THIOL-REACTIVE COMPOUNDS ATTENUATE AORTIC STENOSIS
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Aortic stenosis (AS) is a degenerative disease which primarily affects people over 65 years and is characterized by increased fibrosis and narrowing of aortic valves.

AS leads to increased valve-wall shear stress.

Platelets are a rich source of latent TGF-β1, which can be activated by increased wall shear stress.

Currently, AS treatment involves valve replacement and there are no pharmacological treatments.
N-acetylcysteine (NAC) as treatment for aortic stenosis
FINDINGS

Quantification of fractional valve opening (left) and wall shear stress (right) in LDLR mice were measured by ultrasound at the 6-month time point for the cohorts.

NAC treatment of a low density lipoprotein receptor (LDLR) mouse model attenuates AS progression by blocking activation of platelet-derived TGF-β1.
Dr. Ahamed has shown that platelet-derived TGF-β1 directly contributes to AS progression.

Atherosclerosis prone LDLR mice lacking platelet-derived TGF-β1 were protected from developing AS.

Thiol-Reactive compounds, including NAC and galunisertive (LY2157299), significantly attenuated AS progression in LDLR mice by blocking platelet-derived TGF-β1 activation.

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