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Vegetables as Protective Food

Anil Kumar*

School of Agriculture, Lovely Professional University, Punjab, India

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***Corresponding author:** Anil Kumar

anilkumar2586xyz@gmail.com

School of Agriculture, Lovely Professional University, Punjab, India

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Introduction

Vegetables are horticultural crops that include parts (roots, stalks, flowers, fruits, leaves, and so on) that may be eaten whole or in parts, cooked or uncooked. In terms of bioactive nutrient molecules such dietary fiber, vitamins, and minerals, as well as non-nutritive phytochemicals, vegetables are essential for human nutrition (phenolic compounds, flavonoids, bioactive peptides, etc.). Chronic illnesses such as cardiovascular disease, diabetes, some malignancies, and obesity are all reduced by these nutritional and non-nutrient molecules [1].

With a rising awareness in the role of food in keeping healthy and preserving health, people have begun to modify their eating habits in recent years. Increased intakes of calories, sugar, saturated fats, and animal protein, as well as lower consumption of vegetables and fruits, define “Western” diets. When this sort of food is paired with a lack of physical exercise, illnesses including obesity, diabetes, and cardiovascular disease become more common [2]. Eating plant-based foods such as fruits and vegetables, grains, legumes, and nuts, and substituting butter with healthy oils such as olive oil and canola oil, are all part of a Mediterranean diet. It's advised that you use herbs and spices instead of salt to increase taste, restrict red meat to a few times a month, and eat fish and poultry at least twice a week. Epidemiological research and clinical trials demonstrate that the Mediterranean diet is linked to a variety of good health outcomes, including a lower risk of chronic diseases, a lower overall mortality rate, and a higher chance of healthy ageing. The high consumption of vegetables, and therefore fibre, vitamins, minerals, flavonoids, phytoestrogens, sulphur compounds, phenolic compounds such as monoterpenes, and bioactive peptides, which have beneficial effects on health, is one of the most significant aspects of these diets.

Vegetable in Redemption from Diseases

Diabetes and metabolic syndrome

Diabetes Mellitus (DM), obesity, and the Metabolic Syndrome (MS) have all become more prevalent in recent years, coinciding with a rise in poor eating habits and lifestyle choices. The regulation of eating habits is one of the most essential components of illness control and management in people with various health conditions. It is critical in medical nutrition treatment for these patients to satisfy their energy and nutritional demands, as well as to include items in the diet that have functional activities to combat the illnesses' consequences. This effectiveness of vegetable in curing various diseases is due to the presence of various antioxidants and phytochemicals viz. alkaloids, carotenoids, and various phenolic compounds.

Purslane, Onions and garlic are among the vegetables considered to protect against diabetes mellitus, obesity, and metabolic syndrome due to the volatile oils, organosulfur compounds, and flavonoids found in their composition [3]. Organosulfur compounds like S-methyl cysteine and flavonoids like quercetin in these vegetables have a functional influence on glucose metabolism by modulating the activities of certain enzymes, boosting insulin secretion and sensitivity, and raising NADP+ and NADPH activities. Furthermore, these veggies block the enzymes-glucosidase and amylase, delaying the absorption of glucose from the intestines and preventing the synthesis of D-glucose from oligosaccharides and disaccharides. Broccoli and cauliflower are vegetables that contain glucosinolates and indole-3-carbinol, which are considered to protect against a variety of illnesses. Peas and vegetables from the Leguminosae family, such as peas and soybeans, block the enzyme alpha-amylase and have antidyslipidemic and antioxidant properties.

Cardiovascular diseases

CVDs are the world's leading cause of mortality and disease. CVDs were responsible for 29.6% of all deaths worldwide, according to the Global Burden of Disease Study. The rise in bad lifestyles and

eating habits is the primary cause of these deaths. The majority of CVD risk factors are reversible, and non-pharmacologic interventions such as good eating habits and healthy lifestyle modifications can help manage the disease's risk factors. Increased vegetable intake, which is an essential element of a balanced diet, has been found to lower CVD mortality rates and improve risk factors. Saturated fat, trans-fat, and cholesterol levels in vegetables are low, and they are high in bio-active compounds viz. flavonoids, phytoestrogens (lignans, coumestran, isoflavones, resveratrol, and lycopene), organosulfur compounds, soluble dietary fibres (-glucan, pectin, and psyllium), isothiocyanates, monoterpenes, and sterols (sitostanol, stigmasterol, and campesterol).

Onion and garlic components have been shown to lower cholesterol and lipids by inhibiting key enzymes involved in cholesterol and fatty acid synthesis (monooxygenase and HMG-CoA reductase), antiplatelet activity by inhibiting cyclooxygenase enzyme activity, and fibrinolytic effect by inhibiting lipid peroxidation and hemolysis in oxidised erythrocytes. Onion and garlic were also shown to decrease blood pressure by increasing intracellular nitric oxide and hydrogen sulphide generation while blocking angiotensin-converting enzyme activity. Minerals, vitamins, pulp, and phytochemical substances in green leafy vegetables boost antioxidant capacity and protect against oxidative stress, which is considered to have a role in the pathogenesis of CVD.

Cancer

Cancer develops when cells proliferate uncontrollably. As a result of aberrant signals in the body caused by genetic or epigenetic influences, cancer develops, advances, and spreads. Cancer causes numerous mortality worldwide. Each year, cancer claims the lives of 16% of people. Cancer can be caused by a variety of lifestyle, genetic, and environmental factors. Among them include tobacco use, ingested foods, sun radiation, and environmental carcinogens. Cancer prevention is the most essential step in the treatment of cancer. In particular, health-related preventative strategies should be used in communities and individuals at risk.

Inositol, flavonoids, lignans, polyphenols, protease inhibitors, saponins, steroids, triterpenoids, isoflavones, phenolic acids, protein kinase inhibitors, sphingolipids, allicin, aline, and allyl sulphides are all found in this category of vegetables.

Conclusion

Numerous preclinical investigations conducted in recent years have found that the nutritional and non-nutritional phytochemical contents of vegetables have positive protective and enhancing impacts on health. By regulating transcription factors and changing gene expression, cellular metabolism, and cellular communication, these phytochemicals have the capacity to change cellular function. To decrease the risk of micronutrient deficiencies, cardiovascular illnesses, cancer, cognitive impairment, and other nutritional health concerns, the World Health Organization (WHO) advises daily intake of 5-8 servings (400 g–600 g) of fruits and vegetables. It's just as essential to choose the correct ways of preparation and cooking as it is to consume adequate amounts of veggies to get the most nutritional value out of them. To avoid nutrient loss, vegetables should be chopped just before cooking, if feasible by hand or with metal tools with as little touch as possible and cooked using the technique and time that is most suited for that vegetable. Vegetables should be consumed as soon as possible.

References

1 Pennington JA, Fisher RA (2009) Classification of fruits and vegetables. J Food Compos Anal. 22: S23-S31.

2 Septembre MA, Remize, F Poucheret P (2018) Fruits and vegetables, as a source of nutritional compounds and phytochemicals: Changes in bioactive compounds during lactic fermentation. Food Res Int. 104: 86-99.

3 Belemkar S, Dhameliya K, Pata MK (2013) Comparative study of garlic species (Allium sativum and Allium porrum) on glucose uptake in diabetic rats. J Taibah Univ Med Sci. 8: 80-85.