

Junk Food and Associated Health Hazards

Aiman Zehra¹, H. R. Naik²

¹Department of Food Science & Technology, Sher-e-Kashmir University of Agriculture Sciences & Technology of Kashmir (India)

²Professor at Sher-e-Kashmir University of Agriculture Sciences & Technology of Kashmir (India)

Abstract: *“Eat healthy and live healthy” is one of the essential requirements for long life”. Unfortunately, today’s world has been adapted to a system of consumption of foods which has several adverse effects on health. Lifestyle changes has compelled us so much that one has little time to really think what we are eating is right and healthy. Globalisation and urbanisation have greatly affected one’s eating habits and forced many people to consume fancy and high calorie fast foods, popularly known as Junk foods. Research into the possible health hazards on consumption of such high calorie foods has given an insight to avoid them, but unfortunately measures taken are not as effective as they need to be. Diseases like coronary artery disease and diabetes have seen a profound rise in developing countries and such unhealthy junk food consumption is one of the notable factors to its contribution. This global problem of consuming junk food on a large scale and its impact on health needs emphasis and health education which can greatly contribute to its limited consumption and switching over to healthy eating habits for the better living. Knowledge highlighting about the eating habits, nutritional aspects, and quality of unhealthy foods, their health impact and preventive measures should be given to create awareness and render health education for a change towards good eating practices. Junk food and its impact on health have been reviewed from various resources and have been systematically presented, so as to emphasize its ill effects and measures to be adapted towards healthy living.*

Keywords: Junk Food, coronary diseases, diabetes, globalisation, etc.

1. Introduction

Healthy nutritious foods have been replaced by the new food mantra – JUNK FOOD! In the context of world economy, junk food is a global phenomenon. The availability of junk food and snacks at low prices and marketing strategies adapted by manufacturers of such foods has triggered an evolution wherein, consumption of foods that require neither the structure nor the preparation of a formal meal. It seems to have engulfed every age; every race and the newest entrants on stage are children, school going in particular. Hence, a systematic presentation has been made in this review from the articles from various sources highlighting eating habits, nutritional aspects and quality of unhealthy food, their health impact on consumption and preventive measures to be undertaken. Through health education, a change towards good eating practices and adaption of healthy living is possible. Obesity accounts for 300,000 deaths in the U.S alone. Research into junk food and fast food restaurants have found that there is a direct relationship between the number of fast food restaurants located within the local area and obesity rates. According to a survey by the Institute of Food Technologists. With the global spread of food uniformity, its rapid growth is occurring in the developing world. It has radically changed the way people eat all over the world. Junk food simply means an empty calorie food. An empty calorie food is a high calorie or calorie rich food which lacks in micronutrients such as vitamins, minerals, or amino acids, and fiber but has high energy (calories). These foods don’t contain the nutrients that our body needs to stay healthy. Hence, these foods that has poor nutritional value is considered unhealthy and may be called as junk food. ‘Junk food’ is an informal term applied to some foods which are perceived to have little or no nutritional value, but which also have ingredients considered unhealthy when eaten regularly, or to those considered unhealthy to consume at all. The term ‘junk food’ was coined as a slang in the public interest in 1972 by

Michael Jacobson, Director of the Center for Science, Washington D.C (Ashakiran and Deepthi, 2012). Fast food culture is an emerging trend among children. ‘Energy dense food with high sugar/ fat/ salt content and low nutrient value in terms of protein, fiber, vitamin and mineral content is termed “junk food”.

2. Why do people prefer Junk Food?!

Fast foods are taking popularity by nuclear families because working parents have less time for meal preparation by themselves. Majority of working parents with school going children are in stress. Children spend most of the time away from home by attending tuition classes after school hours. Children take breakfast at home and fast food in school or outside school. A positive correlation of increased fast food consumption and increased body mass index was found among adolescents. Socio economic status is an important factor related to fast food consumption. Children from high socio-economic status prefer fast foods to traditional foods despite their better nutritional knowledge. It has been seen that children who are overweight are significantly more likely to recognize fast food restaurant logos than other food logos. Again, families' socio-demographic characteristics play a role in children's recognition of food logos. Factors related to fast food preference by university students are convenience, easy accessibility, taste, cost and quick service in fast food shop. Most of the fast food users take such kind of food though they know well about negative effects on themselves associated with fast food consumption (Das, 2015).

3. Craving for Junk Food?!

Food companies are spending millions of dollars to design foods with addictive sensations. Steven Witherly is a food scientist who has spent 20 years studying what makes certain foods more addictive (and

tasty) than others. According to Witherly, when we eat tasty food, there are some factors that make the experience pleasurable (Witherly2004).

1) **Dynamic contrast**

Dynamic contrast refers to a combination of different sensations in the same food. In the words of Witherly, foods with dynamic contrast have “an edible shell that goes crunch followed by something soft or creamy and full of taste-active compounds. This rule applies to a variety of our favorite food structures — the caramelized top of a slice of pizza, or an Oreo cookie — the brain finds crunching through something like this very novel and thrilling.” (Witherly2004).

2) **Rapid food meltdown and vanishing caloric density.**

Foods that rapidly vanish or “melt in your mouth” signal to your brain that you’re not eating as much as you actually are. In other words, these foods literally tell your brain that you’re not full, even though you’re eating a lot of calories. The result: you tend to over eat(Witherly2004).

3) **Sensory specific response**

Our brain likes variety. When it comes to food, if we experience the same taste over and over again, then you start to get less pleasure from it. In other words, the sensitivity of that specific sensor will decrease over time. This can happen in just minutes. Junk foods, however, are designed to avoid this sensory specific response. They provide enough taste to be interesting (our brain doesn't get tired of eating them), but it's not so stimulating that your sensory response is dulled. This is why we can swallow an entire bag of potato chips and still be ready to eat another. To your brain, the crunch and sensation of eating Doritos is novel and interesting every time(Witherly2004).

4) **Memories of past eating experiences**

This is where the psychobiology of junk food really works against us. When we eat something tasty (say, a bag of potato chips), our brain registers that feeling. The next time we see that food, smell that food, or even read about that food, our brain starts to trigger the memories and responses that came when you ate it. These memories can actually cause physical responses like salivation and create the “mouth-watering” craving that you get when thinking about our favorite foods. All of this brings us to the most important question of all. (Witherly2004).

5) **Cause of Addiction**

There is a system in our brain called the reward system. This system was designed to "reward" us when we do things that encourage our survival. This includes primal behaviors like eating. The brain knows that when we eat, we're doing something "right," and releases a bunch of feel-good chemicals in the reward system, such as the neurotransmitter dopamine - interpreted by our brains as pleasure. The brain is hardwired to seek out behaviors that release dopamine in the reward system. The problem with modern junk foods is that they can cause a reward that is way more powerful than anything we were ever exposed to in nature. Whereas eating an apple or a piece of steak might cause a moderate release of dopamine, and eating a pizza is so incredibly rewarding that it releases a massive amount (Ayano *et al* 2016).

6) **Junk food and its Harm full Effects**

Junk food allows people to eat without planning. Eat not only when it is pre-set meal time, but also when they have spare time. Ingredients of junk foods give great taste and make them addictive. Fat and sugar in combination are capable of producing dopamine-driven surge of intense pleasure in people with a propensity for addictive behaviour. On the other side, it must be noted that they are hazardous to health too. High fat content, particularly cholesterol, sugar and salts have their adverse effects on health. Soaring calorie content with sugar can lead to obesity(Arya and Mishra.2013). Dense sugar content can cause dental cavities and type 2 diabetes mellitus . A short-term adverse effect as a result of eating junk foods lack of energy. Which occurs because junk foods don't provide essential nutrients, even though they can be very much sufficing, due to which one feels weakened. Unfortunately, meals consisting of junk food don't fill up for long. Because they are lacking in fibre, and are made of processed foods, they are rated high on the glycemic index, which means they provide a quick rise in blood sugar, but this also falls quickly, and giving rise to hunger (sharma2015) .Cholesterol and salt are known to set off blood pressure, stroke and heart diseases in a chain. Excessive salts can affect functioning of Kidneys too. Excess fats and oils along with spices added in these foods act as an irritant to gastric mucosa leading to excess secretion of hydrochloric acid, landing in gastritis. Poor concentration is another result of junk food habit known to affect in immediate and medium term periods. When a sumptuous junk meal rich in oil is taken, there is a feeling of drowsiness and failure to concentrate. The junk food eating over a substantial period of time can drop blood circulation due to fat accumulation. Lack of vital oxygen, nutrients and proteins particularly can stale the grey (brain) cells temporarily. Most of the times these junk foods contain colours, which are often inedible, carcinogenic and harmful to the body. Flavourings and colourings can be allergic causing asthma, rashes and hyperactivity. Animal studies on rats have demonstrated the ill effects of consuming junk foods during pregnancy which affects the health of foetus (Ashakiran and Deepthi, 2012).

a) **Obesity:** Obesity is an emerging pandemic of the new millennium. This has profound public health consequences, as 70 percent of overweight children become overweight adults. Obesity is defined as an excess of body fat as measured by Body Mass Index (BMI) ratio in adults – this is calculated by dividing weight in kilograms by height in meters squared. In adults, a BMI over 25 are classified as overweight and over 30 as obese (classes I, II or III or moderate, severe or morbidly obese). According to Swaminathan a person whose body weight is higher than normal by 15-20 percent is considered as overweight and by 25 percent is considered as obese. Obesity has increased in both developed and developing countries although the pace and pattern differ from country to country. It has profound public health consequences, as seventy percent of the overweight children become overweight adults. Fat and sugar in combination are capable of producing a dopamine-driven surge of intense pleasure in people with a propensity for addictive behavior. On the other side, it must be noted that they are hazardous to health too. High

fat content, particularly cholesterol, sugar and salts have their adverse effects on health. Soaring calorie content with sugar can lead to obesity (Arya, G. & Mishra, S. 2013).

b) **Diabetes II:** Type 2 diabetes is the most common type of diabetes. It is a chronic problem in which blood glucose (sugar) can no longer be regulated. There are two reasons for this. First, the cells of the body become resistant to insulin (insulin resistant). Insulin works like a key to let glucose (blood sugar) move out of the blood and into the cells where it is used as fuel for energy. When the cells become insulin resistant, it requires more and more insulin to move sugar into the cells, and too much sugar stays in the blood. Over time, if the cells require more and more insulin, the pancreas can't make enough insulin to keep up and begins to fail (Yuchu Song, 2016).

7) Replacing Junk Food

As per the 'Dietary Guidelines for Indians, 2011' of the National Institute of Nutrition (NIN), a balanced diet is one which provides all nutrients in required amounts and proper proportions. It should provide around 50-60 per cent of the total calories from carbohydrates, preferably from complex carbohydrates; about 10-15 per cent from proteins; and 20-30 per cent from both visible and invisible fat. In addition, it should provide other non-nutrients such as dietary fibre and antioxidants that bestow positive health benefits. Carbohydrates, fats and proteins are macronutrients. Micronutrients such as vitamins and minerals are necessary for physiological and biochemical processes to acquire, assimilate and utilize food to maintain health and activity. Antioxidants and other phyto-chemicals protect the human body from free radical damage. Dietary fibre delays the absorption of carbohydrates and fats and increases the satiety value. The guidelines depict the importance of foods through a 'Food Pyramid'



Figure 1: The NIN food pyramid

Balanced diet is recommended through a blend of four basic food groups such as cereals, millets and pulses; vegetables and fruits; oils, fats and nuts; and milk and animal foods. Notably, food items such as burgers, pizza, fries, chocolates, ice cream, jam etc are not considered the right choice to meet the nutrient needs and must be eaten sparingly. The

guidelines define processed foods as “foods that are subjected to technological modifications either for preservation or for converting into ready to- use/eat foods, eliminating laborious household procedures” (Amit Khurana & Indu Dhangar, 2014).

8) Junk food – global regulations

To respond to the obesity and NCD epidemic, several countries have adopted one or more of the following three approaches (Global *regulatory status*). Typically, junk food items which are high in fat, sugar and salt and low in nutritive value are selected for regulating their exposure and availability to children (Amit Khurana & Indu Dhangar, 2014).

- Ban availability in schools.
- Regulate advertisement and promotion.
- Impose taxes.

Conclusion

Junk foods have certainly carved up the World due to globalization. Consumption of diet high in sugar, saturated fat, salt and calorie content in childhood can lead to early development of obesity and cardiovascular diseases. It is not impossible to win war with junk foods against healthy foods. However, one must beware; entice is so strong that you will be addicted. It must be remembered that the addiction to junk is great for business. It is all in our hands to choose junk food or health. Avoid Junk, Accept Health! No Junk, Know Health!

References

- [1] Ashakiran and Deepthi. 2012. Fast Foods and their Impact on Health. *Journal of Krishna Institute of Medical Sciences University*. 1 (2):7-14
- [2] Arya, G. and Mishra, S., 2013. Effects of Junk Food & Beverages on Adolescent's Health *Journal of Nursing and Health Science*. 1(6):26-32
- [3] Ayano, G. 2016. Dopamine: Receptors, Functions, Synthesis, Pathways, Locations and Mental Disorders: Review of Literatures, *Journal of Mental Disorders and Treatment*. 2(2):2-4
- [5] Das. 2015. Fast Food Consumption in Children. *Medical-clinical-reviews*. 1(1): 1-4
- [6] Sharma. 2015. Food Preservatives and their harmful effects. *International Journal of Scientific and Research Publications*, 5(4):1-2
- [7] Yuchu Song. 2016. Factors that Affect Fast Food Consumption: A Review of the Literature. *MBA Student Scholarship*: 53-1-14

Books

- [8] Steven A. Witherly . 2004. Why Humans Like Junk Food. Chapter 1, page no. 5-15
- [9] Amit Khurana & Indu Dhangar . 2014. Junk food targeted at children. *2014*. 5-28