INPLASY PROTOCOL

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Review Stage at time of this submission: The review has not yet started.

5:2 fasting Versus Continuous Energy Restriction for Weight Loss and Metabolic Improvement in Overweight and Obese People: A Meta-Analysis and Systematic Review

Liu, B[1]; Zhang, N[2].

Review question / Objective: The objective of this meta-analysis was to compare the effects of 5:2 fasting versus continuous energy restriction on weight loss and metabolic improvement in obese and overweight patients.

Condition being studied: 1. Obesity is a chronic disease caused by abnormal or excessive accumulation of body fat that endangers human's healthy, the global prevalence of obesity is steadily increasing, and it has become a major reason of ill health in most countries.2. 5:2 fasting is a form of Intermittent energy restriction, which characterized by two consecutive or non-consecutive "fast" (daily maximum of 500kcal for women and 600kcal for men) days per week.There are some studies have already compared the weight loss and metabolic improvement effect of Intermittent energy restriction and continuous energy restriction,but no meta-analysis has included only 5:2 fasting as the intervention method.

INTRODUCTION

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which characterized by two consecutive or non-consecutive "fast" (daily maximum of 500kcal for women and 600kcal for men) days per week.There are some studies have already compared the weight loss and metabolic improvement effect of Intermittent energy restriction and continuous energy restriction,but no meta-analysis has included only 5:2 fasting as the intervention method.

METHODS

Participant or population: Obese or overweight people aged 18 or older.

Intervention: 5:2 fasting alone or combine other lifestyle intervention and have a clear time for intervention.

Comparator: Continuous energy restriction alone or combine other lifestyle intervention or no nutritional intervention.

Study designs to be included: Randomized controlled trials will be included

Eligibility criteria: (1)Participants: Obese or overweight people aged 18 or older. (2)Intervention: 5:2 diet alone or combine other lifestyle intervention and have a clear time for intervention(3)Comparators: Continuous energy restriction alone or combine other lifestyle intervention or no nutritional intervention.(4)Outcomes: included at least one of the following outcomes: BW, BMI, FM, LM, HDL, LDL, HC, WC.(5)Data: the mean difference(MD) between starting point and ending point with standard deviation(SD) had been reported.(6)Only English study and RCTs were included.

Information sources: Three databases (PubMed, EMBASE, Cochrane online) will be searched to obtain relevant literature. All articles from inception to April 1,2022 that meet our requirements will be extracted from these three electronic databases. We will use the following keywords of titles and abstract to search: (intermittent fasting OR intermittent energy restriction OR routine periodic fasting OR periodic fasting OR 5:2 diet)AND(obesity OR obese OR weight OR overweight),the database's own filters are also used to aid retrieval.

Main outcome(s): Body weight,Body mass index, Fat body mass,Lean body mass.

Additional outcome(s): Waistline, hip circumference.

Data management: Excel.

Quality assessment / Risk of bias analysis: We will use the Review Manager(RevMan, version 5.4.1 Copenhagen: TheNordic Cochrane Centre, The Cochrane Collaboration, 2020)to report risk of bias, they are include detection bias(outcome assessment blinding),selection bias(random sequence generation and allocation concealment),attrition bias(incomplete outcome data) ,reporting bias(selective reporting).The risk level was divided into high risk, low risk and unclear.

Strategy of data synthesis: Continuous variable for random effects models will be used. Between-study heterogeneity will be assessed using the I^2 statistics.According to the Cochrane handbook, the I^2 will be considered non-important(60%).Results will be assessed using forest plots and presented as WMD or SMD for the main outcome and secondary outcomes. Statistical analysis will be conducted using STATA software version 16.0.

Subgroup analysis: Intervention time.

Sensitivity analysis: An sensitivity analysis analysis will be performed to ascertain the results of the meta-analysis by excluding each of the individual studies

Country(ies) involved: China.

Keywords: 5:2 fasting; Continuous energy restriction; Obesity; Weight loss.

Contributions of each author:
Author 1 - Boyu Liu.
Author 2 - Nan Zhang.