



GROWTH AND DEVELOPMENT IN CHILDREN: AN AYURVEDIC PERSPECTIVE

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ABSTRACT

Growth is an essential feature of life of a child that distinguishes him or her from an adult. The process of growth starts from the time of conception and continues until the child grows into a fully mature adult. Development refers to qualitative and quantitative changes and acquisition of a variety of competencies for functioning optimally in a social milieu. Further development is a continuous process from birth to maturity. It may be stressed that, besides 10% prevalence of developmental delay, the early identification of such problems remains difficult. There are different factors explained in Ayurvedic classics which are going for the maintenance and promotion of growth and development in children. This paper throws light on all those concepts aiding in a positive build-up of child's growth and development.

Keywords: growth, development, developmental delay

INTRODUCTION

Growth and development are the normal biological phenomenon of all living beings. They begin at conception and end at maturity. They are unique characteristics of children and any obstacle in this process at any stage can possibly result in aberration of growth and development. Frequently the terms growth and development are used together. In the normal child they progress together, and are interdependent. Growth is an essential feature of life of a child that distinguishes him or her from an adult. The process of growth starts from the time of conception and continues until the child grows into a fully mature adult. Growth is defined as an increase in the size of an individual due to increase in number and size of the cells, resulting in an overall increase. This increase can be seen, appreciated and measured accurately.¹

Development refers to qualitative and quantitative changes and acquisition of a variety of competencies for functioning optimally in a social milieu. Further development is a continuous process from birth to maturity. It depends on maturation and myelination of brain; unless that has occurred, no amount of practice can make the child learn that skill. It may be stressed that, besides 10% prevalence of developmental delay, the early identification of such problems remains difficult. Although severe disorders can be recognized in infancy, it is unusual to diagnose speech impairment, hyperactivity or emotional disorders before the age of 3 or 4 years, and learning disabilities are rarely recognized before children start their schooling. If one can diagnose developmental delay in early stages of growth, the intervention can reduce long-term sequel.² The child acquires different skills and talent at different periods of growth and development, when the relevant neurons spring into action.

Factors Influencing on Growth and Development:

Growth and development is a unique characteristic of children, which differs in each individual depending on the various factor influencing on it.

The factors influencing on Growth and Development are classified as follows:

- **GarbhapoorvaAvastha** – Prior to conception.
- **GarbhakaleenaAvastha**– During pregnancy
- **PrasavottaraAvastha**– After Birth.

Factors Influencing on Growth and Development prior to Conception:

Growth and Development start from very next moment after conception, but the factors influencing on Growth and Development even start prior to conception.

Shukra, Artava, Garbhashaya and Atma:

The union of sperm and ovum in the uterus when gets tranquillized with Prakrita and Vikrita bhavas along with the union of Atma at a time is called Garbha.³ Acharya Charaka and Sushruta both opined that unvitiated Shukra, Artava and Garbhashaya along with endowed Atma all together are responsible for formation of Prakrita Garbha.⁴ It means prior to conception, Shukra and Artava of the parents should be devoid of any Doshas and Garbhashaya should exist in a healthy state, This is to be followed by taking abode of Atma having good deeds of past life; all these together give rise to formation of foetus devoid of developmental disability. Acharyas have gone even to the extent of coding Ritumati Niyamas which help in growth and development of a healthy Graafian follicle.

Atulya Gotra Vivaha:

Marriage between the partners belonging to different Gotras influence over the development of Garbha by avoiding spread of disorders running in the families.⁵ This refers to non-consanguineous marriages. Acharya Bhela opined that Atulya Gotra Vivaha leads to birth of a child who is brilliant and disease free.⁶

Factors Influencing on Growth and Development during Garbha Kaleena Avastha:

After formation of Garbha with union of Shukra, Shonita and Atma, number of factors takes part in development of Garbha. They are as follows:

- Pancha Tanmatras
- Pancha Mahabhutas
- Shad Bhavas
- Garbhini Paricharya and Garbopaghata kara Bhavas
- Dauhru da Avastha
- Garbha Poshana

Role of Pancha Tanmatras.

The dye for printing of the basic structures of body is obtained from four sources i.e. the Matru, the Pitru, the Aatma and the Rasa Dhatu of mother. These are called as Tanmatras and are governed by Mahat-Ahankara in the endowment and Id carried forward by Jeevatma.⁷

Role of Panchamahabhutas in Garbha Vriddhi:

The Mahabhutas are the physical components of the foetus in terms of Doshas Dhatus and Malas. The four elements viz. Vayu, Agni, Jala and Prithvi when they are in a state of excellence, Shuddha Shukra and Shuddha Artava are regenerated.

Vibhajana (division), Pachana (metabolism), Kledana (moistening), Samhanana (solidification) and Vivardhana take place in Garbha (foetus) by Vayu, Teja, Jala, Prithvi, Akasha respectively. Atma gives Jiva to the foetus, in other words; it is conversion of Sukshma Tanmatras into Sthula Shareera.⁸⁻⁹

Role of Shadbhavas:⁹

Shadbhavas i.e. Matruja, Pitruja, Atmaja, Satmyaja, Rasaja and Satwaja Bhavas are responsible for the formation of Angapratyangas of Garbha i.e. organogenesis. These Shadbhavas not only take part in the structural growth of foetus but also play significant role in the development of psychological, spiritual, and emotional factors. Hence grossly it implies that proper growth and development of Garbha is achieved from a combination of proper Shadbhavas. As a whole Matruja, Pitruja, Atmaja and Satwaja Bhavas are responsible for the formation of proper Garbha or an improper Garbha, whereas Rasaja and Satmyaja Bhavas are responsible for development of Garbha.

Role of Garbhini Paricharya:

Garbhini Paricharya includes rules and regulations regarding diet and regimen to be followed by the pregnant lady. And adoption of this Paricharya improves Shareerika Bhavas and Manasika Bhavas of foetus. During first trimester because of nausea and vomiting, she may not be able to take heavy diet. So it is advised to take liquid diet like Ksheera processed with Madhura Aushadhas, which will supply proper nourishment and prevent dehydration. In the second trimester more protein is required for growth of the body tissues of fetus,

thus Mamsa Rasa is advised. In the third trimester the Gokshura is advised along with other nutritive diet, which may be helpful in preventing toxemic disorders. Use of Basti in eighth month of pregnancy may bring proper function of Apana Vata. Acharya Charaka and other authors opine that by following proper Garbhini Paricharya by the pregnant lady, she remains healthy and she delivers the child possessing good health, strength, and Samhanana i.e. compactness (Putramchestam Sampadupetam, Shukhinam, Shukenaisha Kale prajayata).¹⁰

The Effect of Garbopaghathakara Bhavas used by Pregnant Woman¹⁰

- Trauma and compression (in lower abdomen), peeping or falling in deep pit or well, riding in jerking vehicles, listening of unpleasant words may lead to premature delivery or abortion.
- Over indulgence in sex may lead to delivery of baby with deformity, impudent or lazy and henpecked.
- Addiction to intake of Katu Rasa Ahara makes the offspring weak (Durbala).
- Addiction to intake of Tikta Rasa Ahara makes the offspring cachectic (Sosha), weak (Abala), emaciated (Anupachita).
- Squatting or sitting in abnormal position, suppression of urge of defecation, urination or flatus, improper and excessive exercise, use of hot-pungent edibles, less quantity of food may lead to intra-uterine growth retardation (IUGR) or intra uterine death (IUD) of foetus or premature delivery. It is a known fact that prematurity is also one among the risk factors which is responsible for developmental disabilities.

Role of Fulfillment of Desires of Dauhruddha on Growth and Development:

Dauhruddha is a stage where desires of foetus are expressed through the mother and these are to be fulfilled since these are indirectly the physiological and psychic needs of the foetus. Their infulfilment may lead to abnormalities of growth and development in the growing fetus. If these longings are not fulfilled then Vata, which is present in both mother and foetus, gets aggravated. Vitiating Vata causes physical deformities like Kubja (humped back), Kuni (crooked limbs) Khanja (lame), Jada (idiot) and Vaamana.¹¹ Thus vitiating Vata is responsible for producing various pathological abnormalities in the foetus.

Garbha Poshana¹²

The foetus totally depends upon its mother and is devoid of hunger and thirst. Before formation of placenta the nourishment of the embryo occurs through Upasneha (attracting moisture) and Upasveda (osmosis). During this time the embryo gets its nourishment through Upasneha from the fluid moving all around it.

Later when the body parts become conspicuous, the nourishment of foetus is through umbilical cord, which is attached to the placenta and also partly through pores of skin situated in hair roots of the body of foetus through Upasneha. Thus the foetus is completely dependent on its mother's diet, which in turn becomes nourishment factor for the foetus. Foetus is getting its nourishment from the 'Rasa', which is derived from mother's diet and remains alive and develops in uterus. Any abnormality in placenta or the cord may lead to impairment in nutrition of the foetus.

In short Ayurveda described Garbha Vriddhikara Bhavas such as Sampada of Pancha-Tanmatras, Masanumasika Garbhini Paricharya, Upasneha and Upasveda, Kalaparinama and Svabhava Samsiddhi which help for the proper growth and development of foetus.

Factors Influencing Growth and Development during Prasavottara Kala:

Shareera Vriddhikara Bhavas and Bala Vriddhikara Bhavas play vital role in the development of a child after birth till the attainment of adulthood.

Shareera Vriddhikara Bhavas:

As the name itself suggests Shareera Vriddhi i.e. development of bodily tissues is contributed by following factors.¹³

a) Kala Yoga b) Swabhava Samsiddhi c) Aharasaushtava d) Avighata

(a) Kalayoga:

The growth and development is time bound. Once a particular time or age is gone any impairment that had happened can not be corrected e.g. the brain grows very rapidly during first six months of life and the head circumference becomes 44 cm from 34 cm. During next six months the brain growth is only 3 cm and HC becomes 47 cm. If there is failure in such growth, it cannot be made good later. Thus Kala Yoga may be taken as time bound growth and development.

(b)SvabhavaSamsiddhi (Innate potentiality):

Shareera (living body) has got its natural tendency of growth and development that is called as SwabhavaSamsiddhi. Probably it can be correlated with genetic factors. Because children of same parents with same factors grow differently with respect to growth and development, (i.e. Shareerika and Manasika), this is because of Svabhava factor. Svabhava is 'Adrista'. It is nature's gift for individual or that endowed from previous birth. Though the Garbha is formed from the union of four bhutas derived from four sources and persons differ from each other in their innate potentiality. This is termed as SwabhavaSamsiddhi, which plays an important role in Samvardhana of a child.

(c)AharaSausthava:

The term implies that the nutritious and balanced diet with all the required proteins, fats, carbohydrates, minerals and vitamins help for the optimal growth and development of the child. After birth food alone is considered the most important factor for the development, and it is considered as BahyaPrana. "AharamekatvaShareeraVridhikaroBhavanti" Kashyapa says that there is no better medicine than the food, to make the body free from any disease. It can keep the individual healthy. Of all the four ShareeraVrudhikaraBhavas, the Ahara is of paramount importance, and it is mainly responsible for the body growth and development.

(d)Avighata:

'Na vighata' is termed as Avighata. Vighatakarabhavas like injury, trauma, illness, etc. to both the mind and shareera may hinder the growth and development of a developing child. It is important to see that no injury of any sort is caused to mother during pregnancy and no injury is caused to foetus and no mental injury caused to mother during lactation period and no injury whatsoever to the growing child. Vighata to a growing child in the form of some illness may hinder the growth and development of child. Any type of Vighata during foetal life or after birth both mental and physical results in improper growth and development. It may be inferred that such trauma to the Garbha will result in developmental anomalies. Children suffering from tuberculosis, episodes of diarrhoea, etc. lag behind in their growth and development.

Influence of Samskara's on the Growth and Development of a Child:

The word meaning of Samskara changes according to different context; here i.e. in the context of Kaumarabhritya it can be interpreted as follows: Samskara is a religious rite and ceremony, which sanctify the body, mind and intellect of a child, so that child can become fit for the society. Samskara is a time or opportunity provided to the physician to check the periodic growth and developmental milestones attained by the child. Number of Samskaras is explained in the classics, which influence over the growth and development of a child after birth. Various Samskaras have been interpreted for their developmental role in the growing child by Dr. C.H.S.Sastry (1976) in his PhD Thesis at Banaras Hindu University entitled "Principles and Practice of Paediatrics in Ayurveda" and here we are concentrating on few Samskaras. Samskara refers to refinement activity and is done and promoted when the child becomes fit for such faculty to develop.

Jatakarma Samskara¹⁴

This Samskara is advised to be performed immediately after birth. In this Samskara new born is given a preparation of Ghrita + Madhu which is expected to be acting as Medhya, Ayushkara and Pushtikara for the child. Ghee and honey in equal quantity may stimulate immune system of the child immediately after birth.¹⁵

Nishkarmana Samskara¹⁶

This Samskara has to be performed either during 3rd or 4th month from the date of birth. In this Samskara infant is exposed to external environment so that he responds to external stimuli looking to moon/hanging object, may help the macular fixation and pupillary adjustment of the child can occur and the sound produced from bells of temple may stimulate auditory system of child.

Upaveshana Samskara¹⁷

This Samskara is performed during 5th month. According to this Samskara baby is made to sit on the ground for some time so that stimulation will be given for the developmental phase of ability to sit.

Phalaprashana Samskara¹⁸

It is performed during 6th month and is a special contribution of AcharyaKashyapa. In this Samskara, baby is supplemented with fruits, which are rich in vitamin C (e.g. orange) which is absent in mother's milk. Vitamin C is an essential component in the development of immune system and it also has antioxidant property. It helps in the formation of connective tissue in a growing body.

Annaprashana Samskara¹⁹

This Samskara is performed at the age of 10 months. According to Kashyapa from the time of this Samskara baby starts getting food with required nutrient, so that requirement of tissues in the body get fulfilled leading to proper growth and development.

In this way above Samskaras have an influence on both physiological and psychological development of a child. Milk alone is not sufficient at this age for growth and development. Complex carbohydrate and proteinous substances get digested with the secretions that start flowing in the stomach etc and then the child has to be slowly converted to Annada.

CONCLUSION

Child growth is internationally recognized as an important public health indicator for monitoring nutritional status and health in populations. Children who suffer from growth retardation as a result of poor diets and/or recurrent infections tend to have more frequent episodes of severe diarrhoea and are more susceptible to several infectious diseases, such as malaria, meningitis, and pneumonia. Henceforth, the proper knowledge and practice of the factors amounting to the child's growth and development dealt in ancient Ayurvedic classics is quite essential.

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