European Association of Cardiovascular Imaging
Certification in Cardiac Computed Tomography

Suggested reading list

Textbooks

Atlas of Cardiovascular Computed Tomography. 
Budoff MJ, Achenbach SS, Hecht HS and Narula J. 

CT of the Heart. 
Schoepf UJ. 

1. PRINCIPLES OF COMPUTED TOMOGRAPHY

Noninvasive coronary angiography by retrospectively ECG-gated multislice spiral CT. 

High-pitch spiral acquisition: A new scan mode for coronary CT angiography. 

Physics of cardiac imaging with multiple-row detector CT. 
Mahesh M, Cody DD. 

Iterative reconstruction in cardiac CT. 
Naoum C, Blanke P, Leipsic J. 

Multisegment and halfscan reconstruction of 16-slice computed tomography for detection of coronary artery stenoses. 
The evolution of image reconstruction for CT — from filtered back projection to artificial intelligence. 
Willemink MJ and Noël PB. 

2. CARDIAC CT EXAMINATIONS

Diagnostic accuracy of coronary computed tomography angiography: a comparison between prospective and retrospective electrocardiogram triggering. 
Pontone G, Andreini D, Bartorelli AL, Cortinovis S, Mushtaq S, Bertella E et al. 

Patient preparation and scanning techniques. 
Taylor CM, Blum A, Abbara S. 


Advances in cardiac CT contrast injection and acquisition protocols. 
Scholtz J and Ghoshhajra B. 

3. QUALITY & SAFETY

What are the basic concepts of temporal, contrast, and spatial resolution in cardiac CT? 
Lin E, Alessio A. 

Artifacts at Cardiac CT: Physics and Solutions. 
Kalisz K, Buethe J, Saboo SS, Abbara S, Halliburton S, Rajiah P. 

SCCT guidelines on radiation dose and dose-optimization strategies in cardiovascular CT. 
Cardiac-Specific Conversion Factors to Estimate Radiation Effective Dose from Dose-Length Product in Computed Tomography.
JACC Cardiovasc Imaging. 2018;11(1):64-74

Hill KD, Frush DP, Han BK, Abbott BG, Armstrong AK, DeKemp RA et al.

Beta-blockers for cardiac CT: a primer for the radiologist.
Pannu HK, Alvarez Jr W, Fishman EK.

4. INTERPRETATION OF CT IMAGES

A systematic approach for analysis, interpretation, and reporting of coronary CTA studies.

SCCT guidelines for the interpretation and reporting of coronary CT angiography: a report of the Society of Cardiovascular Computed Tomography Guidelines Committee.

CAD-RADS™: Coronary Artery Disease - Reporting and Data System: An Expert Consensus Document of the Society of Cardiovascular Computed Tomography (SCCT), the American College of Radiology (ACR) and the North American Society for Cardiovascular Imaging (NASCI). Endorsed by the American College of Cardiology.
Cury RC, Abbara S, Achenbach S, Agatston A4, Berman DS, Budoff M et al.

5. CARDIAC ANATOMY ON CT

Coronary veins: comprehensive CT-anatomic classification and review of variants and clinical implications.
Saremi F, Muresian H, Sánchez-Quintana D.
6. CORONARY ARTERY DISEASE ASSESSMENT

SCCT guidelines for the interpretation and reporting of coronary CT angiography: a report of the Society of Cardiovascular Computed Tomography Guidelines Committee.


Congenital coronary artery anomalies: a bridge from embryology to anatomy and pathophysiology-a position statement of the development, anatomy, and pathology ESC Working Group.


Use of coronary computed tomographic angiography to guide management of patients with coronary disease.


Atherosclerotic plaque characteristics by CT angiography identify coronary lesions that cause ischemia: a direct comparison to fractional flow reserve.


Coronary computed tomographic angiography as a gatekeeper to invasive diagnostic and surgical procedures: results from the multicenter CONFIRM (Coronary CT Angiography Evaluation For Clinical Outcomes: An International Multicenter) Registry.


Diagnosis of obstructive coronary artery disease using computed tomography angiography in patients with stable chest pain depending on clinical probability and in clinically important subgroups: meta-analysis of individual patient data.


ESC/EACTS guidelines on myocardial revascularization: The task force on myocardial revascularization of the European society of cardiology (ESC) and the European association for cardio-thoracic surgery (EACTS) developed with the special contribution of the European association of percutaneous cardiovascular interventions (EAPCI).

Coronary CT angiography versus standard evaluation in acute chest pain.
Hoffmann U, Truong QA, Schoenfeld DA, et al.

Triple rule out versus coronary CT angiography in patients with acute chest pain: results from the ACIC Consortium.
Burris AC 2nd, Boura JA, Raff GL, et al.

Multidetector computed tomography coronary angiography for the assessment of coronary in-stent restenosis.
Andreini D, Pontone G, Mushtaq S, Pepi M, Bartorelli AL.

Use of 64-slice CT in symptomatic patients after coronary bypass surgery: evaluation of grafts and coronary arteries.

Functional Evaluation of Coronary Disease by CT Angiography.

Noninvasive fractional flow reserve derived from coronary CT angiography: clinical data and scientific principles.


Clinical outcomes of fractional flow reserve by computed tomographic angiography-guided diagnostic strategies vs. usual care in patients with suspected coronary artery disease: the prospective longitudinal trial of FFR(CT): outcome and resource impacts study.

Static and dynamic assessment of myocardial perfusion by computed tomography.
Danad I, Szymonifka J, Schulman-Marcus J, Min JK.
Fractional flow reserve and myocardial perfusion by computed tomography: a guide to clinical application.
Schuijf JD, Ko BS, Di Carli MF, Hislop-Jambrich J, Ihdayhid AR, Seneviratne SK, Lima JAC.

Coronary CT Angiography and 5-Year Risk of Myocardial Infarction.

Coronary Computed Tomography Angiography as the Investigation of Choice for Stable Chest Pain.
Min JK, Newby DE.

Comparison of International Guidelines for Assessment of Suspected Stable Angina: Insights From the PROMISE and SCOT-HEART.

7. CORONARY CALCIUM IMAGING


Clinical indications for coronary artery calcium scoring in asymptomatic patients: expert consensus statement from the Society of Cardiovascular Computed Tomography.

8.ATHEROSCLEROTIC PLAQUE IMAGING

Histopathologic characteristics of atherosclerotic coronary disease and implications of the findings for the invasive and noninvasive detection of vulnerable plaques.

Comprehensive plaque assessment by coronary CT angiography.
Maurovich-Horvat P, Ferencik M, Voros S, Merkely B, Hoffmann U.
Coronary plaque characterization using CT.
Saremi F and Achenbach S.
AJR Am J Roentgenol. 2015 Mar;204(3):W249-60

Plaque imaging with CT—a comprehensive review on coronary CT angiography based risk assessment.
Kolossváry M, Szilveszter B, Merkely B, and Maurovich-Horvat P.

9. CONGENITAL STRUCTURAL HEART DISEASE (IN ADULT PATIENTS)

Sequential segmental analysis.
Anderson RH and Shirali G.

CT of congenital heart disease: normal anatomy and typical pathologic conditions.
Goo HW, Park IS, Ko JK, Kim YH, Seo DM, Yun TJ, Park JJ, Yoon CH.

Technical principles of computed tomography in patients with congenital heart disease.

Computed Tomography Imaging in Patients with Congenital Heart Disease Part I: Rationale and Utility. An Expert Consensus Document of the Society of Cardiovascular Computed Tomography (SCCT): Endorsed by the Society of Pediatric Radiology (SPR) and the North American Society of Cardiac Imaging (NASCI).
Han BK, Rigsby CK, Hlavacek A, Leipsic J, Nicol ED, Siegel MJ et al.

Han BK, Rigsby CK, Leipsic J, Bardo D, Abbara S, Ghoshhajra B et al.

Venous Anomalies of the Thorax.
Demos TC, Posniak HV, Pierce KL, Olson MC and Muscato M.
10. MYOCARDIAL IMAGING

**Computed tomography of cardiomyopathies.**
*Kalisz K and Rajiah P.*

**Assessment of the myocardium with cardiac computed tomography.**
*Clayton B, Roobottom C, Morgan-Hughes G.*

**Analysis of Ventricular Function by Computed Tomography.**
*Rizvi A, Roderick C, Deaño RC, Bachman DP, Xiong G, Min JK and Truong QA.*

11. VALVULAR HEART DISEASE

**Paravalvular leakage in patients with prosthetic heart valves: cardiac computed tomography findings and clinical features.**

**Computed tomography imaging in the context of transcatheter aortic valve implantation (TAVI) / transcatheter aortic valve replacement (TAVR): An expert consensus document of the Society of Cardiovascular Computed Tomography.**

**Mitral Valve Imaging with CT: Relationship with Transcatheter Mitral Valve Interventions.**
*Weir-McCall JR, Blanke P, Naoum C, Delgado V, Bax JJ, Leipsic J.*

12. MISCELLANEOUS ACQUIRED STRUCTURAL HEART DISEASE

**Radiography of cardiac conduction devices: a comprehensive review.**
*Aguilera AL, Volokhina YV, Fisher KL.*
Radiographics.2011;31:1669–82.

**Left atrial appendage studied by computed tomography to help planning for appendage closure device placement.**