

Cardiovascular disease

More than 50% of cardiovascular disease occurrences arise from Atherosclerosis. Atherosclerosis is a generic term used to describe the thickening of the arteries caused by the formation and deposition of an atherosclerotic plaque. The plaque is a fatty fibrous growth that ultimately becomes calcified and contributes to the blocking of the arterial blood vessel. This results in poor or restrictive blood flow contributing to the rise in blood pressure or hypertension, myocardial infarction and stroke. Associated conditions include peripheral vascular disease resulting from the plaque formation in the leg and congestive heart failure that impairs normal cardiac function. Major risk factors for cardiovascular disease include age, gender, family history, abnormal lipid profiles such as low HDL and high LDL cholesterol, hypertension, diabetes, obesity and physical inactivity, cigarette smoking and an “atherogenic diet” high in saturated fat, trans fats, cholesterol, processed foods and low in fruits and vegetables.

Recommendations for reducing your risk for cardiovascular disease include

Regular screening for abnormal lipid profiles such as a high LDL and low HDL levels as well as monitoring of blood pressure. Focus on therapeutic lifestyle changes such as increasing physical activity (regular exercise of more than thirty minutes every day), quitting smoking, alcohol consumption in moderation, stress reduction, dietary modifications such as moderating total and saturated fat intake, replacing saturated fats with desirable polyunsaturated fats; increasing the use of plant based diets with minimal amounts of animal products and paying attention to the sodium content of the diet.

Source: 2010 US Dietary Guidelines
(www.dietaryguidelines.gov)

Summary of a Heart Healthy Diet Pattern based on 2000 Calories per Day

Fruits and vegetables: 4.5 cups daily (one serving= 1 cup raw leafy vegetable, cup raw or Cooked vegetable, . Cup vegetable juice; 1 medium fruit, Cup fresh fruit).

Fish: 2 servings per week if religion permits (1 serving= 4 oz cooked fish preferably fatty fish e.g. salmon, mackerel, catfish).

Legumes or lentils: Vegetarians: 5-7 times per week e.g. lentils, daal, rajma, channa and for Non-vegetarians: at least 2 times per week (one serving= . cup cooked legumes or lentils)

Whole grains: 3 servings per day choose from 1 slice whole grain bread, 1 oz dry whole grain cereal, . cup cooked whole grain brown rice, cup whole grain pasta, 1-6” chapati.

Fiber: 30 g daily (choose legumes, vegetables, fruits, whole grains, oats, rye, bran cereal, berries, brown rice etc); 7 to 13 gm soluble fiber e.g. whole oats, rye, barley.

Nonfat Dairy Products: 2 to 3 servings per day (choose from 1 cup non fat or 1% milk, non-fat yogurt, 1% buttermilk),

Fats & oils: 4 to 6 tsp daily (choose monounsaturated or polyunsaturated oils e.g. Canola, corn, olive, soybean, safflower oil)

Nuts and seeds: 2 to 4 times per week (1/3 cup or 1 . oz nuts, avoid macadamia nuts and Salted nuts, 2 tablespoon or . oz seeds).

Sugar: limit to 5 servings week (1 serving= 1 tablespoon sugar, jelly or jam)

Saturated fat 7%/total energy intake (fat on meat or chicken skin, packaged desserts, whole Milk, ice cream, butter, cheese, sour cream etc.

Trans-fatty acids 0 grams (found in processed foods e.g. cookies, chips, Indian savory snacks and fried foods).

Cholesterol: limit to 200 mg daily (found in animal meats, organ meats, eggs, etc).

Sodium: 1500 mg per day (read food labels; prepare food with as little salt as possible).

From source: dietetics book (revised fifth edition)

Dietary guidelines

Patient should maintain slightly lower than the standard weight. Accordingly total calories should be restricted

- Diet should be rich in fiber , by including foods like raw salads , fruits, green leaf vegetables and whole grains
- Five servings of fruit and vegetables should be included in the diet not only to meet the nutritional requirement , but also to meet antioxidants and fiber
- Inclusion of fish in the diet is beneficial as they contain omega 3 fatty acids
- Concentrated foods like sweets , chocolates , cakes , pastries, ice creams, and fried food should be restricted or preferably avoided
- Food giving only empty calories like carbohydrate beverages , alcohol, sugar, sago, are totally avoided
- Small quantities of almonds can be consumed to bring down the cholesterol levels. High amounts of nuts and oil seeds increase the calories and the fat content in the diet
- Egg yolk contains the cholesterol hence egg should be restricted to 2-3 eggs per week
- Coconut should be avoided in the diet, as it contains high amount of saturated fatty acids and it is a concentrated source of energy.
- Coffee and tea is taken in moderation , excess amount of caffeine increases the heart rate
- To restrict sugar intake artificial sweeteners can be included in the diet,
- animal food like meat and pork which contain high amount of saturated fat can be avoided , all sea foods are rich in sodium hence hypertensive patients should avoided these foods

- food that have hypo cholestermic effects like soy bean , fenugreek , garlic , onion , turmeric should be included in the diet
- if the patient is suffering from hyper tension , sodium should be restricted
- constipation should be prevented by including plenty of water and fiber in the diet
- Heavy meals should be avoided. small and frequent meals are preferred,
- Takings outside meals are avoided, as they are mostly high in fat.

NIN diet guidelines from book (Diet and heart disease)

Sample menu for cardiovascular disease

Early morning	Tea or coffee	1 cup	}	300 kcal
Break fast	Phulkas, Dhal curry Tea or coffee	2 in number 3 table spoons 1 cup		
Mid morning	Any fruit	1	}	400 kcal
Lunch	Rice Dhal with any leafy vegetable Rasam or vegetable soup Butter milk Salad of tomato, onion , carrot	1 katori 1 katori 1 katori 1 katori 1 each		
Snack	Upma Tea or coffee	1 katori 1 cup	}	300 k cal
Dinner	Rice Any vegetable curry Rasam Butter milk Salad of tomato, onion , carrot	1 katori 1 katori 1 katori 1 katori 1 each		
Bed time	Any fruit	1	}	

For non-vegetarians exchange any vegetable curry in dinner with 1egg or 50 grams of chicken

Foods to be preferred and to be limited and completely avoided

Foods	Prefer	Limit	Avoid
Cereals	Wheat , Rice, Ragi, Bajra, maize, Jowar	Foods prepared with Maida like white bread and biscuits	Cakes , pastries, Noodles ,
Pulses	Whole and sprouted and dhals		
Vegetables	Green leafy vegetables , and other vegetables	Roots , and tubers	Fried vegetables, banana chips, canned vegetables.
Fruits	Fresh fruits		Dry fruits, canned fruits
Dairy products	Low fat milk, butter milk , skimmed milk	Whole milk , milk powder	Cheese , butter, khoa, condensed milk, milk cream
Eggs	Egg white		Egg yolk
Animal food	Fish	Chicken	Prawns , shrimps, all types of meat
Fats	More than one type of vegetable oil	Total fat intake	Oily dishes, butter, ghee, coconut oil, vanaspathi, deep fried foods
Sugar and sugar products		Sugar in any home made beverages	Sweets like chocolate and ice creams
Nuts and oil seeds		All nuts and oil seeds	
beverages	Fresh fruit juice(without sugar), light tea ,	Coffee, cola , and soft drinks,	Alcohol
Salt	Foods in natural state	Too much salt in preparation	Pickles, papads, sauces, salt biscuit, fried crispies .

Maintain body weight appropriate for your height

- Body weight is directly proportional to calorie intake
- Energy intake minus energy expenditure equals gain in body weight
- Excess carbohydrate, protein, and fats in the diet can increase body weight , however excess dietary fat makes you fat
- Fat around the abdomen is more dangerous than fat around the hips, keeps your waistline trim, maintain the waist to hip ratio <1(man) and <0.8 (women)
- Refined foods and empty calories from sugar increase blood sugar and triglycerides
- Weight reducing diets must be low in total calories and yet ensure optimum intake of all nutrients, however , very low calorie diets (300-400 kcal/day) are harmful
- Weight reduction should be gradual not more than 0.5 to 1 kg/week

- Diet restriction should be combined with exercise
- Remember ,100 kilocalories in excess/day can increase your weight approximately by 4kg in one year
- Beware! count your calories , cut down fried snacks and sugar

General Physical Activity

- Controls body weight and composition.
- Reduces risk chronic diseases, such as type 2 diabetes, high blood pressure, heart disease, osteoporosis, arthritis and some cancers.
- Builds strong muscles, bones and joints.
- Improves flexibility.
- Wards off depression.
- Improves mood, sense of well-being and self esteem.
- Increases the level of HDL (good cholesterol).

References

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