GENETIC VARIATION IN PPP1R3B AND PLASMA LEVELS OF GLUCOSE, LIPIDS, AND LIVER ENZYMES IN THE DANISH GENERAL POPULATION

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Background

A variant in *PPP1R3B* (rs4841132-A) associates with increased hepatic CT-attenuation, but not with liver fat measured by magnetic resonance spectroscopy (MRS).

PPP1R3B promotes glycogen formation in the liver by binding to protein phosphatase 1 and activating glycogen synthase.

Hypothesis & aim: rs4841132-A associates with changes in hepatic glycogen content. We aimed to do a broader metabolic phenotyping of the variant.

Method

Copenhagen General Population Study and Copenhagen City Heart Study

N= 107,192

Results

Fig. 1. Per-allele effect of rs4841132-A on standardized continuous variables.

Fig. 2. Interaction between genotype and hours since last meal on plasma glucose levels.

Conclusion

- Multiple effects on plasma glucose, lipids and markers of liver damage
- ↑ Hepatic glycogen?
- Liver damage?

Potential mechanism