The NAEOTOM Alpha class
Photon-counting CT

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1. General / Overview

2025

Photon-counting CT: An updated review of clinical results
Judith van der Bie, Thom van der Laan, Marcel van Straten, Ronald Booij, Daniel Bos, Marcel L. Dijkshoorn, Alexander Hirsch, Edwin H.G. Oei, Ricardo P.J. Budde.
European Journal of Radiology, 2025,112189, ISSN 0720-048X.https://doi.org/10.1016/j.ejrad.2025.112189

Getting Started with Photon-counting CT: Optimizing Your Setup for Success
Fides R. Schwartz, Bari Dane, Shan Su, Khanin Khanungwanitkul, Liqiang Ren, and Lakshmi Ananthakrishnan
RadioGraphics 2025 45:2. https://doi.org/10.1148/rg.240106

2024

Photon counting CT versus energy-integrating CT: A comparative evaluation of advances in image resolution, noise, and dose efficiency.
Heismann, B., Kreisler, B., & Fasbender, R. (2024).
Medical Physics, July, 1–10. https://doi.org/10.1002/mp.17591

Photon-Counting Detector CT: Advances and Clinical Applications in Cardiovascular Imaging.
Hagar, M. T., Schlett, C. L., Oechsner, T., Varga-Szemes, A., Emrich, T., Chen, X. Y., Kravchenko, D., Tremamunno, G., Vecsey-Nagy, M., Molina-Fuentes, M. F., Krauss, T., Taron, J., Schuppert, C., Bamberg, F., & Soschynski, M. (2024).
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A Review of Applications of Photon-Counting Computed Tomography in Head and Neck Imaging.
Dogra, S., Shekhrajka, N., Moonis, M.G. (2024).
British Journal of Radiology, tqae226, https://doi.org/10.1093/bjr/tqae226

Photon-counting computed tomography in radiology.
Algin, O., Tokgoz, N., & Cademartiri, F. (2024).
Polish Journal of Radiology, 89, 433–442. https://doi.org/10.5114/pjr/191743

Photonenzählende Detektor- Computertomographie- Paradigmenwechsel in der kardialen CT-Bildgebung
Kravchenko, D., Christian, Y., Milan, L., Tremamunno, G., Schlett, A. V. C. L., Bamberg, F., Emrich, T., & Hagar, M. T. (2024).
1–7. https://doi.org/10.1007/s00117-024-01380-3

Abdominal applications of photon-counting CT
Khanungwanitkul, K., Sliwicka, O., Schwartz F.R.,
British Journal of Radiology (2024) https://doi.org/10.1093/bjr/tqae206

Photon-counting detector computed tomography in cardiac imaging.
Sharma, S. P., Lemmens, M. J. D. K., Smulders, M. W., Budde, R. P. J., Hirsch, A., & Mihl, C. (2024).
Netherlands Heart Journal. https://doi.org/10.1007/s12471-024-01904-5

Photon-Counting Computed Tomography Angiography of Carotid Arteries : A Topical Narrative Review with Case Examples.
Meloni, A., Cau, R., Saba, L., Positano, V., Gori, C. De, Occhipinti, M., Celi, S., Bossone, E., Bertacchi, J., Punzo, B., Mantini, C., Cavaliere, C., Maffei, E., & Cademartiri, F. (2024).
Diagnostics 2024, 14, 2012. https://doi.org/10.3390/diagnostics14182012

Technical principles , benefits , challenges , and applications of photon counting computed tomography in coronary imaging : a narrative review.
Meloni, A., Maffei, E., Positano, V., Clemente, A., Gori, C. De, Berti, S., Grutta, L. La, Saba, L., Bossone, E., Mantini, C., Cavaliere, C., Punzo, B., Celi, S., & Cademartiri, F. (2024).
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Photon counting CT clinical adoption, integration, and workflow.
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Abdominal Radiology. https://doi.org/10.1007/s00261-024-04503-5

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Rao, D., Murray, J. V, Agarwal, A. K., Sandhu, S. J., & Rhyner, P. A. (2024).
American Journal of Neuroradiology https://doi.org/10.3174/ajnr.A8359

Multi-institutional Protocol Guidance for Pediatric Photon-counting CT.
Horst, K. K., Cao, J. Y., McCollough, C. H., El-Ali, A., Frush, D. P., Siegel, M. J., Ramirez-Giraldo, J. C., O'Donnell, T., Bach, S., & Yu, L. (2024). Radiology, 311(2), e231741. https://doi.org/10.1148/radiol.231741

Photon-counting detector CT – first experiences in the field of musculoskeletal radiology
Bette, S., Risch, F., Becker, J., Popp, D., Decker, J. A., Kaufmann, D., Friedrich, L., Scheurig-münkler, C., Schwarz, F., & Kröncke, T. J. (2024). RöFo https://doi.org/10.1055/a-2312-6914

Standardizing technical parameters and terms for abdominopelvic photon-counting CT: laying the groundwork for innovation and evidence sharing.
Leng, S., Toia, G. V., Hoodeshenas, S., Ramirez-Giraldo, J. C., Yagil, Y., Maltz, J. S., Boedeker, K., Li, K., Baffour, F., & Fletcher, J. G. (2024). Abdominal Radiology, 0123456789, 15–21. https://doi.org/10.1007/s00261-024-04342-4

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Toia, G. V., Mileto, A., Borhani, A. A., Chen, G. H., Ren, L., Uyeda, J. W., & Marin, D. (2024).
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Lacaita, P. G., Luger, A., Troger, F., Widmann, G., & Feuchtner, G. M. (2024).
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Protocol optimization for abdominal imaging using photon-counting CT: a consensus of two academic institutions.
Schwartz, F. R., Marin, D., Lofino, L., Abadia, A., O'Donnell, T., & Dane, B. (2024).
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Photon-counting CT in Thoracic Imaging: Early Clinical Evidence and Incorporation Into Clinical Practice.
Fletcher, J. G., Inoue, A., Bratt, A., Horst, K. K., Koo, C. W., Rajiah, P. S., Baffour, F. I., Ko, J. P., Remy-Jardin, M., McCollough, C. H., & Yu, L. (2024). Radiology, 310(3). https://doi.org/10.1148/radiol.231986

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Benson, J. C., Diehn, F. E., Nagelschneider, A. A., & Lehman, V. T. (2024)
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Photon-counting computed tomography - clinical application in oncological, cardiovascular, and pediatric radiology.
Hagen, F., Soschynski, M., Weis, M., Hagar, M. T., Krumm, P., Ayx, I., Taron, J., Krauss, T., Hein, M., Ruile, P., Von Zur Muehlen, C., Schlett, C. L., Neubauer, J., Tsiflikas, I., Russe, M. F., Arnold, P., Faby, S., Froelich, M. F., Weiβ, J., Horger, M. (2023).
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Reduction of beam hardening artifact in photon-counting computed tomography: Using low-energy threshold polyenergetic reconstruction.
McGuire, A. M., Smith, C. D., Chamberlin, J. H., Maisuria, D., Tóth, A., Schoepf, U. J., O'Doherty, J., Munden, R. F., Burt, J., Baruah, D., & Kabakus, I. M. (2023).
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Technical basics and clinical benefits of Photon-counting CT.
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The technical development of photon-counting detector CT.
McCollough, C. H., Rajendran, K., Leng, S., Yu, L., Fletcher, J. G., Stierstorfer, K., & Flohr, T. G. (2023).
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McCollough, C. H., Rajendran, K., Baffour, F. I., Diehn, F. E., Ferrero, A., Glazebrook, K. N., Horst, K. K., Johnson, T. F., Leng, S., Mileto, A., Rajiah, P. S., Schmidt, B., Yu, L., Flohr, T. G., & Fletcher, J. G. (2023).
European Radiology. https://doi.org/10.1007/s00330-023-09596-y

Seeing more with less: Clinical benefits of photon-counting detector CT.
Nehra, A. K., Rajendran, K., Baffour, F. I., Mileto, A., Rajiah, P. S., Horst, K. K., Inoue, A., Johnson, T. F., Diehn, F. E., Glazebrook, K. N., Thorne, J. E., Weber, N. M., Shanblatt, E. R., Gong, H., Yu, L., Leng, S., McCollough, C. H., & Fletcher, J. G. (2023).
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https://doi.org/10.1148/rg.220158

Photon-counting computed tomography – Basic principles, potenzial benefits, and initial clinical experience.
Stein, T., Rau, A., Russe, M. F., Arnold, P., Faby, S., Ulzheimer, S., Weis, M., Froelich, M. F., Overhoff, D., Horger, M., Hagen, F., Bongers, M., Nikolaou, K., Schönberg, S. O., Bamberg, F., Weiß, J., & Stein, T. (2023).
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Photon-counting detector CT : Early clinical experience review.
Sartoretti, T., Wildberger, J. Flohr, T., Alkadhi, H. (2023)
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Standardization and quantitative imaging with Photon-counting detector CT.
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2022

First clinical Photon-counting detector CT system: Technical evaluation.
Rajendran, K., Petersilka, M., Henning, A., Shanblatt, E.R., Schmidt, B., Flohr, T. G., Ferrero, A., Baffour, F., Diehn, F. E., Yu, L., Rajiah, P., Fletcher, J. G., Leng, S., McCollough, C. H. (2022).
Radiology, 303(1), 130-138. https://doi.org/10.1148/radiol.212579

2. Cardiovascular imaging

2026

CT-derived myocardial extracellular volume: current evidence, clinical utility, and the emerging role of photon-counting CT— a systematic review
Jacopo D'Argenzio, Francesco Stucchi, Valentina Tambè, Malaka Mammadova, Gianpaolo Carrafiello, Francesco Secchi
Università Degli Studi Di Milano. DOI: https://doi.org/10.1186/s41747-026-00808-w

Triple rule-out CT: An old idea meets a new detector
Lili Szaraz, Pal Maurovich-Horvat
Semmelweis University, Medical Imaging Center, Department of Radiology. DOI: https://doi.org/10.1016/j.jcct.2026.08.011

Diagnostic performance and clinical impact of photon-counting detector computed tomography in coronary artery disease
Roosha Parikh, Doosup Shin, Ziad A. Ali, Omar K. Khalique
St. Francis Hospital and Heart Center. DOI: https://doi.org/10.1097/HCO.0000000000001339

Is nitroglycerin still necessary for coronary CT angiography in the era of photon-counting CT?
Ismail M. Kabakus, Dhruw M. Maisuria, Jordan H. Chamberlin, Ian L. Mencken, Cesar G. Lopez Rodriguez, Michael M. Sagatelian, Jeremy R. Burt, Dhiraj Baruah
Medical University of South Carolina. DOI: https://doi.org/10.1016/j.jcct.2026.08.007

Mixed coronary plaque phantom analysis by photon-counting CT: impact of calcium and iodine on low-attenuation plaque detection
Bálint Szilveszter, Márton Kolossváry, Anikó Kubovje, Hugo Marques, Borbála Vattay, Zsófia Jokkel, Barbara Sipos, Milán Vecsey-Nagy, Melinda Boussoussou, Pál Maurovich-Horvat, Shawn Newlander, George Wesbey, Elliot McVeigh
Heart and Vascular Center, Semmelweis University. DOI: https://doi.org/10.1093/ehjimp/qyag119

Comparison of Photon-Counting and Energy-Integrating Computed Coronary Tomography Angiography for Coronary Artery Disease: A Systematic Review and Meta-Analysis
Rakila Kurugalage, Arian Bhatia, Aditya Mukherjee, Gunaseelan K, Gemma A. Figtree, Christina A. Bursill, Damini Dey, Dennis T.L. Wong, Jessica A. Marathe, Peter J. Psaltis
South Australian Health and Medical Research Institute. DOI: https://doi.org/10.1016/j.jcmg.2026.05.021

Image-quality optimization for late iodine enhancement with photon-counting CT: impact of spectral analysis and reconstruction parameters
Elisa Bruno, Anna Palmisano, Francesco Pisu, Andrea Bettinelli, Davide Vignale, Antonio Esposito
Advanced Imaging for Personalized Medicine Unit, Experimental Imaging Center, IRCCS San Raffaele Hospital, Via Olgettina 60, 20132 Milan, Italy. DOI: https://doi.org/10.1007/s11547-026-02260-7

Diagnostic accuracy of photon-counting CT for in-stent restenosis: A preliminary meta-analysis
Rakila Kurugalage, Arian Bhatia, Noreen Khan, Aditya Mukherjee, Jessica A. Marathe, Peter J. Psaltis
Vascular Research Centre, Lifelong Health Theme, South Australian Health and Medical Research Institute.
DOI: https://doi.org/10.1016/j.jcct.2026.06.014

Photon-counting detector CT in cardiovascular imaging: technical advances, clinical applications, and future perspectives
Zhiping Hong, Bowen Yao, Haihong Wu
Department of Radiology, The First People's Hospital of Chun'an County. DOI: https://doi.org/10.1007/s10554-026-03767-w

Retrospective assessment of low-dose and low-contrast agent protocols for photon-counting CT angiography of the aorta
Jan-Lucca Hennes, Kristina Krompa, Henner Huflage, Pauline Pannenbecker, Ramin Saam Dazeh, Jan-Peter Grunz, Viktor Hartung, Thorsten Alexander Bley, Philipp Gruschwitz
University Hospital Würzburg. DOI: https://doi.org/10.1007/s10554-026-03757-y

Added value of photon-counting CT for triple rule-out imaging: A propensity-matched comparison with energy-integrating CT
Sardi Hyska, Milan Vecsey-Nagy, Tilman Emrich, Jose Osoria-Velasquez, Moritz C. Halfmann, Jens Ricke, Nicola Fink, Fabian Bamberg, Ismail Mikdat Kabakus, Pal Maurovich-Horvat, Akos Varga-Szemes, Muhammad Taha Hagar
Medical University of South Carolina. DOI: https://doi.org/10.1016/j.jcct.2026.06.013

Photon-Counting Detector CT in Cardiothoracic Imaging: Acuity, Fidelity, Sensitivity, and Sagacity
Qijing Zhou
Second Affiliated Hospital Zhejiang University School of Medicine. DOI: https://doi.org/10.2214/AJR.26.35279

Virtual Noncontrast Images Derived From Photon-Counting CT Enhance Inter-Reader Reproducibility of Myocardial ECV Measurement in Patients With Cardiac Devices
Yosuke Yamakami, Kensuke Hirasawa, Hiroto Hada, Ken Takahashi, Takahiro Tsunoda, Mari Ohmori, Yoshinori Kanno, Taishi Yonetsu, Tetsuo Sasano
Department of Cardiovascular Medicine, Institute of Science Tokyo Hospital. DOI: https://doi.org/10.1097/RCT.0000000000001880

Photon-Counting Detector CT Angiogram More Accurately Characterizes Lower Extremity Runoff than Traditional CT Angiogram
Taleen A. MacArthur, Prabhakar Shantha Rajiah, Melinda S. Schaller
Mayo Clinic Rochester. DOI: https://doi.org/10.1016/j.jvscit.2026.102314

Photon-Counting Detector CT in Cardiothoracic Imaging: AJR Expert Panel Narrative Review
Ruxandra-Iulia Milos, Marilyn J. Siegel, David A. Bluemke, Lisa Jungblut, Martine Remy-Jardin
Medical University of Vienna. DOI: https://doi.org/10.2214/AJR.26.34792

Photon counting detector CT contrast agent-reduced transcatheter aortic valve reconstruction planning: a comparative study
Yannik C. Layer, Alexander Isaak, Narine Mesropyan, Patrick A. Kupczyk, Dmitrij Kravchenko, Marilia Voigt, Tatjana Dell, Julian A. Luetkens, Daniel Kuetting
Department of Diagnostic and Interventional Radiology, University Hospital Bonn. DOI: https://doi.org/10.1007/s00330-026-12613-5

Improved Coronary CT Angiography Diagnostic Image Quality Using Photon-Counting Detector CT in SCAPIS reexamination: Scan Protocol and Comparative Analysis
Mats Lidén, Gusten Nyberg, Marie-Louise Aurumskjöld, Tomasz Baron, Göran Bergström, Lilian Henriksson, Tomas Jernberg, Marit Johannesson, David Lind, Henrik Löfmark, Andrei Malinovschi, Anders Persson, Patrik Nowik, Adrian Pistea, Monica Segelsjö, Franciska Wikner, Mårten Sandstedt, Erika Fagman
Örebro University, Department of Radiology and Medical Physics. DOI: https://doi.org/10.1016/j.ejrad.2026.112920

Photon-counting CT in cardiac imaging: multi-institutional review on technical principles, clinical evidence, and practical protocols
Muhammad Taha Hagar, Milán Vecsey-Nagy, Dmitrij Kravchenko, Moritz C. Halfmann, Satinder P. Singh, Christopher L. Schlett, Daniel Kuetting, Pál Suranyi, Bálint Szilveszter, Reginald F. Munden, Julian Luetkens, Tobias Bäuerle, Fabian Bamberg, Pal Maurovich-Horvat, Akos Varga-Szemes, Tilman Emrich
Medical University of South Carolina, Department of Radiology and Radiological Science. DOI: https://doi.org/10.1016/j.ejrad.2026.112904

Coronary Plaque Ulceration Detected with Photon-Counting CT
Yifei Wang, Song Luo
Department of Radiology, Geriatric Hospital of Nanjing Medical University . DOI: https://doi.org/10.1148/radiol.250554

Pictorial review: A Step-by-step Guide to Coronary CT Angiography with Photon-Counting Detector CT.
C Xie, N Clarke, R Kotronias, K Chan, L Portolan, S Thomas, J Denton, Robyn Farrall, Caroline Taylor, CY Jung, Thomas Halborg, C Nikolaidou, A Kelion, N Sabharwal, D Holdsworth, B Raman, S Neubauer, C Antoniades
Acute Multidisciplinary Imaging & Interventional Centre, Radcliffe Department of Medicine, University of Oxford, Level 2 John Radcliffe Hospital, Headley Way, Oxford, UK, OX3 9DU. DOI: https://doi.org/10.1093/bjr/tqag095

Photon-counting computed tomography: a revolution in cardiac imaging
Gianluca Pontone, Saima Mushtaq, Carmine Pizzi, Pál Maurovich-Horvat, Jonathon Leipsic, Patrick W. Serruys
Centro Cardiologico Monzino IRCCS. DOI: https://doi.org/10.1093/eurheartj/ehaf1118

Quantification of Myocardial Iron and Fat - An Experimental Study with Photon-Counting Detector CT
Philipp N. Maintz, Tristan T. Demmert, Thomas Flohr, Konstantin Klambauer, Lukas J. Moser, Victor Mergen, Matthias Eberhard, Johannes M. Froehlich, Hatem Alkadhi
Diagnostic and Interventional Radiology, University Hospital Zurich. DOI: https://doi.org/10.1093/bjr/tqag020

Diagnostic accuracy of energy-integrating and standard-resolution photon counting detector CT for coronary artery stenosis grading in CCTA: A comparative study
Susann Skoog, Christos Pagonis, Mårten Sandstedt, Lilian Henriksson, Håkan Gustafsson, Anders Persson, Erik Tesselaar
Department of Radiology, Linköping University Hospital. DOI: https://doi.org/10.1016/j.jcct.2026.01.003

Disease progression and plaque composition in patients with non-obstructive coronary artery disease (THRONE): A coronary computed tomography angiography follow-up study
Karim D. Mahmoud, Simran P. Sharma, Ricardo P.J. Budde, Admir Dedic, Kaneshka Masdjedi, Miguel E. Lemmert, Joost Daemen, Jonathan A. Leipsic, Rafael J. de Windt, Paul Cummins, Isabella Kardys, Maarten J.G. Leening, Alexander Hirsch, Nicolas M. Van Mieghem
Erasmus MC - University Medical Center Rotterdam. DOI: https://doi.org/10.1016/j.jcct.2026.01.006

Ultra-High-Resolution Photon-counting CT Depicts Coronary In-Stent Restenosis
Yu Jiang, Jiayu Sun
West China Hospital, Sichuan University. DOI: https://doi.org/10.1148/radiol.252493

From imaging to therapy: a novel photon-counting CT method for patient-specific image modeling and individualized atrial ablation strategies
Nico Erhard, Florian Englert, Marlene Siller, Keno Bressem, Martin Grosshauser, Jan Syväri, Miruna Popa, Hannah Kraft, Alex Tunsch Martinez, Madeleine Tydecks, Eva Koops, Dominic Dischel, Theresa Reiter, Marta Telishevska, Sarah Lengauer, Martin Hadamitzky, Gabriele Hessling, Isabel Deisenhofer, Fabian Bahlke
Department of Electrophysiology, TUM University Hospital, German Heart Center. DOI: https://doi.org/10.1007/s10840-026-02251-8

Photon-Counting Coronary CT Angiography in Asymptomatic Patients With Extreme Coronary Artery Calcium Score
Arthur Shiyovich, Camila V. Blair, Jonathan A. Aun, Avinainder Singh, Rhanderson Cardoso, Daniel Huck, Ron Blankstein
Brigham and Women's Hospital. DOI: https://doi.org/10.1016/j.jacadv.2025.102553

Coronary artery calcium scoring: expanding the new standard by photon-counting detector CT — Part I: Impact of tube voltage, tube current, slice thickness, and quantum iterative reconstructions
Nicola Fink, Lennart R. Koetzier, Emese Zsarnoczay, Milan Vecsey-Nagy, Dmitrij Kravchenko, Muhammad Taha Hagar, Jim O'Doherty, Moritz C. Halfmann, Pal Suranyi, Gijs D. van Praagh, Jens Ricke, Pal Maurovich-Horvat, Tobias Bäuerle, Martin J. Willemink, Akos Varga-Szemes, Tilman Emrich Medical University of South Carolina. DOI: https://doi.org/10.1007/s00330-026-12355-4

Coronary artery calcium scoring: expanding the new standard by photon-counting detector CT Part II: Impact of virtual monoenergetic image reconstructions with adjusted calcium scoring thresholds
Nicola Fink, Lennart R. Koetzier, Emese Zsarnoczay, Milan Vecsey-Nagy, Dmitrij Kravchenko, Muhammad Taha Hagar, Jim O'Doherty, Moritz C. Halfmann, Pal Suranyi, Gijs D. van Praagh, Jens Ricke, Pal Maurovich-Horvat, Tobias Bäuerle, Martin J. Willemink, Akos Varga-Szemes, Tilman Emrich Medical University of South Carolina. DOI: https://doi.org/10.1007/s00330-026-12356-3

Feasibility of ultra-low flow rate coronary CT angiography using photon-counting detector CT: a prospective randomized trial
Shuangxiang Lin, Cuiliu Liu, Yalan Zhou, Qinlan Chen, Shuyue Wang, Jiaxing Wu, Xinhong Wang, Jianzhong Sun Department of Radiology, The Second Affiliated Hospital, Zhejiang University School of Medicine. DOI: https://doi.org/10.1186/s41747-026-00677-3

Assessing Coronary In-Stent Restenosis Using Ultrahigh-Resolution Photon-Counting Detector CT: Results from a Two-Center Study Bálint Szilveszter, Muhammad Taha Hagar, Péter Kulyassa, Barbara Sipos, Anikó Kubovje, Borbála Vattay, Melinda Boussoussou, Sámuel Beke, Kristóf Nagy, Lili Száraz, Pál Maurovich-Horvat, Akos Varga-Szemes, Tilman Emrich, Milán Vecsey-Nagy Semmelweis University Heart and Vascular Center. DOI: https://doi.org/10.1016/j.ejrad.2026.112766

Comparison of Photon-Counting and Energy-Integrating Detector CT for Evaluation of Myocardial Late Iodine Enhancement
Jordan H. Chamberlin, Zain Gowani, Mohamed Hamouda, Sydney Carmain DiBona, Sameer Abrol, Brendan McNeal, Michael Gillespie, Dhiraj Baruah, Jeremy R. Burt, Jeffrey Winterfield, Ismail M. Kabakus Medical University of South Carolina.
DOI: https://doi.org/10.1148/ryct.250340

Diagnostic Performance of Photon-Counting CT Angiography in Vascular Stenosis Assessment: A Systematic Review and Meta-Analysis
Nasser M. Alzahrani, Awad Alzahrani, Zyad M. Almutlaq, Ahmed Alghamdi, Yazeed Almukhlifi, Sultan A. Alotaibi, Jaber Alyami Radiologic Sciences Department, Faculty of Applied Medical Sciences, King Abdulaziz University.
DOI: https://doi.org/10.3390/diagnostics16060881

Low Contrast Photon-Counting Detector CT Using Spectral Information to Enhance Structural Heart Intervention Planning
Doosup Shin, Azka Naeem, Roosha Parikh, William B. Chung, George A. Petrossian, Ziad A. Ali, Jaffar Khan, Omar K. Khalique St. Francis Hospital & Heart Center. DOI: https://doi.org/10.1161/CIRCIMAGING.125.019341

Validation of Ultra-Low-Dose Coronary Artery Calcium Scoring Using Photon-Counting Computed Tomography Sn100 kVp High-Pitch Acquisition With Virtual Monochromatic Imaging
Suguru Araki, Satoshi Nakamura, Mana Deguchi, Shintaro Yamaguchi, Naoki Hashimoto, Takanori Kokawa, Masafumi Takafuji, Yasutaka Ichikawa, Hajime Sakuma, Kakuya Kitagawa Department of Advanced Diagnostic Imaging, Mie University Graduate School of Medicine. DOI: https://www.doi.org/10.1016/j.jcmg.2026.02.012

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Effect of CT Section Thickness on Aortic Valve Calcium Scoring via Photon-counting Detector CT
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Coronary artery calcium scoring: expanding the new standard by photon-counting detector CT —Part I: Impact of tube voltage, tube current, slice thickness, and quantum iterative reconstructions
Nicola Fink, Lennart R. Koetzier, Emese Zsarnoczay, Milan Vecsey-Nagy, Dmitrij Kravchenko, Muhammad Taha Hagar, Jim O'Doherty, Moritz C. Halfmann, Pal Suranyi, Gijs D. van Praagh, Jens Ricke, Pal Maurovich-Horvat, Tobias Bäuerle, Martin J. Willemink, Akos Varga-Szemes, Tilman Emrich
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Assessing Coronary In-Stent Restenosis Using Ultrahigh-Resolution Photon-Counting Detector CT: Results from a Two-Center Study
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Diagnostic Performance of Photon-Counting CT Angiography in Vascular Stenosis Assessment: A Systematic Review and Meta-Analysis
Nasser M. Alzahrani, Awad Alzahrani, Zyad M. Almutlaq, Ahmed Alghamdi, Yazeed Almukhlifi, Sultan A. Alotaibi, Jaber Alyami
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Low Contrast Photon-Counting Detector CT Using Spectral Information to Enhance Structural Heart Intervention Planning
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4. Thoracic and pulmonary imaging

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5. Oncological imaging

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Joël Greffier, Djamel Dabli
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This overview represents a curated selection of the scientific literature available for our photon-counting CT products and is not intended to be a comprehensive bibliography.

Our aim is to highlight publications that we consider particularly informative for the clinical and scientific community. This includes studies that provide insights into the utilization of the technology, demonstrate established or emerging clinical applications, contribute relevant scientific evidence, or provide broader perspectives through reviews and consensus publications.

Selection is based on the relevance of the scientific content rather than authorship, institution, journal, or study outcome. Inclusion should not be understood as an endorsement, nor should omission be interpreted as a judgment regarding the quality or relevance of a publication.

We encourage readers to consider this overview as a starting point for exploring the scientific evidence and to consult the original publications and the broader scientific literature for a comprehensive assessment.

The products/features (here mentioned) are not commercially available in all countries. Due to regulatory reasons their future availability cannot be guaranteed. Please contact your local Siemens Healthineers organization for further details.

The statements by customers of Siemens Healthineers described herein are based on results that were achieved in the customer's unique setting. Because there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT and/or automation adoption) there can be no guarantee that other customers will achieve the same results.
The use of contrast enhanced imaging is at the sole discretion of the physician and within the approved contrast media indications.

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