SUPPLEMENT

Supplementary Table 1. Comparison of Studies of Methods Designed for Automatic Calcium Scoring in CT

Study	Sensitivity (%), Per-Lesion	False-Positives Per CT Scan	ICC	Number of CT Scans for Test	Protocol of CT Scan	Method of Detection
Isgum et al. 2007 [1]	73.8	0.1	NA	76	ECG-gated CT	Feature extraction + classification (k-NN)
Kurkure et al. 2010 [2]	92.3	NA	NA	105	Electron-beam CT	Feature extraction + two-stage classifier
Bruner et al. 2010 [3]	85.6*	NA	NA	30	Electron-beam CT	Atlas based approach (coronary artery regions)
Shahzad et al. 2013 [4]	86.6	2.2	NA	157	ECG-gated CT	Feature based method + multi-atlas approach with 10 atlas images
Wolterink et al. 2015 [5]	87*	4.1 mm^3/image	0.93	530	ECG-gated CT	Feature based two classifiers, one for distinguishing calcifications and negatives and the other for assigning location
Wolterink et al. 2016 [6]	79	0.2	0.96	530	ECG-gated CT	2.5D patch-based CNN (15 or 25 sizes from axial, coronal, sagittal plane)
Lessmann et al. 2018 [7]	91.2	40.7 mm^3/scan	NA	506	Non-ECG-gated chest CT	Cascaded two 2.5D CNNs (CNN1 with large receptive field and CNN2 with smaller receptive field)
Cano-Espinosa et al. 2018 [8]	NA	NA	0.93†	1000	Non-ECG-gated chest CT	CNN based regression model, which directly predicts CAC score
Martin et al. 2020 [9]	93.2‡	NA	0.985	511	ECG-gated CT	Two-fold deep-learning models, first one to exclude aorta, aortic valve, mitral valve regions and second one to classify coronary calcium voxels
van Velzen et al. 2020 [10]	93	4 mm^3/scan	0.99	529	ECG-gated CT Non-ECG-gated chest CT (n = 3811)	Same as Lessmann et al. 2018 [7]
Proposed	93.3	0.11	0.99	2985	ECG-gated CT	3D patch-based CNN for semantic segmentation

*Volume analysis, †Pearson correlation coefficient, ‡Per-patient sensitivity. CNN = convolutional neural network, D = dimensional, ECG = electrocardiogram, ICC = intraclass correlation coefficient, k-NN = k-nearest neighbor classifier

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