



# ROLE OF YOGIC PRACTICES ON SELECTED PSYCHOMOTOR SKILLS AMONG BADMINTON PLAYERS - An Overview

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## Abstract

The purpose of the study is to describe the role and effect of yogic practices on selected psychomotor skills among Badminton players. Yoga is defined as a group of physical, mental, and spiritual practices or disciplines which originated in ancient India, which includes changes in mental attitude, diet, and the practice of specific techniques such as yoga asanas (postures), breathing practices, and meditation to attain the highest level of consciousness. Bhastrika is an important breath exercise in yoga and pranayama. Nadi shodhana is also known as alternate nostril breathing. It is a powerful breathing practice with wide reaching benefits. The study is delimited with yogic practices under the effects and evaluated on the basis of its impact on psychomotor skills. The purpose of the study is to describe the role of Yogic practices on selected psychomotor skills among Badminton players and describes the effects of Yogic practices on psychomotor skills. So, the researcher found that it is worthwhile to have a study on the role of Yogic practices on selected psychomotor skills among Badminton players.

**Keywords:** Bhastrika, Nadi shodhana, Yoga, Physical, Mental, Spiritual Practice, Psychomotor Skills

## Introduction

Everyone thinks that in order to concentrate well in Badminton, we need to "block out" distractions. Rather than doing battle with distractions, and attempting to ward them off, it's better to simply "tune in" to the proper cue. There are two types of distractions, internal and external. Either type takes our attention away from the correct cues we should be focusing on. To tune in, focus on various aspects of the shuttlecock. By clearing the mindset taking some deep breaths, relaxing muscles, focusing the shuttlecock you hold it, or the server holds it. Taking a very sharp look at it using the vision and sense you begin to enter the moment. This is where we concentrate, and our object of concentration is the shuttlecock. Anything else we think about is a distraction. We don't have to think "about the shuttlecock", just watching the shuttlecock we automatically concentrate. We don't have to force it, or block out any distractions. We are simply in the now, focusing.

Yoga is defined as a group of physical, mental, and spiritual practices or disciplines which originated in ancient India, which includes changes in mental attitude, diet, and the practice of specific techniques such as yoga asanas (postures), breathing practices, and meditation to attain the highest level of consciousness.

We can survive for weeks without food, and days without water but if we stop breathing for just a few minutes, we die. It is astonishing how little attention we pay to this, our most important source of bodily energy. In the Yogic tradition, breath plays a central role, being used to balance the body and mind.

Pranayama (control of the breath) is one of the 8 Limbs of Yoga presented in the Yoga Sutra. When we are stressed or anxious, we tend to breathe shallowly. Simply by noticing this and slowing down our breathing we can immediately access a more relaxed state.

Breathing is unique in that it is a process that happens naturally, but we can also choose to control it, this places it at the boundary between our conscious and unconscious experience, making it the perfect tool for meditation. One of the simplest yet most profound types of meditation involve simply returning the mind to the breath every time we are distracted by thoughts. Practicing asanas, pranayama, meditation, and tratakas (concentrated gazing practices), and attending devotional sessions can lead to a significant improvement in fine coordinated movements. Yoga practices led to a reduced degree of optical illusion created by muller-lyer lines and raised the critical fusion frequency but also improved neural performance, higher critical fusion frequency indicating reduced fatigue and stress level.

## Pranayams

### 1. Bhastrika

Bhastrika is an important breath exercise in yoga and pranayama. It is sometimes treated as a kriya or 'cleansing action' along with kapalabhati to clear the airways in preparation for other pranayama techniques. Bhastrika involves a rapid and forceful process of inhalation and exhalation powered by the movement of the diaphragm. The movement of air is accompanied by an audible sound. One inhale and exhale equals one round of Bhastrika, and it may be repeated for many consecutive rounds.

Breathe in and out forcefully through both the nostrils, filling and emptying the abdomen like the bellows of a blacksmith. Repeat 20 times then hold the breath. It should be repeated thus thrice. By practicing it, no disease or disorder takes place and a disease free-state increased day by day.

### Mental health benefits of Bhastrika

1. It is good for brain oxygenation.
2. It benefits the nervous and the motor system.
3. It is great for energizing the body and the mind
4. Good for people with depression and anxiety

### 2. Nadi shodhana

Nadi shodhana is also known as alternate nostril breathing. It is a powerful breathing practice with wide reaching benefits. Nadi is a sanskrit word meaning "channel" or "flow" and *shodhana* means "purification." Therefore, nadi shodhana is primarily aimed at clearing and purifying the subtle channels of the mind-body organism, while

balancing its masculine and feminine aspects. It is pacifying for all three doshas and is a suitable practice for most anyone.

### Mental health benefits of Nadi Shodhan

**1. Enhanced Mental Function:** Alternate nostril breathing helps sharpen your concentration and mental clarity when your mind is dull. It provides equal amounts of oxygen to both sides of your brain. It is a great exercise to do before an important event where you need greater focus, like an exam, interview, or important meeting.

**2. Soothed Nervous System:** By focusing on your breath, slowing it down and deepening it, your brain will register a message for your nervous system to move from a stressed to a relaxation response. Breathing just through your left nostril (by blocking off your right nostril) can direct oxygen flow and energy into the right hemisphere of your brain, which turns on the parasympathetic nervous system (enabling relaxation).

### Balance in Badminton:

Balance is all about distributing weight evenly so that the player can remain upright and steady. If too much weight goes forward, backward or to either side a player will lose balance. You probably take a lot of this for granted, having mastered balancing a long time ago, but it's worthwhile pointing out that the better you are at balancing the faster you will improve at Badminton.

Badminton is an active sport (honest) and therefore we are more interested in dynamic balance than static balance. Dynamic balance is the ability to maintain balance and control of the body whilst moving. In a Badminton match you need to be able to keep your balance as you move to the shuttlecock, as this will enable you to play a good shot and move for the next shuttlecock.

### Balancing Asanas

- 1. Vrikshasana:** This posture is a close replica of the steady, yet graceful stance of a tree. The quintessential yoga balance, and a posture in which you're standing on one leg, Tree Pose really requires attention and concentration to stabilize. For this pose, unlike most other yoga poses, you are required to keep your eyes open so that your body can balance itself. This asana has benefits performing in the morning. This asana involves focus and concentration, and it is best to channelize this in the morning when your mind is clear of the worries and stress from the happenings of the day.
- 2. Virabhadrasana III:** This flying warrior pose requires focus and concentration as you stabilize your body on one leg and draw your torso parallel to the floor. Just like your gaze, if your thoughts start to wander, you may lose your balance. Find a mental *and* visual drishti (a focus point to set your gaze/thoughts on).

### Psychomotor skills

Psychomotor ability is the relationship between cognitive functions and physical movement. Psychomotor learning is demonstrated by physical skills such as movements like, agility, coordination, reaction time, time movement

anticipation, which demonstrate the fine or gross motor skills, such as use of precision instruments or tools, and walking.

With respect to Badminton, psychomotor skills prepare an athlete to achieve a specific goal through structured and focused training. The research is implying the application of Yogic Practices training is to increase the athlete's psychological mindset and capacity to optimize athletic performance. Training can be undertaken across a long period of time and involves many psychological variables. Badminton requires immense amount of reaction ability, anticipation and agility as well.

Our mind directs the body to respond and provides athletes with the information regarding where and when to perform. If the mind is not receiving messages and cognition is not accurate or quick enough, performance may suffer. It is important to have clear mindset, focused and clear vision to be functioning at advanced levels.

Psychomotor skills are crucial to Badminton success. You need to be able to track the shuttlecock and then move your body correctly and on time in order to make a stroke. Hitting a badminton shuttlecock may seem simple but in fact it is highly complex. That's one of the reasons why they haven't been able to create a machine/robot that can beat a human yet.

Whether you class yourself as coordinated or uncoordinated really doesn't matter. If you want to learn how to play Badminton (or improve faster) you need to work on improving your general and Badminton specific psychomotor abilities as much as possible.

Psychomotor skills enhance eye hand coordination and hence Badminton sporting skills are improved.

A Badminton is a highly skilled sport where and shuttlecock moves to quick on the Table which sometimes may become difficult analyzing its speed and react accordingly.

### **Some important psychomotor skills for Badminton players:**

**1. Reaction Time:** Reaction time is the ability to respond quickly to a stimulus. It is one of the most important psychomotor abilities in Badminton and other sports too. Simple reaction time is the time taken between a stimulus and movement.

Performers receive stimuli from the eyes, the ears and kinesthetic sense. Skilled players reduce reaction time by selecting the most important information, and by anticipating other player's actions and the path of the shuttlecock quickly.

**2. Agility:** Agility is an ability to change the body's position efficiently, and requires the integration of isolated movement skills using a combination of balance, coordination, speed, reflexes, strength and endurance.

Agility in Badminton helps in changing directions while maintaining the balance, speed and control over the whole body without losing lot of time in transition. It helps in enhancing player's coordinative abilities.

**3. Anticipation:** In sport and exercise psychology, anticipation usually refers to the ability to quickly and accurately predict the outcome of an opponent's action before that action is completed. Being able to anticipate your opponent's shots will be a great advantage. Your body and your mind continuously react to different situations in Badminton and by having great anticipation you'll have plenty of time to get to the shuttlecock and hit it with good placement.

So, the researcher found that it is worthwhile to study on the role of yogic practices on selective psychomotor skills among Badminton players.

## Methods

### Bhastrika Technique

In this pranayama, inhalation and exhalation is repeatedly performed at the same ratio. The instructor only gives instructions for breathing through both nostrils 20 times. This process of rhythmic breathing in and out of the nose is performed quickly. The Players who feel uneasy while learning Bhastrika, the technique has to be slowly done according to their own pace of capacity.

**Duration:** Up to five rounds should be practiced.

**Sequence and time of practice:** The best time for Bhastrika pranayama is after mild stretching and warm-up. Bhastrika should never be practiced after meals.

**Awareness:** Focus the awareness on the breathing process, the physical movement of the abdomen and the mental counting.

**Precautions:** A feeling of faintness, excessive perspiration or a nauseous sensation indicates that the practice is being performed incorrectly. Avoid violent respiration, Avoid excessive shaking of the body. If any of these symptoms are experienced, a slow, conscientious approach is recommended by the instructor.

### Nadi Shodhan

**Preparation:** Players are instructed to sit comfortably in meditative posture, eyes closed and prepare them for pranayama. Keep the head and spine straight. Gently close your right nostril with your thumb.

**Step 1:** Inhale through your left nostril then close it with your ring-little fingers.

**Step 2:** Open and exhale slowly through the right nostril.

**Step 3:** Keep the right nostril open, inhale through the right then close it.

**Step 4:** Open left nostril and exhale slowly through the left.

Inhale (left) → Exhale (right) → Inhale (right) → Exhale (left) → **1 Breathe**

Continue to breathe in this manner counting ten breaths. At the end of ten breaths, take a deep breath in and out slowly. This is one round. Practice three to five rounds. Remember inhalation and exhalation must be equal.

**Now the players will go for some Yogic Balancing Asanas:**

### 1. Vrikshasana

- Stand with 2 inches feet apart.

- Focus on a point in front. While exhaling, bend the right leg and place the foot on the inside of the left thigh. The heel should be touching the perineum.
- Inhale and extend the arms up and join the palms in Namaste.
- In this position continue deep breathing pulling in the tummy muscles and expanding the spine upwards with every exhalation.
- Stay here as long as you can focusing on one point.
- Slowly exhaling bring the arms down and then the right foot down to rest.
- Continue this with the other foot.

## 2. Virbhadrasana III:

- Take a deep inhalation and step your legs 4 to 5 feet apart.
- With an exhalation turn the right foot 90 degree to the right and the left foot 45-60 degree to the right.
- Bend the right knee till your thigh becomes parallel to the floor and perpendicular to your shin. The knee must be aligned right over your heel, ensure it doesn't extend beyond the heel.
- Exhale and bend your trunk forward till your chest rests on your thigh. Bring your arms close to join both of your palms. Keep the arms straight. Hold this position for 2 breaths.
- Slowly shift the weight of your body on your right leg as you lift the left leg off the floor. Simultaneously raise your left leg (keeping it straight) and straighten your right leg. The knee of the left leg must face downward. Look either straight or down.
- The whole body except the right leg becomes parallel to the floor in the final position of Warrior 3. Once you find balance, stretch your hands forward and your leg backward. Retain the pose from 5 to 30 seconds taking deep breaths.
- To come out of the pose, exhale and lower the left leg back onto the floor along with bending the right leg. Practice again from the other side.

After the successful completion of both the Yogic practices, that is pranayams and balancing asanas, the players will go for their psychomotor skill interventions.

1. **Reaction Time:** The reaction time assessment will be carried out utilizing Vienna Test System Application which will be consisting of a desktop screen and response panel. **Instructions:** The Response Panel is used as the input device. An animated instruction phase will be displayed on the screen followed by the test. The test involves the presentation of colored stimuli and/or acoustic signals. The respondent is instructed to press the reaction key only when specific stimuli are presented and, having pressed the key, to return his finger immediately to the rest key. **Scoring:** As per norms, calculation of mean reaction time, mean motor time, dispersion of reaction time, dispersion of motor time.
2. **Time Movement Anticipation:** The Time Movement Anticipation assessment will be carried out utilizing Vienna Test System Application which will be consisting of a desktop screen and response panel.

**Instruction:** A green ball appears on the screen, moving slowly. At an unpredictable moment the ball disappears and two red lines appear. One line passes through the point at which the ball has just disappeared. The other is the target line. Anticipation of time is measured by instructing the respondent to indicate when the ball will reach the target line; he does this by pressing a button at what he considers to be the appropriate moment. To measure anticipation of movement, the respondent is additionally asked to indicate the point at which the ball will cross the target line. This is done by means of two keys that control an arrow on the screen.

**Scoring:** The time error is measured as the time difference and the position error is measured as the deviation from the correct position.

### 3. Agility:

**HEXAGONAL OBSTACLE TEST:** The Hexagonal Obstacle Test is to monitor the athlete's agility. Required resources to undertake this test you will require: a) 66 cm sided hexagon marked out on the floor and b) Stop watch. The Hexagonal Obstacle Test is conducted as follows:

- The athlete stands in the middle of the hexagon, facing line A.
- On the command GO the watch is started and the athlete jumps with both feet over line B and back to the middle, then over line C and back to the middle, then line D and so on.
- When the athlete jumps over line A and back to the middle this counts as one circuit
- The athlete is to complete three circuits.
- On completion of three circuits the watch is stopped and the time recorded.
- The athlete rests and then repeats the test.
- On completion of the second test determine the average of the two recorded times. If you jump the wrong line or land on a line then the test is to be restarted.

## Discussions and Conclusions

Vishvanath Pise, Balaram Pradhan, and Manmath Gharote (2018) the objective of this study was to see the effect of yoga practices on psycho-motor abilities of intellectually disabled children. Seventy intellectually disabled children were divided into experimental group and control group. Both experimental and control group were assessed on the first day and after 12 weeks of the yoga intervention for static balance, eye hand coordination, agility and reaction time. The subjects of experimental group then underwent a training of yoga practices, for 1 hr for a total period of 12 weeks. The result of within group comparison revealed significant improvement in static balance, eye hand coordination, agility, and reaction time ( $P < 0.001$ ) in subjects of yoga group however no change was observed in control group. The present study demonstrated that 12 weeks of yoga is effective in improving psycho-motor abilities of intellectually disabled children.

Avalle and Vallumurgan 10 conducted study with the purpose of the Effects of selected yogic exercise and psychological skill training on selected psycho physiological and psychomotor variables of high- level participants. To achieve the purpose of the present study, forty-five intercollegiate level players from Maruthi College of Physical Education, Coimbatore were selected as subjects at random and their ages ranged from 18 to 24 years. The subjects were divided into three equal groups. The variables selected were cognitive anxiety, Self-

confidence, Heart rate, Systolic blood pressure, Diastolic blood pressure and Body temperature as psycho-physiological variables and Reaction time, and Hand eye Co-ordination as psychomotor variables. The study was formulated as a true random group design, consisting of a pre – test and posttest. The subject (n=45) was randomly assigned to three equal groups of fifteen men students each. The groups were assigned as psychological skills training (PST), yogic exercises (YE) and control group (CG) in an equivalent manner. The psychological skills training group and yogic exercises group participated for a period of twelve weeks and the post tests were conducted. Analysis of covariance statistical technique was used to test the adjusted mean difference among the three groups. When the adjusted post – test was significant, the Scheffe post hoc test was used to find out the paired mean differences. By analysis of covariance the cognitive anxiety was significant at 0.05 levels with F ratio of 9.66 as the table F ratio was 3.23 for adjusted means. By analysis of covariance the self-confidence was significant at 0.05 level with a ratio of 29.78 as the table F ratio was 3.23 for adjusted means. By analysis of covariance the heart rate was significant at 0.05 level with an F ratio of 1.85 as the table F ratio was 3.23 for adjusted means. By analysis of covariance the systolic blood pressure was insignificant at 0.05 level with F ratio of 41 0.96 as the table F ratio was 3.23 for adjusted mean. By analysis of covariance the hand eye co- ordination was significant at 0.05 levels with F ratio of 1032.81 as the table F ratio was 3.23 for adjusted means. By analysis of covariance the reaction time was significant at 0.05 levels with F of 13.76 as the table F ratio 3.23 for adjusted means by analysis of covariance the body temperature was insignificant at 0.05 levels with F ratio of 1.28 the table F ratio was 3.23 for adjusted means. The findings of the study showed that there were significant differences in the cognitive anxiety, somatic anxiety, self-confidence, and heart rate due to influence of yogic exercises and psychological skills training. In case of diastolic blood pressure, systolic blood pressure and body temperature there was insignificant differences due to yogic exercises and psychological skills training. The findings of the study shown that there was a significant difference in the hand eye co – ordination and reaction time due to influence of yogic exercises and psychological skills training. The findings of the study showed that there was significant difference in the self-confidence and hand eye coordination between the yogic exercises and psychological skills training group.

Bhomik and Pant conducted study to examined the effect of yogic practices on the psycho-motor variables of physically challenged students. Forty Subjects between the age of 8-15 years were selected from Amar Jyoti School and Rehabilitation Centre, Gwalior (M.P). The training program was scheduled for five days week for a period of 45 minutes each day for 6 weeks duration and was increased to 60 minutes on weekly basis in a progressive way. Further the group was divided randomly into control and experimental group. Each group had equal sample size of 20 subjects. The selected psychomotor variables were recorded on pre and post completion of 6-week yogic exercises. The data on Psychomotor variables were recorded with the help of the standard procedure such as: Speed of movement test by Nelson and Johnson's, Hand steadiness by hand steadiness tester and Eye hand coordination by mirror tracking test. In order to study the effect of yogic exercise on selected psychomotor variable, statistically the analysis of covariance technique was employed to analyze the raw data at 0.05 level of significance. It was observed that F-ratio was found to be significant for all the selected psychomotor characteristics i.e. Speed of movement. Hand steadiness and Eye Hand Coordination in comparison to control



group at 0.05 level of significance. This study, therefore suggests the utility of selected yoga practices for physically challenged students. Aim and Objective: The aim and objective of the study was to determine the effect of yogic exercises on the selected psychomotor performance that is Speed of Movement, Hand Steadiness and Eye Hand Coordination of Physically challenged students. Selected Yogic Exercises were found effective in bringing about significant improvement in speed of movement, hand steadiness and eye hand coordination of physically challenged students Hence, the study recommends to prepare more Yoga Module to such subject to enhance their psychomotor performance.

## Conclusion

The finding similar to this study suggests that the treatment of six-to-eight-week yogic training program can show significant improvement in psychomotor skills. Continuous practicing of breathing technique with pranayama like Nadi Shodana and Bhastrika can enhance the power of concentration, focus and mind stability which can improve reaction time and quick time movement anticipatory ability. An 8- week Iyengar Hatha yoga program specifically tailored to elderly persons and designed to improve lower-body strength and flexibility. Which develop the theory of strengthening lower body portion with the help of balancing asanas and it can definitely help in improving agility level too.

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