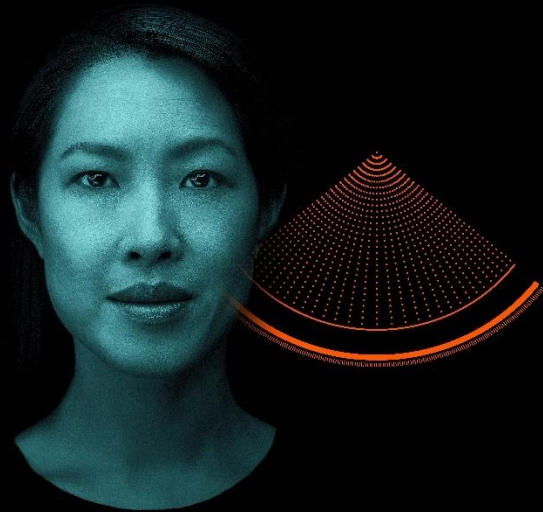
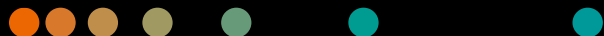


# The best of both worlds: Ultra-high-pitch pulmonary angiography with free-breathing technique by means of photon-counting detector CT for diagnosis of acute pulmonary embolism

## NAEOTOM Alpha Publication Summary



Photon-counting is NAEOTOM



### Key findings of the case study



“CT attenuation was higher in the PCD-group (all  $P < 0.05$ ). CNR and SNR were higher in lobar pulmonary arteries in PCD-CTPAs ( $P < 0.05$ ), whereas no difference was ascertained within the pulmonary trunk ( $P > 0.05$ ). Image quality of PCD-CTPA was rated best by all readers (excellent/good image quality in 96.1% of PCD-CTPAs vs. 50.9% of EID-CTPAs). PCD-CT produced no nondiagnostic scans vs. three non-diagnostic (5.9%) EID-CTPAs. Radiation dose was lower with PCD-CT than with EID-CT (effective dose  $1.33 \pm 0.47$  vs.  $1.80 \pm 0.82$  mSv; all  $P < 0.05$ ).”

**Authors:** Pannenbecker, et al. European Radiology 2024

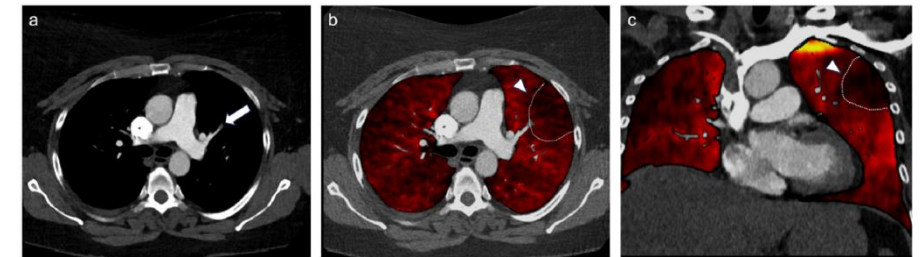
**Institute:** University Hospital Würzburg, Germany

<https://doi.org/10.1016/j.acra.2024.06.028>

PCD: Photon-counting detector  
SNR: Signal-to-noise ratio

CNR: Contrast-to-noise ratio  
CTPA: CT pulmonary angiography

*“Ultra-high-pitch CTPA with free-breathing technique with PCD-CT allows for superior image quality with significantly reduced radiation dose and full spectral information. With the ultra-high pitch, only PCD-CTPA enables reconstruction of iodine maps containing additional functional information.”*



Axial (a) ultra-high-pitch PCD-CTPA at 60 keV of a 45-year-old woman demonstrating pulmonary embolism in the left upper lobe (arrow) with corresponding wedge-shaped perfusion deficits in the iodine maps (b and c; arrowheads). Anatomical CTPA and iodine maps were considered excellent by all three readers. CTPA, CT pulmonary angiography; PCD, photon-counting detector.

NAEOTOM Alpha is not commercially available in all countries. Its future availability cannot be guaranteed. The statements by Siemens Healthineers' customers described herein are based on results that were achieved in the customer's unique setting. Because there is no "typical" hospital and many variables exist (e.g., hospital size, samples mix, case mix, level of IT and/or automation adoption) there can be no guarantee that other customers will achieve the same results.