

Protocol: t_ctperfat_2005_1_0229d

CT PERICARDIAL FAT OFFSPRING COHORT PROTOCOL

Protocol: Reference is Rosito GA, Massaro JM, Hoffmann U, Ruberg FL, Mahabadi AA, Vasan RS, O'Donnell CJ, Fox CS. Pericardial fat, visceral abdominal fat, cardiovascular disease risk factors, and vascular calcification in a community-based sample: the Framingham Heart Study.

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“Extra-pericardial fat and intra-pericardial fat tissue volumes (cm^3) were measured using a dedicated offline workstation (Aquarius 3D Workstation, TeraRecon Inc., San Mateo, CA). Absolute Hounsfield Units (HU) values of pixels correspond directly to tissue property. Therefore, a predefined image display setting was used to determine the extra- and intra-pericardial fat tissue volumes (window width -195 to -45 HU; window center -120 HU) to identify pixels that correspond with adipose tissue. Extra- and intra-pericardial fat were measured across total available imaging volume and was measured in cm^3 .

Extra- and intra- pericardial fat volumes were measured using a semi-automatic segmentation technique using the above display settings. The reader was required to manually trace the pericardium. Extra-pericardial fat volume was defined as any adipose tissue located both within the pericardium and within the thorax from the level of the right pulmonary artery to the diaphragm and the chest wall to the descending aorta. Intra-pericardial fat volume was defined as any adipose tissue located within the pericardial sac. Segmentation of the overall volume was automatically interpolated using the manually-defined tracings. When necessary, the reader made manual adjustments through the scan volumes to account for interpolating errors. On a random sample of 100 participants, intra-reader reproducibility was excellent for extra-pericardial fat (intra-class correlation [ICC] 0.99) and for intra-pericardial fat (ICC 0.97). Inter-reader reproducibility was also excellent (extra-pericardial fat ICC 0.98; intra-pericardial fat 0.95). “