



# Enhancement in Shooting ability of Basketball players through Meditation

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## Abstract

Concentration has been defined as "the ability to direct one's thinking in whatever direction one would intend". Meditation is defined as the art of focusing in one particular area with complete attention without any deviation. This privileged art comes with innumerable well-known physical and mental benefits which include increase in individual concentration, decrease in negative emotions like anxiety and increase in positive emotions which cause happiness. This study has been designed to train Basketball players mentally through Meditation and compare their shooting abilities which results in determining the impact of Meditation on shooting ability. To serve the purpose of this study, a total of 30 regular male Basketball players pursuing graduation have been chosen as sample. They were divided into two equal groups namely the control group and experimental group. Both the groups have undergone selected Basketball Shooting Skill tests and the scores were taken as the pre-test scores. Later in addition to their regular training, the experimental group was trained for Basic Meditation, Mindfulness Meditation and Concentration Meditation for duration of six weeks. After the completion of 6 weeks both the groups were again tested for Shooting skill tests and their performances were noted as post-test scores. The comparison between the pre-test and post-test scores of both the groups using the suitable statistical techniques revealed that six-week meditation training had an appreciable effect on shooting ability of Basketball players.

**Keywords:** Meditation, Concentration, Basketball Skill Tests.

## Introduction

Meditation assists an individual in advancing towards training his mind. It is similar to how the fitness training is to the body<sup>1</sup>. As a beginner it becomes extremely difficult for an individual to sit for long hours thinking of nothing or just with an empty mind. But generally, to start with meditation the easiest way is to sit and focus on your breath. Since the breath is your constant companion; it can also help you carry concentration meditation over into the rest of your life for additional benefits.

**Reviews:** As per a paper which was recently published in the journal *Psychological Science*, it was identified that brain functions are enhanced through Meditation. The study proved that thorough practice of meditation helps people in focusing their attention and sustaining it for longer periods even while performing their most boring tasks<sup>2</sup>. It was also seen that the participants who regularly practiced meditation could in turn develop the ability of picking up the visual cues better than the control group. This research anyways could not study whether meditation helped the subjects in processing the newly given information in a meaningful way.

As per the research of 1970s it is known that the Buddhist monks practiced prolonged meditation for years and could undoubtedly perform much better on concentration tests than many of us.

**Stress and performance:** An application of Gray's three-factor arousal theory to basketball free-throw shooting" by Roger Whitehead published in the *Journal of Sports Sciences*, 1996, 14, 393-401 speaks of association of longer pre-shot preparations and increased occurrence of overthrow shots with increase in the stress levels of players which are assumed to be present during the game<sup>3</sup>. Apart from this, it was concluded that the free-throws were more often overthrown when players attempted during critical situations rather than when attempted in non-crucial game situations.

**Definition of Terms:** *Meditation* is the art of holding your complete attention towards a single point of reference or concentration. It can also be defined as the ability to turn your attention away from distracting thoughts and focus on the present moment.

**Mindfulness meditation:** Mindfulness meditators practice the non-judgmental observation of the ongoing stream of internal experiences as they arise<sup>4</sup>. The objective of Mindfulness meditation is not to involve in thoughts to judge them but to make oneself aware of each note as it arises in the mind.

**Concentration meditation:** Concentration Meditation aims towards focusing at a single point of observation. Some of the methods of practicing Concentration meditation are watching one's own breath, oral repetition of a single word or mantra,

staring continuously at flame of a candle or counting the beads of a rosary.

## Methodology

**Sample:** To serve the purpose of this study, a total of 30 regular male Basketball players of Anurag Group of Institutions, Hyderabad pursuing graduation have been chosen as sample. They were divided into two equal groups namely the control group and experimental group.

**Method:** Both the groups have undergone selected Basketball Shooting Skill tests and the scores were taken as the pre-test scores. Later in addition to their regular training, the experimental group was also trained for Basic Meditation, Mindfulness Meditation and Concentration Meditation for duration of six weeks. After the completion of 6 weeks both the groups were again tested with the same Shooting skill tests and their performances were noted as post-test scores.

**Basketball Shooting Skill Tests:** The following NBA Combined Skill Tests<sup>3</sup> were conducted to test the shooting ability of players.

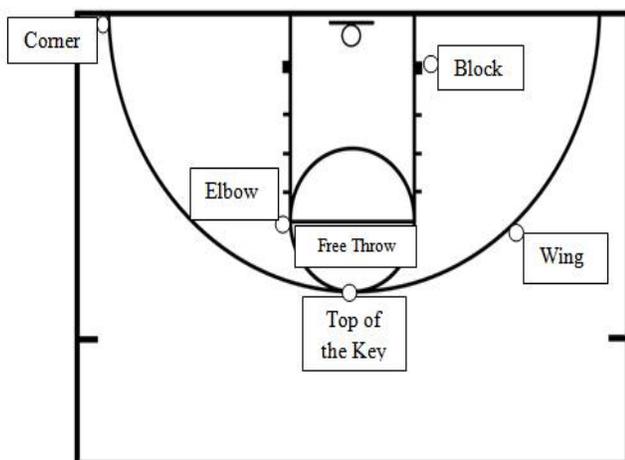


Figure-1

**Basketball Half-Court diagram with various markings used for skill tests**

**Free Throws:** The subject is given 10 chances to shoot at the basket from behind the Free throw line without any time limit. The number of baskets made in the correct form is counted as the individual score<sup>5</sup>.

**Spot up shooting:** Every subject is given chance to attempt 25 uncontested Spot up jump shots from various distances. The subject attempts 5 shots from 5 different spots namely 1) Top of the key, 2) Left break area, 3) Right break area, 4) Left corner area and 5) Right corner area of the court. This is an untimed test. The number of successful shots scored by the player out of 25 is reported as the individual score.

**Box shots:** This is a timed test for duration of 30 seconds. There are 2 blocks which are also called the low posts marked on the court as shown in figure above. On the signal of the tester the time is started and the subject starts moving from block to block while attempting shots at the basket. A helper continuously feeds balls to the subject. At the end of 30 seconds, the number of box shots correctly made into the basket is counted as individual score.

**Right handed lay-ups/left handed lay-ups:** This test is timed for 30 seconds. Every subject is given 30 seconds to attempt right handed lay-up shots and 30 seconds to attempt left handed lay-up shots. At the end of the time the number of successful shots made in the correct form is considered as the individual score.

**Off the dribble shooting:** This test is designed to simulate in-game action for every subject. Subjects attempt a total of 18 jump shots off the dribble from 3 different areas i.e. 6 shots coming from the left break area, 6 shots coming from the right break area of the court and 6 shots from the top of the key which is about a distance of 20ft, 9inches. The tester counts the number of successful shots and the subject is scored accordingly out of 18.

**On the move shooting:** This is a similar in-game action simulating test timed for 45 seconds per set. The subject will be moving between the corners and the elbows on right side of the court attempting jump shots on the move for duration of 45 seconds. A helper will be feeding balls to the subject while he is on the move. Similarly the subject repeats the test for 45 seconds from the left side of the court moving between elbows and the corners. At the end of the test the total number of successful shots are counted as individual score

**Meditation Training:** The subjects of experimental group were trained in 3 levels of meditation practicing each level for duration of 2 weeks. The training was as follows

**Level-1:** This level is an introduction to basic meditation which benefits as an exercise. The following steps are to be followed to practice basic meditation. i. Comfortable body position would be either sitting or lying on your spine. ii. Close your eyes. iii. Do not make any effort to control your breath. Breathe naturally. iv. Drag your complete attention onto your breath and observe the movements of the body while inhalation and exhalation as you breathe. Concentrate on the movement of your chest, shoulders, rib cage and stomach. Just focus your attention without any efforts to control your breathe. Initially start this practice with 2-3 minutes of meditation and try for longer periods<sup>5</sup>.

**Level-2:** This level lasting for 2 weeks aims at improving the concentrative meditation of the experimental group. It basically speaks of focussing at a single point. The subjects here have practised concentrative meditation by the technique of focussing

their sight at flame of a candle. As focussing the mind is a difficult task, the subjects started initially with meditating only for few minutes working up for longer durations.

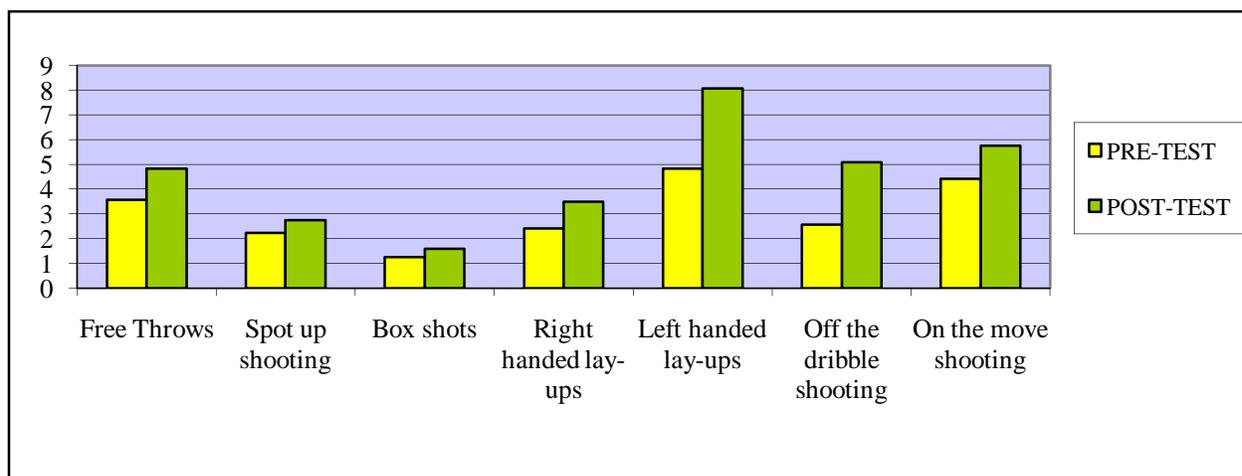
**Level-3:** This is the final level of meditation technique which is complicated and a combination of both the previous techniques. The individual here will be concentrating on his breath while focusing on the flame of the candle. Hence, each of the above 3 levels were practiced for 2 weeks each, contributing towards 6 weeks of meditation training.

**Statistical Analysis:** After six weeks of meditation practice i.e. 2 weeks of Basic Meditation, 2 weeks of Concentration Meditation and 2 weeks of Mindfulness Meditation the same shooting skill tests were organized for both the groups and the data was tabulated as the post-test results.

Further using SPSS version 21 for statistical analysis the following results were attained.

**Table-1**  
**Paired Sample t-Tests Comparing Pre and Post-Test Differences in Mean Scores of experimental group**

Skill Test	Pre/Post	Mean	Std. Deviation	Std. Error Mean	t	Sig. (p)
Free Throws	Pre-Test	3.5833	1.72986	.49937	-4.103	.002
	Post-Test	4.8333	.93744	.27061		
Spot up shooting	Pre-Test	2.2500	.96531	.27866	-2.569	.026
	Post-Test	2.7500	.45227	.13056		
Box shots	Pre-Test	1.2500	.86603	.25000	-1.483	.166
	Post-Test	1.5833	.66856	.19300		
Right handed lay-ups	Pre-Test	2.4167	.99620	.28758	-4.168	.002
	Post-Test	3.5000	.67420	.19462		
Left handed lay-ups	Pre-Test	4.8333	2.20880	.63763	-8.741	.000
	Post-Test	8.0833	1.97523	.57020		
Off the dribble shooting	Pre-Test	2.5833	1.67649	.48396	-8.660	.000
	Post-Test	5.0833	1.56428	.45157		
On the move shooting	Pre-Test	4.4167	3.05877	.88299	-2.345	.039
	Post-Test	5.7500	1.91288	.55220		



**Figure-2**  
**Graphical Representation of Pre-Test and Post-Test results of Experimental Group**

From the above table it can be seen that there has been a significant difference in the mean values of pre and post test measures of the Experimental group and is also reflected in the p values.

## Results and Discussion

When similar analysis was done for the data of Control group it was found that there was no significant difference in the mean values of pre and post test scores of the control group whereas it can be seen that there is a significant difference in the mean values of pre and post test measures of the Experimental group. These results imply that six weeks of meditation practice for regular male college Basketball players has a positive effect and improves their shooting ability in game situations.

## Conclusion

Six weeks of meditation practice for regular male college Basketball players has a positive effect and improves their shooting ability in game situations.

## Recommendation

The following are the recommendations drawn from the study: i. Meditation has to be made a regular practice along with their

skill development practices irrespective of game. ii. Meditation plays a vital role in Sports Psychology and is helpful to players of any level and gender.

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