Journal of Advances and Scholarly Researches in Allied Education
Vol. 15, Issue No. 9, October-2018, ISSN 2230-7540

Obesity and Dietary Fat Intake

Paromita Mukhejee[1]* Prof. Dr. B. J. Singh[2]

[1] Research Scholar, Pebble Hills University

[2] Pebble Hills University

Abstract – Weight gain is a product of consuming more energy (calories) through food and beverage than you expand through the combination of what it takes to sustain the very basic function of life (resting metabolism),metabolizing the food we ingest (thermic effect of food) and what you burn in daily activities also known your exercise metabolic rate. A person can gain weight he or she consume more calories than needed to fuel these 3 things (regardless of if they come from Dietary fat, carbohydrates, protein, alcohol or mixture of nutrient. Public health recommendation for us population 1977 were to reduced fat intake to low as 30% of calories to lower the incidence of coronary artery disease. These recommendation results in a compositional shift in food materials in the agricultural industry and fractional content of fat was replaced principally with carbohydrates. Subsequently, high carbohydrate were recognized as contributing to the lipoprotein pattern that characteristic atherogenic dyslipidemia and hypertriacylglycerlemia the rising incidence of metabolic syndrome and obesity are becoming common themes in the literature. Current recommendation to keep saturated fatty acids, Trans fatty acid, and cholesterol intake as low as possible while consuming a nutritionally adequate diet. In the face of such recommendation the agricultural industry is shifting food composition towards the lower proportion of all saturated fatty acid

Keywords - Saturated Fatty Acids, Saturated Fat, Dietary Recommendation, HDL, LDL, Coronary, Artery Disease

----------X----------

INTRODUCTION

The study of lipid and their major structural element the fatty acids remain one of the most enigmatic research fields in biology and nutrition. As a specific component in the diet, fat provide essential fatty acids and dissolve and assit in the absorption of fat soluble vitamins and essential nutrient. Fat in the diet also produce metabolic effect that are a complex consequent of fat content, fatty acid composition, timing and individual variation. Fatty acid are required not only membrane synthesis, modification of protein and carbohydrate construction of various structural cell and tissue, production of signaling compounds and fuel but also for solubilizing a variety of non-polar and poorly soluble cellular and extracellular constituent the complexity of structural and diversity of function of fatty acids in biological cell and tissue remain poorly understood .In only a few biological situation have the action of fatty acid been described and scientific knowledge of the structure and function of the biological lipid is narrow research on fatty aci consumed in the diet has focused principally on their role in lipoprotein metabolism although how saturated fatty acid increased lipoprotein cholesterol is not completely understood at the molecular level and which saturated fatty acid have capacity is still being debated however that evidence that dietary saturated fat generally increased the blood cholesterol concentration is the basis of recommendation to decreased the intake of saturated fat. The decision to focus the role of saturated fat in the diet and n lipid metabolism is reasonable in the cost of cholesterol related disease in the population. However the apparent breadth study of saturated fat and lipid metabolism should not obscure the fact that little is known about the metabolic aspects of individual dietary saturated fatty acid. Although both clinical and epidemiological evidence indicate that diet inordinately rich in saturated fat and deleterious to health, there is still question of what the most health full overall mixture of different class of dietary fat. The agricultural enterprise and food industries are being guided by recommendation to the public to decrease the saturated fatty acid content as low as possible. The response has been gradual but continues and saturated fats are disappearing from food supply.

RECOMMENDATION FOR INTAKE OF DIETARY FAT

In the American Heart Association step1 and step 2 diets the percentage of calories from total Fat were28.6% and 25.3 % respectively and the percentage of calorie from saturated fat were 9% and 6.1% respectively .Step1 and Step 2 diet are recommended for treatment of high bood cholesterol. Initialy the dietary recommendation for patient consuming the step 1 diet were similar to those advocated by the American Heart Association. However, 40 y after much cited Fragminton Heart Study was carried out, person with high tri acyl glycerol concentration(<17l Mmol/lit)and low HDL cholesterol concentration (<1.03mmol/lit) were reported to have a significantly higher rate of coronary Heart Disease(CAD) than the person with lower triacylglycerol and higher HDL cholesterol concentration .In addition studies of long term health benefits of consuming a low fat diet ……particularly after variation in human response is taken into account are lacking of low fat diet have been shown to exert a potentially deleterious effect on lipoprotein profile in some person. As example in the study in healthy non diabetic individual consumes diet that contain either 60% of total calories from carbohydrate and 25% from fat and 15% from protein the 60% of carbohydrate diet resulted in higher fasting plasma triglycerol, remnant lipoprotein, remnant lipoprotein triglycerol and lower HDL cholesterol without changing LDL cholesterol concentration.

DIETARY RECOMMENDATION TO DECREASES FAT INTAKE

The result of The National Health and Nutrition Examination Survey Data----collection of the studies in us indicate that the replacement of dietary fat with dietary carbohydrate, the role of carbohydrate in the weight gain is unclear. However, carbohydrate increased blood glucose concentrations, which stimulate insulin release, which in turns promote the growth of fat tissue that can cause weight gain. Increased obesity is associated with the metabolic syndrome and hypertriacylglycerlemia, a recognized atherogenic risk.

METHOD

A specific research question of this review

- To determine whether dietary fat independent of energy intake is a risk factor for the development and progression of overweight and obesity

- To assess the effectiveness of fat reduction strategies relative to their dietary strategies in overweight and obese individual and weight maintenance in normal weight and obese individual

- Dietary fat intake measured either percentage energy from fat and 1% fat intake grams adjust from the energy intake was examined.

The questionnaires about their life style factors food, habit, daily fat intake, age weight, height Body Mass Index, syndrome x central obesity, apple or pear save belly, total calorie intake, according to physical activity is taken this patient.

MECHANISMS

To confirm whether dietary fat plays a role in the a etiology of the overweight and obesity suggested in some cohort studies, biologically plausible mechanism must be identified which explain how dietary fat might increase the risk of weight gain

It is well establish the body weight remains stable as long as energy intake matches energy expenditure (WHO 1998).

Energy intake is excess of energy expenditure results in energy storage and weight gain hence dietary fat could affect energy balance by influencing energy storage energy expenditure and energy intake

SUMMARY OF MECHANISM EXPLAINING THE RELATIONSHIP BETWEEN DIETARY FAT AND OBESITY

The research suggested that energy density, rather than the dietary fat perse, is an important determinant of energy intake. The effect of diet o and n fat balance is not mediated through difference inmetabolic action with the respect of energy storage and total energy expenditure High fat diet do not results excess energy intake and then energy density and palatability are health constant (Stubbs et. al. 1996, Salzman et. al. 1997). Together the evidence suggested that factors promoting excess energy expenditure and energy storage, are more likely to increase the risk of weight gain energy density appears to be the major determinant of energy intake. Energy intake reduced when the energy density of the diet is low (<4KJ/GM) and increased when the energy density is high (>6KJ/GM) (Rolls et. al. Bells and Rolls 2001). The effect of energy density on energy intake appears to be similar in both obese and lean individual.

Energy density is mainly determined by the water fat and fiber contents of food. More evidence

Is required to determine the relative effect of the total water and fiber contents of food of the Energy density of diet other factors such as palatability the physical form off food and the amount of food consumed as well as behaviour and genetic factor may also influence energy intake. Eating patterns

in terms of food variety and frequently restaurant meals also effect on.

DISSCUSSION

Evidence from research study suggested that factors promoting excess energy intake rather than differential effect of macronutrient on energy expenditure and energy storage are more likely to increase the weight gain there was a wide variation in the amount the short term weight loss achieve. Dietary factors such as protein content of the diet have been shown to increased short term weight loss in obese individual non subsequent food intake include neurochemical genetic environmental and emotional factors and Hellenistic quality of food(Freedom et. al. 2001). Combinary reduced energy intake with increased physical activity had the greatest impact of weight loss in obese individual (Hammer et. al. 1989). Few studies controlled adequately for physical activity is therefore little evidence to indicate whether dietary fat reduction alone will prevent weight gain in normal weight, overweight, and obese individual. Although dietary fat may increase energy density of the diet facilitating excess energy intake and hence the weight gain and other dietary non dietary factors need to be considered .Further research is required to determine the long term effectiveness of manipulating the energy densit5y of the diet on weight maintenance. An overview studies indicate that high fat diet induce greater food intake and weight gain than high carbohydrate diet. Several factors such as caloric density satiety properties and post absorptive processing can contribute to this different response to high fat diet. According to the satiating effect after each meal with a high fat carbohydrate ratio is less than for meal with a lower ratio. Some research has reported that the most important variable influencing meal size is not level of hunger but the nutrient content of the range of food consumed. Thus dietary fat has a weak effect on satiety and we suggest that periodic exposure to a high fat meal, particularly when the hunger is high may be sufficient to lead the over consumption of energy as fat in obese patient energy balance is well correlated with the fat balance in lean control, where there is no correlation either carbohydrate or protein balance. Several authors have shown that carbohydrate is closely regulated by adjusting oxidation to intake whereas fat intake and lipid oxidation is seen in lean controls appear not to be present in obese patient. On high fat diet post obese women fail to increase the ratio of fat to carbohydrate oxidation approximately increased dietary fat result in preferential fats storage in post obese women impaired suppression of carbohydrate and reduction of energy expenditure.

CONCLUSION

The relative effectiveness of reducing energy density of the diet by manipulating the dietary fat, fiber and water contents of food. The usefulness of other dietery strategies for reducing total energy intake, such as increasing protein content of the diet , reducing the intake of sugar containing beverage and reducing portion size. Eating pattern in particular food variety and frequency of consumption of restaurant meal also may lead to be considered. Physical activity is clearly critical for weight maintenance. In children physical activity was shown to be an important determinant of overweight and obesity.

Intake of total dietary fat and poly unsaturated fatty acid in the Australian diet has decreased since 1983 whilst intake of total energy and saturated fatty acid has increased (cook et. al. 2001). Behavioral Research suggested that low fat dietary message have successfully communicated consumer's associated dietary fat with overweight and generally believed that fat restriction was benefit

To health shanahan et. al. 2000. They are aware of low fat dietary strategies including restricting dietary fat intake by using low fat and oil in cooking trimming meat fat and chicken skin. Grayling instead of frying using low fat food alternatives and avoiding intake of fried foods take away full cream dairy food cakes, biscuit salad dressing. Dietary fat influences overconsumption and weight gain through its low satiety properties and high caloric density, obese and post obese subject do not appear to adopt to dietary fat and therefore fat storage is normal.

REFERENCE

1. Willet W.C. (1998). Dietary Fat and obesity an unconvincing relation Amj. Clin. Nutr1998; 68: pp. 1149-50

2. Bray G.A. & Popkin B.M. (1998). Dietary fat intake does effect obesity Amj. Clin.Nutr.1998:68:1157-13

3. Knopp R.H., Walden C.E., Retztoff B.M., et. al. (1997). Long term Cholesterol lowering effect of fat restricted diet In hypercholesterolemic and combined hyperlipidmic men: The Dietary Alternative Study JAMA 1997; 278 : pp. 1509-15

4. Sheppard L., Kristal A.R., Kushi L.H. (1991). Weight loss in women participating in a randomized trial in Low fat diet in patient with concern heart disease Amj. Nutr1991154821-8

5. Thusen L., Henrikser L.B., Englsy B. (1986). One year explain with low fat low cholesterol diet in patient with concern heart disease Amj Nutr 1986;44: pp. 212-9

Corresponding Author

Paromita Mukhejee*

Research Scholar, Pebble Hills University