

## Effects of Yoga on *Prakrti* in Children – a Pilot Study

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**Abstract:** *Effect of Yoga on the personality of children and trigunas have been proven. But there are no available studies on the effect of yoga on tridoshas, which may contribute to the restoration of positive health. Objective of the study was to understand the effect of Integral Yoga module on the Prakrti of children.*

*The study was single group pre-post design. During th period of three months, 30 children aged 8-12 yrs, selected from Maxwell public school practiced Integral Yoga module including asanas, pranayama, nadanusandhana, chanting and games. Ayurveda child personality inventory was administered before and after. Paired sample T-test was applied. Vata was decreased significantly and Pitta increased significantly. Increase in Kapha was not significant. Integral Yoga Module has the significant effect on the tridoshas in children.*

**Key words:** *tridosha, prakriti, vāta, pitta, kapha*

### Introduction

Western psychology proclaims personality of an individual determined by the psychodynamic systems id, ego, super-ego and unconscious principle. It defines personality as “the dynamic organization within the individual of those psychophysical systems that determine his characteristic behavior and thought” (Mischel, 1971). Indian psychology conceptualizes that the personality is determined by *tridosha* (metabolic principles - Vāta, Pitta, Kapha) and *trigunas* (Sattva, Rajas, Tamas-representing harmony, passion, ignorance) (Brahmananda, 1994).

Āyurveda classics illustrate 7 types of *Doshaja Prakrti* and sixteen types of mental constitution formed at the time of conception (Brahmananda, 1994). Accordingly, they affirm persons with predominance of single *dosha*, and two *dosha* are susceptible to somatic diseases and psychological illness.

Concepts of Indian psychology about our past-life actions (*samskaras*) determine our character. Patanjali quotes that birth, experiences, actions depend upon past-life impressions. He also emphasizes that practice of *astanga* yoga will help in clearing the impressions, thus changing the character of an individual (Vivekananda, 2006; Tapasyananda, 2006). Thus perfect health can be attained (Brahmananda, 1994). Similarities between Āyurveda concept and modern gestalt theory and the correspondence of 16 types of personalities with 16 types of psychological disorders have been discussed (Dube, Kumar, Dube, 1983).

A study have reported significant changes in *sattva, rajas, tamas* by integral yoga practice on subjects of age group 17-63 (Khemka, Ramaro, Hankey, 2011). A randomized controlled study has shown the influence of yoga on *gunas* and self esteem in comparison to physical exercise

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(Berger, Silver, Stein, 2009). Another study have reported changes in well being of children after yoga (Rangan, Nagendra, Bhat, 2009). The GES educational program, based around integrated yoga modules is proven effective in enhancing visual and spatial memory (Krishnan, Sripriya, 2006). Simplified kundalini yoga have showed significant effect on personality and achievement (Deshpande, Nagendra, Nagarathna, 2009). Yoga has proven more effective than physical exercise in attention deficit hyperactive disorder (Haffner, Roos, Goldstein, Parzer, Resch, 2006). Relaxation and yoga exercise have reduced anxiety of children and adolescent group (Platania-Solazzo, Field, Blank, Seligman, Kuhn, Schanberg, Saab, 1992). The efficacy of integral yoga module as an effective therapeutic tool in the management of mentally retarded children has been proven (Smith, Greer, Sheets, Watson, 2011).

Improvement of the physical and mental health and promotion of well-being by six months of yoga practice in adults has been proved (Uma, Nagendra, Nagarathna, Vaidehi, Seethalakshmi, 1989). Improvement of cognitive function and quality of life in women who practiced yoga has been addressed (Hadi, Hadi, 2007). A study has proved reduction of somatic stress by muscle relaxation (Oken, Zajdel, Kishivama, Flegal, Dehen, Has, Kraemer, Lawrence, Levy, 2006). Higher scores in life satisfaction and lower scores in excitability, aggressiveness, openness, emotionality and somatic complaints was followed by hatha-yoga practice (Khasky, Smith, 1999).

As there was no published studies available on the effect of yoga on *tridosha* and *prakrti*, need was felt for the present study to be carried out.

## Methods

The study was single group pre-post design. Examinees practiced integral yoga module for three months. They practiced twice a week with yoga teacher and they were asked to practice at home every day by themselves. Āyurveda child personality inventory was administered at the beginning and at the end of three months. *Vata*, *pitta*, *kapha* mean scores were analyzed, significance was analyzed by Paired sample T-test.

Āyurveda child personality inventory which was based on Sanskrit verses quoted in nine texts had three subscales: *vata* (A), *pitta* (B), *kapha* (C). Associated with the Cronbach's alpha for A, B and C scales were 0.77, 0.55 and 0.84 respectively. The Split-Half reliability scores were 0.66, 0.39 and 0.84 respectively. Factor validity coefficient Scores on each items was above 0.5.

## Subjects

Thirty children of the age group 8-12 years old from Maxwell Public School, Bangalore were included in the study. Children with attention deficit hyperactive disorder, autism, psychosis and mentally challenged were excluded from the study.

## Integral Yoga Module

Yoga practices included breathing exercises like ankle stretch breathing, hand-stretch breathing, dog breathing, rabbit breathing, dynamic exercises like jogging, forward-backward bending, *Surya namaskara*, *asanas* - *vrkshasana*, *veerabhadra-asana*, *ustrasana*, *padahasthasana*, ostrich pose, blossom, *pavanamuktasana kriya*, *pranayama* techniques - *nadishuddhi*, *bhramari*, yogic breathing, *nadanusandhana*, yogic games like search engine, find the leader, along with the stories, *vedic* chanting, *Bhagavad Gita* chanting.

**Table 1:** Demographic data

Sample	N/Mean	%/ SD
Gender	12 boys/N-30	40%
Age	9.5	1.4
Education	5.2	1.7

## Results

**Table 2:** Paired sample T-test results of ACPI

Tridosha	Before Yoga	After Yoga	Significance
Vata	19.4±7.29	15.4±4.28	.002
Pitta	19.7±6.1	23.0±1.6	.011
Kapha	21.4±9.7	22.8±4.1	.416

## Discussion

Children who scored high in *vata* and *pitta* before yoga, scored high in *pitta* and *kapha* after yoga. Children who scored high in *kapha* before practice, scored high in *pitta* and *kapha* after yoga. Children, who scored high in *vata*, scored high in *vata* nad *pitta* after yoga. Totally, *vata* was reduced significantly, *pitta* increased significantly, while increase in *kapha* was not significant.

Sweating reduces *vata* according to Ayurveda classics (*Brahmananda*, 1994). A study has shown sweat loss after yoga practice (*Schell, Allolio, Schonecke*, 1994). *Vata* is associated with *rajas* and *tamas*. Earlier studies have shown *rajas* and *tamas* decreases after yoga (*Deshpande, Nagendra, Nagarathna*, 2009). The present study found that *vata* has reduced after yoga.

*Pitta* has the characteristic of heat. If body temperature increases, *pitta* increases (*Brahmananda*, 1994). Earlier studies have discussed the effect of yoga on body temperature and thermoregulation (*Madanmohan, Mahadevan, Balakrishnan, Gopalakrishnan, Prakash*, 2008). This study have determined that *pitta* have increased by integral yoga practice.

*Kapha* is predominant is *jalamahabhuta*, which is associated with *sattva* and *tamas guna* (*Brahmananda*, 1994). Earlier research work (*Telles, Singh*, 2011) has discussed *kapha* correlates with *sattva guna*. Earlier studies have shown *sattva guna* increases after yoga (*Rangan, Nagendra, Nagarathna*, 2009; *Deshpande, Nagendra, Nagarathna*, 2009). This investigation has proved the increase in *kapha* by yoga.

## Conclusions

The strength of this study is the first attempt to explore the effect of yoga on *prakrti* of children. While, Ayurveda quotes, persons with predominance of single or double *doshas* will always be diseased and equilibrium state of *tridosha* is health. The present result may point, that yoga helps to move towards positive health by changing the states of *doshas*.

Although yoga module resulted in significant changes in *tridosha* (except *kapha*), sample size was small, yoga practices were not monitored regularly. Sample was not randomly assigned. Future studies are required on random-controlled sample. And yoga practices should be monitored continuously.

The present study have showed, integrated module of yoga have significant effect on *vata* and *pitta* and not necessarily on *kapha* for children of the age group 8-12 years.

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