INTRODUCTION

Ayurveda concepts refer Ahara, Nidra, and Bhramcharyyavas the main pillars of body for positive health. The special emphasis on "Ahara" (diet) and "Anna" (food) is given as described on prime basis, is a means to a good life, health and wellness. Healthy and wholesome food nourishes the mind, body and soul. Ayurveda asserts the quality and appropriate quantity of food are important factors to be considered to remain healthy. Food taken in proper quantity provides strength, vigour, good complexion and nurtures the health of the tissues.

In western point of view, quantity of food is determined by serving portion size or in caloric intake. In 1992 the U.S. Department of Agriculture released the national guide for maintaining good health in the form of a food pyramid. The nutritionists, doctors and other health care providers routinely used the guide across the nation. It was adapted on the basis of cardiovascular and cancer risk factors available at the time. The guide recommended the reduction of total fat intake and promoted 6-11 servings of complex carbohydrate including rice, pasta, vegetables, and fruits and two servings of meat or animal products. Over the years and several research findings later, it was concluded that the recommended food pyramid had greatly faltered in providing a basis for a balanced diet since obesity was on the rise. The USDA's Center for Nutrition Policy and Promotion has now reassessed the dietary guide in the hope that appropriate changes and inclusion of polyunsaturated fats and whole grains in required quantity would shift the graph. A new pyramid is now available to the public (from 2004) with new dietary requirements. Most of the dietary requirements are formulated on the basis of research data available on chronic diseases, cardiovascular and cancer risk factors at this time, using cholesterol ratios and triglyceride levels as indicators of wellness across the broader population.

The science of human nutrition is mainly concerned with defining the nutritional requirement for the promotion, protection and maintenance of health in all groups of the population. Such knowledge is necessary in order to assess the nutritional adequacy of diets for growth of infants, children and adolescents and for maintenance of health in adults of both sexes and during pregnancy and lactation in women. In this context, a variety of terms have been used to define the amount of nutrients needed by the body such as: Optimum requirements, minimum requirements, recommended intake or allowances and safe level of intake. Of theses the term “recommended dietary intake or allowance” has been widely accepted.

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**Matravat Bhojana**

Estimating how much is appropriate to consume can be difficult. Ayurveda states that portion size (Matra of Ahara) and eating frequency is weighed on the basis of how effectively the food is digested. Ayurveda emphasizes that a diet must be properly selected and wisely formulated, not only according to the physical conditions of a person, but taking into consideration the body type (Pita, Kapha, or Vata) and should complement the seasonal and daily changes and other natural factors that surround an individual. The food is considered as Matravat when it gets digested by the next Annakala (Time of food). Clear belching devoid of any smell/taste, a good appetite, feeling of freshness and lightness of the body are the symptoms of properly digested food.\(^v\)

Annakala refers to the timing of meal. There have been lot of discussion over the meal timings in the recent past. In Western culture, it is a common idea that the daily food intake should be divided into three square meals: breakfast, lunch, and dinner, which is most commonly followed even in India. However, the number of meals is not a universal standard. As an example, the Ancient Romans had only one substantial meal, usually consumed at around 16:00 hrs, and they believed that eating more than once per day was unhealthy. Although they also ate in the morning and at noon, these meals were frugal, light and quick.\(^viii\) Later, Monastic rules influenced common peoples’ eating behaviour. The term breakfast means “break the night’s fast”, pointing out that it is the first meal after the evening/night devoted to prayer.\(^ix\) Breakfast also became important during the industrial revolution as a meal consumed before going to work. Dinner in its current form and timing became popular after the widespread use of artificial light, which facilitated eating before dawn and after dark. Acharya Sushruta recommends once a day meal for those with Mandagni (weak digestive capacity) and twice a day meals for those with the normal digestive power. Food taken in the morning should get digested by the evening and the food taken during the evening should get digested by the next morning. When more food is taken into the body that can be processed in one sitting, it is said to dampen the digestive fire. On the contrary, it is also important to consider that under eating can lead to an impairment of the digestive fire as well, due to underuse and malnutrition of bodily tissues.

**Sarvagraha** (Quantity of food for 1 meal) and **Parigraha** (quantity of each of its ingredients in a meal) are both important factors to be considered for portion size. Ayurveda texts gives an analogy for deciding the total quantity of food to be taken during a meal. The stomach capacity should be divided into three parts; one part of it should be filled up with solid food (Rice, Roti etc), the second parts with liquids and the third part should be left free for the movement. While it is difficult to decide the exact quantity of solid foods and liquid foods based on this analogy, the texts also explain the food if taken in proper quantity does not produce any pressure on the abdomen, discomfort in chest and heaviness in the abdomen. The senses have fresh feeling and hunger and thirst are satisfied. There is a feeling of comfort in standing, sitting, sleeping, walking, exhaling, and inhaling, laughing and talking. The food taken in proper quantity promotes strength, complexion and plumpness.\(^vi\)

To decide the Parigraha of Ahara, the food plate should be foods of all Shad-Rasa (Six tastes). Kautilya’s Arthashastra mentions the quantity of food as Rice \(\frac{1}{4}\) prashtha (640 gms), Pulse \(\frac{1}{4}\) th of rice (160 gms), Salt \(\frac{1}{16}\) th of pulse (10 gms), Fat \(\frac{1}{4}\) th pulse (40 gms), Meat 20 palas (960 gms), Curds \(\frac{1}{2}\) prashtha (320 gms) Fresh Vegetables \(\frac{1}{2}\) times of meat (30 pala). The Panchabhutik composition of the food must be considered before deciding the proper quantity of every food in the plate. As per the Panchabhutik composition, Food items can be classified as Guru Ahara dravya and Laghu Ahara dravya. Guru dravya are formed by Prithivi and Jala mahabhuata and Laghurdrayav are Agni and Vayu Mahabhubh. The Laghu Dravya due to Rukshata, Laghata Sukshma, Chalata, Vishadata and Kharaata in them enhance the Agni and can be taken till satiety. On the contrary the Guru Dravyaproduce more discomfort and hence should be taken up to one third or one half of the total stomach capacity.\(^v\)

**Illness Produced form Amatrvat Ahara and Akala Bhojana**

Amatracan be either Heena (Less in quantity) or Atimatra (Excessive), both causing illness. Heena causes detoration of strength, complexion, sense organs, intellectual, and causes constipation, decreases in libido, decreases in life expectancy, and all Vataja diseses. Atimatra causes vitiation of all Doshas and causes Santarpanjanya vyadhi (Diseases of over nutrition).\(^vii\) Repeated eating when food taken in previous Annakala is not digested is called as Adhyashana. Adhyashana therefore is described as a wrong habit of eating and also mentioned as the causative factor of many diseases like Grahanidoshaii, Pittaja Gulma\(^iii\), Aamavisha\(^iv\), Kushtha\(^v\), Udgaroga\(^vii\) etc. The hazarduous effect of Adhyashana can be understood on the basis of Aamavisha Sampraapti\(^vii\) and description of Ajirna Bhjana. Various studies find large portions, in particular of highly palatable foods, challenge innate human appetite control systems and may lead to weight gain.\(^viii\) In recent years research in this area has experienced rapid growth. The collective microbiomal organ provides many fundamental functions such as metabolic, immunological, and infection control. The microbiota exerts many actions on the central nervous system, so many that it has been coined the “gut–brain axis.” Diet composition (e.g., fat and fibre content) influences gut microbiota. There is a multifaceted relationship between microbiota and food timing. Not only can diet composition exert negative effects on microbiota, but meal timing can also: consuming food outside the normal feeding phase (eating during light time for rodents and during late night in humans) may disturb normal peripheral and central clocks.\(^x\) This desynchronization of internal clocks, and thus the modification of microbiota, is associated with increased risks of metabolic and cardiovascular diseases. Finally, further studies are needed to explore properly the connection between microbiota and meal frequency and timing.

**Concluding Thoughts**

In order to gain a comprehensive picture of the physiological and health effects of meal timing, frequency and quantity of food to be taken based on Ayurveda principles, multiple lines of research must be integrated.
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