

## Diet and Health – What Should We Eat ?

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Poor quality diets are a major cause of mortality and disability worldwide, to which a tenth of disability adjusted life years (DALYs) is attributed worldwide. International food programs have traditionally focused on food security and micronutrient deficiency, but the diet-related health burdens due to non-communicable chronic diseases (NCDs) are now surpassing those due to undernutrition in nearly every region of the world.<sup>1</sup> This trend has raised questions about the best means for promoting healthy diets, with growing attention on the need to improve overall diet quality. However, the national nutrition policy and strategy of Nepal 2004 and Nepal's multisector nutrition plan 2012 focuses on addressing deficits in energy intake and imbalances in consumption of specific macro- and micronutrients. The only dietary guideline for Nepalese lists the components of healthy eating without explaining how and why. The guideline promotes eating a variety of foods, including whole grains, vegetables, fruits, pulses, fish, poultry eggs and reduced meat, milk and milk products, moderate amounts of fat, limited salt intake and use only adequately iodized salt, less sugar, sweets and sweetened drinks.

The type of carbohydrate in the diet is more important than the amount of carbohydrate in the diet. For example, whole grains such as whole wheat (*atta*), brown rice, barley and quinoa are better choices than white rice and refined flour (*maida*). Studies have shown a positive link between whole grain consumption and better health.<sup>2</sup> Higher consumption of white rice is associated with a significantly increased risk of type 2 diabetes; and replacing each 50 grams per day intake of white rice with the brown rice could lower risk of type 2 diabetes by 16%.<sup>3</sup> Higher consumption of whole grains has also shown to lower cardiovascular disease, metabolic syndrome, colorectal cancer and overall mortality.<sup>2</sup>

Similarly, protein quality matters more than protein quantity. Eating healthy protein sources like fish, chicken, beans, or nuts in place of red meat, including processed red meat, can lower the risk of several diseases and premature death. Eating even small amounts of red meat, especially processed red meat, on a regular basis is linked to an increased risk of heart disease, stroke, and type 2 diabetes, cancer death, and of premenopausal breast cancer, pancreatic and prostate cancer.<sup>4</sup> The World Health Organization has, in fact, denoted processed meat as carcinogenic to humans.

Fruits and vegetables are an important part of a healthy diet, and variety is an important feature. A diet rich in fruits and vegetables can lower the risk of heart disease and stroke. There is a strong link between eating fruits and vegetables and protection against several types of cancers, including those of the mouth, throat, larynx, esophagus, and stomach; fruit may also protect against lung cancer. Greater consumption of whole fruits and green leafy vegetables protect against diabetes.<sup>5</sup> Eating fruits and vegetables can also keep your eyes healthy, and prevent cataracts and macular degeneration.<sup>6</sup>

When it comes to dietary fat, what matters most is the type of fat. Contrary to the dietary advice of promoting low-fat diets, research shows that healthy fats are necessary and beneficial for health. Large studies have shown an absence of a link between total fat intake and any important health outcome, including cancer, heart disease, and weight gain. Good fats, such as the polyunsaturated fats found in liquid vegetable oils, nuts, and seeds, can help ward off type 2 diabetes, and heart disease.<sup>7</sup>

As per the matter of drink, water is the best choice. Drinks that are loaded with sugar are the worst choice; they contain a lot of calories and virtually no other nutrients. Consuming high-sugar drinks can lead to weight gain and increased risk of type 2 diabetes, cardiovascular disease and gout.<sup>8</sup> People who are drinking just one can of a sugar-sweetened soft drink every day, and not cut back on calories elsewhere, could gain up to 2 kilos in a year. Salt adds flavor to food and contains 40% of sodium. The human body needs a small amount of sodium to conduct nerve impulses, contract and relax muscles, and maintain the proper balance of water and minerals. But too much sodium in the diet can lead to high blood pressure, heart disease and stroke.<sup>9</sup> WHO recommends limiting daily sodium intake to 2 grams.

In conclusion, strong evidence exists to confidently make dietary recommendations for populations. Based on the evidences, the Harvard T.H. Chan School of Public Health recommends the 'healthy eating plate' model for optimal health benefits. The healthy eating plate recommends that vegetables constitute half of the plate, whole grains one-fourth, healthy proteins on the final fourth, healthy plant oil in moderation and water as a drink.

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## REFERENCES

1. Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, AlMazroa MA, Amann M, Anderson HR, Andrews KG, Aryee M. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The lancet*. 2012 Dec 15;380(9859):2224-60.
2. Aune D, Keum N, Giovannucci E, Fadnes LT, Boffetta P, Greenwood DC, Tonstad S, Vatten LJ, Riboli E, Norat T. Whole grain consumption and risk of cardiovascular disease, cancer, and all cause and cause specific mortality: systematic review and dose-response meta-analysis of prospective studies. *BMJ*. 2016 Jun 14;353:i2716.
3. Sun Q, Spiegelman D, van Dam RM, Holmes MD, Malik VS, Willett WC, Hu FB. White rice, brown rice, and risk of type 2 diabetes in US men and women. *Archives of internal medicine*. 2010 Jun 14;170(11):961-9.
4. Song M, Fung TT, Hu FB, Willett WC, Longo VD, Chan AT, Giovannucci EL. Association of animal and plant protein intake with all-cause and cause-specific mortality. *JAMA internal medicine*. 2016 Oct 1;176(10):1453-63.
5. Hung HC, Joshipura KJ, Jiang R, Hu FB, Hunter D, Smith-Warner SA, Colditz GA, Rosner B, Spiegelman D, Willett WC. Fruit and vegetable intake and risk of major chronic disease. *Journal of the National Cancer Institute*. 2004 Nov 3;96(21):1577-84.
6. Christen WG, Liu S, Glynn RJ, Gaziano JM, Buring JE. Dietary carotenoids, vitamins C and E, and risk of cataract in women: a prospective study. *Archives of Ophthalmology*. 2008 Jan 1;126(1):102-9.
7. Hu FB, Manson JE, Willett WC. Types of dietary fat and risk of coronary heart disease: a critical review. *Journal of the American College of Nutrition*. 2001 Feb 1;20(1):5-19.
8. Vartanian LR, Schwartz MB, Brownell KD. Effects of soft drink consumption on nutrition and health: a systematic review and meta-analysis. *American journal of public health*. 2007 Apr;97(4):667-75.
9. He FJ, MacGregor GA. A comprehensive review on salt and health and current experience of worldwide salt reduction programmes. *Journal of human hypertension*. 2009 Jun;23(6):363.