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CARDIOVASCULAR DISEASES: TYPES, RISK FACTORS AND NUTRITIONAL MANAGEMENT

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Abstract

Cardiovascular diseases are found to be the leading cause of death and disability in the world. Although, a large proportion of cardiovascular diseases is preventable, the disease continue to rise mainly because preventive measures are inadequate. This paper takes a look at cardiovascular diseases, it examines various types of cardiovascular diseases and the risk factors involved. The paper also explained the relationship between cardiovascular diseases and nutrition and how the disease can be managed through nutrition. Conclusion was made and it was recommended amongst others that better attention should be given to one's eating habits and lifestyle early in life to prevent the occurrence of cardiovascular diseases.

Introduction

Cardiovascular disease is a class of diseases that involves the heart or blood vessels (arteries, capillaries and veins). It refers to any disease that affects the cardiovascular system principally cardiac disease, vascular diseases of the brain and kidney and peripheral arterial diseases (Wikipedia, 2011). The term cardiovascular disease is often used interchangeably with "heart disease" which generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Heart conditions such as infections and other conditions that affect the heart's muscle, valves or beating rhythm are also considered forms of heart disease (Mayo clinic, 2010). Heart disease is a broad term used to describe a range of diseases that affect the heart. The various diseases that fall under the umbrella of heart disease include diseases of the blood vessels such as coronary artery diseases; heart rhythm problems (arrhythmias), heart infections and heart defects (congenital heart defects).

Cardiovascular disease has been reported as the biggest cause of deaths worldwide, though cardiovascular mortality have declined in many high income countries. At the same time, cardiovascular disease and deaths have increased at an astonishingly fast rate in low and middle income countries. The antecedents of cardiovascular diseases, notably atherosclerosis begin early in life, making primary prevention efforts necessary from children. There is therefore increased emphasis on preventing atherosclerosis and cardiovascular problems in general by modifying risk factors such as healthy eating habits, exercise and avoidance of smoking (News medical, 2012). This paper takes a look at various types of cardiovascular diseases, risk factors involved, ways of prevention and management.

Types of Cardiovascular Diseases

There are many different problems/types of the heart and circulatory system. They include:

- Angina
 - Arrhythmia
 - Strokes
 - Atherosclerosis
 - Congestive heart failure
 - Cardiomyopathy
 - Endocarditis
 - Heart attack
 - High blood pressure/hypertension
 - Peripheral artery disease
- **Angina** – is described as a pain felt in the chest due to insufficient blood supply to the heart, generally as a result of arteriosclerosis of the coronary arteries usually experienced during exercise or stress (womentowomen.com, 2012)
 - **Arrhythmia** – is a disruption of the regular rhythmic beating of the heart and can also be described as an abnormal rhythm of the heart. Arrhythmia can occur in a healthy heart and could be of minimal consequences. There are different types of arrhythmias. The heart beats in a steady even rhythm of about 60-100 times each minute. Sometimes, the heart gets out of rhythm, the heart can beat too slow, too fast or irregularly. Bradycardia is when the heart rate is less than 60 beats per minute. Tachycardia is when the heart rate is more than 100 beats per minute. An arrhythmia can affect how well the heart works. The heart may not be able to pump enough blood to meet the body's needs which could lead to stroke or sudden cardiac death (wikipedia, 2012).
 - **Arteriosclerosis**: is a condition that develops when the blood vessels narrow and harden through build up of plaque in the walls of arteries making it harder for blood to flow through. Plaque is made up of deposited fats, cholesterol and other substances. Plaque formations can reduce or close off the blood's flow through an artery, when a plaque formation becomes inflamed and unstable, it may rupture, setting loose blood clot that can narrow the artery or completely block it. When the blockage occurs in a coronary artery (the arteries that supply blood and oxygen to the heart) it can cause a heart attack. When it occurs in the carotid artery (the main arteries in the neck that supply blood to the brain), it could lead to stroke, if the blockage remains in the peripheral arteries, it can cause pain, changes in skin colour, sores, ulcers or difficulty in walking. Total loss of blood circulation to the legs and feet could lead to gangrene and limb loss (Web MD, 2012).
 - **Cardiomyopathy**: is a disease in which the heart muscle becomes inflamed and unable to work as it should. Cardiomyopathy is classified into primary and secondary cardiomyopathy. Primary cardiomyopathy cannot be attributed to specific cause such as high blood pressure, heart valve disease and the likes. Secondary cardiomyopathy is due to specific causes. It is often associated with diseases involving other heart organs as well as the heart itself (Web MD 2012).
 - **Congestive heart failure** – develops when the heart's pumping ability diminishes due to blockages or restriction of blood flow. When there is heart failure, the weakened heart cannot supply the cells with enough blood. This results in fatigue and shortness of breath. Everyday activities such as walking, climbing stairs or carrying groceries can become very difficult.
 - **Heart attack**: (Coronary thrombosis, myocardial infarction); this occurs when the heart muscle or myocardium stops functioning due to loss of blood flow, nutrients or electric signal. Many people survive their first heart attack and return to their normal lives to enjoy many more years of productive activity when properly managed (Masley, 1998).

- **Stroke:** occurs when blood vessels that carry oxygen and nutrients to the brain are either blocked by a clot (thrombosis or embolism) or burst. When that happens, it affects the arteries leading to and within the brain, part of the brain can't get the blood and oxygen it needs, so it starts to die. These are called ischemic strokes. Ischemic stroke occurs when a blood vessel that feeds the brain gets blocked usually from a blood clot when the blood supplied to a part of the brain is shut off which results in dead brain cells. The result will be the inability to carry out some of the previous functions as before like walking or talking. Some effects of stroke are permanent if too many brain cells die after a stroke incidence due to lack of blood and oxygen to the brain (wikipedia, 2012).
- **Endocarditis:** is an infection of the heart's inner lining (endocardium) and valves, it occurs when bacteria in the blood stream (bacteremia) lodge on abnormal heart valves or other damaged heart tissue. This can occur during dental and peridental surgical procedures (wikipedia, 2012).
- **Heart valves problems:** occurs when heart valves don't open enough to allow blood flow as it should. This is called stenosis. Regurgitation occurs when the heart valves are unable to close properly and allow blood to leak through.

The heart has four chambers; the upper two are the right and left atria. The lower two are the right and left ventricles. Blood is pumped through the chambers aided by four heart valves. The valve open and close to let the blood flow in only one direction. Regurgitation occurs when the heart valves is unable to close properly and allow blood to leak through. When the valve leaflets bulge or prolapses back into the upper chamber, it refers to a condition called Mitral valve prolapsed, when this happens, they may close properly and allow blood flow through them (American Heart Association [AHA, 2012])

Risk Factors of Cardiovascular Diseases

Risk factors can be described as certain factors that play an important role in a person's chance of developing heart disease. Almost all cardiovascular diseases in a population can be explained in terms of a limited number of risk factors; age, gender, high blood pressure, high serum cholesterol levels, tobacco smoking, excessive alcohol consumption, family history, obesity, lack of physical activity, psychological factors, diabetes mellitus and air pollution while the individual contribution of each risk factors varies between different countries or ethnic groups. The consistency of the overall contribution of these risk factors is remarkably strong. Risk factors such as age, gender history are immutable, however many other cardiovascular disease factors are modifiable by life style change, drug treatment or social change (Chinese school.netfirms-com, 2009).

Risk factors are divided into two categories: Major and Contributing Risk Factors

Major risk factors are those that have been proven to increase one's risk of heart disease. Contributing factors are those that can lead to an increased risk of heart disease. Some risk factors can be changed, treated or modified and some cannot. Controlling as many risk factors as possible through lifestyle changes, one can reduce the risk of heart disease (Chinese school net firms-com, 2009).

Major Risk factors of Cardiovascular Disease

- High blood pressure
- High blood cholesterol
- Diabetes mellitus
- Obesity and overweight
- Smoking
- Physical inactivity
- Gender
- Heredity
- Age

High Blood Pressure

The heart pumps blood in a loop through the body; out through the arteries, back through the veins. Blood pressure is the force in the arteries when the heart beats (systolic pressure) and when the heart is at rest (diastolic pressure) measured in millimeters of mercury (mmHg). Blood pressure is driven in large part by the openness and elasticity of the blood vessels, which can be negatively affected by the atherosclerosis, hormonal imbalance and nerve signals from the brain. Besides being a measure of poor cardiovascular health, high blood pressure forces the heart and arteries to work harder and the major organs are affected. High blood pressure occurs when the force of blood flowing through the blood vessels is so high that it gives pressure against the walls causing strain. High blood pressure/hypertension can lead to heart attack or stroke if left untreated (voices.yahoo.com, 2009).

High Blood Cholesterol

Masley (1998) described high blood cholesterol as one of the major risk factors for heart disease. Masley further described cholesterol as a fat-like substance carried in the blood which is found in all the blood cells. The liver produces all the cholesterol the body needs to form cell membranes and to make certain hormones. Extra cholesterol enters the body when foods that come from animal is eaten such as meat, eggs and dairy products. The major culprit that raises blood cholesterol is the saturated fat in food. Excessive low density lipo-protein in the blood causes plaque to form on artery walls, which starts a disease process called atherosclerosis. When plaque builds up in the coronary arteries that supply blood to the heart, one is at a greater risk of having a heart attack. Foods rich in saturated fat include butter fat in milk products, fat from red meat and tropical oils such as coconut oil (Chinese school.netfirms.com, 2009).

Diabetes Mellitus

Karen (2010) described diabetes mellitus as a metabolic disorder which drastically increases the risk of various heart related conditions. Diabetes results when the body is either not producing enough insulin or not using insulin sufficiently which causes glucose (sugars) to build up in the coronary artery disease with angina (chest pain), heart attack, atherosclerosis and stroke. Heart problems are the leading cause of death among people with diabetes, especially in the case of adult onset or type II diabetes (also known as non insulin-dependent diabetes). The American Heart Association(2012) estimates that 65% of patients with diabetes die of some form of cardiovascular disease. Good control of blood sugar levels can reduce cardiovascular disease risk in diabetes (Karen, 2010).

Obesity and Overweight

Extra weight is thought to lead to increased total cholesterol levels, high blood pressure and an increased risk of coronary artery disease. Masley, (1990) reported that 30% to 40% of the world's population are obese and thus have a high risk for developing heart diseases. It also increases the chances of developing other risk factors for heart disease, especially high blood pressure, high blood cholesterol and diabetes.

Smoking

Most people are aware that cigarette and tobacco smoking increases the risk of lung cancer, but fewer people realize that it also greatly increases the risk of heart disease and peripheral vascular disease (Vessels that supply blood to the arms and legs). According to the American Heart Association (2012), more than 400,000 Americans die each year of smoking related illnesses. The ingredients in cigarettes alone pose serious risks to the heart. The additive agent of tobacco, nicotine is the leading cause of cardiovascular disease associated with smoking. Research has shown that smoking increases heart rate, tightens major arteries and can create irregularities in the timing of heart beats, all of which make the heart work harder. Smoking raises blood pressure which increases the risk of stroke in people who already have high blood pressure. Although, nicotine is the main active agent in cigarette smoke, other chemicals and compounds like tar and carbon monoxide are also harmful to the health in a variety of ways. These chemicals lead to the build up of fatty plaque in the arteries, possibly by injuring the vessel walls and they also affect cholesterol and fibrinogen levels which is a blood clotting material. This increases the risk of a blood clot that can lead to a heart attack (voice.yahoo.com, 2009).

physical Inactivity

Physical inactivity leads to high blood pressure, high levels of fatty acids which promote hardening of the arteries, low levels of high density lipo protein (good) cholesterol and diabetes. Physical inactivity could also lead to obesity.

Exercise burns calories. It helps to control cholesterol levels and diabetes and may lower blood pressure. Physical activity strengthens the heart muscle and makes the arteries more flexible. Those who actively burn 500 to 3500 calories per week, either at work or through exercise can expect to live longer than those who do not exercise. Moderate intensity exercise is helpful if done regularly (voices.yahoo.com, 2009).

Gender

Men are at greater risk of heart disease than premenopausal women, but the difference narrows after women reaches menopause. Once past menopause, a woman's risk is similar to that of man. Coronary heart disease is 2 to 5 times more common in men than in women among middle age people. World Health Organization (2010), reported that sex contributes to approximately 4% of the variation in the sex ratios of coronary heart disease mortality. One of the proposed gender factor in cardiovascular disease is hormonal difference. In women, estrogen is the predominant sex hormone. Estrogen may have predictive effects through glucose metabolism and hemostatic system and may have a direct effect on improving endothelial cell function. The production of estrogen decreases after menopause and may change the female lipid metabolism toward a more atherogenic form by decreasing the HDL cholesterol level and by increasing low density lipoprotein (LDL) and total cholesterol levels (WHO, 2010).

Heredity

Heredity has been described as a single cause of cardiovascular disease that cannot be prevented but the onset of the disease can be thwart if preventive measures are taken, earlier through healthy eating habits and exercise (voices.yahoo.com, 2010). Heart disease tends to run in some families. For example, if one's parents or siblings had a heart or circulatory problem before age 55, then one is at risk for heart disease than someone who does not have the family history. Risk factors including high blood pressure, diabetes mellitus and obesity may also be passed from one generation to the other (Masley, 1998).

Contributing Risk Factors of Cardiovascular Disease

- Stress
- Birth control pills
- Alcohol

Stress

This is considered a contributing factor for heart disease because stressful situations raise the heart rate and blood pressure, increasing the heart's need for oxygen. This need for oxygen can bring in angina pectoris or chest pain in people who already have heart disease (helpguide.com, 2007). During times of stress, the nervous system releases extra hormones (most often adrenaline). These hormones raise blood pressure, which can injure the lining of the arteries, when arteries heal, the walls may harden or thicken, making it easier for plaque to build up. Stress also increases the amount of blood clotting factors that circulate in the blood and makes it more likely that a clot will form. The clots may block an artery narrowed by plaque and cause a heart attack. Stress may also contribute to other risk factors, for example, people who are stressed may over eat for comfort, start smoking or smoke more than they normally would.

Birth Control Pills

Birth control pills are considered safe for women younger than 35 years of age who do not smoke or have high blood pressure or other risk factors. Birth control pills increases the risk of heart disease and blood clots in women who smoke or have other risk factors of cardiovascular disease especially in women older than age 35. It is advisable that women who use birth control pills should have yearly checkups that test blood pressure, triglyceride and glucose levels (Wikipedia 2011).

Alcohol

Alcohol is known to affect the liver and abuse of the substance may lead to cirrhosis of the liver. Alcohol use is also a cause of cardiovascular diseases. Abusing alcohol increases the fatty deposits in the blood leading to atherosclerosis, it raises the blood pressure and increases the risk of coronary heart disease (Wikipedia 2011).

Studies have shown that the risk of heart disease in people who drink moderate amounts of alcohol is lower than in non drinkers. Researchers reported that moderate intake of alcohol is an average of one or two drinks per day for men and one drink a day for women. One drink is defined as 1 fluid ounces (f102) of 80 proof spirits such as bourbon, scotch, vodka, gin and the likes. 1f/ 02 of low proof spirits, 4 f1 02 of wine, or 12 f102 of beer. Drinking more than a moderate amount of alcohol can cause heart related problems such as high blood pressure, stroke, irregular heart beats and cardiomyophthy (disease of the heart muscle). Calories from alcohol often add fat to the body which may increase the risk of heart disease. Hence, it is not recommended that non drinkers start drinking alcohol or that drinkers increase the amount that they drink (WHO, 2010).

Link Between Cardiovascular Diseases and Nutrition

Maslew (1998) stated that nearly one half of Americans die of cardiovascular disease. He further stressed, that the morbidity and mortality associated with cardiovascular disease is strongly related to abnormal lipid levels resulting from poor nutrition. The American Heart Association(2012) reported in a study that populations who substitute on a low fat and cholesterol diet has an appreciably amount of coronary disease. The evidence suggest that a diet high in saturated fat or cholesterol is an important factor for a high incidence of coronary diseases.

Nutrition powerfully influence the factors responsible for cardiovascular disease (e.g. abnormal lipid levels). There is growing evidence that patients can improve their lipid levels and decrease the rate of cardiovascular disease by adding specific saturated and polyunsaturated fats to mono-unsaturated fats and omega 3 fatty acids. Nutritionally, it is advisable to eat what will be helpful to maintain good health. Frequently eating fruits, vegetables, nuts and plant oils can help reduce cholesterol build up in the arteries and slow the progression of cardiovascular disease. These foods are rich in antioxidants which are likely to reduce low density lipo-protein (LDL) oxidation and slow the need for scavenger cells to pick up oxidised LDL. (Pearson, 2006).

Nutritional Management of Cardiovascular Disease

Improving the diet is an important step towards preventing and managing heart disease. In the past, much of the nutritional advice for the prevention of cardiovascular diseases was centered on foods to stay away from or avoid. Minimizing our intake of certain foods such as those high in trans-fats or saturated fats is clearly essential. Along with weight control and regular exercise, a heart healthy diet can reduce the risk of heart disease or stroke by 80%. However, studies have shown that including certain foods in our diet such as those rich in omega 3, poly unsaturated fats, as well as many plant based foods is critical for optimal heart by lowering the risk for heart attack.

Here are healthy heart tips by Karen (2012)

Avoid saturated and trans-fats

Of all the possible improvements one can make to the diet is by avoiding saturated fats and cutting out trans-fats entirely. Both saturated and trans-fat raises low density lipo-protein (LDL) or "bad cholesterol level, which can increase the risk for heart attack and stroke". It is well established that reducing intake of saturated fat reduces low density lipo-protein (LDL) cholesterol levels, decrease the risk of coronary artery disease. Studies have shown that people can reduce their intake of saturated fat and trans fatty acids by nearly 50% by cutting out three daily sources, butter/margarine, fatty meats and dairy products made from 2 percent or whole milk.

There are many ways to control how much saturated and trans-fat intake. Keep these culprits in mind as you prepare to cook:

Limit solid fat: reduce the amount of solid fats like butter, margarine or shortening you add to food when cooking or serving. The best way to avoid saturated or trans fat is to practice healthy life style. Snack on fruits and vegetables instead of chips.

While saturated and trans fats are road blocks to a healthy heart, omega-3 and 6 poly-unsaturated fats are essential for good health. Omega-3 polyunsaturated fats help prevent irregular heart rhythms, reduce the risk of blood stability, lower blood triglycerides and relax blood vessels walls. Some researchers consider it as the most important nutritional factor influencing cardiovascular disease risk (Pearson, 2006).

A balanced intake of omega 3 and omega 6 poly-unsaturated fatty acids theoretically produces balanced inflammatory and thrombolytic activity. Increased intake of foods rich in omega 3 fatty acid decreases LDL cholesterol levels. Intake of linoleic acid is strongly associated with a decreased risk of coronary artery diseases. Food sources of omega 3 include soya beans products, walnuts and hazel nuts, canola oil, flax oil, green leafy vegetables and marine sources. Other source include higher fat fish like salmon, mackerel, herring and sardines. Sources of omega-6 include vegetable oil, soy nuts and walnuts. Both plant and marine sources of omega-3 fats protect the heart, however, marine or fish source of omega-3 polyunsaturated fats provide significantly greater protection as they are incorporated directly into the cell membrane (Karen, 2012)

Eat lots of fruits and vegetables and limit your intake of red meat. The more you avoid red meat and increase your intake of fruit and vegetables, the more you lower your chances of developing high blood pressure, diabetes and high cholesterol. More recently, many health organizations are putting fruits and vegetables at the top of the list for a healthier heart. Colourful fruits and vegetables contain an incredibly powerful mix of nutrients, fibre and plant compounds which are critical to a healthy blood pressure and reduces the risk of cancer and stroke (masley, 1998).

Engage in Regular Exercise

Karen (2012) asserted that engaging in regular daily exercise can reduce the risk of fetal heart disease. He stated that when physical activity is combined with other lifestyle measures such as maintaining a healthy weight, the payoff is greater. According to him, engaging in at least 30 to 60 minutes moderate intense exercise most days of the week will help to keep the heart healthy, such exercise include brisk walk, juggling among others.

Beans as a source of healthy heart nutrient

Beans or legumes have been called the best human plant food and is a potent tool in the treatment and prevention of chronic disease. A review of eleven studies highlights the benefits of beans for heart health. Eating beans lowers total cholesterol, LDL cholesterol and triglycerides as well as increasing high density lipoprotein (LDL) cholesterol. Regular beans eaters are more likely to have a healthy body weight, healthy blood pressure and healthy blood sugar level. They are at a lower risk of developing diabetes, which is a major risk factor for the development of cardiovascular disease (Wikipedia, 2011). According to food based dietary guidelines (2009), beans contains antioxidant properties. Researchers tested the antioxidant activity in the skin of 12 common varieties of dry beans. Black beans demonstrated the greatest antioxidant activity followed by red, brown, yellow and white beans. Beans are loaded with fibre including viscous or soluble fibre (one half cup of most beans contains about seven grains of fibre). There are rich heart healthy nutrients found in beans such as the isoflavones found in soy. A health study on shanghai women involving 75,000 Chinese women showed that consuming one to two servings of soy daily is linked to a 75 percent lower risk of cardiovascular disease. Making beans a regular part of our diet should be a priority for every one. It is therefore advisable to eat beans at least three times a week as a replacement for meat (Wikipedia, 2011).

Eat Foods Rich in Flavonoids

Flavonoids are powerful plant compounds that protect the heart. Certain foods like berries, pomegranate juice, cinnamon are rich in plant compounds called flavonoids. Emerging research suggests these compounds may be powerful protectors of the heart. As potent antioxidants, they help prevent plaque build up by preventing oxidation of low density lipoprotein (LDL) cholesterol. They are important to the health of the endothelium – the cells that line blood vessels walls by boosting nitric oxide production, for example, they help to keep blood vessel dilated. Flavonoids appear to have strong anti-inflammatory activity. Inflammation is believed to be a key factor in the development and progression of cardiovascular diseases. Hence, it is advisable to eat flavonoid rich foods daily for a healthy heart. Eat berries on your morning cereal or add frozen berries to low fat milk shakes. Eating an apple a day with the peel on is of health benefit. Taking green or black tea three cups daily is good for the heart. Spice up your meals with plenty of herbs, spices and onions (food based dietary guidelines, 2009).

Eat nuts most times

Studies have shown that eating nuts regularly may provide as much protection for the heart as taking a lipid lowering medications. Many large scale studies support the strong link between nuts and heart health. Fruits, vegetables, whole grains and nuts contain a complex mix of nutrients, fibre and beneficial plant compounds. In addition, nuts contain mono and poly unsaturated fats which are primarily good for the heart. Adding more nuts to the diet is one of the tastiest and easiest lifestyle changes most people can make. Almonds are especially rich in vitamin E and magnesium. It is advisable to eat a variety of nuts (Masley, 1998).

Increase Garlic Intake

Several meta analysis have shown that garlic intake reduces LDL cholesterol levels by up to 9 percent and produces a small rise in HDL cholesterol levels; one medium size garlic glove daily or capsules with 900 to 1800mg of dried fresh garlic are sufficient. Garlic has no known side effects except for the presence of odor in some individuals (Masley, 1998).

Increase intake of Soluble fiber

Soluble fiber increases excretion of fecal bile acid and removal of cholesterol – good sources of soluble fibre include oat products, barley, fruits and vegetables. Several studies have shown that daily serving of oat bran or oat meal decreases total cholesterol levels by up to 3 percent. Pectin a soluble fiber found in fruit also decreases LDL cholesterol levels (Karen, 2012).

Stay Clear of salt and processed Foods

Eating a lot of salt can contribute to a high blood pressure, which is a major risk factor for cardiovascular disease. Reducing the salt in your food is a big part of a heart healthy diet. The American Heart Association (2012) recommends not more than about a teaspoon of salt a day for an adult. The national Academy of Sciences also recommends a sodium intake of 1,500mg daily with 2,300 mg (about a teaspoon of salt) being the maximum daily limit. That may sound alarmingly small but there are actually many painless even delicious ways to reduce sodium intake. These ways include:

- Reduction of canned or processed foods
Much of the salt we eat comes from canned or processed foods. Eating fresh foods, eating unsalted meats and making your own soups or stews can dramatically reduce your sodium intake.
- Cook at home, using spices for flavor
Cooking for yourself enables you to have more control over your salt intake. Make use of the many delicious alternatives to salt. Try fresh herbs like thyme, garlic, ginger, basil or chives, bay leaves, all spice of cumin to flavor your meal without sodium (Wikipedia, 2007).

- Check your weight
As you put on weight as an adult, your weight gain is mostly fat rather than muscle. This excess weight can lead to conditions that increase the chances of heart disease. When this is noticed (weight gain), cut down your food in terms of portion sizes, eat more of nutrient dense foods like fruits and vegetables.
- Avoid food that contains hydrogenated vegetables, palm and coconut oils as well as vegetable oil shortening and pay attention to your intake of cheese, butter, ground beef and higher fat luncheon meats. This can significantly contribute to saturated fat intake which leads to weight gain.

Moderation of Alcohol Intake

More than sixty studies support a link between moderate alcohol consumption and a healthier heart. Moderate alcohol protects the heart by increasing HDL or "good" cholesterol and decreasing the risk of blood clots. All types of alcohol when taken in moderation protect the heart, however, red wine may provide further protection due to its flavonoid content. Excess alcohol may increase blood pressure, triglycerides and the risk of stroke. If you don't drink, do not inculcate in your life style. Simply focus on eating heart healthy foods like fruits, vegetables, nuts, beans and whole grains (Chinese School, 2009).

Eat More of Whole Grains

Refined or processed foods are lower in fiber content. It is important to make whole grains an integral part of the diet.

Conclusion and Recommendation

Good nutrition has been found to be vital for the prevention and management of cardiovascular diseases. The disease is known to cause heart dysfunctional conditions to arteries and the veins that supply oxygen to vital life-sustaining areas of the body like the brain, heart itself and other vital organs. Unavailability of oxygen to these tissues leads to organ damage and even death.

It is never too late or too early to begin improving heart health. Some risk factors can be eliminated while others can only be managed. Eliminating risk factors that you can change and by properly managing those that cannot be controlled may greatly reduce the risk of cardiovascular diseases. Hence, better attention should be given to our eating habits and life style early in life as well as engagement in exercise for the prevention and management of cardiovascular diseases.

References

- American Heart Association (AHA, 2012). *Heart Diseases* www.heart.org/HFART/caregiver/p. Retrieved 29/07/2012
- Cardiovascular disease and conditions. Retrieved from <http://www.womentowomen.com/cardiovascular-diseases.aspx> on 10/03/2012
- Causes of heart diseases, heart diseases and Risk factors <http://chinese-school-netfirms.com/heart-disease-cause.html> 2004 on 29/04/2012.
- Karen F. (2010). *Heart healthy tips*. Retrieved from beaunconhill.pathc.com/articles/heart on 15/2/2012
- Masley, S.C. (1998). *Dietary therapy for preventing and treating coronary artery diseases*. Retrieved from www.aafp.org 1999/03/5/
- Mayo clinic (2010) *Heart diseases*. Retrieved from <http://www.mayoclinic.com/heart-disease/ds01120>. Retrieved 30/10/2011
- New medical (2012). *Cardiovascular diseases*. <http://www.news-medical.net/health> on 15/3/2012
- Nine leading causes of cardiovascular diseases <http://voices-yahoo.com/nine-leading-causes-cardiovascular-diseases-2012> Retrieved on 15/3/2012
- Pearson U.A. (2006). *Dietary treatment of cardiovascular diseases* www.asfng.org 2006/04/6/p1 on 29/09/2011

- WebMD(2012). *Types of heart diseases* <http://www.webmd.com/heart-disease-cardiovascular>. Retrieved 30/03/2012
- Wikipedia,(2007). *Food based dietary guidelines* www.helpguide.org/life/healthydiet on 29/09/2011
- Wikipedia,(2011). *Cardiovascular disease*. Retrieved from [http://en.m.wikipedia.org/wiki/cardiovascular diseases](http://en.m.wikipedia.org/wiki/cardiovascular_diseases) 30/10/2011
- Wikipedia,(2012). *Heart diseases* <http://en.m.wikipdia.org/wiki/heart-diseases> 15/2/2012
- World Health Organization (WHO, 2010). *Risk factors of cardiovascular disease*. Retrieved from <http://www.google.com/search-who.int/.../en/> on 28/11/2011