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Effects Of Early, Late And Self-Selected Time-Restricted Eating On Rest-Activity Rhythm Phase In Adults With Overweight Or Obesity: A Secondary Analysis Of A Randomized Controlled Trial

Miscelanea

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Introducción

Disruptions in the circadian timing of behaviours such as sleep, physical activity, and eating can adversely affect cardiometabolic health. Time-restricted eating (TRE) may resynchronize behavioural and metabolic rhythms; however, whether the timing of the eating window differentially influences the phase of the rest-activity rhythm in humans remains unknown.

Objetivos

To investigate the effects of a 12-week intervention of three TRE schedules on changes in rest-activity rhythm phase in adults with overweight or obesity, compared with usual care (UC).

Material y Método

197 adults (49.8% women; age: 46.8±6.3 years; BMI: 33.0±3.5 kg/m²) were randomly allocated to UC (n=49), early TRE (n=49), late TRE (n=52), or self-selected TRE (n=47). The UC group maintained their habitual eating window (≥12-h). The TRE groups adopted an 8-h eating window starting before 10:00 (early), after 13:00 (late), or when preferred (self-selected). All groups received a nutritional education program. Rest-activity rhythms were assessed by accelerometry for 14 days before and during the last two weeks of the intervention (24-h/day). Acrophase from both classic and extended Cosinor models, as well as timing of the lowest and the maximum 5 hours (L5, M5) and 10 hours (L10, M10) of activity, were included.

Resultados y conclusiones

No significant differences were observed in any phase-related parameter change between the TRE groups compared with UC group (all $P \geq 0.112$), nor among the TRE groups, whether imposed or self-selected schedules (all $P \geq 0.141$).

Incorporating TRE, irrespective of the eating window, did not modify the phase of the rest-activity

rhythm compared to UC in adults with overweight or obesity, indicating that TRE does not disrupt participants' habitual lifestyle patterns. These findings suggest that TRE is a non-constraining strategy that can be easily integrated into daily life. Given the intrinsic stability of circadian phase, longer interventions may be required to determine whether sustained TRE can influence behavioural circadian timing.