

SIDNEY KIMMEL MEDICAL COLLEGE

# Which test for which patient?

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# Patient Factors

- Ability to exercise
- Resting ECG
- Body habitus
- History of prior revascularization
- Preferences

# Systems factors

- Availability
  - Test
  - Reader (Cardiology, Radiology)
- Time of Day
- Duration of Wait
  - ED/obs?

# What are my choices? Functional

- Exercise ECG
  - With imaging?
- Pharmacologic
  - Vasodilator
  - Inotrope/Chronotrope
- Imaging
  - Myocardial Perfusion Imaging (SPECT or PET)
  - Stress echo

# What are my choices? Anatomical

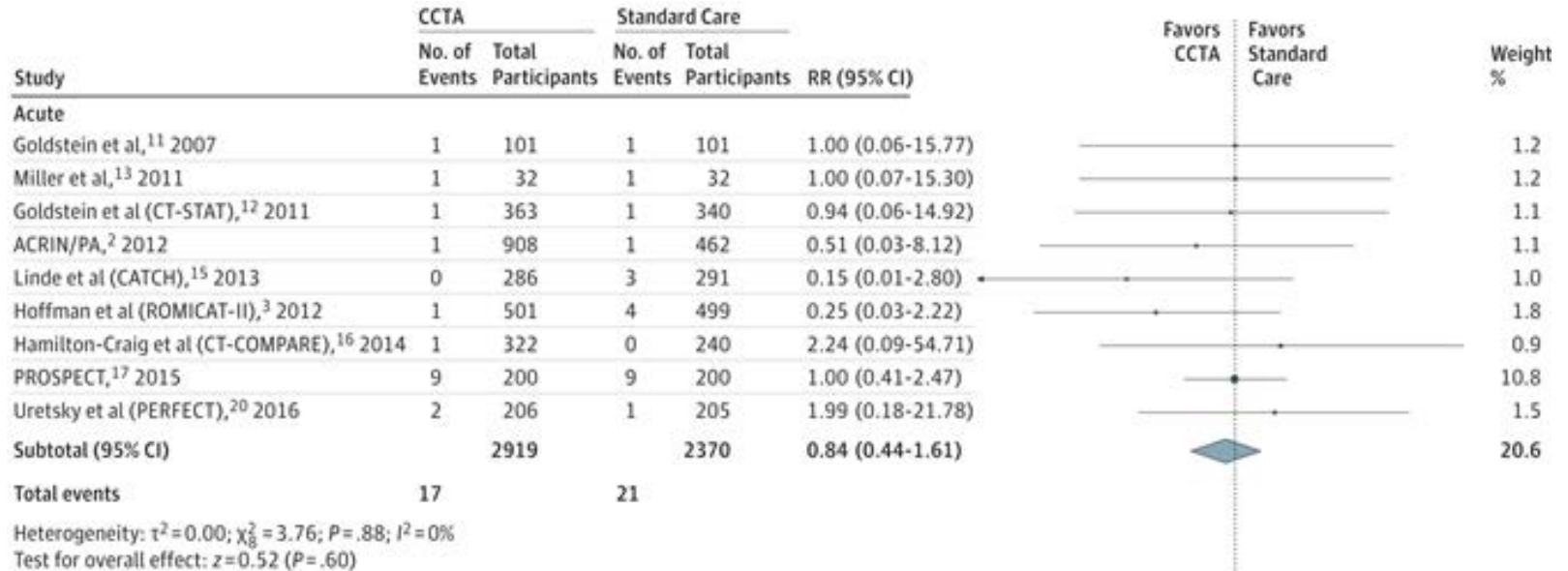
- Coronary Artery Calcium Scoring
- Coronary CT Angiography
- Cardiac MRI

# How good are these tests? Diagnosis of CAD

	No. of Studies	No. of patients	Sensitivity	Specificity
Adenosine Echo	6	516	72 (62-79)	91 (88-93)
Adenosine SPECT	9	1207	90 (89-92)	90 (89-92)
Dipyridamole echo	20	1835	70 (66-74)	93 (90-95)
Dipyridamole SPECT	21	1464	89 (84-93)	65 (54-74)
Dobutamine echo	40	4097	80 (77-83)	84 (80-86)
Dobutamine SPECT	14	1066	82 (77-87)	75 (70-79)

Pharmacologic stress testing for coronary disease diagnosis: A meta-analysis Am Heart Journal 2001

# Diagnosis of MI

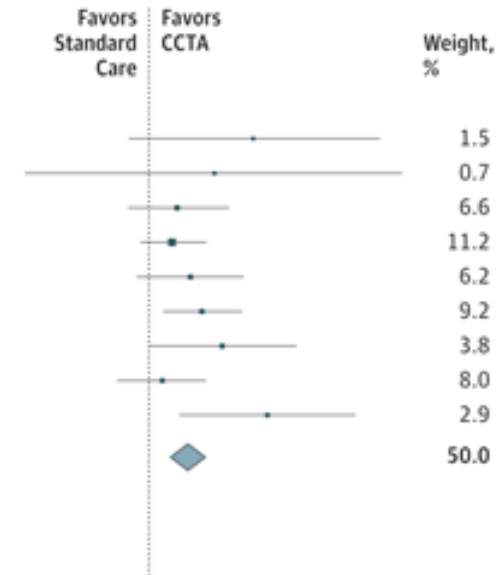


Coronary Computed Tomography Angiography vs Functional Stress Testing for Patients With Suspected Coronary Artery Disease: A Systematic Review and Meta-analysis, JAMA 2017

# Revascularization

Study	CCTA		Standard Care		RR (95% CI)
	No. of Events	Total Participants	No. of Events	Total Participants	
Acute					
Goldstein et al, <sup>11</sup> 2007	6	99	1	98	5.94 (0.73-48.43)
Miller et al, <sup>13</sup> 2011	1	30	0	30	3.00 (0.13-70.83)
Goldstein et al (CT-STAT), <sup>12</sup> 2011	14	361	8	338	1.64 (0.70-3.86)
Hoffman et al (ROMICAT-II), <sup>3</sup> 2012	32	501	21	499	1.52 (0.89-2.59)
ACRIN/PA, <sup>2</sup> 2012	24	908	6	462	2.04 (0.84-4.94)
Linde et al (CATCH), <sup>15</sup> 2013	29	285	12	291	2.47 (1.28-4.74)
Hamilton-Craig et al (CT-COMPARE), <sup>16</sup> 2014	14	322	3	240	3.48 (1.01-11.97)
PROSPECT, <sup>17</sup> 2015	15	200	12	200	1.25 (0.60-2.60)
Uretsky et al (PERFECT), <sup>20</sup> 2016	15	206	2	205	7.46 (1.73-32.22)
Subtotal (95% CI)		2912		2363	1.96 (1.45-2.65)
Total events	150		65		

Heterogeneity:  $\tau^2=0.01$ ;  $\chi^2_8=8.30$ ;  $P=.40$ ;  $I^2=4\%$   
 Test for overall effect:  $z=4.38$  ( $P<.001$ )



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# My decision making:

