Researchers ID potential cause behind the blood vessel dysfunction in obesity

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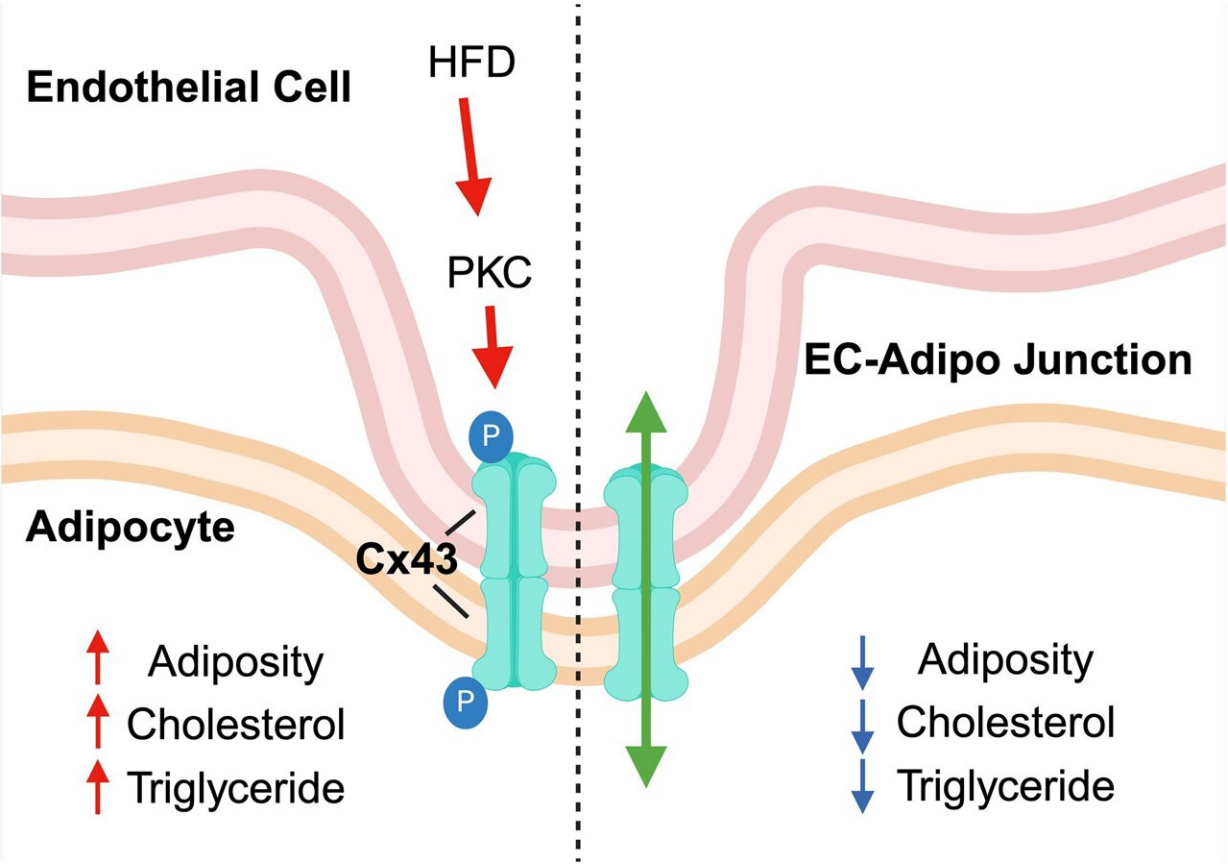

Graphical abstract. Credit: *Function* (2024). DOI: 10.1093/function/zqae029

Obesity is a metabolic disorder tied to endothelial dysfunction and increased risk of cardiovascular disease. A recent study, published in the journal *Function*, investigated the mechanisms responsible for lipid transport and storage interaction with body fat and its impact on metabolic function.

Single-cell RNA sequencing revealed enrichment of fatty acid-handling machinery in blood vessels and endothelial cells from mice that were fed a high-fat diet, indicating their specialized role in lipid metabolism. Phosphorylation of the gap junction protein called Connexin 43, which is involved in intercellular communication and regulates cell proliferation and cell death, increased in the mice and lipid-treated endothelial cells.

These findings suggest Connexin 43-mediated multicellular communication is a possible regulator of fat tissue function. "This increased channel phosphorylation and decreased [endothelial cells] to adipocyte communication, leading to dyslipidemia could be a potential mechanism behind the onset endothelial dysfunction in obesity," the research team wrote.

More information: Melissa A Luse et al, Endothelial-adipocyte Cx43 mediated gap junctions can regulate adiposity, *Function* (2024). DOI: 10.1093/function/zqae029

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blood-vessel-dysfunction.html