ISSN: 2456-9348
Vol (03) _Issue (12) Impact Factor: 4.520

iJETRM
International Journal of Engineering Technology Research & Management

REGULAR PHYSICAL EXERCISE CAN PREVENT CORONARY HEART DISEASE, OBESITY, DIABETES MELLITUS THAT ARE CAUSES OF FOOD HABITS AND SEDENTARY LIFE STYLE

Monoj Maiti
Guest Teacher, Department of Physiology,
Bajkul Milani Mahavidyalaya, Kismat Bajkul, Purba Medinipur, 721655, West Bengal, India.
maitimonoj@gmail.com

Abstract:
The physical activity is movement of body through expenditure of energy that increased muscle strength and endurance and provide nutrients, oxygen supply in body, decreases unhealthy triglycerides and cholesterol as a result different health problems are prevented include cardiac disease, diabetes mellitus and obesity. The sedentary life style as well as decreased physical activity and food habits include daily intake of fat enriched food substances also can cause of the diseases that can be managed through both dietary and regular exercise. The medical treatment also parallel responsible for the treatment of the over body weight or obesity, CHD or cardiac disease and high blood sugar level or diabetes mellitus.

Keywords: CHD, Diabetes Mellitus, Obesity, regular physical activity, Sedentary life style.

INTRODUCTION

Physical exercise is the movements of body parts which have static and dynamic types that enhance the physical activity as well as adaptive physiological changes in systems include cardiovascular, respiratory system etc. The four categories of exercise are endurance, strength, balance and flexibility. The endurance or aerobic exercise type include dancing, jogging, brisk walking etc have good effects on cardiovascular system and breathing rate that effects more oxygen carrying capacity in body. The strength exercise or strength training or resistance training provides everyday activities. The balance exercise include tai chi, heel-to-toe walk etc. The flexibility exercise include yoga, calf stretch etc enhance freedom movement of body (Go4life, 2019). Disease is harmful condition than normal structural or function state of an organism by physical injury (William Burrows et al, 2010). The most common types of diseases are communicable which are transmitted from one person to other persons e.g. infection, cholera, malaria etc and non communicable diseases are not transmitted which are may be inherited or not inherited or chronic type e.g. thalassemia, anemia, obesity, cardiovascular disease, diabetes mellitus etc. The regular exercise can maintain body weight and reduced the risk of the chronic disease (Arlene Semeco et al, 2017). The coronary artery disease or CAD or coronary heart disease or CHD or ischemic heart disease or IHD due to formation of plaque in arteries that result blood flow is reduced as well as cardiac myopathy or sudden cardiac death or cardiac stroke. The plaque results from excess fat deposition along the arterial lumen of coronary blood vessels that result chest pain, shortness of breath or blockage in artery or heart attack, this condition from excess eating of fat enriched food substance and sedentary life style that provide gain of more energy in body (Mayo clinic, 1998 – 2019). Obesity or over body weight is due to cause of genetically or sedentary life style or excessive energy or fat enriched food intake. The body mass index (BMI) value due to 30kg/meter^2 or more then it was denoted by the obesity. Obesity is a complex disease due to excessive fat in body can be treated by physical training or dietary management including avoiding excessive fat or energy intake and medication (Mayo clinic, 1998 – 2019). The obesity is a abnormal or excessive fat accumulation that presents a risk to health (WHO, 2019). Diabetes mellitus is a group of metabolic disorders characteristic by high blood sugar level in fasting condition and decrease blood insulin level that can be prevented through regular aerobic exercise, at least 150 minutes per week (Marina Basina, 2018).

iJETRM
International Journal of Engineering Technology Research & Management

Census of coronary heart disease, obesity, diabetes mellitus in India

Cardiovascular disease include coronary heart disease is a major health problem and causes of mortality and morbidity in Indian population, 17.5 million death globally occurs in 2012, out of them 75 % death in developing countries. The CHD can cause of 17% of total death in 2001 – 2003 that number is increased to 23% in 2010 – 2013 in Indian population (Rajeev Gupta et al, 2016). The number of death due to cause of CHD is 1.8 – 2.00 million per year in India (Gupta R et al, 2009). The obesity is preventable no communicable disease, is the major health problems in high income countries, and that can be problems in low income and middle income countries especially in urban areas (Dr. Aruna Rastogi, 2016). The maximum risk of age for obesity or weight gain of body in male or female is 28 – 38 year and 73% urban Indians are obese due to cause of decreased physical activity and healthy feeding (Nirmalya Dutta, 2013). The obesity person can be affected by different diseases and recently it was found that more than 135 million people are affected by over body weight in India (Prakash Ranjan Mondal, 2019). The diabetes mellitus or diabetes has major two types are type – 1 due to pancreatic failure, found in young age or in children and type – 2 diabetes due to decreased sensitivity of cell to insulin, found in old age. WHO sates that 69.2 million people are suffering with type – 2 diabetes mellitus in 2015 (India Today, 2019). In India, 31.7 million people are suffered by diabetes (Australas Med J., 2014).

Physical exercise with coronary heart disease, obesity, diabetes mellitus

The coronary heart disease is characterized by angina, tightness in your arms, shortness of breath, heart attack etc influencing by different factors e.g. high blood pressure, high cholesterol, poor diet, over body weight, sedentary life style, diabetes etc. These cardiac diseases are diagnosed by electrocardiogram, echocardiogram, coronary angiogram, blood test etc (American Academy of Family Physicians, 2019). The sticky cholesterol and other substances are deposited inside the arterial lumen of coronary blood vessels that results blood flow is depressed as a result arthrosclerosis, myocardial infarction, ischemic heart disease as well as CHD (Debra Sullivan, 2019). The physical activity can reduced cholesterol level and maintain it in blood, the blood flow is increased due to increase the activity of heart. The regular exercise with medicine can prevent the CHD and keep healthy life. The avoiding smoking and intake of fatty food products the CHD can prevent (Mayo clinic, 2019).

The obesity is due to enhancement of body fat that can be prevented by both regular exercise and dilatory management. The obesity or over body weight accelerates risk of poor health and illness (Wayne state university physician group, 2011). Daily 60 – 90 minute exercise is advised to control over weight (Jakicic JM et al , 2006). The physical fitness index (PFI) is important parameters for measuring physical activity, the PFI value above 80 or more indicates the good or more activity then the porn of obesity is more less. The WHO prescribed for good health of an adults, daily two hours exercise and moderate to various physical activity and daily one hours exercise for children (Harvard T.H. chan, 2019). The moderate exercise such as fast walking, jogging, swimming, tennis etc can burn the body fat and provide more energy in exercising muscles that decreased the body weight in cooperation with intake of low calories food substances (Health direct, 2018). The weight loss or control of obesity is maintained by physical activity that increases hunger (Melody Covington, 2017). The prevention of obesity must be required for healthy life neither different risk problems may developed e.g. heart disease, stroke, kidney problem, hypertension, high blood sugar level etc (David C. Dugdale, 2019).

The diabetes mellitus or high blood sugar level due to enough insulin is not available in plasma or decrease sensitivity of receptors for insulin hormone along the plasma membrane. The different symptoms of the diabetes mellitus are increased urination, thirst, decrease the sensitivity of peripheral nerves and hyperglycemia, itching, skin infection, tired, hyperventilation, weight loss etc due to blood sugar level above 140mg/dl in thrusting condition, the diabetes mellitus are broadly divided by two categories type – 1 or INDM, developed before age of 40 year and type – 2 or NIDDM developed in old age due to pancreases fails to produce enough insulin hormone formation and genetically by causing sedentary life style respectively (Erika F.Brutsaert, 2019). The insulin increased the entering of glucose into the cell, utilization of glucose in call, glycogenesis, glycolysis etc in normal but due to low amount of insulin secretion from beta cells of pancreas or decrease sensitivity of insulin to their receptors along the plasma membrane, the blood glucose level is increase than normal level that is considered as diabetes mellitus. The physical exercise increased the cardiovascular activity, energy expenditure, increased glucose utilization and insulin sensitivity etc that are preventive factors of diabetes mellitus (Sheri R. Colberg et al, 2016). The diabetes can be prevented by different ways including regular physical activity or exercise or avoiding sedentary life style and managements of food habit e.g. avoiding the sugary foods, refined carbs, non ketogenic diet, high calorie enriched foods, smoking etc (Franziska Spritzler, 2017).

iJETRM
International Journal of Engineering Technology Research & Management

CONCLUSION

The sedentary life style, bad food habits are also associated with weight gain by deposition of fat at different sites of body that are directly link with overweight or obesity, coronary heart disease, diabetes mellitus are also prevented by expenditure of energy, loss of body weight, regular physical exercise, intake of low calorie food substance, more dilatory fibers with avoiding high fat substance, more energy and smoking. The medication or drug therapy is important for treatment of moderate or severe condition of these diseases.

REFERENCES

[1] Go4life, 4 types of exercise, the national institute on aging at NIH, 16th December 2019.
[2] William Burrows, Dante G. Scarpelli, Disease, Encyclopedia Britannica, October 2010.
[3] Arlene Semeco, MS, RD, The top 10 benefits of regular exercise, healthline, 10th February 2017.
[4] Mayo clinic, coronary artery disease, Mayo foundation for medical education and research (MFMER), 1998 – 2019.
[5] Mayo clinic, Obesity, Mayo foundation for medical education and research (MFMER), 1998 – 2019.
[6] World Health Organization, Obesity, 2019.
[7] Marina Basina, Everything you need to know about diabetes, healthline, 4th October 2018.
[8] Gupta R et al, CVD_s are largest causes of death in India million death study, World J cardiol, 2012.
[9] Rajeev Gupta, Indu Mohan, Jagat Narula, Trends in coronary heart disease epidermiology in India, Science direct, Annals of global health, volume 82, issue 2, page no – 307 – 315, March – April 2016.
[10] Dr. Aruna Rastogi, obesity, zahid, 5th October 2016.
[11] Nirmalya Dutta, no country for fit people – every other urban Indian is obese, health.India.com, 19th September 2013.
[12] Prakash Ranjan Mondal, prevalence of obesity in India: A systematic review, science direct, diabetes & metabolic syndrome: clinical research & reviews,volume 13, issue 1, page no 318 – 321, January – February 2019.
[13] India today, diabetes epidemic:98 million people in India may have type 2 diabetes by 2030, India today web desk, 17th September 2019.
[14] Australas Med J, The current state of diabetes mellitus in India, NCBI resources, volume 7(1), page no – 45 – 48, 2014.
[15] American Academy of Family Physicians, coronary artery disease, family doctor.org, 2019.
[16] Debra Sullivan, Understanding coronary artery disease and how to prevent it, healthline, 14th Febuary 2019.
[17] Wayne state university physician group, the role of exercise in treating obesity, 2011.
[18] Jakicic JM, Otto AD, Treatment and prevention of obesity: what is the role of exercise?,NCBI, 2006.
[19] Harvard T.H. chan, obesity prevention source, The president and fellows of Harvard college, 2019.
[20] Health direct, obesity and exercise, 2018.
[21] Melody Covingto, obesity and exercise, obesity medicine association, 15thMay, 2017.
[22] David C. Dugdale, health risks of obesity, Medline plus trusted health information for us, 5th Auguest 2019.
[23] Erika F. Brutsaert, diabetes mellitus, MSD manual consumer version, 2019.
[24] Sheri R. Colberg, Ronald J. Sigal, Jone E. Yardley, Michael C. Riddell, Davir W. Dunstan, Paddy C. Dempsey, Edward S. Horton, Kristin Castorino and Deborah F. Tate, Physical activity/ exercise and diabetes: a position statement of the American diabetes association, American diabetes association. Diabetes care, 2016.
[25] Franziska Spritzler, 13 ways to prevent type 2 diabetes, healthline, 29th January 2019