NAEOTOM Alpha class
Photon-counting CT

Overview of selected publications

SIEMENS Healthineers

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1. General / Overview

2025

NAEOTOM Alpha

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

NAEOTOM Alpha

Getting Started with Photon-counting CT: Optimizing Your Setup for Success

RECOMMENDED

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

NAEOTOM Alpha

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

NAEOTOM Alpha

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).

RoFo. https://doi.org/10.1055/a-2452-0288

NAEOTOM Alpha

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

NAEOTOM Alpha

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

NAEOTOM Alpha

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

NAEOTOM Alpha

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

NAEOTOM Alpha

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

NAEOTOM Alpha

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

NAEOTOM Alpha

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).

14(4), 698–724. https://doi.org/10.21037/cdt-24-52

NAEOTOM Alpha

Photon counting CT clinical adoption, integration, and workflow.

Dane, B., Froemming, A., Schwartz, F. R., Toshav, A., Ramirez-Giraldo, J. C., & Ananthakrishnan, L. (2024).

Abdominal Radiology. https://doi.org/10.1007/s00261-024-04503-5

NAEOTOM Alpha
Photon-Counting Detector Computed Tomography: Techniques and Practical Clinical Applications. Advances in Clinical Radiology.
Wu, P. W., Zhang, D., Primak, A., Booij, R., Winant, A. J., & Lee, E. Y. (2024).
https://doi.org/10.1016/j.yacr.2024.05.004

NAEOTOM Alpha
Comprehensive Review of External and Middle Ear Anatomy on Photon Counting CT.
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

NAEOTOM Alpha
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

NAEOTOM Alpha
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

NAEOTOM Alpha
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

NAEOTOM Alpha
Approaches, advantages, and challenges to photon counting detector and multi-energy CT.
Toia, G. V., Mileto, A., Borhani, A. A., Chen, G. H., Ren, L., Uyeda, J. W., & Marin, D. (2024).
Abdominal Radiology. https://doi.org/10.1007/s00261-024-04357-x

NAEOTOM Alpha
Photon - Counting Detector Computed Tomography (PCD - CT): A New Era for Cardiovascular Imaging ? Current Status and Future Outlooks.
Lacaita, P. G., Luger, A., Troger, F., Widmann, G., & Feuchtner, G. M. (2024).
Journal of Cardiovascular Development and Disease. 11, 127. https://doi.org/10.3390/jcdd11040127

NAEOTOM Alpha
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).
Abdominal Radiology. https://doi.org/10.1007/s00261-024-04254-3

NAEOTOM Alpha
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). http://pubs.rsna.org/doi/10.1148/radiol.231986

NAEOTOM Alpha
High yield Clinical Applications for Photon Counting CT in Neurovascular Imaging.
Benson, J. C., Diehn, F. E., Nagelschneider, A. A., & Lehman, V. T. (2024)
Br J Radiol May 7;97(1157):894-901. https://doi.org/10.1093/bjr/tqae058

2023

NAEOTOM Alpha
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).
RoFo Fortschritte Auf Dem Gebiet Der Rontgenstrahlen Und Der Bildgebenden Verfahren. https://doi.org/10.1055/a-2119-5802

NAEOTOM Alpha
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).

Journal of Cardiovascular Computed Tomography, July, 3–4. https://doi.org/10.1016/j.jcct.2023.08.007

NAEOTOM Alpha
Photon counting computed tomography–applications.
Lofino, L., Marin, D. (2023).
Radiologic Clinics of North America. https://doi.org/10.1016/j.rcl.2023.06.004

NAEOTOM Alpha
Technical basics and clinical benefits of Photon-counting CT.
Flohr, T., Schmidt, B. (2023).
European Journal of Radiology 163 (2023) 110829 https://doi.org/10.1097/RLI.0000000000000980

NAEOTOM Alpha
Photon-counting CT : Review of initial clinical results.
Van der Bie, J., van Straten, M., Booij, R., Bos, D., Dijkshoorn, M. L., Hirsch, A., Sharma, S. P., Oei, E. H. G., & Budde, R. P. J. (2023).
European Journal of Radiology, 163 (April), 110829. https://doi.org/10.1016/j.ejrad.2023.110829

NAEOTOM Alpha
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).
European Radiology. https://doi.org/10.1007/s00330-023-09545-9

NAEOTOM Alpha
Clinical applications of photon counting detector CT.
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

NAEOTOM Alpha
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).
Radiographics : A Review Publication of the Radiological Society of North America, Inc, 43(5), e220158.
https://doi.org/10.1148/rg.220158

NAEOTOM Alpha
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).
RöFo https://doi.org/10.1055/a-2018-3396

NAEOTOM Alpha
Photon-counting detector CT : Early clinical experience review.
Sartoretti, T., Wildberger, J. Flohr, T., Alkadhi, H. (2023)
British Journal of Radiology https://doi.org/10.1259/bjr.20220544

NAEOTOM Alpha
Standardization and quantitative imaging with Photon-counting detector CT.
Mc.Collough C., Rajendran, K., Leng, S. (2023). 00(00).
Investigative Radiology. https://doi.org/10.1097/RLI.0000000000000948

2022

NAEOTOM Alpha
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

2025

NAEOTOM Alpha
Doughnut Sign: A Mixed Plaque Phenotype Unraveled Only by the Photon Counting CCTA
Pruthvi C. Revaiah, MD, Patrick W. Serruys, MD, Sean O. Hynes, MD, PhD, Christos V. Bourantas, MD, PhD, Helle Precht, PhD, Yoshinobu Onuma, MD, PhD, Erica Maffei, MD, and Filippo Cademartiri, MD, PhD.

RECOMMENDED

J Circulation: Cardiovascular Imaging. e017925 (2025) https://doi.org/10.1161/CIRCIMAGING.124.017925

NAEOTOM Alpha

Accuracy of photon-counting detector CT-based iodine maps for myocardial late enhancement detection.

RECOMMENDED

Tremamunno, G., Varga-Szemes, A., Kravchenko, D. et al.

Eur Radiol (2025). https://doi.org/10.1007/s00330-025-11622-0

NAEOTOM Alpha

Aging of the tricuspid valve annulus detected by photon-counting detector computed tomography: Importance of aortic root compression on occurrence of arrhythmias

Morita, Hiroshi et al.

Heart Rhythm, Volume 0, Issue 0. https://doi.org/10.1016/j.hrthm.2025.03.2002

NAEOTOM Alpha

Cost-effectiveness of photon counting detector CT for coronary artery disease diagnostics: A Finnish healthcare perspective

RECOMMENDED

Brix, Mikael A.K. et al.

European Journal of Radiology (2025), Volume 190, 112245 : https://doi.org/10.1016/j.ejrad.2025.112245

NAEOTOM Alpha

Assessing beam hardening artifacts in coronary stent imaging using different CT acquisition parameters on photon-counting detector computed tomography

Adolf, R., Ried, I., Will, A. et al.

Int J Cardiovasc Imaging (2025). https://doi.org/10.1007/s10554-025-03392-z

NAEOTOM Alpha

Coronary Plaque Quantification with Ultrahigh-Spatial-Resolution Photon-counting Detector CT: Intraindividual Comparison with Energy-integrating Detector CT

RECOMMENDED

Milán Vecsey-Nagy, Giuseppe Tremamunno, U. Joseph Schoepf, Chiara Gnasso, Emese Zsarnóczay, Nicola Fink, Dmitrij Kravchenko, Moritz C. Halfmann, Jim O'Doherty, Bálint Szilveszter, Pál Maurovich-Horvat, Ismail Mikdat Kabakus, Pal Spruill Suranyi, Tilman Emrich, and Akos Varga-Szemes

Radiology 2025 314:3/ https://doi.org/10.1148/radiol.241479

NAEOTOM Alpha

Effect of Reconstruction Kernel and Virtual Monoenergetic Imaging on Segmentation-Based Measurement of Coronary Plaque Volume With Photon-Counting CT

Skoog, Susann MD; Good, Elin MD, PhD; Henriksson, Lilian MSc, PhD; Sandstedt, Mårten MD, PhD; Persson, Anders MD; Tesselaar, Erik PhD.

Investigative Radiology ():10.1097/RLI.0000000000001167, February 25, 2025. https://doi.org/10.1097/RLI.0000000000001167

NAEOTOM Alpha

Evaluation of low-dose chest scans for coronary artery calcium scoring using photon-counting computed tomography with different slice thicknesses and iterative reconstruction levels

Zhao YE, Hu Q, Zhu J, Zhang H, Chen J, Sun M, Jin D, Lu G, Luo S.

Quant Imaging Med Surg. 2025 Apr 1;15(4):3565-3574. https://doi.org/10.21037/qims-24-1244

NAEOTOM Alpha

Benchmarking Photon-Counting Computed Tomography Angiography Against Invasive Assessment of Coronary Stenosis: Implications for Severely Calcified Coronaries.

RECOMMENDED

Kotronias, R, de Maria, G, Xie, C. et al.

J Am Coll Cardiol Img. 2025 May, 18 (5) 572–585. https://doi.org/10.1016/j.jcmg.2024.11.005

NAEOTOM Alpha

Feasibility of on-site CT-FFR analysis on cardiac photon-counting CT in evaluation of hemodynamically significant stenosis in comparison to invasive catheter angiography

RECOMMENDED

Ayx, Isabelle et al.

European Journal of Radiology, Volume 183, 111927 https://doi.org/10.1016/j.ejrad.2025.111927

NAEOTOM Alpha

Influence of virtual monoenergetic reconstructions on coronary CT angiography-based fractional flow reserve with photon-counting detector CT: intra-individual comparison with energy-integrating detector CT.

Tremamunno, G., Pinos, D., Zsarnoczay, E. et al.

Insights Imaging 16, 36 (2025). https://doi.org/10.1186/s13244-025-01927-5

NAEOTOM Alpha

Improving image quality and diagnostic usability in photon-counting coronary CT angiography using a novel reconstruction algorithm. RECOMMENDED

Haag, N.P., Niehoff, J.H., Shahzadi, I. et al.

Eur Radiol (2025). https://doi.org/10.1007/s00330-025-11429-z

NAEOTOM Alpha

Intra-individual radiomic analysis of pericoronary adipose tissue: Photon-counting detector vs energy-integrating detector CT angiography

Kravchenko, Dmitrij et al.

International Journal of Cardiology, Volume 420, 132749 (2025). https://doi.org/10.1016/j.ijcard.2024.132749

NAEOTOM Alpha

Myocardial Late Enhancement With Photon-Counting Detector CT in Spontaneous Coronary Artery Dissection: Prospective Comparison With Cardiac MRI

Klambauer, Konstantin MD; Klotz, Ernst PhD; Moser, Lukas J. MD; Kälin, Tobias; Biondo, Andrea MD; Schweiger, Victor MD; Mergen, Victor MD; Lisi, Costanza MD; Würdinger, Michael MD; Schlenker, Rabea MD; Di Vece, Davide MD; Gotschy, Alexander MD; Reiner, Martin MD; Ghadri, Jelena-R. MD; Wilzeck, Verena C. MD; Eberhard, Matthias MD; Templin, Christian MD, PhD; Manka, Robert MD; Alkadhi, Hatem MD, MPH, EBCR, FESER.

Investigative Radiology ():10.1097/RLI.0000000000001203, April 25, 2025. https://doi.org/10.1097/RLI.0000000000001203

NAEOTOM Alpha

Evaluation of Extracellular Volume and Coronary Artery Disease in Cardiac Amyloidosis Using Photon-Counting CT. RECOMMENDED

Popp, Sabine MD; Beitzke, Daniela BSc, MSc; Strassl, Andreas BSc, MSc; Kronberger, Christina MD, PhD; Kammerlander, Andreas MD, PhD; Duca, Franz MD, PhD; Loewe, Christian MD; Hoffner, Maximilian MD; Heidinger, Benedikt H. MD, PhD; Beitzke, Dietrich MD.

Investigative Radiology ():10.1097/RLI.0000000000001198, April 25, 2025. https://doi.org/10.1097/RLI.0000000000001198

NAEOTOM Alpha

Photon-Counting Chest CT at Radiography-Comparable Dose Levels: Impact on Opportunistic Visual and Semiautomated Coronary Calcium Quantification

Kroschke, Jonas MD; Kerber, Bjarne MD; Eberhard, Matthias MD, PD; Ensle, Falko MD; Frauenfelder, Thomas MD; Jungblut, Lisa MD.

Investigative Radiology ():10.1097/RLI.0000000000001199, April 25, 2025. https://doi.org/10.1097/RLI.0000000000001199

NAEOTOM Alpha

Quantification of abdominal aortic calcification using photon-counting CT angiography: an imaging biomarker for high-risk cardiovascular patients

Ota, T., Nakamoto, A., Hori, M. et al.

Radiol med (2025). https://doi.org/10.1007/s11547-025-01978-0

NAEOTOM Alpha

Relationship Between Myocardial Strain and Extracellular Volume: Exploratory Study in Patients with Severe Aortic Stenosis Undergoing Photon-Counting Detector CT

Lisi, C.; Mergen, V.; Moser, L.J.; Klambauer, K.; Michel, J.; Kasel, A.M.; Alkadhi, H.; Eberhard, M.

Diagnostics 2025, 15, 224. https://doi.org/10.3390/diagnostics15020224

NAEOTOM Alpha

Diagnostic Performance and Clinical Impact of Photon-Counting Detector Computed Tomography in Coronary Artery Disease. RECOMMENDED

Sakai, K, Shin, D, Singh, M. et al.

JACC. 2025 Feb, 85 (4) 339–348. https://doi.org/10.1016/j.jacc.2024.10.069

NAEOTOM Alpha

CT in Evaluation of Hemodynamically Significant Stenosis in Comparison to Invasive Catheter Angiography.

Ayx, I., Lichti, L., Buettner, S., Papavassiliu, T., Schoenberg, S. O., Kuru, M., & Marschner, C. A.

European Journal of Radiology, 111927 (2025). https://doi.org/10.1016/j.ejrad.2025.111927

2024

NAEOTOM Alpha

Giant Thrombus in a Coronary Artery Bypass Graft: Comparison of Photon-counting Detector CT and Energy-integrating Detector CT.

Zhang, H., & Jin, D. (2024).

Radiology, 313(3), e241326. https://doi.org/10.1148/radiol.241326

NAEOTOM Alpha
Virtual Monoenergetic Imaging of Thoracoabdominal Computed Tomography Angiography on Photon-Counting Detector Computertomography: Assessment of Image Quality and Leveraging Low-keV Series for Salvaging Suboptimal Contrast Acquisitions.
Rippel, K., Decker, J. A., Luitjens, J., Habeeballah, O., Bette, S., Braun, F., Kroencke, T. J., & Scheurig-Muenkler, C. (2024).
Diagnostics, 14(24). https://doi.org/10.3390/diagnostics14242843

NAEOTOM Alpha
Intra-individual Differences in Pericoronary Fat Attenuation Index Measurements Between Photon-counting and Energy-integrating Detector Computed Tomography.
Tremamunno, G., Vecsey-Nagy, M., Hagar, M. T., Schoepf, U. J., O'Doherty, J., Luetkens, J. A., Kuetting, D., Isaak, A., Varga-Szemes, A., Emrich, T., & Kravchenko, D. (2024).
Academic Radiology, 1–11. https://doi.org/10.1016/j.acra.2024.11.055

NAEOTOM Alpha
Superiority of photon-counting computed tomography for detecting high-risk unstable angina patients: two case reports.
Ho, D. T., Nguyen, A. D. Q., Tran, H. T. Q., Tran, C. C., & Nguyen, C. D. (2024).
International Journal of Cardiovascular Imaging, 0123456789. https://doi.org/10.1007/s10554-024-03300-x

NAEOTOM Alpha
Interrelation of pericoronary adipose tissue texture and coronary artery disease of the left coronary artery in cardiac photon-counting computed tomography.
Kahmann, J., Nörenberg, D., Papavassiliu, T., Schoenberg, S. O., Froelich, M. F., & Ayx, I. (2024).
Frontiers in Cardiovascular Medicine, 11(December), 1–9. https://doi.org/10.3389/fcvm.2024.1499219

NAEOTOM Alpha
Intra-individual radiomic analysis of pericoronary adipose tissue: Photon-counting detector vs energy-integrating detector CT angiography.
Kravchenko, D., Vecsey-Nagy, M., Varga-Szemes, A., Hagar, M. T., Schoepf, U. J., Gnasso, C., Zsarnóczay, E., O'Doherty, J., Caruso, D., Laghi, A., Emrich, T., & Tremamunno, G. (2025).
International Journal of Cardiology, 420, 132749. https://doi.org/10.1016/j.ijcard.2024.132749

NAEOTOM Alpha
Diagnostic performance of high and ultra-high-resolution photon counting CT for detection of coronary artery disease in patients evaluated for transcatheter aortic valve implantation.
Sharma, S. P., Verhemel, S., Hirsch, A., van der Bie, J., Dijkshoorn, M. L., Daemen, J., van Mieghem, N., & Budde, R. P. J. (2024).
International Journal of Cardiovascular Imaging. https://doi.org/10.1007/s10554-024-03273-x

NAEOTOM Alpha
Cost-effectiveness of ultrahigh-resolution photon-counting detector coronary CT angiography for the evaluation of stable chest pain.
Vecsey-Nagy, M., Emrich, T., Tremamunno, G., Kravchenko, D., Taha Hagar, M., Laux, G. S., Schoepf, U. J., O'Doherty, J., Boussoussou, M., Szilveszter, B., Maurovich-Horvat, P., Kroencke, T., Kabakus, I. M., Spruill Suranyi, P., Varga-Szemes, A., & Decker, J. A. (2024).
Journal of Cardiovascular Computed Tomography, September. https://doi.org/10.1016/j.jcct.2024.10.011

NAEOTOM Alpha
Combined influence of quantum iterative reconstruction level and kernel sharpness on image quality in photon counting CT angiography of the upper leg.
Krompaß, K., Goldbrunner, F. A., Hartung, V., Ergün, S., Peter, D., Hendel, R., Huflage, H., Patzer, T. S., Hennes, J. L., Bley, T. A., Grunz, J. P., & Gruschwitz, P. (2024).
Scientific Reports, 14(1), 1–9. https://doi.org/10.1038/s41598-024-79188-3

NAEOTOM Alpha
Diagnostic performance of Photon-counting CT angiography in peripheral artery disease compared to DSA as gold standard.
Ghibes, P., Hagen, F., Weissinger, M., Wrazidlo, R., Nikolaou, K., Levitin, A., Kirksey, L., Artzner, C., Grözinger, G., & Partovi, S. (2025).
European Journal of Radiology, 182, 111834. https://doi.org/10.1016/j.ejrad.2024.111834

NAEOTOM Alpha
In-Stent Restenosis in Peripheral Arterial Disease: Ultra-High-Resolution Photon-Counting Versus Third-Generation Dual-Source Energy-Integrating Detector CT Phantom Study in Seven Different Stent Types.
Dachs, T. M., Hauck, S. R., Kern, M., Klausenitz, C., Hoffner, M., Schernthaner, M., Abdel-Rahman, H., Hannover, A., Strassl, A., Steiner, I., Loewe, C., & Funovics, M. A. (2024).
CardioVascular and Interventional Radiology. https://doi.org/10.1007/s00270-024-03874-y

NAEOTOM Alpha
Decreasing Unnecessary Invasive Coronary Angiograms With Photon-Counting Detector Coronary Computed Tomography Angiography.
Einstein, A. J. (2024).

Journal of the American College of Cardiology. https://doi.org/10.1016/j.jacc.2024.10.084

NAEOTOM Alpha
Evaluating small coronary stents with dual-source photon-counting computed tomography: effect of different scan modes on image quality and performance in a phantom.
Muhlen, C. Von, Schüermann, T., Krauss, T., Soschynski, M., Westermann, D., Taron, J., Schlett, C. L., Bamberg, F., Schuppert, C., & Hagar, M. T. (2024).
August. https://doi.org/10.4274/dir.2024.242893

NAEOTOM Alpha
Diagnostic Performance and Clinical Impact of Photon-Counting Detector Computed Tomography in Coronary Artery Disease.
Sakai, K., Shin, D., Singh, M., Malik, S., Dakroub, A., Sami, Z., Weber, J., Cao, J. J., Parikh, R., Chen, L., Sosa, F., Cohen, D. J., Moses, J. W., Shlofmitz, R. A., Collet, C., Shlofmitz, E., Jeremias, A., Khalique, O. K., & Ali, Z. A. (2024).
Journal of the American College of Cardiology. https://doi.org/10.1016/j.jacc.2024.10.069

NAEOTOM Alpha
Coronary CT angiography-based FFR with ultra high-resolution photon-counting detector CT: Intra-individual comparison to energy-integrating detector CT.
Vecsey-Nagy, M., Tremamunno, G., Schoepf, U. J., Gnasso, C., Zsarnóczay, E., Fink, N., Kravchenko, D., Taha Hagar, M., Halfmann, M. C., Jokkel, Z., O'Doherty, J., Szilveszter, B., Maurovich-Horvat, P., Spruill Suranyi, P., Varga-Szemes, A., & Emrich, T. (2024).
European Journal of Radiology, 181, 111797. https://doi.org/10.1016/j.ejrad.2024.111797

NAEOTOM Alpha
Differential properties of drug-eluting stents and bioresorbable scaffolds in photon-counting computed tomography
von zur Mühlen, C., Fingerhut, J.B., Lang, F., Westermann D., Schlett C.L.
European Heart Journal - Cardiovascular Imaging, jeae254. https://doi.org/10.1093/ehjci/jeae254

NAEOTOM Alpha
The pericoronary adipose tissue attenuation in CT strongly depends on kernels and iterative reconstructions.
Lisi, C., Klambauer, K., Moser, L. J., Mergen, V., Manka, R., Flohr, T., Eberhard, M., & Alkadhi, H. (2024).
European Radiology. https://doi.org/10.1007/s00330-024-11132-5

NAEOTOM Alpha
Integrating Coronary Artery Assessment and Myocardial Late Enhancement Imaging with Photon-Counting Detector CT: Visualizing the Invisible.
Lemmens, M. J. D. K., Heuts, S., Bidar, E., Wildberger, J. E., Mihl, C., & Smulders, M. W. (2024).
Circulation: Cardiovascular Imaging, March, 1–4. https://doi.org/10.1161/CIRCIMAGING.124.017238

NAEOTOM Alpha
Intraindividual Comparison of Ultrahigh-Spatial-Resolution Photon-Counting Detector CT and Energy-Integrating Detector CT for Coronary Stenosis Measurement.
Vecsey-Nagy, M., Tremamunno, G., Schoepf, U. J., Gnasso, C., Zsarnóczay, E., Fink, N., Kravchenko, D., Halfmann, M. C., Laux, G. S., O'Doherty, J., Szilveszter, B., Maurovich-Horvat, P., Kabakus, I. M., Suranyi, P. S., Varga-Szemes, A., & Emrich, T. (2024).
Circulation: Cardiovascular Imaging, October, 1–9. https://doi.org/10.1161/CIRCIMAGING.124.017112

NAEOTOM Alpha
Left ventricular thrombus in patient with nonischemic cardiomyopathy : A case report
Thi, T., Pham, T., Le, T. M., & Tran, C. C. (2024).
Radiology case reports. 19, 5241–5247. https://doi.org/10.1016/j.radcr.2024.07.179

NAEOTOM Alpha
Advanced myocardial characterization and function with cardiac CT.
Lisi, C., Moser, L. J., Mergen, V., Klambauer, K., Uçar, E., & Eberhard, M. (2024).
The International Journal of Cardiovascular Imaging. https://doi.org/10.1007/s10554-024-03229-1

NAEOTOM Alpha
Intraindividual reproducibility of myocardial radiomic features between energy-integrating detector and photon- counting detector CT angiography.
Tremamunno, G., Varga-szemes, A., Schoepf, U. J., Laghi, A., Zsarnoczay, E., Fink, N., Aquino, G. J., Doherty, J. O., Emrich, T., & Vecsey-nagy, M. (2024).
European Radiology Experimental. https://doi.org/10.1186/s41747-024-00493-7

NAEOTOM Alpha
Accuracy of ultra-high resolution and virtual non-calcium reconstruction algorithm for stenosis evaluation with photon-counting CT : results from a dynamic phantom study.
Zsarnoczay, E., Fink, N., Schoepf, U. J., Pinos, D., Doherty, J. O., Allmendinger, T., Hagenauer, J., Grif, J. P., Vecsey-nagy, M., & Maurovich-horvat, P. (2024).
European Radiology Experimental https://doi.org/10.1186/s41747-024-00482-w

NAEOTOM Alpha
Ultra-high Versus Standard Resolution Photon-Counting Detector CT Angiography for Imaging of Femoral Stents in a Cadaveric Perfusion Model.
Hartung, V., Hendel, R., Huflage, H., Augustin, A. M., Grunz, J. P., Kleefeldt, F., Peter, D., Lichthardt, S., Ergün, S., Bley, T. A., & Gruschwitz, P. (2024).
Academic Radiology, 1–9. https://doi.org/10.1016/j.acra.2024.07.038

NAEOTOM Alpha
Quantification accuracy in photon-counting detector CT for coronary artery calcium score: a pilot study.
Wang, M., Zhang, X., Li, J., Dong, H., Xu, Z., Yan, F., & Yang, W. (2024).
International Journal of Cardiovascular Imaging, 0123456789. https://doi.org/10.1007/s10554-024-03209-5

NAEOTOM Alpha
In vitro and in vivo optimized reconstruction for low-keV virtual monoenergetic photon-counting detector CT angiography of lower legs.
Graafen, D., Bart, W., Halfmann, M. C., Müller, L., Hobohm, L., Yang, Y., Neufang, A., Espinola-Klein, C., Pitton, M. B., Kloeckner, R., Varga-Szemes, A., & Emrich, T. (2024).
European Radiology Experimental, 8(1). https://doi.org/10.1186/s41747-024-00481-x

NAEOTOM Alpha
Improved Detection of Small and Low-Density Plaques in Virtual Noncontrast Imaging–based Calcium Scoring at Photon-Counting Detector CT.
Fink, N., Emrich, T., Schoepf, U. J., Zsarnoczay, E., O'Doherty, J., Halfmann, M. C., Griffith, J. P., Pinos, D., Suranyi, P., Baruah, D., Kabakus, I. M., Ricke, J., & Varga-Szemes, A. (2024).
Radiology: Cardiothoracic Imaging, 6(4). https://doi.org/10.1148/ryct.230328

NAEOTOM Alpha
Combined conventional factors and the radiomics signature of coronary plaque texture could improve cardiac risk prediction.
Kahmann, J., Nörenberg, D., Papavassiliu, T., Dar, S. U. H., Engelhardt, S., Schoenberg, S. O., Froelich, M. F., & Ayx, I. (2024).
Insights into Imaging, 15(1). https://doi.org/10.1186/s13244-024-01759-9

NAEOTOM Alpha
Prospective ECG-gated High-Pitch Photon-Counting CT Angiography: Evaluation of measurement accuracy for aortic annulus sizing in TAVR planning.
Yang, Y., Richter, R., Halfmann, M. C., Graafen, D., Hell, M., Vecsey-Nagy, M., Laux, G., Kavermann, L., Jorg, T., Geyer, M., Varga-Szemes, A., & Emrich, T. (2024).
European Journal of Radiology, 178, 111604. https://doi.org/10.1016/j.ejrad.2024.111604

NAEOTOM Alpha
Synthetic hematocrit from virtual non-contrast images for myocardial extracellular volume evaluation with photon-counting detector CT.
Mergen, V., Ehrbar, N., Moser, L. J., Harmes, J. C., Manka, R., Alkadhi, H., & Eberhard, M. (2024).
European Radiology. https://doi.org/10.1007/s00330-024-10865-7

NAEOTOM Alpha
Photon-Counting Versus Dual-Source CT for Transcatheter Aortic Valve Implantation Planning.
Dirrichs, T., Schröder, J., Frick, M., Huppertz, M., Iwa, R., Allmendinger, T., Mecking, I., & Kuhl, C. K. (2024).
Academic Radiology, 1–10. https://doi.org/10.1016/j.acra.2024.06.014

NAEOTOM Alpha
Impact of reconstruction parameters on the accuracy of myocardial extracellular volume quantification on a first-generation, photon-counting detector CT.
Gnasso, C., Pinos, D., Schoepf, U. J., Vecsey-Nagy, M., Aquino, G. J., Fink, N., Zsarnoczay, E., Holtackers, R. J., Stock, J., Suranyi, P., Varga-Szemes, A., & Emrich, T. (2024).
European Radiology Experimental, 8(1). https://doi.org/10.1186/s41747-024-00469-7

NAEOTOM Alpha
Increasing the rate of datasets amenable to CTFFR and quantitative plaque analysis: Value of software for reducing stair-step artifacts demonstrated in photon-counting detector CT.
Lisi, C., Moser, L. J., Mergen, V., Flohr, T., Eberhard, M., & Alkadhi, H. (2024).
European Journal of Radiology Open, 12(June), 100574. https://doi.org/10.1016/j.ejro.2024.100574

NAEOTOM Alpha
Photon-Counting Computed Tomography in Atherosclerotic Plaque Characterization.
Cau, R., Saba, L., Balestrieri, A., Meloni, A., Mannelli, L., Grutta, L. La, Bossone, E., Mantini, C., Politi, C., Suri, J. S., Cavaliere, C., Punzo, B., Maffei, E., & Cademartiri, F. (2024).
Diagnostics 14, 1065. https://doi.org/10.3390/diagnostics14111065

NAEOTOM Alpha
Ultra-High resolution coronary CT angiography on Photon-Counting detector CT: Bi-Centre study on the impact of quantum iterative reconstruction on image quality and accuracy of stenosis measurements.
Vecsey-Nagy, M., Varga-Szemes, A., Schoepf, U. J., Tremamunno, G., Fink, N., Zsarnoczay, E., Szilveszter, B., Graafen, D., Halfmann, M. C., Vattay, B., Boussoussou, M., O'Doherty, J., Suranyi, P. S., Maurovich-Horvat, P., & Emrich, T. (2024).
European Journal of Radiology, 111517. https://doi.org/10.1016/j.ejrad.2024.111517

NAEOTOM Alpha
Improvement of coronary stent visualization using ultra-high-resolution photon-counting detector CT.
Qin, L., Zhou, S., Dong, H., Li, J., Zhang, R., Yang, C., Liu, P., Xu, Z., Yan, F., & Yang, W. (2024).
European Radiology, 1–10. https://doi.org/10.1007/s00330-024-10760-1

NAEOTOM Alpha
Spectral Photon-Counting Computed Tomography : Technical Principles and Applications in the Assessment of Cardiovascular Diseases.
Meloni, A., Maffei, E., Clemente, A., Gori, C. De, Occhipinti, M., Positano, V., Berti, S., Grutta, L. La, Saba, L., Cau, R., Bossone, E., Mantini, C., Cavaliere, C., Punzo, B., Celi, S., & Cademartiri, F. (2024).
J. Clin. Med. 2024, 13, 2359. https://doi.org/10.3390/jcm13082359

NAEOTOM Alpha
CT radiomic features reproducibility of virtual non-contrast series derived from photon-counting CCTA datasets using a novel calcium-preserving reconstruction algorithm compared with standard non-contrast series: focusing on epicardial adipose tissue.
Cui, M. X., Bao, S. Y., Li, J. Q., Dong, H. P., Xu, Z. H., Yan, F., & Yang, W. (2024).
International Journal of Cardiovascular Imaging. https://doi.org/10.1007/s10554-024-03096-w

NAEOTOM Alpha
Coronary Artery Calcium Scoring Using Virtual Versus True Noncontrast Images From Photon-Counting Coronary CT Angiography.
Haag, N. P., Michael, A. E., Lennartz, S., Panknin, C., Niehoff, J. H., Borggrefe, J., Shahzadi, I., Zwanenburg, A., & Kroeger, J. R. (2024).
Radiology, 310(3). https://doi.org/10.1148/radiol.230545

NAEOTOM Alpha
Qualitative and quantitative image quality of coronary CT angiography using photon-counting computed tomography: Standard and Ultra-high resolution protocols.
Vattay, B., Boussoussou, M., Vecsey-Nagy, M., Kolossváry, M., Juhász, D., Kerkovits, N., Balogh, H., Nagy, N., Vértes, M., Kiss, M., Kubovje, A., Merkely, B., Maurovich Horvat, P., & Szilveszter, B. (2024).
European Journal of Radiology, 175. https://doi.org/10.1016/j.ejrad.2024.111426

NAEOTOM Alpha
Virtual non - iodine photon - counting CT - angiography for aortic valve calcification scoring.
Feldle, P., Scheuber, M., Grunz, J. P., Heidenreich, J. F., Pannenbecker, P., Nora, C., Huflage, H., Bley, T. A., & Petritsch, B. (2024).
Scientific Reports, 1–7. https://doi.org/10.1038/s41598-024-54918-9

NAEOTOM Alpha
Virtual calcium removal in calcified coronary arteries with photon-counting detector CT—first in-vivo experience.
Mergen, V., Rusek, S., Civaia, F., Rossi, P., Rajagopal, R., Bättig, E., Manka, R., Candreva, A., Eberhard, M., & Alkadhi, H. (2024).
February, 1–10. https://doi.org/10.3389/fcvm.2024.1367463

NAEOTOM Alpha
Angiography Versus Digital Subtraction Angiography in Patients with Peripheral Arterial Disease.
Augustin, A. M., Hartung, V., Grunz, J., Hennes, J., Huflage, H., Bley, T. A., Petritsch, B., & Gruschwitz, P. (2024).
Academic Radiology, 8, 1–14. https://doi.org/10.1016/j.acra.2024.02.008

NAEOTOM Alpha
Ultrahigh-Spatial-Resolution Photon-counting Detector CT Angiography of Coronary Artery Disease for Stenosis Assessment.
Halfmann, M. C., Bockius, S., Emrich, T., Hell, M., Schoepf, U. J., Laux, G. S., Kavermann, L., Graafen, D., Gori, T., Yang, Y., Klöckner, R., Maurovich-Horvat, P., Ricke, J., Müller, L., Varga-Szemes, A., & Fink, N. (2024).
Radiology, 310(2). https://doi.org/10.1148/radiol.231956

NAEOTOM Alpha
Photon-counting CT-angiography in pre-TAVR aortic annulus assessment: effects of retrospective vs. prospective ECG-synchronization on prosthesis valve selection.
Hagar, M. T., Kluemper, T., Hein, M., von Zur Muhlen, C., Faby, S., Capilli, F., Schuppert, C., Schmitt, R., Ruile, P., Westermann, D., Schlett, C. L., Bamberg, F., Krauss, T., & Soschynski, M. (2024).
International Journal of Cardiovascular Imaging, 0123456789. https://doi.org/10.1007/s10554-024-03050-w

NAEOTOM Alpha
Diagnostic improvements of calcium-removal image reconstruction algorithm using photon-counting detector CT for calcified coronary lesions.
Nishihara, T., Miyoshi, T., Nakashima, M., Akagi, N., Morimitsu, Y., Inoue, T., Miki, T., Yoshida, M., Toda, H., Nakamura, K., & Yuasa, S. (2024).
European Journal of Radiology, 172, 111354. https://doi.org/10.1016/j.ejrad.2024.111354

NAEOTOM Alpha
A Novel Reconstruction Technique to Reduce Stair-Step Artifacts in Sequential Mode Coronary CT Angiography.
Moser, L. J., Mergen, V., Allmendinger, T., Manka, R., Eberhard, M., & Alkadhi, H. (2024).
Investigative Radiology, 00(00), 1–7. https://doi.org/10.1097/rli.0000000000001066

NAEOTOM Alpha
Identification of a small thrombus in the left ventricle identified on iodine maps derived from dual-source photon-counting detector CT.
Kisohara, M., Kitera, N., Itoh, T., Murai, K., Hiwatashi, A., & Kawai, T. (2024).
Radiology Case Reports, 19(4), 1404–1408. https://doi.org/10.1016/j.radcr.2024.01.020

NAEOTOM Alpha
Ultra-high-resolution photon-counting detector CT in evaluating coronary stent patency: a comparison to invasive coronary angiography. European Radiology.
Hagar, M. T., Soschynski, M., Saffar, R., Molina-Fuentes, M. F., Weiss, J., Rau, A., Schuppert, C., Ruile, P., Faby, S., Schibilsky, D., von zur Muehlen, C., Schlett, C. L., Bamberg, F., & Krauss, T. (2024).
European Radiology https://doi.org/10.1007/s00330-023-10516-3

NAEOTOM Alpha
Photon-Counting Computed Tomography: "One-Stop Shop" For Coronary Stenosis, Inflammation And Myocardial Assessment in STEACS.
Kotronias R., Raman, B., Ferreire, V., Neubauer, S., Antoniades, C. (2024)
European Heart Journal March, 1–18. https://doi.org/10.1093/ehjci/jeae003

NAEOTOM Alpha
Image quality assessment of coronary artery segments using ultra-high resolution dual source photon-counting detector computed tomography.
Bie, J. Van Der, Sharma, S. P., Straten, M. Van, Hirsch, A., Annisa, P., Bos, D., Dijkshoorn, M. L., Booij, R., & Budde, R. P. J. (2024).
European Journal of Radiology, 171(August 2023), https://doi.org/10.1016/j.ejrad.2023.111282

2023

NAEOTOM Alpha
Utility of Photon Counting CT in Transcatheter Structural Heart Disease Interventions.
Rajiah, P. S., Alkadhi, H., Mieghem, N. M. Van, & Budde, R. P. J. (2023).
Seminars in Roentgenology, 1–12. https://doi.org/10.1053/j.ro.2023.11.005

NAEOTOM Alpha
Intra-individual comparison of coronary CT angiography-based FFR between energy-integrating and Photon-counting detector CT systems.
Zsarnoczay, E. , Sanchez, D.P. , Schoepf, U.J., O'Doherty, J. , Gnasso, C., Griffith III, J., Vecsey-Nagy, M, Suranyi, P., Maurovich-Horvat, P., Emrich, T., Varga-Szemes, A., (2023)
International Journal of Cardiology, https://doi.org/10.1016/j.ijcard.2023.131684

NAEOTOM Alpha
Advantages of Photon-counting Detector CT in Vascular Aortic Imaging.
Zanon, C., Cademartiri, F., Toniolo, A., Bini, C., Clemente, A., Colacchio, E. C., Cabrelle, G., Mastro, F., Antonello, M., Quaia, E., & Pepe, A. (2023).
Tomography 2024, 10, 1–13. https://doi.org/10.3390/tomography10010001

NAEOTOM Alpha
Comparison of Photon-counting Detector and Energy-integrating Detector CT for Visual Estimation of Coronary Percent Luminal Stenosis.
McCollough, C. H., Rajiah, P., Bois, J. P., Winfree, T. N., Carter, R. E., Rajendran, K., Williamson, E. E., Thorne, J. E., & Leng, S. (2023).
Radiology, 309(3), e230853. https://doi.org/10.1148/radiol.230853

NAEOTOM Alpha
Photon-counting detector CT reduces the rate of referrals to invasive coronary angiography as compared to CT with whole heart coverage energy-integrating detector.
Simon, J., Hrenkó, Á., Kerkovits, N. M., Nagy, K., Vértes, M., Balogh, H., Nagy, N., Munkácsi, T., Emrich, T., Varga-Szemes, A., Boussoussou, M., Vattay, B., Vecsey-Nagy, M., Kolossváry, M., Szilveszter, B., Merkely, B., & Maurovich-Horvat, P. (2023).
Journal of Cardiovascular Computed Tomography, October. https://doi.org/10.1016/j.jcct.2023.11.079

NAEOTOM Alpha

An Intra-Individual Comparison of Low-keV Photon-counting CT versus Energy-Integrating-Detector CT Angiography of the Aorta.

Hennes, J., Huflage, H., Grunz, J., Hartung, V., Augustin, A. M., Patzer, T. S., Pannenbecker, P., Petritsch, B., & Bley, T. A. (2023). Diagnostics 2023, 13(24), 3645. https://doi.org/10.3390/diagnostics13243645

NAEOTOM Alpha

Infrapopliteal Segments on Lower-Extremity CTA: Prospective Intraindividual Comparison of Energy-Integrating Detector CT and Photon-counting Detector CT.

Yalon, M., Inoue, A., Thorne, J. E., Lee, Y. S., Johnson, M. P., Esquivel, A., Leng, S., McCollough, C. H., Fletcher, J. G., & Rajiah, P. S. (2023).
AJR. American Journal of Roentgenology. https://doi.org/10.2214/AJR.23.29778

NAEOTOM Alpha

Image Characteristics of Virtual Non-Contrast Series Derived from Photon-counting Detector Coronary CT Angiography—Prerequisites for and Feasibility of Calcium Quantification.

Braun, F. M., Risch, F., Decker, J. A., Woźnicki, P., Bette, S., Becker, J., Rippel, K., Scheurig-Münkler, C., Kröncke, T. J., & Schwarz, F. (2023).
Diagnostics, 13(22), 3402. https://doi.org/10.3390/diagnostics13223402

NAEOTOM Alpha

Coronary artery stenosis quantification in patients with dense calcifications using ultra-high-resolution Photon-counting-detector computed tomography.

Koons, E. K., Rajiah, P. S., Thorne, J. E., Weber, N. M., Kasten, H. J., Shanblatt, E. R., McCollough, C. H., & Leng, S. (2023).
Journal of Cardiovascular Computed Tomography, October. https://doi.org/10.1016/j.jcct.2023.10.009

NAEOTOM Alpha

Coronary calcium scoring on virtual non-contrast and virtual non-iodine reconstructions compared to true non-contrast images using Photon-counting computed tomography.

Sharma, S. P., van der Bie, J., van Straten, M., Hirsch, A., Bos, D., Dijkshoorn, M. L., Booij, R., & Budde, R. P. J. (2023).
European Radiology. https://doi.org/10.1007/s00330-023-10402-y

NAEOTOM Alpha

Coronary Stenosis Quantification With Ultra-High-Resolution Photon-counting Detector CT Angiography.

Eberhard, M., Candreva, A., Rajagopal, R., Mergen, V., Sartoretti, T., Stähli, B. E., Templin, C., Manka, R., & Alkadhi, H. (2023).
JACC: Cardiovascular Imaging, 2–4. https://doi.org/10.1016/j.jcmg.2023.10.004

NAEOTOM Alpha

Photon-counting detector CT-based virtual monoenergetic reconstructions: repeatability and reproducibility of radiomics features of an organic phantom and human myocardium.

Wolf, E. V., Müller, L., Schoepf, U. J., Fink, N., Griffith, J. P., Zsarnoczay, E., Baruah, D., Suranyi, P., Kabakus, I. M., Halfmann, M. C., Emrich, T., Varga-Szemes, A., & O'Doherty, J. (2023).
European Radiology Experimental, 7(1). https://doi.org/10.1186/s41747-023-00371-8

NAEOTOM Alpha

Pericoronary radiomics texture features associated with hypercholesterolemia on a Photon-counting-CT.

Kahmann, J., Tharmaseelan, H., Riffel, P., Overhoff, D., Papavassiliu, T., Schoenberg, S. O., Froelich, M. F., & Ayx, I. (2023).
Frontiers in Cardiovascular Medicine, 1–10. https://doi.org/10.3389/fcvm.2023.1223035

NAEOTOM Alpha

Comparison of ultrahigh and standard resolution Photon-counting CT angiography of the femoral arteries in a continuously perfused in vitro model.

Gruschwitz, P., Hartung, V., Ergün, S., Peter, D., Lichthardt, S., Huflage, H., Hendel, R., Pannenbecker, P., Augustin, A. M., Kunz, A. S., Feldle, P., Bley, T. A., & Grunz, J. P. (2023).
European Radiology Experimental, 7(1). https://doi.org/10.1186/s41747-023-00398-x

NAEOTOM Alpha

Photon-counting Detector CT for Femoral Stent Imaging in an Extracorporeally Perfused Human Cadaveric Model.

Hartung, V., Gruschwitz, P., Huflage, H., Augustin, A. M., Kleefeldt, F., Peter, D., Lichthardt, S., Ergün, S., Bley, T. A., Grunz, J.-P., & Petritsch, B. (2023).
Investigative Radiology, 1–8. https://doi.org/10.1097/rli.0000000000001019

NAEOTOM Alpha

Photon-counting Detector Computed Tomography Versus Energy-Integrating Detector Computed Tomography for Coronary Artery Calcium Quantitation.

McCollough, C. H., Winfree, T. N., Melka, E. F., Rajendran, K., Carter, R. E., & Leng, S. (2023).
Journal of Computer Assisted Tomography, 00(00), 1–5. https://doi.org/10.1097/rct.0000000000001554

NAEOTOM Alpha
A prospective study comparing the quality of coronary computed tomography angiography images from photon counting and energy integrating detector systems.
Skoog, S., Sandborg, M., Henriksson, L., Sandstedt, M., Gustafsson, H., & Persson, A. (2023).
Acta Radiologica. https://doi.org/10.1177/02841851231199384

NAEOTOM Alpha
Cardiovascular applications of photon-counting CT technology: A revolutionary new diagnostic step.
Meloni, A., Cademartiri, F., Positano, V., Celi, S., Berti, S., Clemente, A., La Grutta, L., Saba, L., Bossone, E., Cavaliere, C., Punzo, B., & Maffei, E. (2023).
Journal of Cardiovascular Development and Disease, 10(9), 363. https://doi.org/10.3390/jcdd10090363

NAEOTOM Alpha
Saving contrast media in coronary CT angiography with photon-counting detector CT.
Cundari, G., Deilmann, P., Mergen, V., Ciric, K., Eberhard, M., Jungblut, L., Alkadhi, H., & Higashigaito, K. (2023).
Academic Radiology, 6, 1–9. https://doi.org/10.1016/j.acra.2023.06.025

NAEOTOM Alpha
Coronary stent imaging in photon counting computed Tomography: Optimization of reconstruction kernels in a phantom.
Elias Michael, A., Schoenbeck, D., Becker-Assmann, J., Henning Niehoff, J., Flohr, T., Schmidt, B., Panknin, C., Baer-Beck, M., Hickethier, T., Maintz, D., Christian Bunck, A., Borggrefe, J., Wiemer, M., Rudolph, V., & Robert Kroeger, J. (2023).
European Journal of Radiology, 166(May), 110983. https://doi.org/10.1016/j.ejrad.2023.110983

NAEOTOM Alpha
Intra-individual comparison of image quality of the coronary arteries between Photon-counting detector and energy-integrating detector CT systems.
Pinos, D., Griffith, J., Emrich, T., Schoepf, U. J., O'Doherty, J., Zsarnoczay, E., Fink, N., Vecsey-Nagy, M., Suranyi, P., Tesche, C., Aquino, G. J., Varga-Szemes, A., & Brandt, V. (2023).
European Journal of Radiology, 166, 111008. https://doi.org/10.1016/j.ejrad.2023.111008

NAEOTOM Alpha
Impact of virtual monoenergetic levels on coronary plaque volume components using Photon-counting computed tomography.
Vattay, B., Szilveszter, B., Boussoussou, M., Vecsey-Nagy, M., Lin, A., Konkoly, G., Kubovje, A., Schwarz, F., Merkely, B., Maurovich-Horvat, P., Williams, M. C., Dey, D., & Kolossváry, M. (2023).
European Radiology. https://doi.org/10.1007/s00330-023-09876-7

NAEOTOM Alpha
Intra-individual comparison of coronary artery stenosis measurements between energy-integrating detector CT and Photon-counting detector CT Coronary artery stenosis measurements.
Wolf, E. V., Gnasso, C., Schoepf, U. J., Halfmann, M. C., O'Doherty, J., Zsarnoczay, E., Varga-Szemes, A., Emrich, T., & Fink, N. (2023).
Imaging, 1–8. https://doi.org/10.1556/1647.2023.00156

NAEOTOM Alpha
Ex vivo coronary calcium volume quantification using a high-spatial-resolution clinical photon- counting-detector computed tomography.
Marsh Jr, J. F., Vanmeter, P. D., Rajendran, K., Leng, S., & Mccollough, C. H. (2023).
Journal of Med. Imaging 10(4), 1–12. https://doi.org/10.1117/1.JMI.10.4.043501

NAEOTOM Alpha
Photon-counting Detector CT Angiography for Endoleak Detection After Endovascular Aortic Repair.
Turrion Gomollon, A. M., Mergen, V., Sartoretti, T., Polacin, M., Nakhostin, D., Puippe, G., Alkadhi, H., & Euler, A. (2023).
Investigative Radiology, Publish Ah(00), 1–6. https://doi.org/10.1097/rli.0000000000000993

NAEOTOM Alpha
Cardiac virtual noncontrast images for calcium quantification with Photon-counting detector CT.
Mergen, V., Ghouse, S., Sartoretti, B. T., Manka, B. R., & Euler, A. (2023).
Radiology: Cardiothoracic Imaging 2023; 5(3):e220307 https://doi.org/10.1148/ryct.220307

NAEOTOM Alpha
Accuracy of ultrahigh-Resolution Photon-counting CT for Detecting Coronary Artery Disease in a high-risk population
Hagar, M. T., Soschynski, M., Saffar, R., & Rau, A. (2023).
Radiology 307(5):e223305 https://doi.org/10.1148/radiol.223305

NAEOTOM Alpha
The Importance of Temporal Resolution for Ultra-High-Resolution Coronary Angiography Evidence From Photon-counting Detector CT.
Mergen, V., Sartoretti, T., Cundari, G., Serifovic, M., Higashigaito, K., Allmendinger, T., Schmidt, B., Flohr, T., Manka, R., Eberhard, M., & Alkadhi, H. (2023).

Investigative Radiology 1–8. https://doi.org/10.1097/RLI.0000000000000987

NAEOTOM Alpha
Dual-Source Photon-counting Computed Tomography — Part III : Clinical Overview of Vascular Applications beyond Cardiac and Neuro Imaging.
Meloni, A., Cademartiri, F., Pistoia, L., Degiorgi, G., Clemente, A., Gori, C. De, Positano, V., Celi, S., Berti, S., Emdin, M., Panetta, D., Menichetti, L., Punzo, B., Cavaliere, C., Bossone, E., Saba, L., Cau, R., Grutta, L. La, & Maffei, E. (2023).
Journal of Clinical Medicine. 12, 3798. https://doi.org/10.3390/jcm12113798

NAEOTOM Alpha
Dual-Source Photon-counting Computed Tomography — Part I : Clinical Overview of Cardiac CT and Coronary CT Angiography Applications.
Cademartiri, F., Meloni, A., Pistoia, L., Degiorgi, G., Clemente, A., Gori, C. De, Positano, V., Celi, S., Berti, S., Emdin, M., Panetta, D., Menichetti, L., Punzo, B., Cavaliere, C., Bossone, E., Saba, L., Cau, R., Grutta, L. La, & Maffei, E. (2023).
J. Clin. Med. 2023, 12, 3627. https://doi.org/10.3390/jcm12113627

NAEOTOM Alpha
Photon-counting Detector CT in Patients Pre- and Post- Transcatheter Aortic Valve Replacement.
Bie, J. Van Der, Hirsch, A., & Mieghem, N. M. D. A. Van. (2023)
Radiology: Cardiovascular Imaging 5(2):e220318 https://doi.org/10.1148/ryct.220318

NAEOTOM Alpha
Spectral aortoiliac Photon-counting CT angiography with minimal quantity of contrast agent.
Rau, S., Soschynski, M., Schlett, C. L., Hagar, M. T. (2023).
Radiology Case Reports, 18(6), 2180–2182. https://doi.org/10.1016/j.radcr.2023.01.066

NAEOTOM Alpha
Photon-counting Versus Energy-Integrating Detector CT Angiography of the Lower Extremity in a Human Cadaveric Model With Continuous Extracorporeal Perfusion.
Gruschwitz, P., Hartung, V., Kleefeldt, F., Ergün, S., Huflage, H., Peter, D., Hendel, R., Patzer, T. S., Pannenbecker, P., Kuhl, P. J., Bley, T. A., Petritsch, B., Grunz, J. (2023).
Investigative Radiology 1–6. https://doi.org/10.1097/RLI.0000000000000982

NAEOTOM Alpha
Radiation Dose Reduction for Coronary Artery Calcium Scoring Using a Virtual Non-Iodine Algorithm on Photon Counting Detector Computed Tomography Phantom Data.
Fink, N., Zsarnoczay, E., Schoepf, U. J., Doherty, J. O., Iii, J. P. G., Pinos, D., Tesche, C., Ricke, J., Willemink, M., Varga-szemes, A., & Emrich, T. (2023).
Diagnostics Apr 25;13(9):1540. https://doi.org/10.3390/diagnostics13091540

NAEOTOM Alpha
Quantifying lumen diameter in coronary artery stents with high-resolution photon counting detector CT and convolutional neural network denoising.
Koons, E. K., Rajendran, K., Thorne, J. E., Huber, N. R., Mccollough, C. H., Leng, S., & Chang, S. (2023)
Medical Physics Research Article https://doi.org/10.1002/mp.16415

NAEOTOM Alpha
First in-vivo coronary stent imaging with clinical ultra high resolution Photon-counting CT
Geering, L., Sartoretti, T., Mergen,V., Cundari, G., Rusek, S., Civaia, F., Rossi, P., Templin, C., Manka, R., Eberhard M., Alkadhi, H.
Journal of Cardiovascular Computed Tomography, 5(1), 1–2. https://doi.org/10.1016/j.jcct.2023.02.009

NAEOTOM Alpha
Photon Counting Detector CT-Based Virtual Noniodine Reconstruction Algorithm for In Vitro and In Vivo Coronary Artery Calcium Scoring: Impact of Virtual Monoenergetic and Quantum Iterative Reconstructions.
Fink, N., Zsarnoczay, E., Schoepf, U. J., Griffith, J. P., Wolf, E. V, O'Doherty, J., Suranyi, P., Baruah, D., Kabakus, I. M., Ricke, J., Varga-Szemes, A., Emrich, T. (2023).
Investigative Radiology, 1–8. https://doi.org/10.1097/RLI.0000000000000959

NAEOTOM Alpha
High-Pitch Multienergy Coronary CT Angiography in Dual-Source Photon-counting Detector CT Scanner at Low Iodinated Contrast Dose.
Rajiah, P. S., Dunning, C. A. S., Rajendran, K., Tandon, Y. K., Ahmed, Z., Larson, N. B., Collins, J. D., Thorne, J., Williamson, E., Fletcher, J. G., Mccollough, C. (2023).
Investigative Radiology, 58(9):p 681-690 https://doi.org/10.1097/RLI.0000000000000961

NAEOTOM Alpha
Characterizing the Heart and the Myocardium With Photon-counting CT.
Zsarnóczay, E., Varga-Szemes, A., Emrich, T., Szilveszter, B., van der Werf, N. R., Mastrodicasa, D., Maurovich-Horvat, P., Willemink, M. J. (2023).
Investigative Radiology, 58(7):p 505-514 https://doi.org/10.1097/RLI.0000000000000956

NAEOTOM Alpha
Ultra-high resolution Photon-counting coronary CT angiography improves coronary stenosis quantification over a wide range of heart rates – A dynamic phantom study.
Zsarnoczay, E., Fink, N., Schoepf, U. J., O'Doherty, J., Allmendinger, T., Hagenauer, J., Wolf, E. V., Griffith, J. P., Maurovich-Horvat, P., Varga-Szemes, A., Emrich, T. (2023).
European Journal of Radiology, 161, 110746. https://doi.org/10.1016/j.ejrad.2023.110746

NAEOTOM Alpha
Radiation dose optimization for photon - counting CT coronary artery calcium scoring for different patient sizes : a dynamic phantom study.
Dobrolinska, M. M., Werf, N. R. Van Der, Bie, J. Van Der, Groen, J. De, Dijkshoorn, M. (2023).
European Radiology, 33, 4668–4675 (2023). https://doi.org/10.1007/s00330-023-09434-1

NAEOTOM Alpha
Photon-counting Computed Tomography (PCCT): Technical Background and Cardio-Vascular Applications.
Meloni, A., Frijia, F., Panetta, D., Degiorgi, G., De Gori, C., Maffei, E., Clemente, A., Positano, V., Cademartiri, F. (2023).
Diagnostics, 13(4). https://doi.org/10.3390/diagnostics13040645

NAEOTOM Alpha
Influence of heart rate and heart rate variability on the feasibility of ultra-fast, high-pitch coronary Photon-counting computed tomography angiography.
Rotkopf, L. T., Froelich, M. F., Riffel, P., Ziener, C. H., Reid, C., Schlemmer, H. P., Schoenberg, S. O., Ayx, I. (2023).
International Journal of Cardiovascular Imaging. https://doi.org/10.1007/s10554-023-02808-y

NAEOTOM Alpha
Myocardial characterization with extracellular volume mapping with a first-generation Photon-counting detector CT with MRI reference.
Aquino, G. J., O'Doherty, J., Schoepf, U. J., Ellison, B., Byrne, J., Fink, N., Zsarnoczay, E., Wolf, E. V., Allmendinger, T., Schmidt, B., Flohr, T., Baruah, D., Suranyi, P., Varga-Szemes, A., & Emrich, T. (2023).
RSNA radiology Cardiac Imaging. https://pubs.rsna.org/doi/10.1148/radiol.222030

NAEOTOM Alpha
CT Angiography of the aorta using Photon-counting detector CT with reduced contrast media volume.
Higashigaito, K., Mergen, V., Eberhard, M., & Jungblut, E. L. (2023).
Cardiothoracic Imaging. https://doi.org/10.1148/ryct.220140

NAEOTOM Alpha
Intra-individual comparison of coronary calcium scoring between photon counting detector- and energy integrating detector-CT : Effects on risk reclassification.
Wolf, E. V, Halfmann, M. C., Schoepf, U. J., Zsarnoczay, E., Fink, N., Iii, J. P. G., Aquino, G. J., Willemink, M. J., Doherty, J. O., Hell, M. M., Suranyi, P., & Kabakus, I. M. (2023).
Frontiers in Cardiovascular Medicine, January, 1–8. https://doi.org/10.3389/fcvm.2022.1053398

2022

NAEOTOM Alpha
Photon- counting detector coronary CT angiography : impact of virtual monoenergetic imaging and iterative reconstruction on image quality.
Sartoretti, T., McDermott, M. , Mergen, V., Euler, A., Schmidt, B., Jost, G., Wildberger, J.E., Alkadhi, A. (2022)
British Institute of Radiology. April 2022. https://doi.org/10.1259/bjr.20220466

NAEOTOM Alpha
Influence of local aortic calcification on periaortic adipose tissue radiomics texture features—a primary analysis on PCCT.
Tharmaseelan, H., Froelich, M. F., Nörenberg, D., Overhoff, D., Rotkopf, L. T., Riffel, P., Schoenberg, S. O., Ayx, I. (2022).
International Journal of Cardiovascular Imaging, 38(11), 2459–2467. https://doi.org/10.1007/s10554-022-02656-2

NAEOTOM Alpha
Assessment of epicardial adipose tissue on virtual non-contrast images derived from Photon-counting detector coronary CTA datasets.
Risch, F., Schwarz, F., Braun, F., Bette, S., Becker, J., Scheurig-Muenkler, C., Kroencke, T. J., & Decker, J. A. (2022).
European Radiology. https://doi.org/10.1007/s00330-022-09257-6

NAEOTOM Alpha
New Horizons in Vascular Imaging With Photon-counting Detector CT.
Wildberger, J. E., & Alkadhi, H. (2023).
Investigative Radiology, 1–6. https://doi.org/10.1097/RLI.0000000000000957

NAEOTOM Alpha
Stent imaging on a clinical dual-source Photon-counting detector CT system—impact of luminal attenuation and sharp kernels on lumen visibility.
Decker, J. A., O'Doherty, J., Schoepf, U. J., Todoran, T. M., Aquino, G. J., Brandt, V., Baruah, D., Fink, N., Zsarnoczay, E., Flohr, T., Schmidt, B., Allmendinger, T., Risch, F., Varga-Szemes, A., Emrich, T. (2022).

European Radiology. https://doi.org/10.1007/s00330-022-09283-4

NAEOTOM Alpha
High-pitch, high temporal resolution, multi-energy cardiac imaging on a dual-source Photon-counting-detector CT.
Ahmed, Z., Campeau, D., Gong, H., Rajendran, K., Rajiah, P., McCollough, C., & Leng, S. (2022).
Medical Physics. https://doi.org/10.1002/mp.16124

NAEOTOM Alpha
Current role of coronary calcium in younger population and future prospects with photon counting technology.
Cademartiri, F., & Maurovich-Horvat, P. (2022).
European Heart Journal. Cardiovascular Imaging, 24(1), 25–26. https://doi.org/10.1093/ehjci/jeac214

NAEOTOM Alpha
Reduced Iodinated Contrast Media Administration in Coronary CT Angiography on a Clinical Photon-counting Detector CT System.
Emrich, T., O'Doherty, J., Schoepf, U. J., Suranyi, P., Aquino, G., Kloechnker, R., Halfmann, M. C., Allmendinger, T., Schmidt, B., Flohr, T., Varga-Szemes, A. (2022).
Investigative Radiology 58(2). https://doi.org/10.1097/RLI.0000000000000911

NAEOTOM Alpha
High Temporal Resolution Dual-Source Photon-counting CT for Coronary Artery Disease: Initial Multicenter Clincal Experience.
Soschynski, M., Hagen, F., Baumann, S., Hagar, M. T., Weiss, J., Krauss, T., Schlett, C. L., von zur Mühlen, C., Bamberg, F., Nikolaou, K., Greulich, S., Froelich, M. F., Riffel, P., Overhoff, D., Papavassiliu, T., Schoenberg, S. O., Faby, S., Ulzheimer, S.,, Ayx, I., Krumm, P. (2022).
Journal of Clinical Medicine 11(20). https://doi.org/10.3390/jcm11206003

NAEOTOM Alpha
Plaque composition on ultra-high-resolution coronary computed tomography angiography with optical coherence tomography correlation.
Emrich, T., Hell, M. (2022).
European Heart Journal. https://doi.org/10.1093/eurheartj/ehac560

NAEOTOM Alpha
Coronary Artery Calcium Evaluation Using New Generation Photon-counting Computed Tomography Yields Lower Radiation Dose Compared With Standard Computed Tomography.
Schwartz, F. R., Daubert, M. A., Molvin, L., Ramirez-Giraldo, J. C., Samei, E., Marin, D., Tailor, T. D. (2022).
Journal of Thoracic Imaging, https://doi.org/10.1097/RTI.0000000000000685

NAEOTOM Alpha
First in-human quantitative plaque characterization with ultra-high resolution coronary Photon-counting CT angiography.
Mergen, V., Eberhard, M., Manka, R., Euler A., Alkadhi H. (2022).
Frontiers in Cardiovascular Medicine, 9. https://doi.org/10.3389/fcvm.2022.981012

NAEOTOM Alpha
Ultra-High-Resolution Coronary CT Angiography With Photon-counting Detector CT.
Mergen, V., Sartoretti, T., Baer-Beck, M., Schmidt, B., Petersilka, M., Wildberger, J. E., Euler, A., Eberhard, M., Alkadhi, H. (2022).
Investigative Radiology, Publish Ahead of Print (00), 8–12. https://doi.org/10.1097/rli.0000000000000897

NAEOTOM Alpha
Comparison Study of Myocardial Radiomics Feature Properties on Energy-Integrating and Photon-counting Detector CT.
Ayx, I., Tharmaseelan, H., Hertel, A., Nörenberg, D., Overhoff, D., Rotkopf, L. T., Riffel, P., Schoenberg, S. O., Froelich, M. F. (2022).
Diagnostics, 12(5), 1294. https://doi.org/10.3390/diagnostics12051294

NAEOTOM Alpha
Improved assessment of coronaryartery luminal stenosis with heavycalcifications using high-resolutionPhoton-counting detector CT.
Koons, E., VanMeter, P., Rajendran, K., Yu, L., McCollough, C. H., Leng, S. (2022).
Physics of Medical Imaging, SPIE Event. https://doi.org/10.1117/12.2613019

NAEOTOM Alpha
Coronary CTA-based Calcium Scoring: In-Vitro and In-Vivo Validation of a Novel Virtual Non-Iodine Reconstruction Algorithm on a Clinical, First Generation Photon Counting-Detector System.
Emrich, T., Aquino, G., Schoepf, U. J., Braun, F. M., Woznicki, P., Decker, J. A., O´Doherty, J., Brandt, V., Allmendinger, T., Nowak, T., Schmidt, B., Flohr, T., Kroencke, T. J., Scheurig-Muenkler, C., Varga-Szemes, A., Schwarz, F. (2022).
Investigative Radiology, 1–8. https://doi.org/10.1097/RLI.0000000000000868

NAEOTOM Alpha

Coronary calcium scores on dual-source Photon-counting computed tomography: an adapted Agatston methodology aimed at radiation dose reduction.

van der Werf, N. R., Greuter, M. J. W., Booij, R., van der Lugt, A., Budde, R. P. J., van Straten, M. (2022).
European Radiology. https://doi.org/10.1007/s00330-022-08642-5

2021

NAEOTOM Alpha

Dose Reduction in Coronary Artery Calcium Scoring Using Mono-Energetic Images from Reduced Tube Voltage Dual-Source Photon-counting CT Data: A Dynamic Phantom Study.

van der Werf, N. R., van Gent, M., Booij, R., Bos, D., van der Lugt, A., Budde, R. P. J., Greuter, M. J. W., van Straten, M. (2021).
Diagnostics, 11(12), 2192. https://doi.org/10.3390/diagnostics11122192

NAEOTOM Alpha

Epicardial Adipose Tissue Attenuation and Fat Attenuation Index: Phantom Study and In-Vivo Measurements With Photon-counting CT.

Mergen, V., Ried, E., Allmendinger, T., Sartoretti, T., Higashigaito, K., Manka, R., Euler, A., Alkadhi, H., Eberhard, M. (2022).
American Journal of Roentgenology, 218(5), 822-829. https://doi.org/10.2214/AJR.21.26930

NAEOTOM Alpha

Extracellular volume quantification with cardiac late enhancement scanning using dual-source Photon-counting detector CT.

Mergen, V., Sartoretti, T., Klotz, E., Schmidt, B., Jungblut, L., Higashigaito, K., Manka, R., Euler, A., Kasel, A., Eberhard, M., Alkadhi, H. (2021).
Investigative Radiology, 57(6), 406-411. https://doi.org/10.1097/RLI.0000000000000851

NAEOTOM Alpha

Photon-counting Detector CT-Based Vascular Calcium Removal Algorithm: Assessment Using a Cardiac Motion Phantom.

Allmendinger, T., Nowak, T., Flohr, T., Klotz, E., Hagebauer, J., Alkadhi, H., Schmidt, B. (2022).
Investigative Radiology, 57(6), 399-405. https://doi.org/10.1097/RLI.0000000000000853

NAEOTOM Alpha

High-Pitch Photon-counting Detector Computed Tomography Angiography of the Aorta: Intraindividual Comparison to Energy-Integrating Detector Computed Tomography at Equal Radiation Dose.

Euler, A., Higashigaito, K., Mergen, V., Sartoretti, T., Zanini, B., Schmidt, B., Flohr, T. G., Ulzheimer, S., Eberhard, M., Alkadhi, H. (2021).
Investigative Radiology, 57(2), 115-121. https://doi.org/10.1097/RLI.0000000000000816

NAEOTOM Alpha

Coronary Calcium Scoring with First Generation Dual-Source Photon-counting CT-First Evidence from Phantom and In-Vivo Scans.

Eberhard, M., Mergen, V., Higashigaito, K., Allmendinger, T., Manka, R., Flohr, T., Schmidt, B., Euler, A., Alkadhi, H. (2021).
Diagnostics, 11(9), 1708. https://doi.org/10.3390/diagnostics11091708

NAEOTOM Alpha

Tube voltage-independent coronary calcium scoring on a first-generation dual-source Photon-counting CT-a proof-of-principle phantom study.

Mergen, V., Higashigaito, K., Allmendinger, T., Manka, R., Euler, A., Alkadhi, H., Eberhard, M. (2021).
International Journal of Cardiovascular Imaging, 38(4), 905-912. https://doi.org/10.1007/s10554-021-02466-y

3. Abdominal imaging

2025

NAEOTOM Alpha

Improved display and detection of small renal stones using photon-counting detector CT compared to conventional energy-integrating detector CT.

RECOMMENDED

Esquivel, A., Potretzke, T., Ferrero, A. et al.
Abdom Radiol (2025). https://doi.org/10.1007/s00261-024-04781-z

NAEOTOM Alpha

Optimizing photon counting CT enterography: determining the optimal virtual monoenergy for bowel imaging.

Sharifi, A., O'Donnell, T. & Dane, B.
Abdom Radiol (2025). https://doi.org/10.1007/s00261-025-04832-z

NAEOTOM Alpha
Spectral Differentiation of Hyperdense Non-Vascular and Vascular Renal Lesions Without Solid Components in Contrast-Enhanced Photon-Counting Detector CT Scans—A Pilot Study. Diagnostics, 15(1).
Becker, J., Feitelson, L. M., Risch, F., Canalini, L., Kaufmann, D., Wudy, R., Jehs, B., Haerting, M., Wollny, C., Scheurig-Muenkler, C., Kroencke, T., Schwarz, F., Decker, J. A., & Bette, S. (2025).
Diagnostics https://doi.org/10.3390/diagnostics15010079

2024

NAEOTOM Alpha
Automated Kidney Stone Composition Analysis with Photon-Counting Detector CT, a Performance Study—A Phantom Study.
Dillinger, D., Waldeck, S., Overhoff, D., Faby, S., Jürgens, M., Schmidt, B., Hesse, A., Schoch, J., Schmelz, H., Stoll, R., & Nestler, T. (2024).
Academic Radiology, 1–8. https://doi.org/10.1016/j.acra.2024.10.045

NAEOTOM Alpha
Photon-counting computed tomography versus energy-integrating computed tomography for detection of small liver lesions : comparison using a virtual framework imaging.
Felice, N., Wildman-tobriner, B., & Segars, P. (2024).
11(5), 1–13. https://doi.org/10.1117/1.JMI.11.5.053502

NAEOTOM Alpha
Ultra - High - Resolution Photon - Counting Detector CT Benefits Visualization of Abdominal Arteries : A Comparison to Standard - Reconstruction.
Zhang, H., Xing, Y., Wang, L., Hu, Y., Xu, Z., Chen, H., Lu, J., & Yang, J. (2024).
Journal of Imaging Informatics in Medicine, 0123456789. https://doi.org/10.1007/s10278-024-01232-5

NAEOTOM Alpha
Photon-counting Detector CT for Liver Fat Quantification: Validation across Protocols in Metabolic Dysfunction-associated Steatotic Liver Disease.
Lin, H., Xu, X., Deng, R., Xu, Z., Cai, X., Dong, H., & Yan, F. (2024).
Radiology, 312(3), e240038. https://doi.org/10.1148/radiol.240038

NAEOTOM Alpha
Imaging the pancreas with photon-counting CT – A review of normal pancreatic anatomy.
Brandt, E. G. S., Müller, C. F., Thomsen, H., Rodell, A. B., Ibragimov, B., & Andersen, M. B. (2024).
European Journal of Radiology, 181(April), 111736. https://doi.org/10.1016/j.ejrad.2024.111736

NAEOTOM Alpha
The reliability of virtual non-contrast reconstructions of photon-counting detector CT scans in assessing abdominal organs.
Dudás, I., Schultz, L., Benke, M., Szücs, Á., Kaposi, P. N., Szijártó, A., Maurovich-horvat, P., & Budai, B. K. (2024).
BMC Medical imaging. https://doi.org/10.1186/s12880-024-01419-w

NAEOTOM Alpha
Sharper, Smarter, Safer: Unpacking the Potential of Photon-Counting CT in Urolithiasis Imaging.
Nezami, N., & Malayeri, A. A. (2024).
Radiology, 312(1), 1–2. https://doi.org/10.1148/radiol.240497

NAEOTOM Alpha
PCD-CT enables contrast media reduction in abdominal imaging compared to an individualized kV-adapted contrast media injection protocol on EID-CT.
Hoeijmakers, E. J. I., Stammen, L., Wildberger, J. E., Eijsvoogel, N. G., Hersbach, J. M., Pernot, J. C. J. G., Flohr, T. G., Martens, B., & Jeukens, C. R. L. P. N. (2024).
European Journal of Radiology, 179, 111680. https://doi.org/10.1016/j.ejrad.2024.111680

NAEOTOM Alpha
Low-dose Ultra-high-resolution Photon-Counting Detector CT for Visceral Artery CT Angiography: A Preliminary Study.
Wang, L., Hu, Y., Zhong, J., Yue, X., Xu, Z., Ding, B., Chu, J., Yan, F., Yao, W., Zhang, H., & Hu, W. (2024).
Academic Radiology, 1–13. https://doi.org/10.1016/j.acra.2024.06.044

NAEOTOM Alpha
Photon-Counting CT Shows Side-Branch Intraductal Papillary Mucinous Neoplasm- Pancreatic Duct Connection
Khanungwanitkul, K., & Schwartz, F. R. (2024).
Radiology 2024; 312(2):e240611 https://doi.org/10.1148/radiol.240611

NAEOTOM Alpha
Submillisievert Abdominal Photon-Counting CT versus Energy-integrating Detector CT for Urinary Calculi Detection: Impact on Diagnostic Confidence.
Huflage, H., Kunz, A. S., Patzer, T. S., Pichlmeier, S., Westhofen, T., Gruschwitz, P., Heidenreich, J. F., Lennartz, S., Bley, T. A., & Grunz, J. P. (2024).
Radiology, 312(1). https://doi.org/10.1148/radiol.232453

NAEOTOM Alpha
Investigation of abdominal artery delineation by photon-counting detector CT.
Ota, T., Onishi, H., Itoh, T., Fukui, H., Tsuboyama, T., Nakamoto, A., Enchi, Y., Tatsumi, M., & Tomiyama, N. (2024).
Radiologia Medica, 0123456789. https://doi.org/10.1007/s11547-024-01858-z

NAEOTOM Alpha
Comparison of automated kidney stone size measurement and volumetry in photon counting CT compared to 3rd generation dual energy CT and physically measurements – an ex vivo study.
Nestler, T., Stoll, R., Schmelz, H., Schoch, J., Hesse, A., Nestler, K., Smolka, K., Faby, S., Jürgens, M., Schmidt, B., Spornitz, K., Overhoff, D., & Waldeck, S. (2024).
World Journal of Urology, 42(1), 1–7. https://doi.org/10.1007/s00345-024-05114-x

NAEOTOM Alpha
Improved image quality and abdominal lesion detection with photon-counting CT compared to dual-source CT: New evidence from a phantom study.
Macri, F. (2024).
Diagnostic and Interventional Imaging, 000, 9–10. https://doi.org/10.1016/j.diii.2024.06.008

NAEOTOM Alpha
Photon-counting CT: technical features and clinical impact on abdominal imaging.
Onishi, H., Tsuboyama, T., Nakamoto, A., Ota, T., Fukui, H., Tatsumi, M., Honda, T., Kiso, K., Matsumoto, S., Kaketaka, K., Enchi, Y., Kawabata, S., Nakasone, S., & Tomiyama, N. (2024).
Abdominal Radiology, 0123456789. https://doi.org/10.1007/s00261-024-04414-5

NAEOTOM Alpha
Evaluation of Incidental Findings on Abdominopelvic CT: Potential Benefit of Photon-counting CT Over Conventional Single-energy CT.
Ichikawa, T., Yamamuro, H., Kobayashi, M., Yoshida, R., Katayama, T., Nishizawa, K., Watanabe, S., Furuya, H., & Hashimoto, J. Tokai Journal of Experimental and Clinical Medicine, 49(2), 73–81. (2024).

NAEOTOM Alpha
Photon-counting detector CT with an ultra-low-dose contrast media to diagnose a renal pseudoaneurysm: A case report.
Noro, T., Ojio, Y., Urano, M., Ohta, K., Suzuki, K., Sato, T., Nakayama, K., Ohba, S., Kawai, T., Itoh, T., & Hiwatashi, A. (2024).
Radiology Case Reports, 19(9), 3618–3621. https://doi.org/10.1016/j.radcr.2024.05.077

NAEOTOM Alpha
Image quality of opportunistic breast examinations in photon-counting computed tomography: A phantom study.
Sawall, S., Baader, E., Wolf, J., Maier, J., Schlemmer, H. P., Schönberg, S. O., Sechopoulos, I., & Kachelrieß, M. (2024).
Physica Medica, 122(April). https://doi.org/10.1016/j.ejmp.2024.103378

NAEOTOM Alpha
Abdominal image quality and dose reduction with energy-integrating or photon-counting detectors dual-source CT: A phantom study. Diagnostic and Interventional Imaging,
Joël Greffier, Dabli, D., Faby, S., Pastor, M., Croisille, C., de Oliveira, F., Erath, J., & Beregi, J. P. (2024).
Diagnostic and Interventional Imaging, 1–7. https://doi.org/10.1016/j.diii.2024.05.002

NAEOTOM Alpha
Photon-Counting Detector CT: Potential for 75% Reduction in Contrast Medium Amount: A Phantom Study.
Higaki, F., Morimitsu, Y., Iguchi, T., Saito, H., Takaki, H., Nakagoshi, A., Wada, M., Uka, M., Akagi, N., Mitsuhashi, T., Matsui, Y., & Hiraki, T. (2024).
Acta Medica Okayama, 78(2), 135–142. https://doi.org/10.18926/AMO/66916

NAEOTOM Alpha
Iodine quantification of renal lesions: Preliminary results using spectral-based material extraction on photon-counting CT.
Tóth, A., Chamberlin, J. H., Mendez, S., Varga-Szemes, A., & Hardie, A. D. (2024).
Journal of Clinical Imaging Science, 14(7), 1–8. https://doi.org/10.25259/JCIS_1_2024

NAEOTOM Alpha
Photon-Counting Computed Tomography Compared With Conventional Energy-Integrating Detector Portal Venous Phase Computed Tomography.
Dane, B., Mabud, T., Melamud, K., Ginocchio, L., Smereka, P., Okyere, M., Ct, R. T. R., Donnell, T. O., & Megibow, A. (2024).
Journal of Computer Assisted Tomography 1–8. https://doi.org/10.1097/RCT.0000000000001617

NAEOTOM Alpha
Image quality of abdominal photon-counting CT with reduced contrast media dose: Evaluation of reduced contrast media protocols during the COVID19 pandemic supply shortage.
Layer, Y. C., Isaak, A., Mesropyan, N., Kupczyk, P. A., Luetkens, J. A., Dell, T., Attenberger, U. I., & Kuetting, D. (2024).
Heliyon, 10(6), e28142. https://doi.org/10.1016/j.heliyon.2024.e28142

NAEOTOM Alpha
Evaluation of ECG-Gated, High-Pitch Thoracoabdominal Angiographies With Dual-Source Photon-Counting Detector Computed Tomography.
Rippel, K., Luitjens, J., Habeeballah, O., Scheurig-Muenkler, C., Bette, S., Braun, F., Kroencke, T. J., Schwarz, F., & Decker, J. A. (2024).
Journal of Endovascular Therapy. https://doi.org/10.1177/15266028241230943

NAEOTOM Alpha
Photon-counting CT using multi-material decomposition algorithm enables fat quantification in the presence of iron deposits.
Hollý, S., Chmelík, M., Suchá, S., Suchý, T., Beneš, J., Pátrovič, L., & Juskanič, D. (2024).
Physica Medica, 118. https://doi.org/10.1016/j.ejmp.2024.103210

2023

NAEOTOM Alpha
Photon-Counting Computed Tomography Versus Energy-Integrating Dual-Energy Computed Tomography: Virtual Noncontrast Image Quality Comparison.
Dane, B., Ruff, A., O'Donnell, T., El-Ali, A., Ginocchio, L., Prabhu, V., & Megibow, A. (2023).
Journal of Computer Assisted Tomography, 1–6. https://doi.org/10.1097/rct.0000000000001562

NAEOTOM Alpha
Photon-counting CT urogram: optimal acquisition potential (kV) determination for virtual noncontrast creation.
Dane, B., Freedman, D., Qian, K., Ginocchio, L., Smereka, P., & Megibow, A. (2023).
Abdominal Radiology, 0123456789. https://doi.org/10.1007/s00261-023-04113-7

NAEOTOM Alpha
Reduced versus standard dose contrast volume for contrast-enhanced abdominal CT in overweight and obese patients using photon counting detector technology vs. second-generation dual-source energy integrating detector CT.
Hagen, F., Estler, A., Hofmann, J., Walder, L., Faby, S., Almarie, B., Nikolaou, K., Wrazidlo, R., & Horger, M. (2023).
European Journal of Radiology, 169, 111153. https://doi.org/10.1016/j.ejrad.2023.111153

NAEOTOM Alpha
Crohn's disease inflammation severity assessment with iodine density from photon counting CT enterography: comparison with endoscopic histopathology.
Dane, B., Qian, K., Soni, R., & Megibow, A. (2023).
Abdominal Radiology, 0123456789. https://doi.org/10.1007/s00261-023-04060-3

NAEOTOM Alpha
Multiphase photon counting detector CT data sets – Which combination of contrast phase and virtual non-contrast algorithm is best suited to replace true non-contrast series in the assessment of active bleeding?
Risch, F., Bette, S., Sinzinger, A., Rippel, K., Scheurig-Muenkler, C., Kroencke, T., & Decker, J. A. (2023).
European Journal of Radiology, 168(September), 111125. https://doi.org/10.1016/j.ejrad.2023.111125

NAEOTOM Alpha
Is There Still a Role for Two-Phase Contrast-Enhanced CT and Virtual Monoenergetic Images in the Era of Photon-counting Detector CT ?
Estler, A., Nikolaou, K., Schönberg, S. O., Bamberg, F., Froelich, M. F., Tollens, F., Verloh, N., Weiss, J., Horger, M., & Hagen, F.
Diagnostics 2023, 13, 1454. https://doi.org/10.3390/diagnostics13081454

NAEOTOM Alpha
Impact of CT Photon-counting Virtual Monoenergetic Imaging on Visualization of Abdominal Arterial Vessels.
Dillinger, D., Overhoff, D., Booz, C., Kaatsch, H. L., Piechotka, J., Hagen, A., Froelich, M. F., Vogl, T. J., & Waldeck, S. (2023).
Diagnostics, 13(5). https://doi.org/10.3390/diagnostics13050938

NAEOTOM Alpha
Liver Fat Quantification in Photon Counting CT in head to head comparison with clinical MRI; first experience.
Schwartz, F. R., Ashton, J., Wildman-tobriner, B., Ramirez-giraldo, J. C., Samei, E., Bashir, M. R., & Marin, D. (2023).
European Journal of Radiology, 110734. https://doi.org/10.1016/j.ejrad.2023.110734

NAEOTOM Alpha
Potential of Unenhanced Ultra-Low-Dose Abdominal Photon-counting CT with Tin Filtration : A Cadaveric Study.
Huflage, H., Grunz, J., Patzer, T. S., Pannenbecker, P., Feldle, P., Sauer, S. T., Petritsch, B., Ergün, S., Bley, T. A., & Kunz, A. S. (2023).
Diagnostics 13.603 https://doi.org/10.3390/diagnostics13040603

NAEOTOM Alpha
Exploiting the Potential of Photon-counting CT in Abdominal Imaging.
Schwartz, F. R., Samei, E., & Marin, D. (2023). Special Issue. 00(00), 1–11.
Investigative Radiology. https://doi.org/10.1097/RLI.0000000000000949

2022

NAEOTOM Alpha

Comparison of Image Quality and Dose Exposure of Contrast-Enhanced Abdominal CT acquired on a 1st Generation Clinical Dual-Source Photon-counting Detector CT in Obese Patients vs. a 2nd Generation Dual-Source Dual Energy Integrating Detector CT.

Hagen, F., Hofmann, J., Wrazidlo, R., Gutjahr, R., Schmidt, B., Faby, S., Nikolaou, K., Horger, M. (2022).
European Journal of Radiology, 151, 110325. https://doi.org/10.1016/j.ejrad.2022.110325

4. Thoracic imaging

2025

NAEOTOM Alpha

The Effect of X-ray Dose Photon-Counting Detector Computed Tomography on Nodule Properties in a Lung Cancer Screening Cohort: A Prospective Study

RECOMMENDED

Kerber, Bjarne MD; Ensle, Falko MD; Kroschke, Jonas MD; Strappa, Cecilia MD; Stolzmann-Hinzpeter, Ricarda MD; Blüthgen, Christian MD; Marty, Marc MD; Larici, Anna Rita MD; Frauenfelder, Thomas MD; Jungblut, Lisa MD.
Investigative Radiology ():10.1097/RLI.0000000000001174, March 10, 2025. https://doi.org/10.1097/RLI.0000000000001174

NAEOTOM Alpha

Photon-counting detector CT provides superior subsolid nodule characterization compared to same-day energy-integrating detector CT

Wang, J., Huang, Z., Zhu, Z. et al.
Eur Radiol 35, 2979–2989 (2025). https://doi.org/10.1007/s00330-024-11204-6

NAEOTOM Alpha

Lung microvasculopathy in chronic thromboembolic pulmonary hypertension: high-resolution findings with photon-counting detector CT in 29 patients

Remy-Jardin, M., Duhamel, A., Delobelle, M. et al.
Eur Radiol (2025). https://doi.org/10.1007/s00330-025-11561-w

NAEOTOM Alpha

Reconstruction Kernel Optimization for Ultra-High-Resolution Photon-Counting Detector Computed Tomography of the Lung.

Tóth, Adrienn MD; Chamberlin, Jordan H. MD; Smith, Carter D. BS; Maisuria, Dhruw BS; McGuire, Aaron M. BS; Schoepf, U. Joseph MD; O'Doherty, Jim PhD; Munden, Reginald F. MD, DMD, MBA; Burt, Jeremy MD‡; Baruah, Dhiraj MD; Kabakus, Ismail M. MD, PhD.
Journal of Computer Assisted Tomography 49(3):p 456-461, May/June 2025. https://doi.org/10.1097/RCT.0000000000001694

NAEOTOM Alpha

Photon-Counting Detector CT Iodine Maps Versus SPECT/CT: Advancing Lung Perfusion Imaging in Chronic Thromboembolic Pulmonary Hypertension.

RECOMMENDED

Kerber, Bjarne MD; Hüllner, Martin MD; Maurer, Alexander MD; Flohr, Thomas PhD; Ulrich, Silvia MD; Lichtblau, Mona MD; Frauenfelder, Thomas MD; Franckenberg, Sabine MD.
Investigative Radiology ():10.1097/RLI.0000000000001163, February 28, 2025. https://doi.org/10.1097/RLI.0000000000001163

NAEOTOM Alpha

Reproducibility of lung density quantification across photon-counting and conventional energy-integrating CT: a comparative study

RECOMMENDED

Saman Sotoudeh-Paima, Ehsan Samei, Ehsan Abadi.
British Journal of Radiology, 2025; https://doi.org/10.1093/bjr/tqaf103

NAEOTOM Alpha

Are we systematically overdosing women ? Revisiting standardized contrast protocols for thoracoabdominal CT scans.

Becker, J., Huber, A., Bette, S., Rubeck, A., Arndt, T. T., Müller, G., Risch, F., Canalini, L., Wollny, C., Schwarz, F., Scheurig-muenkler, C., Kroencke, T., & Decker, J. A. (2025).
European Radiology. https://doi.org/10.1007/s00330-024-11329-8

2024

NAEOTOM Alpha

Direct comparison of photon counting-CT and conventional CT in image quality of lung nodules: A systematic review and meta-analysis.

Mohammadzadeh, S., Mohebbi, A., Kiani, I., & Mohammadi, A. (2024).
European Journal of Radiology, 111859. https://doi.org/10.1016/j.ejrad.2024.111859

NAEOTOM Alpha

Photon-counting detector CT provides superior subsolid nodule characterization compared to same-day energy-integrating detector CT.

Wang, J., Huang, Z., Zhu, Z., Wang, B., Han, W., Hu, G., Ying, Z., Yu, Y., Wang, Y., Pan, Z., Wang, D., Song, Y., Li, H., Liu, L., Song, L., Liang, N., & Song, W. (2024).

European Radiology. https://doi.org/10.1007/s00330-024-11204-6

NAEOTOM Alpha

Reconstruction Kernel Optimization for Ultra-High-Resolution Photon-Counting Detector Computed Tomography of the Lung.

Tóth, A., Chamberlin, J. H., Smith, C. D., Maisuria, D., McGuire, A. M., Schoepf, U. J., O'Doherty, J., Munden, R. F., Burt, J., Baruah, D., & Kabakus, I. M. (2024).

Journal of Computer Assisted Tomography, 00(00), 1–6. https://doi.org/10.1097/RCT.0000000000001694

NAEOTOM Alpha

Photon-Counting CT Iodine Maps for Diagnosing Chronic Pulmonary Thromboembolism: A Pilot Study.

Kerber, B., Flohr, T., Ulrich, S., Lichtblau, M., Frauenfelder, T., & Franckenberg, S. (2024).

Investigative Radiology, 1–6. https://doi.org/10.1097/RLI.0000000000001134

NAEOTOM Alpha

Potential dose reduction and image quality improvement in chest CT with a photon-counting CT compared to a new dual-source CT.

Greffier, J., Dabli, D., Faby, S., Pastor, M., Oliveira, F. de, Croisille, C., Erath, J., & Beregi, J. P. (2024).

Physica Medica, 127(May), 1–7. https://doi.org/10.1016/j.ejmp.2024.104844

NAEOTOM Alpha

Assessment of Emphysema on X-ray Equivalent Dose Photon-Counting Detector CT: Evaluation of Visual Scoring and Automated Quantification Algorithms.

Kerber, B., Ensle, F., Kroschke, J., Strappa, C., Larici, A. R., Frauenfelder, T., & Jungblut, L. (2024).

Investigative Radiology, 1–8. https://doi.org/10.1097/RLI.0000000000001128

NAEOTOM Alpha

Improved discriminability of severe lung injury and atelectasis in thoracic trauma at low keV virtual monoenergetic images from photon-counting detector CT.

Kaatsch, H. L., Völlmecke, M. F., Becker, B. V., Dillinger, D., Kubitscheck, L., Wöhler, A., Schaaf, S., Piechotka, J., Schreyer, C., Schwab, R., Overhoff, D., & Waldeck, S. (2024).

Diagnostics, 14(19), 1–14. https://doi.org/10.3390/diagnostics14192231

NAEOTOM Alpha

Low-dose high-resolution chest CT in adults with cystic fi brosis : intraindividual comparison between photon-counting and energy-integrating detector CT.

Frings, M., Welsner, M., Mousa, C., Zensen, S., Salhöfer, L., Meetschen, M., Beck, N., Bos, D., Westhölter, D., Wienker, J., Taube, C., Umutlu, L., Schaarschmidt, B. M., Forsting, M., Haubold, J., Sutharsan, S., & Opitz, M. (2024).

European Radiology Experimental https://doi.org/10.1186/s41747-024-00502-9

NAEOTOM Alpha

Accuracy of Ultralow-Dose Photon-counting CT in the Detection of Lung Changes after Lung Transplant.

Milos, R., Lechner, L., Korajac, A., & Kifjak, D. (2024).

Radiology 2024; 312(3):e240271. https://doi.org/10.1148/radiol.240271

NAEOTOM Alpha

Pulmonary nodule visualization and evaluation of AI-based detection at various ultra-low-dose levels using photon-counting detector CT.

Jungblut, L., Euler, A., Landsmann, A., Englmaier, V., Mergen, V., Se, M., & Frauenfelder, T. (2024).

Acta Radiologica https://doi.org/10.1177/02841851241275289

NAEOTOM Alpha

Improved detection of small pulmonary embolism on unenhanced computed tomography using an artificial intelligence-based algorithm – a single centre retrospective study.

Hagen, F., Vorberg, L., Thamm, F., Ditt, H., Maier, A., Michael, J., Ghibes, P., Niklas, M., Patrick, B., Konstantin, K., & Marius, N. (2024).

The International Journal of Cardiovascular Imaging https://doi.org/10.1007/s10554-024-03222-8

NAEOTOM Alpha

Assessment of interstitial lung disease in a systemic sclerosis patient cohort using photon-counting detector CT with ultra-high resolution and a 1024-pixel image matrix 1024-matrix size and UHR mode for SSc-ILD assessment in Photon-Counting CT. (2024)

Mergen, V., Jordan, S., Mihai, C., & Dister, O.

British Journal of Radiology. https://doi.org/10.1093/bjr/tqae170

NAEOTOM Alpha
Simultaneous high-pitch multi-energy CT pulmonary angiography using a dual-source photon-counting-detector CT : A phantom experiment.
Bruesewitz, M. R., Swicklik, J. R., Fletcher, J. G., & Mccollough, C. H. (2024).
Journ. of applied clinical medical physics July, 1–8. https://doi.org/10.1002/acm2.14496

NAEOTOM Alpha
Advanced lung imaging with photon- counting detectors : Insights from thermoluminescence dosimetry.
Huflage, H., Hackenbroch, C., Schüle, S., Kunz, A. S., Gruschwitz, P., Razinskas, G., Beer, M., Bley, T. A., Wech, T., & Grunz, J. (n.d.).
Academic Radiology, 7, 1–8. https://doi.org/10.1016/j.acra.2024.08.013

NAEOTOM Alpha
Dual-source photon-counting computed tomography for coronary in- stent observation : influence of heart rate and virtual monoenergetic image.
Ogawa, R., Yanagawa, M., Hata, A., Yamagata, K., Ninomiya, K., & Doi, S. (2024).
The International Journal of Cardiovascular Imaging https://doi.org/10.1007/s10554-024-03203-x

NAEOTOM Alpha
Improved Pulmonary Artery Evaluation Using High-Pitch Photon-Counting CT Compared to High-Pitch Conventional Dual-energy CT.
Ct, R. C. D., Yalon, M., Hoodeshenas, S., Chan, A., Horst, K. K., Crum, I., Thorne, J. E., Lee, Y. S., Yu, L., Mccollough, C. H., Fletcher, J. G., & Rajiah, P. S. (2024).
1–9. https://doi.org/10.1097/RCT.0000000000001645

NAEOTOM Alpha
A new era of high-resolution CT diagnostics of the lung : improved image quality , detailed morphology , and reduced radiation dose with high-resolution photon- counting CT of the lungs compared to high- resolution energy-integrated CT.
Aurumskjöld, M., Sjunnesson, L., Pistea, A., Ásbjörnsson, G., Wellman, F., & Bozovic, G. (2024).
https://doi.org/10.1177/02841851241269918

NAEOTOM Alpha
Photon-Counting Detector CT Radiological-Histological Correlation in Cadaveric Human Lung Nodules and Airways.
Hata, A., Yanagawa, M., & Ninomiya, K. (2024).
Invest. Rad. https://doi.org/10.1097/RLI.0000000000001117

NAEOTOM Alpha
Photon-counting Detector CT (PCD-CT) generated iodine maps to characterize parenchymal lung disease : a feasibility study.
Huisinga, C., Bredemeier, S., Hartung, D., Scharm, S., Werncke, T., Renz, D., Wacker, F., & Shin, H. (2024).
European Journal of Radiology, 111689. https://doi.org/10.1016/j.ejrad.2024.111689

NAEOTOM Alpha
Photon-counting CT for pulmonary embolisms—when radiologists don't have to choose between image quality or motion artifacts.
Andersen, M. B. (2024).
European Radiology, 1–2. https://doi.org/10.1007/s00330-024-10992-1

NAEOTOM Alpha
Polyenergetic reconstruction mitigates streak artifacts by dual source imaging in chest photon counting detector computed tomography.
Maisuria, D., Chamberlin, J. H., Baruah, D., Hinen, S., O'Doherty, J., McGuire, A., Knight, H., Schoepf, U. J., Munden, R. F., & Kabakus, I. M. (2024).
Clinical Imaging, 113, 110235. https://doi.org/10.1016/j.clinimag.2024.110235

NAEOTOM Alpha
Image quality of lung perfusion with photon-counting-detector CT: comparison with dual-source, dual-energy CT.
Remy-Jardin, M., Guiffault, L., Oufriche, I., Duhamel, A., Flohr, T., Schmidt, B., & Remy, J. (2024).
European Radiology. https://doi.org/10.1007/s00330-024-10888-0

NAEOTOM Alpha
The Best of Both Worlds: Ultra-high-pitch Pulmonary Angiography with Free-Breathing Technique by Means of Photon-Counting Detector CT for Diagnosis of Acute Pulmonary Embolism.
Pannenbecker, P., Heidenreich, J. F., Huflage, H., Gruschwitz, P., Patzer, T. S., Weng, A. M., Grunz, J. P., Kunz, A. S., Bley, T. A., & Petritsch, B. (2024).
Academic Radiology, 1–9. https://doi.org/10.1016/j.acra.2024.06.028

NAEOTOM Alpha
Diagnosis of acute pulmonary embolism: when photon-counting-detector CT replaces energy-integrating-detector CT in daily routine.
Remy-Jardin, M., Oufriche, I., Guiffault, L., Duhamel, A., Flohr, T., Schmidt, B., & Remy, J. (2024).
European Radiology. https://doi.org/10.1007/s00330-024-10724-5

NAEOTOM Alpha
Technology Characterization Through Diverse Evaluation Methodologies : Application to Thoracic Imaging
P. C., Rajagopal, J. R., Schwartz, F. R., Mccabe, C., Farhadi, F., Zarei, M., Ria, F., Abadi, E., Segars, P., Ramirez-giraldo, J. C., Jones, E. C., Henry, T., Marin, D., & Samei, E. (2024).
Journal of Computer Assisted Tomography. https://doi.org/10.1097/RCT.0000000000001608

NAEOTOM Alpha
Potential of photon counting computed tomography derived spectral reconstructions to reduce beam-hardening artifacts in chest CT.
Haag, F., Hokamp, N. G., Overhoff, D., Dasegowda, G., Kuru, M., Nörenberg, D., Schoenberg, S. O., Kalra, M. K., & Froelich, M. F. (2024).
European Journal of Radiology, 175. https://doi.org/10.1016/j.ejrad.2024.111448

NAEOTOM Alpha
Photon Counting Computed Tomography with the Radiation Dose of a Chest X-Ray: Feasibility and Diagnostic Yield.
Dettmer, S., Werncke, T., Mitkovska, V. N., Brod, T., Joean, O., Vogel-Claussen, J., Wacker, F., Welte, T., & Rademacher, J. (2024).
Respiration. https://doi.org/10.1159/000536065

2023

NAEOTOM Alpha
Diagnostic Accuracy of Contrast-Enhanced Thoracic Photon-counting Computed Tomography for Opportunistic Locoregional Staging of Breast Cancer Compared With Digital Mammography.
Neubauer, J., Wilpert, C., Gebler, O., Taran, F., Pichotka, M., Stein, T., Molina-Fuentes, M. F., Weiss, J., Juhasz-Böss, I., Bamberg, F., Windfuhr-Blum, M., & Neubauer, C. (2023).
Investigative Radiology, 1–6. https://doi.org/10.1097/RLI.0000000000001051

NAEOTOM Alpha
Photon-counting detector CT allows significant reduction in radiation dose while maintaining image quality and noise on non-contrast chest CT.
Donuru, A., Araki, T., Dako, F., Dave, J. K., Perez, R. P., Xu, D., Nachiappan, A., Barbosa, E. M., Noel, P., Litt, H., & Knollman, F. (2023).
European Journal of Radiology Open, 11(October), 100538. https://doi.org/10.1016/j.ejro.2023.100538

NAEOTOM Alpha
Detectability and Volumetric Accuracy of Pulmonary Nodules in Low-Dose Photon-counting Detector Computed Tomography: An Anthropomorphic Phantom Study.
Hop, J. F., Walstra, A. N. H., Pelgrim, G.-J., Xie, X., Panneman, N. A., Schurink, N. W., Faby, S., van Straten, M., de Bock, G. H., Vliegenthart, R., & Greuter, M. J. W. (2023).
Diagnostics, 13(22), 3448. https://doi.org/10.3390/diagnostics13223448

NAEOTOM Alpha
Image Quality and Radiation Dose of CTPA With Iodine Maps: A Prospective Randomized Study of High-Pitch Mode Photon-counting Detector CT Versus Energy-Integrating Detector CT.
Pannenbecker, P., Heidenreich, J. F., Grunz, J.-P., Huflage, H., Gruschwitz, P., Patzer, T. S., Feldle, P., Bley, T. A., & Petritsch, B. (2023).
AJR. American Journal of Roentgenology. https://doi.org/10.2214/AJR.23.30154

NAEOTOM Alpha
Ultra-high-resolution Photon-counting detector computed tomography of the lungs: Phantom and clinical assessment of radiation dose and image quality.
Chamberlin, J. H., Smith, C. D., Maisuria, D., Parrish, J., van Swol, E., Mah, E., Emrich, T., Schoepf, U. J., Varga-Szemes, A., O'Doherty, J., Munden, R. F., Tipnis, S. V., Baruah, D., & Kabakus, I. M. (2023).
Clinical Imaging, 104(October), 110008. https://doi.org/10.1016/j.clinimag.2023.110008

NAEOTOM Alpha
Impact of ultra-high-resolution imaging of the lungs on perceived diagnostic image quality using Photon-counting CT.
Van Ballaer, V., Dubbeldam, A., Muscogiuri, E., Cockmartin, L., Bosmans, H., Coudyzer, W., Coolen, J., & de Wever, W. (2023).
European Radiology. https://doi.org/10.1007/s00330-023-10174-5

NAEOTOM Alpha
Investigating the Small Pixel Effect in Ultra-High Resolution Photon-counting CT of the Lung.
Huflage, H., Hendel, R., Kunz, A. S., Ergün, S., Afat, S., Petri, N., Hartung, V., Gruschwitz, P., Bley, T. A., & Grunz, J.-P. (2023).
Investigative Radiology, 1–5. https://doi.org/10.1097/rli.0000000000001013

NAEOTOM Alpha
Image quality of photon counting and energy integrating chest CT – Prospective head-to-head comparison on same patients.
Schwartz, F. R., Ria, F., McCabe, C., Zarei, M., Rajagopal, J., Molvin, L., Marin, D., O'Sullivan-Murphy, B., Kalisz, K. R., Tailor, T. D., Washington, L., Henry, T., & Samei, E. (2023).
European Journal of Radiology, 166, 111014. https://doi.org/10.1016/j.ejrad.2023.111014

NAEOTOM Alpha
Regional Pulmonary Morphology and Function : Photon-counting CT Assessment
Scharm, S.C., Schaefer-Prokop,C. , Winther, H.B., Huisinga, C. , Werncke, T. Vogel-Claussen, J., Wacker, F.K., Shin, H.
Radiology 2023; 308(1):e230318 • https://doi.org/10.1148/radiol.230318

NAEOTOM Alpha
Minimizing Contrast Media Dose in CT Pulmonary Angiography with Clinical Photon Counting Using High Pitch Technique.
Saeed, S., Niehoff, J. H., Boriesosdick, J., Michael, A., Woeltjen, M. M., Surov, A., Moenninghoff, C., Borggrefe, J., & Kroeger, J. R. (2023).
Academic Radiology, 12, 1–7. https://doi.org/10.1016/j.acra.2023.05.018

NAEOTOM Alpha
Photon - counting CT for diagnosis of acute pulmonary embolism : potential for contrast medium and radiation dose reduction.
Pannenbecker, P., Huflage, H., Peter, J., Philipp, G., Theresa, G., Weng, A. M., Heidenreich, J. F., Bley, T. A., & Petritsch, B. (2023).
European Radiology, https://doi.org/10.1007/s00330-023-09777-9

NAEOTOM Alpha
Ultra-high resolution CT imaging of interstitial lung disease: impact of Photon-counting CT in 112 patients.
Gaillandre, Y., Duhamel, A., Flohr, T., Faivre, J. B., Khung, S., Hutt, A., Felloni, P., Remy, J., & Remy-Jardin, M. (2023).
European Radiology. https://doi.org/10.1007/s00330-023-09616-x

NAEOTOM Alpha
Image Quality Analysis of Photon-counting CT Compared with Dual-Source CT: A Phantom Study for Chest CT Examinations.
Deleu, M., Maurice, J. B., Devos, L., Remy, M., & Dubus, F. (2023).
Diagnostics, 13(7). https://doi.org/10.3390/diagnostics13071325

NAEOTOM Alpha
Photon-counting computed tomography in the assessment of rheumatoid arthritis-associated interstitial lung disease: an initial experience.
Marton, N., Gyebnar, J., Fritsch, K., Majnik, J., Nagy, G., Simon, J., Müller, V., Tarnoki, A. D., Tarnoki, D. L., & Maurovich-Horvat, P. (2023).
Diagnostic and Interventional Radiology. https://doi.org/10.4274/dir.2023.221959

NAEOTOM Alpha
Ultra-High-Resolution Photon-counting CT Imaging of the Chest A New Era for Morphology and Function.
Remy-jardin, M., Hutt, A., Flohr, T., Faivre, J., Felloni, P., Khung, S., (2023).
Investigative Radiology. https://doi.org/10.1097/RLI.0000000000000968

2022

NAEOTOM Alpha
Lung Cancer Screening Using Clinical Photon-counting Detector Computed Tomography and A Prospective Patient Study.
Inoue, A., Tucker, F., Walkoff, L. A., Levin, D. L., Hartman, T. E., Burke, K. A., Rajendran, K., Yu, L., Mccollough, C. H., & Fletcher, J. G. (2022).
Journal of Computer Assisted Tomography, 1–7. https://doi.org/10.1097/RCT.0000000000001419

NAEOTOM Alpha
Ultra-High-Resolution Photon-counting Detector CT of the Lungs: Association of Reconstruction Kernel and Slice Thickness With Image Quality
Milos, R., Röhrich, S., Prayer, F., Strassl, A., Beer, L., Heidinger, B. H., Weber, M., Watzenboeck, M. L., Kifjak, D., & Tamandl, D. (2022).
American Journal of Radiology https://doi.org/10.2214/AJR.22.28515

NAEOTOM Alpha
Accuracy of Nodule Volume and Airway Wall Thickness Measurement Using Low-Dose Chest CT on a Photon-counting Detector CT Scanner.
Dunning, C. A. S., Jeffrey, F., Winfree, T., Rajendran, K., Leng, S., Levin, D. L., Tucker, F., Fletcher, J. G., Mccollough, C. H., & Yu, L.
Investigative Radiology . (2022). https://doi.org/10.1097/RLI.0000000000000933

NAEOTOM Alpha
Detection of Post-COVID-19 Lung Abnormalities:Photon-counting CT versus Same-day Energy-integrating Detector CT
Prayer, F., Kienast, P., Strassl, A., Moser, P., Bernitzky, D., Milacek, C., Gyöngyösi, M., Kifjak, D., Röhrich, S., Beer, L., Watzenboeck, M., Milos,R., Wassipaul, C., Gompelmann, D., Herold, C. J., Prosch, H., Heidinger, B.H. (2022)
Radiology, 2022 Nov 29;222087. https://doi.org/10.1148/radiol.222087

NAEOTOM Alpha
Impact of Photon Counting Detector CT Derived Virtual Monoenergetic Images on the Diagnosis of Pulmonary Embolism.
Yalynska, T., Polacin, M., Frauenfelder, T., & Martini, K. (2022).
Diagnostics, 12(11), 2715. https://doi.org/10.3390/diagnostics12112715

NAEOTOM Alpha
Impact of Photon-counting-detector-CT derived virtual-monoenergetic-images and idione-maps on the diagnosis of pleural empyema.
Jungblut, L., Abel, F., Nakhostin, D., Mergen, V., Sartoretti, T., Euler, A., Frauenfelder, T., Martini, K. (2022).
Diagnostic and Interventional Imaging (00), 1–7. https://doi.org/10.1016/j.diii.2022.09.006

NAEOTOM Alpha
Potential of Photon-counting Detector CT for Radiation Dose Reduction for the Assessment of Interstitial Lung Disease in Patients With Systemic Sclerosis.
Jungblut, L., Euler, A., von Spiczak, J., Sartoretti, T., Mergen, V., Englmaier, V., Landsmann, A., Mihai, C.-M., Distler, O., Alkadhi, H., Frauenfelder, T., Martini, K. (2022).
Investigative Radiology, Publish Ahead of Print (1), 1–7. https://doi.org/10.1097/rli.0000000000000895

NAEOTOM Alpha
Dose Reduction and Image Quality in Photon-counting Detector High-resolution Computed Tomography of the Chest: Routine Clinical Data.
Graafen, D., Emrich, T., Halfmann, M. C., Mildenberger, P., Düber, C., Yang, Y., Othman, A. E., O' Doherty, J., Müller, L., Kloeckner, R. (2022).
Journal of Thoracic Imaging, 00(00), 1–8. https://doi.org/10.1097/RTI.0000000000000661

NAEOTOM Alpha
Low-Dose High-Resolution Photon-counting CT of the Lung: Radiation Dose and Image Quality in the Clinical Routine.
Woeltjen, M. M., Niehoff, J. H., Michael, A. E., Horstmeier, S., Moenninghoff, C., Borggrefe, J., Kroeger, J. R. (2022).
Diagnostics, 12(6), 1441. https://doi.org/10.3390/diagnostics12061441

NAEOTOM Alpha
Performance of Virtual non-contrast images generated on clinical Photon-counting Detector CT for emphysema quantification : Proof of Concept Performance of Virtual non-contrast images generated on clinical Photon-counting Detector CT for emphysema quantification : Proof of Concept Performance of PCD-CT derived VNC images for emphysema quantification.
Jungblut, L., Sartoretti, T., Kronenberg, D., Mergen, V., Euler, A., Schmidt, B., Alkadhi, H., Frauenfelder, T., Martini, K. (2022).
British Journal of Radiology. https://doi.org/10.1259/bjr.20211367

NAEOTOM Alpha
Impact of Contrast Enhancement and Virtual Monoenergetic Image Energy Levels on Emphysema Quantification: Experience With Photon-counting Detector Computed Tomography.
Jungblut, L., Kronenberg, D., Mergen, V., Higashigaito, K., Schmidt, B., Euler, A., Alkadhi, H., Frauenfelder, T., Martini, K. (2022).
Investigative Radiology, 57(6), 359-365. https://doi.org/10.1097/RLI.0000000000000848

2021

NAEOTOM Alpha
First Performance Evaluation of an Artificial Intelligence-Based Computer-Aided Detection System for Pulmonary Nodule Evaluation in Dual-Source Photon-counting Detector CT at Different Low-Dose Levels.
Jungblut, L., Blüthgen, C., Polacin, M., Messerli, M., Schmidt, B., Euler, A., Alkadhi, H., Frauenfelder, T., Martini, K. (2021).
Investigative Radiology, 57(2), 108-114. https://doi.org/10.1097/rli.0000000000000814

5. Oncologic imaging

2025

NAEOTOM Alpha
Contrast-enhanced photon-counting detector CT for discriminating local recurrence from postoperative changes after resection of pancreatic ductal adenocarcinoma
RECOMMENDED
Alagic, Z., Duran, C.V., Svensson-Marcial, A. et al.
Eur Radiol Exp 9, 26 (2025). https://doi.org/10.1186/s41747-025-00567-0

NAEOTOM Alpha
Spectral Differentiation of Hyperdense Non-Vascular and Vascular Renal Lesions Without Solid Components in Contrast-Enhanced Photon-Counting Detector CT Scans—A Pilot Study
Becker, J.; Feitelson, L.-M.; Risch, F.; Canalini, L.; Kaufmann, D.; Wudy, R.; Jehs, B.; Haerting, M.; Wollny, C.; Scheurig-Muenkler, C.; et al.
Diagnostics 2025, 15, 79. https://doi.org/10.3390/diagnostics15010079

NAEOTOM Alpha

Breast cancer assessment under neoadjuvant systemic therapy using thoracic photon-counting detector computed tomography in prone position: a pilot study.

Neubauer, C., Nattenmüller, J., Bamberg, F. et al.

Eur Radiol Exp 9, 41 (2025). https://doi.org/10.1186/s41747-025-00576-z

NAEOTOM Alpha

Optimal virtual monoenergy for the detection of pancreatic adenocarcinoma during the pancreatic parenchymal phase on photon counting CT. RECOMMENDED

Ruff, A., Li, X., Goldberg, J.D. et al.

Abdom Radiol (2025). https://doi.org/10.1007/s00261-024-04696-9

NAEOTOM Alpha

Simple cystic lesions of the pancreas: image quality and diagnostic accuracy of photon-counting detector computed tomography. RECOMMENDED

Rau, S., Stein, T., Rau, A. et al.

Radiol med (2025). https://doi.org/10.1007/s11547-025-02015-w

NAEOTOM Alpha

Optimal virtual monoenergy for the detection of pancreatic adenocarcinoma during the pancreatic parenchymal phase on photon counting CT.

Ruff, A., Li, X., Goldberg, J. D., Ehrhart, M., Ginocchio, L., Smereka, P., O'Donnell, T., & Dane, B. (2025).

Abdominal Radiology. https://doi.org/10.1007/s00261-024-04696-9

2024

NAEOTOM Alpha

Advancements in early detection of pancreatic cancer: the role of artificial intelligence and novel imaging techniques.

Huang, C., Shen, Y., Galgano, S. J., Goenka, A. H., Hecht, E. M., Kambadakone, A., Wang, Z. J., & Chu, L. C. (2024).

Abdominal Radiology, 0123456789. https://doi.org/10.1007/s00261-024-04644-7

NAEOTOM Alpha

Photon-counting detector computed tomography: iodine density versus virtual monoenergetic imaging of pancreatic ductal adenocarcinoma.

Alagic, Z., Valls Duran, C., Suzuki, C., Halldorsson, K., Svensson-Marcial, A., Saeter, R., & Koskinen, S. K. (2024).

Abdominal Radiology. https://doi.org/10.1007/s00261-024-04605-0

NAEOTOM Alpha

Inter-reader agreement of pancreatic adenocarcinoma resectability assessment with photon counting versus energy integrating detector CT.

Kim, J., Mabud, T., Huang, C., Lloret del Hoyo, J., Petrocelli, R., Vij, A., & Dane, B. (2024).

Abdominal Radiology, 0123456789. https://doi.org/10.1007/s00261-024-04298-5

NAEOTOM Alpha

Pancreatic cyst prevalence and detection with photon counting CT compared with conventional energy integrating detector CT.

Dane, B., Kim, J., Qian, K., & Megibow, A. (2024).

European Journal of Radiology, 175(December 2023), 111437. https://doi.org/10.1016/j.ejrad.2024.111437

NAEOTOM Alpha

Diagnostic performance of photon-counting detector CT for differentiation between adrenal adenomas and metastases.

Bette, S., Risch, F., Canalini, L., Becker, J., Leithner, E. V., Huber, A., Haerting, M., Jehs, B., Wollny, C., Schwarz, F., Tehlan, K., Scheurig-Muenkler, C., Wendler, T., Kroencke, T., & Decker, J. A. (2024).

European Radiology. https://doi.org/10.1007/s00330-024-10675-x

NAEOTOM Alpha

Value of virtual non-contrast images to identify uncomplicated cystic renal lesions: photon-counting detector CT vs. dual-energy integrating detector CT.

Rau, S., Rau, A., Stein, T., Hagar, M. T., Faby, S., Bamberg, F., & Weiss, J. (2024).

Radiologia Medica. https://doi.org/10.1007/s11547-024-01801-2

NAEOTOM Alpha

Photon Counting Computed Tomography in Rectal Cancer: Associations Between Iodine Concentration, Histopathology and Treatment Response: A Pilot Study.

Surov, A., Diallo-Danebrock, R., Radi, A., Kröger, J. R., Niehoff, J. H., Michael, A. E., Gerdes, B., Elhabash, S., Wienke, A., & Borggrefe, J. (2024).

Academic Radiology, 1–7. https://doi.org/10.1016/j.acra.2024.02.006

NAEOTOM Alpha
Pancreatic cancer in photon-counting CT: Low keV virtual monoenergetic images improve tumor conspicuity.
Woeltjen, M. M., Niehoff, J. H., Roggel, R., Michael, A. E., Gerdes, B., Surov, A., Borggrefe, J., & Kroeger, J. R. (2024).
European Journal of Radiology, 173, 111374. https://doi.org/10.1016/j.ejrad.2024.111374

NAEOTOM Alpha
Photon-Counting Detector CT for Liver Lesion Detection — Optimal Virtual Monoenergetic Energy for Different Simulated Patient Sizes and Radiation Doses.
Racine, D., Mergen, V., Viry, A., Frauenfelder, T., Alkadhi, H., Vitzthum, V., & Euler, A. (2024).
Investigative Radiology 1–7. https://doi.org/10.1097/RLI.0000000000001060

2023

NAEOTOM Alpha
Optimal conspicuity of pancreatic ductal adenocarcinoma in virtual monochromatic imaging reconstructions on a Photon-counting detector CT: comparison to conventional MDCT.
Decker, J. A., Becker, J., Härting, M., Jehs, B., Risch, F., Canalini, L., Wollny, C., Scheurig-Muenkler, C., Kroencke, T., Schwarz, F., & Bette, S. (2023).
Abdominal Radiology. https://doi.org/10.1007/s00261-023-04042-5

NAEOTOM Alpha
Impact of Photon-counting detector computed tomography on image quality and radiation dose in patients with multiple myeloma.
Rau, A., Neubauer, J., Taleb, L., Stein, T., Schuermann, T., Rau, S., Faby, S., Wenger, S., Engelhardt, M., Bamberg, F., & Weiss, J. (2023).
Korean Journal of Radiology, 24, 1–11. https://doi.org/10.3348/kjr.2023.0211

NAEOTOM Alpha
Quantum iterative reconstruction on a Photon-counting detector CT improves the quality of hepatocellular carcinoma imaging.
Graafen, D., Stoehr, F., Halfmann, M. C., Emrich, T., Foerster, F., Yang, Y., Düber, C., Müller, L., & Kloeckner, R. (2023).
Cancer Imaging, 23(1), 1–10. https://doi.org/10.1186/s40644-023-00592-5

NAEOTOM Alpha
Anemia detection and quantification in contrast-enhanced CT scans on a novel Photon-counting detector CT: A prospective proof-of-concept study
Decker, J. A., Huber, A., Senel, F., Risch, F., Bette, S., Braun, F., Becker, J., Popp, D., Haerting, M., Jehs, B., Rippel, K., Wollny, C., Scheurig-muenkler, C., Kroencke, T. J., & Schwarz, F. (2023).
European Journal of Radiology. 166, 110967. https://doi.org/10.1016/j.ejrad.2023.110967.

NAEOTOM Alpha
Photon counting detector CT: a new frontier of myeloma bone disease evaluation.
Cook J., Rajendran K., Ferrero A., Dhillon P., Kumar S., Baffour, F. (2023)
Acta Haematologica https://doi.org/10.1159/000531461

NAEOTOM Alpha
Soft reconstruction kernels improve HCC imaging on a Photon-counting detector CT.
Graafen, D., Müller, L., Halfmann, M. C., Stoehr, F., Foerster, F., Düber, C., Yang, Y., Emrich, T., & Kloeckner, R. (2023).
Academic Radiology, 3, 1–12. https://doi.org/10.1016/j.acra.2023.03.026

2022

NAEOTOM Alpha
Evaluation of radiomics feature stability in abdominal monoenergetic photon counting CT reconstructions.
Tharmaseelan, H., Rotkopf, L. T., Ayx, I., Hertel, A., Nörenberg, D., Schoenberg, S. O., & Froelich, M. F. (2022).
Scientific Reports, 1–12. https://doi.org/10.1038/s41598-022-22877-8

NAEOTOM Alpha
Myeloma bone disease imaging on a 1st-generation clinical Photon-counting detector CT vs. 2nd-generation dual-source dual-energy CT.
Winkelmann, M. T., Hagen, F., Le-Yannou, L., Weiss, J., Riffel, P., Gutjahr, R., Faby, S., Nikolaou, K., & Horger, M. (2022).
European Radiology. https://doi.org/10.1007/s00330-022-09225-0

NAEOTOM Alpha
Prospective Multireader Evaluation of Photon-counting CT for Multiple Myeloma Screening.
Schwartz, F. R., Vinson, E. N., Spritzer, C. E., Colglazier, R., Samei, E., French, R. J., Said, N., Waldman, L., & McCrum, E. (2022).
Radiology. Imaging Cancer, 4(6), e220073. https://doi.org/10.1148/rycan.220073

NAEOTOM Alpha

Photon-counting Detector CT with Deep Learning Noise Reduction to Detect Multiple Myeloma.
Baffour, F. I., Huber, N. R., Ferrero, A., Rajendran, K. Glazebrook, K. N., Larson, N. B., Kumar, S., Cook, J. M., Leng, S., Shanblatt, E. R., McCollough, C. H., Fletcher, J. G. (2022).
Radiology, 1-8. https://doi.org/10.1148/radiol.220311

NAEOTOM Alpha

Photon-counting detector CT improves quality of arterial phase abdominal scans: A head-to-head comparison with energy-integrating CT.
Graafen, D., Müller, L., Halfmann, M., Düber, C., Hahn, F., Yang, Y., Emrich, T., Kloeckner, R. (2022).
European Journal of Radiology, 156, 110514. https://doi.org/10.1016/j.ejrad.2022.110514

NAEOTOM Alpha

Photon-counting Detector CT with Quantum Iterative Reconstruction. Impact on liver lesion detection and radiation dose reduction.
Racine, D., Mergen, V., Viry, A., Eberhard, M., Becce, F., Rotzinger, D. C., Alkadhi, H., Euler, A. (2022).
Investigative Radiology, 1–8. https://doi.org/10.1097/RLI.0000000000000925

NAEOTOM Alpha

Anemia Detection by Hemoglobin Quantification on Contrast-enhanced Photon-counting CT Data Sets.
Decker, J. A., Huber, A., Senel, F., Bette, S., Braun, F., Risch F., Woznicki, P., Becker, J., Popp, D., Haerting, M., Jehs, B., Rippel, K., Wollny, C., Scheurig-Muenkler, C., Korenke, T., Schwarz, F. (2022)
Radiology 1-3, 77–79. https://doi.org/10.1148/radiol.220063

NAEOTOM Alpha

Radiation Dose Reduction in Contrast-Enhanced Abdominal CT: Comparison of Photon-counting Detector CT with 2nd Generation Dual-Source Dual-Energy CT in an oncologic cohort.
Wrazidlo, R., Walder, L., Estler, A., Gutjahr, R., Schmidt, B., Faby, S., Fritz, J., Nikolaou, K., Horger, M., Hagen, F. (2022).
Academic Radiology, 1–8. https://doi.org/10.1016/j.acra.2022.05.021

NAEOTOM Alpha

Optimal Conspicuity of Liver Metastases in Virtual Monochromatic Imaging Reconstructions on a Novel Photon-counting Detector CT—Effect of keV Settings and BMI.
Bette, S., Decker, J. A., Braun, F. M., Becker, J., Haerting, M., Haeckel, T., Gebhard, M., Risch, F., Woźnicki, P., Scheurig-Muenkler, C., Kroencke, T. J., Schwarz, F. (2022).
Diagnostics, 12(5), 1231. https://doi.org/10.3390/diagnostics12051231

NAEOTOM Alpha

Liver Iodine Quantification With Photon-counting Detector CT: Accuracy in an Abdominal Phantom and Feasibility in Patients.
Sartoretti, T., Mergen, V., Jungblut, L., Alkadhi, H., Euler, A. (2022).
Academic Radiology, 1–9. https://doi.org/10.1016/j.acra.2022.04.021

NAEOTOM Alpha

Image Quality and Radiation Dose of Contrast-Enhanced Chest-CT Acquired on a Clinical Photon-counting Detector CT vs. Second-Generation Dual-Source CT in an Oncologic Cohort : Preliminary Results.
Hagen, F., Walder, L., Fritz, J., Gutjahr, R., Schmidt, B., Faby, S., Bamberg, F., Schoenberg, S., Nikolaou, K., Horger, M. (2022).
Tomography 2022, 8(3), 1466–1476. https://doi.org/10.3390/tomography8030119

6. Neurovascular imaging

2025

NAEOTOM Alpha

In Vivo Discrimination of Iodine and Tantalum-Based Liquid Embolics After Intracranial or Spinal Embolization Using Photon-Counting Detector CT. RECOMMENDED

Maurer, C.J., Berlis, A., Stangl, F.J. et al.

Clin Neuroradiol (2025). https://doi.org/10.1007/s00062-025-01502-x

NAEOTOM Alpha

Potential for Radiation Dose Reduction in Temporal Bone CT Imaging Using Photon-Counting Detector CT
Fumiyo Higakia, Yusuke Morimitsub, Toshihiro Iguchic , Sung Il Hwangd, Takahiro Kitayamaa, Yuka Takahashia, Mayu Ukaa, Noriaki Akagib, Akiko Sugayae , Toshiharu Mitsuhashif , Yusuke Matsuig , and Takao Hirakig
Acta Med. Okayama, 2025 Vol. 79, No. 2, pp. 75-80. http://doi.org/10.18926/AMO/68645

NAEOTOM Alpha

Influence of tube voltage on image quality in non-contrast photon-counting computed tomography of the head: Comparison of 120 kVp and 140 kVp.

Schoenbeck D, Kroeger JR, Woeltjen MM, et al.

The Neuroradiology Journal. 2025;0(0). https://doi.org/10.1177/19714009251339079

NAEOTOM Alpha

Assessing anemia in stroke patients through virtual non-contrast imaging with photon-counting detector CT: validation on supra-aortic vessel CT-Angiography

Quint, G., Decker, J., Cortes, A. et al.

Neuroradiology (2025). https://doi.org/10.1007/s00234-025-03620-2

NAEOTOM Alpha

Pre- and Postoperative Imaging of Cochlear Implantation in Cadaveric Specimens Using Low-Dose Photon-Counting Detector CT

Bjoern Spahn, Franz-Tassilo Müller-Graff, Kristen Rak, Jonas Engert, Johannes Voelker, Stephan Hackenberg, Rudolf Hagen, Tilmann Neun, Bernhard Petritsch, Thorsten Alexander Bley, Jan-Peter Grunz, Henner Huflage.

American Journal of Neuroradiology Feb 2025, 46 (2) 362-371; https://doi.org/10.3174/ajnr.A8533

NAEOTOM Alpha

Photon-counting detector CTA to assess intracranial stents and flow diverters: an in vivo study with ultrahigh-resolution spectral reconstructions

RECOMMENDED

De Beukelaer, F., De Beukelaer, S., Wuyts, L.L. et al.

Eur Radiol Exp 9, 10 (2025). https://doi.org/10.1186/s41747-025-00550-9

NAEOTOM Alpha

Increased diagnostic accuracy and better morphology characterization of unruptured intracranial aneurysm by ultra-high-resolution photon-counting detector CT angiography

RECOMMENDED

He N, Lyu H, Zhang Y, et al.

Journal of NeuroInterventional Surgery Published Online First: 04 April 2025. https://doi.org/10.1136/jnis-2025-023094

NAEOTOM Alpha

Photon-counting CT imaging of a patient with coiled and untreated intracranial saccular aneurysms

Tóth A, Cho JY, Wilson E, O'Doherty J, Spampinato MV.

The Neuroradiology Journal. 2025;0(0). https://do.org/10.1177/19714009251313514

NAEOTOM Alpha

Delineation of the brachial plexus by contrast-enhanced photon-counting detector CT and virtual monoenergetic images

Nakashima, Masahiro et al.

European Journal of Radiology, Volume 184, 111964. (2025) https://doi.org/10.1016/j.ejrad.2025.111964

NAEOTOM Alpha

Intracranial Calcification Detection; a Comparison Between Micro-CT, Conventional CT and Ultra-high-resolution Photon-Counting Detector CT

van der Bie, Judith et al.

Academic Radiology, Volume 32, Issue 6, 3599 – 3607 (2025). https://doi.org/10.1016/j.acra.2025.01.028

NAEOTOM Alpha

Deep Learning Based Detection of Large Vessel Occlusions in Acute Ischemic Stroke Using High-Resolution Photon Counting Computed Tomography and Conventional Multidetector Computed Tomography.

RECOMMENDED

Boriesosdick, J., Shahzadi, I., Xie, L. et al.

Clin Neuroradiol 35, 185–195 (2025). https://doi.org/10.1007/s00062-024-01471-7

NAEOTOM Alpha

Improved visualization of the inferior tympanic and mastoid canaliculi with photon counting detector CT

James P. McDonald, Paul J. Farnsworth, Norbert G. Campeau, Shuai Leng, Matthew L. Carlson, John C. Benson, Ian T. Mark, John I. Lane,

American Journal of Otolaryngology, Volume 46, Issue 1, 2025, 104585, ISSN 0196-0709, https://doi.org/10.1016/j.amjoto.2024.104585

NAEOTOM Alpha

Use of Photon-Counting Detector Computed Tomography (PCD-CT) in a Revision Cochlear Implant.

Rist, T. M., Holder, J. T., & Labadie, R. F. (2025).

Otology Neurotology. https://doi.org/10.1097/MAO.0000000000004411

NAEOTOM Alpha
CT-Guided Epidural Contrast Injection for the Identification of Dural Defects.
Mark, I. T., Oien, M., Benson, J., Verdoorn, J., Johnson-tesch, B., Kim, D. K., Cutsforth-gregory, J., Madhavan, A. A., Mark, I. T., Oien, M., Benson, J., Verdoorn, J., Johnson-tesch, B., Kim, D. K., Cutsforth-gregory, J., & Madhavan, A. A. (2025).
46(1), 207–210.
AJNR Am J Neuroradiol 2025, 46 (1) 207-210 doi: https://doi.org/10.3174/ajnr.A8437

NAEOTOM Alpha
Pre- and Postoperative Imaging of Cochlear Implantation in Cadaveric Specimens Using Low-Dose Photon-Counting Detector CT.
Spahn, B., Rak, K., Engert, J., Voelker, J., Hackenberg, S., Hagen, R., Neun, T., Petritsch, B., Bley, A., Grunz, J., Huflage, H.
AJNR Am J Neuroradiol (2025). https://doi.org/10.3174/ajnr.A8533

2024

NAEOTOM Alpha
Improved visualization of the inferior tympanic and mastoid canaliculi with photon counting detector CT.
Tang, Y., Yan, Y., Mao, J., Ni, J., & Qing, H. (2023).
American Journal of Otolaryngology, 101865. https://doi.org/10.1016/j.amjoto.2024.104585

NAEOTOM Alpha
Deep Learning Based Detection of Large Vessel Occlusions in Acute Ischemic Stroke Using High-Resolution Photon Counting Computed Tomography and Conventional Multidetector Computed Tomography.
Boriesosdick, J., Shahzadi, I., Xie, L., Georgescu, B., Gibson, E., Frohwein, L. J., Saeed, S., Haag, N. P., Horstmeier, S., Moenninghoff, C., Niehoff, J. H., Surov, A., Borggrefe, J., & Kroeger, J. R. (2024).
Clinical Neuroradiology. https://doi.org/10.1007/s00062-024-01471-7

NAEOTOM Alpha
Visibility of Intracranial Perforating Arteries Using Ultra-High-Resolution Photon-Counting Detector Computed Tomography (CT) Angiography.
Okazaki, T., Niwa, T., Yoshida, R., Sorimachi, T., & Hashimoto, J. (2024).
Tomography 2024, 10, 1867–1880. https://doi.org/10.3390/tomography10120136

NAEOTOM Alpha
Establishing a Foundation for the In Vivo Visualization of Intravascular Blood with Photon-Counting Technology in Spectral Imaging in Cranial CT.
Klempka, A., Neumayer, P., Schröder, A., Ackermann, E., Hetjens, S., Clausen, S., & Groden, C. (2024).
Diagnostics, 14(14), 1–9. https://doi.org/10.3390/diagnostics14141561

NAEOTOM Alpha
Ultra-High-Resolution Photon-Counting-Detector CT with a Dedicated Denoising Convolutional Neural Network for Enhanced Temporal Bone Imaging.
Chang, S., Benson, J. C., Lane, J. I., Bruesewitz, M. R., Swicklik, J. R., Thorne, J. E., Koons, E. K., Carlson, M. L., Mccollough, C. H., & Leng, S. (2024).
AJNR Am J Neuroradiol 2024 https://doi.org/10.3174/ajnr.A8572

NAEOTOM Alpha
Evaluation of Intracranial Fusiform Aneurysm After Flow Diverter Treatment at Photon-Counting CT.
Wei, J., Zhang, J., & Li, X. (2024).
Stroke, December 2024, 1–2. https://doi.org/10.1161/STROKEAHA.124.049448

NAEOTOM Alpha
Myelographic Techniques for the Localization of Cerebrospinal Fluid Leaks.
Madhavan, A. A., Shah, V., Brinjikji, W., & Cutsforth-Gregory, J. K. (2024).
Neuroimaging Clinics of North America, 35(1), 133–142. https://doi.org/10.1016/j.nic.2024.08.005

NAEOTOM Alpha
Causes of Intracranial Hypotension: Spontaneous, Traumatic, and Iatrogenic Cerebrospinal Fluid Leaks.
Cutsforth-Gregory, J. K., Steel, S. J., Schievink, W. I., & Madhavan, A. A. (2024).
Neuroimaging Clinics of North America, 35(1), 123–132. https://doi.org/10.1016/j.nic.2024.08.004

NAEOTOM Alpha
Dural Arteriovenous Fistula at Photon-Counting CT Angiography.
Tang, W. T., & Zhao, Y. E. (2024).
Radiology, 313(1), 1–2. https://doi.org/10.1148/radiol.240954

NAEOTOM Alpha
Three-Dimensional Reconstruction of a Malleus Handle Fracture Using Photon-Counting CT.
Shi, J. J., Fujiwara, R. J. T., Pinho, M. C., & Isaacson, B. (2024).
Otology and Neurotology, 2–4. https://doi.org/10.1097/MAO.0000000000004343

NAEOTOM Alpha
Ultra-high-resolution photon-counting detector CT for visualization of the brachial plexus.
Nakashima, M., Kawai, T., Matsumoto, K., Kawaguchi, T., Urano, M., Kitera, N., Itoh, T., & Hiwatashi, A. (2024).
European Journal of Radiology, 181, 111810. https://doi.org/10.1016/j.ejrad.2024.111810

NAEOTOM Alpha
Direct visualization of microwires in hybrid depth electrodes using high-resolution photon-counting CT.
Smeijers, S., Coudyzer, W., Keirse, E., Bougou, V., Decramer, T., & Theys, T. (2024).
Epilepsia Open, June, 1–4. https://doi.org/10.1002/epi4.13080

NAEOTOM Alpha
High resolution CT angiography for the assessment of intracranial stents and flow diverters using photon counting detector CT.
Ludovichetti, R., Gorup, D., Krepuska, M., Winklhofer, S., Thurner, P., Madjidyar, J., Flohr, T., Piccirelli, M., Michels, L., Alkadhi, H., Mergen, V., Kulcsar, Z., & Schubert, T. (2024).
J. Neurointervent. Surg. 1–7. https://doi.org/10.1136/jnis-2024-022041

NAEOTOM Alpha
Carotid artery assessment in dual - source photon - counting CT : impact of low - energy virtual monoenergetic imaging on image quality , vascular contrast and diagnostic assessability.
Booz, C., Bucolo, G. M., Angelo, T. D., Mazziotti, S., & Lanzafame, L. R. M. (2024).
La Radiologia Medica, 0123456789. https://doi.org/10.1007/s11547-024-01889-6

NAEOTOM Alpha
Ultra-High-Resolution Temporal Bone Anatomy Using Photon-counting CT : Added Value of Improved Spatial Resolution.
Ansari, S., & Gaddikeri, S. (2024).
Radiographics 2024. 44(10):e240028 https://doi.org/10.1148/rg.240028

NAEOTOM Alpha
Cranial and spinal computed tomography (CT) angiography with photon - counting detector CT : comparison with angiographic and operative findings.
Higaki, F., Hiramatsu, M., Yasuhara, T., Sasada, S., Otani, Y., & Haruma, J. (2024).
Japanese Journal of Radiology. https://doi.org/10.1007/s11604-024-01661-w

NAEOTOM Alpha
Spinal CSF Leaks : The Neuroradiologist Transforming Care Spinal CSF Leaks : The Neuroradiologist Transforming Care.
Mamlouk, M. D., Callen, A. L., Madhavan, A. A., Lützen, N., Jones, L. C., Mark, I. T., Benson, J. C., Verdoorn, J. T., Kim, D. K., Amrhein, T. J., Gray, L., Dillon, W. P., Maya, M., Huynh, T. J., Shah, V. N., Dobrocky, T., Piechowiak, E. I., Chazen, J. L., Malinzak, M. D., ... Kranz, P. G. (2024).
AJNR. https://doi.org/10.3174/ajnr.A8484

NAEOTOM Alpha
High-Resolution Head CTA : A Prospective Patient Study and Energy-Integrating Detector CT.
Diehn, F. E., Zhou, Z., Thorne, J. E., Campeau, N. G., Nagelschneider, A. A., Laurence, J., Benson, J. C., Madhavan, A. A., Bathla, G., Lehman, V. T., Huber, N. R., Baffour, F., Fletcher, G., Mccollough, C. H., Yu, L., Diehn, F. E., Zhou, Z., Thorne, J. E., Campeau, N. G., ... Yu, L. (2024).
AJNR. https://doi.org/10.3174/ajnr.A8342

NAEOTOM Alpha
Optimizing Photon-Counting Detector CT for Imaging Intracranial Aneurysms.
Rajendran, K., & Madhavan, A. A. (2024).
American Journal of Neuroradiology, August, 8–11. https://doi.org/10.3174/ajnr.a8400

NAEOTOM Alpha
Myelographic Techniques for the Localization of CSF-Venous Fistulas: Updates in 2024.
Madhavan, A. A., Brinjikji, W., Cutsforth-Gregory, J. K., Amrhein, T. J., Kranz, P. G., Benson, J. C., Diehn, F. E., Johnson-Tesch, B. A., Liebo, G. B., Lehman, V. T., Mark, I. T., Morris, P. P., Oien, M. P., Shlapak, D. P., & Verdoorn, J. T. (2024).
American Journal of Neuroradiology, August. https://doi.org/10.3174/ajnr.a8299

NAEOTOM Alpha
Establishing a Foundation for the In Vivo Visualization of Intravascular Blood with Photon-Counting Technology in Spectral Imaging in Cranial CT. Diagnostics,
Klempka, A., Neumayer, P., Schröder, A., Ackermann, E., Hetjens, S., Clausen, S., & Groden, C. (2024).
14(14), 1561. https://doi.org/10.3390/diagnostics14141561

NAEOTOM Alpha
Photon-Counting CT in the Head and Neck: Current Applications and Future Prospects.
Benson, J. C., Campeau, N. G., Diehn, F. E., Lane, J. I., Leng, S., & Moonis, G. (2024).
American Journal of Neuroradiology, July. https://doi.org/10.3174/ajnr.a8265

NAEOTOM Alpha
Comprehensive Review of Inner Ear Anatomy on Photon Counting CT.
Rao, D., Murray, J. V., Agarwal, A. K., Sandhu, S. J., & Rhyner, P. A. (2024).
American Journal of Neuroradiology, July, ajnr.A8410. https://doi.org/10.3174/ajnr.a8410

NAEOTOM Alpha
The Photon-Counting CT Enters the Field of Cochlear Implantation: Comparison to Angiography DynaCT and Conventional Multislice CT.
Rak, K., Spahn, B., Müller-Graff, F. T., Engert, J., Voelker, J., Hackenberg, S., Hagen, R., Petritsch, B., Grunz, J. P., Bley, T., Neun, T., & Huflage, H. (2024).
Otology and Neurotology, 45(6), 662–670. https://doi.org/10.1097/MAO.0000000000004221

NAEOTOM Alpha
Cranial Computer Tomography with Photon Counting and Energy-Integrated Detectors: Objective Comparison in the Same Patients.
Klempka, A., Schröder, A., Neumayer, P., Groden, C., Clausen, S., & Hetjens, S. (2024).
Diagnostics, 14(10), 1019. https://doi.org/10.3390/diagnostics14101019

NAEOTOM Alpha
Neurovascular Imaging with Ultra-High-Resolution Photon-Counting CT: Preliminary Findings on Image Quality Evaluation.
Tóth, A., Chetta, J. A., Yazdani, M., Matheus, M. G., Doherty, J. O. ', Tipnis, S. V., & Spampinato, M. V. (2024).
American Journal of Neuroradiology, May, ajnr.A8350. https://doi.org/10.3174/ajnr.a8350

NAEOTOM Alpha
Advanced Imaging of Shunt Valves in Cranial CT Scans with Photon-Counting Scanner.
Klempka, A., Ackermann, E., Brehmer, S., Clausen, S., & Groden, C. (2024).
Tomography, 10(5), 654–659. https://doi.org/10.3390/tomography10050050

NAEOTOM Alpha
Ultra-High Spatial Resolution Images of the Temporal Bone Obtained With a Newly Released Photon-Counting Detector Computed Tomography.
Sakaida, H., Ichikawa, Y., Yamazaki, A., Sakuma, H., & Takeuchi, K. (2024).
Ear, Nose and Throat Journal, 4–6. https://doi.org/10.1177/01455613241235551

NAEOTOM Alpha
Comparison of Image Quality and Radiation Dose in Pediatric Temporal Bone CT using Photon Counting Detectors CT and Energy Integrating Detectors CT Comparison of Image Quality and Radiation Dose in Pediatric Temporal Bone CT using Photon Counting Detector.
Lee, J. S., Kim, J., & Bapuraj, J. R. (2024).
American Journal of Neuroradiology. https://doi.org/10.3174/ajnr.A8276

NAEOTOM Alpha
Benefits of Photon-Counting CT Myelography for Localization of Dural Tears in Spontaneous Intracranial Hypotension.
Madhavan, A. A., Cutsforth-Gregory, J. K., Brinjikji, W., Benson, J. C., Johnson-Tesch, B. A., Liebo, G. B., Mark, I. T., Oien, M. P., Shlapak, D. P., Yu, L., & Verdoorn, J. T. (2024).
American Journal of Neuroradiology, March. https://doi.org/10.3174/ajnr.a8179

NAEOTOM Alpha
Imaging of hypodense gliotic lesions in photon counting computed tomography using virtual monoenergetic images.
Schoenbeck, D., Sacha, A., Niehoff, J. H., Moenninghoff, C., Borggrefe, J., Kroeger, J. R., & Michael, A. E. (2024).
Neuroradiology Journal, 0(0), 1–6. https://doi.org/10.1177/19714009241240056

NAEOTOM Alpha
Photon Counting Computed Tomography for Accurate Cribriform Plate (Lamina Cribrosa) Imaging in Adult Patients.
Klempka, A., Ackermann, E., & Clausen, S. (2024).
Tomography 10, 400–414 https://doi.org/10.3390/%20tomography10030031

NAEOTOM Alpha
Imaging of intracranial hemorrhage in photon counting computed tomography using virtual monoenergetic images.
Schoenbeck, D., Sacha, A., Niehoff, J. H., Moenninghoff, C., Borggrefe, J., Horstmeier, S., Surov, A., Shahzadi, I., & Knappe, U. (2024).
Neuroradiology, 0123456789. https://doi.org/10.1007/s00234-024-03308-z

NAEOTOM Alpha
The Small Pixel Effect in Ultra-High-Resolution Photon-Counting CT of the Lumbar Spine.
Huflage, H., Hendel, R., Woznicki, P., Conrads, N., Feldle, P., Patzer, T. S., Ergün, S., Bley, T. A., Kunz, A. S., & Grunz, J.-P. (2024).
Investigative Radiology, 1–6. https://doi.org/10.1097/rli.0000000000001069

NAEOTOM Alpha
Back to the Future: Dynamic Contrast-Enhanced Photon-Counting Detector CT for the Detection of Pituitary Adenoma in Cushing Disease.
Mark, I. T., Van Gompel, J., Bancos, I., Nagelschneider, A. A., Johnson, D. R., Bathla, G., Madhavan, A. A., Weber, N. M., & Yu, L. (2024).
American Journal of Neuroradiology, January, 1–5. https://doi.org/10.3174/ajnr.a8171

NAEOTOM Alpha
Photon-Counting Detector CT Angiography in Cervical Artery Dissection.
Keser, Z., Diehn, F. E., & Lanzino, G. (2024).
Stroke, 55(3), E48–E49. https://doi.org/10.1161/STROKEAHA.123.046174

NAEOTOM Alpha
Ultra-low-dose photon-counting CT of paranasal sinus: an in vivo comparison of radiation dose and image quality to cone-beam CT.
Kaatsch, H. L., Fulisch, F., Dillinger, D., Kubitscheck, L., Becker, B. V., Piechotka, J., Brockmann, M. A., Froelich, M. F., Schoenberg, S. O., Overhoff, D., & Waldeck, S. (2024).
Dento Maxillo Facial Radiology, 53(2), 103–108. https://doi.org/10.1093/dmfr/twad010

NAEOTOM Alpha
Myelography Using Energy-Integrating Detector CT Versus Photon-Counting Detector CT for Detection of CSF-Venous Fistulas in Patients With Spontaneous Intracranial Hypotension.
Schwartz, F. R., Kranz, P. G., Malinzak, M. D., Cox, D. N., Ria, F., McCabe, C., Harrawood, B., Leithe, L. G., Samei, E., & Amrhein, T. J. (2024).
American Journal of Roentgenology, 222(4). https://doi.org/10.2214/AJR.23.30673

NAEOTOM Alpha
Atherosclerotic plaque features relevant to rupture-risk detected by clinical photon-counting CT ex vivo: a proof-of-concept study.
Shami, A., Sun, J., Gialeli, C., Markstad, H., Edsfeldt, A., Aurumskjöld, M. L., & Gonçalves, I. (2024).
European Radiology Experimental, 8(1). https://doi.org/10.1186/s41747-023-00410-4

NAEOTOM Alpha
Image quality of photon-counting detector CT virtual monoenergetic and polyenergetic reconstructions for head and neck CT angiography.
Spampinato, M. V., Rodgers, J., Mcgill, L. J., Schoepf, J., & Doherty, J. O. (2024).
Clinical Imaging, https://doi.org/10.1016/j.clinimag.2024.110081

2023

NAEOTOM Alpha
Discrimination of Hemorrhage and Contrast Media in a Head Phantom on Photon-Counting Detector CT Data.
Risch, F., Berlis, A., Kroencke, T., Schwarz, F., & Maurer, C. J. (2023).
American Journal of Neuroradiology. https://doi.org/10.3174/ajnr.a8093

NAEOTOM Alpha
Diagnostic Performance of Decubitus Photon-counting Detector CT Myelography for the Detection of CSF-Venous Fistulas.
Madhavan, A. A., Cutsforth-Gregory, J. K., Brinjikji, W., Bathla, G., Benson, J. C., Diehn, F. E., Eckel, L. J., Mark, I. T., Morris, P. P., Payne, M. A., Verdoorn, J. T., Weber, N. M., Yu, L., Baffour, F., Fletcher, J. G., & McCollough, C. H. (2023).
American Journal of Neuroradiology, November. https://doi.org/10.3174/ajnr.a8040

NAEOTOM Alpha
Impact of different metal artifact reduction techniques in Photon-counting computed tomography head and neck scans in patients with dental hardware.
Pallasch, F. B., Rau, A., Reisert, M., Rau, S., Diallo, T., Stein, T., Faby, S., Bamberg, F., & Weiss, J. (2023).
European Radiology. https://doi.org/10.1007/s00330-023-10430-8

NAEOTOM Alpha
High resolution photon counting CT permits direct visualisation of directional deep brain stimulation lead segments and markers.
Manfield, J., Thomas, S., Antoniades, C., Green, A. L., & FitzGerald, J. J. (2023).
Brain Stimulation, 16(5), 1276–1277. https://doi.org/10.1016/j.brs.2023.08.015

NAEOTOM Alpha
Evaluation of the ear ossicles with Photon-counting detector CT.
Takahashi, Y., Higaki, F., Sugaya, A., Asano, Y., Kojima, K., Morimitsu, Y., Akagi, N., Itoh, T., Matsui, Y., & Hiraki, T. (2023).
Japanese Journal of Radiology, 2–8. https://doi.org/10.1007/s11604-023-01485-0

NAEOTOM Alpha
Photon-counting CT allows better visualization of temporal bone structures in comparison with current generation multi-detector CT.
Hermans, R., Boomgaert, L., Cockmartin, L., Binst, J., De Stefanis, R., & Bosmans, H. (2023).
Insights into Imaging, 14(1), 112. https://doi.org/10.1186/s13244-023-01467-w

NAEOTOM Alpha
High-resolution computer tomography angiography of the orbit using a Photon-counting computer tomography scanner.
Farnsworth, P. J., Campeau, N. G., Diehn, F. E., Yu, L., Leng, S., Zhou, Z., Fletcher, J. G., & McCollough, C. H. (2023).
Interventional Neuroradiology. https://doi.org/10.1177/15910199231175198

NAEOTOM Alpha
High spatial-resolution skull base imaging with Photon-counting computed tomography and and energy-Inregrating computed tomography – A comparative phantom study.
Rajagopal, J. R., Schwartz, F. R., Solomon, J. B., Enterline, D. S., & Samei, E. (2023).
Journal of Computed Assist. Tomography, 1–8. https://doi.org/10.1097/RCT.0000000000001464

NAEOTOM Alpha
Combining virtual monoenergetic imaging and iterative metal artifact reduction in first-generation Photon-counting computed tomography of patients with dental implants.
Patzer, T. S., Kunz, A. S., Huflage, H., Gruschwitz, P., Pannenbecker, P., Afat, S., Herrmann, J., Petritsch, B., Bley, T. A., & Grunz, J. P. (2023).
European Radiology, https://doi.org/10.1007/s00330-023-09790-y

NAEOTOM Alpha
Dual Source Photon-counting Computed Tomography — Part II : Clinical Overview of Neurovascular Applications.
Cademartiri, F., Meloni, A., Pistoia, L., Degiorgi, G., Clemente, A., Gori, C. De, Positano, V., Celi, S., Berti, S., Emdin, M., Panetta, D., Menichetti, L., Punzo, B., Cavaliere, C., Bossone, E., Saba, L., Cau, R., Grutta, L. La, & Maffei, E. (2023).
J. Clin. Med. 2023, 12, 3626. https://doi.org/10.3390/jcm12113626

NAEOTOM Alpha
Utility of Photon-counting detector CT myelography for the detection of CSF-Venous fistulas.
Madhavan, A.A., Yu, L., Brinjikji, W., Cutsforth-Gregory, J.K., Schwartz, F.R., Mark, I.T., Benson, J.C., Amrhein, T.J..
American Journal of Neuroradiology (2023) http://dx.doi.org/10.3174/ajnr.A7887

2022

NAEOTOM Alpha
Photon-counting Detector CT for Temporal Bone Imaging : Up to Three Times the Resolution at Half the Radiation Dose.
Macielak, R. J., Benson, J. C., Lane, J. I., Carlson, M. L., Leng, S. (2022).
Otology and Neurotology https://doi.org/10.1097/MAO.0000000000003682

NAEOTOM Alpha
Photon-counting Detector CT Virtual Monoengergetic Images for Cochlear Implant Visualization—A Head to Head Comparison to Energy-Integrating Detector CT. Tomography.
Waldeck, S., Overhoff, D., Alizadeh, L., Becker, B. V., Port, M., Froelich, M. F., Brockmann, M. A., Schumann, S., Vogl, T. J., Schoenberg, S. O., Schmidt, S. (2022).
Tomography, 8(4), 1642–1648. https://doi.org/10.3390/tomography8040136

NAEOTOM Alpha
Spectral Shaping Via Tin Prefiltration in Ultra-High-Resolution Photon-counting and Energy-Integrating Detector CT of the Temporal Bone.
Grunz, J., Heidenreich, J. F., Lennartz, S., Weighardt, J. P., Bley, T. A., Ergün, S., Petritsch, B., Huflage, H. (2022).
Investigative Radiology, 1–7. https://doi.org/10.1097/RLI.0000000000000901

NAEOTOM Alpha
Ultra-Low-Dose Photon-counting CT Imaging of the Paranasal Sinus With Tin Prefiltration–How low can we go?
Grunz, J., Petritsch, B., Luetkens, K. S., Kunz, A. S., Lennartz, S., Ergün, S., Bley, T. A., Huflage, H. (2022).
Investigative Radiology, 1–6. https://doi.org/10.1097/RLI.0000000000000887

NAEOTOM Alpha
Image-Quality Assessment of Polyenergetic and Virtual Monoenergetic Reconstructions of Unenhanced CT Scans of the Head: Initial Experiences with the First Photon-counting CT Approved for Clinical Use.
Michael, A. E., Boriesosdick, J., Schoenbeck, D., Woeltjen, M. M., Saeed, S., Kroeger, J. R., Horstmeier, S., Lennartz, S., Borggrefe, J., Niehoff, J. H. (2022).
Diagnostics, 12(2), 265. https://doi.org/10.3390/diagnostics12020265

2021

NAEOTOM Alpha

Photon-counting Computed Tomography Scan of a Cerebrospinal Fluid Venous Fistula.
Kranz, P. G., Gray, L., Malinzak, M. D., Houk, J. L., Kim, D. K., Amrhein, T. J. (2021).
American Journal of Roentgenology, 217(6), 1418–1430. https://doi.org/10.2214/AJR.21.26182

2020

NAEOTOM Alpha

Long-term outcome of patients with spinal dural arteriovenous fistula: The dilemma of delayed diagnosis.
Jablawi, F., Schubert, G. A., Dafotakis, M., Pons-Kühnemann, J., Hans, F. J., & Mull, M. (2020).
American Journal of Neuroradiology, 41(2), 357–363. https://doi.org/10.3174/ajnr.A6372

7. Dental imaging

2025

NAEOTOM Alpha

Cone-beam versus photon-counting detector CT: Influence of dose variations on the detection of simulated mandibular osseous lesions

RECOMMENDED

Adib Al-Haj Husain, Victor Mergen, Silvio Valdec, Sebastian Winklhofer, Hatem Alkadhi, Harald Essig, Thomas Frauenfelder, Peter Kessler, Suen An Nynke Lie, Bernd Stadlinger.
Journal of Cranio-Maxillofacial Surgery, 2025, ISSN 1010-5182, https://doi.org/10.1016/j.jcms.2025.04.023

NAEOTOM Alpha

Dental implant artifacts: Evaluation of photon counting CT-derived virtual monoenergetic images in combination with iterative metal artifact reduction algorithms
Julian Schreck, Julius Henning Niehoff, Saher Saeed, Jan Robert Kroeger, Simon Lennartz, Kai Roman Laukamp, Jan Borggrefe, Arwed Elias Michael,
European Journal of Radiology, Volume 187, 2025, 112117, ISSN 0720-048X, https://doi.org/10.1016/j.ejrad.2025.112117.

NAEOTOM Alpha

Comparison of cone-beam computed tomography with photon-counting detector computed tomography for dental implant surgery

Al-Haj Husain, A., Mergen, V., Valdec, S. et al.

Int J Implant Dent 11, 21 (2025). https://doi.org/10.1186/s40729-025-00611-z

2024

NAEOTOM Alpha

Helpfulness of effective atomic number image in forensic dental identification: Photon-counting computed tomography is suitable.
Asahara, T., Okada, S., Hayashi, H., Maeda, T., Nishigami, R., Kobayashi, D., Kurose, C., Kimoto, N., Goto, S., Hisatomi, M., Yanagi, Y., & Iguchi, T. (2025).
Computers in Biology and Medicine, 184 (April 2024), 109333. https://doi.org/10.1016/j.compbiomed.2024.109333

NAEOTOM Alpha

Potential Benefits of Photon-Counting CT in Dental Imaging: A Narrative Review.
Zanon, C., Pepe, A., Cademartiri, F., Bini, C., Maffei, E., Quaia, E., Stellini, E., & Di Fiore, A. (2024).
Journal of Clinical Medicine, 13(8). https://doi.org/10.3390/jcm13082436

NAEOTOM Alpha

Dental imaging in clinical photon-counting CT at a quarter of DVT dose.
Sawall, S., Maier, J., Sen, S., Gehrig, H., Kim, T. S., Schlemmer, H. P., Schönberg, S. O., Kachelrieß, M., & Rütters, M. (2024).
Journal of Dentistry, 142. https://doi.org/10.1016/j.jdent.2024.104859

2023

NAEOTOM Alpha

Artifact Reduction From Dental Material in Photon-counting Detector Computed Tomography Data Sets Based on High-keV Monoenergetic Imaging and Iterative Metal Artifact Reduction Reconstructions — Can We Combine the Best of Two Worlds ?
Risch, F., Decker, J. A., Popp, D., Sinzinger, A., Braun, F., Bette, S., Jehs, B., Haerting, M., Wollny, C., Scheurig-Muenkler, C., Kroencke, T. J., & Schwarz, F. (2023).
Investigative Radiology, 1–6. https://doi.org/10.1097/RLI.0000000000000967

8. Muskuloskeletal imaging

2025

NAEOTOM Alpha
Assessment of metal artifacts from titanium wrist prostheses: photon-counting versus energy-integrating detector CT
Kämmerling, N., Farnebo, S., Sandstedt, M. *et al*.
Eur Radiol Exp 9, 45 (2025). https://doi.org/10.1186/s41747-025-00587-w

NAEOTOM Alpha
Assessment of bone-implant interface image quality for in-vivo acetabular cup implants using photon-counting detector CT: Impact of tin pre-filtration
Booij, Ronald et al.
European Journal of Radiology Open, Volume 14, 100646 (2025). https://doi.org/10.1016/j.ejro.2025.100646

NAEOTOM Alpha
In Vivo Bone Mineral Density Assessment With Spectral Localizer Radiographs From Photon-Counting Detector CT: Prospective Comparison With DXA. RECOMMENDED
Moser, Lukas Jakob MD; Klambauer, Konstantin MD; Diaz Machicado, Maria Carolina MD; Frey, Diana MD; Mergen, Victor MD; Eberhard, Matthias MD; Nowak, Tristan PhD; Schmidt, Bernhard PhD; Flohr, Thomas PhD; Distler, Oliver MD; Alkadhi, Hatem MD, MPH, EBCR, FESER Investigative Radiology ():10.1097/RLI.0000000000001159, February 4, 2025.
https://doi.org/10.1097/RLI.0000000000001159

NAEOTOM Alpha
Visualization of Bony Union after Discectomy and Fusion Using Photon-Counting Detector CT
Stephan Rau, Jakob Weiss
Radiology 2025 Mar;314(3):e242514. https://doi.org/10.1148/radiol.242514

2024

NAEOTOM Alpha
Reducing Metal Artifacts in Clinical Photon Counting Detector Computed Tomography—A Phantom Study of an Exemplary Total Hip Arthroplasty.
Marcus, R. P., Feuerriegel, G. C., Marth, A. A., Goller, S. S., Nanz, D., Anhaus, J., & Sutter, R. (2024).
Skeletal Radiology. https://doi.org/10.1007/s00256-024-04820-2

NAEOTOM Alpha
Opportunistic Bone Mineral Density Measurement Using Photon-Counting Detector CT Spectral Localizer Images: A Prospective Study.
El Sadaney, A.O., Ferrero, A., Rajendran, K., Jasper, S., Mazza, G.L., Broski, S.M., Shanblatt, E., Nowak, T., Fletcher, J.G., McCollough, C.H., Baffour, F.I. (2024).
Biomedical Materials, 0–16. https://doi.org/10.2214/AJR.24.31909

NAEOTOM Alpha
The quantification of bone mineral density using photon-counting computed tomography and its implications for detecting bone remodeling.
Quintiens, J., Coudyzer, W., Bevers, M., Vereecke, E., van den Bergh, J.P., Manske, S.L., van Lenthe, G.H.
J Bone Miner Res. 2024 Nov 29;39(12):1774-1782. https://doi.org/10.1093/jbmr/zjae163

NAEOTOM Alpha
Multiplanar reconstructions of the thoracic spine in a photon counting dual-source CT scanner : comparison to EID-CT.
Bette, S. J., Braun, F. M., Luitjens, J. H., Kaufmann, D., Decker, J., Becker, J., Scheurig-muenkler, C., Kroencke, T. J., & Schwarz, F. (2024).
https://doi.org/10.1177/02841851241271109

NAEOTOM Alpha
Photon-Counting Detector CT Applications in Musculoskeletal Radiology.
Grunz, J. P., & Huflage, H. (2024).
Investigative Radiology, 00(00), 1–7. https://doi.org/10.1097/RLI.0000000000001108

NAEOTOM Alpha
Quantitative metrics of bone quality determined at the distal radius using photon-counting CT.
Dutta, A., Ferrero, A., Rajendran, K., Drake, M. T., Ou, F. S., Giri, S., Fletcher, J. G., McCollough, C. H., & Baffour, F. I. (2024).
Skeletal Radiology. https://doi.org/10.1007/s00256-024-04770-9

NAEOTOM Alpha
Photon-Counting Computed Tomography: Experience in Musculoskeletal Imaging.
Grunz, J. P., & Huflage, H. (2024).
Korean Journal of Radiology, 25(7), 662–672. https://doi.org/10.3348/kjr.2024.0096

NAEOTOM Alpha
Photon-Counting CT in Musculoskeletal Imaging—10 Key Questions Answered.
Vosshenrich, J., O'Donnell, T., & Fritz, J. (2024).
Seminars in Roentgenology. https://doi.org/10.1053/j.ro.2024.05.003

NAEOTOM Alpha
Photon-Counting Computed Tomography for Microstructural Imaging of Bone and Joints.
Quintiens, J., & van Lenthe, G. H. (2024).
Current Osteoporosis Reports, 0123456789. https://doi.org/10.1007/s11914-024-00876-0

NAEOTOM Alpha
Photon-counting detector computed tomography for metal artifact reduction: a comparative study of different artifact reduction techniques in patients with orthopedic implants.
Pallasch, F. B., Rau, A., Reisert, M., Rau, S., Diallo, T., Stein, T., Faby, S., Bamberg, F., & Weiss, J. (2024).
Radiologia Medica, 0123456789. https://doi.org/10.1007/s11547-024-01822-x

NAEOTOM Alpha
Photon-Counting Detector CT Virtual Monoenergetic Images in Cervical Trauma Imaging—Optimization of Dental Metal Artifacts and Image Quality.
Dillinger, D., Overhoff, D., Froelich, M. F., Kaatsch, H. L., Booz, C., Hagen, A., Vogl, T. J., Schönberg, S. O., & Waldeck, S. (2024).
Diagnostics, 14(6), 626. https://doi.org/10.3390/diagnostics14060626

NAEOTOM Alpha
A comparative study of image quality and diagnostic confidence in diagnosis and follow-up of scaphoid fractures using photon-counting detector CT and energy-integrating detector CT.
Kämmerling, N., Tesselaar, E., Booij, R., Fornander, L., Persson, A., & Farnebo, S. (2024).
European Journal of Radiology, 173, 111383. https://doi.org/10.1016/j.ejrad.2024.111383

NAEOTOM Alpha
Accuracy of photon-counting computed tomography for the measurement of bone quality in the knee.
Azari, F., Uniyal, P., Soete, J., Coudyzer, W., Wyers, C. E., Quintiens, J., van den Bergh, J. P., & van Lenthe, G. H. (2024).
Bone, 181, 117027. https://doi.org/10.1016/j.bone.2024.117027

NAEOTOM Alpha
Severe metallosis following catastrophic failure of total shoulder arthroplasty — a case report.
Ogunfuwa, F. O., Needell, S., & Simovitch, R. W. (2024).
Skeletal Radiology. https://doi.org/10.1007/s00256-024-04575-w

NAEOTOM Alpha
Photon-Counting Detector CT Clinical Utility of Virtual Monoenergetic Imaging Combined With Tin Prefiltration to Reduce Metal Artifacts in the Postoperative Ankle.
Marth, A. A., Goller, S. S., Kajdi, G. W., Roy, P., & Sutter, R. (2024).
Investigative Radiology 1–9. https://doi.org/10.1097/RLI.0000000000001058

2023

NAEOTOM Alpha
Bone Mineral Density Assessment Using Spectral Topograms From a Clinical Photon-counting Detector CT System: A Phantom Evaluation.
Moser, L. J., Pitteloud, J., Mergen, V., Frey, D., Nowak, T., Distler, O., Eberhard, M., & Alkadhi, H. (2023).
American Journal of Roentgenology. https://doi.org/10.2214/ajr.23.30347

NAEOTOM Alpha
Metal artifact reduction in patients with total hip replacements : evaluation of clinical photon counting CT using virtual monoenergetic images.
Schreck, J., Roman, K., Julius, L., Niehoff, H., Elias, A., Jan, M., Michael, M., Jan, W., Kröger, R., Reimer, R. P., Peter, J., Jan, G., & Lennartz, S. (2023).
European Radiology. https://doi.org/10.1007/s00330-023-09879-4

NAEOTOM Alpha
Ultra-high resolution Photon-counting CT with tin prefiltration for bone-metal interface visualization.
Patzer, T. S., Grunz, J.-P., Huflage, H., Hennes, J.-L., Pannenbecker, P., Gruschwitz, P., Afat, S., Herrmann, J., Bley, T. A., & Kunz, A. S. (2023).
European Journal of Radiology, 170, 111209. https://doi.org/10.1016/j.ejrad.2023.111209

NAEOTOM Alpha
Photon-counting Detector CT With Denoising for Imaging of the Osseous Pelvis at Low Radiation Doses: A Phantom Study.
Marcus, R. P., Nagy, D., Feuerriegel, G. C., Anhaus, J., Nanz, D., & Sutter, R. (2023).
American Journal of Roentgenology. https://doi.org/10.2214/ajr.23.29765

NAEOTOM Alpha
Photon-counting Detector CT Versus Energy-Integrating Detector CT of the Lumbar Spine: Comparison of Radiation Dose and Image Quality.
Marth, A. A., Marcus, R. P., Feuerriegel, G. C., Nanz, D., & Sutter, R. (2023).
American Journal of Roentgenology. https://doi.org/10.2214/ajr.23.29950

NAEOTOM Alpha
Rotational alignment of the lower extremity in the presence of total knee endoprosthesis: Reproducibility of torsion analyses using ultra-low-dose Photon-counting CT.
Patzer, T. S., Kunz, A. S., Huflage, H., Luetkens, K. S., Conrads, N., Pannenbecker, P., Jakuscheit, A., Reppenhagen, S., Ergün, S., Bley, T. A., & Grunz, J. P. (2023).
European Journal of Radiology, 167(June), 111055. https://doi.org/10.1016/j.ejrad.2023.111055

NAEOTOM Alpha
Ultra-High-Resolution Photon-counting Detector CT Arthrography of the Ankle: A Feasibility Study.
Luetkens, K. S., Grunz, J.-P., Kunz, A. S., Huflage, H., Weißenberger, M., Hartung, V., Patzer, T. S., Gruschwitz, P., Ergün, S., Bley, T. A., & Feldle, P. (2023).
Diagnostics, 13(13), 2201. https://doi.org/10.3390/diagnostics13132201

NAEOTOM Alpha
Quantitative and qualitative image quality assessment in shoulder examinations with a first - generation photon - counting detector CT.
Patzer, T. S., Kunz, A. S., Huflage, H., Luetkens, K. S., Conrads, N., Gruschwitz, P., Pannenbecker, P., Ergün, S., Bley, T. A., & Grunz, J. P. (2023).
Scientific Reports, 1–8. https://doi.org/10.1038/s41598-023-35367-2

NAEOTOM Alpha
Combining iterative metal artifact reduction and virtual monoenergetic images severely reduces hip prosthesis - associated artifacts in photon - counting detector CT.
Layer, Y. C., Mesropyan, N., Kupczyk, P. A., Luetkens, J. A., Isaak, A., Dell, T., Attenberger, U. I., & Kuetting, D. (2023).
Scientific Reports, 1–11. https://doi.org/10.1038/s41598-023-35989-6

NAEOTOM Alpha
Improved visualization of the bone - implant interface and osseointegration in ex vivo acetabular cup implants using photon - counting detector CT.
Woisetschläger, M., Booij, R., Tesselaar, E., Oei, E. H. G., & Schilcher, J. (2023).
European Radiology Experimental. https://doi.org/10.1186/s41747-023-00335-y

NAEOTOM Alpha
Photon-counting CT of elbow joint fractures: image quality in a simulated post-trauma setting with off-center positioning.
Sonnow, L., Salimova, N., Behrendt, L., Wacker, F. K., Örgel, M., Plagge, J., & Weidemann, F. (2023).
European Radiology Experimental, 7(1), 15. https://doi.org/10.1186/s41747-023-00329-w

NAEOTOM Alpha
Feasibility of Photon-counting CT for femoroacetabular impingement syndrome evaluation: lower radiation dose and improved diagnostic confidence.
Ferrero, A., Powell, G. M., Adaaquah, D. K., Rajendran, K., Thorne, J. E., Krych, A. J., Horst, K. K., McCollough, C. H., & Baffour, F. I. (2023).
Skeletal Radiology, https://doi.org/10.1007/s00256-023-04325-4

NAEOTOM Alpha
Photon-counting Computed Tomography (PC-CT) of the spine: impact on diagnostic confidence and radiation dose.
Rau, A., Straehle, J., Stein, T., Diallo, T., Rau, S., Faby, S., Nikolaou, K., Schoenberg, S. O., Overhoff, D., Beck, J., Urbach, H., Klingler, J. H., Bamberg, F., & Weiss, J. (2023).
European Radiology. https://doi.org/10.1007/s00330-023-09511-5

NAEOTOM Alpha
Ultrahigh-resolution computed tomography of the cervical spine without dose penalty employing a cadmium-telluride Photon-counting detector.
Conrads, N., Grunz, J., Huflage, H., Luetkens, K. S., Feldle, P., Pennig, L., Ergün, S., Bley, T. A., Petritsch, B., & Kunz, A. S. (2023).
European Journal of Radiology, 110718. https://doi.org/10.1016/j.ejrad.2023.110718

NAEOTOM Alpha
Assessment of visibility of bone structures in the wrist using normal and half of the radiation dose with Photon-counting detector CT.
Oei, E. H. G., Persson, A., Booij, R., Nina, F. K., & Tesselaar, E. (2023).
European Journal of Radiology 159(December 2022). https://doi.org/10.1016/j.ejrad.2022.110662

2022

NAEOTOM Alpha

Photon-counting detector computed tomography (PCD-CT) – an emerging technology in hand and wrist imaging.
Booij, R., Sandstedt, M., Tesselaar, E., & Farnebo, S. (2022).
Journal of Hand Surgery: European Volume(0) 1-6 .https://doi.org/10.1177/17531934221132692

NAEOTOM Alpha

Photon-counting Detector CT for Musculoskeletal Imaging: A Clinical Perspective.
Baffour, F. I., Flazebrook, K. N., Ferrero, A., Leng, S., McCollough, C. H., Fletcher, J. G., Rajendran, K. (2022).
American Journal of Roentgenology. https://doi.org/10.2214/AJR.22.28418

NAEOTOM Alpha

Potential of employing a quantum iterative reconstruction algorithm for ultra-high-resolution Photon-counting detector CT of the hip.
Huflage, H., Grunz, J.-P., Kunz, A. S., Patzer, T. S., Sauer, S. T., Christner, S. A., Petritsch, B., Ergün, S., Bley, T. A., Luetkens, K. S.
Radiography, 29(1), 44-49. (2022) https://doi.org/10.1016/j.radi.2022.09.010

NAEOTOM Alpha

Effective Spatial Resolution of Photon Counting CT for Imaging of Trabecular Structures is Superior to Conventional Clinical CT and Similar to High Resolution Peripheral CT.
Sebastian, F., Thomsen, L., Horstmeier, S., Niehoff, J. H., Peña, J. A., Borggrefe, J. (2022).
Investigative Radiology, 1–7. https://doi.org/10.1097/RLI.0000000000000873

2021

NAEOTOM Alpha

Visualization of bone details in a novel Photon-counting dual-source CT scanner-comparison with energy-integrating CT.
Bette, S. J., Braun, F. M., Haerting, M., Decker, J. A., Luitjens, J. H., Scheurig-Muenkler, C., Kroencke, T. J., Schwarz, F. (2021).
European Radiology, 32(5), 2930-2936. https://doi.org/10.1007/s00330-021-08441-4

9. Pediatric imaging

2025

NAEOTOM Alpha

Comparison of Radiation Dose and Image Quality in Pediatric Abdominopelvic Photon-Counting Versus Energy-Integrating Detector CT. RECOMMENDED
Siegel, Marilyn J. MD; Thomas, Matthew Allan PhD; Haq, Adeel MD; Seymore, Noah MD; Sodhi, Kushaljit Singh MD; Abadia, Andres PhD.
Journal of Computer Assisted Tomography ():10.1097/RCT.0000000000001730, January 31, 2025.
https://doi.org/10.1097/RCT.0000000000001730

2024

NAEOTOM Alpha

Pediatric contrast-enhanced chest CT on a photon-counting detector CT: radiation dose and image quality compared to energy-integrated detector CT. RECOMMENDED
El-Ali, A. M., Strubel, N., Pinkney, L., Xue, C., Dane, B., & Lala, S. V. (2024).
Pediatric Radiology, 0123456789. https://doi.org/10.1007/s00247-024-06078-1

NAEOTOM Alpha

Unlocking the Potential of Photon Counting Detector CT (PCD-CT) for Paediatric Imaging: a pictorial essay.
Aliukonyte, I.,Caudri, D., Booij, R.. van Straten, M.. L Dijkshoorn, M., P J Budde, R., H.G. Oei, Edwin., Saba, L., A W M Tidden, H., Ciet, P., (2024).
BJR Open, https://doi.org/10.1093/bjro/tzae015

NAEOTOM Alpha

Photon counting detector computed tomography in pediatric cardiothoracic CT imaging.
Siegel, M. J., & Ramirez-Giraldo, J. C. (2024).
Radiology Advances, 1(2), 1–11. https://doi.org/10.1093/radadv/umae012

NAEOTOM Alpha

Photon-counting computed tomography for paediatric congenital heart defects yields images of high diagnostic quality with low radiation doses at both 70 kV and 90 kV.
Stålhammar, F., Aurumskjöld, M. L., Meyer, S., Wiklund, M., Wingren, P., Liuba, P., & Hedström, E. (2024).
Pediatric Radiology, 0123456789. https://doi.org/10.1007/s00247-024-05939-z

NAEOTOM Alpha
Universal 120-kV Dual-Source Ultra-High Pitch Protocol on the Photon-Counting CT System for Pediatric Abdomen of All Sizes : A Phantom Investigation Comparing With Energy-Integrating CT.
Zhou, W., Huo, D., Lorna, P., Zhou, X., & Weinman, J. (2024).
Investigative Radiology 1–8. https://doi.org/10.1097/RLI.0000000000001080

2023

NAEOTOM Alpha
Photon-counting versus Dual-Source CT of Congenital Heart Defects in Neonates and Infants : Initial Experience.
Dirrichs, T., Tietz, E., Rüffer, A., Hanten, J., Nguyen, T., Dethlefsen, E. (2023).
Radiology 2023; 307(5):e223088 https://doi.org/10.1148/radiol.223088

NAEOTOM Alpha
Comparison of Radiation Dose and Image Quality of Pediatric High- Resolution Chest CT Between Photon-counting Detector CT and Energy- Integrated Detector CT: A Matched Study.
Siegel, M. J., Bugenhagen, & Sanchez, A., Kim S., Abadia, A. Ramirez-Giraldo, J.C.(2023). https://doi.org/10.2214/AJR.23.29077

NAEOTOM Alpha
Low dose pediatric chest computed tomography on a photon counting detector system – initial clinical experience.
Tsiflikas, I., Thater, G., Ayx, I., Weiss, J., Schaefer, J., Stein, T., Schoenberg, S. O., & Weis, M. (2023).
Pediatric Radiology, 1–6. https://doi.org/10.1007/s00247-022-05584-4

NAEOTOM Alpha
Pilot study to determine whether reduced - dose photon - counting detector chest computed tomography can reliably display Brody II score imaging findings for children with cystic fibrosis at radiation doses that approximate radiographs.
Horst, K. K., Hull, N. C., Thacker, P. G., Demirel, N., Yu, L., Mcdonald, J. S., Larson, N. B., Mccollough, C. H., & Fletcher, J. G. (2023).
Pediatric Radiology. https://doi.org/10.1007/s00247-022-05574-6

2022

NAEOTOM Alpha
Pediatric Applications of Photon-counting Detector CT.
Cao, J., Bache, S., Schwartz, F. R., Frush, D. (2022).
American Journal of Roentgenology. https://doi.org/10.2214/AJR.22.28391

10. Spectral imaging

2025

NAEOTOM Alpha
ual-Source Dual-Energy Imaging Using Photon-Counting Detector CT for Bone Edema Detection: Leveraging Tin Prefiltration for Improved Spectral Performance. RECOMMENDED
Rajendran, Kishore PhD; Ferrero, Andrea PhD; Shanblatt, Elisabeth R. PhD; McCollough, Cynthia H. PhD; Baffour, Francis I. MD.
Investigative Radiology ():10.1097/RLI.0000000000001201, April 25, 2025. | https://doi.org/10.1097/RLI.0000000000001201

NAEOTOM Alpha
Artifact Reduction in Interventional Devices Using Virtual Monoenergetic Images and Iterative Metal Artifact Reduction on Photon-Counting Detector CT
Layer YC, Faby S, Haase V, Schmidt B, Mesropyan N, Kupczyk PA, Isaak A, Dell T, Luetkens JA, Kuetting D.
Invest Radiol. 2025 Jan 3. https://doi.org/10.1097/RLI.0000000000001149

NAEOTOM Alpha
CT material decomposition with contrast agents : Single or multiple spectral photon-counting CT scans ? A simulation study.
Sawall, S., Baader, E., Trapp, P., & Kachelrieß, M. (2025).
April 2024, 1–24. https://doi.org/10.1002/mp.17604

2024

NAEOTOM Alpha
Assessing the stability of photon-counting CT: insights from a 2-year longitudinal study.
Liu, L. P., Pasyar, P., Liu, F., Cao, Q., Sandvold, O. F., Rybertt, M. V., Sahbaee, P., Shinohara, R. T., Litt, H. I., & Noël, P. B. (2024).
European Radiology. https://doi.org/10.1007/s00330-024-11244-y

NAEOTOM Alpha
Multienergy Cardiovascular CT Imaging : Current State and Future.
Klambauer, K., Lisi, C., Moser, L. J., Mergen, V., Flohr, T., Eberhard, M., Alkadhi, H. (2024)
British Journal of Radiology, https://doi.org/10.1093/bjr/tqae246

NAEOTOM Alpha
Performance improvements of virtual monoenergetic images in photon-counting detector CT compared with dual source dual-energy CT: Fourier-based assessment.
Kawashima, H., Ichikawa, K., Yoshida, R., Katayama, T., Arimoto, M., Kataoka, J., Nagata, H., & Kobayashi, S. (2024).
Physical and Engineering Sciences in Medicine. https://doi.org/10.1007/s13246-024-01499-6

NAEOTOM Alpha
Radiomics-driven spectral profiling of six kidney stone types with monoenergetic CT reconstructions in photon-counting CT.
Hertel, A., Froelich, M. F., Overhoff, D., Nestler, T., Faby, S., Jürgens, M., Schmidt, B., Vellala, A., Hesse, A., Nörenberg, D., Stoll, R., Schmelz, H., Schoenberg, S. O., & Waldeck, S. (2024).
European Radiology. https://doi.org/10.1007/s00330-024-11262-w

NAEOTOM Alpha
Performance of iodine quantification through high-pitch dual-source photon-counting CT: a phantom study.
Liu, P., Zhou, S., Dong, H., Li, J., Xu, Z., Lin, S., Yang, W., Yan, F., & Qin, L. (2024).
Japanese Journal of Radiology. https://doi.org/10.1007/s11604-024-01671-8

NAEOTOM Alpha
Performance evaluation of single- and dual-contrast spectral imaging on a photon-counting-detector CT.
Ren, L., Zhou, Z., Ahmed, Z., Rajendran, K., Fletcher, J. G., Mccollough, C. H., & Yu, L. (2024).
Medical Physics. July, 1–13. https://doi.org/10.1002/mp.17367

NAEOTOM Alpha
Optimal Spectral Performance on Pediatric Photon-Counting CT Investigating Phantom-Based Size-Dependent kV Selection for Spectral Body Imaging.
Zhou, W., Ataei, A., Huo, D., Ren, L., & Lorna, P. (2024).
Invest. Radiol. 1–8. https://doi.org/10.1097/RLI.0000000000001119

NAEOTOM Alpha
Virtual non-contrast images in photon-counting computed tomography : impact of different contrast phases.
Gadsbøll, E. L., Holmquist, F., & Aurumskjöld, M. (2024).
https://doi.org/10.1177/02841851241271202

2022

NAEOTOM Alpha
Assessment of Iodine Contrast-To-Noise Ratio in Virtual Monoenergetic Images Reconstructed from Dual-Source Energy-Integrating CT and Photon-counting CT Data.
Booij, R., van der Werf, N. R., Dijkshoorn, M. L., van der Lugt, A., van Straten, M. (2022).
Diagnostics, 12(6), 1467. https://doi.org/10.3390/diagnostics12061467

NAEOTOM Alpha
First-generation clinical dual-source Photon-counting CT: ultra-low dose quantitative spectral imaging.
Liu, L. P., Shapira, N., Chen, A. A., Shinohara, R. T., Sahbaee, P., Schnall, M., Litt, H. I., Noël, P. B. (2022).
European Radiology. https://doi.org/10.1007/s00330-022-08933-x

NAEOTOM Alpha
Virtual Noncontrast Abdominal Imaging with Photon-counting Detector CT.
Mergen, V., Racine, D., Jungblut, L., Sartoretti, T., Bickel, B. S., Monnin, P., Higashigaito, K., Martini, K., Alkadhi, H., Euler, A. (2022).
Radiology, 00, 1–9. https://doi.org/10.1148/radiol.213260

NAEOTOM Alpha
Virtual Non-Contrast Reconstructions of Photon-counting Detector CT Angiography Datasets as Substitutes for True Non-Contrast Acquisitions in Patients after EVAR—Performance of a Novel Calcium-Preserving Reconstruction Algorithm.
Decker, J. A., Bette, S., Scheurig-Muenkler, C., Jehs, B., Risch, F., Woźnicki, P., Braun, F. M., Haerting, M., Wollny, C., Kroencke, T. J., Schwarz, F. (2022).
Diagnostics, 12(3), 558. https://doi.org/10.3390/diagnostics12030558

NAEOTOM Alpha
Contrast-Enhanced Abdominal CT with Clinical Photon-counting Detector CT: Assessment of Image Quality and Comparison with Energy-Integrating Detector CT.
Higashigaito, K., Euler, A., Eberhard, M., Flohr, T. G., Schmidt, B., Alkadhi, H. (2022).
Academic Radiology, 29(5), 689-697. https://doi.org/10.1016/j.acra.2021.06.018

12. Dose / IQ

2025

NAEOTOM Alpha

Photon-Counting-Detector CT: Technology Overview and Radiation Dose Reduction
Ren, Liqiang & Duan, Xinhui & Ahn, Richard & Kay, Fernando & Daftaribesheli, Laleh & Zhou, Wei & Guild, Jeffrey & Ananthakrishnan, Lakshmi.
The British journal of radiology. https://doi.org/10.1093/bjr/tqaf116

NAEOTOM Alpha

Image quality and dose reduction with photon counting detector CT: Comparison between ultra-high resolution mode and standard mode using a phantom study.
Greffier J, Van Ngoc Ty C, Sammoud S, Croisille C, Beregi JP, Dabli D, Fitton I.
Diagn Interv Imaging. 2025 Apr 7:S2211-5684(25)00069-5. https://doi.org/10.1016/j.diii.2025.03.009

2024

NAEOTOM Alpha

Fix Martinez M, Klein L, Maier J, Rotkopf LT, Schlemmer HP, Schönberg SO, Kachelrieß M, Sawall S. Potential radiation dose reduction in clinical photon-counting CT by the small pixel effect: ultra-high resolution (UHR) acquisitions reconstructed to standard resolution. Eur Radiol. 2024 Jul;34(7):4484-4491. doi: 10.1007/s00330-023-10499-1. Epub 2023 Dec 22. PMID: 38133673; PMCID: PMC11213748.

NAEOTOM Alpha

Task-based automatic keV selection: leveraging routine virtual monoenergetic imaging for dose reduction on clinical photon-counting detector CT
Rajendran, K., Bruesewitz, M., Swicklik, J,. Ferrero, A., Thorne, J., Yu, L., McCollough, C., Leng, S. (2024).
Physic Med Bio, 0–12. https://doi.org/10.1088/1361-6560/ad41b3

2023

NAEOTOM Alpha

Potential radiation dose reduction in clinical Photon-counting CT by the small pixel effect: ultra-high resolution (UHR) acquisitions reconstructed to standard resolution.
Fix Martinez, M., Klein, L., Maier, J., Rotkopf, L. T., Schlemmer, H. P., Schönberg, S. O., Kachelrieß, M., & Sawall, S. (2023).
European Radiology, 1–8. https://doi.org/10.1007/s00330-023-10499-1

NAEOTOM Alpha

Optimization of the Reconstruction Settings for Low-Dose Ultra-High-Resolution Photon-counting Detector CT of the Lungs.
Graafen, D., Halfmann, M. C., Emrich, T., Yang, Y., Kreuter, M., Düber, C., Kloeckner, R., Müller, L., & Jorg, T. (2023).
Diagnostics, 13(23), 1–13. https://doi.org/10.3390/diagnostics13233522

NAEOTOM Alpha

Metal Artifact Reduction in Photon-counting Detector CT.
Skornitzke, S., Mergen, V., Biederer, J., Alkadhi, H., Do, T. D., Stiller, W., Frauenfelder, T., Kauczor, H.U., Euler, A. (2023).
Investigative Radiology, https://doi.org/10.1097/rli.0000000000001036

2022

NAEOTOM Alpha

Clinical low dose photon counting CT for the detection of urolithiasis: Evaluation of image quality and radiation dose.
Niehoff, J. H., Carmichae, A. F., Woeltjen, M. M., Boriesosdick, J., Lopez Schmidt, I., Michael, A. E., Große Hokamp, N., Piechota, H., Borggrefe Jan, J., & Kroeger, J. R. (2022).
Tomography, 8(4), 1666–1675. https://doi.org/10.3390/tomography8040138

NAEOTOM Alpha

Iterative metal artifact reduction on a clinical photon counting system – technical possibilities and reconstruction selection for optimal results dependent on the metal scenario.
Anhaus, J., Schmidt, S., Killermann, P., Mahnken, A., Hofmann, C. (2022).
Journal of Physics in Medicine and Biology, 2(1), 0–31. https://doi.org/10.1088/1361-6560/ac71f0

NAEOTOM Alpha

Quantum Iterative Reconstruction for abdominal photon-counting detector CT improves image quality.
Sartoretti, T., Landsmann, A., Nakhostin, D., Eberhard, M., Roeren, C., Mergen, V., Higashigaito, K., Raupach, R., Alkadhi, H., Euler, A. (2022).
Radiology, 303(2), 339-348. https://doi.org/10.1148/radiol.211931

NAEOTOM Alpha
Low-dose CT of the abdomen: Initial experience on a novel photon-counting detector CT and comparison with energy-integrating detector CT.
Decker, J. A., Bette, S., Lubina, N., Rippel, K., Braun, F., Risch, F., Woźnicki, P., Wollny, C., Scheurig-Muenkler, C., Kroencke, T. J., Schwarz. F. (2022).
European Journal of Radiology, 148, 110181. https://doi.org/10.1016/j.ejrad.2022.110181

12. Workflow / Others

2025

NAEOTOM Alpha
Advancing Preoperative Planning in Perforator Flap Surgery with Photon-Counting Computed Tomography Angiography: Less Challenges with More Precision. RECOMMENDED
Lan, Y., Liu, R., Guo, L. et al.
Aesth Plast Surg (2025). https://doi.org/10.1007/s00266-025-04861-5

NAEOTOM Alpha
Photon-counting CT for bullet material differentiation: applications in forensic radiology
Schaarschmidt, B.M., Hegmanns, J., Wulff, J. et al.
Eur Radiol Exp 9, 49 (2025). https://doi.org/10.1186/s41747-025-00586-x

NAEOTOM Alpha
Bullet characterization using Photon-Counting detector CT: A phantom study with intact bullets.
Hardy, J. C. A., Crombag, G. A. J. C., Peters, N. H. G. M., Hermsen, R., Willigers, J. L., Nobel, J. M., Wildberger, J. E., Flohr, T. G., & Postma, A. A. (2025).
European Journal of Radiology, 183, 111898. https://doi.org/10.1016/j.ejrad.2024.111898

2024

NAEOTOM Alpha
First photon-counting detector computed tomography in the living crocodile: a 3D-Imaging study with special reference to amphibious hearing.
Melkersson, K. G., Li, H., & Rask-Andersen, H. (2024).
Frontiers in Cell and Developmental Biology, 12(October), 1–14. https://doi.org/10.3389/fcell.2024.1471983

NAEOTOM Alpha
Radiomics Feature Stability in True and Virtual Non-Contrast Reconstructions from Cardiac Photon-Counting Detector CT Datasets.
Canalini, L., Becker, E. G., Risch, F., Bette, S., Hellbrueck, S., Becker, J., Rippel, K., Scheurig-Muenkler, C., Kroencke, T., & Decker, J. A. (2024).
Diagnostics, 14(22). https://doi.org/10.3390/diagnostics14222483

NAEOTOM Alpha
Gadolinium-based coronary CT angiography on a clinical photon-counting-detector system: a dynamic circulating phantom study.
Kravchenko, D., Gnasso, C., Schoepf, U. J., Vecsey-Nagy, M., Tremamunno, G., O'Doherty, J., Zhang, A., Luetkens, J. A., Kuetting, D., Attenberger, U., Schmidt, B., Varga-Szemes, A., & Emrich, T. (2024).
European Radiology Experimental, 8(1), 118. https://doi.org/10.1186/s41747-024-00501-w

NAEOTOM Alpha
Photon-counting CT for forensic death investigations—a glance into the future of virtual autopsy.
Gascho, D. (2024).
Frontiers in Radiology, 1–6. https://doi.org/10.3389/fradi.2024.1463236

NAEOTOM Alpha
Optimizing Quantum Iterative Reconstruction for Tomography of the Lung.
Tóth, A., Chamberlin, J. H., Puthoff, G., Baruah, D., Doherty, J. O., Maisuria, D., Mcguire, A. M., Schoepf, U. J., Munden, R. F., & Kabakus, I. M. (2024).
J. Thorac. Imaging https://doi.org/10.1097/RTI.0000000000000802

NAEOTOM Alpha
Comparing quantitative image parameters between animal and clinical CT-scanners: a translational phantom study analysis.
Vellala, A., Mogler, C., Haag, F., Tollens, F., Rudolf, H., Pietsch, F., Wängler, C., Wängler, B., Schoenberg, S. O., Froelich, M. F., & Hertel, A. (2024).
Frontiers in Medicine, 11(June), 1–9. https://doi.org/10.3389/fmed.2024.1407235

NAEOTOM Alpha
Dendrochronology with a medical X-ray photon counting computed tomography scanner.
Geijer, H., Ndongozi, F., & Edvardsson, J. (2024).
Dendrochronologia, 86, 126233. https://doi.org/10.1016/j.dendro.2024.126233

NAEOTOM Alpha
An Image-Based Prior Knowledge-Free Approach for a Multi-Material Decomposition in Photon-Counting Computed Tomography.
Neumann, J., Nowak, T., Schmidt, B., & Zanthier, J. Von. (2024).
Diagnostics 2024, 14, 1262. https://doi.org/10.3390/diagnostics14121262

2023

NAEOTOM Alpha
Coronary stent imaging in photon counting computed Tomography: Optimization of reconstruction kernels in a phantom.
Elias Michael, A., Schoenbeck, D., Becker-Assmann, J., Henning Niehoff, J., Flohr, T., Schmidt, B., Panknin, C., Baer-Beck, M., Hickethier, T., Maintz, D., Christian Bunck, A., Borggrefe, J., Wiemer, M., Rudolph, V., & Robert Kroeger, J. (2023).
European Journal of Radiology, 166(March), 4–10. https://doi.org/10.1016/j.ejrad.2023.110983

NAEOTOM Alpha
Optimization of Kernel Type and Sharpness Level Improves Objective and Subjective Image Quality for High-Pitch Photon Counting Coronary CT Angiography.
Yang, Y., Fink, N., Emrich, T., Graafen, D., Richter, R., Bockius, S., Wolf, E. V, Laux, G., Kavermann, L., Müller, L., Hell, M., & Halfmann, M. C. (2023).
Diagnostics 2023, 13, 1937. https://doi.org/10.3390/diagnostics13111937

NAEOTOM Alpha
New Contrast Media for K-Edge Imaging With Photon-counting Detector CT.
Jost, G., Mcdermott, M., Gutjahr, R., Nowak, T., Schmidt, B., & Pietsch, H. (2023).
Investigative Radiology https://doi.org/10.1097/RLI.0000000000000978

NAEOTOM Alpha
Feasibility of photon - counting computed tomography as a novel imaging modality for challenging endodontic diagnostic tasks.
Fontenele, R. C., Picoli, F. F., Pinto, J. C., Coudyzer, W., Vasconcelos, K. D. F., Gomes, A. F., & Binst, J. (2023).
Scientific Reports, 1–7. https://doi.org/10.1038/s41598-023-33322-9

NAEOTOM Alpha
Evaluation of run-off computed tomography angiography on a first-generation Photon-counting detector CT scanner – Comparison with low-kVp energy-integrating CT.
Schwarz, F., & Scheurig-muenkler, C. (2023).
European Journal of Radiology, 158(August 2022), 110645. https://doi.org/10.1016/j.ejrad.2022.110645

2022

NAEOTOM Alpha
Assessment of quantitative information for radiation therapy at a first-generation clinical Photon-counting computed tomography scanner.
Hu, G., Niepel, K., Risch, F., Kurz, C., Würl, M., Kröncke, T., Schwarz, F., Parodi, K., Landry, G. (2022).
Frontiers. https://doi.org/10.3389/fonc.2022.970299

NAEOTOM Alpha
Patient Comfort in Modern Computed Tomography : What Really Counts.
Niehoff, J. H., Heuser, A., Michael, A. E., Lennartz, S., Borggrefe, J., Kroeger, J. R. (2022).
Tomography, 8(3), 1401–1412. https://doi.org/10.3390/tomography8030113

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