

23. Integrating Ayurveda and Modern Nutrition: A Review on the Health Benefits of the South Indian Diet

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Abstract:

The classic South Indian meal is one that is an elaborate incorporation of cultural judicious, nutritional equilibrium and the Ayurvedic dietary concepts which when accumulated would also ensure the overall health. Based on Ayurveda, food philosophy focuses on the balance of doshas (Vata, Pitta and Kapha) using the combined taste(rasa), texture and digestion (agni). The meals are developed in a way to provoke, feed, and bring the body to balance and in accordance with the digestive circadian rhythm. These principles are manifested in the South Indian food pattern in terms of its order and structure: It starts with the stimulation of the senses and the digestive system, then proceeds to the range of the diversity of various nutrients, and the digestive conception.

The use of a banana leaf to eat food adds natural antioxidants and helps in sustainability. The pickle is highly spiced and acidic, which stimulates the taste receptors and causes the cephalic phase of digestion. Raw and cooked vegetables contain fiber which helps in motility of the gut and glycemic control, the sambar made of rice and lentils is an excellent complete plant protein including essential amino acids. The dinner is finished with a probiotic mix of curd rice which enhances the health of microbiota and bioavailability, as well as a milk or sabudhana-based sweet, which stabilizes the digestive fire (Agni) and gives some sensory gratification. This chronological order reflects Ayurvedic as well as scientific knowledge of digestion beginning with stimulation and continuing with nourishment and finally with balance. Combined, the Ayurvedic basis of the traditional South Indian meal combined with its history and application into modern nutrition show how the cultural food practices can provide a sustainable way of binding the digestive health and metabolic balance.

Introduction:

Ayurveda is one of the oldest systems of holistic healing in the world that has been in use by India over three thousand years. The literal translation of Ayurveda is the science of life (Veda= knowledge; Ayuh= life). It is a huge accumulation of knowledge that is aimed at maintaining health, being ill-preventive, and pro-longevity. Ayurveda has a focus on the harmony and balance of body, mind, spirit and the nature. This is unlike the contemporary medicine that is predominantly concerned with seeking remedy to diseases once they have arisen. According to the Ayurvedic perspective health is considered a dynamic state of balance between different factors, both internal and external. It appreciates the fact that each individual is a unique person and that well-being cannot be ensured through general approaches to treatment, nutrition, and lifestyle.

In the effort of knowing about the main principles that Ayurveda works on, there are a few basic concepts, which are the core ideas on how the human body functions and inter-relates with the environment around it that are at the centrality of Ayurveda. Three most important ideas are Rasa (taste and pharmacodynamics), Agni (digestive and metabolic energy) and Prakriti (constitution).

Prakriti can be defined as the physical, physiological, and psychological makeup of an individual, which is being determined during the conception period and does not change during his/her life. According to Ayurveda, there are 3 major types of Prakriti according to the pre-eminence of Doshas, the 3 fundamental bio-energies:

Vata (Air & Space) - governs body movements and communication as well as nerve connections.

Pitta (Fire & Water)- governs man metabolism, digestion and energy conversion.

Kapha (Earth and Water) - provides validity, stability and fluidity.

The combination of these Doshas is a different mix in each individual through Prakriti. Understanding of Prakriti is essential to use diet, lifestyle and treatment in order to reach optimum health.

Taste The concept or principle of taste is known as Rasa.

Ayurveda categorizes all substances, food or medicine with the help of six tastes (Rasas):

Madhura (Sweet)

Amla (Sour)

Lavana (Salty)

Katu (Pungent)

Tikta (Bitter)

Kasaya (Astringent)

Every Rasa has certain implications to the physiology of the body and to the Doshas. To take an example, sweet taste builds the tissues and enhances the Kapha whereas bitter taste cleanses and diminishes Pitta. This classification demonstrates the good grasp of pharmacodynamics which is the study of the interaction of various substances and the body in many ways. This opinion is supported by contemporary science. Researchers have found out that the receptors of the sense of taste exist not only on the tongue, but also on the rest of the body. They have an effect on metabolic and cellular pathways. This proves Ayurveda as being of the opinion that taste is directly connected with biological functioning.

Agni simply translates to fire, and is the metabolic transformative energy in the body. Ayurveda believes that it is the source of life and health. A healthy Agni is called Samagni, which helps in normal digestion, absorption and assimilation of nutrients. Conversely, maladjusted Agni, otherwise known as Mandagni, may result in the build up of Ama, or toxins, that is believed to cause the majority of the diseases.

In the contemporary system biology, Agni is seen in a similar light as a collective of enzymatic, hormonal and metabolic processes that are fundamental to life.

The Ayurveda and the health and well-being.

Ayurveda views health (Svasthya) as a balance between Doshas, Agni, Dhatus (tissues), Malas (wastes) as well as mind and senses. This balance helps to maintain the vigor, increase resistance to diseases, and enhance cognitive culture.

Ayurvedic health management considers several important points as follows:

Prevention and maintenance in the form of proper diet (Ahara) and day to day and seasonal procedures (Dinacharya and Ritucharya). Individualization in which the treatments, diets, and exercises are based on the Prakriti of an individual. Integrative approach to treatments with a combination of physical, psychological, and spiritual wellbeing. Ayurveda today looks equivalent to personalized medicine as well as preventive medicine. Such spheres are becoming popular as the future of healthcare.

Ayurveda is a medical philosophy that emphasizes on food and digestion. It is one of the major principles that we are what we digest and not simply what we eat.

Appropriate digestion is accompanied by tissue regeneration and nourishment (Posana).

The disease can be caused by toxic buildup (Ama) because of bad digestion (Vishamagni or Mandagni).

The six tastes (Rasas) assist in equalizing food and making sure that all the physiological needs have been fulfilled.

Dietary provisions are dependent on the Prakriti, age (Vaya), season (Kala), and environment of a person (Desa). This is an example of a personalised and realistic nutrition.

The highly functional concepts of ayurveda are now quantifiable.

it can be done so due to the emerging scientific discoveries, especially in genomics, system biology and network pharmacology.

South Indian Meal arrangement: its Traditional meaning and Applied Scientific meaning of its healthy benefits.

1. Eating food on fresh Banana Leaf:

Eating on a banana leaf is a unique characteristic of South Indian food that contains male symbols and cultural values alongside the useful health advantages. Banana fresh leaves are rich in polyphenols, flavonoid, and other antioxidating in nature, which can pass in small portions of useful elements to food when eaten warm. Research has revealed that *Musa spp.* leaves have antimicrobial and antioxidant effects and thus reduced contamination and oxidative destruction of food. A so natural waxy film covering the leaf serves as protection as well, so there is no necessity to use detergents or metal plates and exposure to the harmful chemicals is avoided. Moreover, banana leaves can be biodegraded and they are eco-friendly which promotes sustainable dining. A banana leaf meal is also said to be sensually more pleasurable, the smells and heat that the leaf emits the leaf slightly enhances the flavor and experience of a meal to the degree of stimulating the mouth and the digestive system to produce saliva.

2 . Pickle Before the Meal.

Usually, one can taste a little pickle (achar) before the main dish. This is not only a cultural thing to do but a physiological one. The pickles are full of spices and acids (vinegar, lemon or tamarind), which stimulate the sense of taste and produce the release of saliva. This triggers the cephalic phase of the

digestion process, where the brain stimulates the stomach and the intestines to start secretion of enzymes and to prepare reception of the food. The sourness and spice arouse and trigger gastric juices which rise the appetite and the preparedness to digest.

Moreover, pickles contain ingredients with the certain health properties:

Vinegar or acetic acid assists in lowering the post prandial blood-glucose levels, by enhancing the sensitivity of insulin.

Fenugreek seeds also contain fiber that can be absorbed and slows down the rate at which carbohydrates are absorbed so as to stabilize blood sugar.

Through curcumin turmeric has antioxidant and anti-inflammatory properties.

Chili and pepper are good sources of capsaicin and piperine, which boost the level of saliva and secretion of digestive enzymes.

Pickle, in a small portion, is, then, like a digestive primer, and opens up the senses, and prepares the body biochemically to make efficient use of the nutrients entering the body.

3. Vegetable Salad Raw and Cooked.

It is always good to start the meal with products rich in fiber, both raw and cooked as it helps in good digestion and metabolic regulation. The insoluble fiber in the raw vegetables, including cucumber, carrot, beetroot, and greens, stimulate mastication, salivation, and mechanical stimulation of the digestive tract. Raw fiber chewing also stimulates the secretion of enzymes into the cephalic phase, and emptying the stomach before proceeding to heavier food.

Soluble fiber, vitamin and phytonutrients are provided by cooked vegetables, like those in the South Indian stir-fry or poriyal. Cooked fiber enhances the bulk and viscosity of the stool, delays the emptying of the stomach and glucose level of the blood after eating.

Consumption of fiber food first also decreases the glycemic index (GI) of next meal. Research has shown that eating of vegetables or fiber prior to carbohydrates has a tremendous impact of decreasing postprandial glucose and insulin. They are in sequence to avert sudden glucose levels, which overtime leads to formation of an advanced glycation end products (AGEs)-molecules that are linked to skin aging and a lack of collagen elasticity. Therefore, the first step to start with fiber does not only help to digest better, but also to enhance proper metabolic and skin health.

4. Rice and Sambar - A Healthy Nutritional Mixture.

South Indian meal is normally the main meal comprising of steamed rice with sambar that forms a balanced meal. Rice is made of complex carbohydrates, which gives sustained energy and sambar, a preparation made of lentils (toor dal, moong dal or masoor dal) is an excellent source of vegetarian protein. The lysine content of pulses is high and methionine is low whereas rice has a lot of methionine and dearths lysine. They contain a full protein compound that has all the necessary amino acids when consumed as a whole.

Sambar is also prepared as having vegetables, tamarind with a combination of spices consisting of turmeric, cumin, fenugreek, and curry leaves providing antioxidants and stimulation of enzymes in digestive systems. Lentils also add dietary fiber, folate and iron to enhance glycemic control and satiety. Thus, rice with sambar would be an example of a perfect meal where carbohydrates, protein,

fiber, and micronutrients are in one unison, a perfect meal to feed the body with energy and nutrients required to restore its functions.

5. Curd Rice - The Probiotic, Cooling, End of the Meal.

Another characteristic of a South Indian meal is that it ends with a curd rice. Live bacterium cultures in curd (yogurt) consist of *Lactobacillus delbrueckii* and *Streptococcus thermophilus*, which are probiotics that help to maintain the health of the gut. These positive microorganisms assist in keeping intestinal microorganisms in balance, digestion, and absorption of nutrients.

Curd rice is consumed after hot and spicy and high fiber foods to cool and settle the gastroenteric tract equalizing the pH levels and lowering the acid levels. The mixture of the curd and rice provides the calcium, phosphorus and milk proteins as well which helps in the bone strength and muscle sustainability. Rice has a high percentage of carbohydrates which act as a source of nourishment to the probiotic bacteria and increases their chances of survival in the digestive tract. Therefore, curd rice is a mild digestive modulator, which restores balance to the bowel and is an assimilatory check-up of nutrients, following a multifaceted meal.

6. Willing Sweet (Milk or Sago -Based) to conclude.

Conventionally, South Indian dishes are served with a small serving of something sweet (which may be prepared using milk, jaggery, or sago). The reason is that it is a symbolic and functional practice. Sweets such as payasam that are prepared using milk contain natural sugars, protein (casein) and also calcium that balances out the meal in its nutritional value and satiating effects. The lactose in the milk is absorbed gradually and it provides a faint sweetness, not with glucose jumps that take place fast in case it is consumed in small quantities.

Sabudhana, which is made of tapioca pearl, can be digested with ease, thus can be used on easy digestion following a heavy meal. Also finishing off the meal with a sweet flavor will fulfill the sensory experience of the food, triggering the secretion of serotonin and making one feel contented. According to Ayurveda, it is also Ayurvedic to end with a sweet as it is a balance to the digestive fire (Agni) that had been increased by spices earlier in the meal to get the body into a state of relaxed digestion.

Conclusion:

The South Indian wedding is not just a cultural identity, it is also a scientifically and Ayurvedically informed dietary system created to ensure that the body is in a balance and the digestive system is healthy. Every part and combination of the meal has a certain purpose which altogether boosts the digestion, absorption of nutrients, and a stable metabolism. A banana leaf has sustainable health benefits such as natural antioxidants and providing natural antioxidants, and pickle triggers digestive preparation and salivation. The raw and cooked vegetable will provide fiber intake to the body that contributes to THE intestinal motility and glycemic regulation. The primary staple of rice and sambar which is based on lentils offers a total protein-carbohydrate complex and energy as well as tissue healing. This is well balanced by the curd rice that facilitates the presence of probiotics that aid in bowel regulation and tallow milk based dessert, a representation of contentment and soft ending of the digestive cycle. Perceived through the Ayurveda prism this meal reflects the aspect of the equilibrium

of the doshas and is governed by the natural order of digestion (Agni). Nutritionally speaking nowadays, it is an ideal wholesome diet, abundant in macronutrients, fiber, and bioactive substances to help maintain gut health and metabolic wellbeing. All these contribute to the overall understanding that the South Indian dining system is the best example of the ancient wisdom with modern science which proves that in modern-life, ancient traditions of eating can provide sustainable and wholesome solutions to health.

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