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Pathophysiology of lipid droplet proteins in liver diseases

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Running title: Abnormal lipid metabolism in fatty liver **Conflict of interest:** The authors have no conflicts to declare.

Abstract

Cytosolic lipid droplets (LDs) are present in most cell types, and consist of a core comprising neutral lipids, mainly triglycerides and sterol esters, surrounded by a monolayer of phospholipids. LDs are heterogeneous in their structure, chemical composition, and tissue distribution. LDs are coated by several proteins, including perilipins and other structural proteins, lipogenic enzymes, lipases and membranetrafficking proteins. Five proteins of the perilipin (PLIN) family (PLIN1 (perilipin), PLIN2 (adipose differentiation-related protein), PLIN3 (tail-interacting protein of 47 kDa), PLIN4 (S3-12), and PLIN5 (myocardial lipid droplet protein)), are associated with LD formation.

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