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**LONGITUDINAL ASSOCIATION OF TV VIEWING AND FATTY LIVER. THE
CARDIOVASCULAR RISK IN YOUNG FINNS STUDY.**

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Objectives

Sedentary behaviour has been associated with increased risk of obesity and cardiometabolic diseases, but the underlying pathogenic mechanisms are unknown. Hepatic lipid metabolism disturbances may play a role. We studied the longitudinal association of TV viewing time with fatty liver evaluated with the Fatty Liver Index (FLI).

Methods

1367 eligible subjects (748 women, 619 men aged 34-49 y) were drawn from the population-based Cardiovascular Risk in Young Finns study. FLI was calculated in 2001 and 2011 from waist circumference, BMI, fasting triglycerides and serum Gamma-Glutamyltransferase. BMI and waist circumference were measured and TV viewing time was self-reported in 2001, 2007, and 2011. Changes in FLI between 2001 and 2011 were studied in groups with constantly low (<1h/d), moderate (1-3h/d), or high (>3h/d) TV time, and in groups with >1 hour in-/decrease in daily TV time between 2001 and 2011. Associations were studied with Tukey-Kramer linear regression adjusting for self-reported physical activity (leisure-time and commuting to workplace), occupational physical strain, sleep duration, socioeconomic status, smoking, diet composition, energy intake and alcohol use in 2007 prior to the last follow-up.

Results

In 2001 FLI was similar in all groups ($p>0.05$), but in 2011 constantly high TV time was associated with a higher FLI regardless of adjustments made for lifestyle. FLI increase in the high TV time group was almost 3-fold in comparison to the low TV time group ($p <0.02$). In addition, FLI increase was lower in the group that decreased their TV time when compared to the constantly high TV time group ($P<0.04$). Only an adjustment for BMI changed all associations to non-significant.

Conclusions

High TV viewing time and obesity are associated with fatty liver. Lipid deposition in liver may be one mechanism linking sedentary behaviour with increased risk of non-communicable diseases.