

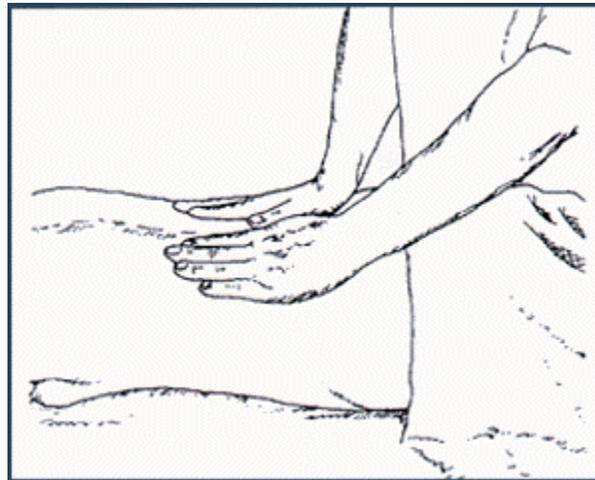
The Role of Soft Tissue Work

by Mario-Paul Cassar

Massage

Massage is one of the modalities I use (with essential oils) in my bodywork and osteopathic work. Some schools of manipulative therapy reject any connection with massage, which, in my opinion, is a shame and has a tone of degradation of the bona fide massage therapists. In this day and age it is an established fact that, resulting from all the publicity and representation, members of the public are fully aware of the difference between a bona fide massage therapist and one operating under its disguise. Massage is very beneficial to patients many of whom openly admit that they prefer it to manipulation. It often happens that a patient is too stressed to have any manipulative work done, in such a case a short massage is very appropriate and induces relaxation.

Neuromuscular technique (NMT)



Developing a good palpatory skill is imperative to soft tissue work, even in the basic techniques of massage (illustration by Helen Davis)

Neuromuscular technique has many applications. It is the one technique I use most in my work, especially when dealing with nodules and spasms of superficial and deep muscles. These two conditions, together with fibrotic tissue, are the ones I frequently come across. My experience is that they develop more often as a result of structural problems rather than visceral organ dysfunction but it is imperative to treat them in each case.

Tissue changes

At this point it may be worth revising how these tissue changes come about. Stressors, like trauma, toxins, pathology, mechanical and emotional stress causes a change of state in fascia (nodules, contractions) and muscle spasms and shortening. This ensues through nerve sensory (afferent) impulses from organs and tissues to the spinal cord and motor (efferent) impulses to the autonomic nervous system, skeletal and involuntary muscles. Motor impulses to skeletal muscles cause spasms and impulses to blood vessels result in vasoconstrictions. Blood supply is therefore impaired to organ tissue and fascia. This means that the close interrelation between the somatic, autonomic and endocrine systems make it impossible for pathological changes to take place in any one structure without causing adaptive changes in other structures (like fascia). Research has shown that the reverse can also happen, i.e when the soft tissues are normalised there is a positive reflex effect on the malfunctioning organ. We can conclude therefore that most soft tissue work, even if it not specifically applied, has a beneficial effect on the viscera.

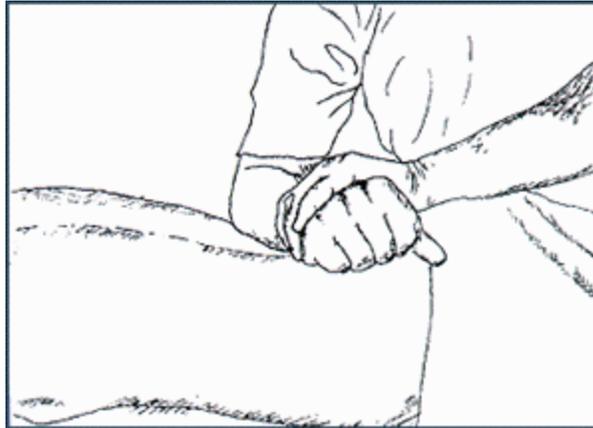
Nodules

Nodules are very common especially in areas like the insertion of the levator scapula into the superior medial border of the scapula and the belly of the supraspinatus and of the rhomboids. These often occur as a result of postural imbalances (repetitive work, spinal abnormalities) and tend to become chronic and change into trigger points. Reducing these with neuromuscular technique prevents the formation of trigger points and helps to correct muscular imbalances, albeit temporarily unless other corrections are made to the posture, work habits and so forth.

Muscle spasm

Muscles in spasm are common and when dealing with these it is crucial to distinguish between a spasm due to emotional factors and one due to postural imbalances. Whereas in the former straightforward relaxation techniques are called for, the latter requires soft tissue work (like NMT) but it may also be necessary to apply spinal adjustments. It is worth bearing in mind that a muscle which 'twitches' to the touch is likely to be associated with nerve root entrapment at a corresponding spinal segment and this needs to be freed up first before the muscle can relax.

The Facilitated segment



Soft tissue has evolved into a number of methods for dealing with heavy musculature and tight fascia, for example the use of the forearm for deep work and neuromuscular technique (illustration by Helen Davis)

One of the main concepts of bodywork in general is that of the 'facilitated segment'. I now want to enlarge on what I have already mentioned when describing tissue changes. Pathological or mechanical stressors cause abnormal afferent (sensory) inputs to a particular area of the spinal cord and this segment is kept in a state of constant increased excitation. This facilitation allows normally ineffectual or subliminal stimuli to become effective in producing efferent (motor) output from the same facilitated segment. The result is that both skeletal muscles and visceral organs innervated by that spinal segment are maintained in a state of overactivity. Associated with this sequence of events is the 'osteopathic lesion' which occurs as a direct result of the abnormal segmental activity as well as being partially responsible for the facilitation (contracted muscles causing misalignments which in turn cause further muscle contractions).

In addition to correcting spinal misalignments using osteopathic techniques, the musculature around that segment of the spine (and more systemically when we take the whole structure into consideration) need to be assessed and treated. Where muscle contractions are playing a part in causing or maintaining the misalignments soft tissue work like muscle energy techniques (MET), NMT and passive stretching are used to break the viscous circle of the facilitated segment. Massage can also play a part in this process, particularly if there is an element of 'emotional involvement' and as a precursor to the other techniques.

Fascia

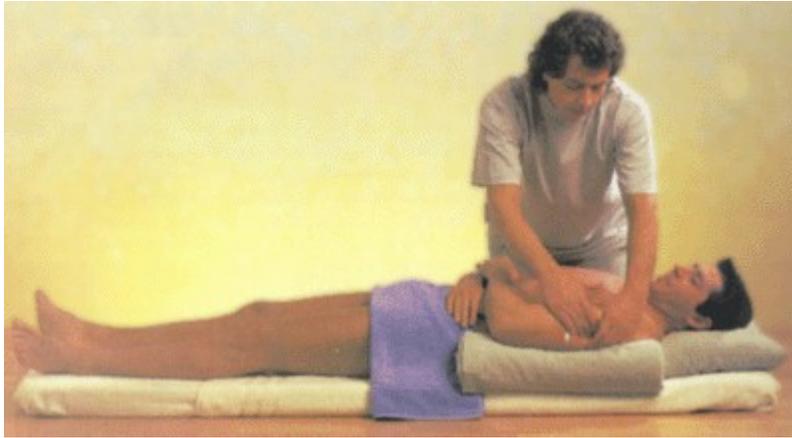
Fascia is fascinating to study and work with as it seems to respond well to very gentle techniques like those of cranio-sacral therapy and heavier work like that of Rolfing. In cranio-sacral therapy we use the rhythm of the cerebrospinal fluid to free the fascial planes. In Rolfing we are concerned with heating up and stretching the fibres.

Postural imbalances are very often due to the shortening of muscles and related fascia. Stretching of any muscle will automatically stretch the fascia which encases it (the fascia itself is in need of stretching, more than the muscle). Passive stretching of postural muscles therefore is one way of dealing with this contracted tissue. The lumbar fascia is very commonly shortened and for this area I use very deep Rolfing-type techniques, deep NMT and lateral stretching of the fibres. One of my earlier cases I had as an osteopath was Mrs. Z who had chronic back pain. I assessed the lumbar fascia to be contracted and despite being eager to use my manipulative techniques, I worked solely on stretching this area. Although the results were not immediate the stretching (and relief from pain) was permanent when it did happen. Contracted fascia requires persistent treatment and active stretching (like yoga exercises).

Fibrotic tissue

Long and continued postural stress, asymmetrically imposed upon the soft tissues, tends to cause fibroblasts to multiply more rapidly and produce more collagen (the repair material of connective tissue). Besides occupying more space within the connective tissue element of the muscle, the extra fibres encroach on the space normally occupied by nerves and vessels causing increased pressure (and pain). Because of this trespass, the tissue loses its elasticity and may become painful when the muscle is required to do work in co-ordination with others. In the long term collagen would begin to replace the active fibres of the muscles, and since collagen is fairly resistant to enzyme breakdown, these changes tend to be irreversible. This situation makes working with fibrotic tissue very difficult and, at times, frustrating.

Reduced spinal mobility can be due to fibrosis (fibrotic changes) of the spinalis thoracis, iliocostalis lumborum and iliocostalis cervicis. Stretching the tissues along and across the fibres is used to help break down the collagen fibres, this is followed by passive stretching. I also use deep tissue work like NMT and Rolfing-type techniques but great care is needed as these can cause pain which then becomes counter-productive. Isolytic stretching (passive stretching of a muscle whilst it performs low level isotonic eccentric work) is good to break up the fibrotic tissue of long fibred muscles like the hamstrings. As with the treatment of fascia, active stretching is necessary to maintain the pliability and length of the muscle.



Some techniques have to be adapted to suit the heavy bodybuilder. When it is only possible to work on the floor you also need to adapt your posture to protect your own back

The sports person

During exercise of long duration like running and swimming the energy for muscle work is derived from the aerobic glycolysis process as there is sufficient time to keep a constant supply of oxygen to the muscle. In explosive type of exercise like that of weight lifting and sprinting the energy derived by aerobic glycolysis is not enough to meet the demand of the muscle so it is supplemented by that of the anaerobic glycolysis. Because of the reduced supply of oxygen there tends to be a residue of lactic acid in the muscle. This also happens, to an extent, in exercise of long duration.

Metabolites like lactic acid and carbon dioxide are likely to be found in muscles following exercise, depending of course on the state of health and efficiency of circulation in the athlete. One of the best, if not the only technique which is used to improve drainage is massage (allowing at least twenty minutes to elapse). It aids both the venous and lymphatic drainage and so reduces toxins and excess fluid and should be used very often in between training sessions and following events. The more frequent the exercise the more regular the massage treatment is required. Dealing with the sports person requires some very heavy work sometimes due to the size of the muscle bulk. So the pressure of the massage, NMT and MET is adjusted to suit the tissues involved.

When treating injuries opinions differ as to what stage the deep soft tissue work is carried out. Generally speaking this would depend on the extent of the strain – the greater it is the longer the wait. Techniques like deep thumb effleurage and cross friction are used to break up excessive scar tissue and free up any adhesions between muscle bundles and groups. The fascial junction between a muscle and the periosteal layer (like that along the fibres of the gastrocnemius and the tibial periosteum) is likely to need freeing up following extensive use or strain.

Preventing injuries is a priority for the athlete, which means flexibility and full muscle stretch. I use a combination of MET and passive stretching as well as setting an active stretching programme for the athlete. A common situation where this applies is looking after the amateur footballer (eg an office worker playing twice a week) where there is a likelihood of very short hamstrings (due to posture). These are prone to strain when he comes to stretch them on a very cold evening or Saturday afternoon. Fibrotic or scar tissue is often present, from previously untreated minor strains, so the routine of deep pressure and passive stretching is applied.

As we have seen the application of soft tissue work is very extensive for the massage therapist, bodyworker and manipulative therapist. Its success depends on being prepared to allow the time to administer it and for developing a sense of palpatory touch. Equipment such as ultra sound, laser and interferential all have their uses but they can never replace the effectiveness and the 'almost magic touch' of soft tissue work.

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Author's Introduction

Soft tissue work was incorporated in physical therapy many years ago. Its efficacy has been demonstrated by the extent of its utilisation and by its continuous evolution, sometimes into other therapy forms.

I always include soft tissue work in my treatments as I consider a session is not complete without it. The benefits to be had from its application far outweigh the time it takes to administer (some manipulative therapists seem to shy away from it because it is time consuming). Assessing the state of the tissues as well as applying the appropriate technique or combination of techniques is an art in itself and something which I find most enjoyable and challenging. Failing to recognise the need for soft tissue work is, in my opinion, inefficient on the part of the manipulative therapist, just as it is unacceptable for a massage therapist to bypass the urgency of referring a patient to a specialist.

It is hard to define exactly what soft tissue work is due to the overlap of 'hands on' techniques we have today. I see it as any modality, which utilises tactile contact on tissues with the aim of normalising their function. A range of movements is used, from stroking (with or without oils) to compression and passive stretching. The more superficial tissues like muscles and fascia are commonly treated but equally important are tendons, ligaments and even viscera. In trying to classify the soft tissue workers, the job is even harder, again due to a degree of overlap. At one end we have the massage therapists doing Swedish, Therapeutic, Sports massage and so forth, then the bodyworkers using systems like Neuromuscular Technique and Muscle Energy Technique, finally the manipulative therapists like osteopaths and chiropractors. Mario can be reached at mariocassar@compuserve.com

About the Author

Mario-Paul Cassar DO MCOA APNT(Fel) practises Osteopathy, Sports Medicine, Massage Therapy and Bodywork. He is also an established tutor with many years of experience in massage therapy and bodywork and has lectured in a number of colleges and centres in the UK, Europe and the USA. Mario-Paul is the principal of the Massage and Bodywork Institute offering tuition in Surrey and London. He is the founder and past chairman of the Association of Physical and Natural Therapists and also the co-founder and first chairman of the British Massage Therapy Council. His first book, *Massage Made Easy*, was published in 1994. Massage & Bodywork Institute 93 Parkhurst Road; Horley ; Surrey RH6 8EX Tel : 01293-775467

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