



EFFECT OF SAMSKARA ON FOOD W.S.R.T FRYING (SNEHA BHARJANA): A REVIEW

Ayurveda

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ABSTRACT

The use of different processes to transform the properties of food items is termed as Samskara in Ayurveda. These methods or processes are aimed at improving the nutritive value, palatability, compatibility, digestibility, and bioavailability of the food. Frying food in any kind of lipid (sneha) is a very popular, old and easy method of cooking. Fried foods have both positive and negative effects on the health of an individual. It can make the food tastier, more nutritive and give good texture, which are desirable qualities. Frying also can be undesirable for health as it makes the food heavy for digestion, high calorie and can sometimes lead to degradation of important heat sensitive nutritional compounds as well as the generation of toxic molecules. Frying in different sneha (Fats) like ghee and oil, gives different results. The use of frying as a food process is to be done after proper consideration of its pros and cons and assessment of the person consuming such food.

KEYWORDS

Samskara, Ayurveda, cooking, sneha, frying

INTRODUCTION

Food is one among the basic essentials of life. It is the fuel that helps the body to perform everyday activities. It helps the body to grow, protect, maintain and rebuild itself. These are attained by different properties of the various food we consume. Hence it is of great significance to transform the qualities of the food we have. This is to be done to make it more palatable, to increase the digestibility and to improve the bioavailability of it etc. Any process done on food articles to transform their qualities is termed as samskara in Ayurveda.[1]. These processes may range from addition of water, cooking in fire, churning, storage to give time to change itself. The method of cooking has a major effect on the amount of nutrients in a finished food product. Cooking (agni sannikarsha) is a type of samskara which includes different methods like boiling, steaming, baking, stewing, roasting, frying, microwaving etc. where heat or fire is used to bring about the changes. Among them frying is a process where there is combination of lipids and high temperature to cook. In Ayurvedic terms it is termed as sneha pachana or bharjana.

Frying of Food

Frying is one of the oldest food processing methods. [2] The process is based on fat food interaction at high temperature.[3] The fat is exposed to three agents when food is immersed in hot oil or ghee; water, oxygen and high temperature.[4] It is a quick and easy way to cook food and provides a characteristic flavour and texture to the food. The penetration of fat into the food depends on the type of food fried in it. Frying techniques differ according to the fat amount, frying time, frying vessel and manipulation of food.

Types Of Frying

The standard frying techniques at present are sautéing, stir frying, pan frying, shallow frying and deep frying etc. Frying of food in a thin layer of fat on a hot surface is done in pan frying, sautéing, stir frying methods. Stir frying method involves frying food at high temperatures in a short period of time and requires continuous stirring to prevent the food from sticking and burning. In shallow frying method the amount of fat is required to immerse about one third to half of food piece. In deep frying method the food is submerged in hot fat.

Effect on Nutrient value of Food

The frying process brings about various changes which influence the nutritional value of the food. When compared to other methods, in frying (deep frying) most of the nutrient remain intact except fat soluble vitamins, which leach out into the fat or may be destroyed by the high temperature.[5] It also results in product enrichment.[6]

Most of the heat sensitive vitamins, water soluble vitamins and minerals are better retained in food in frying than in boiling and steaming processes. At the same time deep frying dehydrates the food,

leading to changes such as starch gelatinization, protein denaturation, loss of nutritive quality, degradation of heat - susceptible vitamins and production of toxic compounds.

Ayurvedic Perspective

In the ancient texts of ayurveda, there are elaborate descriptions about the method of preparation and properties of various food items. The process of frying is mentioned in the preparation of items like vataka, poorika, shashkuli and many more. The properties of food fried in oil is different from that fried in ghee. For example, Acharya Bhavaprakasha while explaining the preparation of masha poorika preparation said that when the poorika is fried in oil it contains the qualities like ruchya (interesting), swadi (tasty), guru (heavy), snigdha (unctuous), balya (provides strength), vitiates rakta and pitta, and it is said as chakshu-tejoharan (destroys the vision), ushnapaka and pacifies vatadosha. [7] and when ghrita is used to fry poorika then it is good for eyes and it is said as raktapittahara. Similarly, the properties of talitamamsa (meat fried in ghee) is told as balavardhaka (increases strength), medhavardhaka (brain enhancer), agnivardhaka (enhances digestive power), mamsavardhaka (increases mamsa dhatu), ojavardhaka (enhances vigor) shukravardhaka (increases shukra dhatu), triptikaraka (brings satiety), laghu, atyant snigdha (too unctuous), rochaka (makes it interesting) and dridhtakara (brings firmness to the body).[8]

Other than these preparations, acharya Bhavaprakasha have mentioned Sashkuli (khasta), mantha (mathari) sampawa (gujiya), karpuranalika, fenika, kundalini (jalebi), dugdhakupika etc. which are prepared by frying in ghee. And all these food preparations have properties like bruhmana (nourishment of dhatus), vrushya (increase spermatogenesis), guru (heavy), vatapittashamaka (pacifies vata and pitta), ruchikaraka (makes food relish), and are good for those who have pradeeptagni (good digestive capacity). Yognatnakar has mentioned separate properties for snehpachita bakshya in different sneha i.e. frying of edibles in ghee and oil. Edibles when fried in ghee provide strength and pacify pitta and vata and when fried in oils destroy the eyesight, pacify vata dosha, become ushna, vitiates pitta dosha and rakta dhatu.

DISCUSSION

Frying is a complex process involving heat and matter (water, fat and nutrient) transfer, resulting in physical, chemical, nutritional and sensory changes (texture, color, taste)[9]. Many of these changes depend on oil temperature, product's water content, oil content and product residence time in the fryer. High-temperature conditions (180 °C) can generate beneficial compounds (aromas and color), but also undesirable effects, such as the degradation of important nutritional compounds (vitamins, etc.) as well as the generation of toxic molecules (e.g. acryl amides, polar compounds of the oil, etc.)[10]

Frying has both beneficial and unwanted harmful effects. Most of the nutrients are better retained in this process compared to the other methods of cooking. On the other hand the fat soluble vitamins are lost during the process, the food gets dehydrated and increases in its caloric values due to fat uptake. Even though the total calories increase in food after frying, it does not give a feeling of satiety, leading to excessive consumption. The temperature inside the product does not usually exceed 100/1038 C at atmospheric pressure.[11]. Frying has little or no impact on the protein or mineral content of fried food, whereas the dietary fiber content of food like potatoes increase after frying due to the formation of resistant starch. Moreover, High temperatures allow rapid heat transfer and short cooking times (only a few minutes). This high temperature and short transit time of the frying process cause less loss of heat labile vitamins than other types of cooking. For example, vitamin C concentrations of French fried potatoes are as high as in raw potatoes, and thiamine is well retained in fried potato products.[12].

From Ayurveda point of view it can be said that frying as samskara (processing) makes the food guru and durjara means heavy and difficult to digest as it absorbs the fat content, retains almost all the macro and micronutrient and increases the fiber content. Since the fried foods give more calories and less satiety it may lead to eating more. It is to be noted that consumption guru ahara in large quantities is not advised as per Ayurvedic classics [13] since it leads to ama (undigested metabolites) formations, indigestion and diseases due to over nourishment (santharpana). Even though all sneha are heavy for digestion and increase kapha dosha, frying in different types of sneha (lipids) like oil and ghee gives the food items different properties. Taila (oil) which is inherently ushna, increases pitta and kapha and pacifies vata [14]; makes the food fried in it vitiate pitta and rakta and thus along with being tasty and strength giving, it also is bad for eye health. On the other hand food fried in ghee that is naturally of cold potency; pacifies pitta and vata dosha, nourishes the rasa, shukra and ojas[15]. Thus such food articles become good for eyes, increases the strength, nourishes the dhatus, and improves spermatogenesis. It is to be kept in mind that fried food articles are only good for those who have good appetite and digestive capacity and that too in smaller quantity.

CONCLUSION

Doing any samskara to food changes its properties for better or for worse. In case of frying while the food becomes tastier, relish, good in texture and retains its nutritive values as compared to other methods of cooking; it also becomes heavier, contains more calories and difficult to digest, thus can not be taken as regular food. Classical Ayurveda also considers frying in ghee is superior to frying in oil by considering their different properties. Therefore while consuming these food preparations, the appetite, digestive capacity, prakruthi(basic nature of body), season etc. should be taken into consideration.

REFERENCES

- Acharya Charaka, Vd. Yadavji Trikamji Acharya, Charak Samhita by Agnivesh with Ayurveda Dipika Commentary of Chakrapanidatta, Third Edition, Chaukhamba Surbharti Prakashan Varanasi, 2020; Pg No 236
- Das R, Pawar DP, Modi VK. Quality characteristics of battered and fried chicken: comparison of pressure frying and conventional frying. *Journal of food science and technology*. Apr 1;50(2),2013: Pg No 284-92.
- Bordin K, Tomihe Kunitake M, Kazue Aracava K, Silvia Favaro Trindade C. Changes in food caused by deep fat frying-A review. *Archivos latinoamericanos de nutricion*. Mar;63(1)2013:Pg No 5-13.
- Alizadeh L, Nayebezhadeh K, Mohammadi A. A comparative study on the in vitro antioxidant activity of tocopherol and extracts from rosemary and *Ferulago angulata* on oil oxidation during deep frying of potato slices. *Journal of food science and technology*. Jan 1;53(1)2016:Pg No 611-20.
- Mba O. Deep-fat Frying Charactersitics of Blends of Palm and Canola Oils (Doctoral dissertation), Department of Bioresource engineering, January 2017, McGill University Libraries.
- Chiou A, Kalogeropoulos N, Salta FN, Efstathiou P, Andrikopoulos NK. Pan-frying of French fries in three different edible oils enriched with olive leaf extract: oxidative stability and fate of microconstituents. *LWT-Food Science and Technology*. Jul 1;42(6) 2009:Pg No 1090-7.
- Sri Bhawamishra, Sri Brahmashankaramishra Shashtri, Bhawaprakasha, edited with Vidyotini hindi commentary, Twelfth Edition Chaukhambha Prakashana, Varanasi 2018; Pg No 878
- Sri Bhawamishra, Sri Brahmashankaramishra Shashtri, bhawaprakasha, edited with vidyotini hindi commentary, Twelfth Edition, Chaukhambha Prakashana, Varanasi 2018; Pg No 884
- Rojas-Gonzalez JA, Avallone S, Brat P, Trystram G, Bohuon P. Effect of deep-fat frying on ascorbic acid, carotenoids and potassium contents of plantain cylinders. *International journal of food sciences and nutrition*. Jan 1;57(1-2) 2006:Pg No 123-36.
- Pokorny J. Changes of nutrients at frying temperatures. Frying of food. Oxidation, nutrient and non-nutrient antioxidants, biologically active compounds and high temperatures. Jul 211999:Pg No 69-103..
- Mba O. Deep-fat Frying Charactersitics of Blends of Palm and Canola Oils (Doctoral dissertation), Department of Bioresource engineering, January 2017, McGill University Libraries.
- Fillion L, Henry CJ. Nutrient losses and gains during frying: a review. *International journal of food sciences and nutrition*. Jan 1;49(2)1998:Pg No 157-68.
- Acharya Charaka, Vd. Yadavji Trikamji Acharya, Charak Samhita by Agnivesh with Ayurveda Dipika Commentary of Chakrapanidatta, Third Edition Chaukhamba Surbharti Prakashan Varanasi, 2020; Pg No 236
- Acharya Charaka, Vd. Yadavji Trikamji Acharya, Charak Samhita by Agnivesh with Ayurveda Dipika Commentary of Chakrapanidatta, Third Edition, Chaukhamba Surbharti Prakashan Varanasi, 2020; Pg No 236
- Acharya Charaka, Vd. Yadavji Trikamji Acharya, Charak Samhita by Agnivesh with Ayurveda Dipika Commentary of Chakrapanidatta, Third Edition, Chaukhamba Surbharti Prakashan Varanasi, 2020; Pg No 236