

# ***Application of Low Radiation CCTA (Coronary CT Angiography) in management of CV Disease***

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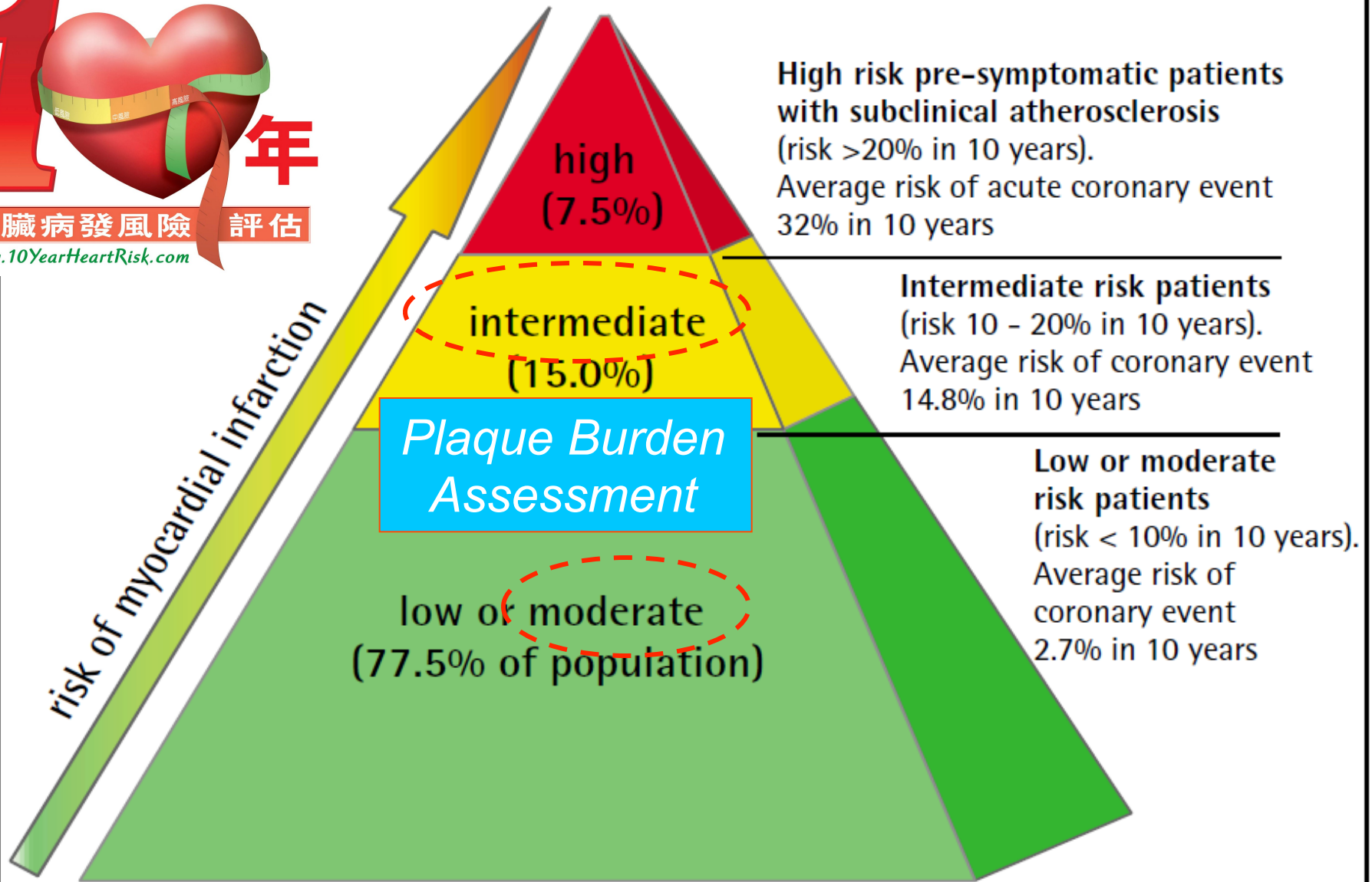
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***President of HK Association of Sports Medicine and Sports Science***



# The myocardial infarction risk pyramid



**High risk pre-symptomatic patients with subclinical atherosclerosis (risk >20% in 10 years).**  
Average risk of acute coronary event 32% in 10 years

**Intermediate risk patients (risk 10 - 20% in 10 years).**  
Average risk of coronary event 14.8% in 10 years

**Low or moderate risk patients (risk < 10% in 10 years).**  
Average risk of coronary event 2.7% in 10 years

low or moderate (77.5% of population)

*Plaque Burden Assessment*

risk of myocardial infarction

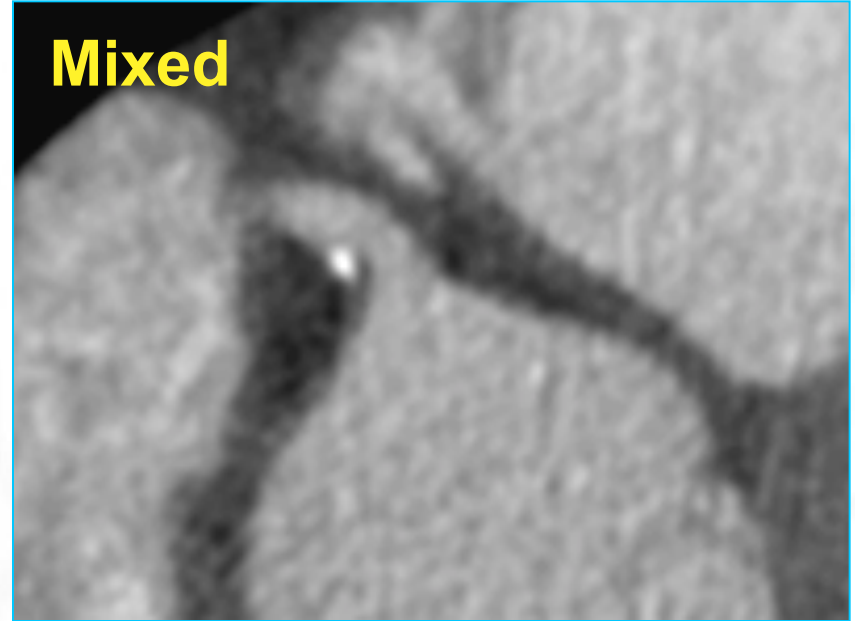
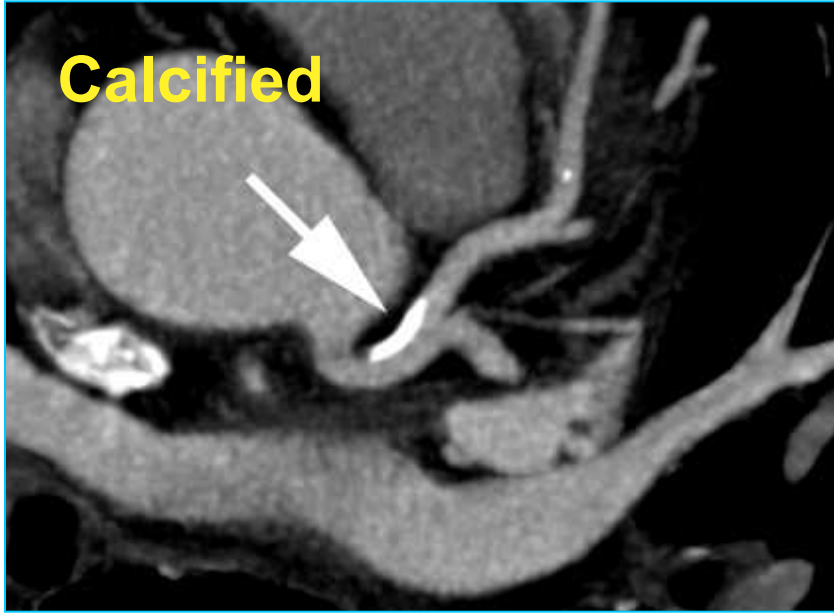
# CCTA for detection of CAD

Multislice Spiral  
(64 slices) CT

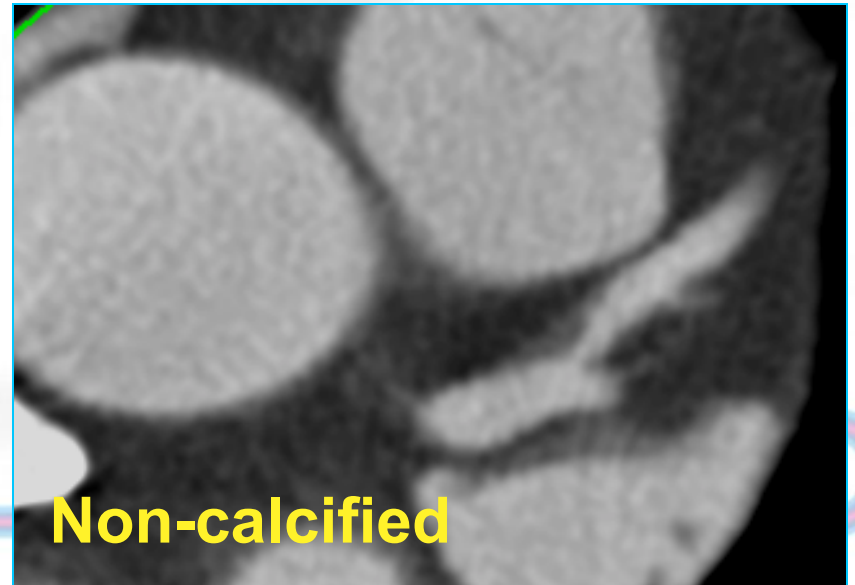
Amazing detailed new  
**HEART SCANS** help doctors  
Spot trouble without surgery.  
How technology could save  
your life. ....**TIME 2005**



Mike Fackelmann, 50, holds a scan of his heart, which revealed a major blockage of a coronary artery (arrow)



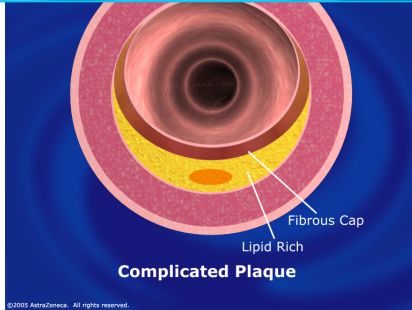
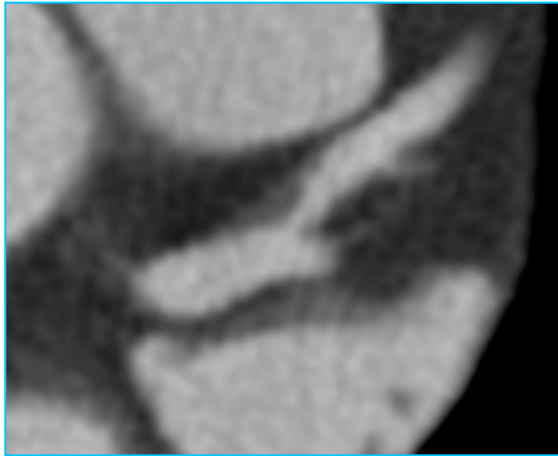
## Visualization of non-stenotic plaque by CT



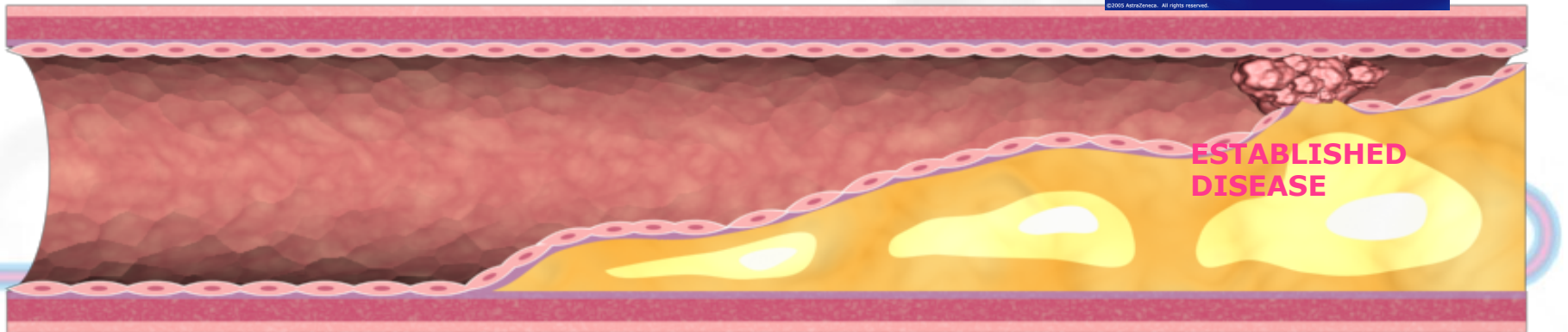
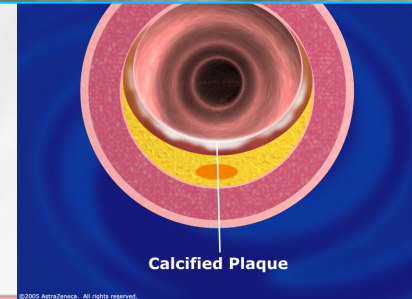
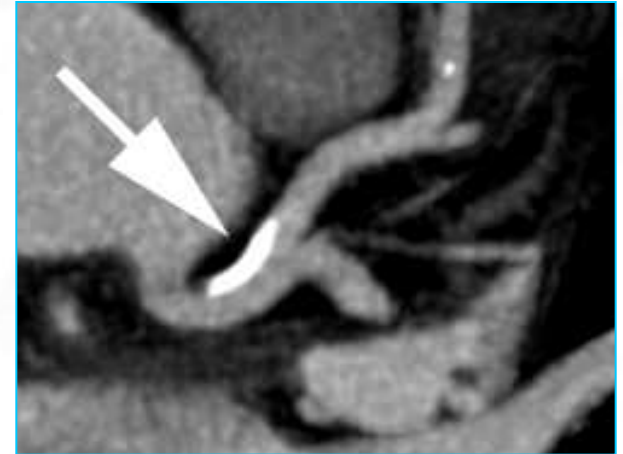


# Calcium = Chronicity

Little Prognostic value in symptomatic patients



Years  
→



# ACCURACY trial

**Table 2** Patient-Based Analysis

Estimate, %

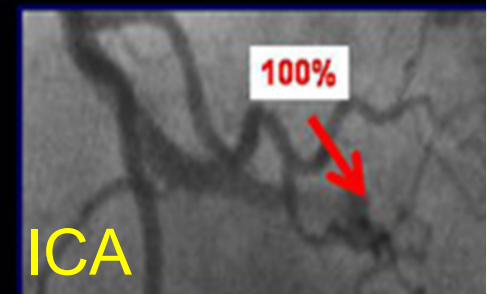
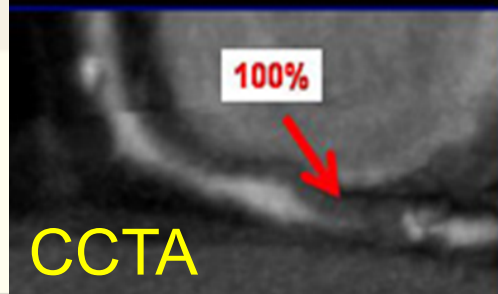
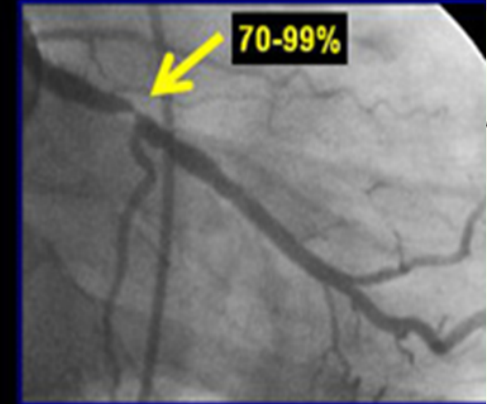
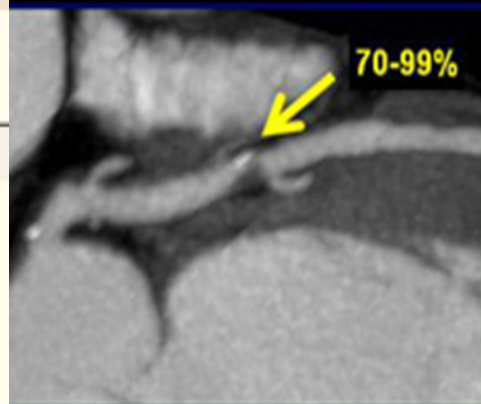
≥50% stenosis

Sensitivity	95
Specificity	83
PPV	64
NPV	99

≥70% stenosis

Sensitivity	94
Specificity	83
PPV	48
NPV	99

## CCTA Stenosis Severity



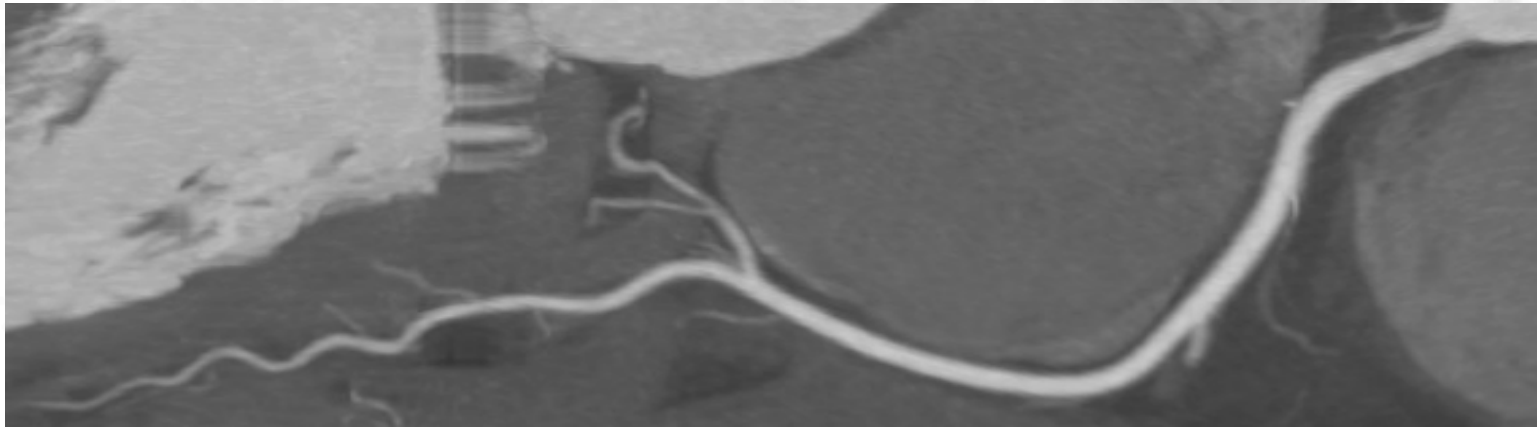
CCTA = coronary computed tomographic angiography; CI = confidence interval; NPV = negative predictive value; PPV = positive predictive value.

**The 99% NPV : CCTA as an effective noninvasive alternative to ICA to rule out obstructive coronary artery stenosis**

Negative Predictive Value 100%

陰性預測值達100%

Negative CCTA Rule Out Significant CAD



# Prognostic Value of Cardiac Computed Tomography Angiography

A Systematic Review and Meta-Analysis

