

Editorial

Principles of Eating in Children

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Abstract

The problem of eating in children is alarming in both the developed and developing world. This communication intends to highlight the essential knowledge on eating to parents, carers and health professionals. The normal anatomy and physiological condition of a human child demands a gradually increasing amount and variety of food items for growth and development. Infants, toddlers, and adolescents require learning food habituation in order to sustain and promote health, prevent diseases and develop food culture by appropriate eating. Healthy oral organ system, neuropsychological preparation, selection of varied food, empathic eating place, time interval between meals, colorful environment and positive eating culture are the vital principles of normal eating in children.

Keywords: Children; Eating; Food; Oral Cavity; Parent

Editorial

Eating is a mechanical, physiological, biochemical, neurobehavioral, hormonal act in which one ingests food that is used as a source of energy and life processes in humans. The literal meaning of 'eat' is to put food in the mouth, chew and swallow it. The process of eating is achieved by a very complex but refined coordination of the tissues and organs of oral cavity that comprises of the lips, tongue, teeth, salivary glands, cheek, hard and soft palates, base of tongue, muscles of pharynx, epiglottis and larynx with intact neurohumoral control system. The maxillary and mandibular bones and temporomandibular joints along with intact facial muscles facilitate the act of eating. The type and consistency of food before and after teething affects eating in children. The oral cavity also adjusts the temperature variation of food thus assisting in not eating either very cold or very hot food. The food is chewed in the buccal cavity, mixed and moistened with mucus and saliva, thereafter undergoes some enzymatic actions initiating digestion and killing potentially harmful bacteria by lysozyme. Eventually partially digested food is pushed by the tongue towards the pharynx and as a result of reflex action is swallowed into the esophagus, completing the act of eating.

The coordination between swallowing and respiration varies across human lifespan and this may be due to the anatomical difference and/or difference on maturation of neural control mechanisms [1]. Sucking and licking are parts of the act of normal food ingestion. The emergence of fetal motor behavior of sucking and swallowing appear between 12 to 15 weeks of gestation [2]. The growth and development of these organs from the first trimester of intrauterine life up to adolescence makes the act of eating complex. Therefore, a vast range of factors play a role in eating. The tissues, organs and their physiological actions are suitable for eating simple and wholesome foods such as breast milk, cereals in infancy and gradually advancing to more varied and complex foodstuff in later childhood and adolescence. Great ranges of motion occur while eating liquid, semisolid, solid and very hard food that demands energy. As growth and development advance children require food accepted by body, climate, culture and availability.

Normal newborns have special instinct to find out the smell of most common early foodstuff, breast milk, and suck with well developed mouth organ system. Sucking and swallowing reflexes are present in full term infants and their absence suggests developmental defects [3]. A newborn baby expresses a desire to eat after a few minutes of birth though he/she knows how to swallow amniotic fluid during the second trimester of pregnancy [4]. Smell, tactile sensation, vision, hearing and taste have a significant effect in wanting to experience food items in children. Diverse constitutional factors within infant's bodies and their environment affect normal and balanced eating in early childhood. The eating-related anatomical organs have to function in a complex but controlled manner immediately following birth and require some time to adapt themselves to the new food and environment. Post birth vital function such as, breathing and crying probably prepare the newborn for sucking and eating that assist to create and save energy for further processing of its own secretions and food supplied from outside. The posture while eating mainly depends upon the age and normal or diseased condition. Infants suck breast milk most comfortably in supine or semi-sitting position on the mother's lap however, changes in posture is possible according to requirement. In diseased and deformed conditions eating may require a frequent change of postures. Head and neck problems further complicate the postures of eating. Many parts of the brain are directly related to the process of eating with the most important being the amygdala, orbitofrontal cortex, and caudate. The cortex of the human brain fuses various qualities of food such as, taste, temperature, smell, texture, and spiciness to compose the flavor of food [5].

The appearances, color, decoration, consistency, form, palatability of food have various degrees of impact on eating. The neuropsychological preparation, environment and place have important roles during eating especially infancy, childhood and adolescence. Feeding utensils, temperature and humidity of the place cannot be undermined during eating. The role of toys, music and various recreational activities also exert some effects in eating. The person who is feeding the child (e.g. mother, carer, grand parent, health professional etc.) also has a significant impact. Besides breast feeding the use of hand, spoon, chopsticks etc may be of great

importance. Above all, frequency and positive eating drive are of paramount importance in feeding after birth. Closer the in-between time interval lesser is the amount of eating due to the variation in the capacity of holding food in the gastrointestinal tract, digestion, absorption, metabolism, assimilation and excretion. There is no natural alternative route of eating except oral route in humans however, our experience of feeding by tube, intravenous route, gastrostomy hole have provided temporary routes of supplying very refined food.

The normal daily requirements of the body according to age, sex, climate and body constitution must be fulfilled by varied and balanced nutrients for the growth and development of children. An individual's unique preference may be based on predisposed biological tendencies but may be further cultivated and modified through experiential learning [6]. Balanced and varied diet during pregnancy may assist to set the stage for babies to love healthy and diverse tastes [7]. As growth and development advance a variety of food is required and supplied gradually in increasing amount and variety. The value of food supplied by families, societies and religious groups have also affected the types of foods served to children. There is a big role of parents in the food selection and eating habits of toddlers, children, and adolescents. The behavior of eating also depends upon the customs, norms and the awareness of parents, grandparents and carers. The changes in food civilization, increment in food and edible substance knowledge, and food culture have compelled the children of the globe to learn more about eating for better health. Therefore a variety of methods has already been developed and is continuously developing to teach children, parents, carers for better and healthier eating. The role of teaching and demonstration are particularly vital in the process of eating in children.

The normal anatomy and physiological condition of a human child demands a gradually increasing amount and variety of food items for growth and development. Infants, toddlers, and adolescents require learning food habituation in order to sustain and promote health, prevent diseases and develop food culture by appropriate eating. Healthy oral organ system, neuropsychological preparation, selection of varied food, empathic eating place, time interval between meals, colorful environment and positive eating culture are the vital principles of normal eating in children.

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