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## **A COMPARATIVE APPROACH OF DIETS IN THE MANAGEMENT OF HIGH BLOOD PRESSURE: A REVIEW**

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### **ABSTRACT**

High blood pressure is one of the essential risk factors for cardiovascular disease affecting worldwide health. Blood pressure is the product of cardiac output multiplied by peripheral resistance. In regular circulation stress is exerted by flow of blood through heart and blood vessels. High blood pressure additionally called hypertension can result from a change in cardiac output, a change in peripheral resistance or both. Control of hypertension must be planned in keeping with proper diet regime by using RDA (Recommended Dietary Allowances) table. Proper food plan performs an important role in the pathogenesis and diagnosis of the disease and also affects the reaction to the treatment. Diets having excessive amount of sodium and fat content, subtle carbohydrate and confectionaries amount, low consumption of fruits and vegetables and reduced life style will cause to hypertension which sooner or later leads to cardiovascular diseases and other diseases related to kidney and brain. The aim of this review is to see the relationship among the different types of diets, physical activity and blood pressure.

**Keywords: Hypertension, diet, cardiovascular diseases, RDA, physical activity**

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**INTRODUCTION-**

The World Health Organization (WHO) has recognized India as one of the countries that will soon experience a number of lifestyle problems. High blood pressure can be as a result of a variety of factors, consisting of melancholy, obesity, genetic predisposition, and immoderate salt intake in the diet and aging. As we all know, high blood pressure is referred as silent killer because it rarely produces symptoms before it damages the heart, brain, or kidneys. Hypertension is the most common lifestyle ailment today. The World Health Organization has identified India as one of the countries with the highest rates of morbidity and mortality due to the fact at least 90% of patients have not any recognized known cause of high blood pressure and this is very important to observe. Hypertension itself is a very dangerous condition. It can cause serious damage to the brain, liver, kidneys and heart. Injury to these vital organs is the most important reason of demise [1].

Hypertension (HTN) or hypertension (BP) is a persistent medical condition in which blood pressure in the arteries is elevated. It is classified as primary or secondary. About 90 to 95% of cases are referred to as primary HTN, meaning high blood pressure for which no clinical reason can be detected. Hypertension is a medical condition that is incurable and usually has

no symptoms and signs. Systemic arterial blood pressure rises above normal. A person's blood pressure may vary at different times of the day. It is usually high after physical activity for example exercise, climbing stairs, giggling or below pressure. Having high blood pressure on the upper extremity however a brief period of time is ordinary. But high blood pressure can lead to cardiovascular disease and other critical health conditions. That's right the condition of the heart is forced to work harder to overcome the increasing systemic pressure to bring blood to the muscles, which puts pressure in the heart and arteries, and increases the risk of heart failure, myocardial infarction, pulmonary embolism, cerebral aneurysm and kidney failure. Failure also leads to death [2].

In ayurveda there is no description of the types of single ailment which can resemble with high blood pressure. From the ayurvedic standards in case of unknown sicknesses, the medical doctors ought to try to recognize the nature of diseases through dosha, the web site of manifestation, etiological elements after which must initiate the remedy [3].

High blood pressure (hypertension) is a common disease wherein long-term blood pressure against the walls of blood vessels is high enough to produce health issues such as heart disease [4]. High blood

pressure is defined as systolic blood pressure greater than 140 mm Hg and diastolic blood pressure greater than 90 mm Hg when measured with two or more visits to a health care provider (Bavishi *et al.* 2006). Hypertension has a profound effect on the quality of human health and health care services worldwide as it contributes to high mortality and threats of cardiovascular disorders such as myocardial infarction, angina pectoris, heart failure, and stroke.

#### **Signs and Symptoms of Hypertension:**

Maximum of the patients with hypertension have no specific signs besides an improved blood strain. Signs and symptoms of high blood pressure are generally variable and at

time very indistinct. The common signs of high blood pressure as following:

- Headache
- Nausea Numbness & burning sensation in palms & toes
- Vertigo
- Vomiting
- Feeling of tiredness, restlessness
- Breathlessness
- Loss of urge for food
- Chest pain
- Pain
- Bleeding from nose (Epistaxis)
- Swelling in legs and eyes (Edema)
- Irritability (feelings of agitation)
- Haziness of vision

#### **Classification of Hypertension:**

Category	Systolic (mm of Hg)	Diastolic (mm of Hg)
Normal	<120	<80
High Normal	120-139	80-90
Stage 1 HTN	140-159	90-99
Stage 2 HTN	≥160	≥100

#### **Dietary Management of Hypertension-**

Dietary modifications play a vital role in the prevention of hypertension and reduce high blood pressure. Control of hypertension is very much important as it increases the complication and thus reducing the person's life expectancy. Various types of diet show their effect on management of hypertension.

- **DASH diet-** The Dietary Approaches to Stop Hypertension

(DASH) is now a day's recommended as one of the essential lifestyle measures for the management of blood pressure in international guidelines [12]. In this diet higher consumption of whole grain, fruits and vegetables, low fat dairy products, lean meat, poultry and fish, and nuts and legumes are recommended. Sodium intake in

DASH diet is restricted to 2300mg [13].

- **Mediterranean diet-** with the aid of adopting healthy dietary pattern hypertension can be prevented. The Mediterranean diet is a conventional food pattern present in the olive oil generating regions of Mediterranean basin. As compared to DASH diet Mediterranean is likewise rich in fruits and vegetables, but there is also consumption of legumes, a slight intake of fish, dairy products, small portion of meat and poultry, and little consumption of sweets [14].
- **Low Sodium diet-** There is many evidences which show the direct connection among the intake of sodium and blood pressure values [14-17]. According to World Health Organization less than 5 g sodium per day are endorsed [18]. Excessive intake of sodium i.e., more than 5 g has shown a substantial growth in the range of blood pressure, which is linked with onset of hypertension and related cardiovascular complications [19, 20].
- **Keto diet-** A keto diet is an aggregate of high fat, maximum amount of protein, low carbohydrate [21]. To enhance the

production of ketones by stimulating the metabolic changes of starvation, this diet is designed [22]. Ketogenic diet is also called low carbohydrate diet.

#### CONCLUSION-

Dietary strategies reduce the burden of blood pressure-related complications. Efforts that focus on environmental and individual behavioral changes could encourage and promote healthier food choices, which are warranted. Improvement within the nutritional pattern and lifestyle can assist in reducing the ranges of blood pressure which enables in controlling of hypertension and low chances of other cardiovascular disorders. Eating more fruits, vegetables and cut back on salt intake favors the protection of cardiovascular system, which includes in reduction of BP values. Different diet methodologies are given to patients. Depending on the level of carbohydrate restriction, protein restriction, quality of fat and following any specific diets whether it is DASH diet, Mediterranean diet, low sodium diet or Keto diet, all diets are helpful in lowering the blood pressure.

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