

## EFFECT OF SPORTS MASSAGE COMBINATION WITH PHYSICAL EXERCISE ON THE PHYSICAL FITNESS OF UNDERGRADUATE COLLEGE STUDENTS

**Prof. Dr. Narendra Uttamrao Patil** Director of Physical Education and Sports,  
Dadasaheb Bidkar Art's Science and Commerce College, Peth, Tal. Peth, Dist. Nashik  
Maharashtra, India.

**Prof. Pradeep Atmaram Waghmare** Director of Physical education and sports,  
M.G.V. Art's, Science and Commerce College, Surgana, Tal. Surgana, Dist. Nashik  
Maharashtra, India.

### Abstract

Massage improves blood circulation, which aids in the body's recovery by increasing the availability of oxygen and nutrients. A sports massage's main goal is to relieve tension and stress as a result of physical activity. An experimental study was conducted to analyze the effect of Sports Massage Combination with Physical Exercise on the Physical Fitness of undergraduate college students and physical fitness (muscular endurance) assessed through sit-ups and pushups test. Random sampling was used to select 20 male participants ranging in age from 18 to 25 years. The data was analysed using the Excel data analysis tool for statistical analysis, such as Mean, SD, and the paired sample 't'-test. According to the findings of the study, Sports Massage can improve undergraduate college students in developing physical fitness and performance. The combination of physical exercise and sports massages improved muscular endurance.

**Keywords:** Sports Massage, Physical Exercise, Physical Fitness, Muscular Endurance, Undergraduate College Students.

### Introduction:

Many people believe that a sports massage is only for professional athletes, but this is not the case. A sports massage's main goal is to relieve stress and tension that builds up in your body's soft tissues as a result of physical exercise. A sports massage can help you drain fatigue, reduce muscle tension, enhance flexibility, and overall prepare for optimal performance, whether you're an athlete, a once-week runner, or just physically active. It can also aid in the prevention of minor injuries that obstruct your performance.

A successful sports massage uses a combination of basic and advanced deep tissue massage methods to promote blood and lymph fluid circulation. Trigger point therapy is also utilized to break down muscular adhesions or knots, allowing for more range of motion. When these strategies are used together, blood flow to weary muscles is increased, which speeds up recovery. It also aids the return of blood to the heart, as well as the flow of interstitial and lymph fluids throughout the body, all of which are necessary for keeping a healthy body.

#### 1. Massage for athletes

Massage is currently widely considered as an important part of a comprehensive training and performance program in sports. This implies the sportsperson can improve before competition and recovery period, resulting in a more effective and intensive post-competition training session.

Sports massage has several important components. Figure 1 shows a closer look at each of benefits to gain a better understanding of them.

- **Mobility and Flexibility:** Professional and elite athletes frequently over-train, resulting in muscle tightness. A sports massage can assist to relax stiff muscles and increase flexibility. It can be used prior to a competition to relax the muscles and improve flexibility, which will improve performance.
- **Reduces Recovery-Time:** Exercise and competition put a strain on the body, and if proper

precautions are not taken, injury might result. Sports massages can help the body cope with stress and avoid damage. A good massage helps the body's natural healing process, waste elimination, and overall wellness by stimulating blood flow and lymph fluid flow.

- **Oxygen and nutrient supply:** Blood flow into muscles is essential for the formation of new tissue as well as enhanced strength and stamina. Massage boosts blood flow, allowing more oxygen and nutrients to enter the body.
- **Assists in the removal of exercise by-products:** Exercise produces lactic and uric acids as natural byproducts. A sports massage can help to improve blood and lymph flow in the body, as well as boost waste output.
- **Psychological Advantages:** There is a lot to be said about sports psychology. Many people are unaware of the importance of massage in athletics and how a good massage may provide more than simply physical benefits. Because the mind is only as powerful as the body, having a strong mind that is relaxed and focused gives you an advantage in high-stakes sports.
- **Relieves Pain:** Pain in the body is an indication of strained muscles, which is unhealthy. Massage promotes the movement of blood and lymph fluid, which aids in the recovery of injuries. A massage can also help with pain from spasms and cramps, which are prevalent among competitive athletes. Soft tissue injuries, such as sprains, strains, and tears, respond well to this specific gel.

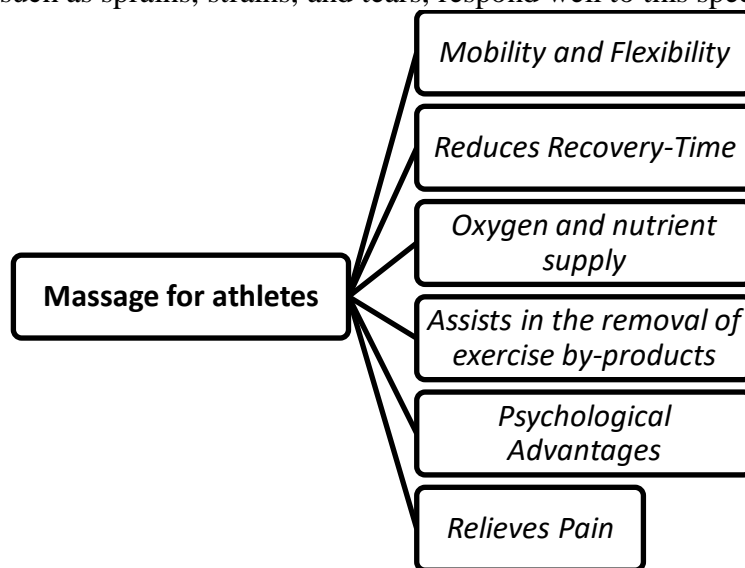


Figure 1: Advantages of Athlete Massage

## Methods

### 1. Subjects and variables

The purpose of this research is to test the effects of Sports Massage combined with Physical Exercise on muscular endurance. Only men between the ages of 18 and 25 from Dadasaheb Bidkar Art's Science and Commerce College, Peth, were chosen. The experimental group consisted of 20 subjects chosen randomly. The sit-ups and push-ups test was used to assess muscular endurance. The training programme of 45 days and was conducted three days per week in the morning.

#### 1.1 Sports Massage Combination with Physical Exercise

Three days in a week Treatment for the improvement of Physical fitness		
<i>Selected exercises and the body parts for the study</i>		
<b>Core body</b>	<b>Abdominal</b>	<b>Shoulder and Back</b>
Sports Massage	A. Oblique Crunches B. V-Ups	A. Incline pushups B. Pike pushup

<b>Data Collection</b>	Sit-ups test	Pushups Test
<b>Fitness Factor</b>	Muscular Endurance	

## 2. Statistical techniques

The data collected from the experimental group before and after the administration of the training programme on and were statistically analyzed. The level of significance was set at 0.05 with a 95% confidence interval. The data was analyzed using the Excel data analysis tool for statistical analysis, such as Mean, SD, and the paired sample 't'-test.

## 3. Study Procedure and research design

The effects of sports massage combined with physical exercise on the physical fitness of undergraduate college students are studied using a one-group pretest-posttest design. The dependent variable is measured twice before and after the treatment is implemented in a one-group pretest-posttest design.

## Results

Data was collected before and after the experimental periods on the experimental group. The following table 1 shows the results of an analysis of undergraduate students' muscular endurance. As per the table 1 mean of pre and post test is (32.6, 34.25) for sit-ups test. Mean of pre and post test of pushups test is (29.3, 31.6)

Table 1: Descriptive Statistics of Experimental Group

	<i>Sit-ups</i>		<i>Pushups</i>	
	<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>
Mean	32.6	34.25	29.3	31.6
Standard Error	1.767	1.554	1.229	1.208
Median	35	37.5	28.5	32
Standard Deviation	7.903	6.950	5.497	5.404
Count	20	20	20	20

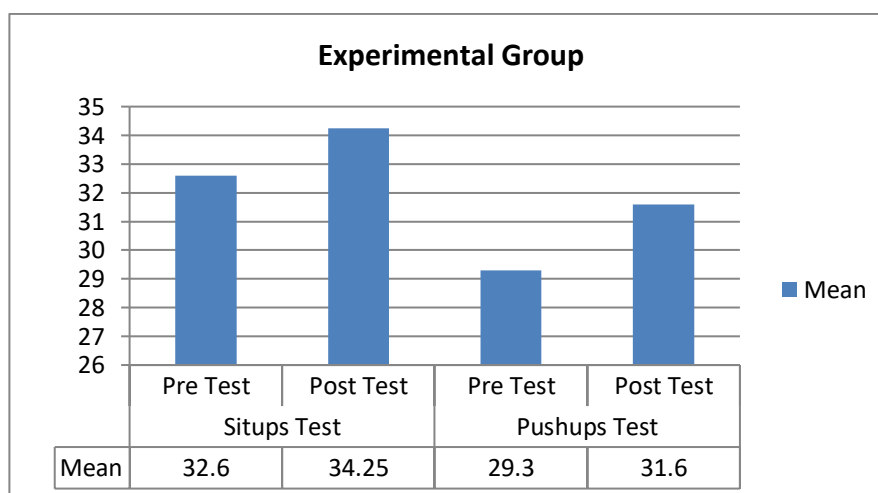


Figure 2: Mean difference of Experimental Group for Muscular Endurance

Table 2: Statistical Analysis (Paired Sample t-test) of Experimental Group

<b>Experimental</b>	<b>Sit-ups</b>		<b>Pushups</b>	
	<i>Pre Test</i>	<i>Post Test</i>	<i>Pre Test</i>	<i>Post Test</i>
Mean	32.6	34.25	29.3	31.6

Variance	62.46	48.30	30.22	29.20
Observations	20	20	20	20
df	19		19	
t Stat	2.091		2.836	
P(T<=t) two-tail	0.050		0.000	

The obtained t Stat value for sit-ups test is 2.091 and P (T<=t) significant at 0.05 level and the posttest mean value is greater than pre-test mean value. The obtained t Stat value for pushups test is 2.836 and P (T<=t) significant at 0.05 level. Table 2 show that there is a positive effect of sports massage combination with physical exercise on muscular endurance of undergraduate students.

As according table 2, the findings shown a significant difference in the post-test mean of the treatment group.

### Discussion:

Sports massage with the combination of physical exercise is effective method to improve physical fitness of undergraduate students, according to the review of literature and results of the previous study (Shen, C. C et. al.).

### Conclusion:

These are just a few of the numerous advantages of sports massages. Many professional athletes and players have a masseuse on retainer. Massage has numerous advantages, including injury prevention and recovery. Performance improvement means a lower risk of injury and a faster recovery time as a result of increased flexible and physical function. The study's findings revealed that undergraduate students can contribute to the improvement of personal exercise and sports performance. Sit-ups and push-ups can be improved by combining physical exercise with sports massage.

### References:

- Bervoets, D. C., Luijsterburg, P. A. J., Alessie, J. J. N., Buijs, M. J., & Verhagen, A. P. (2015). Massage therapy has short-term benefits for people with common musculoskeletal disorders compared to no treatment: A systematic review. *Journal of Physiotherapy*, 61(3). <https://doi.org/10.1016/j.jphys.2015.05.018>
- Best, T. M., Hunter, R., Wilcox, A., & Haq, F. (2008). Effectiveness of sports massage for recovery of skeletal muscle from strenuous exercise. In *Clinical Journal of Sport Medicine* (Vol. 18, Issue 5). <https://doi.org/10.1097/JSM.0b013e31818837a1>
- Brummitt, J. (2008). The role of massage in sports performance and rehabilitation: current evidence and future direction. *North American Journal of Sports Physical Therapy : NAJSPT*, 3(1).
- Hemmings, B. J. (2001). Physiological, psychological and performance effects of massage therapy in sport: A review of the literature. *Physical Therapy in Sport*, 2(4). <https://doi.org/10.1054/ptsp.2001.0070>
- Kumar, A. (2018). Benefit of massage therapy on sports performance. In *International Journal of Advanced Educational Research* (Vol. 3, Issue 1).
- Macdonald, G. Z., Button, D. C., Drinkwater, E. J., & Behm, D. G. (2014). Foam rolling as a recovery tool after an intense bout of physical activity. *Medicine and Science in Sports and Exercise*, 46(1). <https://doi.org/10.1249/MSS.0b013e3182a123db>
- McGillicuddy, M. (2011). Massage for Sport Performance. In *Massage for Sport Performance*. <https://doi.org/10.5040/9781718210523>

Moraska, A. (2005). Sports massage: A comprehensive review. In *Journal of Sports Medicine and Physical Fitness* (Vol. 45, Issue 3).

Shen, C. C., Tseng, Y. H., Shen, M. C. S., & Lin, H. H. (2021). Effects of sports massage on the physiological and mental health of college students participating in a 7-week intermittent exercises program. *International Journal of Environmental Research and Public Health*, 18(9). <https://doi.org/10.3390/ijerph18095013>