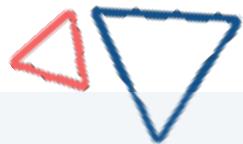


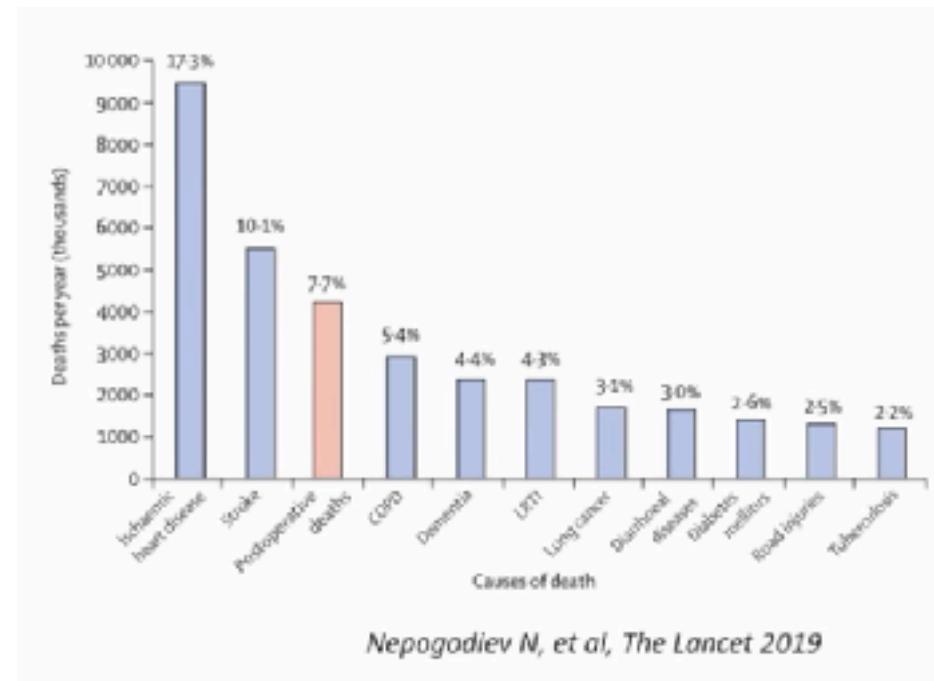
# Hoe kan ik als huisarts het preoperatief cardiale risico best inschatten ?

2022 ESC Guidelines on CV assessment and management of patients undergoing non-cardiac surgery

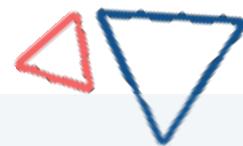


# Ernst van het probleem

- $300 \cdot 10^6$  ingrepen /j :  $4.2 \cdot 10^6$  periop overlijdens /j
- 3e grootste doodsoorzaak
- +/- 50% CV
- 2030 : 20% van 75+ elk jaar hk: MACE : 9,5%



- Doel : vroegtijdige diagnose en aanpak onderliggend cardiaal probleem met reductie periop cardiale sterfte en complicaties.
- Meer ambulante zorg en kortere hospitalisatie -> rol huisarts



# Heelkundige factoren : aard / timing ingreep

**Table I** Surgical risk estimate according to type of surgery or intervention<sup>a</sup> according to the European Society of Cardiology and European Society of Anaesthesiology non-cardiac surgery guidelines

Low risk: <1%	Intermediate risk: 1–5%	High risk: >5%
Superficial surgery	<ul style="list-style-type: none"><li>Intraperitoneal: splenectomy, hiatal hernia repair, and cholecystectomy</li></ul>	<ul style="list-style-type: none"><li>Aortic and major vascular surgery</li></ul>
Breast	<ul style="list-style-type: none"><li>Carotid symptomatic (CEA or CAS)</li></ul>	<ul style="list-style-type: none"><li>Open lower limb revascularisation or amputation or thromboembolectomy</li></ul>
Dental	<ul style="list-style-type: none"><li>Peripheral arterial angioplasty</li></ul>	<ul style="list-style-type: none"><li>Duodeno-pancreatic surgery</li></ul>
Endocrine: thyroid	<ul style="list-style-type: none"><li>Endovascular aneurysm repair</li></ul>	<ul style="list-style-type: none"><li>Liver resection, bile duct surgery</li></ul>
Eye	<ul style="list-style-type: none"><li>Head and neck surgery</li></ul>	<ul style="list-style-type: none"><li>Oesophagectomy</li></ul>
Reconstructive	<ul style="list-style-type: none"><li>Neurological or orthopaedic: major (hip and spine surgery)</li></ul>	<ul style="list-style-type: none"><li>Repair of perforated bowel</li></ul>
Carotid asymptomatic (CEA or CAS)	<ul style="list-style-type: none"><li>Urological or gynaecological: major</li></ul>	<ul style="list-style-type: none"><li>Adrenal resection</li></ul>
Gynaecology: minor	<ul style="list-style-type: none"><li>Renal transplant</li></ul>	<ul style="list-style-type: none"><li>Total cystectomy</li></ul>
Orthopaedic: minor (meniscectomy)	<ul style="list-style-type: none"><li>Intra-thoracic: non-major</li></ul>	<ul style="list-style-type: none"><li>Pneumonectomy</li></ul>
Urological: minor (transurethral resection of the prostate)		<ul style="list-style-type: none"><li>Pulmonary or liver transplant</li></ul>

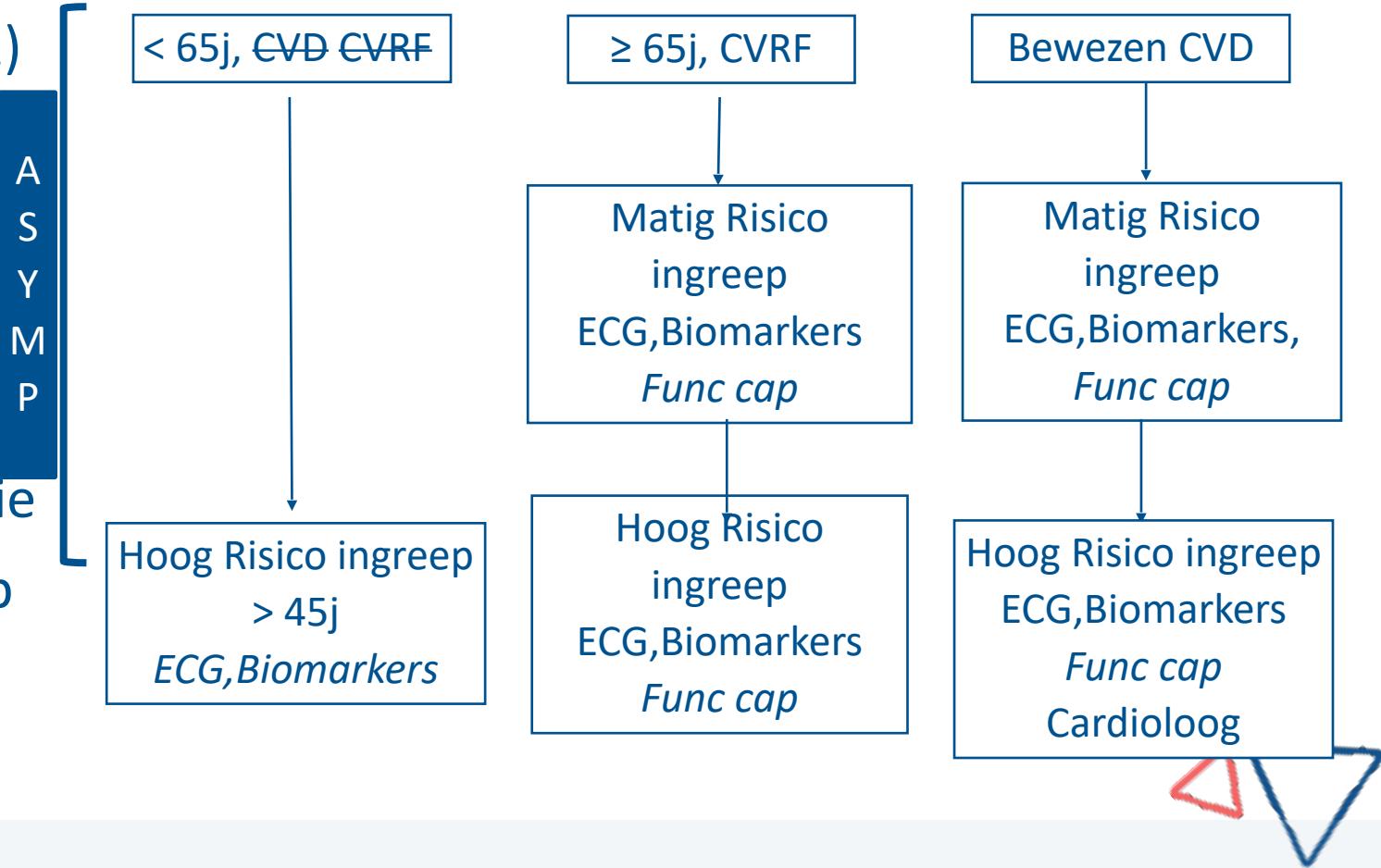
Adapted from the European Society of Cardiology and European Society of Anaesthesiology non-cardiac surgery guidelines.<sup>1</sup>

CAS, carotid artery stenting; CEA, carotid endarterectomy.

<sup>a</sup>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.

# Patient afhankelijke factoren

- VGS / Anamnese / CVR (SCORE-2)
- Kliniek CVD ? → Cardioloog
- Standaard Labo +/ - Biomarkers
  - cTn -NT-proBNP
  - Nierfunctie, anemie ed..
- Rookstop - Optimalisatie therapie
- Afweging risico/voordeel ingreep
  - Frailty !



# CV risico score calculator

CALCULATOR    NEXT STEPS    EVIDENCE    CREATOR

Age, years  
≤75 = 0    ≥75 +1

Hemoglobin, g/dL  
≤12 g/dL    0  
≥12 g/dL    +3

History of heart disease  
No 0    Yes +2

e.g. history of previous myocardial infarction, coronary angioplasty, cardiac surgery, heart failure, atrial fibrillation, or moderate/severe valvular disease confirmed by echocardiography

Angina or dyspnea  
No 0    Yes +1

Vascular surgery  
No 0    Yes +1

Surgical urgency  
Elective 0  
Emergency +1

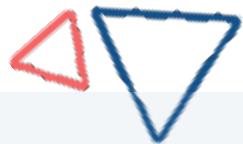
**RESULT**  
**3 points**  
AUB-HAS2  
**11 %**  
Risk of adverse event in 30-day postoperative period



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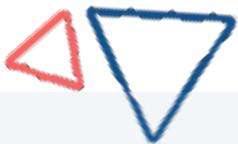
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# Risicoreductie maatregelen

- Interventies CVRF / levensstijl - medicatie
- Periop. advies antiplaatjes
  - ASA in PP : stop ; postop blijvend stop bij laag/ matig risico pat voor CVD
  - ASA in SP : alleen stop bij ingrepen met zeer hoog bloedingsrisico (7d)
  - SAPT : Clo 12m post NSTEMI ACS : tijdelijk onderbreken.
  - SAPT bij de-escalatie post PCI/ACS, recent stroke, PAD, Asa intol -> interdisciplinaire evaluatie
  - DAPT : Uitstel 6m(elec PCI) /12m (ACS). Tijdsgevoelig ? Min 1m / 3m uitstel bij ACS + Ingreep onder Asa. Recent PCI en nood hk ? -> overleggen met anes/ chirurg
  - DAPT longterm : Clo 5d /Tica 3-5d en Prasu 7d
  - Herstarten < 48h postop



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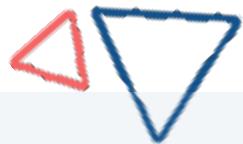
# Bleeding risk according to type of non-cardiac surgery



Surgery with minor bleeding risk	Surgery with low bleeding risk (infrequent or with low clinical impact)	Surgery with high bleeding risk (frequent or with significant clinical impact)
<ul style="list-style-type: none"><li>Cataract or glaucoma procedure</li><li>Dental procedures: extractions (1–3 teeth), periodontal surgery, implant positioning, endodontic (root canal) procedures, subgingival scaling/cleaning</li><li>Endoscopy without biopsy or resection</li><li>Superficial surgery (e.g. abscess incision, small skin excisions/biopsy)</li></ul>	<ul style="list-style-type: none"><li>Abdominal surgery: cholecystectomy, hernia repair, colon resection</li><li>Breast surgery</li><li>Complex dental procedures (multiple tooth extractions)</li><li>Endoscopy with simple biopsy</li><li>Gastroscopy or colonoscopy with simple biopsy</li><li>Large-bore needles procedures, e.g. bone marrow or lymph node biopsy</li><li>Non-cataract ophthalmic surgery</li><li>Small orthopaedic surgery (foot, hand arthroscopy)</li></ul>	<ul style="list-style-type: none"><li>Abdominal surgery with liver biopsy, extracorporeal shockwave lithotripsy</li><li>Extensive cancer surgery (e.g. pancreas, liver)</li><li>Neuraxial (spinal or epidural) anaesthesia</li><li>Neurosurgery (intracranial, spinal)</li><li>Major orthopaedic surgery</li><li>Procedures with vascular organ biopsy (kidney or prostate)</li><li>Reconstructive plastic surgery</li><li>Specific interventions (colon polypectomy, lumbar puncture, endovascular aneurysm repair)</li><li>Thoracic surgery, lung resection surgery</li><li>Urological surgery (prostatectomy, bladder tumour resection)</li><li>Vascular surgery (e.g. AAA repair, vascular bypass)</li></ul>

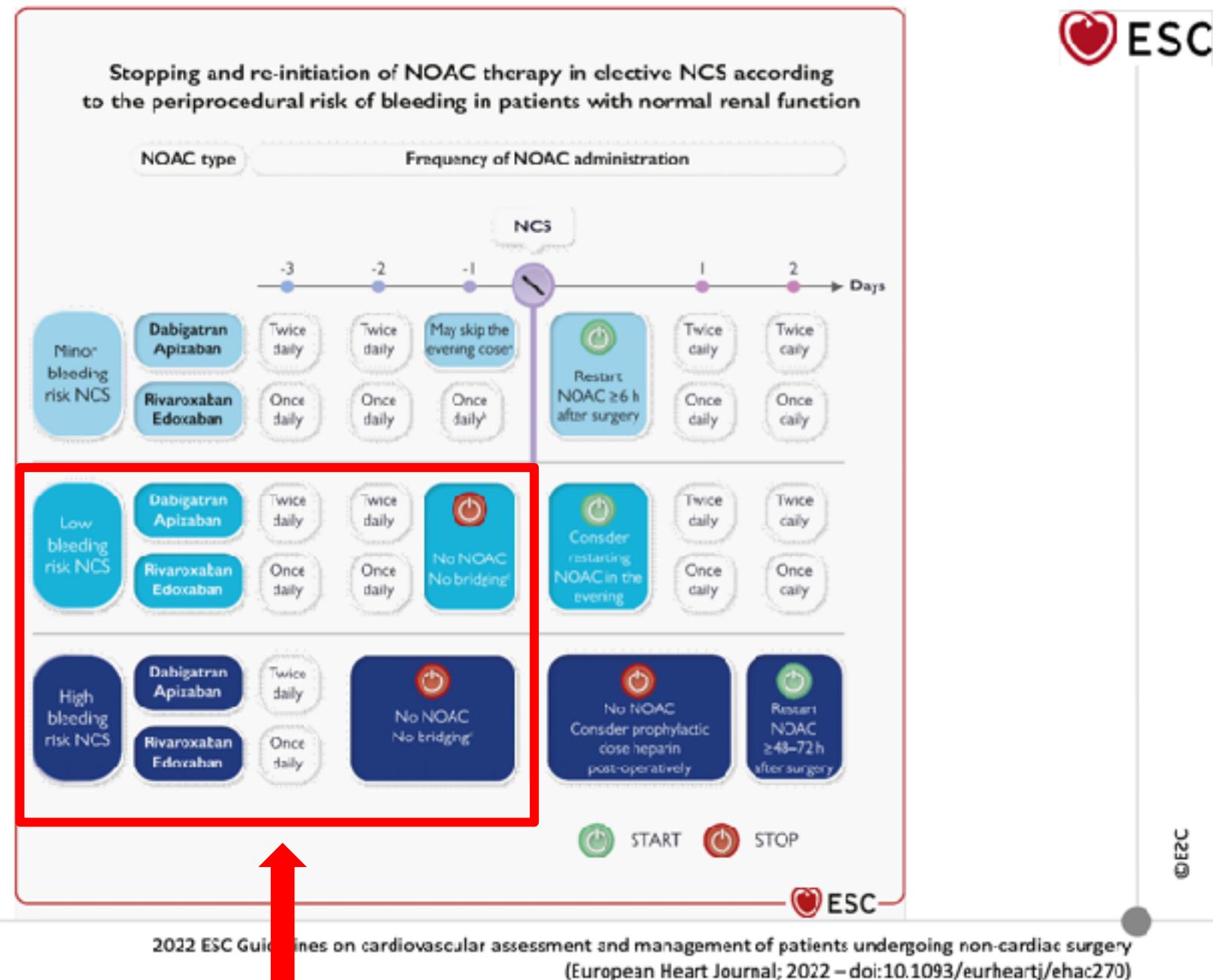
## Risicoreductie maatregelen 2

- Periop. advies anticocoagulantia
  - VKA : hoger bloedingsrisico bij bridging !
    - Bridging bij mech kleppen / erg hoog thrombotisch risico
    - 12h-24h postop herstarten aan onderhouds beh. + 2d 50% extra
    - Bridging : 24u postop LMWH samen met VKA .Stop als INR >2
      - Bij hoog bloedingsrisico : LMWH pas 48h-72h na haemostase herstarten.
  - NOAC
    - Stop ifv bloedingsrisico ( tot 5x  $t_{1/2}$  ) en nierfunctie.
    - Herstarten 6-8 h postop.
      - Hoog bloedingsrisico? Eerst LMWH profyl na 48-72 NOAC
    - Riva low dose stop 24h preop



**Figure 9**

# Peri-operative management of non-vitamin K antagonist oral anticoagulant according to the periprocedural risk of bleeding



**Figure 10**

## Timing of last NOAC dose before elective NCS according to renal function

### Timing of last NOAC dose before elective NCS according to renal function

#### Minor bleeding risk NCS

Perform intervention at NOAC trough level (i.e. 12 h or 24 h after last intake for twice or once daily regimens, respectively). Resume same day or latest next day.

#### Low and high bleeding risk NCS

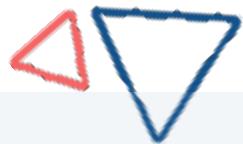
Renal function (estimated GFR, mL/min)	Low bleeding risk NCS	High bleeding risk NCS	Low bleeding risk NCS	High bleeding risk NCS
≥80	≥24 h	≥48 h		
50–79	≥36 h	≥72 h		
30–49	≥48 h	≥96 h		
15–29	Not indicated	Not indicated	≥36 h	≥48 h
<15		No formal indication for use		

No peri-operative bridging with UFH/LMWH

# Risicoreductie maatregelen 3

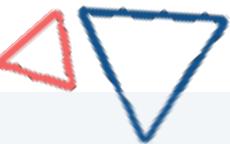


- Perioperatieve thromboprofylaxe
  - Caprini score : <https://capriniriskscore.org/assessment/>
  - <12h preop tot voll mobilisatie / ontslag ZH 10d
  - Kanker hk : 3-4 wkn
  - Orthopedische hk : 14d-35d : LMWH = NOAC
- Anemie : Fe gebrek (50%)
  - Preop corrigeren zo Ferritine < 100 ng/ml of TF sat < 20% of Ferritine < 300 ng/ml (Inflam./HF) -> Minder transfusienood, kortere hospitalisatie



# Take home messages

- Toename van risico op postop CV complicaties door stijgend aantal majeure ingrepen bij ouder wordende bevolking met meer CVRF en comorbiditeiten.
- Belangrijke rol voor huisarts om dit risico te beperken door correcte preoperatieve risicostratificatie en aantal doeltreffende risicoreductie maatregelen:
  - Inchatten van CV risico : SCORE-2 / SCORE-OP tabellen - Comorbiditeiten
  - CV risico calculator
  - Anamnese / KO / lab + BM : vermoeden CVD ? -> preop verwijzing cardioloog
  - Optimalisatie aanpak CVRF
  - Inschatten bloedings-vs thrombotisch risico : preop antithrombotisch beleid.
    - Instructieplan preop advies !

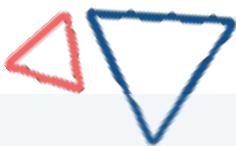


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Thank You



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