

History and origins of massage, including how sports massage developed

Massage was believed to date back to Hippocrates and the fourth century BC although there had been mention of massage prior to this found across the world from different cultures. It was the Ancient Greeks who pioneered the use of massage as it is used today. John Harvey Kellogg, in 1895, published a book, *The Art of Massage*, and used the terms petrissage, tapotement and effleurage, techniques carried out in today's massage.



Previously it was traditionally carried out by medical professionals until 1980s when it was then seen as a separate profession. Research has taken place looking at the therapeutic effects of massage and there have been many different forms of massage resulting from this research, including sports massage.

Swedish massage was previously used by Per Henrik Ling to help fencers and gymnasts to prepare for competitions and to recover from them. Sport massage was also used by the support crew (soigneurs) of those taking place in arduous cycling tour races to aid rapid recovery. It is still used today but with specific techniques developed to meet the needs of certain sports and a differing points of competitions, e.g. pre-event, inter/intra-event and post-event.

Sports Massage and Sports Therapy were recognised in 1990s as professions and professional associations developed standards enabling those who met those standards to join.

Sports massage can be used to complement other therapies and treatments

Sports massage can be used to complement many therapies including physiotherapy and complementary therapy.

Physiotherapists will only tend to offer treatment to a certain point following an injury and the acute phase has passed. A sports massage can help maintain the ROM for example, by helping to break down any adhesions within the soft tissue helping the client to improve and potentially avoid a recurrence of the injury. The Sports Massage Therapist (SMT) will also be able to look at any other potential causes of the injury or continue to treat them long term.

Sports massage can also complement other therapies working with other complementary therapists offering a wider treatment package available to the client. An SMT can work with Strength and Conditioning Coaches to ensure their client is capable of maintaining the level of muscular fitness required to compete in their chosen sport by offering maintenance

massages, massages after training and help to identify any dysfunctions that are likely to impede their training.

Contraindications in response to a massage

Contraindications are reactions which could occur in response to a massage and can occur during or after a massage. Common contraindications include:

- Redness of the skin (explained below)
- Headaches (explained below)
- Passing water more frequently and increased thirst
- Localised aches and pains (feel like DOMs)
- Increased fatigue and tiredness
- Feeling emotional and tearful
- Increased hunger
- Increased sweating
- Localised bruising
- Changes in blood pressure (explained below)
- Spots appearing
- Allergic reaction to the massage medium
- Changes to sleep patterns

Redness to the skin is also known as erythema. This can be a natural response for the body as the different techniques used, e.g. effleurage, are encouraging blood flow. A burning sensation could show an allergic reaction to the medium being used to massage the client which should be immediately cleaned off and a cold compress put onto the area. Any first aid treatment will be given if necessary and medical assistance



sought if required. In order to minimise the likelihood of an allergic reaction happening it is important for the client to inform the SMT of any allergies in the initial consultation.

Alternative mediums for massage treatment can be used.

Headaches can happen after a massage treatment and thirst increased as the flushing of lymph through the system encourage the body to pass more water, increasing urination and sweating. In order to limit this effect water will be available to the client post-massage to help reduce the risk of this.

Changes in the blood pressure happen due to the parasympathetic system being relaxed. During the initial consultation the therapist will ask if the client has any problems with blood pressure (high or low) and constantly assess how the treatment is going. It is advisable that clients rest for a while following a treatment prior to driving home or doing any strenuous exercise in order to help prevent any problems with blood pressure changes.

All effects will be recorded on the client notes and discussed prior to any future treatment to ensure the same does not happen. Any questions regarding contraindications, please do not hesitate to contact me at SallySportsMassage@hotmail.com and I will be happy to discuss.

Techniques used during a Sports Massage

Effleurage means 'flow' or 'glide' and is a long, stroking movement applied rhythmically towards the lymph nodes with pressure applied towards the heart and reduced on the return strokes. It is applied from superficial to deep tissue and can be either done quickly or slowly depending on the effect required.

The main purpose of effleurage is to introduce the SMT's touch to the client in a gentle way helping the client to relax. It allows the SMT to apply the massage medium to the client's body. The SMT is able to monitor the tissues as part of the palpation with effleurage and it is used to warm the soft tissues prior to employing deep tissue techniques. It is also used after the deep tissue techniques to help the body rest. Effleurage is also used to conclude any treatment.

The main effects of effleurage include an increased circulation at the level of application (erythema), relaxation of the soft tissues and improved skin condition.



Petrissage means "to knead the tissues" and involves lifting, rolling, squeezing and pressing of the muscles in order to stretch, separate and manipulate them. It is performed in a smooth rhythmical way using both hands working together; each hand works alternately lifting and passing the tissue from one hand to the other. The variations of petrissage include kneading, picking up, wringing and rolling; kneading involves the palms facing inwards, elbows low while the tissues are lifted and released in a rhythmical fashion; picking up involves one hand to lift, grasp and squeeze the tissue while the other hand stabilises the limb; wringing involves the hands on opposite sides of the tissue and they change sides simultaneously with a lifting/squeezing action; rolling is a form of wringing where the tissues are lifted and rolled together from one side to the other using one or two hands.

The purpose of petrissage is to stimulate the circulation, mobilise a group of muscles and reduce intramuscular congestion. It also reduces tension within the muscle fascia and aid with the freedom of muscles or muscle group movement.

The effects of petrissage include improved fascia mobility, increased mobility of muscles as they are manipulated transversely, increased circulation to muscles and improved skin condition, especially elasticity and a reduction of fibrous adhesions in the muscle fibres and fascia.

Tapotement is a percussion technique that involves alternate hands striking the body in a rapid succession. Cupping is the most commonly used – the hands are formed into a shallow cup shape so that a pocket of air is trapped against the skin as the hand strikes. It should make a hollow sound rather than a slapping sound. Hacking is also used where the ulnar border of the hands (outside) are used in a chopping action. Beating involved the hands in loose fists dropping alternately onto the tissues with the heel of the hand and flat distal digits simultaneously. Pounding involves loose fists rotating over each other (like using a boxing speed ball). All techniques are done with relaxed wrists to prevent a heavy strike and can take practice to master.

The purpose of tapotement is to stimulate the client at the sympathetic nervous system level. The effects include stimulating a reflex muscular contraction (helpful where muscle recruitment is poor), increase local circulation, stimulate nerve endings and leave the client feeling physically and mentally invigorated.

Percussion techniques are used to stimulate tissue and are often not considered appropriate as relaxation is felt to be more important. They can be used prior to a competitive athlete as part of the pre-event massage. It can be used to help nerve stimulation and muscle contraction following a period of immobilisation and help release a muscle that is in spasm. When applied slowly and with a heavier hand it can be relaxing.

Effleurage and petrissage are usually the first techniques used to warm the area and mobilise the tissue to prepare the client for the continuation of the treatment. These are not always necessary as it will depend on the circumstances of the treatment.

Neuromuscular techniques (NMTs) are used to calm the hyperirritability and reactivity of the affected neurological components. These include Trigger point therapy, positional release and Muscle Energy Techniques (METs).

Potential contra-indications for NMTs and soft tissue mobilisation include over treatment of an area with these techniques as it may be detrimental to the outcome required. Repeatedly going over the area of dysfunction may cause more of an irritation than healing.

If an injury is in the acute stage of repair, the use of directly applied techniques including massage, soft tissue mobilisation or NMTs should be avoided as it can affect the healing process. During the sub-acute stage of healing, METs and other invasive stretching techniques should not be used. If an area is showing signs of inflammation, the therapist should avoid working directly on the area, but working in the periphery will help the surrounding tissues to remain well-nourished and have a freer movement, supporting the healing process.

Using the 10-second press test enables the therapist to ascertain the best technique to use to help the “lump” or tightness they have felt within the muscle. Whilst completing the 10-second press test the SMT will maintain good communication with the client. Pressure is placed on the “lump” until the client reports a 7/10 on the pain scale (1 being no pain, 10 being the worst they have felt – everyone is different). The therapist maintains this pressure for approximately 10 seconds up to a maximum of 20 seconds. The therapist will

ask the client whether the pain has increased, remained constant or decreased. If the pain has increased there is inflammation within the area and pressure should be removed and techniques that apply direct pressure should not be used on the area. If the pain remained constant during the test, there may be an adhesion, scarring or congestion that could be helped by using friction techniques. If the pain decreased, it signifies to the therapist that there is a trigger point that is beginning to relax in response to the pressure.

Trigger points (TPs) are areas within the muscle where the sensory receptors have become over-excited and localised pain is perceived. TPs can be a protective response to an injury and it is important to check the movement patterns of the muscles/area after release to ensure any compensation made by other muscle recruitment is amended as necessary to avoid the reoccurrence of the problem.

Using TP techniques helps to improve range of motion (ROM), increase flexibility and contractibility of the affected muscle, reduce localised pain, reduce any referred pain, improve circulation in the area and increase local and general relaxation.

TP application may cause localised bruising or discomfort for one to two days post treatment. The therapist must always work with these techniques within the pain threshold of the client and good communication throughout the treatment is vital. TP treatment works best when soft tissues are warmed and relaxed although it can be performed through clothing.

Regular flushing of the tissues with effleurage after the TP techniques is essential. It not only helps the client's body to relax, it also gives the therapist time to relax too.

To apply the pressure, the therapist can use reinforced thumbs, fingers or elbows or use tools.



Positional release is the use of techniques that involve careful positioning of the client to reduce any pain, spasm or tightness to promote muscle relaxation. Strain-counter-strain and functional technique are used to focus on reducing the hypersensitivity and hyperactivity of the muscle spindles which can lead to increased local muscle tension. As positional release is not as invasive as TP techniques it is an ideal way to treat more vulnerable clients, for example, older clients or those with a low pain threshold. It can also be used on sub-acute injuries.

Passively moving the client's body part or region that is affected into a position of ease or comfort with the client advising that there is a reduction in pain or tenderness in the affected area is the aim of the strain-counter-strain technique.

The functional technique involves the same passive movement but rather than the client vocally advising of any reduction of tenderness, the therapist uses their skill in palpatory feedback to sense when there is a release or freedom from restriction.

Both techniques are used in combination during a treatment.

Muscle Energy Techniques (METs) are a form of assisted stretch and include Post-isometric relaxation (PIR) and Reciprocal inhibition (RI). RI is safe to use in the sub-acute phase of injury as it does not require a contraction of the target tissues.

The aim of METs is to lengthen the muscle that has been limited by any neurological restrictions. It works by manipulating the Golgi tendons organs and muscle spindles using the autogenic and reciprocal inhibition.

PIR relaxations focus on the target muscle which is contracted using autogenic inhibition. The therapist needs to explain to the client how the technique will be carried out and any client involvement required. The therapist slowly and passively moves the limb to the first point of bind – this may be before the client feels a stretch – and ensures that any small compensations of movement are prevented. The therapist holds the limb at the point of bind for 10-20 seconds to enable the



client to fully relax. The client then slowly and progressively performs a 10-second isometric contraction of the muscle being stretched at a 20-30% of maximum. The therapist ensures there is no movement by matching the pressure. After the 10 seconds, the client is advised to relax (deep breath in and out) and the therapist passively increases the ROM of the joint until a new point of bind is felt. The contraction-release cycle is repeated two or three times more. The final point of bind is held for 20-30 seconds passively and then the limb is returned slowly to the normal position.

RI involves the antagonist muscle contracting rather than the target muscle. The application is the same as PIR but the contraction is performed by the opposite muscle to that being stretched, for example the quadriceps are contracted while stretching the hamstrings.

The client should play an active role in all METs, providing feedback regarding pain and/or discomfort, and being aware of the muscles involved and their levels of fatigue. The therapist should ensure clear instructions are followed by the client and that the client understands what is expected of them.

Soft Tissue mobilisation techniques are used to help increase the ROM of tissues by removing any adhesions that are causing restrictions to movement. Adhesions usually occur following a trauma or injury but can also occur due to immobilisation or overuse of a movement. Intramuscular adhesions happen when the fibres become 'stuck' to each other during contraction and affect the function of the muscle; this affects both muscles and their ability to perform correctly. Binding soft tissue adhesions disrupt the functioning of the tendons, ligaments or joint capsules. Examples of soft tissue mobilisation techniques are transverse frictions, soft tissue/myofascial release and connective tissue massage.

Frictions involve the movement of the fingers, thumbs or hands moving back and forth along the line of the muscle in short motions to promote the stretching of the tissue. The tissue should move in unison with the movement. If there is any slippage, the massage medium should be removed. Transverse frictions work at right angles to the fibres of the muscle, tendon, ligament or joint capsule being broken down.

Transverse frictions are used to break down adhesions in muscles, tendons, ligaments and joint capsules, increase mobility of soft tissues and to optimise the formation of scar tissue during the repair phase. They are used to help realign the collagen fibres, remove excessive scar tissue, remove adhesions, reduce any congestion in a local area, and increase local circulation and to increase ROM.

It is important to complete a 10-second press test prior to performing frictions to ensure there are adhesions and the "lump" is not due to neuromuscular hyperactivity. Prior to treatment it is also necessary to get written consent from the client as frictions can cause localised bruising or discomfort for one to two days post-treatment, especially if the frictions are deep.

As the technique can be painful for the client, it is important for the therapist to monitor the client throughout and stop if requested.

If the treatment is on a muscle it should be placed in a relaxed position. If it is a ligament requiring treatment, it should be placed on a slight stretch. Short, multiple frictions are advised and the area should be checked regularly to assess the effects of the treatment. Effleurage should be applied between breaks and applied towards the nearest lymph nodes – this aids relaxation for the client and the therapist. Ice is recommended as part of the aftercare to minimise the possibility of bruising.

Soft tissue release (STR) involve mobilisation of joints either actively, passively or active assisted. STR increases the mobility of soft tissues including muscle fascia, breaks down fibrous adhesions in soft tissues, improves ROM in joints, promotes muscular balance and promotes positive scar tissue formation.

STR can be uncomfortable for the client and therefore it is important for the therapist to communicate with the client throughout. On the pain scale, 6/10 is described as a 'comfortable pain' or 'nice pain' level and this is where STR techniques should be applied.



During STR the muscle is placed in a shortened position and pressure applied to the restricted soft tissues 'locking' it in place proximal to the moving joint. The joint closest to the area is then moved to create a stretch between the 'lock' and the joint. This should be done passively by the therapist but can be progressed to actively if the therapist needs to reinforce the 'lock'. The 'lock' is gradually moved more distally from the moving joint until it reaches a point where the effectiveness is lost. The technique can be repeated for up to 2 minutes depending on the comfort for the client and the response from the affected tissues.

Connective tissue massage treats the body as a whole rather than focussing of specific areas. Fascia covers the entire body and any restrictions within this can cause some restrictions in movement and circulation and massage is used to aid this circulation and mobility.

The therapist should start superficially and move to deep, although treatment of the visceral organs is beyond the scope of practice for SMTs and therefore should not be the primary aim of connective tissue massage.

Prior to treatment, oils and other residual creams should be removed allowing the therapist's hands and fingers to be able to facilitate the ability to stretch the tissues. The therapist starts by using sufficient pressure to be able to move the tissue slowly in different directions to see if there are any restrictions in movement. If any restrictions are found, the tissue should be held until the stretch changes and the movement continues.

Deeper adhesions can be accessed by using the tips of the thumbs and fingers to roll the tissue between them. Any adhesions felt can be held with the thumbs and fingers turned in to form a crescent shape.

The final stages of the treatment include 'walking' the fingers and thumbs across the area – this is effectively rolling the tissues between the fingers and thumbs. Any adhesions should be treated by holding the 'roll' until the tissues respond.

Myofascial release is the use of petrissage combined with connective tissue massage and can be done at home by clients using a foam roller.