



AI IN CHEST IMAGING

MEDICAL FIELD, OR MEDICAL METHOD

Cardiology / Radiology / Medical imaging

TYPE

Decision support Autonomous decision making

CATEGORY

Prevention Detection Diagnosis Treatment
 Other

DESCRIPTION

AI-powered radiological software that uses image recognition capabilities to provide assistance in the form of qualitative and quantitative data (quantification of the total calcium volume in the coronary arteries).

AIM / PURPOSE

Efficiency gain for radiologists by automation of time-consuming image recognition tasks.

OUTPUT / RESULTS

With respect to the cardiac function, logarithmic correlation coefficient of total coronary calcium volume between subject and predicate device was 0.96 (N=381).

With respect to the aorta function the average absolute error in aorta diameters was 1.6 mm (95% confidence interval [1.5 mm, 1.7 mm]) across all nine measurement locations and varied between 0.9 mm and 2.4 mm per location (N=193).

Performance was consistent for all critical subgroups, such as vendors or slice thickness.

AI METHODOLOGY

Heart segmentation, aorta segmentation, landmark detection and calcium detection based on deep learning algorithms.

INPUT / SIZE OF THE DATA (OPTIONAL)

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REFERENCE DOCUMENTS / LINKS / PUBLICATIONS

510k summary available at:
https://www.accessdata.fda.gov/cdrh_docs/pdf18/K183268.pdf

SOURCE

Siemens Healthineers