

Research Summary Research Summary

Effects of different rates of weight reduction on some biological and psychological aspects of youth

Prepared By : Mohamed Munir Mamlouk

Supervised By

Prof.dr Mahmoud Yehia Saad

Prof.dr Nabil Khalil Nada

Prof.dr Eric Doucet

Dr. Mosa Mosa Alam

Introduction

The fast of Ramadan month is one of the most common religious practices uniformly followed by Muslims throughout the World, as Muslims abstain from food and drinks and sexual activity during the hours from before sunrise to sundown, they have only two meals one of them before sunrise (light meal) and the other after sundown (main meal). The actual date for commencement of this fast varies from year to year depending on the particular phase of the moon.

Research Problem

Obesity considers one of the major health problem, obesity treatment and prevention represent a big challenge. World Health Organization (WHO) 2006 statistics revealed that 1.6 billion of adults are overweight and about 400 millions of adults are obese , and these records will increase by year 2015 to be 2.3 billion overweight and 700 millions obese.

The prevalence of obesity problem becomes very wide to include all world countries either developed and developing countries. Obesity occurs when your body consumes more calories than it burns. In the past, many people thought that obesity was simply caused by overeating and under-exercising, resulting from a lack of will power and self-control. Although these are significant contributing factors, doctors recognize that obesity is a complex medical problem that involves genetic, environmental, behavioral, and social factors. All these factors play a role in determining a person's weight.

People who are obese may have the symptoms of the medical conditions like, High blood pressure, high cholesterol levels, breathing problems, and joint pain (in the knees or lower back) is common. The more obese a person is, the more likely they are to have medical problems related to obesity. Aside from the medical complications, obesity is also linked to psychosocial problems such as low self-esteem, discrimination, difficulty finding employment, and reduced quality of life. Therefore obesity management cost the governments a lot of money because its medical link. For example, Canada spends about 2 billion /year that represent 2.4% of the total healthcare fund.

Obesity is managed and treated to decrease the health risks caused by obesity and to improve quality of life. An appropriate weight management program usually combines physical activity, healthy diet, and change in daily habits. Other programs may also involve psychological counseling and, in some cases drug therapy and surgery are very important. Losing weight and keeping it off is very challenging because lifestyle and behavioral changes are required.

The present study try to suggest that Ramadan fasting as model could be suitable strategy for weight loss as (Low meal frequency may decrease the energy intake during Ramadan, and also perform the same level or more of physical activity as the religious activities of Muslims are particularly increased in this month due to special incentive for various acts of worship, farther more The change in schedule of eating in the month of Fasting is really a behavior and lifestyle modification) which is too close for Obesity managements and treatments .

Since Ramadan fasting is observed by millions of Muslims who spread across the globe, a lot of studies done to see the effects of Ramadan fasting and resulted in effective weight loss and beneficial biological changes in the lipid profile and on the other side there were some studies did not report any weight changes during Ramadan fasting. This conffliction may be attributed to various geographical, climatic, social, cultural, and economic conditions of Muslims all over the world. But To date, no study has 1) used gold-standard assessments of body composition and of energy balance; 2) included both normal weight and obese in the same study to determine whether effects differ with differing adiposity levels and; 3) followed-up subjects to ascertain whether the adiposity rebound is similar within groups of normal weight and obese subjects.

The present study would be the first to investigate the effects of Ramadan on both lean and obese subjects at the same time, also it will be the first to follow up the gained results for long period after Ramadan end also it will be

the first study done on Canadian Muslim who represents about 1 million of the Canadian population according to the recent statistics

Objectives and hypotheses:

The main objectives of this study are thus twofold:

Objective 1) investigate the effect of Ramadan fasting in lean and obese men as regard: body weight, body composition, energy expenditure, energy intake, metabolic changes ,lipid profile , nutritional habits

Hypothesis 1: It is hypothesized that there will be a reduced body weight and changes in lipid profile. According to the changes occur in energy balance, body composition

Objectives 2) follow up the detected results for a sufficient period after end of Ramadan.

Hypothesis 2: It is hypothesized that the reduction in body weight will be regained or may be even become more specially in obese subjects.

Hypothesis 3: It is hypothesized that during Ramadan there will be a change in nutritional customs and behavior changes and this will be ended after Ramadan and return to their previous pattern.

Methods:

Ten normal weight and 10 obese males participated in this study, all of them volunteered for this study apparently healthy, none of them had chronic disease, non-smokers nor was on a therapeutic diet, Both groups had the same measurements of energy expenditure, energy intake, body weight ,body composition,blood profile and psychosocial assessments.

These measurements were taken before the onset of Ramadan, 2 weeks into Ramadan fasting, before the end of Ramadan, 4 weeks after the end of Ramadan as well as 20 weeks after the completion of Ramadan fasting. The length average of each fasting day was approximately 13.9 h.

All data were collected in Behavioral and Metabolic Research Unit, university of Ottawa, Canada during Ramadan of 2008 which was in September and flowed up throw 2009.

Statistical Analysis:

Statistical analysis was performed by using SPSS version 17.0 statistical programme. One way repeated measures .

Conclusions and Recommendations

Conclusions

- 1) There was no significant differences in body weight across time for total sample, but it was significant differences in body weight between groups According to the different in BMI between two groups
- 2) There was no significant differences in body composition across time for total sample expect lean mass and fat free mass, it may be result to the lack of the amount of fluids during the fasting, but there was significant differences in body composition between groups According to the different in BMI between two groups.
- 3) There was no significant differences in Energy intake across time total sample and also there was no significant differences in carbohydrate, protein and fat consumption during and before Ramadan fasting.
- 4) There was no significant differences in total Energy expenditure across time for total sample and also for the components of the Energy expenditure (resting metabolic rate - physical activity - thermic effect of food)
- 5) No statistically significant difference in the energy balance across time for total sample
- 6) Under the conditions described in the present study Ramadan fasting is not enough for weight loss without control diet.
- 7) Ramadan fast under the conditions described in the present study and with a limitation for the blood result as we have only result after the 2nd week of Ramadan fasting and we don't have in the end Ramadan fasting, There were some changes in lipid profile during the month of Ramadan fasting:
 - There was significant difference across time for total sample in the level of blood cholesterol with an increase during the month of Ramadan fasting,
 - There was significant differences across time for total sample with decrease in triglycerides during the month of Ramadan fasting.
 - There was no significant difference in high-density lipoproteins across time for total sample,

- There was significant difference across time for total sample with an increase in low density lipoproteins during the month of Ramadan fasting
- There was significant difference across time for total sample with an increase in Abu lipoprotein B during the month of Ramadan fasting

8) There was no significant difference in the hormone across time for total sample, and There was significant differences in the level of blood glucose across time for total sample with an increase during the month of Ramadan fasting .

9) There was significant difference across time for Dietary Restraint for total sample with an increase during the month of Ramadan fasting.

10) There was no significant difference in Disinhibition across time for total sample .

11) There was no significant difference in the feeling of hunger across time for total sample .

Recommendations

1) we should use the of body fat percentage as the most accurate measurement of the obesity .

2) we should increase the healthy eating behavior to be followed during the month of Ramadan fasting (where the selection of types and quantity of foods and to avoid the increase in fat and carbohydrates).

3) we must be not eat the breakfast in the day of fasting on one meal but it should be on stages and time is not one to avoid the health risks associated with increasing the size and breakfast after fasting, when the negative changes in blood libids.

4) advised to drink sufficient quantities of water, not juices and carbonated water in order to maintain the proportion of water in the body during the fasting period without increasing the amount of calories gained.

5) emphasis on the importance of work and physical activity during the fasting month of Ramadan and not to make the fasting month of Ramadan,

an excuse for laziness and lack of doing business where the usual daily physical activity was not affected by fasting.

6) fasting month of Ramadan could serve as a strategy to lose weight if combined with a diet restricted and preferably also a program associate with my body so you can get to lose weight without losing body's muscle tissue with the work on the exploitation of the psychological aspects associated with fasting in terms of Dietary Restraint to use the fast of Ramadan as a way to lose weight.

7) conduct a similar study in the Egyptian society to determine the extent of the impact of Ramadan fasting with a different environment and culture of the Egyptian society, especially in light of the researcher is not aware of any study of measured energy balance during the fasting period and its impact on the configuration of physical and biological variables, on the human body.

ACKNOWLEDGEMENTS

This study was funded by Cultural and Educational Bureau of Egypt of Canada. Which is supported by scholarship from Egyptian government .

The author would like to thank Professor Eric Doucet first of all for his acceptance to be under his supervision in the Behavioral and Metabolic Research Unit, university of Ottawa ,Canada ,for his assistance , encouragement and supporting to the researcher during the study in his laboratory, for his efforts and Scientific comments ,actually thanks a lot.

I wish to thank all the team work at the Behavioral and Metabolic Research Unit, university of Ottawa, Especially Ann Beninato for her invaluable help in coordinating and collecting the blood samples for current study. and Karine Duval, Alexander Schwartz for their assistance in the experiments and contribution to data collection

The author would like to grateful to the volunteers for their excellent cooperation and participating in the study.

Finely I would like to thank My wife Dr. Rasha Elnefily for her language assistance , medical support for current study also for her care for our small family.