

Bilan cardiovasculaire avant chirurgie non cardiaque: quel bilan pour mes patients?

Pr Olivier Varenne
Hôpital Cochin
Université Paris Sorbonne
Paris, France



Mme CE., 76 ans

- Doit être opérée d'un anévrysme de l'aorte abdominale sous rénale.
 - Diabétique, hypertendue.
 - Tt metformine 1000mg x 3 et amlodipine 10mg/j
 - Elle est oppressée à l'effort et sort difficilement de chez elle pour faire quelques courses
 - Elle pèse 76kg et mesure 1m56
-
- **Avis cardiologique pré opératoire?**

Step 3 – Risque de la procédure: Décès et IDM à 30j

Low-risk: < 1%	Intermediate-risk: 1-5%	High-risk: > 5%
<ul style="list-style-type: none">• Superficial surgery• Breast• Dental• Endocrine: thyroid• Eye• Reconstructive• Carotid asymptomatic (CEA or CAS)• Gynecology: minor• Orthopaedic: minor (meniscectomy)• Urological: minor (transurethral resection of the prostate)	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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

Bilan

- **Biologie:**

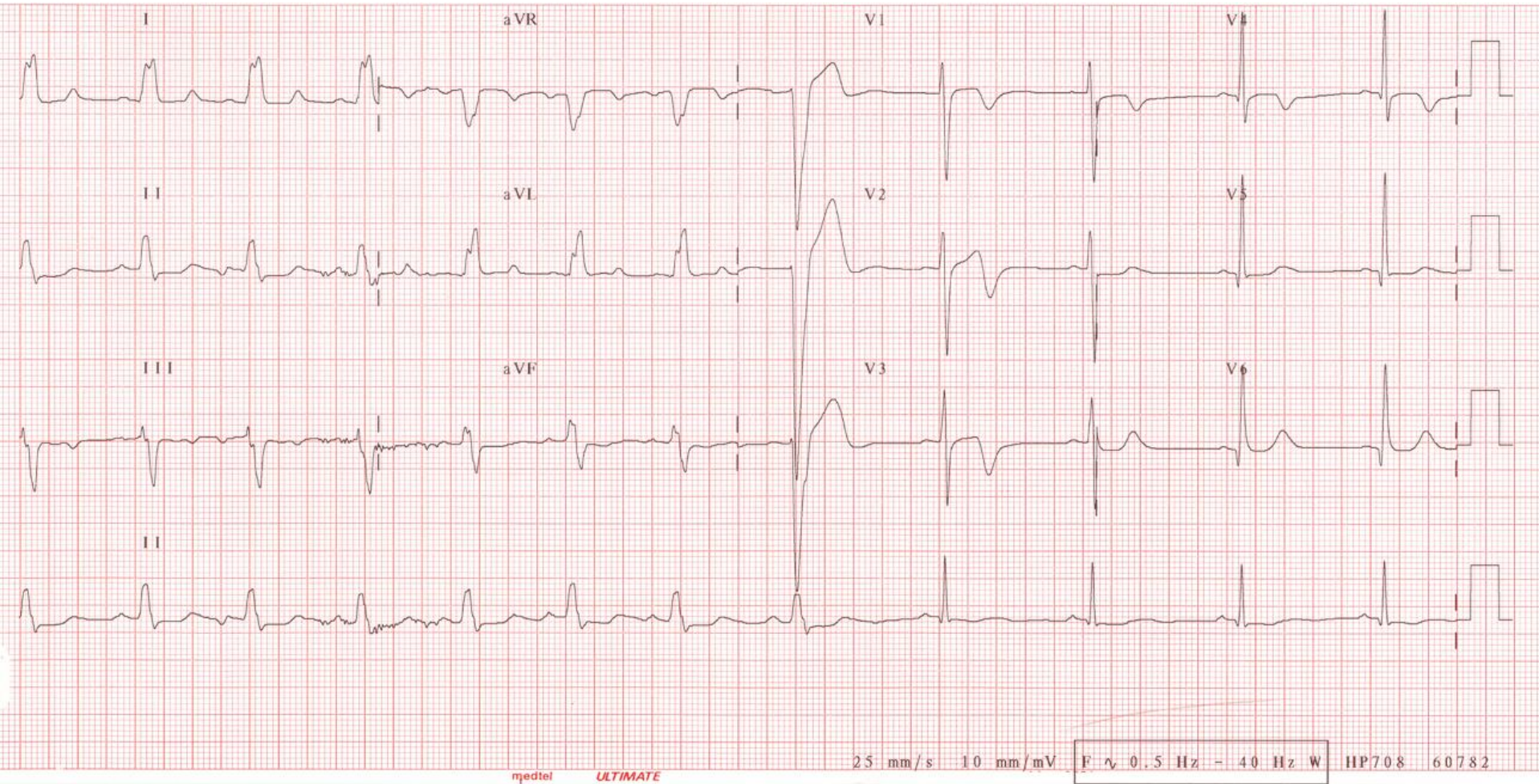
- Hémoglobine 11,1g/dL,
- Clearance créatinine 40ml/mn/m²

- **Echographie**

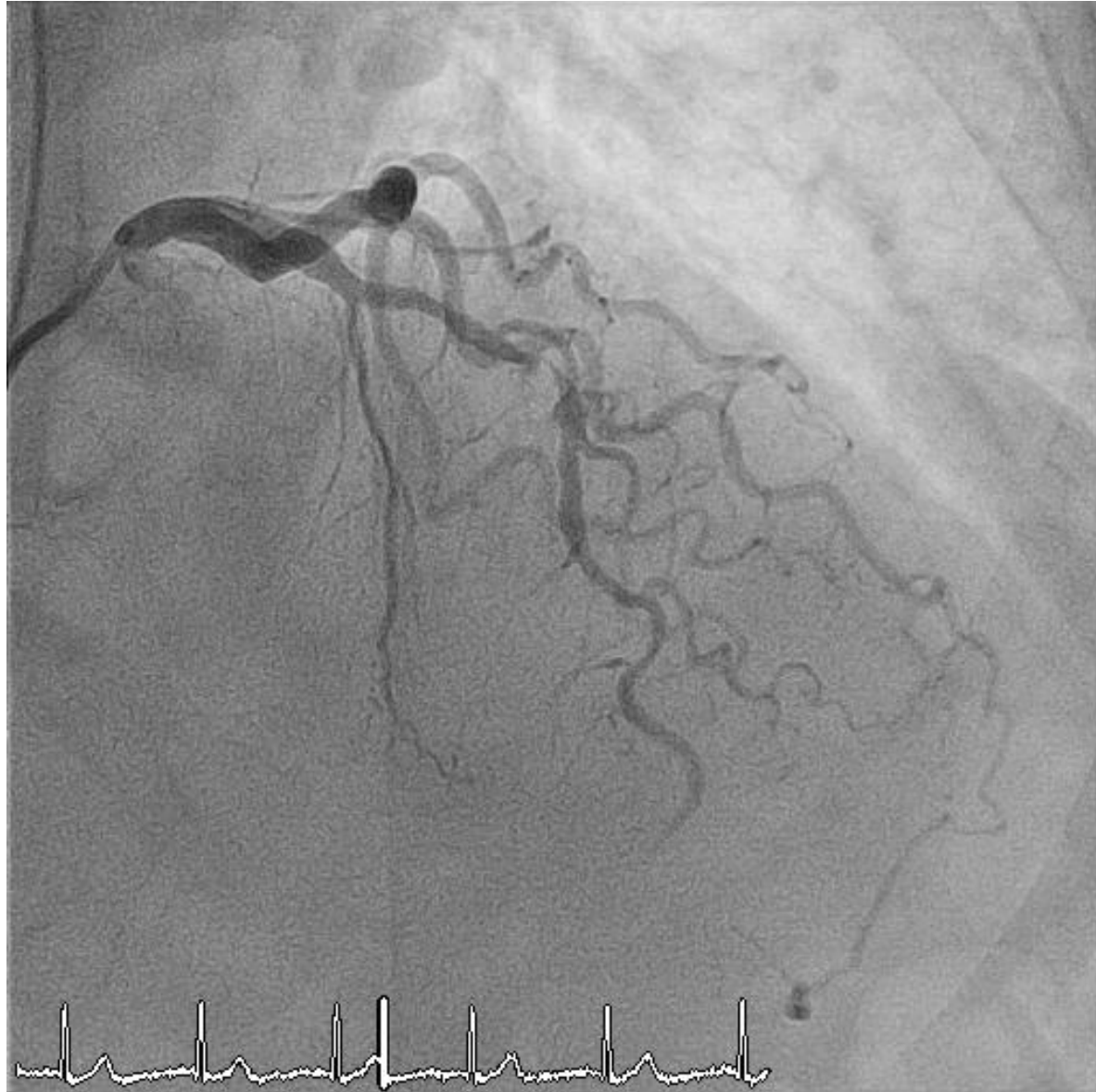
- FEVG normale
- Valves normales
- SIV 12mm

- **ECG**

ECG



Coronarographie



Prophylactic coronary revascularization in stable cardiac patients

Recommendations	Class	Level
Performance of myocardial revascularization is recommended according to the applicable guidelines for management in stable coronary artery disease.	I	B
Late revascularization after successful non-cardiac surgery should be considered, in accordance with ESC Guidelines on stable coronary artery disease.	I	C
Prophylactic myocardial revascularization before high-risk surgery may be considered, depending on the extent of a stress-induced perfusion defect.	IIb	B
Routine prophylactic myocardial revascularization before low- and intermediate-risk surgery in patients with proven IHD is not recommended.	III	B

Indications for revascularization in patients with stable angina or silent ischaemia

Extent of CAD (anatomical and/or functional)		Class ^b	Level ^c
For prognosis	Left main disease with stenosis >50% ^a	I	A
	Any proximal LAD stenosis >50% ^a	I	A
	Two-vessel or three-vessel disease with stenosis > 50% ^a with impaired LV function (LVEF<40%) ^a	I	A
	Large area of ischaemia (>10% LV)	I	B
	Single remaining patent coronary artery with stenosis >50% ^a	I	C
For symptoms	Any coronary stenosis >50% ^a in the presence of limiting angina or angina equivalent, unresponsive to medical therapy	I	A

Step 7b

Extensive stress induced ischaemia

• Individualized management

- Benefit of the procedure
- Predicted adverse outcome
- Effect of medication and revascularization

Cardiac stress test

Extensive ischaemia

Balloon angioplasty:
Surgery can be performed
>2 weeks after intervention
with continuation
of aspirin treatment.

Bare-metal stent:
Surgery can be performed
>4 weeks after intervention.
Dual antiplatelet therapy
should be continued for
at least 4 weeks.

**Surgery can be performed
within 12 months
after intervention for
old-generation
DES and within 6 months
for new-generation DES.**

CABG

Continuation or discontinuation of aspirin in patients previously treated with aspirin may be considered in the peri-operative period, and should be based on an individual decision that depends on the peri-operative bleeding risk weighed against the risk of thrombotic complications.

Surgery

ESC/ESA Guidelines on non-cardiac surgery: cardiovascular assessment and management

2014 version

The magnitude of the problem

- **Annually:**
 - 5.7 million procedures in European patients with increased risk of cardiovascular complications
 - For EU countries: at least 167,000 cardiac complications due to non-cardiac surgical procedures, of which 19,000 are life-threatening

Rationale for new ESC Guidelines

- **High incidence of peri-operative cardiac mortality and morbidity**
- **Impact of vascular disease and comorbidity on postoperative outcome**
- **Impact of risk reduction strategies**
 - Medications: β -blockers, statins, ACE-inhibitors, platelet inhibitors and oral anti-coagulants
 - Coronary revascularization: Stents and duration of DAPT
- **Changes of surgical techniques**
- **Type of anaesthesia**

A stepwise approach

Step 1: Urgent surgery

Step 2: Active or unstable cardiac conditions

Step 3: What is the risk of the surgical procedure?

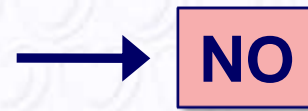
Step 4: What is the functional capacity of the patient?

Step 5: In patients with poor low functional capacity:
consider the risk of surgical procedure

Step 6: Consider cardiac risk factors

Step 7: Consider non invasive testing

Step 1 - Urgent surgery



Step 2



Patient or surgical specific factors dictate the strategy and do not allow further cardiac testing: the consultant provides recommendations on peri-operative management, surveillance for cardiac events and continuation of chronic CV medical treatment.

Surgery

Step 2 - Active or unstable cardiac condition(s):

• Unstable angina pectoris
• Acute heart failure
• Significant cardiac arrhythmias
• Symptomatic valvular heart disease
• Recent myocardial infarction ^a and residual myocardial ischemia

→ **No** → **Step 3**

↓
Yes

- Postpone the procedure
- Treatment options should be discussed in a multi-disciplinary team involving **all** peri-operative care physicians

↓
Surgery

Step 3 - Risk of surgical procedure: 30-day CV death and MI

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Step 3 - Risk of surgical procedure

Low risk (<1%) of surgical procedure

Identify risk factors and provide recommendations on lifestyle and medical treatment according to relevant ESC guidelines



Intermediate or High Risk of surgical procedure

↓
Step 4

Recommendations	Class	Level
In patients with known IHD or myocardial <u>ischaemia</u> , initiation of a titrated low-dose beta-blocker regimen may be considered before surgery.	IIb	B
In patient with heart failure and systolic dysfunction, ACEI should be considered before surgery.	IIa	C
In patients undergoing vascular surgery, initiation of statin therapy should be considered.	IIa	B



Surgery

Step 4 - Functional capacity of the patient scheduled for intermediate or high-risk surgery

Good (≥ 4 METS)

Moderate or poor (< 4 METS)

Step 5

Recommendations	Class	Level
In patients with known IHD or myocardial <u>ischaemia</u> , initiation of a titrated low-dose beta-blocker regimen may be considered before surgery.	IIb	B
In patient with heart failure and systolic dysfunction, ACEI should be considered before surgery.	IIa	C
In patients undergoing vascular surgery, initiation of statin therapy should be considered.	IIa	B

Surgery

Step 5 - In patients with functional capacity <4 METS consider risk of surgery

Intermediate risk surgery

High risk surgery

Step 6

Recommendations	Class	Level
In patients with one or more clinical risk factors non-invasive testing may be considered.	IIb	B
In <u>patients with one or more clinical risk factors baseline ECG is recommended</u>	I	C

Surgery

Step 6

Clinical risk factors

- Ischaemic heart disease (angina pectoris and/or previous myocardial infarction^a)
- Heart failure
- Stroke or transient ischaemic attack
- Renal dysfunction (serum creatinine $>170 \mu\text{mol/L}$ or 2 mg/dL or a creatinine clearance of $<60 \text{ mL/min/1.73 m}^2$)
- Diabetes mellitus requiring insulin therapy

^a According to the universal definition of myocardial infarction

Step 6

Cardiac risk factors in high-risk surgery

1. Ischaemic heart disease
2. Heart failure
3. Stroke or TIA
4. Renal dysfunction
5. Diabetes mellitus

Recommendations	Class	Level
Number of risk factors ≤ 2 Rest echocardiography and biomarkers for evaluation of LV function may be considered.	IIb	B-C

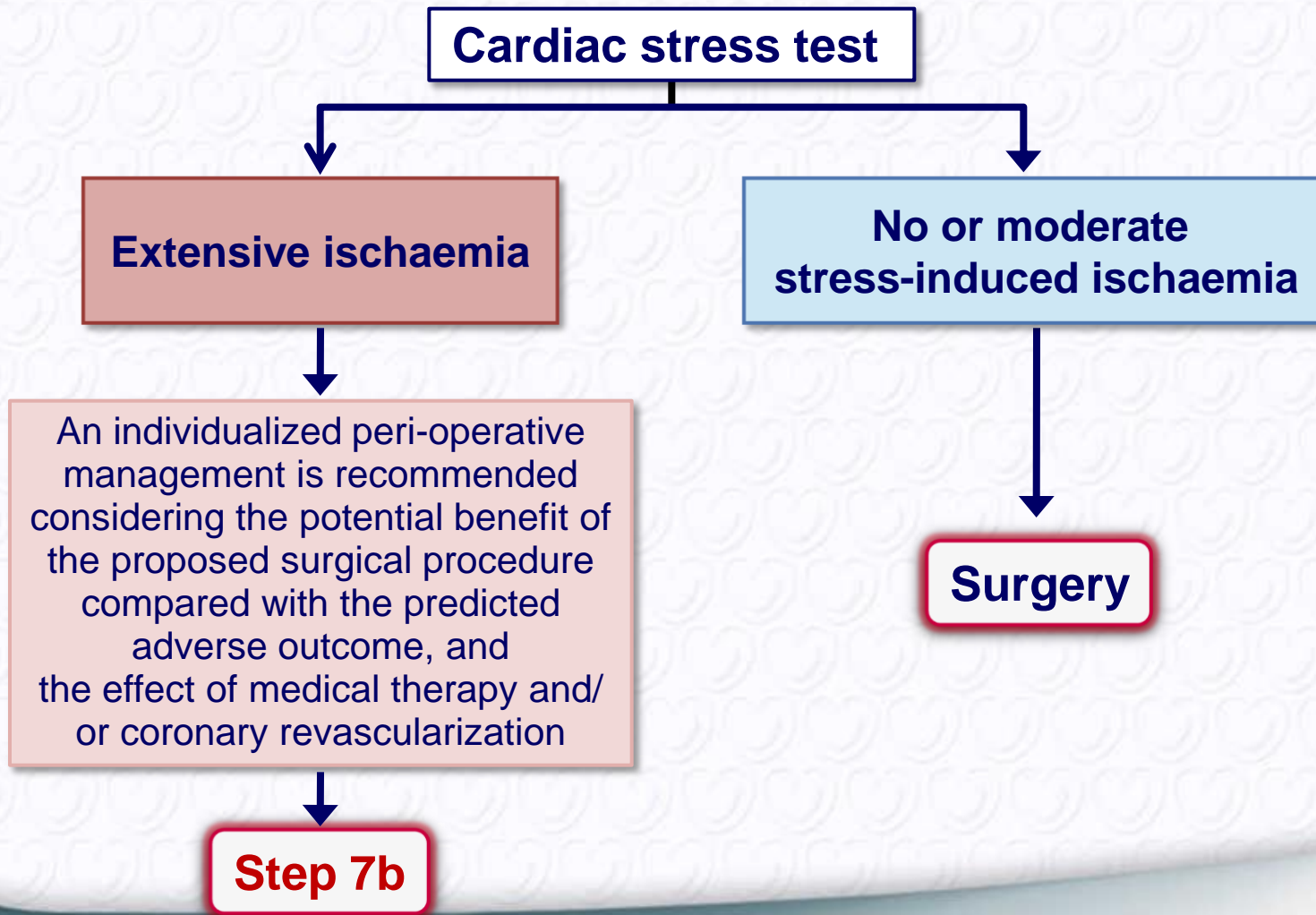
Surgery

Number of risk factors ≥ 3

Step 7

Step 7 – Pre-operative testing

Consider also for patient counselling, surgery, and anaesthesia technique



Step 7b

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Surgery

What is new in these Guidelines?

- Recommendations on the use of **aspirin and P2Y12 inhibitors** in patients undergoing non-cardiac surgery is updated.
- Section on management of patients treated with **new oral anticoagulants** undergoing non-cardiac surgery is included.
- Recommendations on **timing** of non-cardiac surgery after revascularization is updated.
- The section on specific **concomitant diseases** has been updated.
- The **peri-operative monitoring** section has been updated and expanded with help from anesthesia experts.

Gaps in evidence

- Optimal type, dose and duration of beta-blockers in high-risk surgery and their benefits in patients at intermediate surgical risk?
- The benefits of statins in high-risk surgery?
- Interventional or outcome studies on biomarkers, peri-operative haemodynamics and depth of anaesthesia
- How non-cardiac risk factors interact with cardiovascular risk factors and impact on the outcomes of non-cardiac surgery
- Risk scores that can predict mortality from non-cardiac causes
- Effects of patient status, non-cardiac risk-factors, operating team size or skills, and the invasiveness of procedures on outcomes

Version
2014

ESC POCKET GUIDELINES

Committee for Practice Guidelines
To improve the quality of clinical practice and patient care in Europe

European
Society of
Anaesthesiology

ESA



EUROPEAN
SOCIETY OF
CARDIOLOGY*

NON-CARDIAC SURGERY

ESC/ESA GUIDELINES ON NON-CARDIAC SURGERY:
CARDIOVASCULAR ASSESSMENT AND MANAGEMENT

For more information
www.escardio.org/guidelines

www.escardio.org/guidelines

European Heart Journal (2014) 35, 2383–2431
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