

Review article on Junk –Food

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Abstract

Junk food is a calorie rich food which lacks in micronutrients but has high energy. It has high levels of refined sugar, white flour, Trans fat and polyunsaturated fat and salt. The changing environment and the age of teenage which is freedom for select and purchase their own food and drink outside the home. Larger packages and larger serving sizes may encourage greater consumption of this food. Food dense in calories may lead to obesity and future health problems. Obesity is a common cofactor in the development of hypertension. Socio economic status is also important factor related to fast food consumption among children.

Eating out has become a trend these days.² Eating junk food is a popular event among children and adolescent. Children receive the information about junk food mainly from electronic media i.e. TV (67.95%), mother (9.02%), newspaper or magazines (6.71%).³⁶ A study on effect of junk-food was carried out by Nisar et al (2009)²³ they found that 96.4% adolescent children were habitual of junk food. A study done by Zhu et al (2008)³⁶ found 78.72% adolescent having convenience or fast food.

The changing environment by making fast food outlets conveniently available has promoted consumption of energy dense foods high in fat and sugar.¹ Junk food was positively correlated with an overall unhealthy lifestyle of adolescents.¹⁹ The change from childhood to adolescence signifies increasing autonomy over food choices, with increasing opportunities for teenagers to select and purchase their own food and drink outside the home.³³

34.4% of boys and 29.4% of girls ate fast food (burgers, pizzas, fried foods, etc.) more than three times a week.²⁶ A study by verzeletti (2009)³⁴ found that 41.7% adolescents have drunk daily soft drinks and 20.3% eat regularly in fast food restaurants.

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). What makes these foods to be called as 'Junk' is that it contains high levels of refined sugar, white flour, Trans fat and polyunsaturated fat, salt, and numerous food additives such as monosodium glutamate

and tartrazine; at the same time, it is lacking in proteins, vitamins, essential minerals, fiber, among other healthy attributes.⁴

These foods have little enzyme producing vitamins and minerals and but contain high level of calories in their place. A food that is high in fat, sodium, and/or sugar and provides high calories yet useless in value is generally known as a junk food.⁴ The traditional micronutrient rich foods are being replaced by energy dense processed micronutrient poor foods (snacks) like burgers, pizza, chowmein and cold drinks and fruit drinks in greatly increased portions.¹ Fast food eaters' diets were lower in vitamin A, carotenes, and vitamin C density.⁵ Eating fast food was also associated with consuming a diet low in calcium and magnesium density.⁵

A study by French et al (2008)⁹ found significant positive associations were observed between FFFRU and high-fat, high-sugar food choices such as soft drinks, French fries and cheeseburgers. Away-from-home meals were higher in fat, saturated fat, and sodium and lower in fiber, iron, and calcium than were at-home meals.²⁹

Taveras et al (2005)³¹ found that fried food away from (FFA) have higher intake of total energy, sugar sweetened beverages and trans fat as well as higher glycemic index loads and had a lower ratio of polyunsaturated to saturated fats and consumed fewer multivitamins.

Food dense in calories, when oxidised in the body causes enormous formation of 'Acetyl CoA'. Acetyl CoA in excess is channelized out of mitochondria for its participation in other metabolic pathways and for its effective utilization. These pathways include denovo fatty acid synthesis and biosynthesis of cholesterol, which causes excess fatty acid and cholesterol formation. When refined sugar is taken, the pancreas secretes high amounts of insulin to prevent a dangerous spike in blood sugar levels. Because fast food and junk food don't contain adequate amounts of protein and good carbohydrates, the blood sugar levels suddenly drops after eating, resulting with grumpy, fatigued feeling and a craving for sugar.⁴

Kaushik et al (2011)²⁰ finding that positive correlation of increased fast food consumption, skipped breakfasts and increased body mass index was found among adolescents. Fast foods and soft drinks may have detrimental effects on the nutritional status of children, and an increased consumption of these food items may lead to obesity and future health problems.²⁹

Nicklas et al (2001)²² depicted that estimated frequency of fast-food meals was positively associated with energy intake. Jeffery et al (2006)¹⁷ reveal that significant positive association between BMI and frequency of reported eating at fast food restaurants.

Eating at fast food restaurants was positively associated with having children, a high fat diet and Body Mass Index (BMI).¹⁷ frequent fast-food consumption is positively associated with weight gain and risk of insulin resistance.²⁷ There was a significant interaction between eat of fast food and weight gain.⁶ Junk food consumption was associated with overweight.²³ 63% obese children taking junk food regularly.¹²

Junk food and chocolate eating habit have positive relation with prevalence of obesity and overweight.¹² In adolescents, soft drink intake is highly correlated with snacking on energy dense foods.³⁰

Giammettei et al (2006)¹⁰ found that those children who consumed three or more soft drinks per day also had a BMI was higher. Energy intake was found to be positively associated with soft drink consumption.¹⁵ Increased snack food consumption may contribute to the obesity epidemic.³

Gillis et al (2003)¹¹ findings that Obese children and adolescents consume significantly more servings of FAFH, sugar-sweetened drinks and potato chips which contribute to a higher calorie, fat and sugar intake compared to non-obese children and adolescents.

There may be several explanations for the link between obesity and soft drink consumption: 1) decreased energy expenditure with the consumption of soft drinks or high-sugar beverages than with that of mixed-nutrient beverages, such as milk; 2) increased food intake due to decreased satiety and fullness sensations with high-sugar beverages; or 3) decreased milk consumption coincident with the rise in soft drink intake.²⁹

Many studies^(18, 21, 24, 26, 28, 32) reveal that 0.2% to 8.1% obese and 1.4% to 25.1% overweight children and adolescents are consuming junk food, chocolates and soft drink regularly. There eating junk food habitually may be a reason of overweight and obesity. Jain et al (2010)¹⁶ found that consumption of high energy fried food and junk food have shown significant association with the prevalence of adolescent obesity.

Junk food has one more contain is available in dangerous amount. It is salt. And salt has sodium. Sodium is known to affect rennin angiotensin system in kidneys, which produces vasoconstrictive effects on arterioles, leading to development of high blood pressure. A high sodium level has been clearly implicated as the causative factor for high blood pressure.⁴ The prevalence of hypertension in school aged children appears to be increasing, perhaps as a result of the increased prevalence of obesity. Obesity is a common cofactor in the development of essential hypertension.¹⁴

Another study done by Semiz et al (2008)²⁵ found that obesity is an important factor in the development of hypertension. They clearly confirm that cardiovascular risk factors are more common in obese children. In the study by Guizar et al (2005)¹³ confirmed that obese adolescents have higher blood pressure than lean adolescents. A study by Singh et al (2006)²⁶ found that Systolic Hypertension (B.P>140) was found in 11.82% boys and 3.03% girls.

French (2003)⁷ found that larger packages and larger serving sizes may encourage greater consumption at any one meal or eating episode. Pricing of food selections are controlled by the vendor and can easily be manipulated.⁸ Price reduction was significantly associated with percentage of low-fat snack sales.⁸ Socio economic status is an important factor related to fast food consumption among children.²⁰ A study done by Vijayapushpam et al (2003)³⁵ found high SES children 22.2% were habitual of fast food.

SES was significantly associated with FFRU (Frequently Fast Food Restaurant Use) among adolescents.⁹ Socioeconomic status was related to children's risks of being obese or overweight and high SES groups were at a higher risk of obesity, while middle SES groups were at higher risk of overweight.¹² The prevalence of overweight and obesity is higher in upper socioeconomic class as compared to lower socioeconomic class.¹

References:-

1. Agarwal, R. K., (2008): Childhood Obesity: Emerging Challenge, *Indian Pediatrics*, Volume 45, Page No. 443-444.
2. Aggarwal, T., Bhatia, R. C., Singh, D. & Sobti, P. C. (2008): Prevalence of obesity and overweight in affluent adolescents from Ludhiana, Punjab, *Indian Pediatr*, Volume 45, Page No. 500-502.
3. Anderson, J. W. & Patterson, K. (2009): Snack foods: comparing nutrition values of excellent choices and junk foods, *J Am Coll Nutr*, Volume 24, Page No. 155-6.
4. Ashakiran. & Deepthi, R. (2012): Fast Foods and their Impact on Health, *Journal of Krishna Institute of Medical Sciences University*, Volume 1, No. 2, Page No. 7-15.
5. Bowman, S. A. & Vinyard, B. T. (2004): Fast food consumption of U.S. adults: Impact on energy and nutrient intakes and overweight status, *J Am Coll Nutr*, Volume 23 Page No. 163-168.
6. Ebbeling, C. B., Sinclair, K. B., Pereira, M. A., Garcia-Lago, E., Feldman, H. A. & Ludwig, D. S. (2004): Compensation for Energy Intake From Fast Food Among Overweight and Lean Adolescents, *JAMA*, Volume 291, No. 23, Page No. 2828-2833.
7. French S. A. (2003): Pricing effect on food choices, *J Nutr*, Volume 133, Page No. 841.
8. French, S., Jeffery, R. W., Story, M., Brietlow, K. K., Baxter, J. S., Hannan, P., MStat, & M. Patricia Snyder. (2001): Pricing and promotion effects on low fat vending snack purchases: the CHIPS study, *Am J Public Health*, Volume 91, Page No. 112-7.
9. French, S. A., Story, M., Neumark-Sztainer, D., Fulkerson, J. A. & Hannan, P. (2001): Fast food restaurant use among adolescents: associations with nutrient intake, food choices and behavioral and psycho-social variables, *Int J Obes Relat Metab Disord*, Volume 25, Page No.1823-1833.
10. Giammettei, J., Blix, G., Marshak, H. H., Wollitzer, A. O. & Pettitt, D. J. (2003): Television Watching and Soft Drink Consumption association with Obesity in 11 to 13 year Old School Children, *Arch Pediatr Adolesc Med*, Volume 157, Page No. 882-886.

11. Gillis, L. J. & Bar-Or, O. (2003): Food Away from Home, Sugar-Sweetened Drink Consumption and Juvenile Obesity, *Journal of the American College of Nutrition*, Volume 22, No. 6, Page No. 539–545.
12. Goyal, R. K., Shah, V. N. & Saboo, B. D. (2010): Prevalence of overweight and obesity in Indian adolescent school going children: Its relationship with socioeconomic status and associated lifestyle factors, *JAPI*, Volume 58, Page No.151-8.
13. Guízar, J. M., Ahuatzin, R., Amador, N., Sánchez, G. & Romer, G. (2005): Heart Autonomic Function in Overweight Adolescents, *Indian Pediatrics*, Volume 42, Page No. 464-469.
14. Gulati, S. (2006): Childhood Hypertension, *Indian Pediatrics*, Volume 43, Page No. 326-333.
15. Harnack, L., Stang, J. & Story, M. (1999): Soft drink consumption among US children and adolescents: nutritional consequences, *J Am Diet Assoc*, Volume 99, Page No. 436–441.
16. Jain, S., Pant, B., Chopra, H. & Tiwari, R. (2010): Obesity Among Adolescents of Affluent Public Schools in Meerut, *Indian Journal of Public Health*, Volume 54, Issue 3, Page No. 158-160.
17. Jeffery, R. W., Baxter, J., McGuire, M. & Linde, J. (2006): Are fast food restaurants an environmental risk factor for obesity?, *International Journal of Behavioral Nutrition and Physical Activity*, Volume 3, No. 2.
18. Kapil, U., Singh, P., Pathak, P., Dwivedi, S. N. & Bhasin, S. (2002): Prevalence of obesity in affluent adolescent school children in Delhi, *Indian Pediatr*, Volume 39, Page No. 449- 452.
19. Kourlaba, G., Panagiotakos, D. B., Mihas, K., Alevizos, A., Marayiannis, K. & Tountas, Y. (2008): Dietary patterns in relation to socio-economic and lifestyle characteristics among Greek adolescents: a multivariate analysis, *Public Health Nutrition*, Volume 12, No. 9, Page No. 1366–1372
20. Kaushik, J. S., Narang, M. & Parakh, A. (2011): Fast Food Consumption in Children, *Indian Pediatrics*, Volume 48, Page No. 97-101.
21. Khadilkar, V. V. & Khadilkar, A. V. (2004): Prevalence of obesity in affluent schoolboys in Pune, *Indian Pediatr*, Volume 41, Page No. 857-858.
22. Nicklas, T. A., Baranowski, T., Cullen, K. W. & Berenson, G. (2001): Eating Patterns, Dietary Quality and Obesity, *Journal of the American College of Nutrition*, Volume. 20, No. 6, Page No. 599–608.
23. Nisar, N., Qadri, M. H., Fatima, K. & Perveen, S. J. (2009): Dietary habits and life style among the students of a Private Medical University, Karachi, *Pak Med Assoc*, Volume 59, Page No. 98-101.

24. Premnath, M., Basavanagowdappa, H., Shekhar, M. A., Vikram, S. B. & Narayanappa, D. (2010): Mysore Childhood Obesity Study, *Indian Pediatrics*, Volume 47, Page No. 171-173.
25. Semiz, S., Özgoren, E., Sabir, N. & Semiz, E. (2008): Body Fat Distribution in Childhood Obesity: Association with Metabolic Risk Factors, *Indian Pediatrics*, Volume 45, Page No. 457-462.
26. Singh, A. K., Maheshwari, A., Sharma, N. & Anand, K. (2006): Lifestyle Associated Risk Factors in Adolescents, *Indian Journal of Pediatrics*, Volume 73, Page No. 901-906.
27. Stender, S., Dyerberg, J. & Astrup, A. (2007): Fast-food: Unfriendly and unhealthy, *Int J Obes Relat Metab Disord*, Volume 31, Page No. 887-890
28. Stigler, M. H., Arora, M., Dhavan, V., Shrivastav, R., Reddy, K. S. & Perry, C. L. (2011): Measuring Obesity among School-aged Youth in India: A Comparison of Three Growth References, *Indian Pediatrics*, Volume 48, Page No. 105-110.
29. St-Onge, M. P., Keller, K. L. & Heymsfield, S. B. (2003): Changes in childhood food consumption patterns: a cause for concern in light of increasing body weights, *Am J Clin Nutr*, Volume 78, Page No. 1068-1073.
30. Tam, C. S., Garnett, S. P., Cowell, C. T., Campbell, K., Cabrera, G. & Baur, L. A. (2006): Soft drink consumption and excess weight gain in Australian school students: results from the Nepean Study, *International Journal of Obesity*, Volume 30, Page No. 1091-1093.
31. Taveras, E. M., Berkey, C. S., Rifas-Shiman, S. L., Ludwig, D. S., Rockett, H. R. H., Field, A. E., Colditz, G. A. & Gillman, M. W. (2005): Association of consumption of fried food away from home with body mass index and diet quality in older children and adolescents. *Pediatrics*, Volume 116, Page No. e518-e524.
32. Triches, R. M. & Giugliani, E. R. J. (2005): Obesity, eating habits and nutritional knowledge among school children, *Rev Saude Publica*, Volume 35, No. 4, Page No. 1-7.
33. Vereecken, C. A., Inchley, J., Subramanian, S. V., Hublet, A. & Maes, L. (2005): The relative influence of individual and contextual socio-economic status on consumption of fruit and soft drinks among adolescents in Europe, *European Journal of Public Health*, Volume. 15, No. 3, Page No. 224–232.
34. Verzeletti, C., Maes, L., Santinello, M. & Vereecken, C. A. (2009): Soft drink consumption in adolescence: associations with food-related lifestyles and family rules in Belgium Flanders and the Veneto Region of Italy, *European Journal of Public Health*, Volume. 20, No. 3, Page No. 312–317.

35. Vijayapushpam, T., Menon, K. K., Rao, D. R. & Antony, G. M. (2003): A qualitative assessment of nutrition knowledge levels and dietary intake of school children in Hyderabad, *Public Health Nutr*, Volume 6, Page No. 683-688.
36. Zhu, S. P., Ding, Y. J., Lu, X. F., Wang, H. W., Yang, M., Wang, J. X., Chao, X. D. & Zhao, Z. (2008): Study on factors related to top 10 junk food consumption at 8 to 16 years of age, in Haidian District of Beijing, *Zhonghua liu xing bing xue za zhi = Zhonghua liuxingbingxue zazhi*, Aug, Page No. 757-762.