

Changing food trend and associated health risks

Akhilesh Shukla, Anupama Shukla¹

Department of Samhita-Siddhanta, Government Ayurveda College, Bilaspur, Chhattisgarh, ¹Department of Kriya Sharira, Akhandanand Ayurveda Mahavidyalaya, Ahmedabad, Gujarat, India

Abstract

Global food consumption patterns have changed over time. Our eating regimens consistently are altogether different from what our parents or grandparents consumed. The food people consume, in the entirety of their social assortment, define to a large extent people's well-being, growth, and development. Traditional, generally plant-based diets have been gradually replaced by high-fat, energy-dense diets with a significant amount of animal-based foods. There are several health conditions that can be caused or aggravated by such a shift from the traditional dietary practices. This is identified as one of the chief factors contributing to the increasing prevalence of noncommunicable diseases. Conditions such as high cholesterol, high blood pressure, heart ailments, gout, and even cancer are directly linked with an individual's diet. The present review is intended to explore the health hazards of unhealthy food practices prevalent today by providing scientific reasons. Our food practices are the chief factors for the preservation and promotion of good health throughout the life course and it may also determine whether or not a person is going to suffer from the diseases in future life.

Keywords: Aluminum, fast food, genetically modified food, microwave, nonstick cookware, soft drinks, traditional diet

Address for correspondence: Dr. Akhilesh Shukla, Department of Samhita-Siddhanta, Government Ayurveda College, Bilaspur, Chhattisgarh India.
E-mail: an2akhilesh@gmail.com

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INTRODUCTION

The present food system provides a varied range of choices to consume foodstuffs.^[1] Unplanned urbanization and rapid changes in diets and lifestyles that have occurred in the name of development and industrialization have further increased over the past decade. This is having a substantial influence on the health and nutritional status of residents, particularly in developing countries and in countries in transition.^[2] The shift from traditional to the western dietary pattern has become the leading cause of the growing burden of noncommunicable or lifestyle-related diseases and in the year 2015, the Global Burden of Disease study identified unhealthy diet as the leading cause of early mortality worldwide.^[3] The method of food preparation, dietary items, and eating pattern has significantly changed from the past. Along with that the availability of food and

drink products across the nations and its use irrespective of cultural and environmental differences are some of the factors influencing the health and disease pattern globally. There are several health conditions that can be caused or aggravated by such a shift from the traditional diet. Conditions such as high cholesterol, high blood pressure, heart ailments, gout, and even cancer are directly linked with an individual's diet. Even with the availability of scientific evidence and knowledge of the people about the harmful effect of this modern dietary behavior the fast-food industries are keep on growing. The ready availability, taste, low cost, and marketing strategies make them popular with children and adolescents.^[4] The use of nonstick cookware, aluminum vessels, and microwave in home cooking and consumption of genetically modified food products have further made the condition even worse. The present review is highlighting all these factors systematically with the support of scientific evidence.

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FAST FOOD CONSUMPTION AND HEALTH

Fast food culture is an increasing propensity among the younger generation. People buy and consume fast food because of its low cost, easy availability, tastiness, and attractive marketing strategies. But its impact on health is deceptive. Unfortunately, the present world's adaptation to a system of unhealthy consumption of fast foods has resulted in numerous adverse effects on the health of the people.^[5] Such food is found to be contributing to a number of health problems including overweight and obesity, metabolic syndrome, diabetes, and a number of cancers.^[6] In a study conducted in Hyderabad, children from high socioeconomic status preferred fast foods to traditional foods despite their better nutritional knowledge.^[7] Adolescence age is a crucial period to make a platform for the healthy future life because many health-related behaviors and conditions that underlie the major noncommunicable diseases start or are reinforced during this time.^[8] Not only the younger generation but also the fast-food consumption even affects the progeny of the pregnant woman. A 2008 report suggests that mothers who consume junk food during pregnancy or breast-feeding have children who are more prone to obesity. The children are also more prone to lifestyle diseases such as diabetes, raised cholesterol, and high blood fat.^[9] Another report proposes that pregnant mothers who eat high sugar and high fat diets have babies who are probably going to become junk food junkies themselves; this happens on the ground that the high fat and high sugar diet prompts changes in the fetal brain's reward pathway, changing food preferences.^[10]

SOFT DRINK CONSUMPTION

Soft drink consumption has become frequently noticeable and debatable public health and public policy issues.^[11] Studies have proved the association among the artificially sweetened beverage consumption and obesity in the younger population.^[12] An association was also reported between soft drink intake and increased risk of bone fracture (average $r = 0.06$).^[13-16] Seeing its harmful effects, the soft drinks have been banned from schools in Britain and France, and in the United States, school systems as large as those in Los Angeles, Philadelphia, and Miami have prohibited or strictly limited the soft drink sales. Several US states have considered statewide boycotts or restrictions on soft drink sales in schools, with California passing such legislation in 2005.^[11] In a research study of 91,249 women, followed for 8 years, it was found that those who consumed one or more servings of soft drink per day were twice as likely as those who consumed less than one serving per month to develop diabetes over the period of the study.^[17] A study reported a positive association between soft drink consumption and risk of hypertension.^[18] This evidence clearly suggests that soft drink consumption is harmful for the health and it must be withdrawn or at least decreased.

ALUMINUM TOXICITY

At present, aluminum utensils are widely used in the world, especially in the developing countries such as India.^[19] The use of varieties of aluminum vessels such as for cooking, storage, and serving food in households may become the source of aluminum migration into foods and its increased intake with diet. The harmful effects of increased aluminum intake had been well documented and it has attracted a growing concern on human and animal well-being. The immune system seems to be sensitive to aluminum exposure.^[20] The use of aluminum vessels may be one of the causes of the increasing

incidence of Alzheimer's disease.^[21] Aluminum is known for its potential neurotoxicity and is suspected to be linked with various neurodegenerative disorders such as amyotrophic lateral sclerosis and Parkinsonism dementia.^[22] It is recommended that the use of aluminum utensils for cooking or storage of the food should be banned.

USE OF NONSTICK COOKWARE

Nonstick cookware alludes to cookware that has a chemical coating so that food does not stick. Nonstick surfaces are metal vessels (such as aluminum pans) coated with a synthetic polymer called polytetrafluoroethylene (PTFE), also known as Teflon® (DuPont, Wilmington, DE, USA).^[23] It is a synthetic polymer that is useful for its thermal stability and lubricant (antistick) properties.^[24] Overheated polytetrafluoroethylene can generate toxic fumes which is harmful for the health. PTFE toxicosis is reported in humans and it may produce polymer fume fever and usually consists of flu-like symptoms and noncardiogenic pulmonary edema.^[25,26] It is better to avoid using non-stick pans for cooking.

MICROWAVE COOKING

Microwaves are high-frequency radio waves (radiofrequency fields) and like noticeable radiation (light), are part of the electromagnetic spectrum. Microwaves are essentially utilized for TV broadcasting, radar for air and sea navigational aids, and telecommunications including cell phones.^[27] Microwave energy does not penetrate properly in thicker pieces of food and may cause uneven cooking. This can lead to health problems if parts of the food are not heated adequately to kill the possibly dangerous micro-organisms.^[27] Such eating has been documented as a potential risk factor in several foodborne disease outbreaks.^[28] It is important to strictly follow the manufacturer's instructions to cook the food in a microwave oven and to avoid the health risk.

GENETICALLY MODIFIED FOOD

Genetic modification refers to a range of methods used to alter the genetic composition of a plant or animal, including traditional hybridization and breeding.^[29] Desirable traits are selected, combined, and propagated by repeated sexual crossings over numerous generations.^[30] This is a long process and for plant species, it may take 12–15 years to develop, evaluate, and release a new variety of crops in accordance with international requirements.^[31,32] The growing presence of genetically modified organisms in the food system has been a matter of discussion among the scientific community for their safety and effects on health.^[33] It is believed that consumption of these genetically engineered foods can cause the development of diseases which are immune to antibiotics.^[34] The development of pesticide-resistant insects and new allergens and biodiversity are some other issues which are related with genetic modifications.^[30,35] Although a large number of populations in the world are consuming GM food and it is extensively cultivated by the farmers, its long-term effect on health and to the environment is still not well known. It is required to further strengthen our research and make strong policies before introducing any GM crop in agriculture and in the market for human consumption.

CONCLUSION

Dietary practices are important factors in the promotion and maintenance of good health throughout the entire life course as well

as for the manifestation of diseases. Change from the traditional dietary practices and adopting emerging food trends put serious questions about its effect on health and to the surroundings, especially when used for a long period. The growing prevalence of noncommunicable diseases due to unwholesome dietary practices is clearly indicating that our traditional dietary practices are more scientific and advantageous for our health.

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There are no conflicts of interest.

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