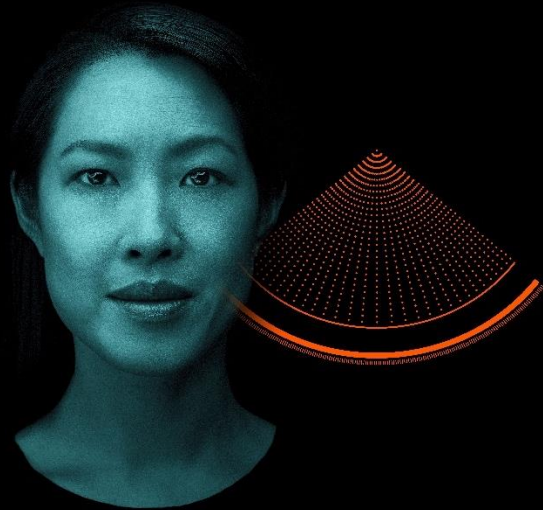
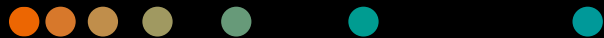


Accuracy of ultralow-dose photon-counting CT in the detection of lung changes after lung transplant

NAEOTOM Alpha Publication Summary



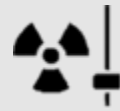
Photon-counting is NAEOTOM



Key findings of the case study

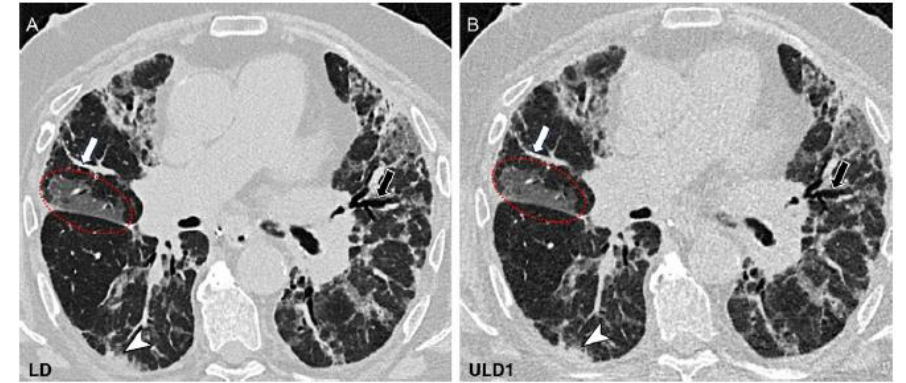


"[...] ultralow-dose (ULD) photon-counting CT (PCT) performed with two radiation dose protocols yielded images of sufficient quality to adequately visualize anatomic structures in 33 of 41 participants (80.5%) to 41 of 41 participants (100%)."



"The two ULD protocols yielded an approximately fivefold and tenfold reduction in radiation dose compared with standard low-dose CT, with mean effective doses of $0.26 \text{ mSv} \pm 0.08 \text{ (SD)}$, $0.17 \text{ mSv} \pm 0.04$, and $1.41 \text{ mSv} \pm 0.44$, respectively."

"ULD PCT was feasible for detecting lung abnormalities following lung transplant, with a tenfold radiation dose reduction."



Chest CT in the craniocaudal direction at inspiration in a 62-year-old male participant with a combination of obstructive and restrictive chronic lung allograft dysfunction 1 year after lung transplant due to fibrosis. **(A)** Standard-of-care low-dose (LD) image (effective dose, 1.77 mSv) and **(B)** ultralow-dose (ULD1) image (effective dose, 0.307 mSv) show a comparison of image quality between protocols. Peripheral vessels (white arrows), bronchiectasis (black arrows), ground-glass opacity (red circles), and small consolidations (arrowheads) seen on the LD image **(A)** have excellent visualization on the ULD1 image **(B)**, which was acquired with a target effective dose of approximately 20% of the LD protocol. The subjective image quality scores of the ULD1 image were 4, 4, and 3 per readers 1, 2, and 3, respectively.

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PCD: Photon-counting detector

ULD: Ultra-low dose

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.