
	Elevated creatinine (creatinine > 100 µmol/litre and < 200 µmol/litre); some dietary restrictions	Documented poor renal function (creatinine > 200 µmol/litre); regular dialysis programme, (peritoneal or haemodialysis)

Which tests?

FBC

- Child bearing women / all over 60
- Baseline if large estimated blood loss
- Significant co-morbidities

U+E

- Baseline if large estimated blood or fluid loss predicted
- Significant co-morbidities
- Medications- diuretics/Digoxin/ACE-i/Steroids/B-blockers

Which tests?

ECG

- Women over 50yo. Men over 40yo.
- Known dysrhythmia/pacemaker
- Meds- Digoxin/diuretics/potassium altering/anti-arrythmias

CXR

- Cardiovascular or respiratory disease
- Major surgery

Sickle Cell Disease

- ALL- African/Afro-Carribean/Eastern Med/Mid Eastern

Group and Save / Cross Match

Management

Order

- Pregnancy test
- MRSA swabs

Book

- Book on to CEPOD
  1. Immediate (Life / limb threatening)
  2. Urgent (Acute cases)
  3. Expedited (Subacute cases)
  4. Elective (Planned)
- Book post op care e.g. ITU/HDU

Management

Optimise patient pre op:

- DM control- First on theatre list
- VTE control- pre/post
- Review bloods

MDT involvement

- Anaesthetic team
- Social/OT for post op

Fasting rules

- Last eat
- Last drink

CONSENT

How do you structure pre-op assessment?

- History
  - PC/PMH/PSH/DH/SH
- Examination
  - ABCDE
- Investigation
  - Bedside/bloods/imaging/special tests
- Management
  - Optimisation
  - MDT involvement

Summary

- Pre-operative care is a risk management process to reduce unexpected complications
- Level of investigation depends on patient and operation
- Aim to optimise the patient pre-op within the MDT

SIMPLY FINALS