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East Meets West: Navigating the Health Challenges of Shifting from Traditional to Western Diets

Shifa Puri¹ and Vikram Anumakonda^{2*}

Consultant Physician, Department of Acute Medicine, The Dudley Group NHS Foundation Trust, UK.

***Correspondence:**

Dr. Vikram Anumakonda FRCP, FFICM, Consultant Physician, Department of Acute Medicine, The Dudley Group NHS Foundation Trust, UK.

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ABSTRACT

This review explores the health impacts of the shift from traditional Eastern diets, rich in plant-based foods, whole grains, and legumes, to Western diets, which are dominated by processed foods, added sugars, unhealthy fats, and high salt intake. It highlights the significant dietary changes, such as increased sugar and salt consumption and altered cooking techniques, and how these shifts contribute to the rising prevalence of metabolic syndrome. Additionally, the review examines how these dietary modifications affect the gut microbiome, potentially reducing its diversity, which is vital for maintaining metabolic health. The research further assesses changes in physical activity associated with these food habits and the broader public health implications, emphasizing how comprehensive lifestyle shifts influence health outcomes in both Eastern and Western populations.

Keywords

Dietary transition, Nutrition and health, Cultural dietary practices, Chronic diseases, Lifestyle diseases, Obesity, Metabolic syndrome, Diabetes prevalence, Cardiovascular health.

Aim of the Review

This review aims to investigate the health effects of the dietary shift from traditional Eastern diets, characterised by high consumption of plant-based foods, whole grains, and legumes, to more Westernised diets that prioritise processed foods, added sugars, salt intake and unhealthy fats. This review examines changes in dietary practices and nutrient consumption, explicitly highlighting the rise in sugar and salt consumption, the shift in cooking techniques, the consequences of these dietary modifications on the incidence of metabolic syndrome and the implications of gut microbiome diversity. This research also assesses the impact of alterations in physical activity associated with food modifications and how these comprehensive lifestyle changes influence public health outcomes in both Eastern and Western populations.

Methodology

A comprehensive literature search was conducted utilising

sources such as PubMed and Google Scholar for this review. The emphasis will be on peer-reviewed articles, meta-analyses, and credible health organisation reports published in the past 20 years, guaranteeing a modern examination of food patterns and health consequences. Essential search terms encompassed "Eastern diet," "Western diet," "nutrition transition," "processed food," "added sugars," "salt consumption," "chronic diseases," "physical activity", "air-frying" and "dysbiosis". Data regarding sugar and salt intake patterns across different nations will be consolidated to clarify trends and facilitate cross-regional comparisons. Research into these influences on dietary modifications was incorporated to offer a comprehensive context for comprehending the effects of Western food patterns on traditional Eastern lifestyles.

The Eastern Diet: Transition from Tradition to Modernity and its Health Impact

The World Health Organisation (WHO) recommends a healthy diet to be made up of fruit, vegetables, legumes (e.g. lentils and beans), nuts and whole grains (e.g. unprocessed maize, millet, oats, wheat and brown rice) [1]. High intakes of vegetables, whole grains, and legumes have historically characterised traditional Eastern diets. These diets, low in unhealthy fats and high in fibre

and micronutrients, have been associated with lower rates of chronic diseases than Western diets. Research by the University of California San Francisco (UCSF) shows the benefits of traditional diets in preventing chronic diseases such as cancer. Populations following these diets, which are high in soy, fish, and vegetables but low in meat and dairy, tend to experience lower rates of cancer and other chronic diseases compared to Western populations. This points to the importance of healthy lifestyle and dietary habits for long-term disease prevention [2].

However, rapid economic development and globalisation have led to significant dietary shifts in many Eastern countries. The transition from conventional Eastern diets to Western nutritional patterns has been associated with considerable health consequences, especially in Southeast Asia and China, where economic advancement has substantially altered food intake [3]. Traditionally, diets in these regions consisted of staples like rice, fish, and vegetables, with low levels of processed food, sugar, and unhealthy fats; however, the transition to one more typical of Western nations higher in fats, animal products, and processed sugars has been linked to a rise in obesity, type 2 diabetes, and other components of metabolic syndrome. Moreover, Fast food chains and supermarkets offering processed and convenience foods have increased in countries like China, India, and Japan. A study conducted by Deakin University comparing ultra-processed food sales between 2009-2019 showed that Asian countries topped the list of ultra-processed food growth sales- India (7.8%), Pakistan (6.3%), in contrast to Germany (0.0%) and United States (0.4%) [4]. The availability of processed and ultra-processed foods, such as sugar, industrial seed oils, and chicken, has increased during the last two centuries. The consumption of butter, lard, shortening, whole-fat dairy, fresh fruits, fresh vegetables, and red meat has decreased [3].

Sugar

In Western countries such as the United States, the average daily sugar consumption can attain 126.4 grams per individual, exceeding the World Health Organization's advised threshold of 25 grams by more than three times [5]. This elevated amount is attributed to processed meals and sugary drinks, characteristic of the Western diet. In nations such as Germany, sugar consumption is comparably elevated, with a daily average intake of approximately 102 grams per individual, primarily due to increased processed foods [5,6].

Traditional Japanese diets have typically contained far lower sugar levels. Recent statistics indicate that the typical daily sugar consumption is roughly 53 grams. Nonetheless, this statistic has risen due to the increasing prevalence of Western fast foods and confections [7,8]. The use of sugar in India, shaped by its varied regional dietary practices, has been increasing. From 2013 to 2017, India saw a 17% rise in the per capita purchase of sweet snacks, reflecting this trend [9]. In 2021, the average daily sugar consumption in India was 19 grams. This proportion, albeit lower than in Western countries, is fast growing due to urbanisation and the rise in processed food consumption. Moreover, historically characterised by low sugar intake, South Korea's current average

sugar consumption is 27.8 grams daily, markedly lower than Western standards. However, this indicates a gradual rise as Western dietary patterns gain prominence [5]. These statistics highlight the nutritional shift, wherein Eastern nations such as Japan, India, and South Korea progressively increase their sugar intake. Still, Western countries such as the US and Germany have already attained elevated levels due to their dependence on processed foods. This tendency is contributing to a worldwide increase in metabolic syndromes [5].

Salt

The shift from traditional to contemporary meals has notably influenced salt intake, revealing differing trends between Eastern and Western regions. Although salt is an essential component of numerous traditional diets worldwide, the proliferation of processed and fast foods in certain countries has significantly increased its consumption to alarming levels.

The average daily salt consumption in the United States is over 3,400 mg, beyond the advised limit of 2,300 mg established by health organisations such as the American Heart Association [9]. Processed foods and restaurant meals, characteristic of the Western diet, mainly influence this elevated consumption. Despite attempts to diminish sodium content in processed foods, it remains a fundamental component of the Western diet, particularly in packaged snacks, breads, and convenience dinners. Traditional Japanese diets exhibit a significant salt content owing to the prevalent utilisation of soy sauce, miso, and pickled vegetables. Japan's mean daily salt consumption is approximately 10 grams (10,000 mg), exceedingly more than twice the World Health Organization's advised threshold of 5 grams (5,000 mg) [10]. Although Japan has undertaken initiatives to decrease salt intake, its culinary traditions continue to incorporate high-sodium meals. China, similarly, to Japan, exhibits elevated salt consumption levels, primarily due to the incorporation of soy sauce and salt-preserved dishes in its traditional cuisine. Current estimates indicate that China's average daily salt consumption is approximately 11 grams (11,000 mg) per individual. This statistic is significant, as it correlates with hypertension and cardiovascular disorders such as stroke and coronary heart disease [11]. Like other Eastern nations, South Korea is known for its culture of fermented foods such as kimchi, soy sauce and soybean paste [12]. Sodium intake in South Korea is high, with about half the population consuming ≥ 4000 mg/day. In 2012, South Korea implemented its National Plan to Reduce Sodium Intake to reduce population sodium consumption by 20% to 3900mg/day by 2020, highlighting its public health significance [12,13]. Although this is marginally lower than in Japan and China, the increasing consumption of processed foods in metropolitan regions contributes to a rise in salt intake.

The disparity in salt consumption between the East and West illustrates both conventional dietary practices and the ongoing transition towards processed foods. In both regions, salt consumption is constantly above recommended thresholds, leading to a global increase in hypertension and cardiovascular illnesses. Nevertheless, the levels are significantly elevated in Asian nations

owing to traditional cuisines that are intrinsically salty, exacerbated by the growing accessibility of processed Western goods.

Changes in Physical Activity

Physical activity has a directly proportional relationship with health-related quality of life physical and mental [14]. In the West, urbanisation and the accessibility of motorised transportation have diminished physical commuting and augmented inactivity, increasing obesity, diabetes and cardiovascular risk factors. In Eastern nations, including China and Japan, analogous trends arise due to swift urbanisation, economic expansion, and Western nutritional impacts. Traditional Eastern lifestyles, often including physical labour and active transportation, are now replaced with more sedentary work environments [15,16]. This rapid urbanisation has reduced physical activity levels. As Eastern cultures increasingly embrace Western sedentary habits, such as heightened screen time, which studies show is most consistent with a higher body mass index (BMI) [17], public health risks reflect those observed in Western nations. The shift mirrors the changes seen in Western countries and contributes to rising rates of obesity and metabolic syndrome. Studies demonstrate that sedentary behaviours are increasing worldwide, especially in nations shifting from traditional to Westernised lifestyles.

Pros of the Eastern Diet and Lifestyle

Traditional Eastern diets, rich in vegetables, whole grains, and lean proteins, are associated with lower rates of chronic diseases. A meta-analysis revealed that acarbose's (a medication used for diabetes) ability to reduce the biomarker of blood glucose over the past three months, HbA1c, levels were significantly superior in patients with T2DM consuming an Eastern diet than those consuming a Western diet [18]. Eastern traditional foods present numerous health benefits, including weight reduction, lower cholesterol levels, decreased blood glucose, reduced blood pressure, and protection against inflammation, but this is due to their high nutrient density and minimally processed food. Populations that adhere to these traditional diets, such as those in rural Japan or Mediterranean regions, often experience lower rates of heart disease, diabetes, and cancer, as well as longer life expectancy [19-22]. Recent clinical trials and interventions indicate that dietary treatments resembling pre-agricultural and pre-industrial diets can positively impact health. These findings are consistent with the evolutionary discordance theory, which suggests that the human body is adapted to specific dietary patterns and that modern diets, which differ significantly from our ancestors, may contribute to chronic diseases. Thus, by adopting healthier eating habits that align with our evolutionary past, we can reduce the risk of chronic diseases and improve overall health [3].

The Eastern diet, distinguished by its focus on whole foods, plant-based components, and conventional cooking practices, offers significant benefits, particularly when combined with modern cooking methods such as air frying. The transition to air frying, which employs considerably less oil than deep frying, might enhance the health advantages of these diets by lowering calorie and fat content while preserving vital nutrients. Air frying facilitates

the preparation of conventional dishes in a healthier manner, rendering them more attractive to individuals aiming to manage or avert metabolic disorders, including obesity and type 2 diabetes [23]. Furthermore, the Eastern diet's emphasis on fermented foods, including kimchi and miso, is rich in probiotics, which promote the growth of healthy bacteria, contribute to gut health, and benefit metabolic syndrome. Fermented foods are abundant in probiotics, expanding gut microbial diversity, boosting insulin sensitivity, and reducing inflammation. Integrating air frying techniques that preserve flavours and textures while minimising fats renders the Eastern diet more health-oriented and promotes a transition towards sustainable cooking practices advantageous for metabolic health [24-26].

Cons of the Transition to Western Diets

The shift towards a Westernized diet has led to a rapid increase in lifestyle-related diseases such as obesity and diabetes, which were previously rare in these populations. A significant feature of the Western diet is the elevated consumption of added sugars. Excessive consumption of added sugars is associated with a heightened risk of obesity, type 2 diabetes, and cardiovascular disease [20].

A study by Burrows et al. found that higher levels of education were associated with a higher intake of fruits and vegetables [21]. The Western diet has emerged as a global phenomenon, profoundly affecting human health. Socioeconomic factors, including income, education, and cultural background, influence food habits and preferences significantly. The Western diet exhibits social traits linked to income and education, as these elements significantly impact food choices. Individuals with elevated incomes and advanced education tend to maintain better diets incorporating more significant quantities of fruits, vegetables, whole grains, and lean proteins.

Adopting Western diets has been associated with declining traditional dietary customs, particularly in non-Western and indigenous populations. This transition is frequently propelled by globalisation, urbanisation, and rising income, resulting in dietary alignment with the Western model, marked by elevated consumption of processed foods, sweets, and refined grains. The erosion of traditional diets is also associated with negative health outcomes, including rising rates of obesity, diabetes, and cardiovascular diseases, significantly as the intake of processed foods and sugars increases [22].

In addition, research suggests that Western dietary patterns result in reduced microbial diversity and an elevation of pathogenic microorganisms, fostering deleterious disorganisation of gut microbiota, also known as dysbiosis [27]. Dysbiosis is linked to numerous health problems, such as obesity, metabolic syndrome, and inflammatory disorders. Furthermore, dysbiosis induced by a Western diet can intensify insulin resistance and facilitate fat formation, especially visceral fat, a critical risk factor for metabolic syndrome [27].

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