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- Conte E, Perone F, Cosyns B, Dweck MR, Donal E, Goncalves I, Ibáñez B, Kaski JC, Maurovich-Horvat P, Onuma Y, Osto E, Sommer Bittencourt M, Serruys PW, Andreini D. Therapies leading to coronary atherosclerosis plaque regression: a scientific statement of the European Association of Preventive Cardiology, the European Association of Cardiovascular Imaging of the ESC, the ESC Working Group on Atherosclerosis and Vascular Biology, and the ESC Working Group on Cardiovascular Pharmacotherapy Part 1: Atherosclerosis Pathophysiology and Imaging Evaluation. *Eur J Prev Cardiol*. 2025 Nov 6:zwaf594. doi: 10.1093/eurjpc/zwaf594. Epub ahead of print. PMID: 41206214.

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**ABSTRACT:**

Coronary artery disease is one of the leading causes of mortality worldwide. While early identification and treatment of major cardiovascular risk factors are crucial, recent data suggest the possibility of non-invasively detecting early stages of coronary atherosclerosis and potentially stabilizing or even reversing the burden of atherosclerosis with innovative and existing treatments. Moreover, therapies from lipid-lowering to anti-inflammatory drugs were recently demonstrated to influence atherosclerosis progression and potentially lead to different grades of plaque regression. The present is Part 1 of a scientific consensus document divided into two separate manuscripts. This first part provides an up-to-date scientific statement on the pathophysiology mechanism of atherosclerosis progression and regression and on the role of invasive and non-invasive imaging techniques in evaluating and quantifying plaque.