

## Connecting (t)issues

Have you ever thought that massage, yoga, acupuncture or other complementary therapies could actually prevent cancer, and/or existing cancer from spreading at tissue level? This is what an international research team is suggesting. On a basic level the theory goes like this: Fasciae is a net of tissue that surrounds every muscle and organ, in short, almost everything in our body. The blood and the lymphatic system is embedded in it. The lymphatic vessels deliver local chemical information from the tissues they drain to the immune system via lymph nodes. Normally the layers of fascia glide over each other, but when they get stiff and sticky the problems start. Not only does this have implications for movement (or the lack of), but it affects the underlying structure of connective tissue, which in turn can affect the behaviour of all cells interacting with the connective tissue matrix.

This can result in chronic inflammation and tissue fibrosis, and this, in turn, leads to tissue stiffness – a negative spiral with one reinforcing the other. It has been thought that chronic inflammation leads to tissue stiffness – but now there is evidence that tissue stiffness can lead to chronic inflammation and fibrosis. There is also a link to cancer, as inflammation and other tissue changes around the tumour are not only a

reaction to the it, but might actually be and ideal “soil” for the cancer to form and to grow. Thus connective tissue stiffness is potentially a driving factor in tumour growth. Here is the beauty of it all: “Physical-based therapies have been shown to reduce connective tissue inflammation and fibrosis and thus may have direct beneficial effects on cancer spreading and metastasis.” (*Cancer Res.* 2016 Nov 1;76(21):6159-6162).

Not only do you get the physical, mental, emotional and spiritual benefits of massage and bodywork, but you might also prevent cancer.

## On-site massage for pain prevention

A substantial amount of time spent on a computer can give us pain in the back, neck, shoulders and arms – even if the screen, keyboard and mouse are ergonomically set up. Most office jobs involve a lot of time in front of a screen.

A study in Wrocław offered a fifteen minute chair massage twice a week to 25 office workers, and compared the effects to 25 similar office workers. In total they studied 20 women and 30 men, with an average age of 34 years.

The study used questionnaires to assess physical activity, musculoskeletal pain (the Cornell Musculoskeletal Discomfort Questionnaire (CMDQ)) and satisfaction with the massage programme in both groups. They also measured pain more objectively by applying pressure (in kg/cm<sup>2</sup> with an algometer).

The level of physical activity was comparable between the groups, with 11 in the massage group and 10 in the control group declaring a high level of physical activity. The biggest differences after massage were a decrease in pain at the lower and upper back and the right arm, but less pain was also reported the in right shoulder and the left forearm. In contrast the pain and discomfort in the control group had not decreased over the four weeks of the study.

Similarly, the sensitivity of the trigger points (assessed by the algometer measuring the pressure pain threshold (PPT)) decreased in the massage group but not in the control group.

This study shows that on-site chair massage does lower the discomfort and pain in office workers. (*Ortop Traumatol Rehabil.* 2016 May 5;18(3):279-288).

The next study shows that even a short massage can reduce tension in the neck and shoulders.

Wishing you a spring in your step,

*Regina Dengler*

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## Short massage real effects

Seventeen healthy people (students I guess) in their mid-twenties participated in two “treatments” 24 hours apart: a short neck and shoulder massage and sitting quietly. Half had the massage first, half had the quiet time.

Neck and Shoulder muscle tension can be measured by assessing the electrical activity in the trapezius muscles using surface electromyography (EMG). The amount of muscle electrical activity change following massage was compared with the change in muscle activity after quiet sitting. The muscle activity stayed the same before and after the quiet sitting, while it was reduced significantly after the short massage. This shows measurable changes in the muscles after massage.

(Neuroreport. 2017 Jan 18;28(2):108-110).

### Recent feedback

*I feel so much better. My back was better for weeks after the last session (4 months ago).*

Tracey G, ASC

*After the first work session I felt so much better so I started to see Regina privately. What a great decision. Today's session was as good as always.*

Maureen, ASC

*I feel so much looser through my shoulders and I really enjoyed the massage.*

Kerry D, ASC

*My shoulder pain has gone since the last massage. The change was quite dramatic.*

Wilson, Sangenic.

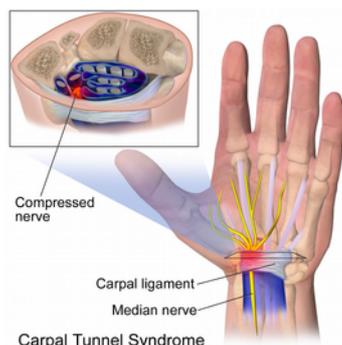
*Great. Really freed my stiff back.*

Jill, Mansfield Building Society

## Carpal Tunnel Syndrome

A randomized trial compared manual therapy to electrical therapy in the treatment of carpal tunnel syndrome (CTS).

The study included 140 people with mild to moderate CTS. They were randomly assigned to either a manual therapy or



electrophysical therapy group. The manual therapy consisted of massage, mobilization of the wrist, and “neurodynamic” techniques (affecting the nerves and the muscles that affect nerves). The electrophysical therapy included laser and ultrasound therapy. Each group received two twenty minute sessions for 10 weeks. The researchers assessed nerve conduction, pain and symptom severity, and function before and after treatment.

Both groups benefited from the treatment, with an increase in nerve conduction and function as well as a reduction in pain. However, the benefit was greater in the massage group in terms of pain, function and subjective symptoms. (J Manipulative Physiol Ther. 2017 Apr 8. pii: S0161-4754(17)30043-X).

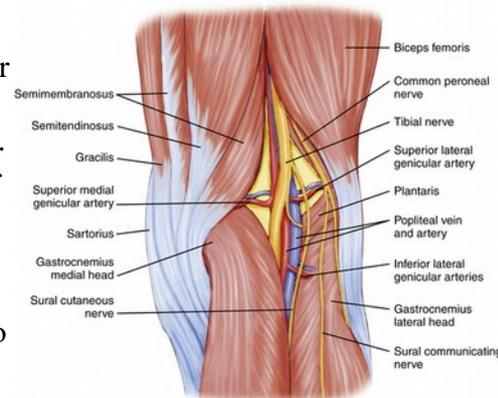
## Massage behind the knee for blood flow.

Some people get pain or discomfort in their lower legs due to issues with circulation. A study in Japan looked at whether the blood flow would increase in the main vein flowing in behind the knee (popliteal vein) after massaging the muscles in this area.

Friction massage of the side the medial and lateral heads of the gastrocnemius muscle was given to 15 healthy male students on their

right leg. Venous flow was measured before and after the massage using Doppler. It was found that the blood flow was indeed significantly increased after the massage. (J Phys Ther Sci. 2017 Mar;29(3):511-514). This and the next study comes with a word of caution. Tension in the gastrocnemius muscles can come with all sorts of problems, so restricting blood flow could be one of them. Should you try this yourself, make sure you massage the fascia and/or muscles, not the nerves or blood vessels nearby.

*A lot of times, the press guys ask why I take an hour and a half to come to the interview room, but if you don't do the massage and the ice baths and the stretching and the cooling down and the eating, and your opponent is doing that stuff, they already have an advantage. Andy Murray*



### Calf massage to prevent thrombosis

Blood clots in the legs (venous thromboembolism) is a complication after many operations, a hip replacement being one of them. This is hoped to be prevented with surgical stockings (often white and uncomfortable) and/or blood thinning (anticoagulation), but with these methods there is still room for improvement. This study looked at a different approach, namely whether calf massage and passive ankle movement could lower the risk for thrombosis after a hip replacement compared to standard care.

The treatment group consisted of 126 consecutive hip-replacement patients in the first 9 months of 2014 and the control group were 138 patients who had the same surgery but standard postoperative care in 2013. The manual calf massage and ankle rotation was immediately after the surgery. Both legs of treatment and control group were checked for thrombosis using ultrasound a week after surgery.

In the massage group one person showed a blood clot on the ultrasound (0.8%) while in the standard care group nine (6.5%) patients had evidence of an embolism. The people on standard care were 9 times more likely to have thrombus than those with post-operative calf massage and ankle rotation.

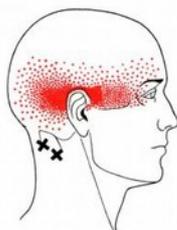
The study authors recommend calf massage and passive ankle motion for patients undergoing a hip replacement, provided deep vein thrombosis does not exist before the surgery (but then they would not have a hip replacement anyway). (*J Orthop Sci.* 2017 Mar 24. pii: S0949-2658(17)30073-8).

### Range of motion increases with massage

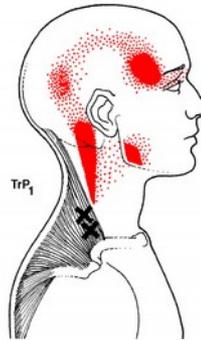
A study of studies (a systematic review and meta-analysis) looked at massage to increase the range of motion (ROM) in the shoulder. It was found that massage significantly improved the shoulder range of motion, especially flexion (lifting arm in front) and abduction (arm lifting to side). (*J Phys Ther Sci.* 2017 Feb;29(2):365-369).

### Trigger points for headache

This study compared massage using trigger points to “sham” ultrasound treatment on people with tension headache measuring the pressure pain threshold (PPT).



Sixty two people with episodic or chronic tension-type headache received either 12 twice-weekly 45-min massage or sham ultrasound sessions or waiting list control. The massage focused on trigger point release



(ischemic compression) upper trapezius and suboccipital muscles. PPT was measured at the various trigger points with a pressure algometer pre and post the first and final treatments.

The pain pressure threshold increased in the massage group, but not in the sham ultrasound or waiting list group.

The PPT increased initially after the first massage session, and continued to increase with more massage sessions, with an additional increase in PPT at the final (12th) massage treatment.

This means that massage using trigger points increases the pain threshold, and even after 6 weeks of twice weekly massages, the 12<sup>th</sup> massage still benefited in terms of pain threshold. (*Am J Phys Med Rehabil.* 2017 Feb 28).

Another study compared active and passive trigger point therapy in the upper trapezius with a sham treatment in women with a history of neck pain.

Forty-two female patients, aged 18 to 64 years, were randomly assigned to 3 groups: group A received passive soft tissue (I am sure the tissues were not soft to start with) therapy (i.e. massage), group B received active soft tissue therapy (self-stretching), and a control group C received a sham procedure. Participants had three sessions, one every other day. Pain intensity, measured with a psychometric questionnaire, and pain pressure threshold (PPT) using an algometer, and range of motion measurement of the neck were obtained before the first session, after the third session, and a week after the third session.

The results indicated a significant decrease in local pain intensity on the visual analogue scale within each group (A and B) compared with the control group. The passive group had significant improvement in PPT compared with the control group.

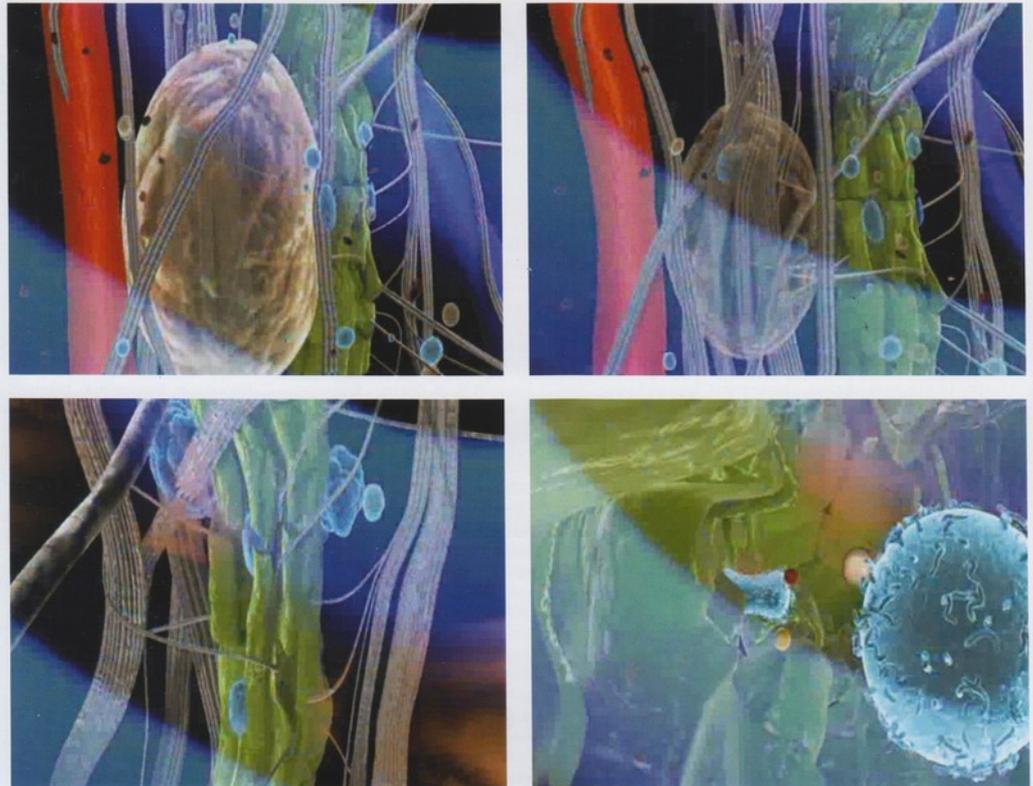
Both passive and active soft tissue therapies reduced pain intensity and increased range of motion, although passive therapy (massage) was more effective in reducing trigger point pain (*J Chiropr Med.* 2016 Dec;15(4):235-242).

## MLD & Deep Oscillation

Manual lymphatic drainage (MLD) is a well-recognised and traditional treatment modality for oedema. HIVAMAT® 200 is a device that uses an intermittent electrostatic field to stimulate blood and lymphatic flow, thereby reducing oedema. This small study compared MLD with MLD plus deep oscillation with the HIVAMAT. Three women with lipoedema and two men with lymphoedema of the legs were recruited. The larger leg was treated with HIVAMAT® 200 plus MLD and the other leg with MLD only over the course of 3 weeks. The effect of the treatment was determined with measurements of leg volumes and high-definition ultrasound to analyse oedema.

Both treatments led to a reduction in fluid volume in the leg, slightly more so with the Hivamat ( $p=0.06$ ). However, the ultrasound showed that the limbs treated with HIVAMAT® 200 plus MLD showed significantly greater reduction in levels of oedema than the limbs treated with MLD alone ( $p=0.017$ ). This means that using deep oscillation and MLD together is likely to get better results than using MLD alone. (*J Lymphoedema*, 2016 11(1):49-53).

In my experience deep oscillation makes MLD much more effective, to the point that I use the Hivamat for oedema unless I can't (for example in pregnancy, the safety of deep oscillation has not been tested on pregnant women). On the right is a schematic illustration of the effects of deep oscillation on oedema, with kind permission from Dr Jens Reinhold (*The Journal (of MLD UK)*, April 2017, p.45).



Schematic representation of interstitial oedema. Resonant vibrations by deep oscillation have a dissolving effect. Lymph and lymphatic ingredients (protein bodies, cell debris, etc.) are mobilised, whirled up and distributed (above). Via anchoring filaments, deep oscillations act on junctions in the endothelial structure of initial lymph vessels (bottom left). Opening of septa thus induced favours resorption of lymph and ingredients (interstitial drainage; Interior view of initial lymph vessel; bottom right). ©PHYSIOMED.

### Recent feedback

*My husband and I came from Germany to see Regina while looking for a treatment to help our infertility issues and lower back pain. Regina was very kind, pleasant and understanding. The session was a very nice experience and we felt relaxed afterwards. The self care instructions were very helpful and we will definitely seek to apply Regina's tips for improving our physical health and relaxation moving forward.*

Roberta, Germany

*Thank you Regina for my new legs. On the ride back home I felt so elastic and loose, that I just flew right over the hills! Totally transformed from the journey to see you. I really do appreciate your sensitivity and willingness to go wherever is needed in the moment. It is a gift.*

Martin S, Thorneywood (very hilly)