Supplemental Files

Table S1: Questionnaire

Question	Interpretation
Have you been diagnosed with a heart disease? (Yes / No)	
If yes, please choose one of the following which best describes your normal level of activities:	
I can undertake all ordinary physical activities without undue fatigue, shortness of breath or heart palpitations, e.g., walk briskly upstairs more than two floors, jog, walk uphill or long distances, swim, ski, shovel snow, spade soil.	NYHA I
I feel undue fatigue, shortness of breath or heart palpitations with ordinary physical activities, e.g., walk briskly upstairs more than two floors, jog, walk uphill or long distances, swim, ski, shovel snow, spade soil.	NYHA II
I feel undue fatigue, shortness of breath, heart palpitations or chest pain with less than ordinary physical activities, e.g., climb one flight of stairs at normal pace without stopping, fast walking on level ground.	NYHA III
I feel undue fatigue, shortness of breath or heart palpitations at rest, increasing with any physical activity.	NYHA IV

Questionnaire for estimation of NYHA class.

Table S2: CT Protocol Parameters

Parameter	Double Low Dose CT Protocol		Routine CT Protocol
	Group A	Group B	
CT scan			
Collimation	128 x 0.6	128 x 0.6	128 x 0.6
Automatic tube current modulation	Yes	Yes	Yes
Iterative reconstruction	SAFIRE, level 3/5	SAFIRE, level 3/5	None
Arterial phase			
Pitch	1.2	1.2	1.2
Modus	SE	SE	SE
Tube voltage (kV_p)	80	100	Automatic tube voltage selection (80-120 kV_p)
Reference tube current (mAs)*	210	123	239 (at 80 kV_p)
Slice thickness/increment (mm)	1.0/0.7	1.0/0.7	1.0/0.7
Kernel	I26f	I26f	B20f
Delayed phase			
Pitch	0.9	0.9	0.9
Modus	DE	DE	SE
Tube voltage (kVp)	80/Sn140	100/Sn140	Automatic tube voltage selection (80-120 kV_p)
Reference tube current (mAs)*	140/70	140/70	239 (at 80 kV_p)
Slice thickness/increment (mm)	3.0/2.0	3.0/2.0	3.0/2.0
Kernel	D30f	D30f	B30f
Contrast medium			
Contrast medium iodine concentration (mg*I/ml)	350	350	350
Bolus injection volume (ml)	54	60	90
Thereof saline (ml, %)	12.4 (23)	10.2 (17)	0 (0)
Bolus iodine concentration (mg*I/ml)	269	292	350
Injection rate (ml/s)	3.7	4.1	4.0
Injection time (s)	14.5	14.5	22.5
Iodine delivery rate (g*I/s)	1.0	1.2	1.4
Total iodine dose (g*I)	14.5	17.4	31.5
Total iodine dose saving (%)	54	44.8	-
Saline chaser (ml)	30	30	40

Summary of CT protocol parameters. The asterisk (*) indicates a reference value using Siemens CareDose 4D for an 80 kg standard patient. The Sn140 in the tube voltage for the delayed phase

of the study protocol refers to a tin-filtered 140 kVp spectrum. Patients were categorized based on their body mass index (BMI) into two groups: group A (BMI < 30 kg/m²) and group B (BMI ≥ 30 kg/m²). DE = dual-energy, SE = single-energy.

Table S3: Quantitative Image Quality of the DLCT Protocol

Parameter	All Patients	Group A	Group B	P Value
Hounsfield Units				
Average	337.7 ± 67.6 (322.4, 353.0)	353.4 ± 69.5 (334.6, 372.1)	300.1 ± 45.2 (281.2, 319.0)	<.001
Ascending aorta	312.2 ± 94.5 (287.0, 337.4)	323.0 ± 105.7 (288.9, 357.0)	288.8 ± 60.1 (260.3, 317.4)	.14
Descending aorta	349.9 ± 82.1 (328.0, 371.8)	367.1 ± 87.7 (338.8, 395.3)	312.6 ± 53.5 (287.2, 338.0)	.007
Abdominal aorta	344.4 ± 67.8 (329.0, 359.8)	359.0 ± 70.3 (340.0, 377.9)	309.3 ± 46.2 (290.0, 328.6)	<.001
Aortic bifurcation	346.1 ± 72.2 (329.8, 362.5)	365.8 ± 71.5 (346.6, 385.0)	298.8 ± 49.1 (278.3, 319.3)	<.001
Common iliac artery	338.8 ± 68.5 (323.3, 354.3)	357.2 ± 66.2 (339.4, 375.1)	294.5 ± 52.5 (272.6, 316.4)	<.001
CNR				
Average	9.8 ± 3.0 (9.1, 10.5)	10.4 ± 3.2 (9.6, 11.3)	8.3 ± 1.7 (7.6, 9.0)	<.001
Ascending aorta	10.0 ± 4.1 (8.9, 11.1)	10.5 ± 4.6 (9.0, 12.0)	9.0 ± 2.4 (7.8, 10.1)	.12
Descending aorta	11.4 ± 3.7 (10.4, 12.4)	12.1 ± 4.0 (10.8, 13.4)	9.8 ± 2.3 (8.7, 10.9)	.011
Abdominal aorta	9.8 ± 2.8 (9.2, 10.5)	10.4 ± 2.9 (9.6, 11.2)	8.5 ± 2.0 (7.6, 9.3)	.002
Aortic bifurcation	9.8 ± 4.0 (8.9, 10.7)	10.6 ± 4.4 (9.4, 11.7)	7.8 ± 2.0 (7.0, 8.7)	<.001
Common iliac artery	9.4 ± 3.5 (8.6, 10.2)	10.2 ± 3.7 (9.2, 11.2)	7.6 ± 2.1 (6.7, 8.4)	<.001
SNR				
Average	11.4 ± 3.1 (10.7, 12.1)	12.1 ± 3.3 (11.2, 13.0)	9.7 ± 1.7 (9.0, 10.4)	<.001
Ascending aorta	11.4 ± 4.2 (10.3, 12.5)	12.0 ± 4.7 (10.5, 13.5)	10.1 ± 2.4 (8.9, 11.2)	.047
Descending aorta	12.7 ± 3.8 (11.7, 13.8)	13.6 ± 4.1 (12.3, 14.9)	10.9 ± 2.2 (9.8, 11.9)	.003
Abdominal aorta	11.2 ± 2.9 (10.6, 11.9)	11.9 ± 3.0 (11.1, 12.7)	9.6 ± 2.1 (8.8, 10.5)	<.001
Aortic bifurcation	11.5 ± 4.3 (10.5, 12.4)	12.3 ± 4.7 (11.1, 13.6)	9.4 ± 2.2 (8.5, 10.3)	<.001
Common iliac artery	11.2 ± 3.8 (10.3, 12.1)	12.0 ± 4.0 (11.0, 13.1)	9.2 ± 2.4 (8.2, 10.2)	<.001

Unless otherwise specified, data are mean ± standard deviation (95% confidence interval). CNR = contrast-to-noise ratio, SNR = signal-to-noise ratio. Patients were categorized based on their body mass index (BMI) into two groups: group A (BMI < 30 kg/m²) and group B (BMI ≥ 30 kg/m²).