

# Common gene mutation bad for liver values, good for blood lipids in children

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A common mutation in the TM6SF2 gene raises liver values but at the same time improves blood lipid values in healthy children, according to a recent study from the University of Eastern Finland. Children who carry the gene mutation had higher ALT values, indicative of changes in liver metabolism. At the same time, however, they also had lower blood triglyceride and LDL cholesterol levels. This finding is in line with earlier research in adults, showing that the gene mutation both predisposes for fatty liver disease and reduces the risk of cardiovascular diseases. The results will be published in *Pediatric Research*, and a pre-print version is available on the journal website.

Overweight is often accompanied by disturbed sugar and lipid metabolism, typically associated with the development of fatty liver. A mutation in the TM6SF2 gene, however, weakens the liver's ability to transfer triglyceride lipids to circulation, thus lowering blood triglyceride levels and at the same time promoting the development of fatty liver.

The study showed that [children](#) who carry the [gene mutation](#) had higher ALT values but lower triglyceride and LDL cholesterol levels than their non-carrier peers. In other children, however, the researchers observed a typical clustering of risk factors in which elevated triglyceride and LDL cholesterol levels were associated with higher ALT values.

"These findings indicate that despite having good blood lipid values, children who carry the risk gene may well be on their way to developing [fatty liver disease](#)," says Anna Viitasalo, MD, of the University of

Eastern Finland.

The mutation in the TM6SF2 gene was carried by 11 per cent of the children who participated in the study.

The study included 462 healthy 6-to-9 year-old girls and boys from the Physical Activity and Nutrition in Children Study, PANIC. The Physical Activity and Nutrition in Children Study is an on-going lifestyle intervention study, which produces valuable information on children's lifestyles, health and well-being all the way into adulthood.

**More information:** Anna Viitasalo et al. Associations of TM6SF2 167K allele with liver enzymes and lipid profile in children: The PANIC Study, *Pediatric Research* (2016). [DOI: 10.1038/pr.2016.3](https://doi.org/10.1038/pr.2016.3)

Provided by University of Eastern Finland

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