

## **Benefits of Massage Therapy in Recovery and Sports Performance (A Review of Qualitative Literature)**

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### **Abstract**

**Background:** *In the field of sports, massage has widely been used by coaches, players and massage practitioners with the perception of increasing performance, adding to recovery during fatigued state of the body and easing stress and stiffness. An effort was made in this research study to evaluate the findings of the current literature focusing the effect of massage therapy in perspectives of physiological and psychological parameters of sports performance. Purpose:* Purpose of the study was to review and evaluate the existing literature regarding the possible effect of massage in connection with sports performance, recovery and rehabilitation. **Methods:** Findings of more than sixty-five selected research studies were carefully examined in the present study. **Results:** The present review revealed that, with the exception to flexibility, massage does not have any significant effect on physiological parameters of sports performance. However, a number of research studies endorse the role of massage in relieving muscular pain and delaying onset of muscle soreness among the players. Similarly, the psychological effects of massage existed

in perspectives of anxiety, depression and stress. **Conclusion:** Application of massage therapy with the objective of improving sports performance seems to be premature and to some extent questionable. On account of psychological effects of relaxation which keeps the player focused, decreases stress and increases mood state, massage is indirectly connected to the quality of sports performance. Finally, it is concluded that due to consistent findings, further research is required to determine the role of massage therapy in perspective various physiological and psychological parameters of sports performance.

**Keywords:** Massage, Sports, Recovery, Performance, Therapy, Parameter

### **Introduction**

Sports, recovery, relaxation, fatigue, rehabilitation, healing, soothing effects, remedy, cure, preparation, training, exercises and massage are the terms commonly used in sports fraternity in sports and action related discussions. Purpose of this research article is to review findings of the existing literature particularly focusing upon the nature, history, types of massage and its role in the recovery and rehabilitation in sports setting, its effectiveness in preparation of athletes for competition and its significance in preventing the musculoskeletal injuries in the field of sports. In the end of the article, a few recommendations have been put forth for the future researchers underlying the need for further research to quench the scarcity of research in this particular area. Massage has universally been applied as the manual therapy for soothing painful and fatigued parts of the body particularly after hard physical exertion with the notion that massage reduces muscular tension, swelling, increases blood flow and wellbeing (Nasrulloh et al., 2021) Similarly, sports massage mostly refers to the specialized soothing movements of the hands, fingers and arms of the masseur done for recovery, relaxation and rehabilitation of the sports injuries (Grabow et al., 2018).

It is natural phenomenon that where there will be strenuous physical activity and personal contact in sports there will be chances of soreness, muscular pain, stiffness in

the body and fatigue. These all instances are associated symptoms of sports injury. Injury is state of the body characterized by pain, swelling, soreness, incapacitation of either muscles, tendons, ligaments, joints caused by overuse or improper activity in sports (Purwanto, 2009).

### **Types of Massage**

Different methods of manual massage have been followed by the by rehabilitation and massage practitioners. Selection of the type or method of massage is subject to the nature, need and type of relief the person requires. The most commonly followed methods of massage include Swedish Massage, Deep Tissue Massage, Sports Massage, Thai Massage and Reflexology (Piper et al., 2016).

Let us have a brief look at the working pattern of each type of massage separately.

#### **1. Swedish Massage:**

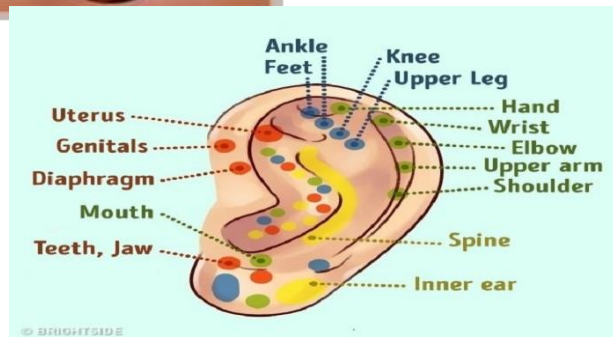
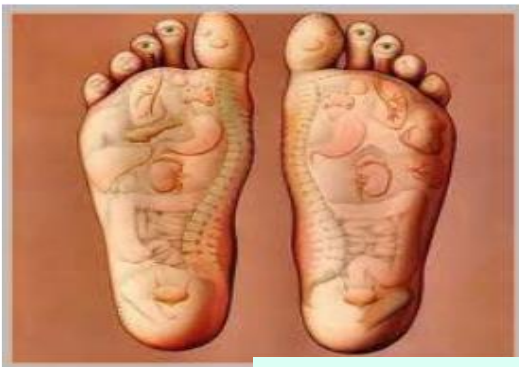
Swedish massage is applied in relation to the anatomical structure and physiological makeup of the body. It is the most popular and classic type of massage and is very effective in releasing body tension, exhaustion and getting relaxation. Its 60 to 90-minute process normally comprises of long strokes, kneading, application of rhythmic pressure of gentle to moderate intensity covering entire body. Swedish massage follows the modality of gentle relaxation, promoting balanced circulation therefore it proves to be relaxing and energizing for the consumer.

- 2. Deep Tissue Massage:** This type of massage is also called Cross-Friction massage. In this method, the masseur applies gentle to moderate pressure of the fingers diagonally targeting a particular area or muscle (Stasinopoulos & Johnson, 2004) In case of any muscular issue like pain in the muscles, soreness, injury or stiffness this type of massage gives good results. Normally moderate to high intensity of fingers pressure is applied upon the affected muscles to get relief of the stress and muscular pain. Deep tissue massage may take 60 to 90 minutes.

- 3. Sports Massage:** As the name itself indicates, sports massage modalities are mostly sports-centered and this type of massage is frequently practiced in the sports fraternity. But it does not mean that it is solely designed for the sportspersons it can equally be used by anyone looking for recovery from muscular injuries, soreness, musculoskeletal injuries. It can be applied to any specific limb or part of the body or it can be used as a total body massage. The role of sports massage is very effective in preventing the repetitive sports injuries. It improves performance and flexibility of the body. It relieves muscular pain, stress and stiffness. Joint mobilization, application of pressure point therapy and compression are the common modalities used in sports massage.
- 4. Thai Massage:** The concept of Thai massage slightly differs from the ordinary methods of massage on the ground that it stresses upon the deep stretching, mobility of joints and rhythmic compression of muscles coordinated with the yoga postures. It aims to mobility and flexibility and reduce stiffness and stress in the muscles. Physiotherapists normally recommend Thai massage for the rehabilitation and cure of musculoskeletal pain, balance issues and back pain, flexibility and improved blood flow. It is a complete body massage.
- 5. Reflexology:** As compared to the other types of massage which normally deals with the entire body, Reflexology type of massage focuses only on the hands, feet and ears of the consumer. Reflexology is basically Chinese method of massage which uses different pressure points in the body. According to an established perception there exists a number of pressure points in the hands, feet and ears of the consumer which are connected to the vital organs of the body like heart, brain, lungs, kidneys, liver and glands. It stimulates circulation and tries to remove any possible blockage or resistance present in the around 7000 nerve endings present in the hands and feet. In Reflexology massage these pressure points are focused and massage is directed to

these points improving blood circulation, calmness, balance, functioning of the nervous system reducing stress and fatigue. Applying pressure of fingers and thumb for around 30 minutes, these pressure points are stimulated and desired objectives are achieved.

### Reflexology Foot Chart



### Other Modes of Massage

Besides manual methods of massage, a number of job-specific electrical massage devices have been available in the market which are auto-operated for serving the programmed purpose. Percussion Massager, Handheld Massager, Neck Massager, Massage Gun, Massage Chair and so on. In addition to manual massage and electrical massage devices, a few other forms of massage have also been applied in the sports arena. Rolling Massage, Acupressure massage, Foam-Roller Massage, Hydro-Massage and Vibro-Massage are prominent among them (Ivkovi'c, 2015).

### The Concept of Massage

Massage is physical manipulation of the different parts of the body executed mainly by the gentle and rhythmic movements of the hands and fingers of the masseur (Romero-Moraleda et al., 2019) Massage has been the most natural healing therapy used since early civilizations for relieving pain, discomfort and getting recovery (Hodgson et al., 2019). Massage was initially used for its restorative purpose but its utility has widened its role to curative, rehabilitative and preventive therapy particularly in the field of sports. The story of the use of massage in sports and everyday life dates back to the ancient days of early civilization linking it with Ancient Greece, China, Rome and Egypt (Smith et al., 2018) Massage has traditionally been used for relieving the feelings of pain, tightness, soreness and stiffness in the body. Literature confirms its indispensable role in the conditioning process of the players many years back (Naderi et al., 2020). Before and during both Summer and Winter Olympics, physiotherapists of the Great Britain regularly used to apply massage on their players (Crawford et al., 2016). Slowly and gradually with the passage of time, massage began to get recognition in the professional and elite sports circle and since Summer Olympics 1984, it has been enjoying its popularity among the Olympians (Beck, 2005). Confirming the acceptability and popularity of massage among the sports community, Ernst (2004) has documented that during the last quarter of the twentieth century, massage therapy had a share of more than 45% in comparison to other medical applications used for care and rehabilitation of the elite players. The story of sports and Greece has long been associated and historians agree to this notion. Linking the relationship of massage and sports, Best et al. (2008) have confirmed that their association existed since the ancient times of Greece. Deficient of the scientific recognition, it has widely been believed that massage has multiple rehabilitative and soothing effects and it is on the same grounds that massage has globally been used reflecting its acceptability (Arroyo-Morales et al., 2008). While executing activities requiring physical exertion in everyday life, man get fatigued and different parts of body

get exhausted, massage is the most effective, easily applicable and cost effective therapy having soothing psychological as well as physical effects in relieving pain and promoting recovery (Crawford et al., 2016)

### **Massage in Historical Perspectives**

Sports and massage have innate relationship since the inception of sports and this fact is confirmed in literature, Madoni et al. (2018) have documented that health practitioners have used massage as an effective tool for the rehabilitation and cure of the injury and illness. In addition to sports, massage has also been used in a number of other health related situations pertaining to cure and remedy since ancient days. Junker & Stöggel (2019) also confirm that since 2500 BC, massage has remained as one of the basic modalities in handling health and fitness issues. With the passage of time, after being used as soothing and pain relieving modality, massage established its place in the list of choice therapies for handling stress, fatigue, pregnancy and musculoskeletal issues (Hiruma et al., 2014). Massage has also been the basic tool of intervention used by the physical therapists dealing with the individual for recovery and rehabilitation (Galloway & Watt 2004). Sports and health practitioners recognize the positive and viable role of massage in improving athletic performance, preparation for competition, effective modality of recovery for stress, pain and stiffness in the body

Kumar (2018), has documented that evidence exists confirming the use of massage in Egypt and China around 2200 and 1400 BC. Similarly, in Greece Hippocrates, known as the “father of Physical Medicine” (377-460 BC) recognized the massage therapy as one of the basic modalities for handling injured and fatigued ones. They were of the opinion that massage serve as the softening therapy of the body prior to participation in exercises and gymnastics. At that time, it was binding upon all the participants to get proper massage with oil before taking part in exercises. Sykaras (2017) highlighting the role of

massage in elite level sports performance has documented that in Paris Olympic Games 1924, Paayo Nurmi a Finnish runner won five gold medals, though he contested the two events of 1.5 km and 5 km races with only 30 minutes' interval between these two races. In addition to his hard work and personal proficiency, it was daily massage that enabled Paayo Nurmi to win five gold medals at the Olympic arena. Similarly, during the Munich Olympic Games in 1972, another Finnish athlete Lasse Virén claiming gold medals and breaking the world and Olympic records in 10000m and 5000m races respectively, he too received daily massage (Best et al., 2008).

### **Massage, Recovery and Sports Performance**

As a matter of common observation, at the elite level sports competition, participants have to follow very fast and exhaustive schedule of activities allowing limited time for rest and recovery which sometimes prove to be hard for the player to get along safely and successfully. Chances of overtraining and overuse injury remain there. Rapid and efficient recovery is vital which enable the player for the succeeding activity and, in many cases, this fast recovery factor plays decisive role in showing dominating performance. Evidence confirms that rapid recovery and enabling the player to get ready for the subsequent event remain the basic objectives of the sports massage therapy (Davis et al., 2020). Research has confirmed that, in addition to relieving pain, adding recovery and restoring mood of the exhausted sports participant, sports massage therapy also has positive effect on muscular force post 48 hours of the activity (Kargarfard et al., 2016). On account of its positive role in relaxation, rehabilitation and recovery, massage has become one of the common experience of everyday life. Its utility and vitality have equally been recognized in sports as well as other areas of daily engagement. Moraska (2005) has concluded that massage serves equally well in the area of preparation for physical exertion, prevention of injuries, recovery and rehabilitation. Literature endorses the role of massage in relieving pain, decreasing soreness and tension in the muscles, increasing



the range of motion and removing the sense of exhaustion (Hodgson et al., 2019). Besides its physical benefits, sports massage also has positive psychological effect on mood, stress, anxiety, mental wellbeing and satisfaction (Delextrat et al., 2013).

Massage therapy plays significant role as an effective modality of the sports medicine field in dealing with the care, prevention and rehabilitation of the sports injuries (Shroff & Sahota, 2013).

In the field of sports massage has been playing divers role, preparation of the player for competition, recovery and rehabilitation of the player, relief of the physical pain and mental stress, all fall within the ambit of massage. Best et al., (2008) have concluded that massage therapy is the most frequently used modality in coping with the recovery and injury related issues. Regular use of massage therapy under supervision of the qualified therapist lengthens physical competencies of the player which alternately prolongs sports career of the player (Nirmalasari et al., 2021).

Muscular fatigue and physical exhaustion of the player are the common features of the sports life (Moraska, 2005). However, in case of fatigue caused as a result of continuous performance, massage is the one of the effective tools for rapid recovery García-Gutiérrez et al., 2018). Similarly, Kargarfard et al. (2016) have documented that increased recovery rate and alternately enhanced performance is witnessed among the body-builders who were provide with 30 minutes of sports massage therapy. It has widely been accepted among the sport fraternity that sports massage therapy has multiple advantages including rapid recovery, improved sports performance, injury prevention and relaxed muscles (Gasibat & Suwehli, 2017). Summarizing the overall benefits of massage Kumar et al. (2013) have concluded that massage reduces muscular pain, tension and improves flexibility and range of motion. Massage therapy prove to be very useful in dealing with recovery, rehabilitation, muscular stiffness and disability (Naderi et al., 2020). Literature has repeatedly endorsed the positive role of massage therapy in soothing muscular pain

and recovery and performance (Kennedy et al., 2018). There exists a common perception among the players and athletes that sports massage has very positive and promoting effect on sports performance (Poppendieck et al., 2016). A number of studies confirms the positive role of massage in enhancing performance & recover and prevention of injuries (Sykaras, 2017; Oranchuk et al., 2019). However, on the contrary, Arroyo-Morales et al. (2011) have concluded that massage may have harmful and damaging effect on performance.

### **Discussion**

Focus of this comprehensive literature review paper was to evaluate the role of massage therapy in perspectives of physiological and psychological aspects of sports performance. Pertaining to the basic theme of the article a number of research papers have been evaluated to better conclude the role of massage in sports performance. In the field of action, pain in the body, muscular stiffness, fatigue, soreness and injury are the part and parcel of participation. In view of the common and widely perceived perception of the players and coaches, massage the most natural and inherent modality which effectively relieves pain and soreness of the body (Beck, 2005). Abundantly used round the globe among the sports fraternity as an effective therapy, massage helps remove muscular pain, soreness and prevent injury. Sports, massage therapy and injuries have long been associated. Perhaps injuries have been the most frequent reason for quitting sports (Drawer & Fuller, 2002). However, following proper principles of participation and adopting protective measures can effectively prevent sports injuries (Wojtys, 2017). Literature abundantly confirms outstanding results in perspectives of massage therapy in dealing with sports injuries (Bell & Falconi, 2016; Surrect et al., 2015). Presently there exists dis-opinion among the researchers regarding the role of massage therapy in affecting strength and force of the body. A sizable number of research studies; MacDonald et al. (2014); Mustafa et al. (2015); Pinar et al. (2012); Sullivan et al. (2013)

deny the role of massage therapy in the enhancing muscular force but on the contrary, considerable number of research studies confirm the role of massage therapy in the improvement of muscular force (Aune et al., 2019; Bedford et al., 2016; Casanova, et al., 2018; Hodgson et al., 2019; Madoni et al., 2018). In addition to different physical attributes and psychological factors, flexibility and range of motion plays significant role in prompt execution of different sports activities. Evaluating the effect of massage therapy, literature has confirmed the role of massage in perspectives of flexibility resultantly enhancing the range and effectiveness of motion at different joints of the body (Davis et al., 2020; Lin et al., 2020; Oranchuk et al., 2019);

### **Conclusion**

The extensive use of massage therapy in all levels of sports from local to elite level competition is probably on account of the belief and perception of the coaches and professional players regarding the psychological effects of massage. It is widely believed that in the field of sports, massage therapy plays potential role in decreasing and subsiding the state of fatigue, anxiety, depression and stress on one hand and improve recovery, calmness, mood and relaxation on the other. This review has confirmed that considerable number of studies have been conducted evaluating and determining the effect of massage on the different parameters of sports performance, recovery and rehabilitation. Psychological advantages of massage therapy have been confirmed by a number of research studies (Arroyo-Morales et al., 2008). So far as the question of physiological benefits of massage therapy are concerned, mixed results have been shown in different research studies. Endorsing positive role of massage therapy Behara & Jacobson (2017) have confirmed it improves blood flow which alternately affects recovery and performance. On the other hand, after review of a number of research articles Naderi et al. (2020) have documented that massage therapy has no positive effect on physiological parameters of performance. Research has revealed another important

aspect of the benefit of massage therapy confirming that it has more effective role in recovery from common physical exertion and exercises rather than endurance activities (Nasrulloh et al., 2020). This literature has also confirmed that effects of massage therapy were more visible in perspectives of novices and untrained ones as compared to seasoned players (Nirmalasari et al., 2020). To better determine the efficacy and role of massage therapy as a recovery regime the present review study has concluded to conduct further research studies authenticate the role of massage in different parameters of sports performance, recovery and rehabilitation.

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