

Time-Restricted Feeding's Effect on Adipose Tissue Metabolism in Obese Male Mice Induced by High Fat Diet: Depot-Dependent Effect

Shhen Kefir *

Department of Food Science and Nutrition, University of Minnesota, Twin Cities, MN 55108, USA

Introduction

Time-restricted feeding is a well-known method for promoting healthy metabolism and weight reduction. The impact of on metabolism is intricate and probably affects several pathways in numerous tissues. An important part of the systemic balance of lipid and glucose metabolism is played by adipose tissue. Metabolic diseases in obesity have a causative relationship with adipose tissue dysregulation. However, little is known about how affects various adipose tissue depots' metabolic processes, including lipolysis, lipogenesis, and thermogenesis. To find out, we exposed male mice to a 10-week regimen of a long-term high fat diet for 10 hours per day or ad libitum. The mice had previously been on an. The protocol resulted in weight loss.

Description

The rise in research studies looking at how diets affect adipose tissue metabolism, insulin resistance, energy expenditure, and the cardiovascular system is directly related to the continual rise in the numbers associated with obesity, diabetes, and their link. It has been demonstrated that a high-fat diet in mice results in obesity, insulin resistance, and dyslipidemia. Diets that help manage obesity can therefore influence how diabetes is affected by obesity, perhaps halting the growing trends of both chronic diseases. One strategy that could be important in lowering the prevalence of diabetes and obesity is intermittent fasting. It is recognised that time-restricted eating, a kind of IF that restricts the daily time window of energy intake consumption [1].

TRF has been utilised as a weight loss approach without changing calorie intake, and research on humans have shown that it improves blood pressure, insulin sensitivity, and oxidative stress. This information may lead to a probable correlation between TRF and a decline in the prevalence of diabetes and obesity. Adipose tissue is essential for controlling how the body uses energy. Chronic, low-grade inflammation originating from adipose tissue is considered to have a significant role in the genesis of the disorders indicated above. Therefore, it is essential to comprehend how affects the regulation of adipose tissue metabolism and function in an obese animal and might be useful in tackling the global obesity epidemic. The TRF mechanism is intricate and probably affects several adipose tissue pathways. Since mice are a more precise model of the target population, no TRF trials have yet been carried out on mice on a long-term high-fat diet that mimics the Western diet [2].

While several studies have indicated the metabolic advantages of,

***Address for Correspondence:** Shhen Kefir, Department of Food Science and Nutrition, University of Minnesota, Twin Cities, MN 55108, USA, E-mail: shunkefir66@gmail.com

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knowledge of the precise response to adipose tissue depots is limited. Adipose tissue is typically divided into two types: white adipose tissue and brown adipose tissue which differ in their metabolic functions, morphology, and gene expression. is the primary site for energy storage and has one large lipid droplet spherical cell between, which is divided into two depots subcutaneous or visceral contains multiple small lipid droplets between and contributes to energy expenditure through thermos Insulin stimulates the storage of energy inside by encouraging adipocyte intake of glucose and fatty acids, which are subsequently converted to triglycerides. The body then signals for the breakdown of triglycerides that have been retained when energy levels are low.

Endogeneity issues can be partially caused by the interaction between elderly labor force participation and physical health. As a result, academics have offered numerous solutions. compared the two-stage least squares method to solve the endogeneity problem between elderly labor force participation and health status using simultaneous equations and full information maximum likelihood estimation . The empirical data demonstrated that the simultaneous equation approach was superior for investigating the connection between elderly labor force participation and health status Additionally, the same approach has been utilized by numerous researchers to address the endogeneity issue between the two factors According in order to lessen the impact of bias on estimated results, it is necessary to take into account all objective health indicators rather than just focusing on a single health indicator. When energy levels are low, the body then instructs the lipolysis pathway to break down stored triglycerides, releasing glycerol and fatty acids that may be transported to tissues for energy consumption. Both WAT and BAT are acknowledged as endocrine organs that produce and release a number of substances known as adipocytes, including leptin and adiponectin, which control all metabolic processes throughout the body [3].

According to the findings of a literature review, a number of studies have looked at the relationship between elderly health and labor force participation. However, few of these studies have looked at the relationship between elderly health and labor force participation and the health status of the elderly. The corresponding research void is filled and elderly health research is enhanced by this paper. The majority of studies have utilized simultaneous equations and multi-index measurements of elderly health status to address the endogeneity issue. and activities of daily living were used in this study to measure the health status of the elderly, in contrast to Nous and Woodard, who only used self-reported health status as a proxy variable Based on the research of Wan et al., we address the endogeneity problem in this paper. investigate the impact of older adults' labor force participation on their health [4,5].

Conclusion

Aging is a natural physiological phenomena and set of biological processes that can result in a variety of gradual physiological and pathological changes. Aging is the main risk factor for a number of neurodegenerative disorders that affect the central nervous system and are intimately linked to aberrant behaviour Increasing data indicates that and the ensuing metabolic dysfunctions may cause age-related cognitive decline, vascular dementia, and moderate cognitive impairment. In the current investigation, we discovered that elderly mice fed a long-term showed cognitive function loss in comparison to mice given also causes, Tau hyper phosphorylation, modifies the architecture

of microglia, and increases inflammation in old mice au hyper phosphorylation is regarded as a crucial pathogenic process that can lead to a variety of behavioural problems and neurodegenerative effects. It is typical to see Tau hyper phosphorylation.

None.

Conflict of Interest

There are no conflicts of interest by author.

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