Supplement material Supplement 1. Qualitative assessment of study reporting.

Domain	Questions	Judgments
Risk of bias		
1) Patient selection	Was a consecutive or random sample of patients enrolled?	Yes, No, Unclear
	Was a case–control design avoided?	Yes, No, Unclear
	Did the study avoid inappropriate exclusions?	Yes, No, Unclear
	Could the selection of patients have introduced bias?	Low, High, Unclear
Applicability	Is there concern that the included patients do not match	Low, High, Unclear
1) Patient selection	the review questions?	
Risk of bias	Were the index test results interpreted without knowledge	
2) Index test	of the results of the reference standard?	Yes, No, Unclear
	If a threshold was used, was it pre-specified?	Yes, No, Unclear
	Could the conduct or interpretation of the index test have	
	introduced bias?	Low, High, Unclear
Applicability	Is there concern that the index test, its conduct, or	·
2) Index test	interpretation differ from the review question?	Low, High, Unclear
Risk of bias	Is the reference standard likely to correctly classify the	
3) Reference standard	target condition?	Yes, No, Unclear
	Were the reference standard results interpreted?	Yes, No, Unclear
	If Yes, was it without knowledge of the results of the index test?	Yes, No, Unclear
	Could the reference standard, its conduct, or its interpretation	
	have introduced bias?	Low, High, Unclear
Applicability	Is there concern that the target condition as defined by the	C
3) Reference standard	reference standard does not match the review question?	Low, High, Unclear
Risk of bias	Was there an appropriate interval between index test(s)	·
4) Flow and timing	and reference standard?	Yes, No, Unclear
	Did all patients receive a reference standard?	Yes, No, Unclear
	Did patients receive the same reference standard?	Yes, No, Unclear
	Were all patients included in the analysis?	Yes, No, Unclear
	Could the patient flow have introduced bias?	Low, High, Unclear

Patients: Patients with CAD; different types of WSS.

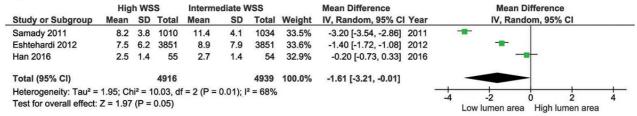
Index test: Relationship between types of WSS and plaque morphology.

Comparator test (if applicable): Baseline features of vulnerability of coronary artery in different types of WSS.

Target condition: Role of types of WSS in coronary plaque; reference standard: morphology of coronary plaque.

Supplementary 2. Comparison of baseline lumen area, plaque area, plaque burden, and necrotic core in group of intermediate WSS vs. high WSS.

a) Baseline lumen area



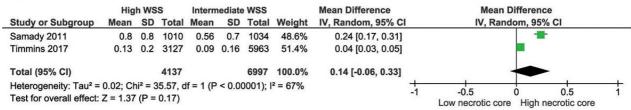
b) Baseline plaque area

	Hig	h WS	S	Interme	ediate \	NSS		Mean Difference			Mea	an Differer	ice	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	Year		IV, R	andom, 95	5% CI	
Samady 2011	7.1	3.7	1010	6.1	3.1	1034	32.5%	1.00 [0.70, 1.30]	2011			-	-	
Eshtehardi 2012	5.8	4.8	3851	4.8	3.6	3851	33.4%	1.00 [0.81, 1.19]	2012					
Timmins 2017	0.45	0.4	5964	0.45	0.56	5964	34.0%	0.00 [-0.02, 0.02]	2017			•		
Total (95% CI)			10825			10849	100.0%	0.66 [-0.14, 1.46]					-	
Heterogeneity: Tau ² = Test for overall effect:	-			= 2 (P =	0.007);	I ² = 59%	6			-4 Lo	-2 w plaque a	0 rea High	2 plaque a	ea 4

c) Baseline plaque burden

	Hig	h WS	SS	Interm	nediate	WSS		Mean Difference			Mean D	ifference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	Year		IV, Rand	om, 95% CI	
Samady 2011	45.5	5.9	1010	34.3	12.4	1034	51.6%	11.20 [10.36, 12.04]	2011				
Eshtehardi 2012	39.4	34	3851	31.4	28	3851	48.4%	8.00 [6.61, 9.39]	2012				
Total (95% CI)			4861			4885	100.0%	9.65 [6.52, 12.78]				•	
Heterogeneity: Tau ² = Test for overall effect:					0.0001); I ² = 53	3%			-50	-25 Low plague burden	0 2 High plague	1975

d) Baseline necrotic core



Supplement 3. Comparison of baseline dense calcium, fibrous, and fibro-fatty area in group of intermediate WSS vs. high WSS.

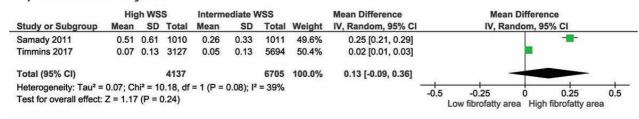
a) Baseline dense calcium

	Hig	gh WS	S	Intern	nediate	e WSS		Mean Difference		Mean	Difference		
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI		IV, Ran	dom, 95% C	:I	
Samady 2011	0.37	0.53	1010	0.24	0.42	1034	48.9%	0.13 [0.09, 0.17]			-		
Timmins 2017	0.05	0.05	3127	0.06	0.15	5694	51.1%	-0.01 [-0.01, -0.01]			•		
Total (95% CI)			4137			6728	100.0%	0.06 [-0.08, 0.20]		-			
Heterogeneity: Tau ² =	0.05; CI	hi ² = 3.	22, df =	1 (P =	0.05);	$ ^2 = 48$	%		-0.5	-0.25	<u> </u>	0.25	
Test for overall effect:	Z = 0.83	3 (P = 0	0.40)							ow dense calcium		o.25 se calcium	0.5

b) Baseline fibrous area

	Hig	gh WS	S	Interm	ediate V	VSS		Mean Difference		Mean I	Difference	ce	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	ij	IV, Rand	lom, 95°	% CI	
Samady 2011	2.5	2.05	1010	1.78	1.66	1034	48.9%	0.72 [0.56, 0.88]					
Timmins 2017	0.41	0.42	5144	0.25	0.33	5964	51.1%	0.16 [0.15, 0.17]					
Total (95% CI)			6154			6998	100.0%	0.43 [-0.11, 0.98]			-		
Heterogeneity: Tau ² =	0.15; CI	hi² = 5.	59, df =	1 (P = 0	.02); 12 =	38%			1	1	0	1	<u></u>
Test for overall effect:	Z = 1.55	6 (P = 0	0.12)							Low fibrous area	High f	ibrous area	4

c) Baseline fibrofatty area



Supplementary 4. Comparison of baseline lumen area, plaque area, plaque burden, and necrotic core in group of low WSS vs. intermediate WSS.

a) Baseline lumen area

	Lov	v WS	S	Interme	diate V	VSS		Mean Difference			Mea	n Differer	nce	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	Year		IV, R	andom, 9	5% CI	
Samady 2011	11.4	4.5	205	11.4	4.1	1034	32.4%	0.00 [-0.66, 0.66]	2011			-		
Eshtehardi 2012	10.7	9.9	3851	8.9	7.9	3851	35.2%	1.80 [1.40, 2.20]	2012				-	
Han 2016	3.7	2.1	55	2.7	1.4	54	32.4%	1.00 [0.33, 1.67]	2016			-	_	
Total (95% CI)			4111			4939	100.0%	0.96 [-0.12, 2.04]						
Heterogeneity: Tau ² =				f = 2 (P =	0.01); I	² = 68%				-4	-2		1 2	
Test for overall effect:	Z = 1.74	(P =	0.08)							L	ow lumen a	rea High	lumen are	эа .

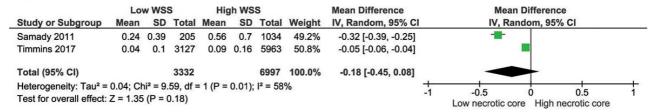
b) Baseline plaque area

	Lov	w WS	S	Interm	ediate !	WSS		Mean Difference			Mea	n Differe	nce	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	Year		IV, R	andom, 9	5% CI	
Samady 2011	4.6	2.1	205	6.1	3.1	1034	30.9%	-1.50 [-1.84, -1.16]	2011		-			
Eshtehardi 2012	5.1	3.2	3851	4.8	3.3	3851	34.2%	0.30 [0.15, 0.45]	2012					
Timmins 2017	0.25	0.4	3127	0.45	0.56	5964	35.0%	-0.20 [-0.22, -0.18]	2017			-		
Total (95% CI)			7183			10849	100.0%	-0.43 [-0.99, 0.13]				•		
Heterogeneity: Tau ² =				f = 2 (P <	0.0000)1); I ² = 7	78%			-4	-2	0	2	4
Test for overall effect:	Z = 1.51	(P =	0.13)							Lo	w plaque a	rea High	plaque a	rea

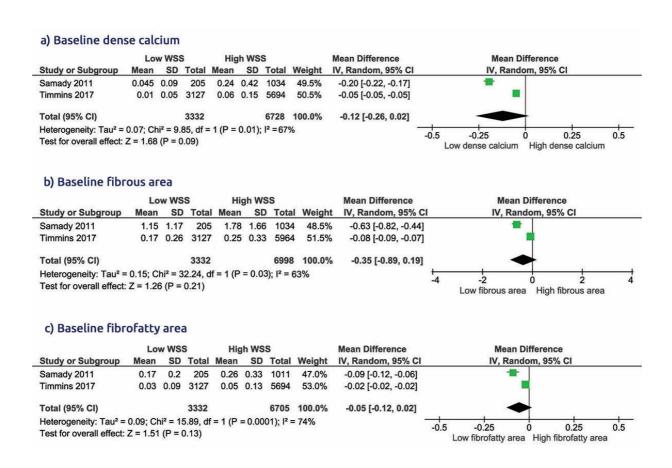
c) Baseline plaque burden

	Lo	w WS	S	Interm	ediate V	VSS		Mean Difference			Mean	Differen	ice	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	Year		IV, Ran	dom, 95	5% CI	
Samady 2011	28.3	10.3	205	34.3	12.4	1034	49.6%	-6.00 [-7.60, -4.40]	2011					
Eshtehardi 2012	31.1	27	3851	31.4	28	3851	50.4%	-0.30 [-1.53, 0.93]	2012			•		
Total (95% CI)			4056			4885	100.0%	-3.13 [-8.71, 2.46]			-			
Heterogeneity: Tau ² =				= 1 (P =	0.08); 1	= 57%				-50	-25	0	25	50
Test for overall effect:	Z = 1.10	(P = 1	0.27)								Low plaque burde	n High	plaque burden	

d) Baseline necrotic core



Supplementary 5. Comparison of baseline dense calcium, fibrous, and fibro fatty area in group of low WSS vs. intermediate WSS.



Supplementary 6. Summary of QUADAS-2 assessment of selected studies.

Author		Ri	sk of bias	Applicability concerns					
(year)	Patients	Index	Reference	Flow and	Patients	Index	Reference		
	selection	test	standard	timing	selection	test	standard		
Samady 2011	Low	Low	Low	Low	Low	Low	Low		
Eshtehardi 2012	Unclear	Low	Unclear	Low	Unclear	Unclear	Unclear		
Timmins 2015	Low	Unclear	Low	Low	Unclear	Unclear	Low		
Timmins 2017	Low	Low	Low	Low	Low	Low	Low		

QUADAS-2: Quality Assessment of Diagnostic Accuracy Studies-2.

Supplementary 7. Summary of quality assessment analysis (Quality Assessment of Diagnostic Accuracy Studies-QUADAS 2).

