### Coronary CT Angiography - More Than Just Narrowed Blood Vessels

**Referent(en):** Williams M  
**Zeit:** 15:30 Uhr  
**Kurzzusammenfassung:** Coronary CT angiography (CCTA) can visualise the presence of coronary artery stenosis and management decisions based on this information have been shown to improve patient outcomes in randomised controlled trials. However, CCTA can also assess the constituents of the atherosclerotic plaque and features in the surrounding perivascular fat. Coronary artery calcification is an established marker of coronary artery disease. However more recently additional calcium characteristics such as density have been shown to improve risk stratification. Furthermore the assessment of non-calcified plaque can also identify high risk patients both on visual and quantitative assessment. Low attenuation plaque in particular is associated with increased risk of myocardial infarction. Additional characteristics such as radiomic assessment or perivascular fat inflammation may provide further risk stratification. Changes in these plaque characteristics have been identified over time and further research is required to determine how they should be used to guide clinical management.

### Current Status of CT Perfusion and CT-FFR in Japan

**Referent(en):** Kitagawa K  
**Zeit:** 15:50 Uhr

### CT Coronary Calcium Scoring

**Referent(en):** Vliegenthart R  
**Zeit:** 16:10 Uhr

**Kurzzusammenfassung:** It is challenging to timely identify asymptomatic individuals who will suffer from coronary events. Risk factor-based scoring systems to estimate cardiovascular risk are not very sensitive or specific. Evaluation of the extent of coronary atherosclerosis can improve cardiovascular risk stratification, in particular the quantification of coronary artery calcium (CAC) by CT. The amount of CAC is typically expressed as a CAC score, according to Agatston. The CAC score increases with age, and is higher for men than for women. Generally, the calcium score is divided into 4 categories: 0 (none), 1-99 (mild), 100-399 (moderate), and at least 400 (severe CAC). Another approach is to calculate an age- and gender-based percentile. Many prospective studies, including population-based studies, have shown the strong predictive value of the CAC score for coronary heart disease. The CAC score predicts coronary events in men and women, and in younger and older populations. The relative risks for increasing CAC scores are much higher than those reported for cardiovascular risk factors or other measures of atherosclerosis. Additionally, the absence of CAC confers an extremely low risk of coronary events. Especially in individuals at intermediate risk based on risk factors, calcium scoring can lead to more appropriate risk classification into the low or high-risk group. There is increasing interest in the importance of a zero calcium score in patients with chest pain. The presence of coronary stenosis and coronary events has been found to be very unlikely in case of a zero CAC score, in both acute and non-acute patients.
**Lernziele:**
1. To learn about risk estimation methods for coronary heart disease.
2. To understand the CT method to derive a CAC score.
3. To appreciate the value of “zero calcium” as well as of “high calcium”.
4. To learn about the role of the CAC score in current guidelines.

**Kurzzusammenfassung:**
Coronary artery calcification is a frequent incidental finding on thoracic CT performed for non cardiac indications. On electrocardiogram gated cardiac CT it is an established marker of coronary artery disease and is associated with increased risk of subsequent cardiac events. Similarly, in patients undergoing routine thoracic CT, coronary artery calcification is associated with increased risk of myocardial infarction and mortality. Guidelines support the reporting of coronary artery calcification on thoracic CT, however radiologist opinions vary. For asymptomatic patients the identification of coronary artery calcification may trigger an assessment of modifiable cardiovascular risk factors.

**Diskussion**

16:50 Uhr