

The Changing Face of Global Eating Patterns

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Food choices and eating habits have changed dramatically around the world over the past fifty years^{12,13,14}. Our diets have been influenced by a range of factors; technologies in our kitchen, modes of transport supplying our shops, media, government as well as trade and migration. Ageing, globalisation and urbanisation all signify new challenges impacting what's consumed and its impact on nutritional status^{16,19,21}. Universal rates of obesity and other nutrition-related, non-communicable diseases (NCD) are steadily increasing and stem largely from the transition from traditional to present-day eating patterns and physical activity. Population ageing is one of the most significant trends of the twenty first century, a phenomenon that occurs when the medium age of a region rises due to longer life expectancy. According to WHO, since 1990 life expectancy has increased globally by six years. This increase has been reported in both developed and developing countries¹⁰.

A person's likelihood of ageing well can be greatly enhanced by ensuring their diets are optimal and contain adequate protein, wholegrains and polyunsaturated fatty acids, and are limited in unrefined carbohydrates, sodium and saturated fat⁹. Age related chronic diseases such as sarcopenia are a fundamental challenge to the ageing population. Sarcopenia is a complex, multifactorial process facilitated by a combination of factors including a sedentary lifestyle and a sub-optimal diet. Diet can play an important role in the prevention and maintenance of nutrition related chronic diseases. As populations continue to age, a spotlight is being shone on ways to reduce the burden of getting older and opportunities to maintain good health.



Nutrition evolution:

In the current "nutrition transition", unhealthy eating habits are outpacing healthy eating patterns in most regions around the world. This unfavourable shift in nutrient intake has been linked to the rapid, worldwide growth of diet-related chronic diseases, predominantly obesity. The trend towards the consumption of foods high in fats and sweeteners, termed 'nutrition transition', is on the rise in the developing world. Intake of unrefined, whole grains is waning, and consumption of fruits and vegetables remains insufficient^{7,9,11}.

Often dubbed the 'Western diet', this radical change in food consumption coupled with increased sedentary lifestyles are reflected in negative nutrition outcomes such as increased body fat composition and morbidity¹⁶. Global diets have evolved over time and are dominated by an accumulation of geographical, environmental, social and economic factors. Income, the cost of living, individual preferences and beliefs as well as cultural customs frame dietary consumption patterns¹⁷. A recent Swedish study reported that a high energy intake from total fat, saturated fat and monounsaturated fat in middle and older age increases the risk of malnutrition ten years later²⁰. This study contradicts

previous research suggesting there is no association. These findings indicate that preventive actions i.e. reducing consumption of foods that are high in saturated and monounsaturated fat can counteract malnutrition in these ageing demographics.

Dinner dynamics continue to evolve:

A general trend towards less structured meal occasions has been recognised around the globe. Changing family structures (fewer than 25% of households consist of a married couple with children) and the rise in single households are influencing consumption habits²². Busy lifestyles, longer, more unpredictable working hours and a rise in the number of females in the workforce are also contributing factors. Traditionally, meals took place at set hours of the day, however now meals are dictated by work and leisure activities and must be more flexible. Eating habits are already far less rigid than they were twenty years ago and this will become more pronounced in the future as people eat what they like when they can, mixing and matching rather than conforming to traditional values^{5,25}.

Significant differences in eating patterns are evident between countries⁵. China, France and Japan still have relatively set meal structures in contrast to Brazil, UK and US, where although meal times differ greatly between individuals, most are casual, simple and require less clean-up time²². On a global level, lunch was revealed to be the most consistent meal of the day, with almost three quarters of respondents eating a meal at 12/1pm⁵.

The latest Greendex survey by the National Geographic Society measured consumption habits and attitudes in 18 countries. Each country was scored on the relative size of its environmental footprint. Compared with 2008, consumer habits have improved to some extent in all countries surveyed, except Brazil¹². America's junk food culture means its consumers eat the greatest amount of processed and packaged foods and the fewest fruits and vegetables.

Food eaten in restaurants has a significant impact on caloric intake and therefore weight gain. Each additional meal or snack eaten away from home adds an average of 134 calories compared with the same meals or snacks prepared at home²³. Provided all other influencing factors remain constant, this additional meal eaten away from home each week could result in approximately two extra pounds per year. The effect of food prepared away from home on daily caloric intake is even more pronounced in obese individuals¹⁵.



Food with a meaning – Social Eating:

Food, once consumed for survival is now consumed as a social activity. Social eating norms are perceived standards for what constitutes appropriate consumption, whether that be amounts of foods or specific food choices, for members of a social group⁸. The way we eat, the type of food we buy, where we get it and how it is prepared has become a part of our character and defines how well we live. Food

often brings people together in a social setting. The presence of other people during a meal occasion has an effect on behaviour as humans have the tendency to crave approval from others⁹. A National Geographical study looked into cultural differences and food and it found that the majority of countries included reported that food was an essential part of their culture. Indian, Chinese, Spanish and Mexican consumers in particular were most attached to their national foods¹².

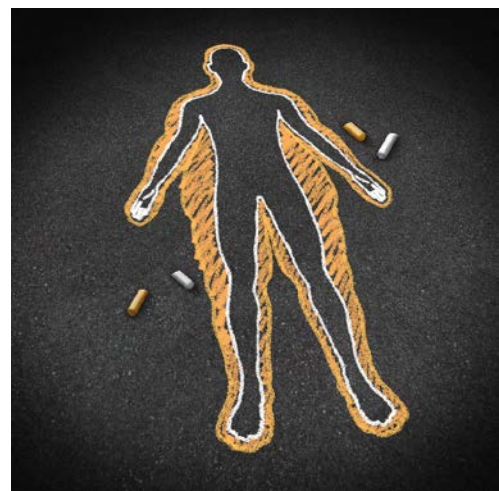
Downsizing our consumption norms

People can be very impressionable when it comes to how much they eat and this becomes their consumption norm. For many individuals, determining how much to consume depends on how much they would usually eat rather than what the appropriate portion size is²⁴. Both the abundant choices in flavour varieties and the social aspect of eating influence an individual's food consumption, and this is especially true for women. A previous study found that women who were given multiple flavour choices ate more ice cream than those who were offered one flavour. Women who dined alone ate less than those who ate together^{2,24}. There is further empirical evidence showing that foods that don't retain their shape (amorphous foods) are consumed in larger portions²³. Recent studies suggest that portion distortion begins as early as three years of age^{23,24}. It was once believed that a person's position or profession influences their portion size however, more recent research contradicts this notion²⁴. Although more affluent and informed consumers are more likely to avoid buying the larger size to begin with, once they begin to serve themselves they choose the larger portions²⁴. Due to busier lifestyles, populations are mindlessly eating i.e. eating when possible rather than when necessary. Mindful eating is an idea that encourages a shift away from autopilot eating by paying attention to your body's hunger cues. This notion is associated with reductions in binge-eating²⁶.

Nutritional outcomes of our newly defined eating patterns:

A) Non-communicable diseases (NCD):

By 2020, projections indicate that non-communicable diseases e.g. cardiovascular diseases, cancers, chronic respiratory diseases and diabetes will account for 75% of all deaths^{4,15,27}. Cardiovascular diseases and chronic obstructive diseases (such as chronic obstructed pulmonary disease and asthma) are expected to increase rapidly in many low and middle-income countries and NCDs are now a major cause of poverty, loss of productivity and poor quality of life worldwide¹⁵. In 2013, an estimated 2.1 billion people (nearly 30% of the global population) were overweight or obese²⁰. Research has looked at the link between obesity and leptin resistance. Obesity is thought to cause so-called central leptin resistance, which can cause the person to overeat and thus gain more weight continuing the cycle of overeating¹⁸. High saturated fat and low fibre were associated with high serum insulin, total cholesterol, weight, waist circumference and BMI over a 10 year period²⁷.



Improving consumer diets has a crucial role to play in reducing the burden of NCDs¹¹. Three quarters of global survey respondents, who are trying to lose weight plan to change their diet, and nearly as many (72%) intend to exercise¹⁴.

b) Self diagnosed Intolerance and Allergy:

The prevalence of allergies are increasing throughout the world, affecting up to 35% of people¹. Primarily seen in countries in Europe and the USA, allergies are on the rise globally, with a significant increase in the incidence of food allergy particularly amongst children¹. In this age of globalisation, it is not only populations that migrate but also food and beverages. As people adopt foreign diets and import exotic products, there has been an associated increase in allergy⁶.

With an abundance of information available on the internet, evaluation from health care providers is not always deemed necessary among consumers. Three quarters of people in a study, who reported they had non-coeliac gluten insensitivity (NCGS), did not fulfill the criteria for its diagnosis. No one knows the true incidence of NCGS because validated biomarkers necessary for diagnosis have not yet been identified³. As a result, consumers look to food in an effort to manage their own health and are limiting multiple dietary components without any medical supervision. A number of research teams are investigating whether reduced levels of nutrients - in particular, vitamin D, omega-3 fatty acids or antioxidants – might contribute to the development of allergies¹.

Re-engineering Consumption Patterns:

Government organisations can do more to promote the importance of eating healthier by implementing labelling regulations; supervising food taxes; supporting healthy eating in schools and workplaces and restricting the marketing of food and drink products that are high in sugar and fat to children. Providing incentives for the food industry to formulate food and drink products with less salt, fat and sugar will have a positive effect on products available to the consumer. Regulation has been developed in some countries in the European Union (EU) and in the United States (US) that require the addition of calorie counts on menus. With more people are eating away from home, this regulation intends to support better food choices. Another EU regulation- Food Information to Consumers (FIC), was introduced in 2014 and was aimed at making food and drink labels more accessible to the consumer. Initiatives promoting the importance of nutrition and healthy eating have been developed in the past however, adequate evaluation to monitor the impact on populations is lacking. More assessment is needed to create more effective public health campaigns.

The Food Industry- A Powerful Platform for Prevention:

Growing awareness around what constitutes healthy food has started to see a shift in eating habits among mainstream consumers and healthy eating is now more top of mind than ever before. Consumers are bombarded with healthy eating tips and tricks as they turn to Google for advice. Food brands are responding to the interest in 'healthier' food and beverage products by formulating 'better-

for-you' and 'good-for-you' varieties that promote the reduction or exclusion of the named and shamed food villains such as trans-fat and sugar and an increase or addition of nutrients such as calcium, vitamin D, fibre and whole grains. The food industry can play a vital role in the appropriate education of consumers by empowering them with relevant information to enable them to make better food choices.

Individuals are re-evaluating their diets and paying close attention to nutritional components in order to pro- actively manage their health. Consumers are shunning restrictive fads in favour of a more holistic wellness approach. These more open-minded, health-conscious consumers are focusing on their long-term health and wellbeing and are willing to occasionally splurge as they look for the right balance. The focus is on positive nutrition; consumers would rather hear what they can eat rather than what they can't eat. Food products revert back to basics as consumers demand whole 'real' foods and choose products rich in natural intrinsic health benefits, while avoiding heavily-processed products. There is growing demand for products that can help individuals to increase their fruit and vegetable intake and products containing 'superfoods', which will further increase their value as healthful ingredients. Protein and fibre are seen as an unstoppable combination and are included in a range of food products to entice consumers. With the mounting negative publicity around sugar, consumers look for alternatives that they consider to be safer and healthier options e.g. Stevia.



Lifestyles are becoming more demanding and time pressured and access to calorie dense foods is easier than ever, driving the development of unhealthy eating behaviours. The food industry needs to leverage the natural health credentials of food products, keeping ingredient lists short. Giving the consumer a reason to believe they can trust the product to deliver nutritional value to them is essential, however, the priority is brand transparency. Consumers look for more tailored, value added products, giving manufacturers the opportunity to develop convenient, targeted nutritional products that can help alleviate the burden on the health systems caused by the crippling effects of NCDs.

“Let food be thy medicine and medicine be thy food”- Hippocrates.

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