



International Conference on
NUTRITION AND HEALTH CARE

November 17-18, 2022 | Paris, France

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TITLE: The effect of blood glucose level and insulin sensitivity on intermittent fasting: a systematic review

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ABSTRACT

Diabetes is a worldwide health problem with increasing prevalence. Type 2 diabetes is the most common disease among adults that happened when blood sugar levels increased due to problems with the use or production of insulin which led to insulin insensitivity. Intermittent fasting is an eating plan that cycles between fasting and non-fasting over a period and has recently gained popularity as a method of manipulating body composition as well as preventing diabetes. The purpose of this review was to systematically evaluate the effectiveness of intermittent fasting to reduce blood glucose levels and improve insulin sensitivity among adults. The present systematic review was conducted according to the Cochrane guidelines. We searched the Scopus, World of Science (WoS), Cochrane and Science Direct databases from 2017 until 2021 to investigate the effect of intermittent fasting on blood glucose level, insulin level, and insulin sensitivity for studies meeting the following criteria: (1) Randomized Clinical Trial (RCT) with adult participants (2) Articles that include the description of the fasting protocol (3) minimum duration intervention in 4 weeks. Two investigators independently screened the titles and abstracts of the articles to evaluate eligibility for inclusion. If consensus was reached, articles were either excluded or moved to the next stage (full text). The full texts of the selected articles were appraised critically to determine eligibility for inclusion in the systematic review. From 1278 studies identified, 20 studies met the eligibility criteria. Blood glucose levels did not show significant differences between three types of IF (Alternate Day Fasting (ADF), Time-Restricted Fasting (TRF), and Intermittent Energy Restriction (IER)) in thirteen studies. However, there were six studies

reported on the effectiveness of IF in reducing blood glucose levels. On the other hand, a total of eleven studies reported the effectiveness of IF to reduce insulin level and insulin sensitivity (HOMA-IR). In the conclusion, intermittent fasting effectively improves insulin sensitivity but not in reducing blood glucose levels.

BIOGRAPHY

Azizah Mat Hussin has completed her PHD from Newcastle University, UK in 2018, in the field of Nutrition. Currently, she is the Head of Section for Environmental Healthcare, Institute of Medical Science Technology, Universiti Kuala Lumpur (UniKL). Before joining UniKL in 2008, she was a Research Officer in the Ministry of Health Malaysia. Her research area is in community health, nutrition in women and elderly, vitamin D and endothelial function. She has been conducted various research, particularly in knowledge, attitude & practice (KAP) among rural women on reproductive health, an association of vitamin D status with physiological and biochemical markers of endothelial function in overweight and obese post-menopausal women, ageing, vitamin D and NO production, feasibility study of a mixed-method intervention to reduce salt intake & increase high-nitrate vegetable consumption in middle-aged & older Malaysian adults with elevated blood pressure. She has been presenting her research studies in various countries such as France, England, Scotland, Ireland, Netherlands and Malaysia. She has been a supervisor and co-supervisor to more than 30 bachelor and master students since 2010.



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