Soft Tissue Therapy, it's Benefits and Application

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Soft Tissue Therapy – What Are The Benefits And Uses?

Terms such as 'Massage', 'Sports Massage' and 'Soft Tissue Therapy' are going to be used interchangeably in this paper.
Massage has been used effectively for many thousands of years, helping to address soft tissue damage, for instance involving issues with tendons, muscles and ligaments.
These treatments remain just as effective, especially where today's lifestyles are directly contributing to these conditions. Whilst it is true to say that the body can often heal itself **(1)**, given time and the right environment and or conditions, it is also possible that what started out as a minor problem could escalate into a more serious one without additional assistance.
Soft Tissue Therapy can therefore assist in helping to accelerate the body's own repair mechanism, thus avoiding a situation where a minor problem becomes a permanent injury.
The benefits of soft tissue therapy extend to areas such as stress relief, improved posture as well as blood and lymphatic circulation, it lowers blood pressure, improved range of motion and flexibility, and breathing becomes easier and deeper. It can also bolster the immune system, help with pain management, assists with tissue rehabilitation whether that be post - surgery or injury.**(2)**

The Physiological Effects of Effleurage and Petrissage

Effleurage
Effleurage assists in moving venous, lymphatic and interstitial fluids so that they can be reused by the body. It assists local circulation, removes waste products such as lactic acid and carbon dioxide and brings nutrients such as oxygen and glucose to the area being massaged. The improvement in circulation reduces blood pressure and heart rate and can increase cardiac output.
There is also the benefit of soothing and relaxing the muscles via the activation of the parasympathetic nervous system **(PNS)(3),** and the production of superficial heat. The action of effleurage also compresses, broadens and stretches tissues near the surface including the muscles when the action is deeper.
There is often a reduction of pain, although whether this is because of the production of endorphins or via the pain gate control theory is often unclear.

Petrissage
Petrissage can be useful in reducing swelling, because it squeezes, stretches and loosens tissues, pushing fluids out of the area. Petrissage also assists in the reduction of muscular stiffness / soreness by pushing the waste materials out from the tissues back into either the circulatory or lymphatic system, thereby reducing the localised acidity.
It can also reduce any adhesions that may have occurred in the fascia that can be reached. Muscle tone can be increased and the atrophying actions can be reduced or lessoned by keeping the blood circulation as well as the nerve stimulation going. The normal electrochemical exchanges that happen during normal exercise can be stimulated.**(4)**

Other General Massage Techniques

Friction
The mechanical stimulation that friction brings, can assist in the break up of tissue adhesions, and can organise the distribution of collagen. It can assist in the separation of plains of fascia, giving access to deeper areas – this is often referred to as myofascial release. The reduction in muscular tension via the golgi tendon, inhibiting muscular-tendonous contractions, will lead to a lengthening

and stretching of both the muscle and tendon fibres.
Superficial heat will often improve local circulation (if valid to the patient, you could explain that thereis a knock on benefit because of the creation of a local ischemia, hyperemia and the subsequently stimulated histamine release). Digestion is often improved, as tension in the abdominal cavity is reduced, leading to better peristalsis and the subsequent excretion of waste. Friction can assist in the release of trigger and reflex points and the subsequent pain relief via the gate control theory. **(5)**

Tapotement
Tapotement is an invigorating stroke which can improve muscle tone because of the reflexive contract / relax response. Both respiratory and sinus congestion can be relieved because the tapotement action physically loosens mucous **(6)**. If it is applied lightly over a long period of time over the sacrum area, then the nervous system for the digestive, urinary and reproductive systems can be stimulated.

The above general massage techniques can be used to treat areas of scar tissue and adhesions in soft tissues.
Some scar tissue will typically remain after the body's phagocyte cells have broken down the cells during the healing process. If the phagocyte cells complete their task, no scar would be formed, but this is rare and as well as scar tissue, the surrounding fibres that have also been affected can stick or adhere to each other. Where these fibres had previously been free to move beside each other in order to function properly, this cannot now happen and therefore needs to be addressed.
Deep effleurage and friction can be used to great effect in breaking down these adhesions, realigning the tissues and assisting in their repair by flushing out toxins and replacing nutrients. Petrissage can also loosen the fibres and increase blood flow, again giving the benefits previously mentioned above.

Sports Massage
Sports massage can be used to help prepare an athlete for competition, and recover after it. Most athletes would agree that they train as hard as they can in order to compete at their highest level. A consequence of this is that they will often continue to train with minor soft tissue damage. These micro traumas can therefore accumulate into more serious injuries if they are not managed carefully. **(7)**
After a training session, the bodies tissues must recover, and the speed and efficacy of the repair will enable the athlete to train again sooner and potentially at a higher level. This is where the therapist can help.
Massage can help to accelerate the repair process by forcing fresh blood through the tissues, cleansing it of any waste products and refilling the nutrients needed within them. This should be carried out as soon as possible after the training session for maximum effect. Massage can also assist in providing the athlete with the fullest range of motion available to them, and improves flexibility. They can also be taught to carry out intelligent stretches use muscle energy techniques so that they can carry them out themselves.
In the days, sometimes hours or minutes, before an event, the tissues should have all issues addressed, and the treatment will then be more attuned to preparing them mentally. Being overly excited can be detrimental to their performance and therefore they may need a relaxing massage to calm their system down. Others may benefit from a massage which stimulates the body, and it is a decision that the therapist will make, depending on the individual conditions at that time.
After an event, a crucially important thing is assisting the tissues to promote recovery. Flushing blood through the tissues, as previously mentioned with regards to post training, will give the bodies tissues the conditions needed to repair damage and feed with the required nutrients.**(7)**

Pressure should be kept to moderate to shallow, as deep pressure would adversely affect damaged tissue. Rest, Ice, Compression and Elevation (RICE) can be beneficial, and, providing the damage is not acute, can also include gentle stretching.**(8)**

Neuromuscular Techniques

Neuromuscular techniques (NMT) rely on the location and use of both reflex and trigger points. If a person's whole body is palpated, there will be certain points that are more painful than most. The points that cause referred pain elsewhere can be called trigger points, the other reflex points. The existence of these points does not in itself indicate any particular problem with the body, however, when there are health problems, the pain felt on pressing on or more of the points will be much increased.
If deep pressure is made on these points, the pain is increased, but after a relatively short time, it begins to decrease as the tissues relax. This can be reasoned to be endorphin release (a natural pain killer). This is a simplistic overview of the actions that are carried out, but misses out several important points if the person receiving this information is to be informed sufficiently so that they can effectively repeat the technique in the future.
When a muscle is damaged, pain will be felt whenever the length of the muscle is changed. This could be by stretching or lengthening the tissues. Sensory nerves tell the central nervous system (CNS) that the above change is taking place and a reflex action causes the muscle to contract. It does this to remove the perceived tension from the muscle as a protective measure in order to remove the pain transmitted on lengthening. The pre-stretched length becomes the new neutral position, the relaxed position even though this should not normally be the case when it is undamaged. **(9)**
NMT seeks to re-set the neutral position to the muscles original, natural one that was in place before the damage happened. When deep pressure is applied, the natural reaction of the body is to protect this action by tensing the area. But firstly because the patient has been briefed to relax, and they are voluntarily undergoing the pain, this protective reaction is minimised, sometimes it does not happen at all. If the pressure is applied in a progressive and controlled manner, and the patient is advised to breathe deeply, the natural reaction to tense up is easier to resist because the body relaxes when we breathe out. **(10)**
Once deep pressure can be increasingly applied, with whatever applicator is seen as most effective (thumb, knuckle, elbow etc), the patient should feel a gradual reduction in pain. After a period of about 90 seconds, there should have been a relaxation of the tissues.
The causes of muscular tension can be many and varied and include the obvious damage to the tissues themselves, but there may be emotional factors as well. Consider how easily stress in modern lives can cause muscular tension and this will be obvious.
Therefore it is essential that the patient feels as relaxed as possible. This extends to the warmth in the room being comfortable, the use of towels which can have a good effect, and the tone of the therapists voice as well as their manner.

Muscle Energy Techniques - The Principles of Post Isometric Relaxation PIR. When you would, or would not use it.
Immediately following an isometric contraction, there is an increased degree of relaxation in that same muscle. This immediate reduction in neurological activity is called post- isometric relaxation (PIR). The methods of active-assisted stretching use the window of reduced neurological activity during the PIR to engage a stretch of the target muscle after it has isometrically contracted. Stretching during the PIR is more effective than stretching without the prior isometric contraction. It is most effective when the injury to the tissue has not happened recently, is not seen as long term, and the stretching of the tissues will not cause further damage .**(11)**

The Principles of Reciprocal Inhibition RI and the circumstances when you would, and would not use it.

When an agonist (target) muscle contracts, there is a neurological inhibition of its antagonist (opposite) muscle. You can imagine in the upper arm, a bicep being used to lift a weight, and the tricep getting longer to allow the contraction in the bicep. The reduction in neurological activity in the antagonist muscle is called reciprocal inhibition. Because reciprocal inhibition decreases neurological activity in muscles opposite the ones being contracted, it is helpful to use during stretching procedures. Stretching of the target muscle is enhanced when its opposite muscle is contracted at the same time.
If the tricep muscle needs to be relaxed, then putting the bicep under contraction will cause this muscle to lengthen, therefore relaxing it.
This technique is very useful if the muscle that needs to be relaxed has been damaged in some way.**(12)**

Muscle Fascia / Connective Tissue - Description of muscle fascia and how it can affect the function of the muscle.

Anatomy sources typically show the human body, minus the layers of skin, leaving muscles, ligaments, tendons and bone to be displayed.
This picture does not take into account the fascia, which permeates the entire body. Fascia is often divided up into layers such as Superficial and Deep, but this is an over-simplification, because the fascia runs through everything, and therefore can affect the function of the muscles that it interacts with, often due to tension in the fascial bands. Consider a situation where layers of fascia pass over each other as the muscles contract and relax. Now introduce a circumstance where they become bound together, possibly due to an injury or even extended inactivity. Where previously the layers of fascia passed over each other, now they do not, and this will result in the mechanical action of the muscles becoming different.
Muscles can become shortened and therefore less effective if this situation was allowed to continue, and the patient would complain of muscle pain or other dysfunction, when in fact it is the fascia that is the cause and needs to be treated along with the muscle.

Fascial Network (Connective Tissue)
The significance of the Fascial Network (Connective Tissue) on Postural Alignment

As previously mentioned, the fascial network envelops the whole body, and therefore if one area of the fascia is changed, another area can be affected. This would indicate that in order to correct an imbalance, the whole of the fascia would need to be worked on, but this is clearly not going to be realistically possible, as it would take an inordinately long period of time to carry this out. Certain areas of the fascia can be worked on though, and it is the discovery of the locations where fascia have bound together that is a step in the right direction in correcting matters.**(13)**
Observation of the posture can be an indicator of fascial imbalance, as any restriction, especially in the superficial fascial layer, will have an effect on the mechanics of the body, showing up as changes to optimum posture.
The fascia can be examined physically by gliding over the skin, and the patient may believe that the therapist is examining the musculature, whereas this is just one aspect that needs to be assessed. Discovering where the fascia is tight will indicate tightened and or shortened muscles as well, and one typical area is the chest. For instance, looking at the position of the shoulders and seeing that they are protected, the therapist will assume that the fascia across the chest and the corresponding

muscles are tight and shortened and will treat this area.
The above condition may have materialised as neck pain for the patient, who may find it strange that the chest is being treated, and therefore informing patients to the relevant degree is another skill that the therapist needs to cultivate.

Example Pathologies

Multiple Sclerosis
Signs, symptoms and pathology

This is a progressive disease of the CNS where the myelin sheath which surrounds the nerve fibres of the brain and spinal cord become inflamed and then degenerate. This degeneration results in the impaired transmission of nerve impulses, most notably those of sensation, and movement. The muscles will become affected, either overly tight or weak.

Causes and prognosis

It is believed that the body's autoimmune system could be responsible for the damage to the myelin sheath. Some research indicates that lower levels of vitamin D may increase the prevalence of susceptibility to the disease.
Some remission may be experienced, but eventually the condition will return and worsen over time.

How soft tissue therapy can be used to treat people with this condition.

Releasing the tightness and strengthening weakness as appropriate will have a beneficial effect on the symptoms; however this will not address the condition itself. Each person being different, the patient needs to be encouraged to inform the therapist, assisting them in giving the most effective help. The reduction of muscle spasms, increased circulation and strength during periods where the condition is not acute is seen as very beneficial.

Other advice or support that could be offered.

Corticosteroids are typically given to patients suffering with this condition, along with many other drugs to control the autoimmune system. These may cause conditions such as digestive disorders that can be addressed by different therapies such as abdominal massage.**(14)**

Carpal Tunnel Syndrome

Signs, symptoms and pathology

The carpal tunnel is an area on the palmer side of the wrist which three sides made up of the carpal bones, the forth side being made up of a transverse ligament. Loss of sensation, intermittent pain and weakness can often be felt, including at night, when sufferers can be woken by the pain. Sufferers can also experience paresthesia which can be described as being like 'pins and needles' and one test is Tinel's Test or Tinel's Sign, which involves tapping the wrist which is presented in the supine position. This recreates the sensation described above.

Causes and prognosis

Carpal Tunnel Syndrome is caused by a restriction in the carpal tunnel, by perhaps scar tissue or

when compressed by surrounding tissues.

How soft tissue therapy can be used to treat people with this condition.

Friction is typically used along with stretching the palmer side of the wrist. Friction would assist in the breakdown of scar tissue, and stretching would help to alleviate the constriction causing the surrounding soft tissue to compress the area.
It may be that surgery is the only viable option, in which case subsequent massage treatment will be optimal to encourage the fullest recovery.

Other advice or support that could be offered

Non-steroidal anti-inflammatory drugs are normally prescribed to treat this condition, and it might be that RICE would be just as effective without the side effects of taking drugs.**(14, 15)**

Irritable Bowel Syndrome (IBS)

Signs, symptoms and pathology

The digestive tract becomes either spastic (spasms) or simply lacks movement. This can result in back pain, lowering of libido and lack of energy.

Causes and prognosis

It is believed that IBS may be caused by things like stress, anxiety or depression. Sufferers can expect to experience conditions on a long term basis, with peaks and troughs of severity.

How soft tissue therapy can be used to treat people with this condition.

During a quiet or 'trough' period as mentioned above, abdominal massage can be beneficial, however the patient must be willing undergo to massage, which can be a significant step in itself due to the above mentioned causes of the condition.
Massage of the abdominal area has a two-fold effect of 'moving things along' as far as the digestive tract is concerned, and can have a significant effect on the sufferers level of stress, anxiety and even depression. This latter benefit may also be connected to the fact that in order to allow the therapist to carry out the treatment, the patient has to let the tension go, thus re-enforcing the positive aspects.
Stress or any of the above conditions can have an effect on the breathing and posture. This could lead to times when psoas and iliacus are therefore affected, and treating these areas will address any knock-on effects. Therefore releasing the intercostal muscles to allow greater mobility and stimulating the diaphragm can also benefit IBS sufferers.

Other advice or support that could be offered

Lifestyle and particularly diet changes can also contribute to successfully controlling the condition. A qualified dietician or nutritionist could offer the detail, but in overview, avoiding or reducing methane producing foods, reducing tea and coffee and reducing meal sizes is a good start. **(14, 16)**

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