

### A CLINICAL STUDY OF SUVARNAPRASHAN ON PHYSICAL GROWTH AND IMMUNOMODULATOR IN CHILDREN

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#### **ABSTRACT**

In Kashyapa Samhita Swarna Prashan has been mentioned as it is an important receipe for child growth and memory enhancement and also to promote longevity in children on one month and six month use.<sup>[1]</sup> *Suvarnaprashana* therapy is becoming widely popular and being administered on the *Pushya nakshatra* of every month at Ayurveda centers across India. In the present study total 50 children of age 0-15

yrs were administered suvarnaprashan bindu on every pushyanakshatra for 1 yr. The Suvarnaprashan was prepared by adding Suvarna bhasma in siddha ghrita containing Brahmi, vacha, Yashtimadhu etc. along with madhu. The dose of suvarnaprashan was decided on the basis of age and weight of child. The assessment was done on the scale of physical growth and its immunomodulatory effect. The study concludes that children taking Suvarnaprashan showed more increase in weight and other physical growth parameters. Also improves general health and prevent recurrences of diseases by boosting immunity.

**KEYWORDS:** Suvarnaprashan, pushyanakshatra, immunity, physical growth.

#### **INTRODUCTION**

Now a days due to polluted air and food the children suffered from many viral diseases like swine flu, recurrent chest infections, GIT, chiken gunia etc. due to recurrences of these type of infections to the children, the physical and mental growth of the child is affected. But still

there is no proper solution or treatment in modern medicine for to prevent from the recurrences of the above ailments. But our ancients were very intellect and they gave us the some treatment like suvarnaprashan for to prevent children from such type of diseases.

Administration of colloidal gold using fine particles of metallic gold or *suvarna bhasma* has been advised in Ayurveda in infants and children in various forms. *Suvarnaprashana* described in *Kashyapa Samhita* is intended to boost memory, intelligence and immunity in infants. It is one of the oldest applications of gold nano medicine.

Ayurvedic texts have copious references describing the use of gold metallic powder (probably fine gold dust) or *Suvarna bhasma* in various rejuvenative therapies. Gold in the form of fine gold dust, red colloidal solution, *Swarna Patra*, *Swarna Bhasma*, *Swarna Parpati*, *Kharaliya* (triturated) formulations and *Sindoorkalpa*, often combined with *ghee*, honey, *Medhya* and *Rasayana* herbs were popularly used in the *Ayurveda* therapies.

*Kashyapa Samhita* written by *Vriddha Jeevaka*, one of the oldest textbooks of *Kaumardhritiya* (one of the eight branches of Ayurveda dealing with mother and child health care), gives the first reference about giving *Suvarnaprashana* as a therapy for infants. This has been advised in infants and children from birth till<sup>[1]</sup> year of age.<sup>[2]</sup> There is misconception among the common man that, *Suvarnaprashana* is vaccination method in Ayurveda, because majority of the physicians administer it monthly once on the day of *Pushya Nakshatra*. But it is incorrect; *Suvarnaprashana* is a *Rasayana Chikitsa*, should be administered continuously to get the optimum therapeutic effects for the physical, mental, intellectual and spiritual wellbeing of the children.

Infant or childhood is the growing state of life. Good health in this state gives strong foundation to the future building of life. Proper growth is observed by their physical characters like anthropometry and physiosocial development. Growth is an increase in physical size of whole or any of its part and can be measured in inches/centimeter and in pounds/kilograms.

There are many factors influencing the rate of growth like inadequate nutrition, physical hyperactivity, lack of adequate rest, physical illness and emotional illness which cause increase in nutritional need but at the same time result in poor appetite and poor absorption. Such situations during rapid growth period and critical period of development have a

temporary or permanent delaying effect on the achievement of normal growth and development.<sup>[3]</sup>

Ayurveda science is more concerned for better life by preventive and supportive measures for pediatric age group. *Aacharya Kashyap* stated that healthy and unhealthy condition depends on the *lehana*.<sup>[4]</sup> *Aacharyas* have mentioned four *swarna yogas* for proper growth and development of child. In all the four *yogas swarna* (gold), ghee and honey are present.<sup>[5]</sup> As *swarna* is the main ingredient of this *leha*, it is named as *Swarna Prashan* (SP).<sup>[6]</sup>

It is an ancient process of administering *swarna* and other useful medicines through oral route in children for better health and prevention from many diseases. *Acharyas* have mentioned the benefits of SP. They have stated that regular use of SP helps to sharpen the memory to its extreme level, help in proper growth and development and prevent from diseases.<sup>[7]</sup> Through this article we want to evaluate the effect of SP on physical growth parameter weight and height etc, in order to improve general health condition of children.

## AIMS AND OBJECTIVES

1. To assess the efficacy of the suvarnaprashan on children's physical development.
2. To determine the efficacy of the suvarnaprashan on children's immunity by assessing the frequency or recurrences of diseases.

## MATERIAL AND METHODS

Total 50 children were selected randomly irrespective of sex from the OPD of Kaumarbhritya, Dr.D.Y.Patil college of Ayurved & Research Centre, Pune. After taking permission from institutional ethical committee and consent from their parents. General examination of each child was carried out to rule out deformity as per hospital case paper, those children were selected only who fulfill the inclusion criteria.

This clinical study involved a single group.

A group of 50 children was administered suvarnaprashan orally on every 27th day on pushhyanakshatra of every month throughout year.

## SELECTION CRITERIA

### 1) Inclusion criteria

1. Age –0 to 15 years
2. Either sex.

3. Recurrent episodes of respiratory ailments and / or gastro-intestinal ailments.

## 2) Exclusion criteria

1. Age above 15 years.
2. Known case of hypersensitivity.
3. Babies with respiratory and /or gastro-intestinal congenital anomaly.
4. Cystic fibrosis
5. Celiac disease.
6. Pulmonary or abdominal tuberculosis

### Preparation of Suvarnaprashan

#### Ingredients

- Suvarna bhasma
- Goghrita
- Madhu
- Bramhi
- Shankhapushpi
- Vacha
- Yasthimadhu
- Bala
- Ashwagandha

Suvarnaprashan (SP) was prepared in the Pharmacy of institute under all aseptic precaution.

Preparation involved the mixing of honey and cow ghee till the formation of homogeneous mixture. Suvarnabhasma was added to this mixture, then mixture was again triturated until the formulation becomes homogeneous.

#### Dose of Suvarna prashan ghrita

The dose of suvarnaprashan was decided on the basis of age and weight of child. Quantity of suvarnabhasma in Suvarnaprashan was kept 1 mg/ml. SP was given on pushya nakshatra of followed on every 27th day. Such 14 dose of SP was given to children of group. On every visit each child was examined for weight, height, head circumfarance and chest circumfarance.

### **Instruments required for examination**

Infantometer, stadiometer and electronic weighing machine.

### **Method for assessment anthropometry**

#### **1. Assessment of weight**

- a. Weight of infant and neonates was measured with infant weighing machine, keeping the child in supine position on the measuring pan and weight was recorded.
- b. Weight in children older than 1 year was measured with electronic weighing machine. Children were standing without shoes in straight posture on the weighing machine and weight was recorded.

#### **2. Assessment of height**

- a. Height of neonates and infants was measured by infantometer. Infant was placed with the top of the head against the fixed head board of the measurement device and with the eye-ear plane perpendicular to the base of the device. Child's knees must be flat against the table and the foot boards moved until the soles, of the feet, are against it, with the toes pointing up.
- b. Height in children older than 2 years was measured with stadiometer.

Children were being measured without shoes while standing against the vertical plane to which the measuring tape is attached. The Childs heels buttocks, shoulder and back of the head was touching the wall. The eye-ear plane was perpendicular to the wall and the feet, including the heels, was be flat on the floor. With the child in this position, the right angle device was lowered until it touches the top of the head, and the height is recorded.

#### **3. Measurement of head, chest circumference & MUAC.**

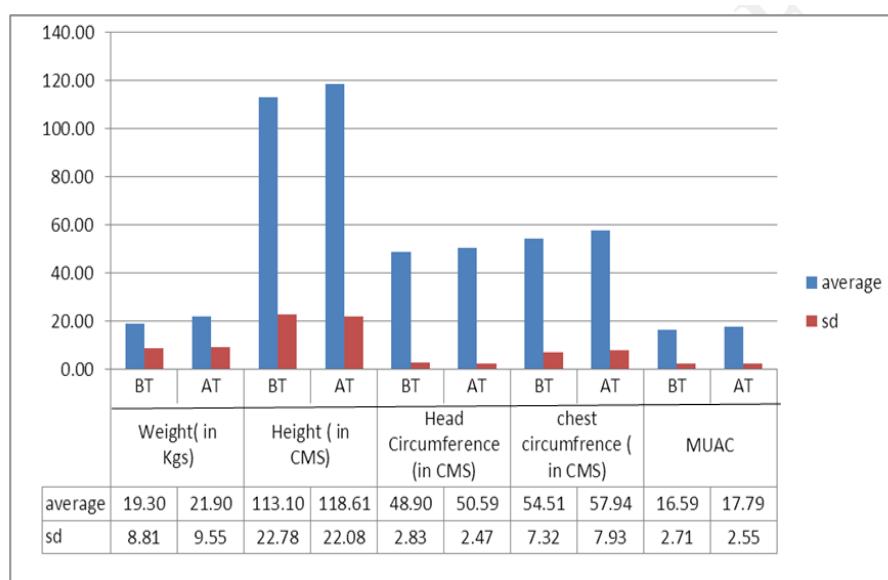
- Measurement of head and chest circumference was measured by plastic measuring tape for all children.

### **OBSERVATIONS AND RESULT**

	Weight		Height		Head Circumference		Chest Circumference		MUAC	
	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
Average	19.30	21.90	113.10	118.61	48.90	50.59	54.51	57.94	16.59	17.79
SD	8.81	9.55	22.78	22.08	2.83	2.47	7.32	7.93	2.71	2.55
CV	0.46	0.44	0.20	0.19	0.06	0.05	0.13	0.14	0.16	0.14

- Weight gain in children is highly significant ( $p<0.001$ ). analyzed by paired t- test.

- Height gain in children in one year is highly significant ( $p<0.001$ ) analyzed by paired t-test
- Head circumference gain in children in one year is highly significant ( $p<0.001$ ) analyzed by paired t-test
- Chest circumference in children in one year is highly significant ( $p<0.001$ ) analyzed by paired t-test
- It is observed that the MUAC is highly significant ( $p<0.001$ )



## DISCUSSION

Children were assessed properly for weight and height in the beginning of the study then subsequently examined on every twenty seventh day and record was documented properly. At the end of observation total gain was calculated and compared with standard gain according to age.

Pair t – test is used to show significant weight gain, height gain and head and chest circumference in all children of male and female in duration of one year as  $p<0.05$  (Table.) means there is increase in weight and height and head and chest circumference in maximum number of children.

Properly made swarna bhasma is sheet (cold) in virya, madhura (sweet) in vipak and madhur (sweet), tikta (bitter), kashaya (astringent) in rasa. and other contain like yasti, bala, ashwagandha, brahmi, vacha provides bala (strength) to the body and brain. It shows brumhana karma (bulk promoting action), which is expected here, with the help of madhur

rasa and madhur vipaka increase in the rasadi dhatus is possible and occurs gradually, thus increase in rasa leads to increase in rakta, mansadi next dhatus may lead to increase in weight of male and female children.<sup>[8]</sup>

Modern research shows that gold particles having anti-oxidant property and T – lymphocyte activation and thus involve in regulation of antigen specific immune response.<sup>[9]</sup> This effect of swarnasiddha ghrita decrease the frequency of illness in children and helps to grow healthily as per the history given by the parent of each child. It also shows cognitive effect of increase in dhi (intellect), dhriti (restrain) and smriti (memory or recalling capacity). Honey and ghee acts as a vehicle for the swarna bhasma vacha and kustha powder.<sup>[10]</sup>

Suvarna Prashan was proven more effective in gaining weight rather than height. Weight and height of child depends upon various factors like maternal, paternal, environmental, genetic constitution and diet. Besides all these, general health of the children is also an important factor. The study result showed that SP maintained general health by increasing immunity level of the body.

SP also improves digestion and metabolism of the body which keep the Tridoshas in balance state. Thus the child is free from seasonal variances and shows effective growth in their physical parameters.

This study has some lacuna like sample size should be more, frequency of SP doses should be more either it is weekly or biweekly instead of per 27th day, study should be conducted in different geographical areas like jangal, anoop and sadharan desha and study should start with different bala kala (seasons) like avar, madhyam, uttam. Approach of this study was limited to local area hence it is possible to vary result according to region, age and many more. Also more research is needed in this direction to evaluate the netrya, hrudya effects of the swarna bhasma. It is also needed to highlight the bhruhanadi karma in scientific way with special reference to effects on needed rasa, raktadi dhatus.

## CONCLUSION

Suvarnaprashan is Ayurvedic lehana medicine. It shows increase in weight and other anthropometric measurements of children more than other normal growing children. Suvarna Prashan was also proven more effective in maintaining general health by increasing immunity

level of the body. Thus we can use SP as effective medicine to maintain general health of children in order to promote weight gain.

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