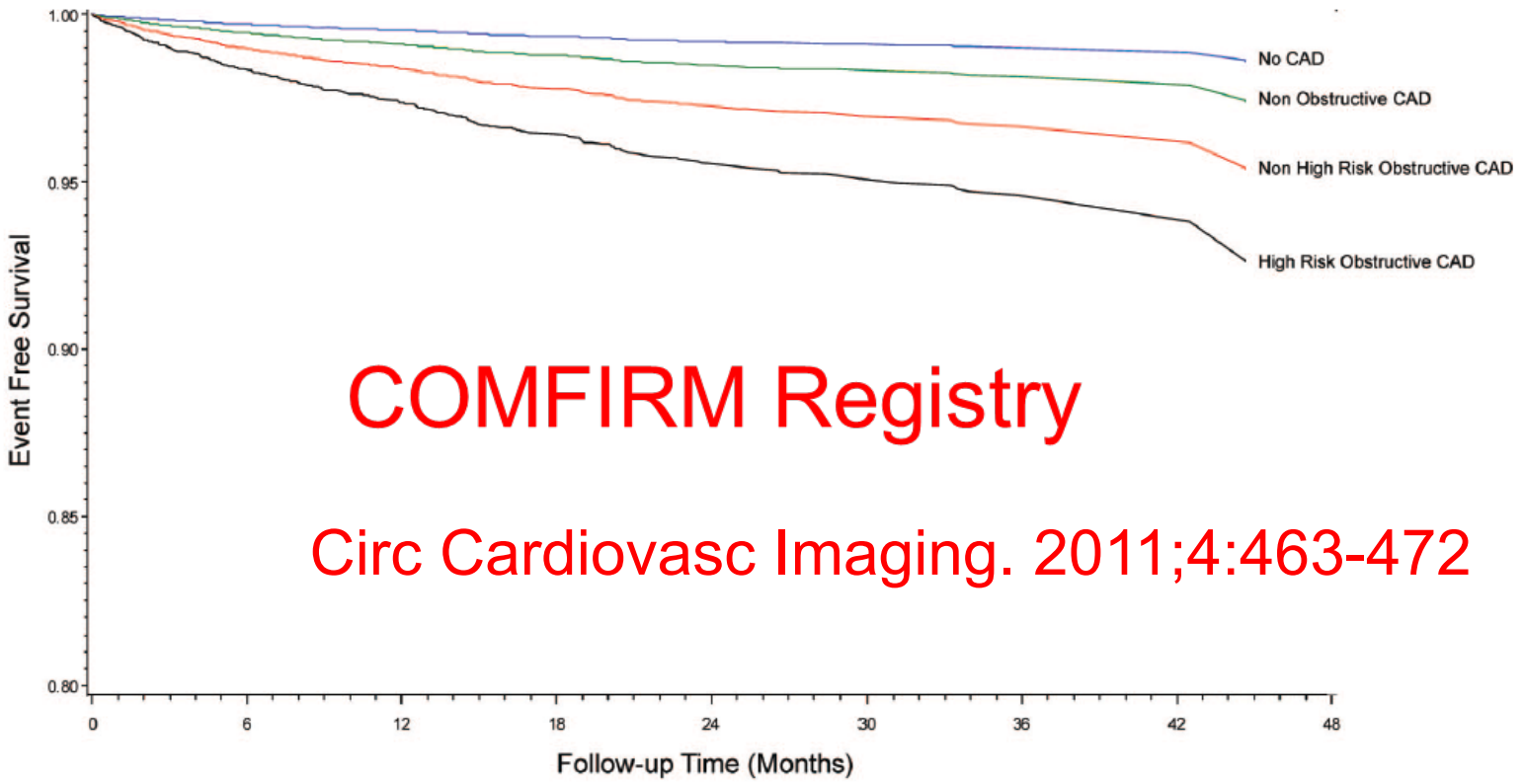
CCTA
A Strong Predictor of Future Risk of Death



COMFIRM Registry

Circ Cardiovasc Imaging. 2011;4:463-472

	5822	5598	5204	3952	2553	1470	694	155	40
ive CAD	4655	4250	3917	2821	1544	735	308	128	31
k Obstructive CAD	1861	1818	1719	1284	703	320	93	34	15
structive CAD	1818	1741	1643	1418	1138	928	547	44	9

Figure 1. Cox risk-adjusted all-cause mortality-free survival by coronary artery disease (CAD) severity for patients without coronary atherosclerosis (**blue line**), nonobstructive CAD (**green line**), non–high-risk CAD (**red line**), and high-risk CAD (**black line**); $P<0.001$.

SOCIETY OF CARDIOVASCULAR COMPUTED TOMOGRAPHY

CCTA vs Cath

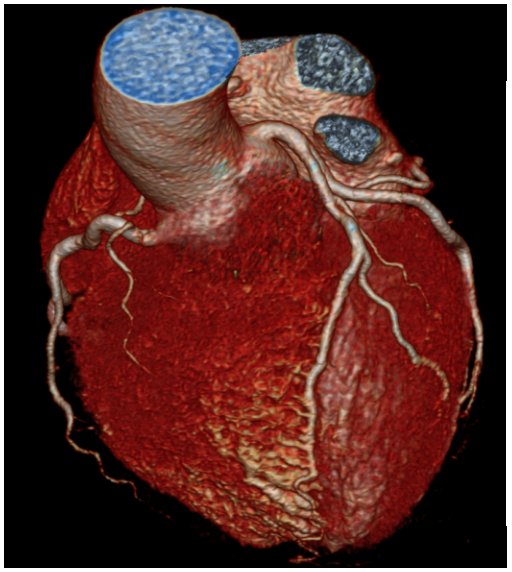
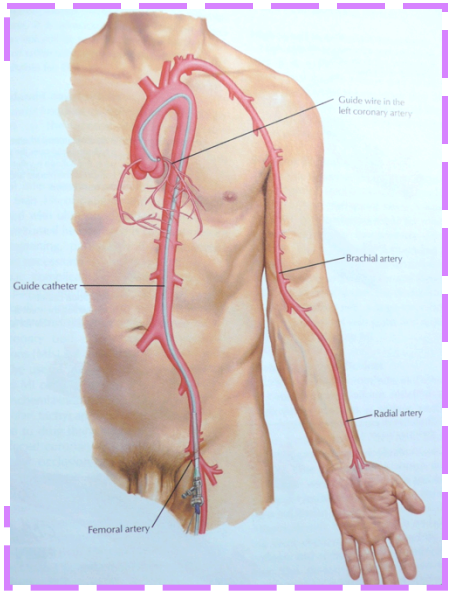


Table 3. Accuracy of CTA

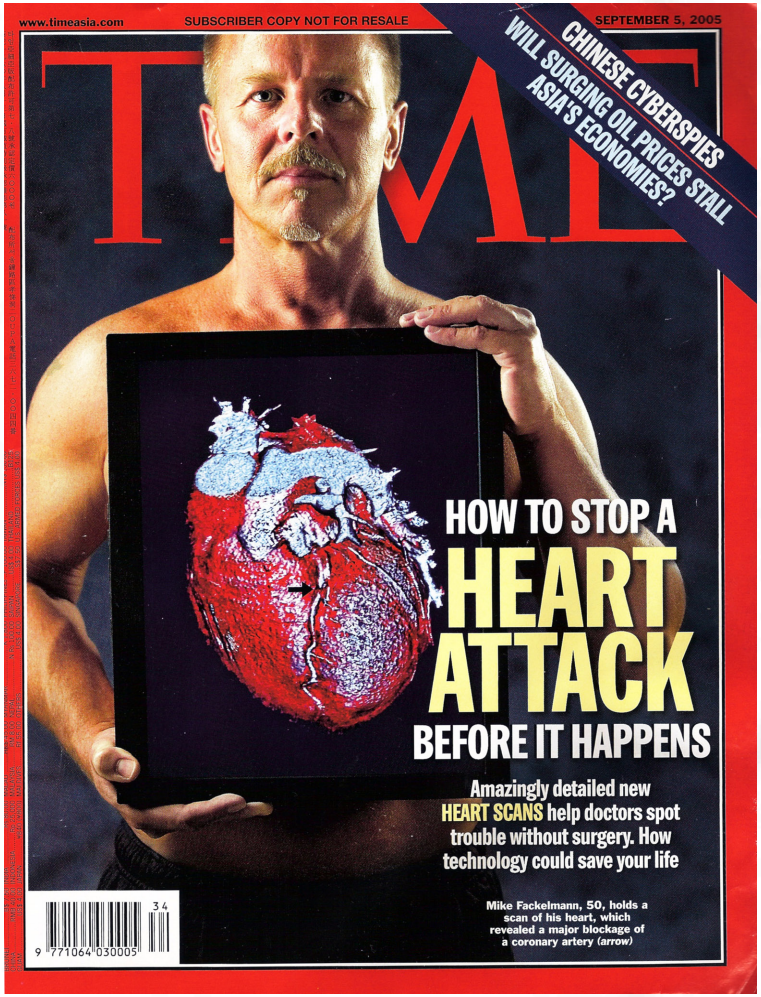
		Invasive Coronary Angiography	
	n=148	Obstructive CAD	No Obstructive CAD
CT Angiography	Obstructive CAD	119	10
	No Obstructive CAD	1	18



CCTA has replaced ICA

as the initial investigation for suspected CAD!

Circ Cardiovasc Imaging 2009;2;16-23



2005

Problems of 64 slices CT:

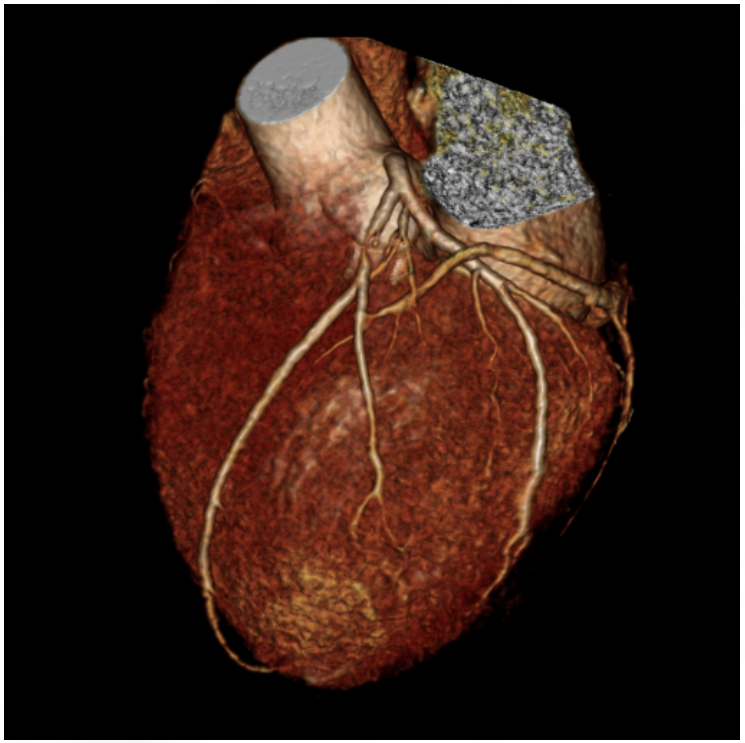
- Low resolution
- Require Slow HR (< 65 bpm)
- Tachycardia / AF impossible
- High radiation dose

Technology

4-slice

16-slice

64-slice



HD Detector
(resolution)

GE

256/320 slice CT
(Coverage)

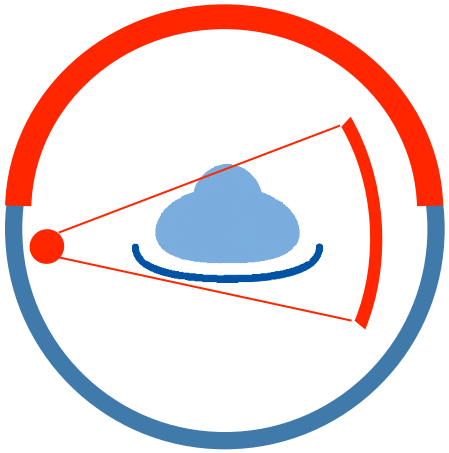
Toshiba

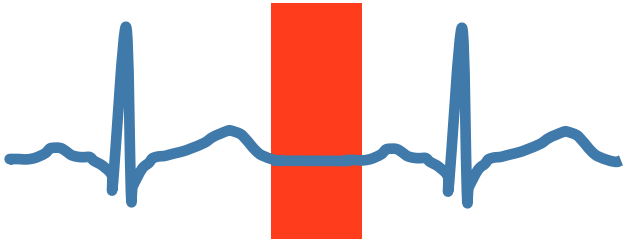
Dual Source CT
(Speed)

Siemens

Dual Source 256 Slices CT (DSCT)

Scan time for heart study 0.25 second



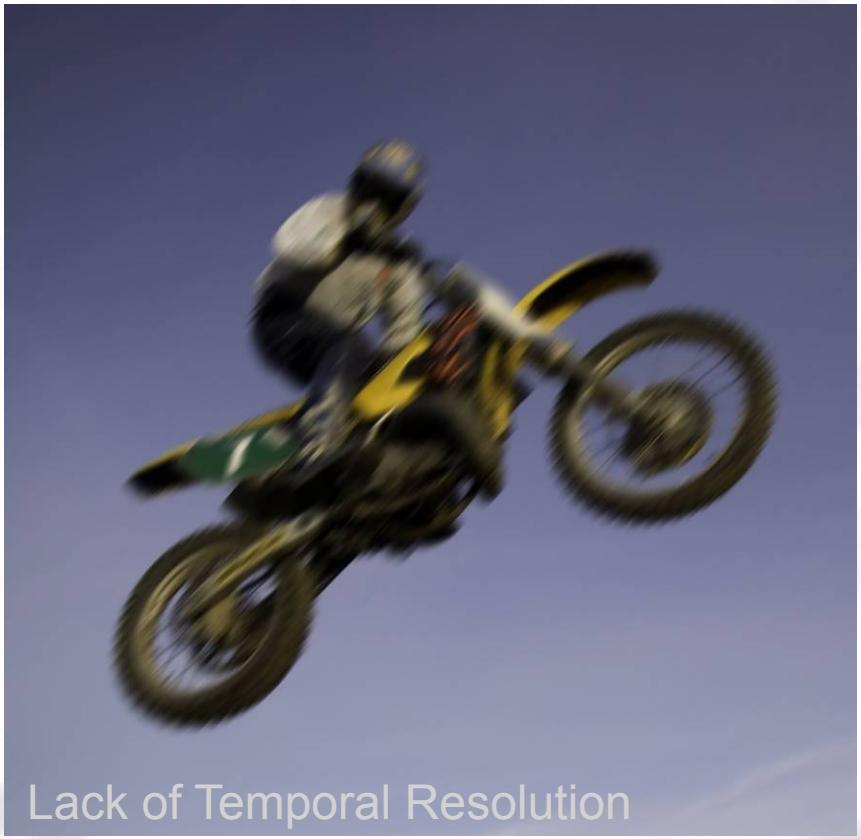


$$TR = \frac{\text{Rotation time}}{2N} = \frac{330}{2} = 165\text{ms}$$


SIEMENS
SOMATOM
Definition Flash

Most Relevant Things First
Fast shutter speed to freeze cardiac motion

Temporal Resolution



Radiation Dose 輻射劑量
About 1/3 of annual background radiation

新一代
雙源CT掃描系統
Dual Source
CT 2X128