

TRADITIONAL FOODS FOR GIRLS AT PUBERTY –A REVIEW**R. Vinodini^{1*}, A. M. Amala Hazel², P. Arulmozhi³ and N. J. Muthukumar⁴**¹Resident Medical Officer, National Institute of Siddha, Chennai-47.²Associate Professor, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai-47.³Lecturer, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai-47.⁴Professor, Director (i/c), National Institute of Siddha, Chennai-47.**ABSTRACT**

Siddha system of medicine place a special emphasis on diet and food habits and believe that health and nutrition nourishes the mind, body and soul. Puberty entails a progressive nonlinear process starting from prepubescent to full sexual maturity through the interaction and cooperation of biological, physical, and psychological changes. On the other hand, puberty triggers a growth spurt, which increases nutritional needs including macro and micronutrients. Increased caloric, protein, iron, calcium, zinc, folate, fat and oil needs have to be provided during this critical period of rapid growth. The traditional foods like ulundhu kali (*Vigna mungo*), vendhayam (*Trigonella foenum-graecum*) kali,

gingelly oil, rice puttu, raw egg etc., are given at the time of puberty and after puberty to overcome the changes in their body. The goal of this review it to validate the nutritional value for the above mentioned foods and suggesting the essential needs of the traditional foods at the time of puberty.

KEYWORDS: Traditional foods, Puberty, Brown rice, Gingely oil.**INTRODUCTION**

Traditional Indian foods have been prepared for many years and preparation varies across the country. Traditional wisdom about processing of food, its preservation techniques, and their therapeutic effects has been established for many generations in India. Indian traditional foods are also recognized as functional foods because of the presence of functional components such as body-healing chemicals, antioxidants, dietary fibres and probiotics.

Article Received on
12 April 2019,Revised on 02 May 2019,
Accepted on 23 May 2019

DOI: 10.20959/wjpr20197-15185

Corresponding Author*R. Vinodini**Resident Medical Officer,
National Institute of
Siddha, Chennai-47.

Siddha system of medicine is a traditional system of medicines native to India. In Siddha, regulation of diet is crucial, since it examines the whole human body as the product of food. According to Siddha concepts, food is responsible for different aspects of an individual including physical, temperamental and mental states. The body absorbs the nutrients as the result of digestion. But Siddha states that the food gets converted into *Saram* (plasma), and then followed by successive conversion into *senner* (blood), *oon* (muscle), *kozhuppu* (fat), *enbu* (bone marrow), reproductive elements and body fluids.

Puberty is a life-changing time for a teenage girl. Unsurprisingly, research indicates that nutrition significantly impacts the most important aspects of puberty. If you're the parent or guardian to a teenage girl and you're struggling to understand these changes, focus on food. It will make all the difference. By placing nutrition on a support, it will help the girl to prepare for a healthy future. Adolescence (age 10–19 years) is one of the most challenging periods in human development. Physical and psychological changes are taking place and many important issues arise that influence the nutritional well-being of adolescents. Eating behaviours that are learned early in life are maintained in adulthood. Nutritional inadequacies influence not only adolescents' health but also the risk for major chronic diseases in adulthood. And during this life-changing period, it's important to focus on good nutrition to stay strong and healthy.

The traditional foods are food which are in their original form, as they were created, not modernized processed or packaged. They have a long history of supporting good health. Foods that is whole, nutrient-dense, simple and basic like meat and poultry, eggs, whole grains, fish, beans and legumes, vegetables, fruit, nuts and seeds.

In rural areas, people eat foods based on traditional essential foods, whereas the urban population incorporates more modern foods into the diet. In urban areas, a lot of food is consumed outdoors, mostly on the streets, which is not the case in rural areas. Food sold on the street by vendors is mostly composed of junk food. Polycystic ovarian syndrome which has become commonest among young girls in India due to this type of poor nutritional diet. Moreover, Type 2 diabetes mellitus, hypertension, obesity, deficiencies and anaemia are partly related to food habits.

Essential Nutrients During Puberty

Micronutrient needs for youth are elevated during adolescence to support physical growth and development. The micronutrients involved in the synthesis of lean body mass, bone and red blood cells are especially important during adolescent. Vitamins and minerals involved in protein, ribonucleic acid and deoxyribonucleic acid synthesis are needed in the greatest amounts during the growth spurt. Needs decline after physical maturation is complete; however, the requirements for vitamins and minerals involved in bone formation are elevated through-out adolescence and adulthood, because bone density acquisition is not complete by the end of puberty.

Iron

Iron requirements are increased during adolescence to support the deposition of lean body mass, increase in red blood cell volume and need to replace iron lost during menses among females. Iron needs are highest during periods of active growth among all teens and are especially elevated after the onset of menses in adolescent females. Inadequate intake could increase the risk for anaemia – a condition characterized by lethargy, fatigue, and dizziness. During adolescence, iron deficiency anaemia may impair the immune response, decrease resistance to infection and decrease cognitive functioning and short term memory.

Calcium

Calcium needs are greater during puberty and adolescence than during childhood or the adult life, because of accelerated muscular, skeletal and endocrine development. Bone mass is acquired at much higher rates during puberty than any other time of life. In fact, females accrue approximately 37% of their total skeletal mass from ages 11 to 15 years, making adolescence a crucial time for osteoporosis prevention. For calcium intake milk, yogurt, cheese, soy products, and kidney beans. Even foods like fish (sardines and salmon with the bones) and leafy greens (collard greens or spinach) can contribute to calcium intake. In some cases, a calcium supplement may be required – especially if you are a vegetarian family, if your teen is lactose intolerant or the family doesn't consume dairy for other reasons.

Zinc

It helps to build and repair DNA. A flourishing immune system ensures that the body stays strong enough to grow and develop properly. Zinc is essential to this process. Zinc can be found in fortified cereals, poultry, lean meats etc.

Folic Acid

The need of folate increases during later adolescence to support accretion of lean body mass and to prevent neural tube defects among females of reproductive age. Food sources of folate should include naturally occurring folate, found in dark green leafy vegetables and citrus fruits and folic acid found in fortified grain products.

Protein

During adolescence protein requirement vary with degree of physical maturation. Actual protein needs are best determined based on the kilogram of body weight, during puberty to account for differences in rates of growth and development among teens. Children going through puberty also need a diet that focuses on protein, as the protein helps bones, organ tissue and other parts of the body to develop.

Essential fats

Omega-3 and omega -6 are called essential fatty acids, due to vital for hormone, skin, nail and hair health, energy, brain function and cardiovascular health. Thus, it is mostly found in oily fish, shelled hemp seeds, pumpkin seeds, sunflower seeds, flaxseeds and walnuts. Thus, the cold pressed oils of the nuts and seeds are also good nutrient foods. It should be taken daily for better health.

Disadvantages of Processed foods

Over-consumption of processed food products like cereals, cheese, tinned vegetables, bread, savoury snacks, crisps, sausage, pies, pasties, meat products like bacon, salami, convenience foods like microwave meals or ready meals, cakes, biscuits and soft drinks leads to major health consequences, they are becoming a concerning trend. Highly processed foods are chemically treated with additives or preservatives to improve their taste, texture or to extend shelf-life which causes many health problems like obesity, metabolic syndrome includes cardiovascular disease and type 2 diabetes mellitus, inflammatory bowel disease, colorectal cancer, anxiety, depression and autoimmune diseases.

TRADITIONAL FOODS**Ulundhu kali (Black gram porridge)**

It's one of the healthy dishes, given to girls during puberty in villages in earlier days. It is traditionally eaten with jaggery and gingely oil. This is considered to be a store house of proteins. Urad dal will strengthen the uterus and reduces pain during mensuration i.e., when

uterine wall contracts. Urad dal is known for its rich fibre content and hence enhances digestion and it help to reduce cholesterol. It helps to strength the pelvic and back bone, facilitate normal delivery.

Nutritional value: 100 g of Ulunthu kali is approximately equal to 1056 kilocalories and rich in iron, calcium, protein, sodium, potassium, manganese, omega 3 fatty acid, omega 6 fatty acid, vitamin B6, K and E.

Ragi roti

It's a delicious traditional south Indian dish, which has been forgotten by people of this present generation. It is absolutely healthy and has right balance of nutrients in it. Ragi flour is the best non-dairy sources of calcium when compared to any other grains. According to the National Institute of Nutrition in India, 100 grams of Ragi contains 344 mg calcium. Calcium is critical for healthy bones and teeth and prevention of osteoporosis - a disease which weakens the bones. It is extremely beneficial for growing kids.

Nutritional value: 100 g of Ragi roti is approximately equal to 350 kilocalories and rich in calcium, sodium, potassium and vitamin A and C. Also rich in amino acids like tryptophan, threonine, valine, isoleucine and methionine.

Arisi puttu (Rice puttu)

Rice Puttu or Vella puttu is made with rice powder, jaggery, coconut etc. It is a famous sweet dish made in every household of Tamilians. It tastes good with ghee or hot sesame oil. It is also made when a girl child attains puberty as it strengthens the body during periods and also it makes bone strong. It is a tedious process but the final product is really tasty.

Nutritional value: 100 g of Arisi puttu is approximately equal to 550 kilocalories and rich in calcium, iron, vitamin A, C, sodium, potassium, protein, zinc, selenium, manganese, magnesium and phosphorus.

Vendhaiya kalli (Fenugreek kali)

One of the healthy foods we should consider in our diet during summer to make our body cool. It plays vital role in Women's health as well, during puberty and pregnancy period. Vendhayam / Fenugreek seeds are a best medicine for women to ease their menstrual problems.

Nutritional value: 100 g of vendhaiya kalli is approximately equal to 1041 kilocalories and rich in protein, folates, calcium, magnesium, manganese, phosphorus, zinc, vitamin A, B2, B3, B6, C, E and K, omega 3 and omega 6 fatty acid.

Raw egg

Hen's egg yolk (it is poured into half glass sesame oil and the girl is asked to swallow it in the raw form without smashing the Yolk) in raw form give nourishment to the girl's body. The egg yolk with sesame oil has the same nutrients which the body produce during puberty. This is given for the next seven days and then stopped and then continued during second menstrual cycle also. But now a day as a part of modern life, we don't follow these customs saying that it's conventional that is also a reason for menstrual cramps, infertility and other uterus problems.

Nutritional value: A medium sized egg is approximately equal to 63 calories and rich in protein, calcium, sodium and potassium.

Ellu urundai (Sesame balls)

Black Sesame seed powder are mixed with palm jaggery and given at the time of menstruation because they are rich in vitamin E, which will tone the uterus.

Nutritional value: 100 g of Ellu urundai is approximately equal to 955 kilocalories and rich in calcium, iron, manganese, magnesium, sodium, potassium and vitamin B6.

Initial foods During Menstruation

1. Amaranth seeds in a cup of raw milk are offered on the first day of period.
2. Greens, especially from fenugreek, spinach are given. Ideal when consumed in soup form with spices.
3. Foods with urad dal (*Vigna mungo*) like vadas, urad dal rice, urad dal balls.

CONCLUSION

Food is an essential source of power. It supplies more nutrients for health also it is the symbol of hospitality and friendship throughout the world. It is an outlet of emotion. Food is a source of security for people to feel reasonably secure when they have enough food stored up to take care of them during periods of scarcity.

The traditional Indian food culture should not be forgotten by every generation as it shows the identity of the Indian people itself in terms of culture and norms. Traditional foods are those whole and ancient foods that have been eaten for centuries and even millennium. Each of the instruments has its own tales and sentimental values along with it. They are the foods that your great grandmother and grandfather would have eaten. Without them, the Indian food will not have its own distinctiveness and cannot achieve the accomplishment that can be seen nowadays. They are simple, naturally grown or raised, nutrient-dense, thoughtfully prepared. They are not fads (in fact, they tend to go in direct opposition to most conventional nutritional advice these days). Thus, several recommendations should be made in supporting the cultures in order to preserve it for longer period.

Now a day as a part of modern life, we don't follow these traditional foods saying that it's conventional and taking many processed foods causing Irregular menstrual cycle, menorrhagia, polymenorrhoea, dysmenorrhoea, obesity, polycystic ovarian disease, poor follicular growth at last ends with infertility. By consuming traditional foods regularly we may prevent these types of diseases.

By taking traditional foods, it helps to regulate menstrual cycle, facilitate normal vaginal delivery, reduces the risk of early osteoporosis and post-menopausal symptoms.

REFERENCES

1. Prof. Pu. Mu. Venugopal. *Udal thathuvam*. Published by Indian system of medicine and homeopathy, Chennai 600106, 2014.
2. Preetam Sarkar et al. Traditional and ayurvedic foods of Indian origin. *Journal of Ethnic Foods*, September 2015; 2(3): 97-109.
3. L. Kathleen Mahan, Janice L Raymond. *Nutrition in adolescence*. Krause's Food and the Nutrition Care process. 14th edition, 2017; 333.
4. Ejoh, Aba. Food Habits and the Prevalence of Sickness in the Northern Part of Cameroon. *International Journal of Current Research in Biosciences and Plant Biology*, 2016; 3: 127-134.
5. Kenneth Brown. How Processed Foods Can Affect Your Health. June 16, 2018. Retrieved from <https://www.verywellfit.com/ways-processed-food-wrecks-your-health-3898404>
6. Healthy diet for teenage girls. Curejoy editorial. Jun 19, 2018. Retrieved from <https://india.curejoy.com/content/healthy-diet-for-teenage-girls>

7. What are some of the old forgotten recipes of Indian dishes? / Retrieved from <https://www.quora.com/What-are-some-of-the-old-forgotten-recipes-of-Indian-dishes>
8. Eduardo Villamor and Erica C. Jansen. Nutritional Determinants of the Timing of Puberty. *Annual Review of Public Health*, 2016; 37: 33-46.