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### **Lipoproteins in chronic kidney disease**

Chronic kidney disease (CKD) is associated with high cardiovascular risk. CKD patients exhibit a specific lipoprotein pattern termed “uremic dyslipidemia”, which is characterized by rather normal low-density lipoprotein cholesterol (LDL-C), low high-density lipoprotein (HDL-C), and high triglyceride plasma levels. All three lipoprotein classes are involved in the pathogenesis of CKD-associated cardiovascular diseases (CVD). Uremia leads to several modifications of the structure of lipoproteins such as changes of the proteome and the lipidome, posttranslational protein modifications (e.g. carbamylation) and accumulation of small-molecular substances within the lipoprotein moieties, which affect their functionality. Lipoproteins from CKD patients interfere with lipid transport and promote inflammation, oxidative stress, endothelial dysfunction as well as other features of atherogenesis, thus, contributing to the development of CKD-associated CVD. While, lipid-modifying therapies play an important role in the management of CKD patients, their efficacy is modulated by kidney function. Novel therapeutic agents to prevent the adverse remodeling of lipoproteins in CKD and to improve their functional properties are highly desirable and partially under development.