# Novel protein detects and responds to changes in blood flow

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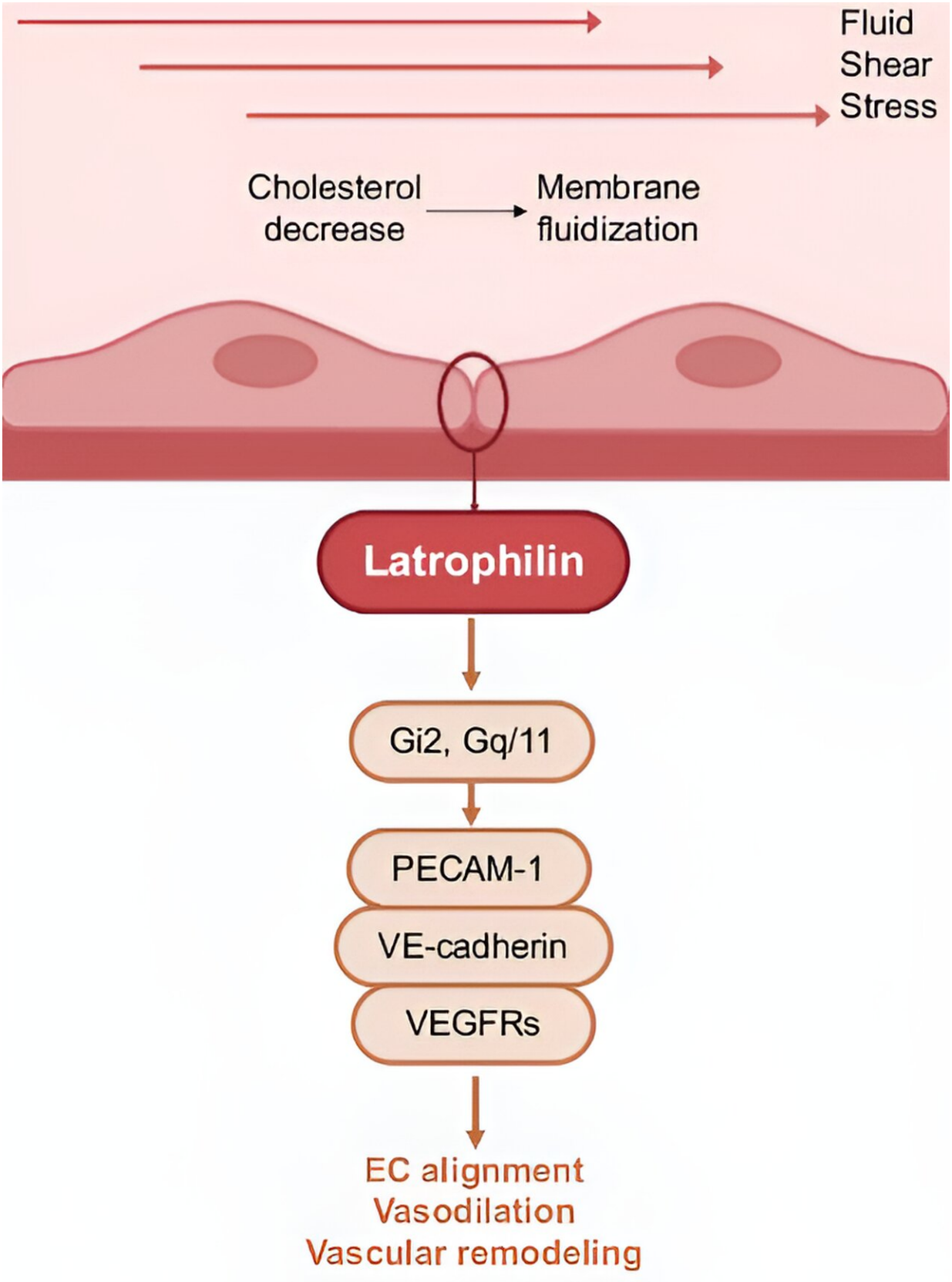
Fluid
Shear
Stress
Cholesterol decrease
Membrane fluidization
Latrophilin
Gi2, Gq/11
PECAM-1
VE-cadherin
VEGFRs
EC alignment
Vasodilation
Vascular remodeling

Model for junctional endothelial shear stress mechanotransduction. Credit: *The EMBO Journal* (2024). DOI: 10.1038/s44318-024-00142-0

When blood moves through your body, it exerts a frictional force on the walls of blood vessels. This force, known as fluid shear stress, has important effects on vascular development, function, and disease.

A team at Yale, led by Martin Schwartz, Ph.D., Robert W. Berliner Professor of Medicine (cardiology), has identified a protein that helps your body sense and respond to changes in this shear stress. The study, "Latrophilin-2 mediates fluid shear stress mechanotransduction at endothelial junctions," is published in *The EMBO Journal*.

This protein, latrophilin-2, is found on the surface of the cells lining the blood vessel wall. Schwartz's team demonstrated that latrophilin-2 is activated by changes in blood flow and is required for flow-dependent blood vessel development and preclinical remodeling. Additionally, the authors found that specific variants of the gene encoding latrophilin-2 are highly associated with the development of cardiovascular disease in humans.

These findings help define a novel pathway by which our blood vessels respond to changes in flow and shed new light on cell biology and genetic links to cardiovascular disease.

**More information:** Keiichiro Tanaka et al, Latrophilin-2 mediates fluid shear stress mechanotransduction at endothelial junctions, *The EMBO Journal* (2024). DOI: 10.1038/s44318-024-00142-0

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