

Timing is everything

voorbeelden uit cardio-metabool onderzoek

3^e Harry Blom-beraad



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Voorbeeld 1. Relatie tussen licht en overgewicht



American Journal of Epidemiology
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Vol. 180, No. 3
DOI: 10.1093/aje/kwu117
Advance Access publication:
May 29, 2014

Original Contribution

The Relationship Between Obesity and Exposure to Light at Night: Cross-Sectional Analyses of Over 100,000 Women in the Breakthrough Generations Study

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Initially submitted January 9, 2014; accepted for publication March 10, 2014.

There has been a worldwide epidemic of obesity in recent decades. There is growing evidence that light exposure causes weight gain, even when energy intake is controlled. Disruption of sleep and circadian rhythms by exposure to light at night (ALAN) while sleeping may be a mechanism by which ALAN exposure causes weight gain.

JAMA Internal Medicine | Original Investigation

Association of Exposure to Artificial Light at Night While Sleeping With Risk of Obesity in Women

Yong-Moon Mark Park, MD, PhD; Alexandra J. White, PhD; Chandra L. Jackson, PhD, MS; Clarice R. Weinberg, PhD; Dale P. Sandler, PhD

[+](#) Supplemental content

IMPORTANCE Short sleep has been associated with obesity, but to date the association between exposure to artificial light at night (ALAN) while sleeping and obesity is unknown.

OBJECTIVE To determine whether ALAN exposure while sleeping is associated with the prevalence and risk of obesity.

DESIGN, SETTING, AND PARTICIPANTS This baseline and prospective analysis included women aged 35 to 74 years enrolled in the Sister Study in all 50 US states and Puerto Rico from July 2003 through March 2009. Follow-up was completed on August 14, 2015. A total of 43 722 women with no history of cancer or cardiovascular disease who were not shift workers, daytime sleepers, or pregnant at baseline were included in the analysis. Data were analyzed

Meer licht per dag geeft meer vetmassa in muizen



Photoperiod

8h

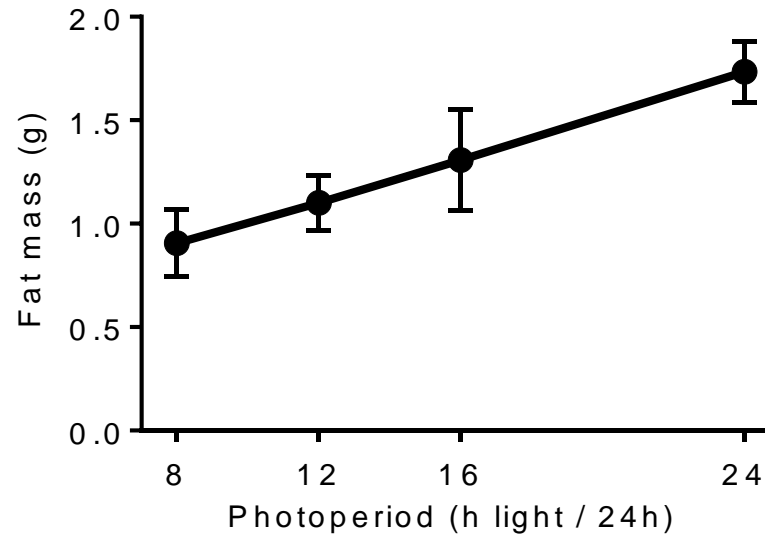
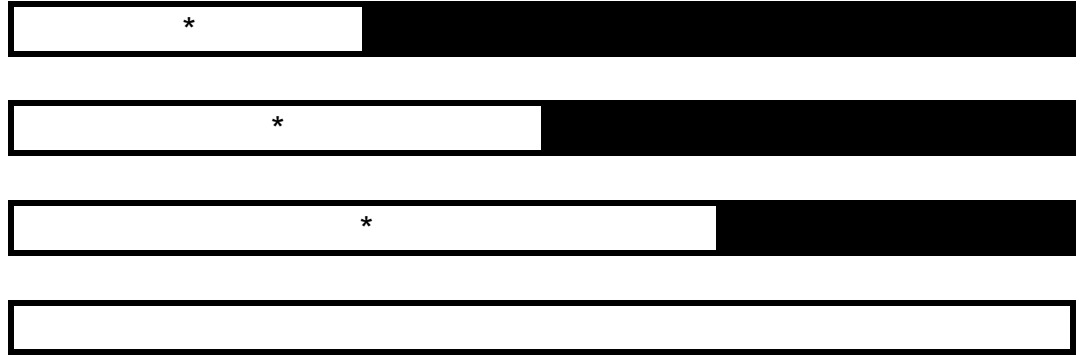
12h

16h

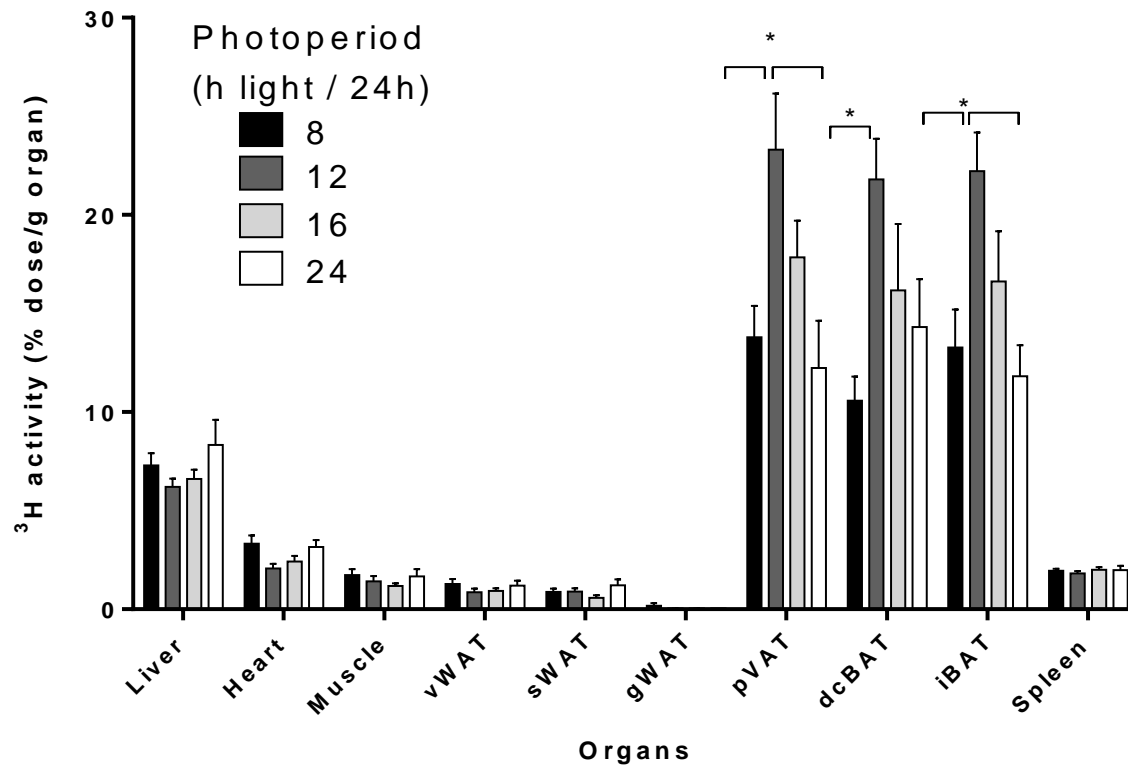
24h

ZT 0

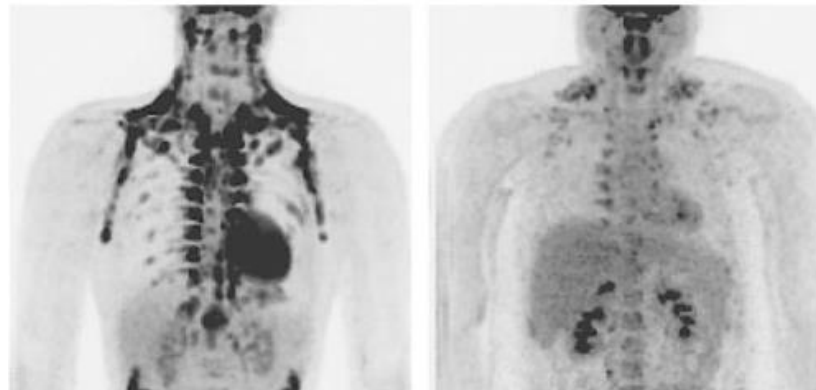
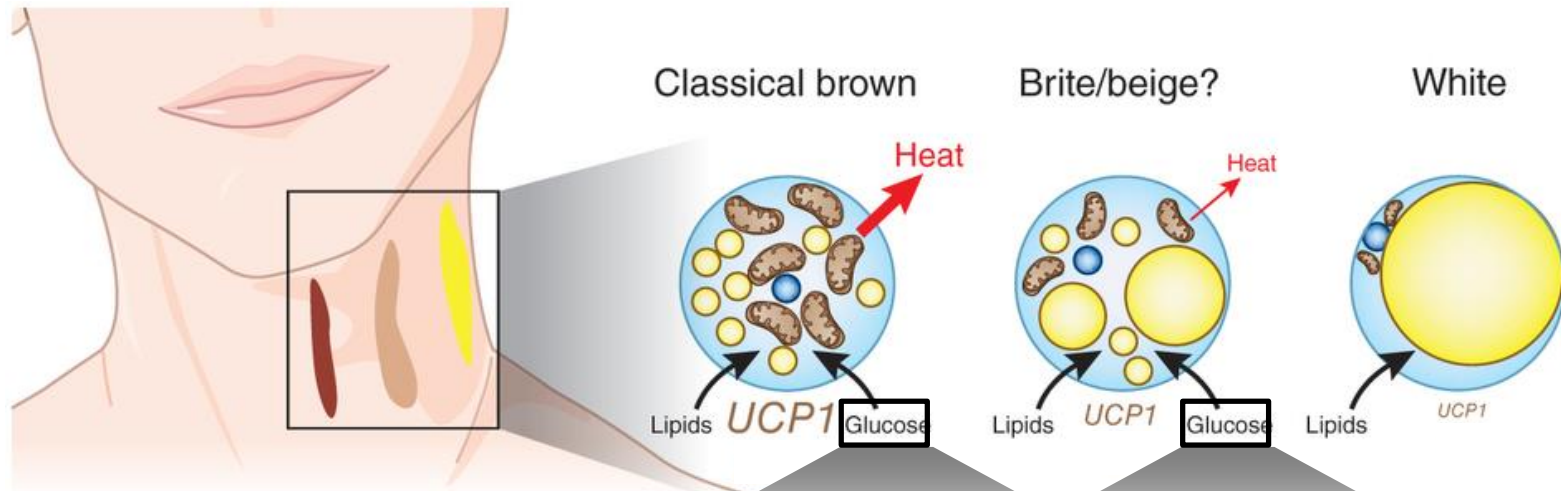
ZT 24



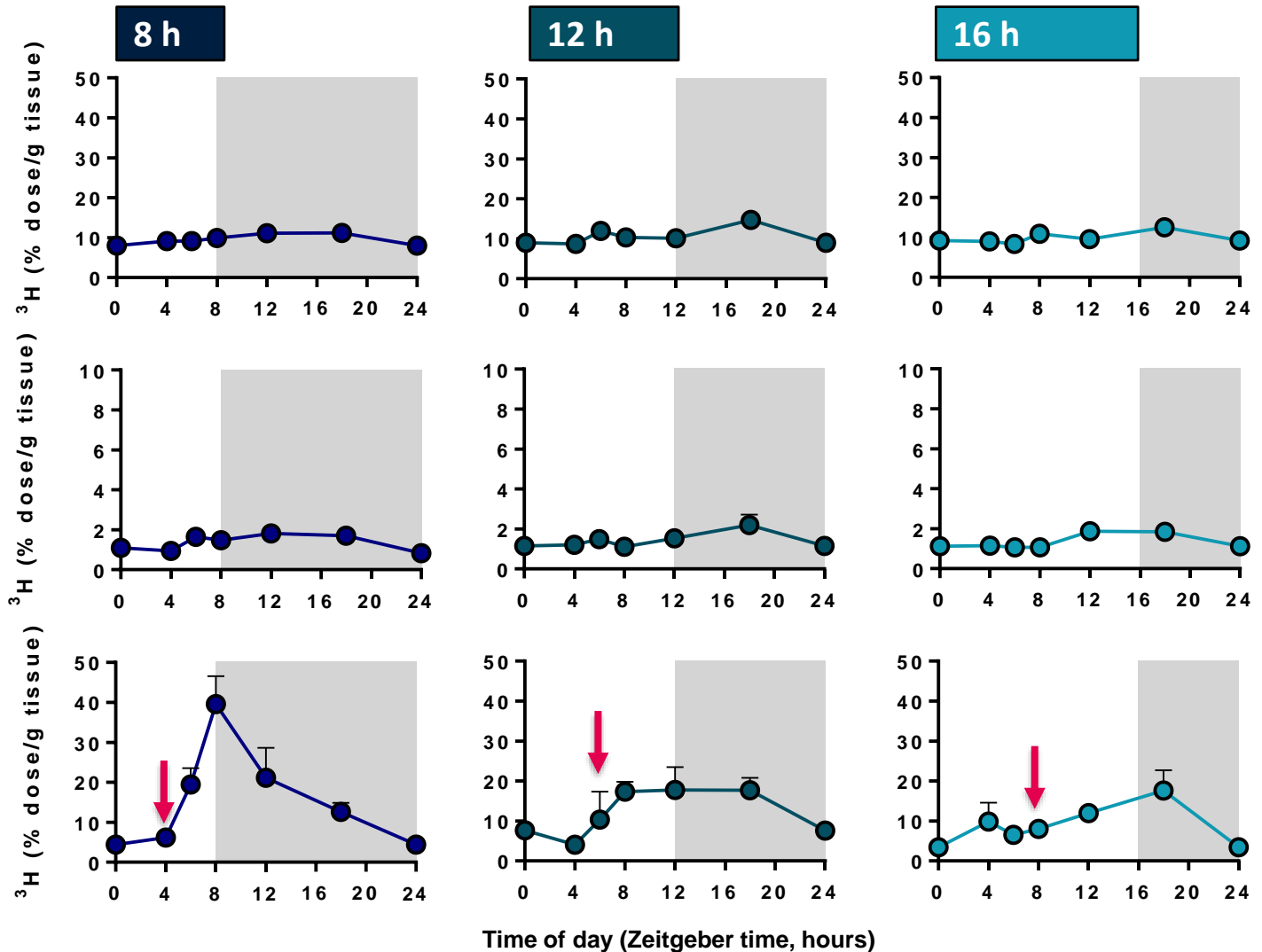
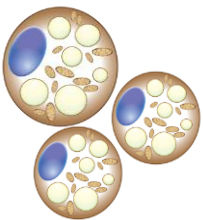
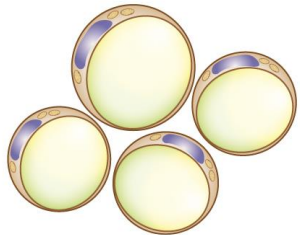
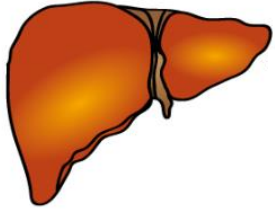
Er is geen relatie tussen licht en de verwerking van vetten, of toch wel?



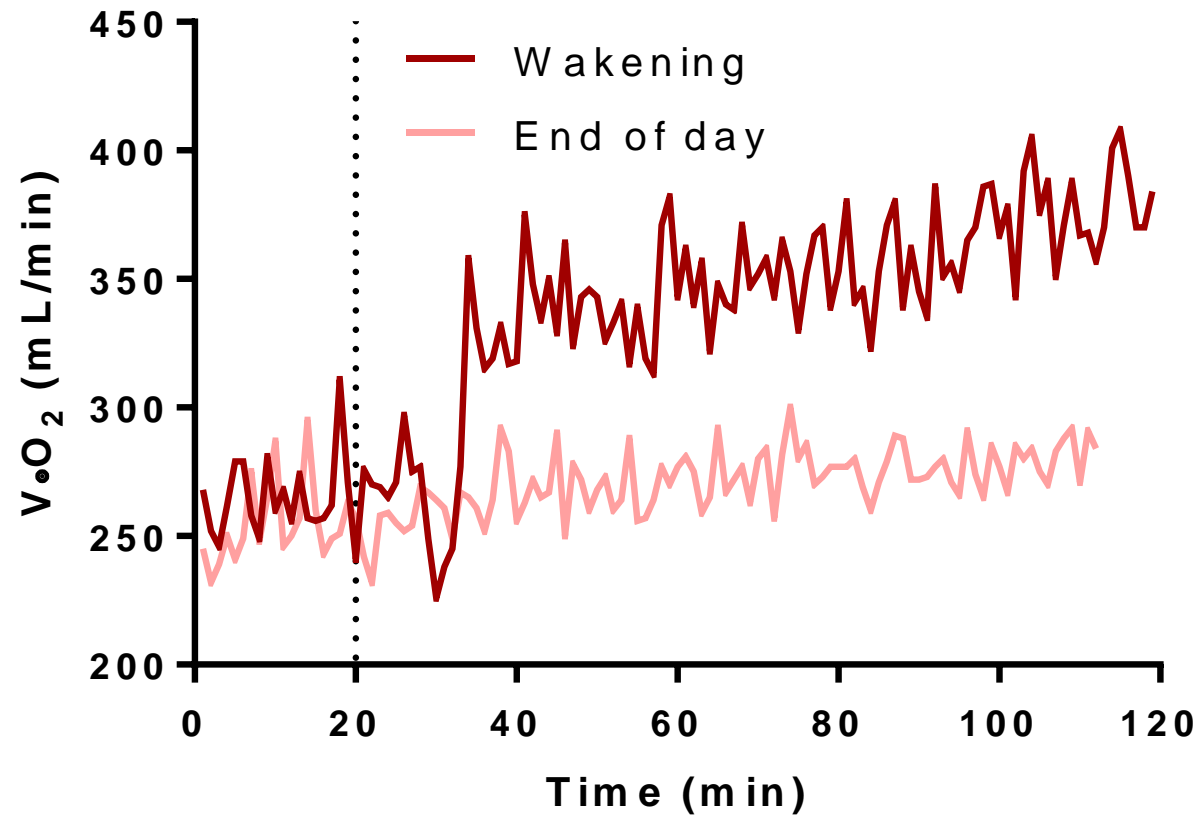
Bruin vetweefsel zet suikers en vetten om tot warmte



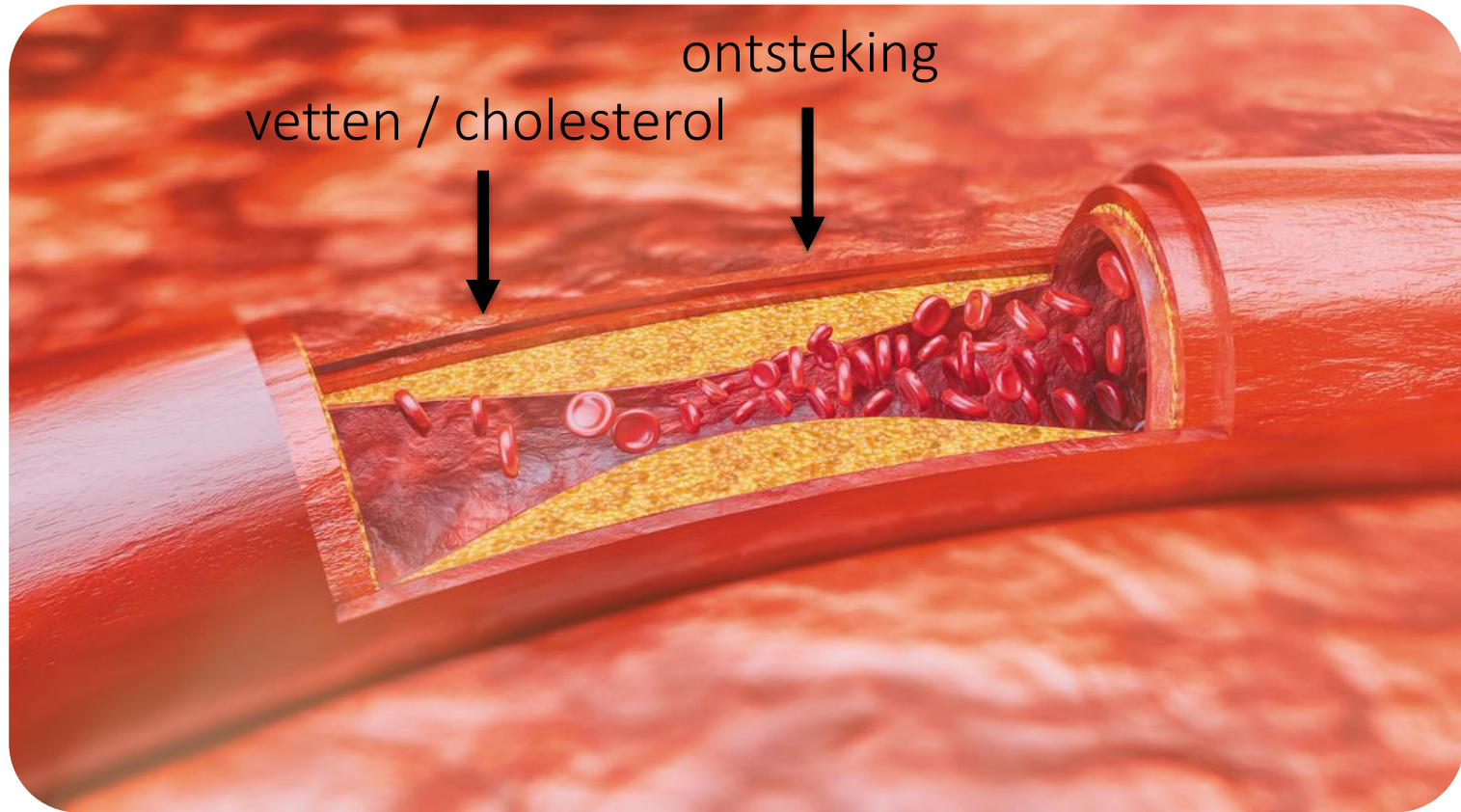
Bruin vetweefsel vertoont een sterk dag- en nachtritme



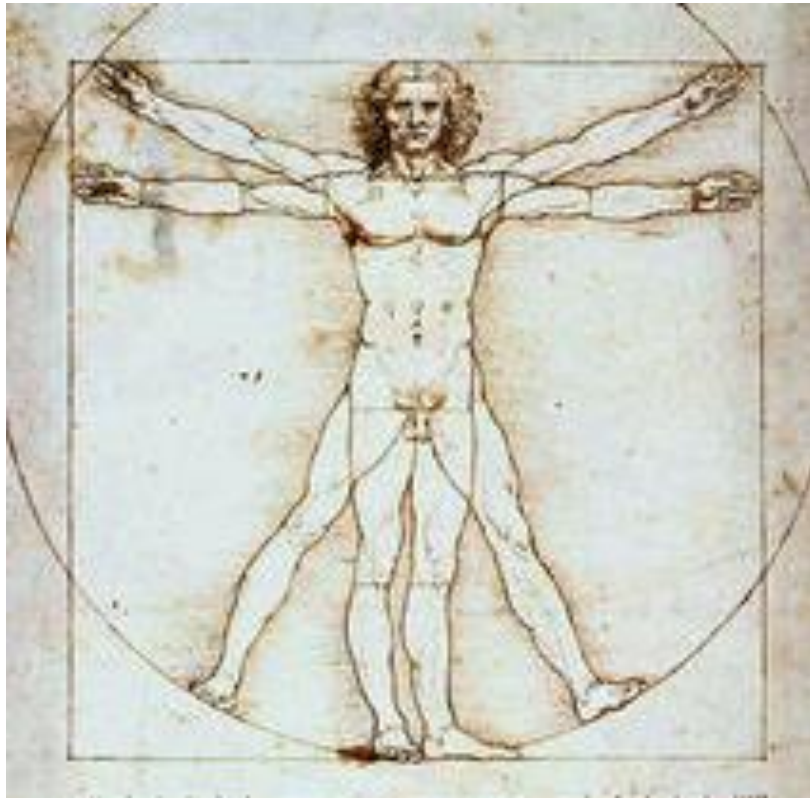
Het maakt uit wanneer je bruin vetweefsel stimuleert!



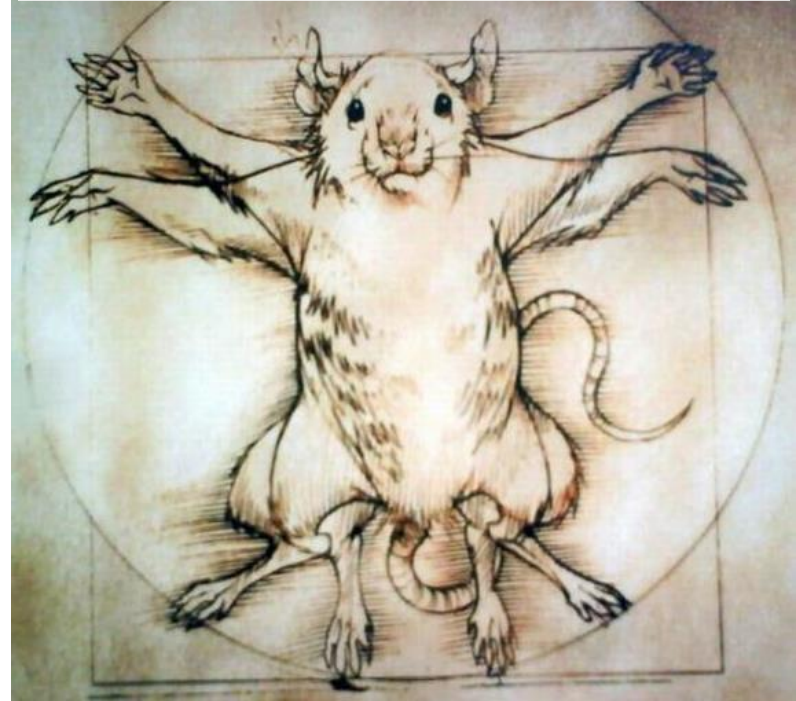
Voorbeeld 2. Sporten tegen hart- en vaatziekten



Hoe onderzoeken we de ontwikkeling van slagaderverkalking?

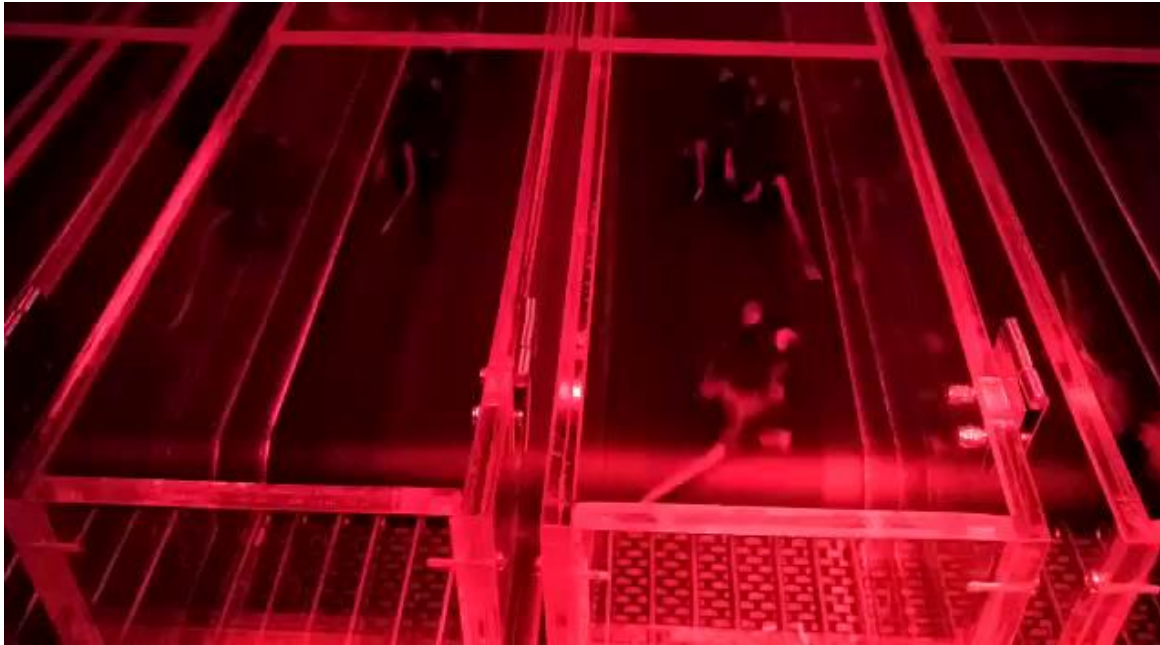


APOE*3-Leiden.CETP muis

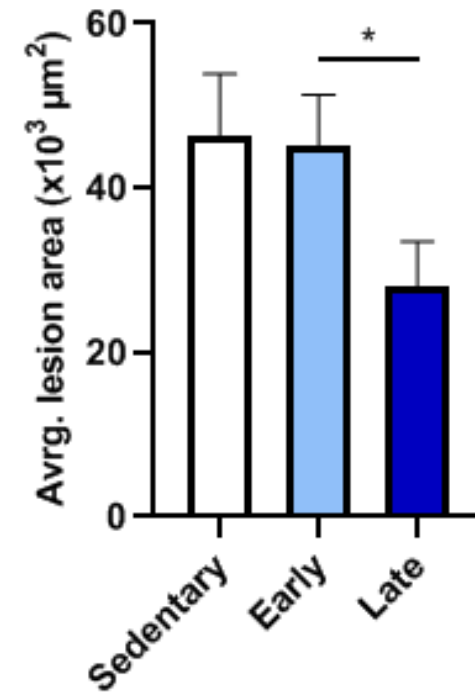
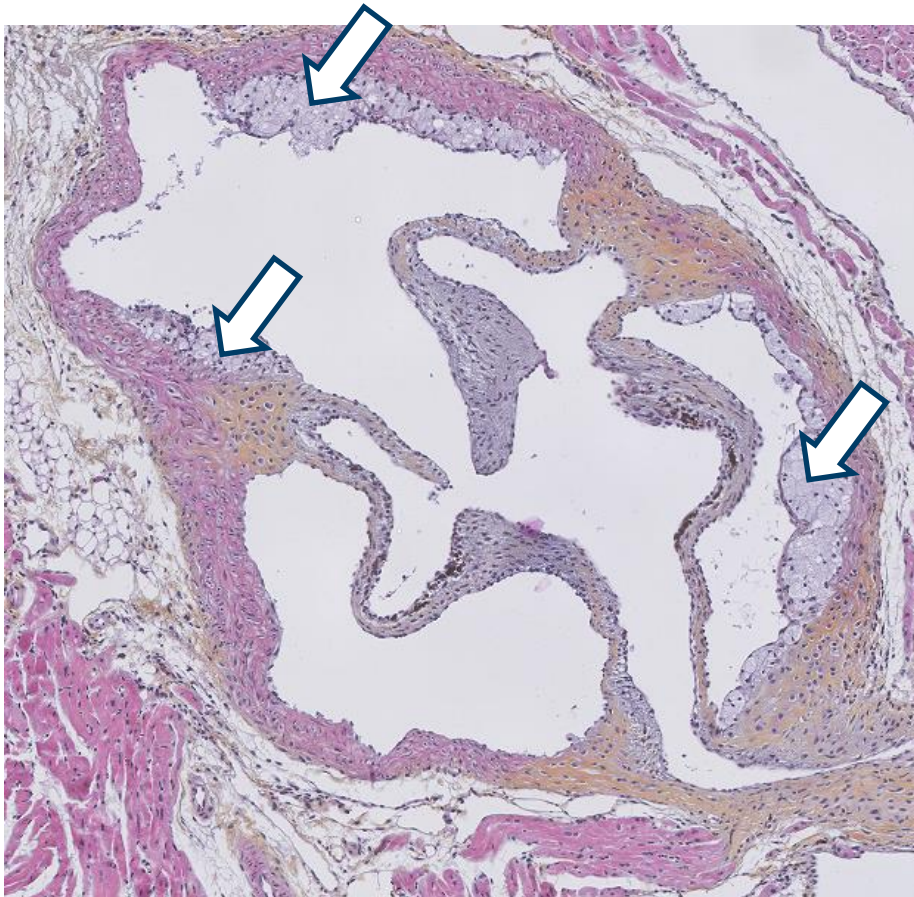


Kunnen we hart- en vaatziekten voorkomen door te sporten? En zo ja, wanneer moet je dat doen?

4 weken lang, dagelijkse training op de loopband in de vroege óf late nacht



Alleen het sporten aan het einde van de nacht voorkomt slagaderverkalking



Conclusies

Voor de metabole en cardiovasculaire gezondheid

- Is het van belang dat huisvestingscondities goed gecontroleerd zijn, licht tijdens de nacht is een probleem.
- Kan het tijdstip waarop je metingen uitvoert van belang zijn
- Maakt het uit op welke tijd van de dag je de interventies toepast