



## Concept Of Nutritional Diet In Ayurveda

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### Abstract

*"The doctor of the future will no longer treat the human frame with drugs but rather will cure and prevent disease with nutrition".*

*The treatment principle in Ayurveda is mainly based on preventive aspect first rather than curative. Aahara (Food) is considered as the first pillar among three (Nidra and Abrahmacharya being other two). Many common health problems can be prevented through a nutritious diet.*

*Food is important as a nutritional source, also with therapeutic value and most importantly it plays an important role during the post treatment period to re-gain the diminished strength due to the harmful effect of the disease.*

*Healthy and nutritional diet is always advisable in order to prevent the affliction of diseases as it is well known that "prevention is better than cure".*

**Key words:** Ayurveda, Aahara, Nutrition, Therapeutic value, Re-gain

### INTRODUCTION

Food (Aahara) is one of the tripods of life as per Ayurvedic classics. Indian traditional medicine has incorporated various explanations regarding this vital pillar of life. This includes the classification of foods according to the geographical area and also with respect to the bodily Tri-Doshas and mental qualities, different processing methods of food, importance and role of food on the body and mind, wholesome and unwholesome diets and the pattern of metabolism.

The transforming unit from 'food' into nutrition is termed as 'Agni' or digestive fire, which forms the edifice upon which the Ayurvedic system is built.<sup>1</sup>

*Agni* transforms food so that nutrients can be optimally utilized. When *Agni* is strong, our body fully assimilates nutrients and eliminates what it doesn't need.<sup>9</sup> If the digestive fire is weak, the incompletely digested portion of the meal forms a sticky, toxic substance called *Ama*. *Ama* blocks the micro channels of the body and settles in areas of the body that are out of balance, taking on many forms, such as calcium

deposits in the joints, plaque in the arteries, and cysts and tumours. A coated tongue, bad breath, dullness of the senses, depression, and unclear thinking can indicate the presence of *Ama*.<sup>2</sup>

To prevent *Ama* from forming, drink plenty of warm or room temperature water. Do not eat late at night. Eat freshly prepared meals, and cook with seasonal, organic fruits and vegetables (avoid genetically modified foods). Strengthen agni by "kindling" it with heating foods and spices, such as Ardraka (*Gingiber officinalis* Rosc.) and Maricha (*Piper nigrum* Linn.) *Pippali*(*Piper longum* Linn)etc. Eat a thin slice of fresh ginger sprinkled lightly with salt a half hour before taking a full meal.<sup>3</sup>

One should not consume food either with lustfulness or ignorance one should scrutinise it well and then eat what is wholesome for body, body is born of food.<sup>4</sup> Ayurveda explains that everything absorbed by five senses like Mouth (food, water), Nose (Breath), Ear (Chanting, sweet music), Skin (Sunlight), Eyes (Nature) is Food. When we consume food in adequate amount, it gives us long life and youthfulness.<sup>5</sup> When consumed in inadequate amounts, it increases production of toxins which is harmful for life. Having right food is the initial step towards achieving healthy life. But just having right food is not enough. Right combination and proportion of food is also important for an individual.<sup>6</sup>

Ayurveda categorizes food in to three categories: Satvic, Rajasic and Tamasic. These types of foods have different effects on the body and the mind.<sup>7,8</sup>

### **Sattavic Food**

Satvic food is one that can be digested easily and brings balance to one's mind. It helps in building immunity and improving the healing response in those who are unwell. such as- Fresh fruits and vegetables, salads, fresh fruit juices, cereals(red rice), Herbal tea, fresh Cow's milk, Dry fruits, Nuts, Honey, Jaggery and freshly cooked Food promote Sattva (a quality of mind which induces clarity, harmony and balance).

### **Rajasic Food**

Rajasic food is one that is oily, aromatic, spicy and attractive to taste . This includes non-vegetarian food like meat, fish eggs, chicken, all whole pulses and dals, which are not sprouted, Canned food, Basmati rice, Sour cream, Paneer, ice-cream, Yeast, Sugar, Pickle, Vinegar, Garlic, Onion and salted foods promote Rajas (a quality of mind which induces energy, aggression and action).

### **Tamasic Food**

Tamasic food includes all kinds that are not fresh and are unnatural, overcooked, stale and processed. Such as-Alcohol, Beef, Chicken, Fish, Pork, Eggs, Frozen food, Micro-waved food, Mushroom, Drugs, Tea, Coffee, Fried food, Fried nuts, etc. promote Tamas (quality of mind which evokes darkness, inertia, resistance and grounding).

Ayurveda identifies six major tastes we need in our diet every day—sweet, sour, salty, pungent, bitter, and astringent. Each of these tastes has specific health-giving effects. When we consistently eat only a few of the tastes, it not only causes health problems but also triggers cravings for unhealthy foods. For instance, fast food contains mostly sweet, sour, and salty tastes. If we eat a steady diet of fast food, we can develop a craving for sweets. The six tastes also affect the Doshas. Different foods cause specific doshas either to increase or decrease. The Doshas increase and decrease on the principle of "like attracts like" (Samanya-Vishesha Siddhanta).<sup>9</sup>

*Sushruta Samhita* states that an individual, whose Doshas are in balance, appetite is normal, body, mind, and senses remain full of bliss, is called a healthy person." By following these simple, time-tested Ayurvedic dietary principles in our daily life, one can enhance his/her health, increase happiness, and uplift the spirit.<sup>10</sup>

Ayurveda has considered about the diet in detail. The Ayurvedic diet is one that not only nourishes the body, but also restores balance of 'Tridoshas' which is very much essential for maintaining Health. Depending on our dosha, or constitutional type, some foods can be beneficial, and others should be avoided. These same foods may have the opposite effect on another dosha. The science of Ayurveda teaches that right diet which balances the Doshas is the foundation of healing. The effect of food on the Doshas is given in Table No.1.<sup>11,12</sup>

Table No.1: The effect of food on the Doshas

Effect on Doshas	General considerations	Example
<b>Vaata Aggravating foods</b>	Foods with the Vaata qualities, such as dry qualities. Pungent, bitter, astringent; light, dry, cold foods, stimulants like smoking, alcohol, junk food, long leaf teas and green tea, brown rice. Avoid excessively hot, dry spices that causes dryness.	<b>Vegetables:</b> Cabbage, , Brinjal, Cauliflower, green leafy, peas, vegetables, Mushrooms, pepper, potatoes, sprouts, tomatoes, zucchini (tori). If these vegetables have to be cooked then it should be in pure ghee or unrefined Sesumum oil. <b>Fruits:</b> Apples, pears, pomegranates <b>Spices:</b> almost all spices
<b>Vaata Pacifying foods</b>	Excess Vaata can be counter -balanced with nutritive and tissue-building foods that are warm, moist, heavy, soft and oily, as well as foods with a sweet, sour and salty taste.	<b>Vegetables:</b> Asparagus, beets, carrots, cucumber, green beans, okra (bhindi), onions and Garlic, Radishes, sweet potatoes. <b>Fruits:</b> Bananas, coconuts, dates, mangoes, melons, peaches, all sweet fruits in general. <b>Grains :</b> Oats, rice and wheat
<b>Pitta Aggravating foods</b>	Pungent and oily foods such as curry, fried foods and spicy condiments, as well as spices such as cayenne, garlic and dry ginger, Pungent, sour, salty, hot, light, oily. Stimulants like smoking, alcohol, coffee, pickles, vinegar, fried foods, spicy foods, fermented foods, curds, almond, corn, sesamum, mustard oil should be avoided.	<b>Vegetables:</b> Beets, Carrots, Brinjal, Garlic, Hot peppers, Onions, Spinach, Tomatoes. <b>Fruit:</b> Sour and unripe fruits. Grapefruit, Papayas, Peaches, Bananas, Apricots. <b>Grains :</b> Brown rice, corn, millet, Raye.

<b>Pitta Pacifying foods</b>	Excess Pitta can be balanced with foods that are cool, dry and heavy with a mild, naturally sweet, bitter or astringent taste.	<b>Vegetables &amp; Fruits:</b> Rice, beans, steamed vegetables and fruits, green coriander (dhaniya), coriander seeds, cardamom, sprouts and raw foods. Milk, ghee, coconut oil, olive oil. <b>Spices:</b> Mild spices like cumin, coriander and cilantro etc. <b>Grains :</b> Barley, oats, wheat, parboiled rice.
<b>Kapha Aggravating foods</b>	Foods with Sweet, sour, salty; heavy, oily and cold properties which induces possessiveness, miserliness, laziness such as dairy products, wheat, avocados and oils have these qualities and will increase Kapha in the body. Desserts, sweets, ice cream, deep fried foods	<b>Vegetables:</b> all sweet juicy vegetables such as cucumbers, pumpkin family, sweet potatoes, tomatoes, tori, ghiya etc. <b>Fruits:</b> All sweet juicy fruits in general. <b>Lentils &amp; Legumes:</b> Tofu and kidney beans. <b>Spices:</b> Excess salt.
<b>Kapha Pacifying foods</b>	Taking smaller amounts of food and emphasize food with Vaata properties of light and dry and with Pitta properties which are hot or sharp are recommended, so look for foods with pungent, bitter or astringent tastes. Warm light food, dry food cooked without much water, minimum of butter, oil and sugar, stimulating foods (ginger, chillies, Pickles), raw foods, salads.	<b>Vegetables :</b> Generally all vegetables like light, bitter vegetables such as leafy greens. <b>Fruits :</b> Apples, apricots, pears, pomegranates, dried fruits in general, Lentils & Legumes <b>Spices :</b> All are good - ginger and turmeric are excellent <b>Grains:</b> Puffed cereals such as puffed rice or corn; small, astringent grains, such as millet, amaranth, and quinoa

Acharya charaka has mentioned the qualities of ideal diet as ‘The diet which besides providing the basic nutrition to the body, helps to maintain the healthy state of the body and prevents the occurrence of diseases should be consumed on daily basis.’<sup>13</sup>

## MODERN CONCEPT

Food and Nutrition is the basic need of every individual and it is important to mention the definition of food, nutrition and nutrient which are the quality deciding factors of any diet as the state of health is achieved through balanced diet itself.

**Food:** It is a substance consumed, other than water and drugs, for maintaining the health, well-being and vitality of the individual. Sometimes foods are eaten raw. But most of the time, they are eaten after some culinary processes such as cooking, boiling, frying, baking, etc. After such treatment, the food becomes "diet" (meal).<sup>14</sup>

**Nutrition:** It is that branch of science, which deals with the study of a dynamic process, in which the consumed food is utilized for nourishing the body (a process of assimilation of food).

**Nutrient:** It is a chemical factor (active ingredient) present in food item, which determines the quality of food and in turn the health of the individual. For example, proteins, fats, carbohydrates, vitamins and minerals.

**Dietetics:** It is the science that deals with the study of nutrition in health and disease (i.e. planning of meals for the healthy and the sick).

## NUTRIENTS

These are grouped into two groups- Macro and Micro nutrients.

**Macronutrients:** They are so called because they are required in large quantities and so they constitute the main bulk of the food. They are often called as "Proximate principles". For example, Proteins, fats and carbohydrates. Their contribution in the food is as follows.

- ◆ Proteins - 7 to 15 percent
- ◆ Fats- 10 to 30 percent
- ◆ Carbohydrates - 65 to 80 percent

**Micronutrients:** They are so called because they are required in small quantities (varying from micrograms to milligrams). For example, vitamins and minerals.<sup>15</sup>

### **Food Fortification**

It is a process wherein nutrients are added in small quantities, to the foods, to maintain or to improve the quality of food aimed at prevention and control of some nutritional disorders, as a long-term measure.

#### **Examples**

- ◆ Addition of vitamin A and D to Vanaspathi and milk (2500 IU of vitamin A and 175 IU of vit D per 100 gm)
- ◆ Addition of potassium or sodium iodide to common salt (Iodization of salt) for the prevention and control of endemic goiter
- ◆ Addition of iron salts to common salt for the prevention of nutritional anemia
- ◆ Addition of lysine to wheat flour while making bread, Twin fortification of common salt with iron and iodine, Fluoridation of water for the prevention of dental caries.<sup>16</sup>

### **Food Related Diseases**

These are the diseases caused due to defects in the foods consumed. The defects may be deficiency in intake or excessive consumption, or contamination of food or food intoxications or food poisoning. Thus the chief dietetic diseases are:

- I. Deficiency diseases
- II. Excess of food consumption
- III. Food-borne intoxications
- IV. Food poisoning
- V. Food borne diseases

#### **Deficiency Diseases**

- a. Protein energy malnutrition
- b. Vitamin deficiency diseases
- c. Mineral deficiency diseases

#### **Excess of foods consumption**

This results in the following conditions:

- ◆ Hypervitaminosis-A
- ◆ Hypervitaminosis-D
- ◆ Obesity
- ◆ Fluorosis

Hypervitaminosis-A and D are explained under vitamins A and D respectively. Obesity – explained under epidemiology of obesity flurosia-explained under trace elements, fluorine.

#### **Food Borne Intoxication**

There are grouped into two groups:-

A. Due to naturally occurring toxins in the food grains.

- ◆ Lathyrism
- ◆ Epidemic dropsy
- ◆ Endemic ascites
- ◆ Toxic polyphenol

B. Due to toxins produced by the fungi in the food grain.

- ◆ Aflatoxicosis
- ◆ Ergotism

## Food Poisoning

It is an acute inflammatory disease of the gastrointestinal tract, caused by the ingestion of food contaminated with either toxin producing bacteria or by their preformed toxins or chemical substances or other poisonous food substances.

Clinically it is characterized by short incubation period, pain in the abdomen, vomiting and/or diarrhea, with or without fever.

Food poisoning differs from food borne diseases in that it is not transmitted by faeco-oral route. It also differs from food intoxication in that there is neither toxic factor in the food grain nor there is contamination with fungus.<sup>17</sup>

## Classification of Food Poisoning

They are broadly classified into two types:

1. Non-bacterial
2. Bacterial

Non-bacterial food poisoning

These consist of the following types:

- a. Mushroom poisoning
- b. Solanine poisoning
- c. Chemical poisoning

## Mushroom poisoning

The two common poisonous mushrooms (fungi), which are eaten in mistake for edible Mushrooms are amanita pantherina and amanita muscaria. Their poisonous effects are due to the presence of muscarine. Symptoms such as abdominal pain followed by vomiting and diarrhea occur within a few minutes or hours. Sometimes there may be sweating, twitchings, miosis, diplopia, muscular incoordination and convulsions, followed by coma. Atropine is the effective antidote. Amanita phalloides is highly poisonous fungi. It contains amanitine, which is cytotoxic and phallin, which is hemolytic. No antidote for this. Mortality is 50 - 90%. Both of these are destroyed by cooking. So the symptoms are produced only when they are improperly cooked or eaten raw.

## Solanine poisoning

Solanine is a toxic alkaloid present in the peelings of potato, especially in sprouts. Symptoms occur within a few hours. There will be fever, headache, pain abdomen, vomiting, diarrhea, weakness and depression. Patient usually recovers within a few days. Since the alkaloid is soluble in water, potatoes are boiled and peeled.

## Chemical poisoning

Inorganic chemical substances resulting in poisoning are pesticides, fertilizers, arsenic, zinc, mercury, etc.

### **Bacterial food poisoning**

This is caused by the consumption of food contaminated with either toxin producing bacteria or by the irpre form edtoxins. Thus they are two types, namely

- a. Infection type
- b. Toxin type

#### **Infection type**

In this type, organisms enter the body through the food, multiply, produce toxin, cause pathology and result in clinical manifestations. Incubation period is more than 8 to 12 hrs. The causative bacteriae are Salmonella group, Clostridium perfringens and Vibrio parahaemolyticus.

#### **Toxin type**

In this type, there is already preformed toxin in the food. Therefore, the incubation period is shorter than that of infection type( > 8 to 12 hrs). The bacteriae which result in this type of food poisoning are Staphylococcus aureus, Clostridium botulinum and Bacillus cereus.<sup>18</sup>

### **Discussion**

Food is consumed for nutrition purpose on daily basis and it can also be used as a drug when ever required according to the disease condition. In other hand, the food also cause many disorders too if it is infected, contaminated, treated with chemicals or by nature itself (e.g. Poisonous mushrooms, Toxins etc.). Hence it becomes essential for the physicians to check the food habits of the patients before starting the treatment. If any deficit found in the food habits and hygiene it should be suitably corrected along with creating the awareness.

Nutrition is of the highest priority in today's life and it's the hub of everyone who is desirous of good health. The importance of nutrition is emphasized by its role in maintaining health.

- i. Averting the degenerative changes caused by ageing (Rasayana)
- ii. Enhancing the defense system (Roga pratibandhaka Rasayana)
- iii. Convalescence after an illness (Balya)
- iv. Maintain the vigor and vitality (Vajikarana)
- v. For maintaining the joie de vivre (Jeevaniya).

Food and drinks with desirable smell, taste and touch and having been taken according to prescribed method is said as vital strength by the experts on the basis of observing their results directly; because the condition of internal fire depends on their fuel. They produce energy in mind, constitution of Dhatus, strength, complexion and clarity of sense organs, if property taken. This is only possible when the Diet what we take is hygienic, otherwise they become harmful.

Ayurveda and modern science have discussed about the hazards of unwholesome diet and the foods to be avoided but, certain methods like using additives and preservation methods are the recent developments in the field of Food and nutrition. Ayurveda advices to consume food in the fresh and hot state if it is cooked one. This prevents contamination and improves digestion.

The methods of food preservation are the traditional one which was in practice thousands of years ago and they are more natural ones and the additives used were also being natural products like salt, sugar, ghee, jiggery, honey etc. which are devoid of any harmful effects. Unlike these natural preservatives, vinegar, chemicals which are non-food substances used as added preservatives, the sauces, spice-powders used in fast food along with chemical flavoring agents disturb the digestion and lead to serious digestive system disorders and even carcinoma.

Hence it is wise to select the natural, hygienic and nutritive food which stabilizes the healthy state of body and mind.

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**Table no. 2 : Some Ayurvedic plants and their nutritional value<sup>19</sup>**

Species; Family; common names	Edible plant part (S)	Nutritional Value					Vitamins Bio = Biotin, Fol – folic acid, Nic – nicotinic acid, pan – Pantothenic acid
		Energy (Kcal)	Protein	Fat	Minerals		
			(g per 100gm)				
<i>Allium cepa</i> , Alliaceae; onion, bulb onion	Bulb	27	1.18	0.25	0.51	A, E, K, B1, B2, B6, Bio, C, Fol, Nic, Pan	
<i>Allium sativum</i> , Alliaceae; garlic	Bulb	139	6.05	0.12	1.42	E, K, B1, B2, C, Nic	
<i>Beta vulgaris var.</i> , Chenopodiaceae	Leaves, Root	14	2.13	0.28	1.68	A, B1, B2, C, Fol, Nic, Pan	
<i>Cocos nucifera</i> , Arecaceae, Coconut	Seed, (Stem)	363	4.63	36.5	1.18	E, B1, B2, B6, C, Fol, Nic, Pan	
<i>Daucus carota</i> , Apiaceae carrot	roots	26	0.98	0.20	0.86	A, E, K, B1. B2, B6, Bio, C, Fol, Nic, Pan	
<i>Helianthus tuberosus</i> Asteraceae	rhizomes	31	2.44	0.41	1.74	A, B1, B2, C, Nic	
<i>Ipomoea batatas</i> Convolvulaceae, sweet potato	tubers	108	1.63	0.60	1.12	A, B1. B2, B6, Bio, C, Fol, Nic, Pan	
<i>Lepodium sativum</i> Brassicaceae	leaves	33	4.2	0.70	1.90	A, E, B1. B2, B6, C, Nic	
<i>Musa acuminata</i> (=M.sapientum); Musaceae; banana	fruit	88	1.15	0.18	0.83	A, E, K, B1. B2, B6, Bio, C, Fol, Nic, Pan	
<i>Phaseolus vulgaris</i> , Fabaceae, common bean	seeds	237	21.1	1.60	3.85	A, E, B1. B2, B6, Bio, C, Fol, Nic, Pan	
<i>Prunus dulcis</i> , Rosaceae, almond	fruit	583	22.1	54.1	2.65	A, E, B1. B2, B6, Bio, C, Fol, Nic, Pan	
<i>Punica granatum</i> , Punicaceae, pomegranate	fruit	74	0.70	0.60	0.70	A, B1, B2, C, Nic	
<i>Sesamum indicum</i> , Pedaliaceae, sesame	seeds	565	20.9	50.4	5.3	K, B1. B2, B6, Nic	
<i>Solanum melongena</i> , Solanaceae, brinjal	fruit	17	1.24	0.18	0.50	A, E, K, B1. B2, B6, C, Fol, Nic, Pan	
<i>Solanum tuberosum</i> , Solanaceae, potato	fruit	70	2.04	0.11	1.02	A, E, K, B1. B2, B6, Bio, C, Fol, Nic, Pan	
<i>Triticum aestivum</i> , Poaceae, bread wheat	fruit (grains)	329	13.9	2.48	1.87	A, E, B1. B2, B6, Fol, Nic	
<i>Vitis vinifera</i> , vitaceae, grapevine, common grape	fruit	67	0.68	0.28	0.48	A, E, K, B1. B2, B6, Bio, C, Fol, Nic, Pan	