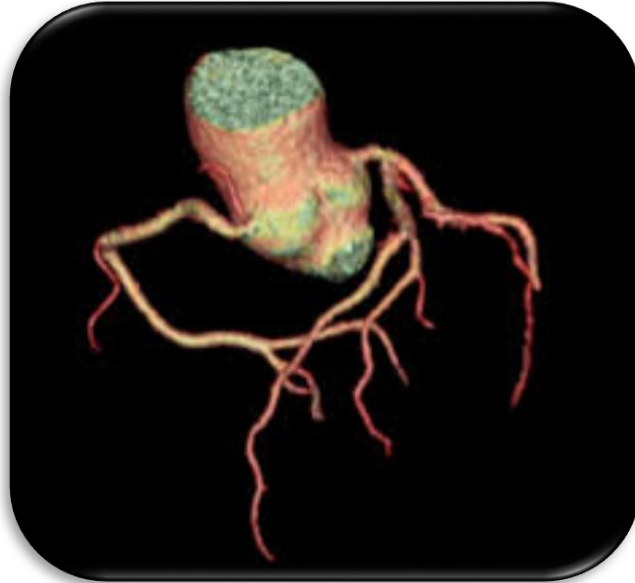


# Maladie Coronaire

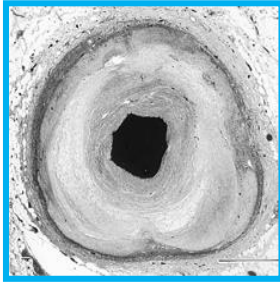
## Quel examen pour quel patient ?



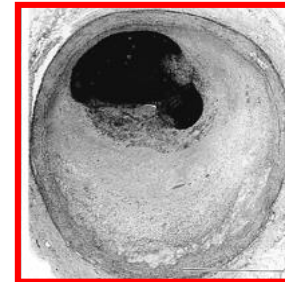
Thomas CUISSET  
CHU Timone, Marseille

Une maladie, deux présentations

Syndrome Coronaire Chronique



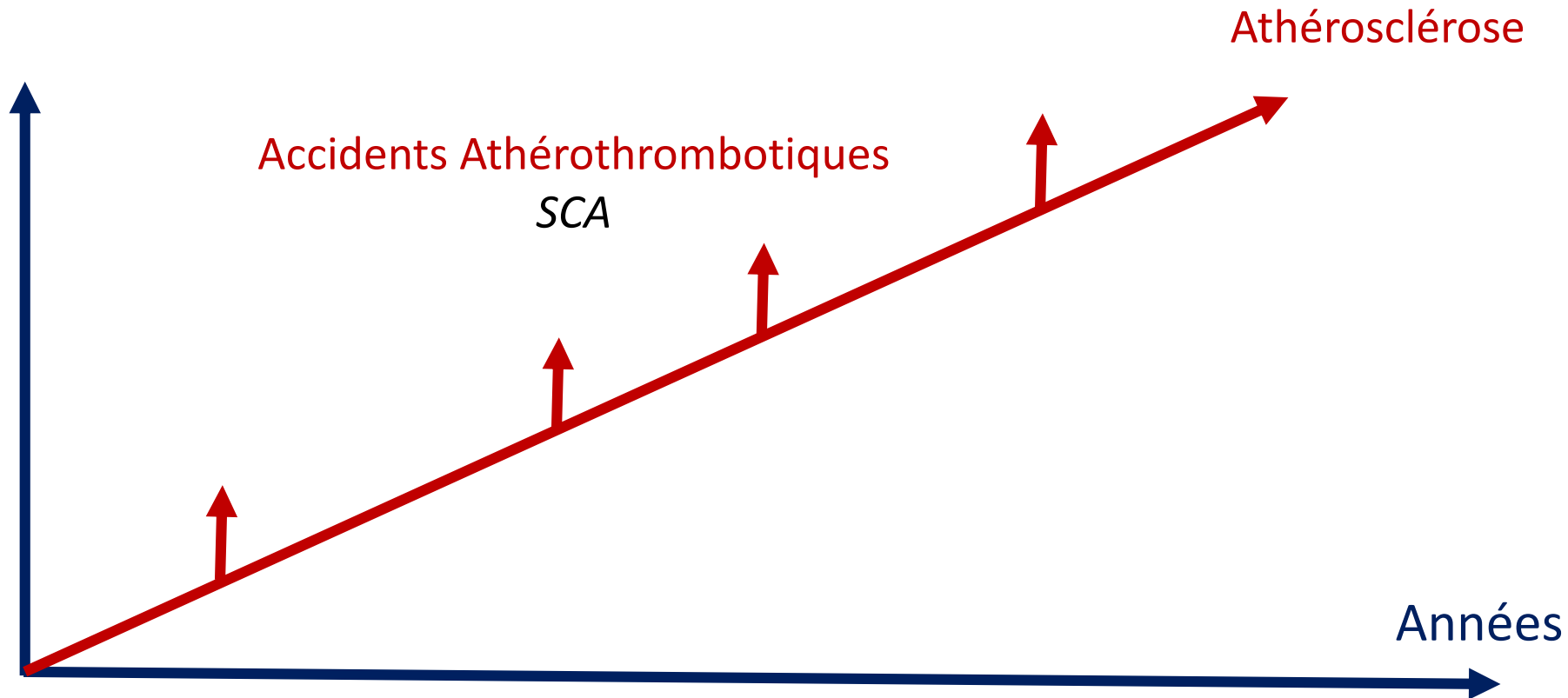
Syndrome Coronaire aigu



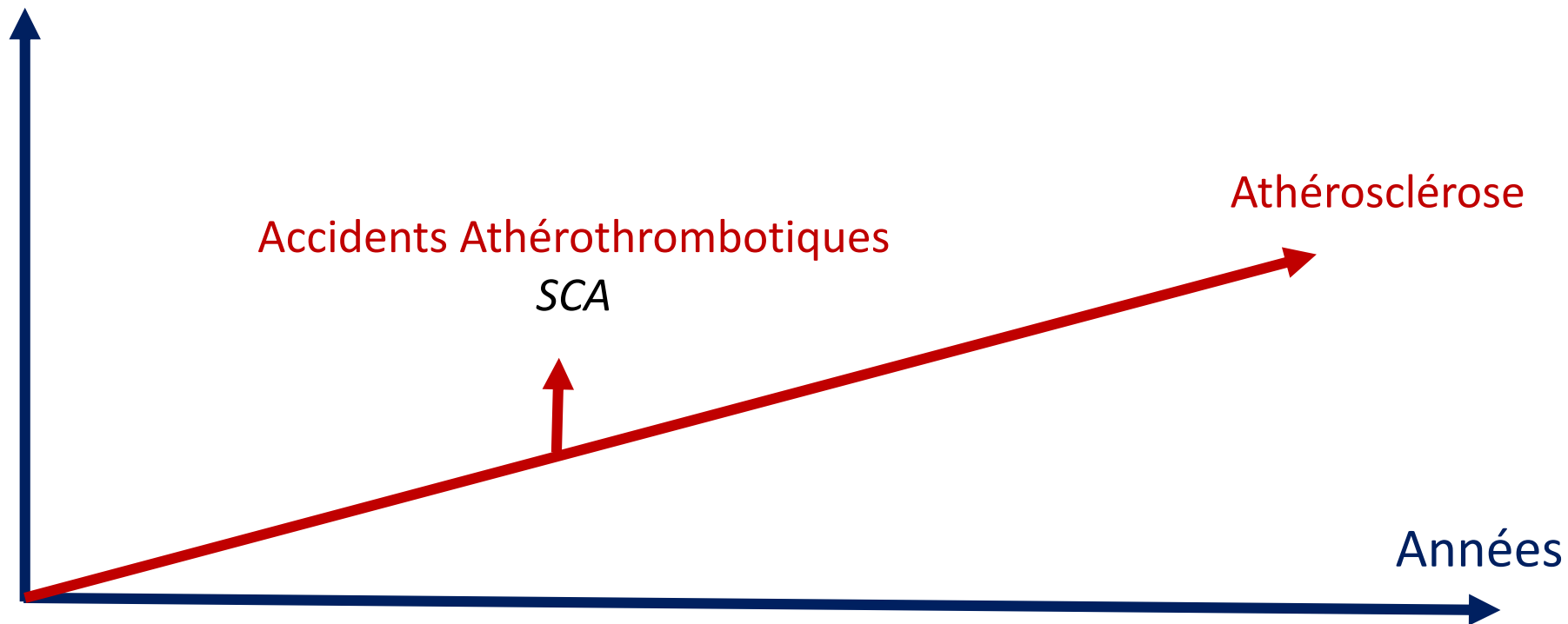
Patients programmés  
**Patient de consultation**  
**Tests non invasifs**  
Risque mortalité long terme

Urgences Cardiologiques  
Hospitalisation  
Coronarographie  
Risque mortalité court terme

# Objectif Maladie Coronaire stable = Prévention

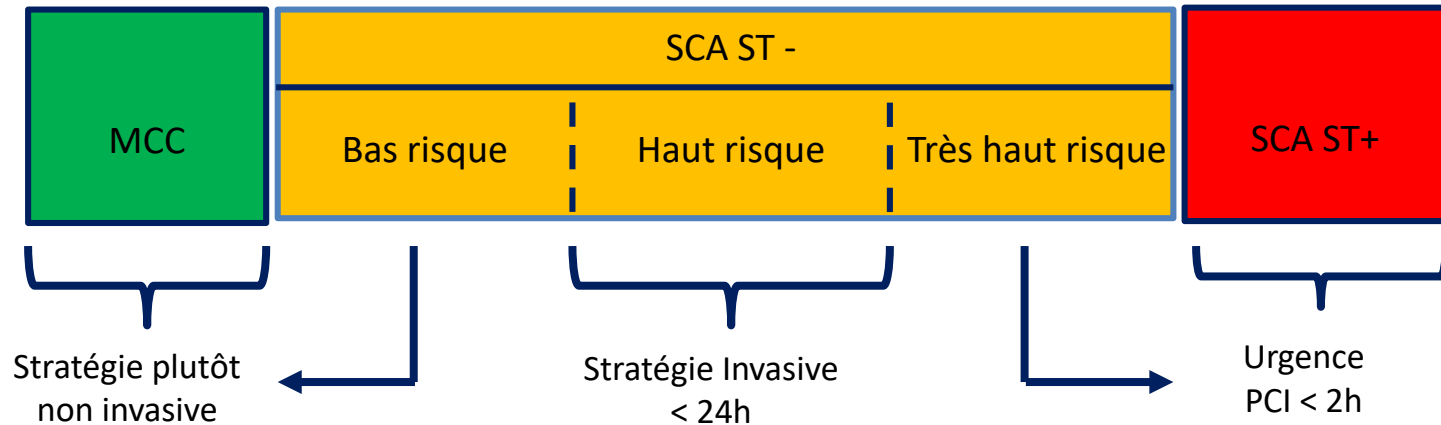


# Bonne prévention secondaire



# Maladie Coronaire chronique

## *Approche non invasive*



# Deux profils très différents

Patients avec symptômes

Patients Asymptomatiques

# Deux profils très différents

Patients avec symptômes

Patients Asymptomatiques

Patients avec symptômes

## Pourquoi faire des examens ?

Recherche cause des symptômes -> traiter

Recherche maladie sous jacente -> prévention accidents aigus





European Society  
of Cardiology

European Heart Journal (2024) **00**, 1–123  
<https://doi.org/10.1093/eurheartj/ehae177>

**ESC GUIDELINES**

# **2024 ESC Guidelines for the management of chronic coronary syndromes**

**Developed by the task force for the management of chronic  
coronary syndromes of the European Society of Cardiology (ESC)**

***Endorsed by the European Association for Cardio-Thoracic Surgery (EACTS)***

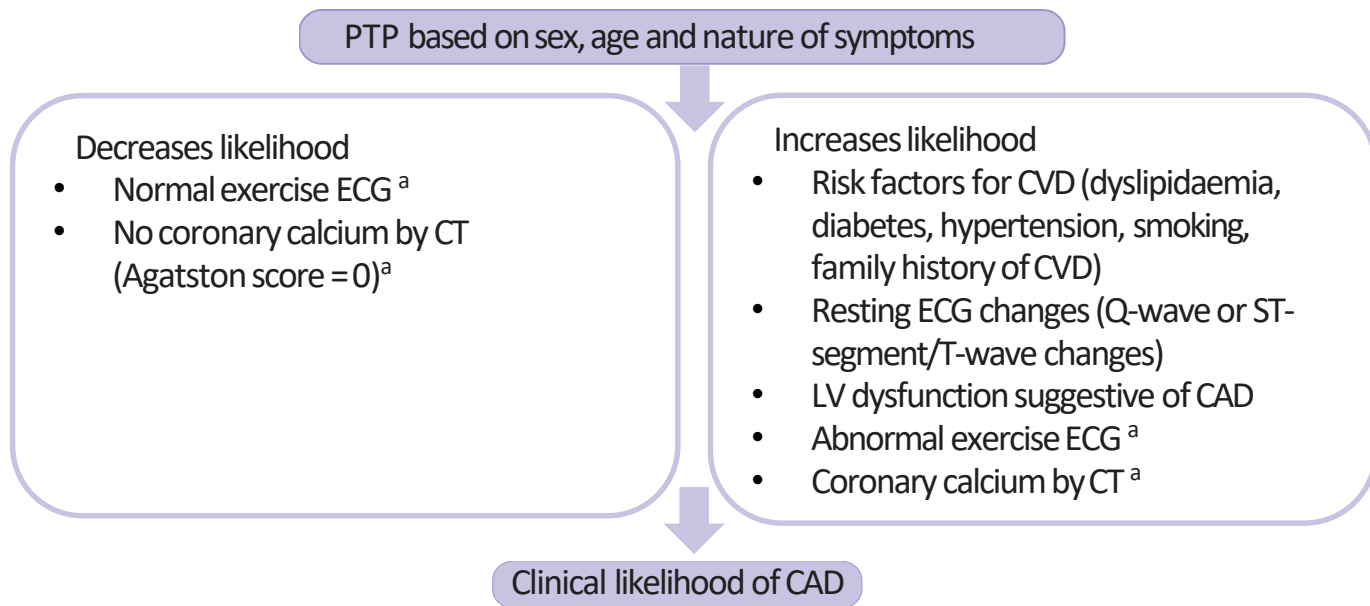
# Patients with angina and/or dyspnoea and suspected CAD

Pre-test probability of coronary artery disease

|       | Typical |     | Atypical |     | Non-anginal |     |  | Dyspnoea <sup>a</sup> |     |
|-------|---------|-----|----------|-----|-------------|-----|--|-----------------------|-----|
| Age   | M       | W   | M        | W   | M           | W   |  | M                     | W   |
| 30–39 | 3%      | 5%  | 4%       | 3%  | 1%          | 1%  |  | 0%                    | 3%  |
| 40–49 | 22%     | 10% | 10%      | 6%  | 3%          | 2%  |  | 12%                   | 3%  |
| 50–59 | 32%     | 13% | 17%      | 6%  | 11%         | 3%  |  | 20%                   | 9%  |
| 60–69 | 44%     | 16% | 26%      | 11% | 22%         | 6%  |  | 27%                   | 14% |
| 70+   | 52%     | 27% | 34%      | 19% | 24%         | 10% |  | 32%                   | 12% |

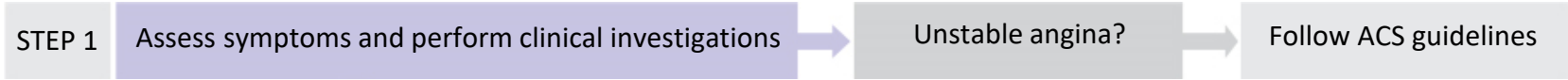
# Patients with angina and/or dyspnoea and suspected CAD

Ajout determinant de “probabilité” de maladie coronaire



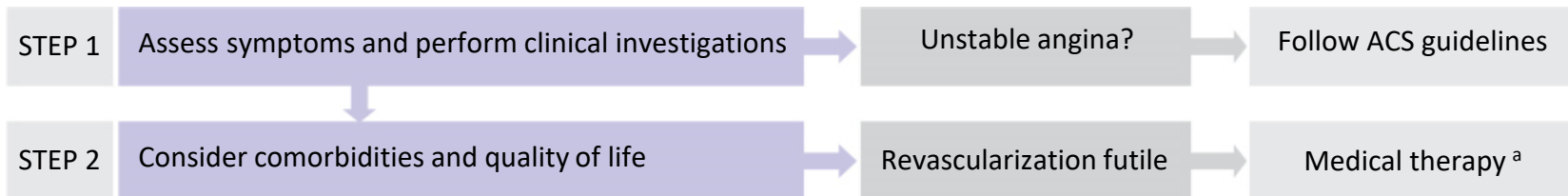
# Patients with angina and/or dyspnoea and suspected CAD

## Diagnostic approach



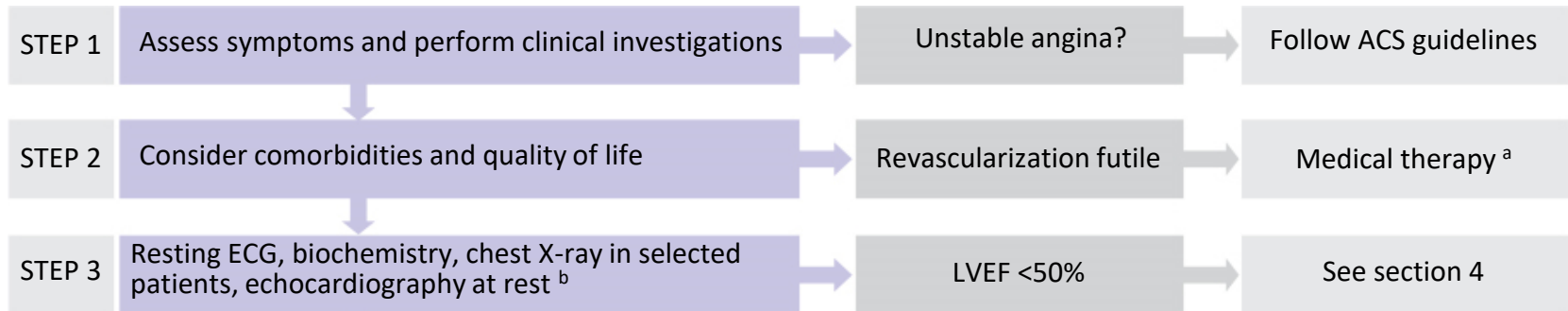
# Patients with angina and/or dyspnoea and suspected CAD

## Diagnostic approach



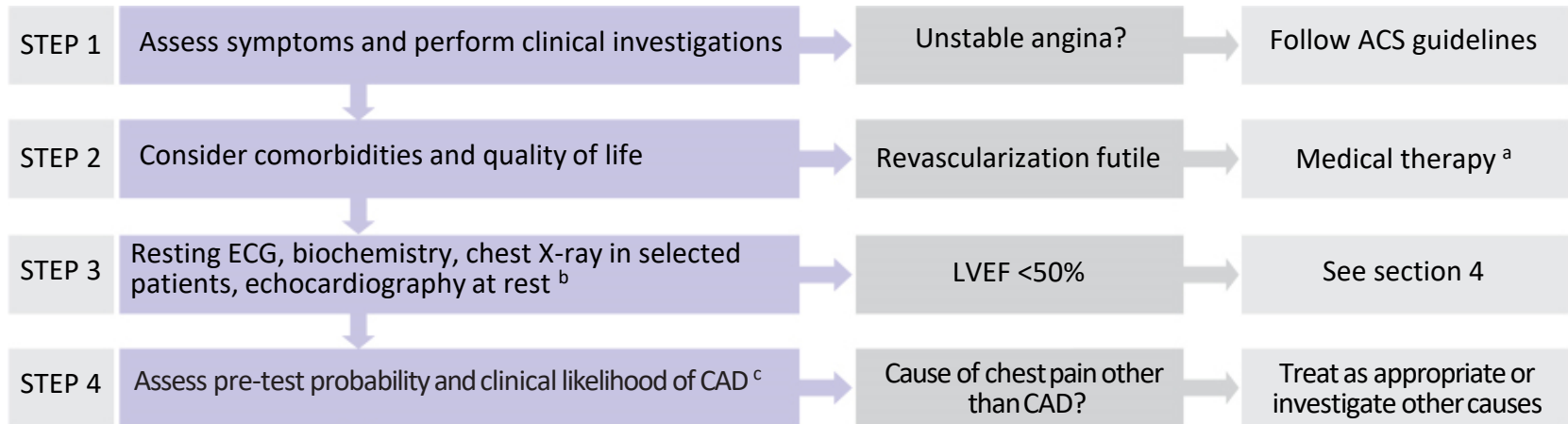
# Patients with angina and/or dyspnoea and suspected CAD

## Diagnostic approach



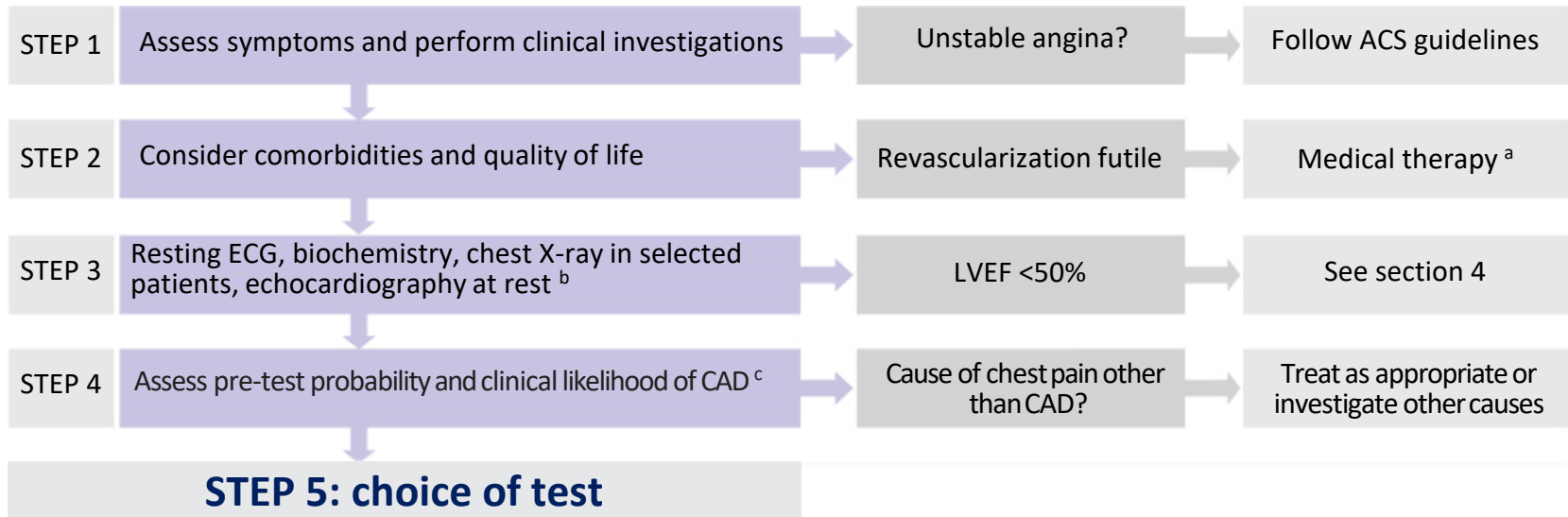
# Patients with angina and/or dyspnoea and suspected CAD

## Diagnostic approach



# Patients with angina and/or dyspnoea and suspected CAD

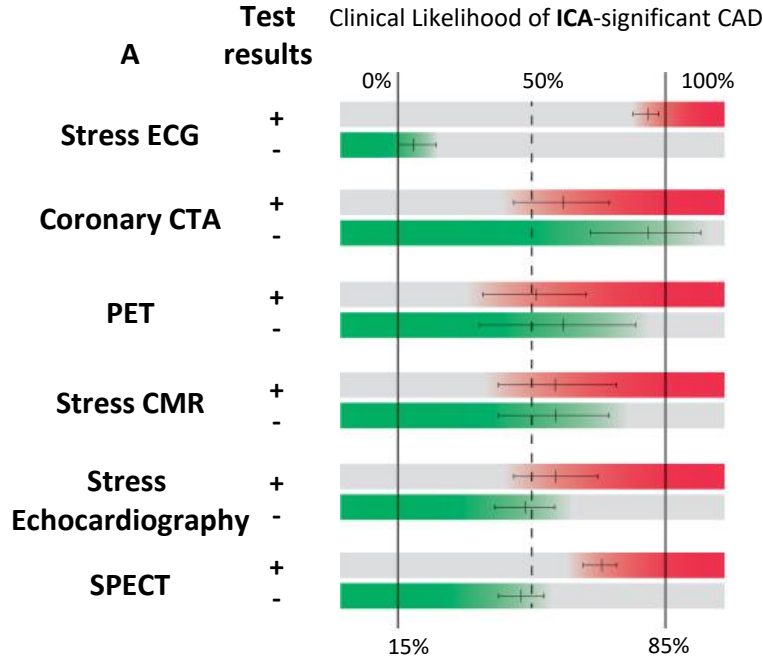
## Diagnostic approach





# Patients with angina and/or dyspnoea and suspected CAD

## Quel test ?



Ranges of clinical likelihood for rule-in/out CAD



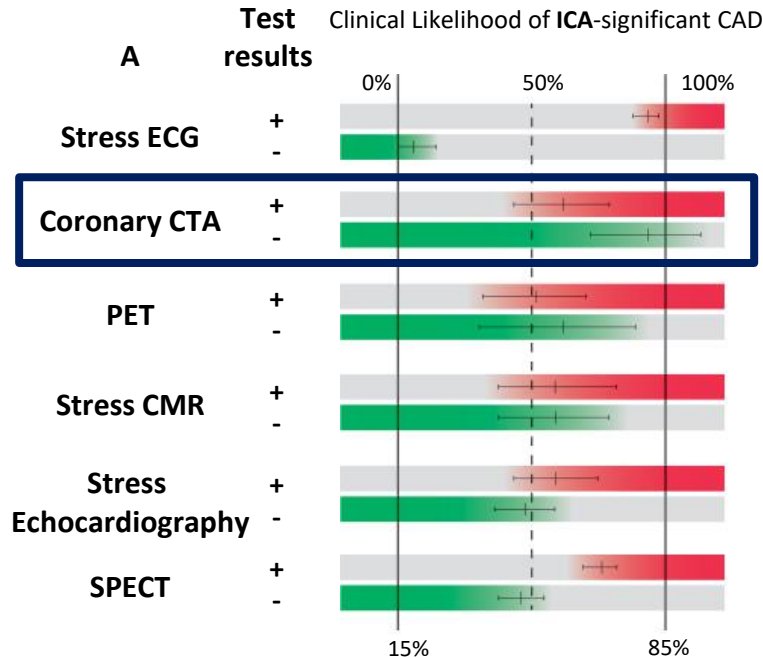
**Clinical Likelihood** range where test can **rule-in** CAD (Post-test probability will rise above 85%)



**Clinical Likelihood** range where test can **rule-out** CAD (Post-test probability will drop below 15%)

# Patients with angina and/or dyspnoea and suspected CAD

## Quel test ?



**Rule-out performance**

Ranges of clinical likelihood for rule-in/out CAD



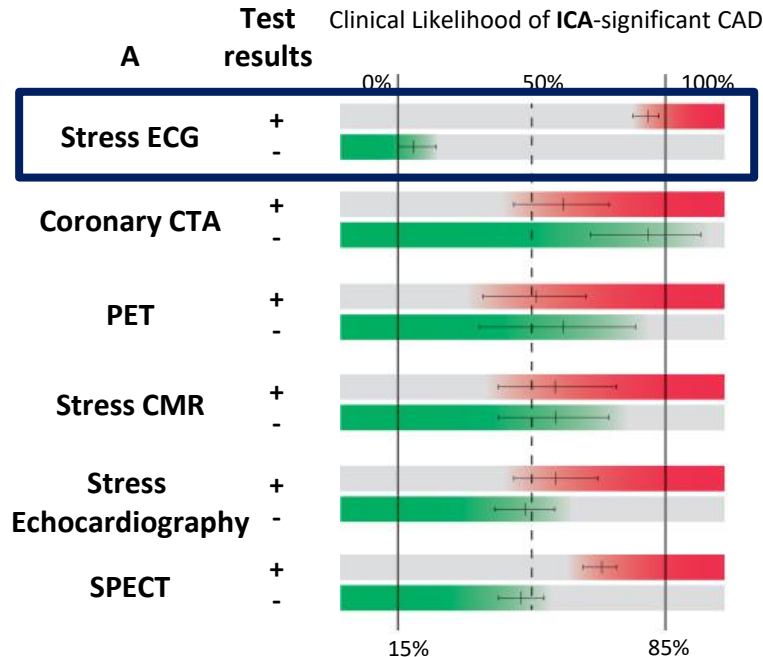
**Clinical Likelihood** range where test can **rule-in** CAD (Post-test probability will rise above 85%)



**Clinical Likelihood** range where test can **rule-out** CAD (Post-test probability will drop below 15%)

# Patients with angina and/or dyspnoea and suspected CAD

## Quel test ?



Epreuve effort Classique: Sensibilité = 60%



Sensibilité = 50%

Ranges of clinical likelihood for rule-in/out CAD



**Clinical Likelihood** range where test can **rule-in** CAD (Post-test probability will rise above 85%)



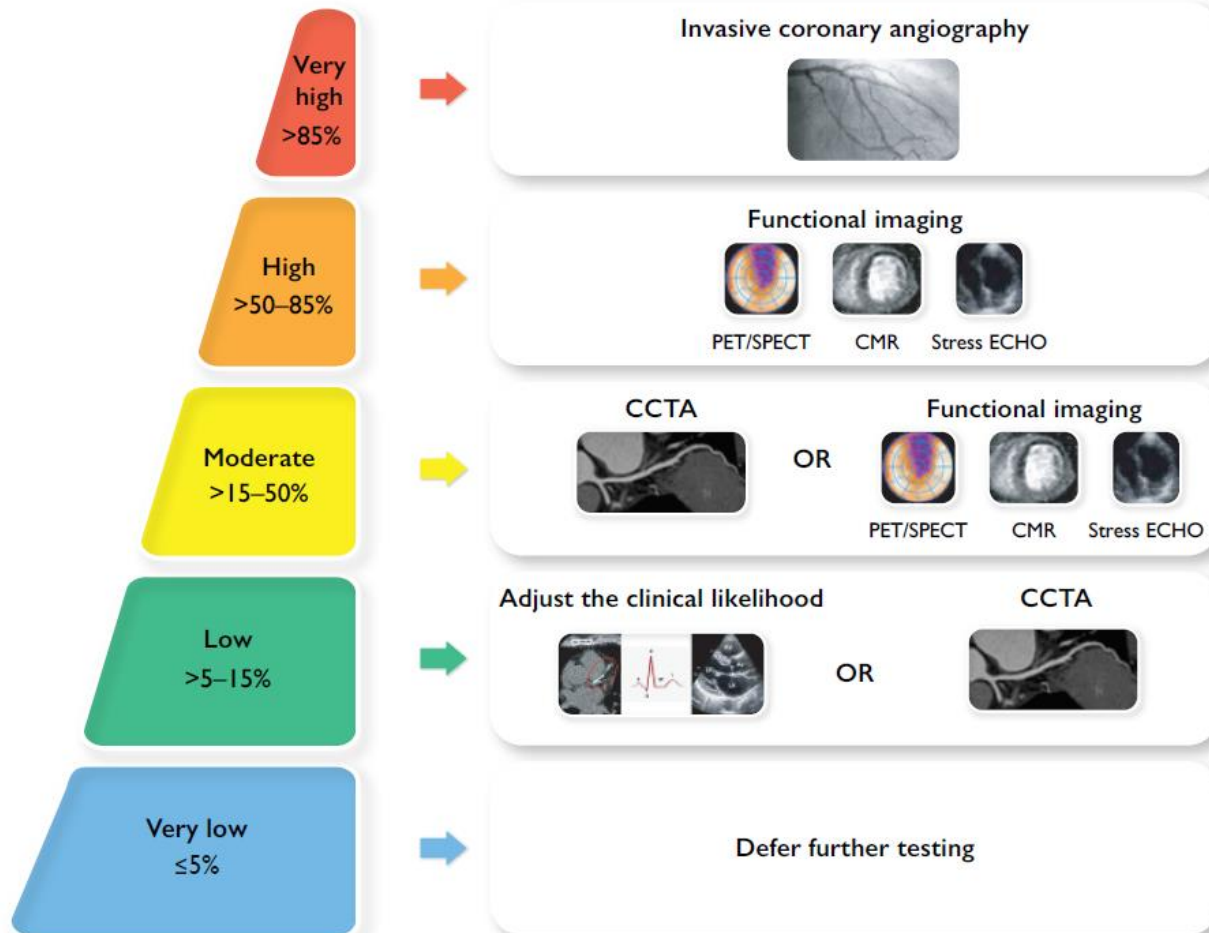
**Clinical Likelihood** range where test can **rule-out** CAD (Post-test probability will drop below 15%)

# L'épreuve d'effort ?

| Recommendations                                                                                                                                                                                              | Class <sup>a</sup> | Level <sup>b</sup> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|
| Exercise ECG may be considered as an alternative test to rule in and rule out CAD when non-invasive imaging tests are unavailable. <sup>148,166,188,190,191</sup>                                            | <b>IIb</b>         | <b>B</b>           |
| In individuals with a low or moderate (>5%–50%) pre-test likelihood of obstructive CAD, an exercise ECG is not recommended to rule out CAD if CCTA or functional imaging tests are available. <sup>148</sup> | <b>III</b>         | <b>C</b>           |

Risk factor-weighted clinical likelihood  
of obstructive CAD

Appropriate first-line test for  
suspected CCS



# Et le score calcique ?



In individuals with a low (>5%–15%) pre-test likelihood of obstructive CAD, CACS should be considered to reclassify subjects and to identify more individuals with very low ( $\leq 5\%$ ) CACS-weighted clinical likelihood.<sup>139,143,165</sup>

**IIa**

**B**

Si CACS = 0 -> STOP

# Choix du test si précordialgies

**Rien:** Symptômes atypiques / terrain bas risque +/- Score calcique

**Coroscanner:** Probabilité faible à intermédiaire / Pas ATCD Stent

**Imagerie de stress:** Probabilité intermédiaire à élevée et/ou ATCD Stent

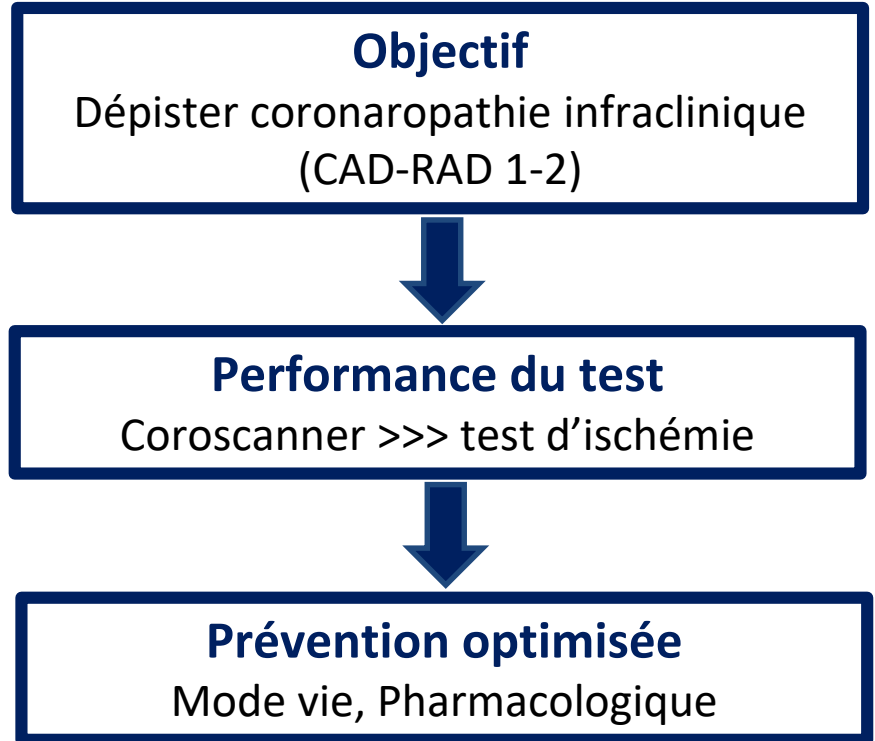
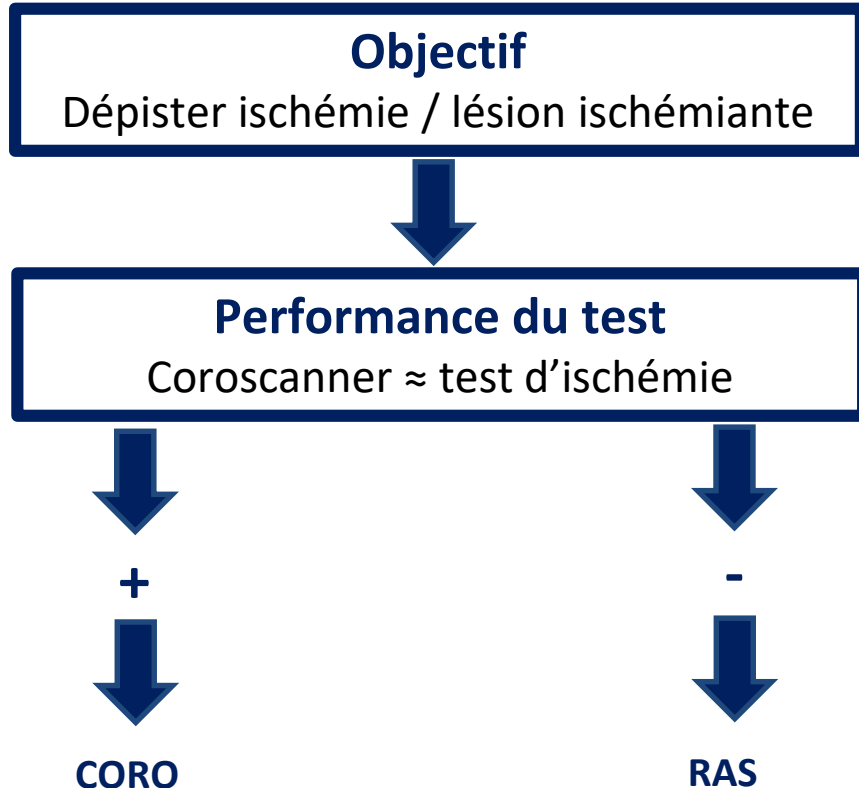
**Invasif:** Symptômes typiques + Terrain haut risque ou « SCA »

# Plus de Coroscanner ?

| Recommendations                                                                                                                                                                                                            | Class <sup>a</sup> | Level <sup>b</sup> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|
| In individuals with suspected CCS and low or moderate (>5%–50%) pre-test likelihood of obstructive CAD, CCTA is recommended to diagnose obstructive CAD and to estimate the risk of MACE. <sup>33,34,145,212,214–221</sup> | <b>I</b>           | <b>A</b>           |



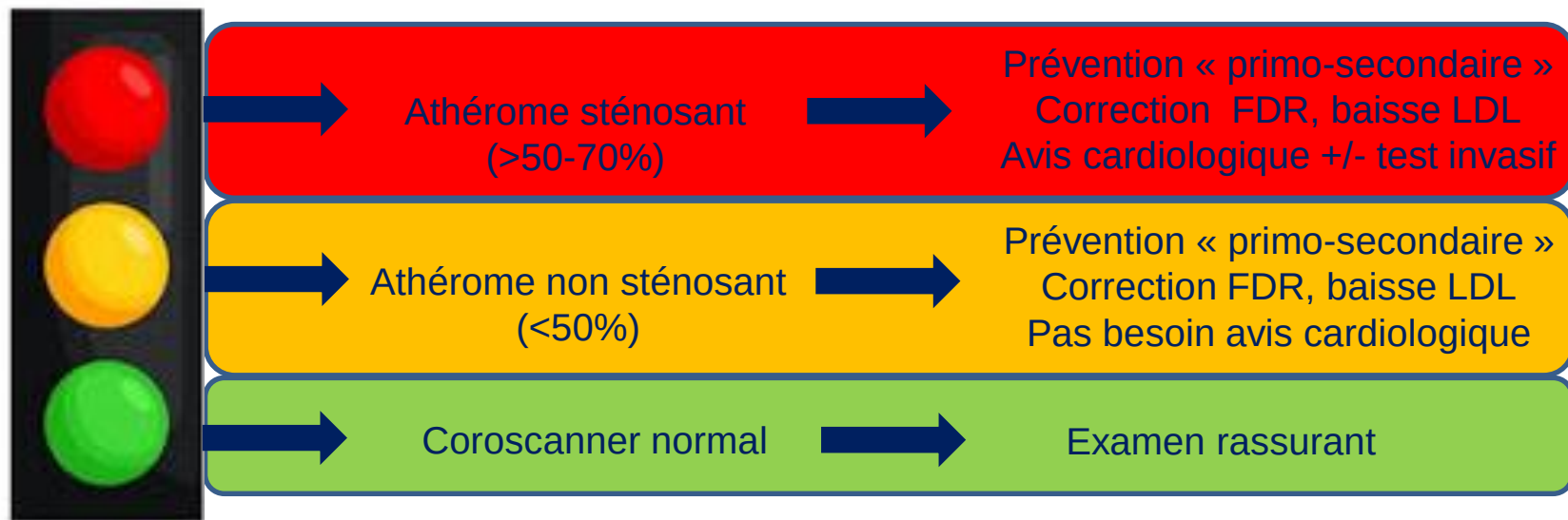
# Plus de Coroscanner ?



| CAD-RADS categories |                                         |                                    |                                       |
|---------------------|-----------------------------------------|------------------------------------|---------------------------------------|
| Score               | Stenosis                                | Interpretation                     | Further investigation                 |
| 0                   | 0%                                      | Absence of CAD                     | None                                  |
| 1                   | 1–24%                                   | Minimal non-obstructive CAD        | None                                  |
| 2                   | 25–49%                                  | Mild non-obstructive CAD           | None                                  |
| 3                   | 50–69%                                  | Moderate stenosis                  | Consider functional assessment        |
| 4A                  | 70–99% single or 2- vessel              | Severe stenosis                    | Consider ICA or functional assessment |
| 4B                  | Left main >50% or 3- vessel $\geq 70\%$ |                                    | ICA                                   |
| 5                   | 100%                                    | Total coronary occlusion           | Consider ICA and viability assessment |
| CadRads N           | Non-diagnostic study                    | Obstructive CAD cannot be excluded | Additional evaluation needed          |



## Que faire du résultats d'un coroscanner ?





# Que faire du résultats d'un coroscanner ?



Correction des FDR CV: Tabac, HTA, DM  
Correction du LDL-cholestérol: quelle cible ?  
Mise en route ou non monothérapie AAP ?





## Que faire du résultats d'un coroscanner ?



Athérome non sténosant  
( $<50\%$ )

Prévention « primo-secondaire »  
Correction FDR, baisse LDL  
Pas besoin avis cardiologique

Correction des FDR CV: Tabac, HTA, DM

Correction du LDL-cholestérol: quelle cible ? **LDL  $< 1$  g/L**

Mise en route ou non monothérapie AAP ? **Ca dépend, plutôt NON**

# Deux profils très différents

Patients avec symptômes

Patients Asymptomatiques



## Patients asymptomatiques

### Pourquoi faire des examens ?

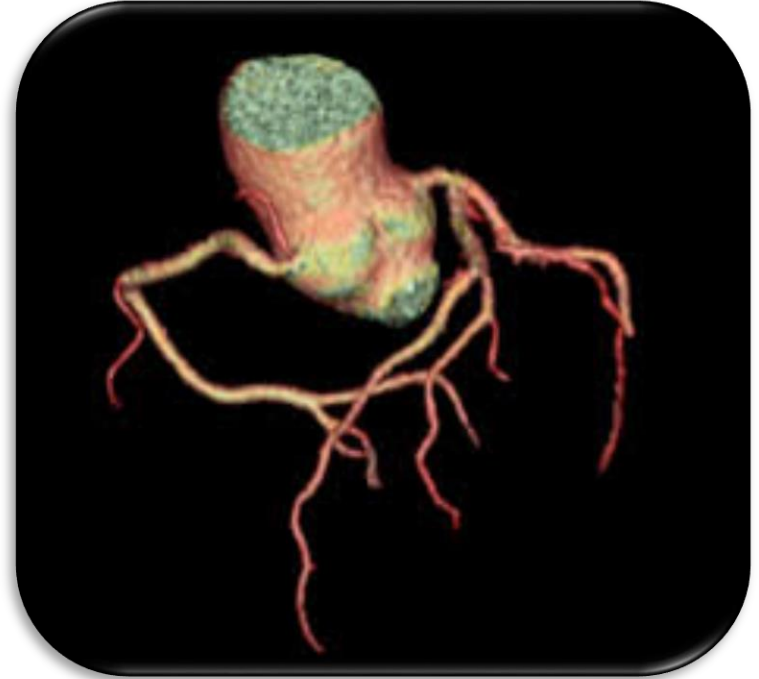
~~Recherche cause des symptômes → traiter~~

Recherche maladie sous jacente -> prévention accidents aigus

Dépister formes graves et asymptomatiques ?

# Attention aux excès

Coroscanner pour tous !





# Règle absolue

Un patient qui va bien: pas toujours utile de chercher pourquoi !

Rappel: bénéfice revascularisation dans maladie stable surtout sur symptôme (pas simple chez l'asymptomatique)

Attention à ne pas aggraver patient par examens inutiles

# Règle absolue

## Attention à ne pas aggraver patient par examens inutiles

Coroscanner douteux -> Coronarographie

-> **Complication de l'examen**

Coroscanner douteux -> Coronarographie -> Lésion -> PCI

-> **Complication de l'intervention**

Coroscanner douteux -> Coronarographie -> Lésion -> PCI -> DAPT -> Hémorragie

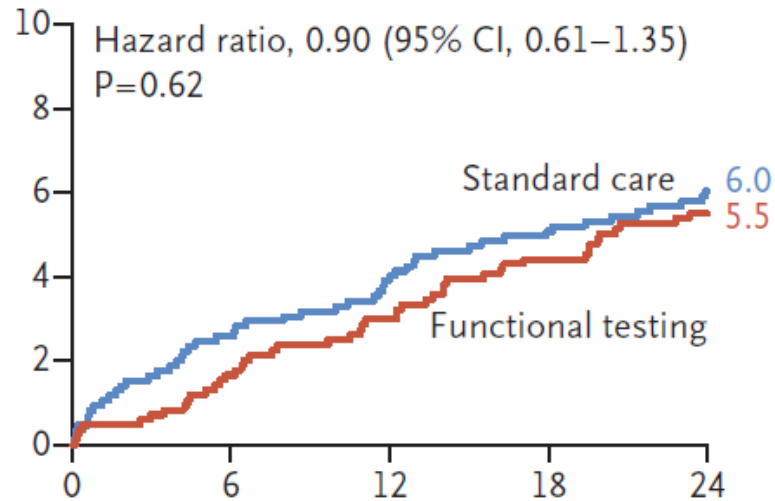
-> **Complication des médicaments**

## Routine Functional Testing or Standard Care in High-Risk Patients after PCI

Après Angioplastie à haut risque  
Intérêt test non invasif si pas de symptôme ?

**Suivi Clinique vs Test non invasif**

## Routine Functional Testing or Standard Care in High-Risk Patients after PCI



Aucun bénéfice à test systématique

# Routine Functional Testing or Standard Care in High-Risk Patients after PCI

## Suivi « individualisé » avec test non invasif

Chez patients développant des symptômes (angor, dyspnée)

Chez patients asymptomatiques « à risque » ?

# **2024 ESC Guidelines for the management of chronic coronary syndromes**

**Developed by the task force for the management of chronic coronary syndromes of the European Society of Cardiology (ESC)**

routine functional testing is not recommended for asymptomatic post-PCI patients, as it has not been shown to improve outcomes compared with standard care after 2 years

Ce qui est vrai en post SCA / stent est sans doute vrai chez  
un patient qui n'a jamais eu de soucis !



## Patients asymptomatiques

### Pourquoi faire des examens ?

De Façon très sélectionné chez patients « haut risque »

Plus pour guider traitement

Que pour rechercher des interventions à faire



ORIGINAL ARTICLE

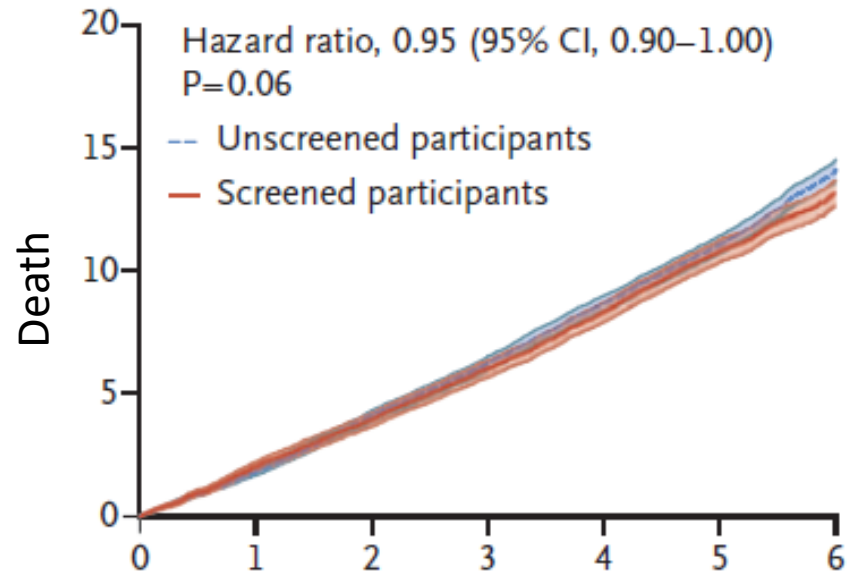
Five-Year Outcomes of the Danish  
Cardiovascular Screening (DANCAVAS) Trial

Danish Trial

N= 46611

Control group vs Screening

Screening = CACS, IPS, ECG et Bio

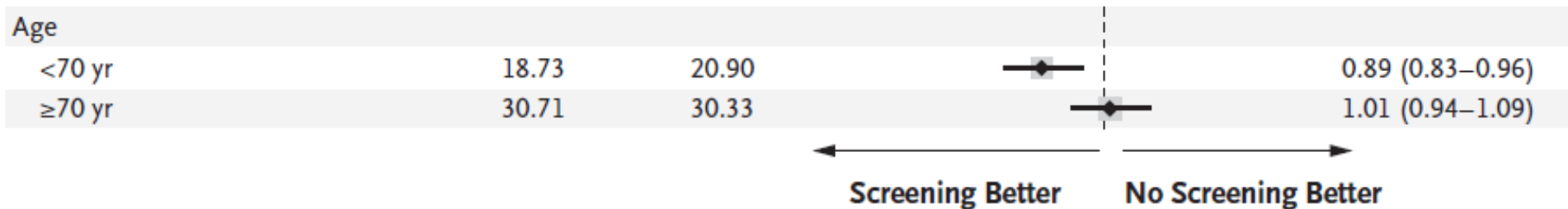


## ORIGINAL ARTICLE

Five-Year Outcomes of the Danish  
Cardiovascular Screening (DANCAVAS) Trial

Pas uniquement prévention primaire

Plus de saignements dans groupe screené (DAPT)



## Recommendations

Class<sup>a</sup>

Level<sup>b</sup>

CACS may be considered to improve risk classification around treatment decision thresholds. <sup>1104–1106</sup>

**IIb**

**C**

An ultrasound of the carotid arteries may be considered as an alternative when CACS is unavailable or not feasible to detect atherosclerotic disease and to improve risk classification around treatment decision thresholds. <sup>1111</sup>

**IIb**

**B**

Score calcique / Doppler TSAO chez patients à ht risque: peut être

# Quel examen pour quel patient ?

Patients avec symptômes

Patients Asymptomatiques

Test non invasif +++  
Adapté au patient  
Plus de scanner Coronaire  
Améliorer symptôme  
Optimiser prévention

Très sélectif  
Adapté au patient  
Score calcique ?  
Optimiser prévention