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## Effect of Surya Bhedan and Chandra Bhedan Pranayama on shooting ability in basketball

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### Abstract

The purpose of this study was to assess the effects of Surya Bhedan and Chandra Bhedan Pranayama on shooting ability in Basketball player. For the purpose of this study <sup>[10]</sup> basketball players were selected from Department of Physical Education AMU, Aligarh. The data was analysed through t-test to ascertain the significant difference in the pre and post experimental means of two groups obtained after the two different pranayams on two successive days.

**Keywords:** Surya Bhedan Pranayama, Chandra Bhedan Pranayama, basketball

### Introduction

Yoga is a popular activity for athletes, children, and seniors. Yoga can be modified to suit all levels of persons ranging from age, sex and physical condition. The word "yoga" comes from the Sanskrit root "yuj", which means "to yoke" the spirit and physical body together. Yoga has evolved over thousands of years to embrace a wide range of styles and disciplines. Yoga energizes our bodies and calms our minds.

Pranayama is control of Breath". "Prana" is Breath or vital energy in the body. On subtle levels prana represents the pranic energy responsible for life or life force, and "ayama" means control. So Pranayama is "Control of Breath. Pranayama has a Soothing and balancing effect on the nervous system and consists of different breathing exercises. The many kinds of pranayamas has a different effect on our physiology and the state of our mind. "Tasmin Sati Svasa prasvasa Orgativicchedah Pranayamah" – The regulation of breath or the control of Prana is the stoppage of inhalation and exhalation, which follows after securing that steadiness of posture or asana. That is the definition of Pranayama in the Patanjali Yoga Sutras.

Surya Bhedana Pranayama is one of the main pranayamas practiced with Kumbhaka. Surya means the sun. In Surya Bhedan Pranayama the Surya Nadi or the right nostril channel is activated. Surya Bhedan Pranayama is mentioned in the yoga texts Hatha Yoga Pradeepika and the Gheranda Samhita.

In Yoga, the right nostril channel or the Surya Nadi, also called the Pingala Nadi is related to prana and the bodily functions, In Surya Bhedan Pranayama, the inhalation is done through the right nostril only. It is said to activate all the bodily functions.

Surya Bheda Pranayama is classified as a practice involving retention of breath. The breath is held to the maximum limit as per one's comfort. The practice of Kumbhaka or holding of breath is an advanced practice.

Chandra is the moon. Bhedana means passing through. In Chandra Bhedana Pranayama inhalation is done through the left nostril and exhale through the right.

It is said that energy passes through Ida (Chandra) Nadi on the inhalation and through Pingala or Surya Nadi on the exhalation. These are larger nadis that hold the balance of magnetism and energy created by the sun and moon. They travel from the base of the spine to the point between the eyebrows. Chandra Bhedana Pranayama is a cooling pranayama. The moon corresponds to the introspective, passive and artistic aspects of an individual's personality.

### Purpose

The purpose of this study was to assess the effects created at physiological level by Surya Bhedan Pranayama and Chandra Bhedan Pranayama on shooting ability in Basketball player.

### Methodology

1. For the purpose this study 10 basketball players were selected from Department of Physical Education AMU Aligarh. They were first made to undertake 10 shots from free throw line and their score was noted, there after all of them were subjected to 10 minutes of Surya Bhedana Pranayam and again they took shots from free throw line and the score was noted for each player.
2. Next day same group of players were again asked to perform 10 free throws after which they were subjected to 10 minutes of Chandra Bhedana Pranayama followed by their performing of 10 free throws.

### Statistical Analyses

The data was analysed through t-test to ascertain the significant difference in the pre and post experimental means obtained after the two different pranayams on two successive days.

**Table 1:** t-test Pre and Post-test difference of Chandra Bhedan

Group	Experiment	N	Mean	Sd	Df	Cal-value
Chandra Bhedan Pranayama	Pre	10	5.4	1.50	9	3.16
	Post	10	5.3	1.41	9	

Tab. 05=1.83

Since calculated value is greater than tabulated value we conclude that post experimental mean is significantly lesser than the pre experimental mean.

**Table 2:** t-test Pre and Post difference of Surya Bhedan Prayanam

Group	Test	N	Mean	Sd	Df	Cal-Value
Surya Bhedan Pranayam	Pre	10	5.4	1.50	9	5.58
	Post	10	6.1	2.13	9	

Tab. 05=1.83

Since calculated value is greater than tabulated value we conclude that post experimental mean is significantly greater than the pre-experimental mean.

**Table 3:** t-test Surya Bhedan and Chandra Bhedan

Group	Experiment	N	Mean	Sd	df	Cal-value
Surya Bhedan	Post	10	6.1	1.50	9	2.58
Chandra Bhedan	Post	10	5.3	1.41	9	

Tab. 05=1.83

Since calculated value is greater than tabulated value we conclude that Surya Bhedan mean is significantly greater than the Chandra Bhedan mean.

### Results and Discussion

The findings of the study had revealed Chandra bhedan pranayam to creates a cooling effect due which the shooting performance is significantly decreased, as significant t-value had been observed between the pre and post Chandra bhedan means of the group.

Chandra is the moon. Bhedana means passing through. In Chandra Bhedana Pranayama inhalation is done through the left nostril and exhale through the right. It is said that energy passes through Ida (Chandra) Nadi on the inhalation and through Pingala or Surya Nadi on the exhalation. These are

larger nadis that hold the balance of magnetism and energy created by the sun and moon. They travel from the base of the spine to the point between the eyebrows. Chandra Bhedana Pranayama is a cooling pranayama. The moon corresponds to the introspective, passive and artistic aspects of an individual's personality.

With the practice of Chandra Bhedana Pranayama the mind becomes steady. Chandra Bhedana Pranayama is beneficial in conditions like mental tension, agitation, high blood pressure, heart disease etc. Chandra Bhedana Pranayama is also useful for meditation. The practice of Chandra Bhedana Pranayama reduces the flow of bile and as such the body heat is reduced. Chandra Bhedana Pranayama helps cure heart burn and laziness. It reduces the bile and removes the excess heat of the body. You do not feel tired, and belching is stopped.

The findings of the study had shown that after suryabhedan pranayam the shooting performance in basketball capacity had increased significantly. *Surya Bhedan Pranayama* activates the body and the bodily functions. It increases the digestive fire. It destroys all diseases that are caused by insufficiency of oxygen in the blood. The *Gheranda Samhita* says that *Surya Bhedan Pranayama* destroys decay and death, awakens Kundalini Shakti and increases digestive fire. The *Hatha Yoga Pradeepika* says that *Surya Bheda Pranayama* cleans the frontal sinuses, destroys disorders of *Vata* and destroys intestinal worms. In the *Hatha Yoga Pradeepika*, it is also said that one can perform *Uddhiyana Bandha* by pulling in the abdomen at the end of Kumbhaka or holding of breath. This will force the prana to enter the central pranic channel called *Sushumna Nadi*. This leads to awakening of the *Kundalini Shakti*.

Thus from the findings of the present study we conclude that suryabhedan pranayam prior to basketball game might be beneficial for enhancing the shooting performance whereas Chandra bhedan may decrease performance.

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