

## Coronary Calcium Screening with Non-Gated Standard and Low-Dose Chest Computed Tomography in Comparison to Electrocardiographic-Gated Calcium Scoring

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### Abstract

Coronary artery calcification (CAC) is a recognized marker of coronary atherosclerosis. It is frequently detected on chest computed tomography (CT). The purpose of this study was to evaluate the correlation between the coronary calcium scoring values obtained with gated CT and with non-gated standard and low-dose chest CT. 425 consecutive patients prospectively studied with non-gated chest CT: 214 patients with the standard CT protocol and 211 patients with the low-dose one. Values of Agatston calcium score and stratification of patients into five calcium score risk categories were compared with the reference data from gated cardiac CT group. The correlation between CAC scores obtained with gated and non-gated CT was high ( $r = 0,977$  for standard CT and  $0,988$  for low-dose CT). It remained high after exclusion from analysis the values of CAC score = 0 ( $r = 0,975$  and  $0,986$ , resp.). Categorization of patients into the five calcium score risk groups was also high for the both chest CT protocols ( $\kappa 0,877$  and  $0,892$ , resp.). The study shows that analysis of CAC and the risk stratification of the screened patients is feasible with help of non-gated chest CT.

**Key words:** Calcium Score, Coronary Artery Calcification, Lung Cancer Screening, Low-Dose Computed Tomography, Coronary Artery Disease.

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