

Ayurvedic Concept of Food and Nutrition

Karra Nishteswar*

Department of Dravyaguna, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, India

*Corresponding author: Karra Nishteswar, Ex-Professor and Head, Department of Dravyaguna, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar-361 008, Gujarat, India, Tel: 9440011471; E-mail: nishteswar@yahoo.co.in

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Abstract

The human body is the product of food (*Ahara*) and it is considered as the sustainer of life. The Ayurvedic approach to food and dietetics is very different from the conventional Western approach. One should regularly take such articles which are conducive to the maintenance of good health and are capable of preventing the attacks of diseases. Most of the incurable diseases are produced due to improper food. Intelligent and self-controlled person should consume conducive food in right quantity and at right time to prevent diseases.

Introduction

Ahara (diet) *Nidra* (sleep) and *Brahmacarya* (abstinence) are recognized as the three *Upastambhas* (sub pillars) essential for the smooth running of life [1]. Among the three *Upastambhas*, *Ahara* is considered as the best sustainer of life (*Vrittikaranam Sreshtam*) [2]. Susrutha described that body as well as food are mainly constituted by five mahabhutas. Body is the product of Food and Food is harbinger of Happiness and Suffering. All the dietary articles are composed of *Panchamahabhutas* and the *Tridoshas*/biohumors (*Vata*, *Pitta*, *Kapha*) are the biological derivatives of these five *Mahabhutas*. A balanced diet in *Ayurveda* is planned in relation to the known *Panchabhautic* composition and *Tridoshic* impacts in the living body. Food (*Ahara*) and lifestyle (*Vihara*) significantly affect one's overall health and the upsurge of metabolic and degenerative diseases are the result of adaptation of modern life style. Showing the importance of food Acharya Caraka says that food sustains the life of all living beings; and complexion, clarity, good voice, longevity, genius, happiness, satisfaction, nourishment strength and intellect are all conditioned by food [3]. Most of the incurable diseases are produced due to improper food. Intelligent and self-controlled person should consume conducive food in right quantity and at right time to prevent diseases.

The amount of food which without disturbing the equilibrium (of *dhatu*s or *dosh*as of the body) get digested as well as metabolized in proper time is to be regarded as the proper quantity. One should regularly take such articles which are conducive to the maintenance of good health and are capable of preventing the attacks of diseases. Chakrapani the commentator of Carakasamhita opines that light foods are *Vayu Agnimahabhuta* predominant while, heavy food substances are *Prithvi* and *Jala mahabhuta* predominant [4]. Diets and drinks whose color smell taste and touch are pleasing to the senses (representing visual, olfactory, gustatory and tactile sensation) and conducive to the health if taken in accordance with rules, in fact represents the very life of living beings. Every substance is possessing one or two tastes predominantly out of six rasas (tastes) Among them sour (*amla*) sweet (*madhura*) and pungent (*katu*) are mainly considered basing on the metabolism (*vipaka*) of substances which are identified as three only. Salt, bitter and astringent tastes follow the metabolic pathways mentioned for sour, sweet and pungent substances.

For proper maintenance of positive health one should first of all eat food in proper quantity. The quantity of food to be taken again depends on the pattern of digestion. The power of digestion and metabolism again varies according to the season as well as the age of the individual. The standard measurement of food for an individual is to be determined on the basis of one's own digestive capacity. *Ahara* is categorized as *Hitahara* (wholesome) and *Ahitahara* (unwholesome). In a similar context, the terms *Pathya* and *Apathya* are also used to denote the acceptability and adoptability of a particular food in a given context. Acharya Caraka gives a list of dietetics which should be and should not be taken regularly. *Shashtika*, *Sali* (rice variety which gets ripened in 60 days), *Mudga* (*Green gram*), *Amalaki* (*Indian gooseberry*), rock salt, rain water, ghee, *Jangalamamsa* (meat of animals of arid, desert-like land) and honey are wholesome and can be taken regularly [5]. *Guru* (heavy) *aharadravyas* such as *vallura* (Dried meat), *sushka saka* (Dried vegetables), lotus rhizome, lotus stalk, meat of diseased animals, *kurchika* (boiled buttermilk) *kilata*, pork, beef, meat of buffalo, fish, curd, Masa (blackgram) and yavaka (pounding barley to remove chaff and then boiling the grain in water or milk) should not be taken regularly [6]. Curd shouldn't be taken at night [7].

The Ayurvedic texts give great emphasis on the compatibility and incompatibility of certain foods. Caraka describes in detail the 18-fold denominators of *Viruddhahara*, i.e., dietary incompatibility [8]. *Aharadravyas* become incompatible due to their mutually contradictory qualities, by combinations (*samyoga*), by method of preparation (*samskara*), by virtue of place (*desa*), time (*kala*), dose (*matra*) and some others by their inherent nature (*swabhava*) [9]. Caraka mentions that the intake of incompatible diet is responsible for the causation of sterility, blindness, *visarpa* (Herpes), *udara* (Ascites), insanity, fistula in ano, coma or fainting, intoxication, abdominal distention, stiffness in neck, varieties of anaemia, indigestions, various skin diseases, diseases of intestines, swelling, gastritis, fever, rhinitis, and infertility [10].

Ayurveda emphasizes the material quality of food but places even greater emphasis on the selection of food, its processing and cooking, and rules for healthy eating. Thus the Ayurvedic approach to food and dietetics is very different from the conventional Western approach. Carakasamhita describes the eight principles of *Ahara vidhi* i.e., (1) *Prakriti* (nature of food articles), (2) *Karana* (preparation), (3)

Samyoga (combinations), (4) *Rashi* (quantity), (5) *Desha* (habitat and climate), (6) *Kala* (time factor), (7) *Upayogasamstha* (rules of use), and (8) *Upayokta* (the user) [11]. Similarly, Susruta describes 12-fold considerations (*dwadasaasaanpravicharas*) to be followed during the consumption of food [12]. While considering *Aharamatra*, Acharya Caraka says that food is to be taken depending upon the power of digestion and metabolism (Agnibala and srotobala), which varies according to season as well as the age of the individual. Quantity of the food to be taken directly depends on digestive strength of a person (*agnibala*). The stomach capacity is divided into three portions and two portions should be filled by solid and liquid food and one portion should be left for the easy gastric movements and air, to aid the digestion process [13]. During the process of eating, water taken in small quantity stimulates digestion, and when taken after meal causes *sthaulya* (obesity) [14]. Water taken in excess fetters digestion and dilutes nutrients. Therefore frequent intake of water in small quantities is recommended. The nutrients ingested from the food undergo the process of absorption, assimilation and then are finally transformed into energy and used for body development.

Processing of food results in the transformation of attributes of the dravya. Methods of preparing of different type of food items like *manda* (rice water which is the clear supernatant watery portion (without rice) in which rice is boiled) *Peya* (rice soup), *Yavaagu* (semi solid meal thicker than *Peya*), *Vilepi* (thick rice soup which thicker than *Yavaagu*) *Yusha* (Lentil soup), are mentioned in the *samhitas*. The different *aharakalpanas* of the same *dravya* differ in their properties and digestibility. The body is the result of consumables taken in four forms i.e., *Ashita* (eatables), *Peeta* (liquid food), *Khadita* (linctus) and *Leedha* (masticable foods) [15].

While describing the general principles of taking *Ahara*, Acharya Caraka emphasizes on taking food which is hot and unctous; because it taste well, stimulates digestive fire, carminates flatus, digests quickly, develops body, provides firmness to sense organs, increases strength, produces clarity or complexion. Caraka mentions that food taken in proper quantity promotes life span without disturbing the equilibrium of *tridoshas* (*vata*, *pitta*, *kapha*) also it passes down easily to anus, doesn't disturb the digestive fire and gets digested with comfort. One should eat only when the previous meal is digested, otherwise the indigested food vitiates all the *doshas* quickly. One should eat food consisting of the items which are non-antagonistic in potency in favourable place and with favourable accessories. One should not consume too fast and too slow. One should take food without talking and laughing and with full concentration [16].

The drink which is taken after the intake of food or medicine is called *Anupana* (post-prandial drinks). These increase the effects of food and drugs and their palatability. Generally taking water before meals reduces adiposity, after meals increases adiposity and during meals promotes digestion. In the cases of indigestion, toxicity and diarrhoea, water also works as a therapeutic agent.

Classification of Ingredients of Food and Drinks

In modern science food articles are primarily classified depending upon their chemical composition namely carbohydrate, protein, fat, vitamins, mineral etc. In Ayurveda, such classification is based on the biological action of food articles and their taste (*rasa*). The term food includes all edible substances and based on the sources of food articles, can be divided into vegetable products and animal products. Due to its *Prabhava* (specific action) they can be of two types *hita* (wholesome)

and *ahita* (unwholesome). With respect to the mode of use it can be in four ways i.e., eatables, drinks, chewables and lickables. Since taste (*Rasa*) plays a major role in proper digestion, classification of food and food group are developed according to taste. In view of quality they can be twenty i.e., *guru-laghu*, *snigdha-ruksha* etc. Ultimately depending upon the combinations and preparations food they become innumerable [17].

Acharya Susruta gives a greater elaboration regarding the classification of food articles. Caraka classified dietetic articles and drinks in twelve groups where as Susruta included twenty one groups. The 12 groups mentioned by Charaka are, *Sukadhanya* (Corns with bristles) *Samidhanya* (pulses), *Mamsa* (meat), *Saka* (vegetables), *phala* (fruits), *Harita* (salads/vegetables to be used uncooked), *Madya* (wines), *Ambu* (water), *gorasa* (milk and milk products) *ikshuvikara* (products of sugarcane), *kritanna* (food preparations), *aharayogi* (accessory food articles) [18].

Sukadhanya and samidhanya/simbidhanya

In Charakasamhita the innumerable varieties of cereals like rice, wheat, barley are described in *sukadhanya* varga and pulses like green gram and black gram are described under *Samidhanyavarga*. Susruta classified the Cereals and Pulses under *Sali*, *kudhanya* and *Mudgavargas* [19]. Three types of rice namely, *Sali*, *Sashtika* and *Vrihi* are mentioned. Botanically all of them belong to the same family and species. But according to ayurveda there is a great difference in their nutritive value. Whereas *Sali* and *Shashtika* alleviate *doshas* and maintain their equilibrium the third type of rice aggravates them. Among all the varieties of rices *Lohitasali* is considered to be the best one as it alleviates all the three *doshas* [20]. Describing the qualities of wheat and barley (*Godhuma* and *Yava*) Caraka says that wheat is unctuous stabilizing and heavy [21]. Rice contains carbohydrate and starch in plenty and vitamins, minerals and protein in small quantity. The protein present in the outermost layer of the rice is very useful and easily assimilated. Among all the cereals *Yava*/barley has been detected as unwholesome by Charaka. Because of its light and astringent qualities it is not recommended for prolonged use. But it is indicated in *Prameha* (diabetes), *Sthoulya* (obesity) and *Vrana* (injuries) [22]. The fiber in barley might lower cholesterol and blood pressure in people with high cholesterol. Barley may also reduce blood sugar and insulin levels. Barley seems to slow stomach emptying. This could help keep blood sugar stable and create a sensation of being full, which might help to control appetite.

Shimbi dhanya or *Shami dhanya* (Pulses) form an important group which supply the required proteins. In general they are *Kashaya* (Astringent), *Madhura* (sweet) in taste, cold in *Virya* (potency) and *Katu* (pungent) in *Vipaka*. They generate *vayu*, arrest the flow of urine and evacuation of stool and alleviate *Pitta* and *Kapha*.

Mudga (green gram) is the best among *Shimbi Dhanya* [23]. Greengram is rich in iron (3.9 mg/100 gm) and potassium (1150 mg/100 gm). *Mudga* is best among pulses utilized in the form of soup [23]. Many pulses have *Kaphamedohara* Property and are *Pathya* in cardiovascular disease and obesity which are proven through modern researches. Consumption of legumes has been associated with reduced risk of coronary heart disease and cardiovascular disease.

Kulatha/Horsegram (*Dolichos biflorus*) has an astringent taste and is pungent on digestion [24]. It proves curative in cases of urinary calculi arising from seminal derangement (*Shukrashmari*), abdominal glands, catarrh, and cough. Due to its anthelmintic properties, it is

useful in treating amoebic diarrhoea, bowel haemorrhage and colic pains.

Tila (Sesame seeds) is sweet, bitter, astringent, hot in potency and produces Pitta [25]. It is beneficial to the skin and teeth, improves the intellect and digestion, is anuretic and heavy, helps the growth of hair, and subdues the deranged *Vata*. The lignans sesamin and sesamol present in sesame seeds have been shown to have a cholesterol-lowering effect in humans, and to prevent high blood pressure and increase vitamin E supplies in animals. Sesamin has also been found to protect the liver from oxidative damage. Sesame seeds are an excellent source of copper, known for its use in reducing some of the pain and swelling of rheumatoid arthritis [26]. *Adhaki* (Toor dal) alleviates the vitiated *kapha* and *pitta* but aggravates *vata* [27]. Toor dal contains folic acid, an important vitamin for all women especially pregnant women.

Black gram (*Masha*) is *Snigdha* (unctuous), *Balya* (increases strength), increases *Kapha* and *Pitta*, *Malakara* (increases bulk of faeces), *Sara* (laxative), *Guru* (not easily digestible), *Ushna* (hot in potency), *Vatahara* (mitigate *Vata*), *Madhura* (sweet in taste), and *Shukra Vriddhikara* (aphrodisiac properties) [28]. Black gram is rich in vitamins, minerals and devoid of cholesterol. Black gram contains plenty of potassium. This helps to balance sodium potassium level and reduce hypertension or high blood pressure. In spite of its aphrodisiac and *vatahara* properties, *Masha* is said to be the most unwholesome among samidhanayas [29].

Mamsavarga

Considering the therapeutic value of meats, Ayurveda has given a thoughtful consideration to categorize them. Emphasizing upon it Caraka says, no other food excels meet in producing nourishing effect in the body (*mamsam brimhananam*) [2]. Animals whose meat is used as food are classified into the following eight groups: *Prasaha* (animals and birds who eat by snatching), *Bhumisaya* (animals who live in burrows in earth), *Anupa* (animals inhabiting marshy land), *Varisaya* (aquatic animals), *Varicara* (birds moving in water), *Jangala* (animals dwelling in dry land forests), *Viskira* (gallinaceous birds), *Pratuda* (pecker birds) [30]. The meat of Goat is neither too cold in potency nor too heavy and unctuous. It does not vitiate *doshas* and is homologous with the dhatus (body tissues), *Anabhishtyandi* (does not obstruct the channels and *Brimhana* (nourishing) [31]. Meat of cock is unctuous, hot in potency, aphrodisiac and nourishing. It clarifies the voice, promotes strength produces sweating and alleviates *vata* [32]. Beef is useful in exclusive vitiation of *Vata*, rhinitis, irregular fever, dry cough, fatigue, *Atyagni* (increased appetite) and wasting of muscles [33].

Dealing with fishes, Caraka says that fish is in general heavy, hot in potency, sweet, strength promoting, nourishing, unctuous and aphrodisiac [34]. According to Susruta meat of fish obstructs the channels, vitiates all the *doshas* and cause skin diseases. While considering the usefulness of non vegetarian diet, certain types of meat are contraindicated for the sake of health. Dried or putrified flesh, flesh of old diseased, old, emaciated, poisoned, and flesh of snake bitten animals should be avoided.

Sakavarga and haritavarga

Ayurveda recognizes all the green vegetables including root and tubers under the heading of Sakavarga and more than 300 vegetable drugs are described in various texts of ayurveda. Green vegetables are rich in cellulose, protein, salts, vitamins and plenty of water content.

Dried vegetables are usually useless as they are mainly devoid of these nutrients. Roots and tubers are store house of starch and minerals mainly potassium salts. According to Susruta, *Vastuka* (*Chenopodium album*) is pungent, vermifuge and tonic [35]. It improves the intellect and digestion laxative and relishing tends to subdue all kind of deranged humors of the body. *Trapusha* (*Cucumis sativus*) and *Ervaruka* (*Cucumis melo*) are heavy and cold in potency [36]. *Trapusha* is palatable and exceedingly diuretic. *Alabu*/Bottle gourd (*Lagenaria sciceraria*) is purgative, cold in potency and heavy [37]. Bottle gourd is one of the least calorie vegetable, providing just 14 calories per 100 g. It is one of the vegetables recommended by the dieticians in weight-control programs. Fresh gourds contain small quantities of Foliates. Foliates help reduce the incidence of neural tube defects in the newborns when taken by anticipant mothers during their early months of pregnancy. It acts as an excellent blood thinner. *Kushmanda* (Benincasa hispida) alleviates all the three vitiated *doshas* and helps in the elimination of urine and faeces [38]. It is *medhya* (improves intelligence) and useful in various mental disorders. Modern research has verified its usefulness within the management of Benign Prostatic Hyperplasia (BPH) or even prostate enlargement. Its higher potassium content can make this an excellent vegetable for maintaining a healthy blood pressure level [39]. Patola has bitter taste, beneficial to ulcers, spermatopoetic and appetizing [40]. *Vartaka* (Brinjal) and *Karavellaka* (Bittergourd) are light relishing and appetizing [41]. Caraka and Susruta, both have indicated the wholesomeness of young radish (*balamulaka*) and *Sushkamulaka* (dried radish) but they take the mature one as unwholesome [42]. Radishes are a very good source of vitamin C. Folate, fiber, riboflavin, and potassium, as well as good amounts of copper, vitamin B6, magnesium, manganese, and calcium are less prominent nutrients that support the healthy properties of radishes. Their fiber content makes radishes particularly effective at preventing and fighting colorectal cancer. Radishes can act as a natural decongestant. They have been shown to lower cholesterol, manage diabetes and regulate blood pressure and blood sugar levels [43]. The flower of *Agastya* (*Sesbania grandiflora*) is especially beneficial in night blindness [44]. *Agastya* leaves are an excellent source of calcium and iron. The abundance of these nutrients is one reason for its reputation as a bone strengthener. Flowers of *Sana* and *salmali* are bowelbinding and used for raktapitta [45].

Phalavarga

Fruits are a must to meet the required amount of vitamins and minerals in the body. Susruta described *Dadima* (Pomegranates) as two types viz. sweet and sour. *Dadima* alleviates all the three *doshas* (deranged biohumors) [46]. It relieves excessive thirst and burning sensation (*trit dahahara*). It is a good natural aphrodisiac and improves sperm count and semen quality. It is good for heart (*hridya*) improves intelligence (*medhya*) immunity and body strength. Clinical research shows that pomegranates, when part of a healthy diet, might help prevent heart disease, heart attacks and strokes. This is because pomegranates have the potential to thin the blood, increase blood flow to the heart, reduce blood pressure, reduce plaque in the arteries, and reduce bad cholesterol while increasing good cholesterol. Juice used to treat jaundice and diarrhoea. The fruit pulp and the seed are stomachic [47].

Amalaki/Indian gooseberry is the best known fruit possessing high therapeutic properties. Amalaki alleviates tridoshas and specially normalizes pitta. It is laxative, spermatopoetic and beneficial to the eye sight [48]. Vaghbata describes Amalaki as the best drug for prameha (diabetes) along with turmeric (nisha) [49]. Indian Gooseberry

contains chromium, which has a therapeutic value for diabetic patients. Indian Gooseberry stimulates the isolated group of cells that secrete the hormone insulin, thereby reducing blood sugar in diabetic patients and keeping their body balanced and healthy. It is very rich in Vitamin C, and contains many minerals and vitamins like Calcium, Phosphorus, Iron, Carotene and Vitamin B Complex. Amalaki is also a powerful antioxidant and acts as an antiageing agent. Experiments done with Amalaki Rasayana on *Drosophila melanogaster* flies increased their longevity and stress tolerance, which seem to generally agree with their recommended human usages in Ayurvedic practices [50].

Mrdvika (*Vitis vinifera* Linn) provides immediate cure for thirst, burning sensation, nourishing aphrodisiac and cold in potency [51]. Grape fruits are an excellent source of vitamin C, a vitamin that helps to support the immune system. Grapes are rich in polyphenolic phytochemical compound resveratrol. Resveratrol is one of the powerful anti-oxidant which has been found to play a protective role against cancers of colon and prostate, coronary heart disease (CHD), degenerative nerve disease, Alzheimer's disease and viral/ fungal infections. Anthocyanin compounds found in grapes are also strong antioxidants. Grapes are rich source of micronutrient minerals like copper, iron and manganese [52].

Mangoes are the most widely consumed fruit in the world. Considering Mango Caraka mentions that young fruits cause raktapitta, matured but unripe fruits aggravate pitta and the ripe fruits alleviate vata [53]. The antioxidant zeaxanthin, found in mangoes, is thought to play a protective role in eye health and possibly ward off damage from macular degeneration. The beta carotene content in mangoes play a protective role against asthma and prostate cancer [54].

Almonds (*Vatama*) is heavy hot in potency, unctuous, strength promoting, nourishing and aphrodisiac [55]. Almonds are a very good source of vitamin E, manganese, magnesium, potassium, biotin, and copper. It is a good antioxidant and helps to lower the cholesterol levels. Almonds provides Magnesium which acts as a natural calcium channel blocker [56].

Kharjura (dates) are refreshing, sweet in taste and proves curative in cases of haemoptysis [57]. Dates are rich source of fibre, copper and potassium. The dietary fibres prevents LDL absorption in the gut and also works as a bulk laxative [58].

Madyavarga

Caraka deals with 84 types of alcoholic products and mentioned their uses [59]. While describing the general qualities of madya he mentions that wine in general is exhilarating and nourishing. It promotes confidence, energy, intelligence, contentment, nourishment and strength. If madya is taken in a proper way it works as elixir. Untoward effect of beverages depend directly on their alcoholic content and the preparations described in ayurveda under the heading of madya do not appear to have higher alcoholic concentration and hence stand on safer side and can be used for their beneficial effects. The wine known as Mardvikam prepared from the juice of fruits such as grapes and raisins is light and easy to digest, and prove curative in chronic fevers, phthisis and other wasting diseases [60]. Antioxidants in red wine called polyphenols may help protect the lining of blood vessels in the heart. Resveratrol might be a key ingredient in red wine that helps prevent damage to blood vessels, reduces low-density lipoprotein (LDL) cholesterol and prevents blood clots [26]. According to Caraka the fresh wine is heavy and it aggravates all the doshas. Old

wine clarifies the channels of circulation, digestive, light and palatable. A variety of wine called arista is highly efficacious owing to the concentrated action of a variety of drugs entering into its composition. It proves curative in large number of diseases tends to subdue the deranged biohumors of the body and is a good appetizer.

Jalavarga

Caraka, Susruta and Vaghbata have appraised the necessity of water among all dietetic articles. Cold water is beneficial in hot seasons and in burning sensation of the body. The use of cold water should be avoided in catarrh, rheumatism, indigestion, acute stages of fever etc. Warm water is appetizing, diuretic and febrifuge [60]. The use of water boiled and subsequently cooled down is recommended in dysentery, burning of the skin, haemoptysis etc. [61].

Gorasavarga

Milk is a natural elixir. Commonly milk contains proteins (caseinogens, lactalbumin and lactoglobulin), carbohydrates, fats, vitamins, mineral salts and enzymes (mainly amyolytic, proteolytic and lypolytic). Ayurveda deals with milk of cow, goat, buffalo, camel, mare, ass, elephant, sheep and human types which are commonly being used in the community [62]. According to Susruta the milk of cow is regarded as the most wholesome among all milks [63]. The milk of buffalo has been regarded as Mahabhishyandi and it vitiates the channels of circulation. It is useful in persons suffering from insomnia [63]. Goats milk resemble human milk but fail as a substitute. It is especially useful in persons suffering from phthisis [63]. The milk of sheep is regarded as the most unwholesome among all milks [29]. Breast milk is a unique nutritional source that cannot adequately be replaced by any other food. Human milk is nourishing and wholesome. It is useful in eye diseases and raktapitta [64]. Curd, buttermilk and ghee prepared from milk also differs in their properties. Curd (Dadhi) is appetizer, stimulant, aphrodisiac and is useful in nasal catarrh, diarrhoea, dysuria and emaciation [65]. Takra (butter milk) is useful in oedema, piles and obstinate abdominal diseases including ascites [66]. The use of buttermilk is prohibited in hot season. Buttermilk prepared in the traditional way is considered beneficial to health as it contains probiotic microbes and is sometimes referred to as "Grandma's probiotic". Navanitam (fresh butter) is digestive, stimulant and cardiogenic [67]. Ghritam (clarified butter) promotes memory, intellect, power of digestion, semen and useful in insanity, intoxication and epilepsy [68]. Clarified matured ghrita from 11-100 years is called kumbhasarpi, while that which is older than this is called Mahaghritam. Mahaghritam is highly efficacious and specially curative in eye diseases like cataract [60].

Ikshuvarga

Twelve types of sugarcane are mentioned by Susruta. Sugarcane is sweet in taste and digestion, heavy, cool, strength giving, spermatopoetic and diuretic [70]. Sugarcane should be chewed to benefit these properties. Machine expressed juice causes burning sensation and indigestion. Caraka and Susruta dealt with five types of sugarcane products as phanita, guda, matsyandika, khanda and sarkara. Phanita is the most liquid and brings about a simultaneous derangement of all the three bodily humors. Guda acts as demulcent and purifier of blood and urine [71]. Sugar prepared from sugarcane is aphrodisiac useful in consumption and unctuous. Sugar in general is useful in thirst and burning sensation [72].

Honey is described as the best yogavahi substance i.e., it carries the properties of the drugs added to it [73]. Honey acts as a purifying and healing agent in respect of ulcers and eyes is aphrodisiac, astringent and can penetrate all the minutest channels of the human body [74]. Old honey is astringent, lekhana (scrapes the excessive fat) and reduces obesity [75]. Warm honey is considered poisonous for the reason of being collected from the sap of variety of flowers and plants. Caraka mentions that honey should be taken in small quantity and mentions that nothing is so troublesome as the indigestion (Ama) caused by the improper intake of honey [76]. Honey is loaded with natural sugar, mostly fructose and glucose, which means it is high in carbohydrates. The most common nutrients found in honey are Vitamin B6, niacin, thiamine, pantothenic acid, and riboflavin [77].

Kritanna varga

Various types of prepared food have been mentioned in Ayurveda. Different preparations like Manda (gruel water), Peya (thin gruel), Vilepi, Yavagu (thick gruel) and Odana (boiled rice) are mentioned. Manda stimulates the power of digestion and facilitates the downward movement of flatus. Peya alleviates hunger, thirst, depression, weakness, abdominal diseases and fever. Vilepi is refreshing, bowel binding, light and cardiotoxic [78]. Rice prepared of the boiled dehusked paddy is light, but becomes heavy when taken cold. According to Susruta the rice boiled and cooked with clarified butter or any other fatty substances as well as with meat, citrus fruits or any kind of pulses forms a rich heavy food which imparts strength to the body [79]. The soup prepared from green gram is most wholesome. The soup (Yusa) of Masura or Mudga or Kulatha is specially recommended in vatavyadhi (nervous diseases). The soup of Kulatha cures diseases like asthma, cough, piles etc. [80]. The soup prepared and seasoned with salt, spices and oil is called krita yusa (Seasoned soup) and the one without admixture of spices, salt or oil is called akrita yusa. Acharya Susruta describes a variety of sweet and confectionary preparations. Of these one variety known as Ghritapura (food prepared by putting clarified butter in doughs of corn flour) is strength giving, spermatopoietic and subdues the deranged vata and pitta [81].

Meat is naturally spermatopoietic and imparts gloss and strength to the system. Moreover, that which has been cooked and prepared with clarified butter, curd, sour gruel (*Kanjika*), acid fruits (as the pomegranate etc.) pungent and some aromatic condiment, (as black pepper, etc.) should be considered as very wholesome diet, though heavy to digest. It is possessed of relishing, strength-giving and tissue building properties. The varieties of cooked meat such as, the *Ullupta* (minced meat), the *Bharjita* (fried), the *Pishta* (made into balls or cakes), the *Pratapta* (roasted with clarified butter over a charcoal fire), the *Kandupachita* (dipped in mustard oil and powdered aromatic condiments and roasted and done to a honey colour over a charcoal fire), the *Parishuska* and the *Pradigdha* go by the general name of *Shulyam* (Kabob). Of the varieties of *Shulyam*, those which are boiled with oil should be considered hot in their potency, heavy to digest and increases the *Pitta*, while those, which have been fried with clarified butter, should be regarded as light, appetizing, agreeable, relishing, beneficial to the eyes, and cooling in their potency. They also subdue the *Pitta* and are pleasant to the taste. A thin meat soup is a pleasant tonic, and proves beneficial in cases of dyspnea, cough, and consumption. It subdues the *Pitta* and *Kapha*, destroys the *Vayu*, and

has an agreeable taste. It is wholesome to persons of weak memory and reduced semen. Meat-soup, prepared with the juice of the *Dadima*, etc., and seasoned with pungent condiments, increases the quantity of semen and tends to subdue the action of all the three deranged humours of the body [82].

Aharaupayogivarga

Adjuvants of food include oils, condiments, spices and salts. Sesame oil is subtle, hot in potency and *vyavayi* (one which spreads all over the body before undergoing digestion). It promotes strength, skin health, intelligence and power of digestion [83]. Mustard oil is pungent in taste and hot in potency. It cures itching and urticarial [84]. Cumin, turmeric, black pepper, coriander, asafoetida and ginger are the commonly used spices. Ginger is used for treating indigestion, flatulence, colic, vomit, stomach spasm, cold, cough and asthma [85]. In addition to their medicinal qualities herbs and spices enhance the taste and flavor of the food and aids digestive secretions. *Hingu* (Asafoetida) subdues *Vata* and *Kapha*, has a pungent taste, is demulcent, laxative and sharp, and relieves colic pain, indigestion and suppression of stool [86]. Cumin promotes digestion and relieves diarrhoea. Black pepper is a stimulant, decongestant, expectorant and digests fat. *Lashuna*/ Garlic cures infections, useful in skin diseases, aphrodisiac and heavy [87]. Garlic is found to be an excellent food useful in the management and prevention of cardiovascular diseases. *Jambira* (Lemon) is appetizer, digestive stimulant and anti-infective [87]. Turmeric is a powerful anti-inflammatory and antiseptic, useful for bronchial asthma, chronic cough. Turmeric has an anti-coagulant action, keeping the blood thin. Curcumin one of the chemical constituent of turmeric possess anticancer properties. Rock salt (*saindhava*) is the best among salts. It is palatable, promoter of digestion, aphrodisiac, conducive for eyesight and alleviates the three *doshas* [88].

Seasonal Consideration of Food

During winter season (*Hemanta* and *Sisira*) (December, January and February) due to the contact with cold wind, the digestive power of healthy people get increased and capable of digesting any heavy food. During spring (*Vasanta*) (march and april) out of the three biohumors, *kapha* gets aggravated. Light and easily digestible food should be taken and heavy unctuous, sweet diets and day sleep should be avoided. During *Grishma* (June-July) due to the extremely hot weather intake of sweet, cold, liquid and unctuous diet and drinks are prescribed. Salty, sour, pungent and hot foods should be avoided during summer. During *Varsha Ritu* (august-september) the digestive power weakens and in order to maintain the normal power of digestion one should take old barley, wheat, *sali* rice along with meat of arid animals and vegetable soup. The *sarat ritu* starts during October-November. In this season sweet, light, bitter and cold food and drink which have potential to alleviate the vitiated *pitta* are advised [89].

Influence of Mana (Mental Factors) on Digestion

Acharya Charaka mentioned the influence of negative emotions on the digestion of food [90]. Healthy and wholesome food if taken even in proper quantity do not get properly digested when the individual is afflicted with grief, fear, anger, sorrow, excessive sleep and excessive vigil (Table 1).

No	Food Items- Sanskrit Name	Common Name	Nutritional and Medicinal Benefits Mentioned In Ayurveda
1	<i>Sali, Shashtika</i>	Varieties of Rices	Alleviates the vitiated biohumors, maintains the body
2	<i>Godhuma</i>	Wheat	Restorative, invigorating, nourishing aphrodisiac
3	<i>Yava</i>	Barley	Not recommended for daily use. Useful in diabetes and obesity
4	<i>Mudga</i>	Green Gram	Alleviates vitiated kapha, pitta (bio humors). easy to digest, good for eyes (drishtiprasadana). Recommended most wholesome among pulses
5	<i>Kulatha</i>	Horsegram	Anthelmintic, useful in urinary calculi
6	<i>Tila</i>	Sesame Seeds	Beneficial to the skin, hair and teeth, improves the intellect and digestion
7	<i>Adhaki</i>		Alleviates vitiated kapha, pitta
8	<i>Masha</i>	Black Gram	Increases bulk of faeces, laxative, aphrodisiac, unwholesome among pulses
9	<i>Mamsa</i>	Meat	Best in nourishing body
10	<i>Ajamamsa</i>	Mutton	Homologous with the dhatus (body tissues), <i>anabhishtyandi</i> (does not obstruct the bodily channels)and is nourishing
11	<i>Kukkutamamsa</i>	Chicken	Aphrodisiac and nourishing. It clarifies the voice, promotes strength, produces sweating
12	<i>Gomamsa</i>	Beef	Exclusive vitiation of vata, rhinitis, irregular fever, dry cough, fatigue, atyagni (increased appetite) and wasting of muscles
13	<i>Matsya</i>	Fish	Strength promoting, nourishing, unctuous and aphrodisiac, causes skin diseases, not recommended for daily use
14	<i>Vastuka</i>	Lamb's quarters	Vermifuge and tonic, improves intellect and digestion, laxative
15	<i>Trapusha</i>	Cucumber	Heavy and cold in potency. Exceedingly diuretic
16	<i>Ervaruka</i>	Musk melon	Heavy and cold in potency
17	<i>Alabu</i>	Bottle Gourd	purgative, cold in potency and heavy
18	<i>Kushmanda</i>	Ash gourd	Alleviates all the three vitiated doshas and helps in the elimination of urine and faeces, improves intelligence and useful in various mental disorders
19	<i>Patola</i>	Snake gourd	Beneficial to ulcers, spermatopoetic and appetizing
20	<i>Vartaka</i>	Brinjal	Relishing and appetizing
21	<i>Karavellaka</i>	Bittergourd	Relishing and appetizing
22	<i>Mulaka</i>	Radish	Mature radish is considered unwholesome
23	<i>Agasthya</i>	Vegetable hummingbird	Flowers are beneficial in nightblindness
24	<i>Dadima</i>	Pomegranate	Alleviates all the three doshas (deranged biohumors), relieves excessive thirst, aphrodisiac, good for heart (<i>hridya</i>) improves intelligence (<i>medhya</i>)
25	<i>Amalaki</i>	Indian Gooseberry	Laxative, spermatopoetic and beneficial to the eye sight, useful in urinary disorders including diabetes mellitus
26	<i>Mrdvika</i>	Grapes	Immediate cure for thirst, burning sensation, nourishing aphrodisiac
27	<i>Amra</i>	Mango	Nourishing and strength promoting. Ripe fruit alleviates vitiated vata
28	<i>Vatada</i>	Almond	Strength promoting, nourishing and aphrodisiac, use of almonds contraindicated in raktapitta
29	<i>Kharjura</i>	Dates	Sweet in taste and proves curative in cases of haemoptysis
30	<i>Ardraka</i>	Ginger	Useful in indigestion, flatulence, colic, vomit, stomach spasm, cold, cough and asthma

31	<i>Hingu</i>	Asafoetida	Demulcent, laxative and sharp, and relieves colic pain, indigestion and suppression of stool
32	<i>Jiraka</i>	Cumin	Promotes digestion and relieves diarrhea
33	<i>Maricha</i>	Black Pepper	Stimulant, decongestant, expectorant and digests fat
34	<i>Lashuna</i>	Garlic	Cures infections, useful in skin diseases, aphrodisiac, management and prevention of cardiovascular diseases
35	<i>Haridra</i>	Turmeric	Anti-inflammatory and antiseptic, useful for bronchial asthma, chronic cough
36	<i>Kshira</i>	Milk	Sweet, lactogenic, nourishing, libidinal stimulant, invigorating, relieves dyspnoea and bronchitis
37	<i>Dadhi</i>	Curd	Appetizer, digestive, stimulant, aphrodisiac, unctuous, strength promoting, useful in nasal catarrh, irregular fever, anorexia, dysuria and emaciation
38	<i>Ghritha</i>	Ghee	Appetizing, improves intelligence, memory and eye sight
39	<i>Takram</i>	Buttermilk	Useful in oedema, piles, sprue, anurea and abdominal diseases
40	<i>Ikshu</i>	Sugarcane	Sweet, cool, spermatopoetic and diuretic

Table 1: Nutritional and medicinal benefits of various food items mentioned in Ayurveda.

Conclusion

Ayurveda lays great deal of emphasis upon proper diet for the preservation and promotion of positive health, and prevention and cure of diseases. For each and every disease wholesome and unwholesome (*pathya* and *apathya*) food ingredients have been specified. If a person suffering from any disease follows strictly the regulations of diet; he may not require medicine, but if he does not follow the regulations of diet, medicine may be fruitless. Food taken in proper quantity provides strength, vigor, good complexion and nurtures the health of the tissues. In order to live healthy, one must live in harmony with his surroundings and follow a diet suitable to one's own bodily constitution.

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