Mediterranean Diet Pyramid: a Pivot Role in Dilemma of Anti-Aging

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ABSTRACT: Mediterranean diet reflects traditional dietary habits and foods of mediterranean people, historically associated with good health. Mediterranean diet pyramid having the basis of dietary habits and food pattern more likely according to Crete, Greece and Italy, where life expectancy ratio among adults is greatest in the world. The diet is categorized by plentiful plant foods, fresh fruits as the usual daily dessert, olive oil as the major source of fat, dairy products particularly cheese and milk, fish and poultry in moderate to low amount, zero to four eggs consumed weekly with the consumption of red meats and wine in low amounts. All research studies included in this study emphasize on the fact that combinations of the foods in mediterranean diet impart beneficial impact on the chronic disease prevention as well as their management primarily due to the nutraceutical nature of the ingredients rich in substances like omega 3 & 6, vitamins, minerals, polyphenols and functional fibers likely to be effective in cardiovascular disease risk factors and biomarkers of metabolic syndrome.

Keywords: Mediterranean diet, anti-aging, chronic disease prevention,

Aboriginal foods vs processed foods and chronic diseases (CVD’s)

“Nutrition, nourishment, or aliment, is the supply of materials - food - required by organisms and cells to stay alive.” Food is the basic necessity of life, not only food but the quality of food affects the life. Healthy and nutritious food is needed by the body. Good nutrition is the basic requirement for everyone. And the deficiency and excess of any nutrient is bad for our health. The diet plays major role in the development and prevention of chronic diseases. Diet is key factor which we can change that will affect all other factors related to chronic diseases. Aboriginal foods are rich in nutrients and much healthy food a person then processed foods. Processed foods contain much quantity of sodium in form of sodium carbonate, sodium benzoate. Processed foods contain food preservatives that are much harmful for our health and are threatening to our life.

To check the effect of Mediterranean diet on plasma level of C protein a study was conducted having 1514 men and 1528 women in which it was observed that in both the
genders there was a reduction in concentration of inflammation and coagulation marker reducing risk of cardiovascular disease, showing the beneficial effects of diet in cardiovascular system (Chrysohou et al. 2004).

To check the association of fish consumption and cardiovascular events a study was conducted men and women which were reporting to eat fish >300 grams in a week and when test results were observed it was concluded that consumption of fish was independently associated with the low inflammatory markers reducing risk of hypertension and cardiovascular events (Zampelas et al. 2005).

A modified diet was given with extra virgin oil and nuts and it was reported that they helped in reducing the cardiovascular disease and proved beneficial for healthy hearts. It was observed that this diet was helping in maintaining blood volume in the body. Eating nuts were observed to reduce LDL level in the body and increasing HDL level in the body (Kopel et al. 2013).

**Serum cholesterol**

According to a study conducted on two group of people one inter vented group and one was control group. The inter vented group were given fruits, milk, almonds, meat organ soya bean olive oil it and control group was given nothing of it was observed that there was decrease in cardiac deaths as well as their blood pressure was normal as compared to control group. Serum cholesterol level were also being reduced in the inter vented group (Singh et al. 2002).

**Cardiovascular Diseases**

The one of the risk factor for cvd’s is processed foods that leads towards hypertension high blood pressure, heart attack, heart strokes and ultimately death. Sp our much concern should be on the healthy diet that is not from processed foods. Aboriginal foods are healthy for us because they are rich of nutrients, contains raw milk, contains unrefined salts and unrefined sugars, lacto fermented vegetables and contains unrefined food items, whereas processed foods contains refined food items which are rich in salt and food preservatives and causing.

The attention to Mediterranean diet in CVD is increasing day by day. A study was conducted in men and women (9408) both were CVD patient and were given food according to the plan, data was collected through food frequency questionnaire and there was 4 year follow up. It was observed that both group showed good results in decrease n CVD risk as well as increases on HDL level in their body (Núñez-Córdoba et al. 2009).

A study was conducted on Mediterranean diet score was given to effect of diet on lowering hypertension. There was a positive predictive score on hypertension 45% as well as hypercholesterolemia 46%, results showed that effect of Mediterranean diet on blood was good (Panagiotakos et al. 2007).

**Hypertension**

Hypertension leads to Cardiac problems mainly heart attack or any other diseases of
hearts, food is now what is being consider the most variable part of this cause a study was conducted on different types of diet and it was concluded that diets low in saturated fats and sodium and rich in fruits and vegetables with adequate amount of potassium, calcium and magnesium are effective in treatment for hypertension (Kokkinos et al. 2005).

The Mediterranean diet was found to be have inverse relationship with both systolic and diastolic blood pressure. They found that intake of vegetables, olive oil and fruits were having inversely effect on both diastolic and systolic blood pressure as well as meat and meat product were also having positive effect on the blood volume showing beneficial effect on the arterial blood pressure (Psaltopoulou et al. 2004).

Raw milk and dairy products are used in diet of traditional people diet which will help in the prevention of many chronic diseases. There are following studies which shows that milk is very important for prevention of chronic diseases especially cardiovascular disease.

**Metabolic Syndrome**

Calcium is considered as one of the main nutrient have beneficial impact of milk and milk products on blood pressure control. Other minerals as magnesium and potassium. Also help to regulate BP. Bioactive peptides containing components of milk can regulate the blood pressure. These all studies are also supporting the same effect of milk consumption on the heart diseases, stroke, ischemic heart disease, diabetes and metabolic syndrome.

According to a study the postmenopausal women who consumed more calcium both from dietary sources and supplemental calcium not particularly from dairy products and vitamin D sources are relatively at decreased risk of ischemic heart disease and mortality (Bostick et al. 1999).

The cow milk contains an enzyme named as IGF-1 which is responsible for the growth of the baby cow but if a human is consuming cow milk IGF-1 performs some inflammatory function which initiates the complication of acne. Milk and Dairy products cause an insulin production which leads to even more production of IGF-1 resulting in more acne. Utilization of milk and dairy products causes excessive secretion of sebum resulting in the blocking of pores as a result more acne occurs and a favorable condition is generated for the production of P.acnes bacteria as a result more severe acne takes place.

According to the study which concluded that the individuals' mostly adolescent girls and boys who consume more skimmed milk are at high risk of acne. This study suggest milk has several bioactive molecules and hormonal constitutes in it e.g. androgenic compounds in milk which have many physiological effects on individuals (Adebamowo et al. 2006).

**Fast Foods**

More consumption of fast food and soft drinks leads towards obesity and weight gain and both of these factors leads towards chronic diseases and especially cvd’s.

With increasing age and school grades
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from elementary to junior high and middle school their consumption of breakfast, fruits, vegetables and milk decreased but consumption of fast foods and soft drinks increased. The results of this cohort study described that consumption of breakfast in third grade was 99% and in eighth grade this consumption reduced to 85%. The reduction in consumption of fruits and vegetables was 41% and 25% respectively from third grade to eighth grade. There was significant reduction in milk as compared to three times increased proportion of soft drinks. (Lytle et al. 2000).

According to a study the consumption of soft drinks in youth from ages of 6-17 years increased up to 48% while this % age was 37 in 1977 and 56 in 1988. The consumption of soft drinks is associated with energy intake which may result in excessive weight gain and obesity in children. Secondly the soft drinks consumption can affect the dietary quality by decreased consumption of milk and can result in deficiency of calcium. (French et al. 2003)

Milk contains pre-biotic and probiotics which are very helpful in treating diarrhea and can also rehabilitate the beneficial microorganisms present in the colon of the GIT. And can also act as a rehydrating drink in diarrhea. According to the study which suggested that those people who consumed raw milk are mostly victim of chronic diarrhea. So people with increased intake of raw milk are at high risk of chronic diarrhea with secretory mechanism (Belongia et al. 1993).

Soy milk is a type of milk which contains soy protein and it is very effective in different types of cancers for example prostate, colon or colorectal cancer. According to a study which concluded that men with increased intake of soy milk are relatively at less risk of prostate cancer. So this study suggests that increased intake of soy milk can prevent from prostate cancer in men (Jacobsen et al. 1998).

In a study either to check intake of DASH diet 412 random participants were selected and they were given traditional diets 30 days consecutively after one month their blood examination was taken and it was found that they were having low blood pressure low diastolic as well as systolic pressure due to less intake of trans fat as well as sodium (Sacks et al. 2001).

Cardiovascular disease is growing worldwide day by day as there are several studies claiming foods to be the cause of that. Hypertension, obesity, diabetes are leading causes for heart disease, it was observed that certain food elevate this risk and certain show protection against risk like food high in fat causes obesity a and food high in poly unsaturated fats reduces this risk, foods that are high in sodium causes hypertension and food high in potassium causes low risk for hypertension (Reddy and Katan 2004).

Healthy Diet

The healthy diet of children is of much importance because the future of the nation depends upon the children of that nation and the best growth and development of children is only possible when they are consuming healthy diet and bad habits and unhealthy dietary practices is mostly seen in school going children it will leads towards obesity weight gain and also malnutrition and it will
further cause chronic diseases in children.

According to study Obese children and adolescents were consuming more amount of meat, grain products, foods away from home, sugar sweetened drinks and potato chips. Consumption of theses things will contribute to higher calorie intake and higher percent body fat. Boys were consuming more amount of sugar sweetened drinks than girls. So obese children and adolescents should not consume foods away from home and sugar sweetened drinks because there is a relationship between these food items and percent body fat (Gillis and Bar-Or 2003).

This study was conducted on children of age group 4 to 9 years old in the united states. According to study 30 percent of children were consuming fast food on a typical day irrespective of gender. The consumption of fast foods in children have very bad effects on their health and it also effects th dietary quality. Fast foods consumption in children also leads to chronic diseases and causing obesity in school going children (Bowman et al. 2004).

This study was conducted on breakfast habits, nutritional status, academic performance and body weight of children and adolescents. Breakfast skipping habit is mostly seen in United States and Europe. The children who consumed breakfast daily tend to have higher nutritional status and show good academic performance than those children who do not consume breakfast daily. The children who consume breakfast daily consume higher calories daily and are not overweight than breakfast skippers. There is a relationship between breakfast skipping and obesity and poor cognitive function. Breakfast consumption habit may enhance cognition related to memory and develop a healthy lifestyle (Rampersaud et al. 2005).

This study was conducted on US school going children. According to this study there is relationship between food insecurity and children nutritional and nonnutritional staus. Food insecurity was measured by interveiweng the parents of children. Academicperformance,weight and height of children were dierctly measured and social performance of children was taken from teachers. So mostly food insecure children were poor in studies and were showing poor academic performance and they were also socialy not good. So this study concluded that food insecurity has poor impact on nutrional and nonnutriional status of chlidren (Jyoti et al. 2005).

According to a study is was found that family who were indulging themselves in good meal practices in front of their children, they were more likely to have good eating habits in their adulthood, they were consuming more fruits and green leafy vegetables as well less intake of soft drinks (Larson et al. 2007).

According to a study 20 children of school were checked half of them were given glucose drinks half of them no breakfast and half were given cereals that were rich in carbohydrates. They found that those children who were consuming glucose drinks and no breakfast were more likely to have less attention and much memory problem as compared to the children who were consuming cereals they all were having great attention and good memory control. They
concluded that complex carbohydrates rich diet in morning can help to increase children mental health (Wesnes et al. 2003).

According to a research from all the households about 7.5% were found food insufficient after considering many demographic factors difference between food sufficient and food insufficient low income groups. Children of both the groups consumed almost similar amount of macronutrients and micronutrients irrespective of their family groups but there was some difference in consumption of total cholesterol and higher cholesterol in food sufficient group.(Casey et al. 2001)

A study was conducted on Japanese people as they have highest life longevity in the world as it was due to nitrite that cause vascular integrity resulting in less cardiovascular diseases these nitrites are produced from nitrates that were found in vegetables that all the Japanese consume. Due to high intake of these vegetables they were less likely to be prone to cardiovascular events(Sobko et al. 2010).

American heart Association Company is critically working on people dietary behavior to reduce cardiovascular failure events among population. They suggested that people should consume whole grains, fish, meat organ and fruits and vegetables and should avoid refined foods food containing high amount of salt in order to have a healthy life and controlled hypertension(Lichtenstein et al. 2006).

A study was conducted on hypertensive patient 436 participants were taken as they were given DASH diet for 3 weeks including fruits, vegetables, low dietary fats, low saturated fats, foods containing less amount of sodium and high amount of potassium after testing it was observed that they were having LDL values in lesser amount and HDL values in higher amount(Obarzanek et al. 2001).

**CONCLUSION**

Mediterranean diet is the reflection of culture and traditional dietary habits and foods of Mediterranean people. Traditionally associated with good health. Mediterranean diet pyramid includes the basis of dietary habits and food pattern more likely according to Crete, Greece and Italy, where life expectancy ratio among adults is greatest in the world. The diet is recognized by plentiful plant foods, fresh fruits as the usual daily dessert, olive oil as the major source of fat, dairy products particularly cheese and milk, fish and poultry in moderate to low amount, zero to four eggs consumed weekly along with the consumption of red meats in low amounts. All research studies included in this study highlighted the fact that combinations of the foods in Mediterranean diet has beneficial impact on the chronic disease prevention as well as its management caused by the nutraceutical nature of the ingredients rich in substances like omega 3 & 6, vitamins, minerals, polyphenols and functional fibers likely to be effective in cardiovascular disease risk factors and biomarkers of metabolic syndrome.

**REFERENCES**

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Thirdly, there was a reduction in concentration of sugar sweetened drinks than girls. So obese adolescents were consuming more amount of solids and liquids having inversely effect on both diastolic and systolic blood pressure (Psaltopoulou et al. 2017). Mediterranean diet attenuates inflammation and markers related to cardiovascular disease and hypercholesterolemia 46%, which both group showed good results in heterogeneous diet pyramid includes the basis of dietary culture and traditional dietary habits and prevention as well as its management caused mortality among postmenopausal women.


Cardiovascular disease is growing rapidly and both of these factors leads towards hypertension high blood pressure, heart disease and obesities (Larson et al. 2007). According to a research from all the studies and were showing poor academic performance than those children who consumed breakfast in the morning. J Nutr 135(12): 2831-2839.


