

Diet Concepts for Healthy life

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Abstract

In the current world, in this 21st century being healthy is very important and is linked to the food we eat. Having nutritious diet helps to maintain healthy Body Mass Index and also helps to reduce the risk of having diseases like cancer, cardiovascular, diabetes, arthritis and stroke. In the present situation it is a challenge to nurses working with patients on improving both their nutrition and overall health depending on the diseases. Medical Nutrition Therapy gives us an idea about Causes of the disease and the Diet to be followed for each individual disease (Roth. R. A, 2016). Here are 10 diet concepts for maintaining overall quality of health with respect to that disease. In this article diet concepts for Weight Control, Diabetes, Cardio vascular disease, Renal Disease, Gastro intestinal, Cancer, Blood Pressure, Arthritis, Asthma and Fever have been discussed.

If we change our life style and have healthy eating habits we can avoid being excess weight or obese. Diet for weight control should not focus on weight loss rather follow healthy diet plan. Most of the diseases controlled by Replacing saturated and trans fats with unsaturated fats include omega-3 fatty acids; Increasing consumption of fruits and vegetables and adequate folic acid intake; Consuming high fiber diet such as whole-grain; Limiting consumption of sugar and sugar based products and sodium intake. Even though genetics play important role, a diet plan (vegan diet) which is high in fiber and low in fat with minimum amount of saturated food is recommended for Diabetes disease. By avoiding fatty and fried food and having high fiber diet which is rich in raw fruits and vegetables is recommended for Heart diseases.

Once we realize the connection between good health and wholesome balanced diet, then our food will become our medicine for maintaining good health. The health conditions such as making right food choices and leading healthy lifestyle helps to prevent, treat and cure of the diseases.

Diet concept – weight control

Usually normal weight means average desired or standard weight which is meant to maintain good health which is known as “rule of thumb method” which is only an estimate, it may vary on various other factors. Over weight is 10-20% more than average weight, excessive body fat is 20% more than the average weight which is also called as obesity, Underweight is 10-15% below the average weight. It is measured by Body Mass Index (BMI) based on the height and weight in order to assess health risks.

Standard Body Mass Index (BMI) is used to determine person health risk against weight which 19-25 BMI indicates fewer health risks. BMI of 25-30 indicates overweight and BMI over 30 indicates obesity. Distribution of fat also indicates for example fat at abdominal cavity has more risk than fat in thigh, buttock and hip area which might cause the risk of health problems such as hypertension, coronary heart disease, Type 2 diabetes and some form of Cancers.

According to National Center for health statistics show 73% of adults who are 20 years and above are obese or overweight. Center for Disease control and Prevention is focusing on policy and environmental strategies to make healthy eating and living accessible and affordable for everyone. Some of the Strategies to prevent and manage obesity are Community efforts, early care & Education, Salad bars to school, Healthy food environments, Healthy Hospitals,

Healthcare. Adult overweight & obesity awareness programs such as Defining Adult Obesity, Adults obesity causes & consequences. Children obesity programs such as Defining childhood obesity, childhood obesity causes & consequences. Data Statistic, Resources & publications about Adult and child obesity facts, Data trend obesity maps, fact sheets and social media tools are maintained and focused by Center for Disease control and Prevention (CDC, 2017).

Currently over weight in children has increased to 40.8% leads to strain on Heart, Lungs, Muscles, bones & joints which increases risk of diabetes mellitus, hypertension and some form of cancers. Changing eating habits is the main key for reducing & maintaining the weight. Also one should prefer to eat less than what they would prefer and also exercise 90 minutes most of the days in a week. Foods that are allowed are fat free milk, butter milk, yogurt, cheese and eggs; Lean beef, lamb, veal, pork, turkey, chicken and fish; Whole grain bread; Coffee or Tea without milk and sugar; Have lots of vegetables and healthy snacks. Now a days surgical treatments such as gastric by-pass and stomach banding are done for fat reduction but these are causing complications such as dumping syndrome, bleeding, infections, gastritis, gallstones, and iron, Vit B12 and calcium deficiencies. Under weight is dangerous to health, counseling and high calorie diet is recommended for such people.

Diet concept – diabetes mellitus

Diabetes Mellitus is a chronic disorder which affects metabolism of carbohydrates characterized by hyperglycemia (abnormal amounts of glucose in blood). This is major cause of death and various diseases such as blindness, heart & kidney diseases, infectious diseases and Amputations of legs, feet & toes.

For maintenance of good health distribution of glucose must be managed carefully, this is controlled by Pancreas by providing insulin hormone which helps glucose to enter in to cells. The binding of insulin receptor on the cell signals pancreas to stop sending insulin. This causes reduction of glucose in the blood. Inadequate production of insulin or if body unable to use insulin causes hyperglycemia which means glucose accumulates in blood. Causes are not confirmed, may be viruses or obesity may precipitate the disease in people who have genetic tendency. Symptoms are polyuria, polydipsia, polyphagia. Also diabetes causes diseases such as vascular, Arthrosclerosis which might further cause retinopathy, neuropathy.

Recent Researches are planned through Diabetes Research and clinical practice, some of the research reviews and articles shows the effect of diabetes on Renal, Cardio metabolism, overweight with different scenarios and environmental conditions (Science Direct, 2017). Research on Renal glucose metabolism in diabetes highlights “Renal glucose metabolism in normal physiological conditions, when facts affecting, Abnormalities in Type1 and Type 2 diabetes” (Alsahli,M&Gerich,J,2017).The Research review of Cardio metabolic health in Asians with diabetic in the US highlights “ Non-Hispanic Asians had lower levels compared to other race & ethnicities and they had adjusted levels of hypertension and LDL cholesterol and their BMI can underestimate their cardio metabolic risk” (Menke,A,&Cowie,C,C,2017).

Treating diabetes includes diet, medication and exercise in which diabetic diet is used. Diets are usually prescribed by physician or dietitian in consultation with client based on diets based on exchange lists which is most commonly used diet for Diabetes. American Diabetics Association or American Dietetic Association has multiple lists which contain approximately equal amounts of carbohydrates, protein, and fats by providing freedom to choose food substitution with one list with other still providing required amount of nutrients and calories. Some of the examples of exchange list are Carbohydrates bread, milk & fruits; Meat: lean meat, medium meat, high meat & plant based meat. Starch exchange list: Bread, peas, lentils, starchy vegetables, fruits, milk & yogurts. Non starchy vegetables: spinach, Broccoli, Asparagus, sprouts, celery etc. recommended. High fiber intake reduces insulin needed to the body by lowering the blood glucose. Intake of water should be high so that high absorption of mineral increases. Avoid using Dietetic foods, use

only general public food it has no difference rather Dietetic foods are more costly. Alcohol consumption is not recommended only fat free & sugar free products are recommended.

Diet concept – cardiovascular disease

The Cardio Vascular Disease affects heart & blood vessels which is the leading cause of death or permanent disability in the US. Risk factors such as Abdominal obesity, High blood lipids such as triglycerides, low HDL, and high LDL, High blood pressure, Insulin resistance which might cause risk of coronary heart disease, stroke, peripheral vascular disease and type 2 diabetes.

Cardio vascular Disease can be acute or chronic. The example of acute form is Myocardial Infarction (MI). The chronic heart disease causes loss of heart function and develops over the period. The two types of chronic heart disease are compensated heart disease where heart can maintain blood circulation, here heart beat unusually fast. In decompensate heart disease heart cannot maintain circulation and it is enlarged where congestive heart failure occurs which in turn affects myocardium, endocardium, pericardium and blood vessels. Arteriosclerosis is another term for vascular disease in which arteries harden making passage of blood difficult which causes the heart attack. Risk factors are Hyperlipidemia, hypertension and smoking. Contributing factors are obesity, diabetes etc.

The British Heart Foundation (BHF) had organized an event aimed to raise awareness of heart disease of Cardio vascular research which is happening in Wales. *Purpose of the research activities was to educate the public about possible reasons of cardiovascular diseases; reducing happening of incidences; about BHF funded research activities to understand disease and new treatments; Informing about health diets to reduce risk of heart diseases” (CardiffUniversity,2017).As part of prevention works CDC had implemented Strategies for Healthy heart and stroke-free. Aim of these strategies is heart disease & stroke prevention- The controlling risk factors such as high blood pressure & cholesterol; Recognizing signs & symptoms of heart attack and stroke; Improving emergency responses and quality of care. Strategies provide awareness about healthy eating, physical activity & tobacco use, diabetes & obesity in order to improve overall cardiovascular health in US (CDC, 2017).

The risk of heart disease can be reduced by maintaining ones weight and diet limiting salt & fat intake and keeping activities at healthy level. Foods with fat-restricted and low-cholesterol are allowed. Foods which need to be included are whole grain breads & cereals; Meats with trimming & skin removed i.e lean beef, pork, veal and egg whites; Fat-free dairy products such as low fat milk, cheese, curd etc., Other foods i.e oils such as olive, canola, peanut; limited nuts such as walnuts and almonds. Avoid foods like Breads made out of egg or cheese, fatty meats and dairy products. Heart disease with hypertension must use sodium restricted diet and need to avoid canned and processed food.

Diet concept – renal disease

The main function of Kidney is to filter the blood, excrete wastes and help to maintain both the composition and volume of body fluids which in turn maintains fluid balance, acid balance and electrolyte balance. Renal failure occurs when kidneys fail to eliminate nitrogenous waste.

Primarily disorders of kidney caused by infection, degenerative changes, diabetes, high blood pressure, renal stones or trauma. Renal failure can be Acute or Chronic. Usually Acute Renal failure occurs along with other medical problem such as crushing injury, or cardiac arrest and may last 1 or few weeks. Chronic kidney disease occurs slowly by causing functioning nephrons to diminish affecting the function of kidney protein wastes are circulated in the blood which in turn causes Uremia. In case of severe renal failure death occurs unless dialysis or kidney transplantation is performed.

O’Brien kidney centers i.e multiple universities support interdisciplinary investigations basic, clinical applied aspects of physiology & pathophysiology of renal. Some of the examples are

Duke University research the profound impact kidney disease imparts on cardiovascular morbidity and mortality (NIH, 2017). Indiana O'Brien Center researching on Advanced Microscopic Analysis to develop new optical methodologies for investigators. UAB-UCSD core center for acute kidney injury research which supports shared core facilities to enhance further research and collaborations. University of Pittsburgh research aims to facilitate multidisciplinary research which includes kidney cell biology, physiology, pathobiology and translational research. University of Michigan aims to develop improved diagnosis, treatments and prevention strategies for patients with kidney diseases. UT Southwestern Medical Center support research in kidney development and genetics, renal physiology and chronic kidney disease. Yale University aims to facilitate translational and clinical research which advances the treatment and prevention of kidney diseases. Polycystic Kidney Disease Research and Translation Centers (Mayo Clinic Rochester, UAB and University of Maryland Baltimore) support research in cilia-related diseases and foster basic and clinical research of cystic diseases of kidney patients (NIH, 2017).

Due to multifaceted nature of the kidney functions diet therapy for renal disorders is extremely complex. Dietary treatment for chronic renal diseases requires sufficient protein with sodium, potassium & phosphorus restriction to prevent malnutrition and muscle wasting. For kidney transplant patients the diet or restriction on protein, carbohydrates and sodium, calcium and phosphorus depends on medications given at that time. Dietary treatment for renal stones would be higher dietary calcium intake, reduce animal protein.

Diet concept – gastro intestinal problems

The food digestion and absorption occurs in gastrointestinal tract. The mouth, esophagus, stomach, small and large intestine are the primary organs and liver, gallbladder and pancreas also involve digestion and absorption process. Disorder in these organs causes Gastro intestinal problems.

Disorders of primary organs cause problems such as Dyspepsia, esophagitis, Hiatal Hernia could be caused by physical or psychological and treatment could be relieving the stress, small frequent meals, avoiding irritants such as citrus fruits, juices, spicy foods etc. Chronic diseases like inflammatory bowel diseases cause inflammation in gastrointestinal tract which often due to malabsorption which in turn leads to malnutrition. Some of the examples of IBDs are ulcerative colitis and Crohn's diseases which affects small or large or both intestines.

Johns Hopkins School of medicine supports multiple research programs which related to gastrointestinal tract and liver. The Basic Science Research Program conducts investigates on physiology or pathophysiology of the digestive system and applies to improve care of patients. Johns Hopkins Center for Epithelial Disorders research on epithelial cells of gastrointestinal tract, liver, pancreas and kidney. The research of Conte Digestive Diseases Basic and Translational Research Core Center is regulation of epithelial function (JOHNHOPKINS, 2017). Ongoing training programs for Digestive diseases were funded by National Institutes of Health (NIH) by National Institute of Diabetes, Digestive and Kidney Diseases (NIH, 2017).

National Cancer Institute of NIH researches on several factors and provide information about better ways to diagnosis, causes, treatment and prevention of the cancer. Some of the latest researches are mentioned here. In study "Forgoing Conventional Cancer treatments for Alternative Medicine increases risk of death", patients with nonmetastatic breast, lung or colorectal cancer patients have less survival rate if they have taken their initial treatment with Alternative therapies rather than conventional treatment. "Immunotherapy using the immune system to treat cancer study", shows the new immunotherapy as new system to restore immune system's natural ability to fight cancer. "The study on "CAR T-cell: Engineering patients' Immune cells to treat their cancers" primarily useful for cancers such as leukemia and lymphoma. The effect of Chemotherapy before surgery for breast cancer can increase risk of the cancer

spreading to other parts of the body is researched by “Study uncovers previously unrecognized effect of chemotherapy”. (NIH, 2017).

The Gastrointestinal tract problems such as Peptic ulcers need sufficient low-fat protein but not excess to avoid gastric acid secretion; less spicy food should be taken. Indigestion is usually caused by coffee, tea, or caffeine related products. Avoid smoking, alcohol consumption and consumption of irritative foods. Diverticulosis / Diverticulitis caused by a diet lacking fiber, so consumption of high-fiber diet is recommended. Inflammatory Bowel Disease low residue diet is used to avoid danger of obstruction & irritated inflamed area. Celiac disease malabsorption of virtually all nutrients, gluten-free diet would be recommended i.e barley, oats, rye and wheat. Cholecystitis & Cholelithiasis clients require fat-restricted diet.

Diet concept – cancer

Cancer is caused by abnormal cell growth and can occur in any organ genes lose control of cell growth and reproduction becomes excessive and unstructured. Cancer is called as neoplasia and is malignant.

Even though mortality rate is high in cancer patients, in case of cancer found in early stages with prompt and proper treatment can eradicate the disease. The negative part of this disease is, if it is not diagnosed in early stage and is metastasized death can be occurred and patient goes through lots of pain as result of treatment.

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Diets with high in fiber can help against colorectal cancer. Diets of vitamin C can help against cancers of stomach and esophagus. Cancers of lung, bladder and larynx can be treated with diet with sufficient carotene and vitamin A. Plant based foods such as fruits and vegetables are anti-carcinogenic agents. Daily 9 or more servings of fruits and vegetables should be taken. Lentils contain vitamins, minerals, protein and fiber, legumes such as soybeans, dried beans may protect against cancer. Protein foods are essential for the maintenance of immune system.

Diet concept – blood pressure

A condition which the blood vessels have persistently raised pressure also known as raised or high blood pressure. Blood pressure is created by force of blood pushing against walls of arteries (blood vessels) when it is pumped by heart (WHO, 2017).

Normal Blood pressure is 120 over 80mm of mercury, which is necessary for healthy life style. Even though low blood pressure causes problems like dizziness and recurrent falls, it can be treated by proper diet. Hypertension or high blood pressure can severely have impact on quality of life and it also increases the risk of heart disease, stroke and death. Population around 85 million in United States have high blood pressure, this is mainly due to processed foods (MacGill, 2017).

Latest research which is funded by BHF to Professor Julian Paton for the study of the brain could help us to better understand, and control, high blood pressure. Blood pressure is necessary

to all parts of our body along with oxygen and nutrients and it is bone by heart and kidneys. Usually in stressful situations our body can become hyperactive and can cause raise in blood pressure briefly. Professor Paton further research “Selfish brain hypothesis of hypertension”, which says that when blood flow to brain is reduced, sympathetic nervous system messages blood vessels around the body causing increase in blood pressure which provides more blood to brain. Professor Paton’s research aim is to find out “whether reduced blood flow to brain causes hypertension or decrease in brain blood flow triggers the hypertension” (BHF, 2017).

Life style contributes a lot for the treatment and prevention of raised or high blood pressure which in turn have benefit for heart and overall health. Usually salt intake under 5g a day benefits people with or without hypertension which is recommended by WHO. Alcohol consumption should be minimized as per the American Heart Association recommendation. Hypertension patients are recommended to have minimized fat with more fruit and vegetables. Foods recommended are Whole-grain, high-fiber foods; variety of fruit and vegetables; beans, pulses and nuts; Omega-3-rich fish; skinless poultry and fish and low-fat dairy products (MacGill, 2017).

Diet concept – arthritis

Inflammation of the joints is called Arthritis, it can be single joint or multiple joints. Usually adults over 65 have Arthritis, now a days it is affecting children, teens, and younger adults (healthline, 2017).

Most common types of Arthritis are Osteoarthritis (OA) and Rheumatoid Arthritis (RA). The connective tissue in our joints called Cartilage protects joints against our movements and reduction in the normal amount of tissue cartilage cause of various arthritis. Most common arthritis is OA which is caused by normal wear and tear causes infection or injury in the joints which in turn affects cartilage tissue. An autoimmune disorder that occurs when body’s immune system attacks soft tissue in our joints, produces lubricant fluid which nourishes the cartilage. The synovium in disease RA invade and destroy further leads to destruction of bone and cartilage inside the joint (healthline, 2017).

Scientific Strategy 2015-2020 an ongoing scientific research provides direction for the Foundation’s scientific discovery of activities for next 5 years. The aim of Arthritis Foundation is to improve lives through leadership in prevention, control and cure of arthritis & related diseases. Scientific strategy goals are: “Delivering on Discovery-” Improved decision making & better lives through improved prevention by earlier diagnosis of arthritis and related diseases & new treatments through prevent, control and cure. “Decision making with Metrics “In order to improve the health & life span of people with arthritis & related diseases based on Fact-based metrics. “Building Human Capital “For Arthritis related disease scientific research pipeline is strengthened & scientific discovery is catalyzed. Collaborations together accelerating the movement of scientific knowledge for faster cure by strategies: Accelerating medicines partnership; The Biomarkers Consortium; The childhood arthritis & rheumatology research alliance; Healthy people 2020 (Arthritis Foundation, 2017).

Treatment to Arthritis is regular exercise such as swimming and healthy diet is important. Maintaining healthy weight reduces risk of developing Osteoarthritis or its symptoms. Healthy diet includes lots of antioxidants such as fresh fruits, vegetables and inflammation-reducing herbs, fish and nuts. Fired foods, processed foods, dairy products and high intakes of meat should be minimized or avoided. Sometimes patients who have Rheumatoid arthritis research recommend gluten-free diet.

Diet concept – asthma

The airways in the lungs are involved in a chronic disease called Asthma, airways or bronchial tubes allow air to flow in or out of lungs. During the Asthma muscles around airways gets swollen making breathing difficult (NIH, 2017).

Asthma is a chronic disease which inflames and narrows the airways causes coughing, wheezing, chest tightness, shortness of breath. When symptoms are mild it goes away by itself or else it gets worse. When symptoms gets intense we will have an asthma attack which may require emergency care which can be fatal (NIH, 2017).

Recent research summaries are: “Prevalence of food allergy in Australia remains remarkably high” – study shows prevalence of food allergy decreased in under 4 years old, but it increased in 4 years old. “Can school-age asthma be predicted during first year of life?” - Study says that virus etiology and atopic status at the time of first severe wheezing episode are important for early intervention strategies for asthma prevention. “Import and specific role for basophils in human anaphylaxis” – pathophysiology of human anaphylaxis indicates circulation in organs and have long term implications for development of novel biomarker assays for diagnosing & therapeutic interventions to prevent anaphylaxis. “ Prenatal Vitamin D supplementation to prevent asthma” – study indicates that it needs to be reconfirmed in other studies, but Vitamin D supplementation in pregnancy may help in preventing wheezing illness in early childhood and asthma. “Asthma & blocked lungs in HIV-infected youth” – as Most of the HIV-infected have asthma and obstructive pulmonary disease which is leading to complex lung disease further long-term follow-up studies is getting difficult for definitive treatment (AAAAI, 2017).

Actually there is no conclusive specific diet which has effect on asthma attacks, but having fresh, nutritious foods may improve overall health and symptoms of asthma. Foods which might help lung function are Vitamin D-rich foods - milk and eggs; Beta carotene-rich vegetables - carrots and leafy greens; Magnesium-rich foods – spinach and pumpkin seeds. Foods which needs to be avoided are Sulfites found in wine and dried fruits; Foods which cause gas – beans, cabbage and onions; Artificial ingredients – chemical preservatives and flavors (healthline, 2017).

Diet concept – fever

If a human body temperature goes above normal range of 36-37 centigrade (98-100 Fahrenheit) known as Fever also called as hyperthermia. The body temperature is affected by many factors such as eating, exercise, sleeping etc. (Nordqvist, 2017).

Elevated body temperature is one of the ways of combating an infection from our body by our immune system. It is helping to neutralize the bacterium or virus causing the infection. Sometimes human temperature may raise very high causing serious complications with symptoms with extreme irritability, confusion, delirium and seizures (Nordqvist, 2017).

In the research “Fever as an important resource for infectious diseases research” - it became important to evaluate the effects of pyrexia or fever which Viruses and bacteria are responsible for infectious diseases which ultimately helps to develop new treatments. Observing if fever has a negative impact over the pathogen or if it increases virulence, helps in development of new treatments for intractable diseases (NCBI, 2016).

When we are suffering from fever our diet should be simple not to be difficult to cope with digestive system. Take more fluids fruits or vegetable juice extracts, herbal teas, broths and gelatin; but if fever is along with diarrhea then our diet should include more semi-solid or soft nourishment such as mashed rice, vegetable soups, supple simmered eggs, cooked with steam vegetables, yogurt and porridge. During fever avoid taking soft drinks which increases sugar intake, milk products, meat which are high in cholesterol, coffee, tea, alcohol, tobacco and smoking (WHO, 2017).

Conclusion

In the current world, in this 21st century being healthy is very important and is linked to the food we eat. Having nutritious diet helps to maintain healthy Body Mass Index and also helps to reduce the risk of having diseases like cancer, cardiovascular, diabetes, arthritis and stroke.

If we change our life style and have healthy eating habits we can avoid being excess weight or obese. Diet for weight control should not focus on weight loss rather follow healthy diet plan. Most of the diseases controlled by Replacing saturated and trans fats with unsaturated fats include omega-3 fatty acids; Increasing consumption of fruits and vegetables and adequate folic acid intake; Consuming high fiber diet such as whole-grain; Limiting consumption of sugar and sugar based products and sodium intake. Even though genetics play important role, a diet plan (vegan diet) which is high in fiber and low in fat with minimum amount of saturated food is recommended for Diabetes disease. By avoiding fatty and fried food and having high fiber diet which is rich in raw fruits and vegetables is recommended for Heart diseases.

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