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## **Shiatsu - the Scientific Basis. Shiatsu works - but how? (Cliff Andrews)**

At last we have the evidence, the ESF research project has shown Shiatsu to be effective. But this still leaves us with a big question, how does Shiatsu actually work? When we learn Shiatsu we immerse ourselves in a challenging, inspiring and personally enriching process that encompasses experiences from meditation to massage, from Qi gong to Ki work. I believe that emerging scientific research can suggest possible mechanisms that can explain how Shiatsu works, and also explain why we train in specific ways.

Electrical currents in the human body were studied and documented earlier than electromagnetic fields of the body, and used for diagnostic instruments to measure the activity of the heart and brain. It is only recently that instruments sensitive enough to detect biomagnetic fields have only been developed. But every electrical activity has a corresponding electromagnetic field – this effect is used in the transmission of radio signals and electromagnets that have thousands of applications in appliances that we use every day. Any conducting medium – be it a wire or the human body – is able to act as either a transmitter or receiver of electromagnetic information.

The whole of our body and mind acts as in interconnected living matrix that is a producer and receiver of biomagnetic fields. The biomagnetic field of the heart, which is the strongest field produced by the body can be detected 3m away by the latest instruments we have. Every physical, emotional and mental activity of our bodies produces a signature component of the total biomagnetic field. It is intriguing that the discipline of Ki diagnosis involves us in quieting the physical and mental activity in our bodies by practice similar to mediation techniques. This process is precisely what would be needed to turn out own living matrix from a transmitter into a receiver of biomagnetic signals.

In Shiatsu we use Ki penetration and relaxed bodyweight to contact meridians, treat points and connect our hands while we work. Now there is clear evidence that these subjective feeling is a reality, indeed the strength of the Ki we project as trained practitioners has been measured to be about 1,000 times stronger than the heart biomagnetic field, which is the strongest normally in our bodies and about 1,000,000 times stronger than the biomagnetic fields created in our brains.

Even more fascinating is that this emitted biomagnetic field from our hands as we work is not at a fixed frequency but scans through a range of frequencies that have been shown to enhance healing of different types of body tissue. In fact machines that simulate the biomagnetic frequencies of our hands are in production and in common use in hospitals to jump-start the healing of difficult injuries that fail to heal normally.



We now have no reason to doubt that the Meridian pathways really exist, as Bill Palmer quoted in his recent Shiatsu News article, the photographs of coherent biophoton emissions by Popp has given us striking images of the meridian pathways illuminated in the IR spectrum. How these pathways of coherent photons could be connected to meridian function is another puzzle, and one that Patrizia Stephanini and I quizzed Emilio Del Giudice

about in a recent meeting we had about quantum coherence and meridians – his reply – “that is for you two to figure out”. The most likely explanation lies in the embryological development of the fascia and connective tissue.

### **But what about diagnosis?**

I have a favourite teaching technique to demonstrate how important the energy-work component of Hara diagnosis is. I first find a Kyo and Jitsu meridian on the Hara and then tighten my hands and arms until the differences between the Hara zones is reduced to the uniform texture of the abdominal wall – the diagnosis disappears in front of our very eyes. This is easy to do – try it yourself... yet what mechanism is at work here, where does the Kyo and Jitsu on the Hara go? And why might this experience help us understand how we can make a Hara diagnosis?

It seems that the actual physical palpation of the abdomen is only a part of the meta-perception that allows us to “diagnose” or “energy-read” the Hara. Physical palpation is not even an essential part of the process, as it is possible to detect differences in the Hara areas away from the body surface – using so called “etheric” diagnosis or “off the body” techniques. Pauline

Sasaki transformed Masunaga's original palpation technique by lightening the touch and placing more emphasis on alignment, by doing so she introduced components of the whole field techniques that she learned from Akinobu Kishi in the 1970s. The logic of this approach is that it balances the physical input of the direct connection to the living matrix via the palpation of the body structure with information from the wider biomagnetic field. Basically the lighter the touch and the more emphasis on alignment the more we adjust the balance between information from the field effects of the meridians and less from the local viscera.

If Meridian function Ki patterns are represented by a characteristic components of the total biomagnetic field it should be possible to feel these. I tried this experiment out in a workshop recently. I asked the students to pair up, and with their eyes closed to sense their partner who was about 2 metres distant. The partner then used the Masunaga meridian expressions to create a change in their biomagnetic field. The students with their eyes closed had no problem in detecting and describing differences created in the field of their partners.



In diagnosis we combine our perception of direct touch of an area with a wider perception of the biomagnetic field - our training would then act to create a filter to allow us awareness of the meridian functions. It seems likely that we then combine this into a meta-perception that we interpret as Kyo or Jitsu. One of the genius qualities of the Masunaga system is the emphasis on the kinaesthetic learning of the meridian functions by the meridian

expressions; this transforms the theory into a direct experience of characteristic biomagnetic patterns.

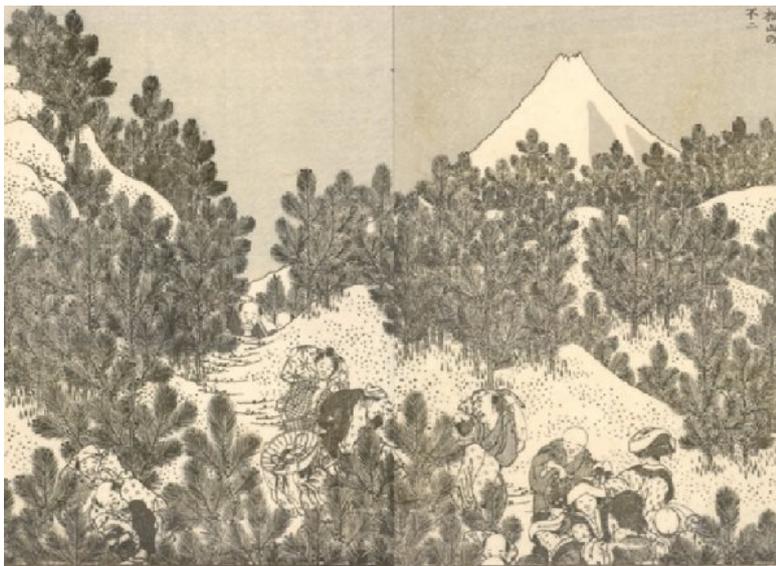
Probably the first thing that we are taught in Shiatsu is to centre or align ourselves. We are taught that connecting with "Universal Qi" will give us the ability to feel another's Ki, and also to be able to treat our receiver more effectively, but how could this conceivably work?

A possible mechanism could be the Schumann resonance. Variations in the Earth's magnetic field, thousands of times stronger than the biomagnetic field created by our own body show intriguing resemblance to the alpha rhythms in the brain. This has led some scientists to

conjecture that part of aligning and tuning into Universal Ki could be allowing our brain's alpha waves to resonate or become entrained with the Schumann resonance.

### **What about relaxed body weight?**

Why is that so important to use relaxed bodyweight to connect with the meridian Ki? Muscle contraction has many effects; it not only creates its own pattern of biomagnetic fields but also has an effect on our connective tissue and nervous system. Relaxing our bodies while we work has two effects – increasing our sensitivity to our client's biomagnetic field by quieting our own, and also increasing the effect of our intention, and our ability to project Ki – perfect for maximising the effect of our treatment and our ability to tune into what is happening as we work.



Intention, sometimes called “mindset”, some teacher emphasise, is an important part of Shiatsu technique. But how could it be possible to use our mind to change what we perceive and the effect of our touch? There are several areas of research that could point to possible explanations. A biomagnetic field is produced in the brain before any action takes place. The famous saying from the Tai Chi classics “The Mind leads Ki – Ki leads the Blood” is very close to the

observation that a biomagnetic field is created in the brain before any movement takes place.

### **And why do we press?**

Why do we use rhythm and depth? What is the difference between pressing a point and just holding it? The answer lies in the piezo-electric property of connective tissue. When you light a gas hob and you hear a “clicking” noise before the spark lights the gas –you are hearing a crystal being compressed from which by a process called piezo electricity an electrical spark is given off. One of the remarkable properties of our connective tissue is that it has a liquid crystal structure and it has piezo electric properties. When we press a meridian the associated



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connective tissue will create an electrical and bio-magnetic pulse. We can feel this pulse as a change in the listening hand, in practice we adjust the tempo and the depth to optimise the feeling of change in the meridian – we monitor this in the listening hand. If we hold a point for a longer time the piezo electric effect will be minimised and the Ki projection effects become dominant.

Interestingly piezo electrical substances are used in many devices as sensitive detectors – that is because the physical- electrical qualities of piezo-crystals are reversible – changes in the physical dimensions occur when exposed to electrical currents. This could explain the mechanism by which energy-work practitioners report feeling physical sensations that mirror their client's symptoms in their own bodies.

### **So what happens when we “unblock” a meridian?**

A remarkable property of the connective tissue is that it is grounded in a gel-like substance that becomes more solid with stress, injury or aging. Pressure changes the quality of this gel – to a sol (solution) making it more fluid, the gel rehydrates under pressure, and also becomes more conductive to electricity. This can explain how we can feel a blockage in a meridian, which would be represented by the gel state of the connective tissue, the increase of connectivity, the physical changes in the meridian and also the subjective effect of the client of being more connected would be a result of changes from the gel to sol state. The familiar feeling we have of the 2 handed connection becoming stronger as the meridian unblocks would be due to the increased electrical conductivity in the rehydrated gel.

Masunaga thought that the sensation of the 2 handed connection was explained by the sympathetic nervous system. We now know that this is unlikely to be the whole story. The speed of transmission of the nervous system is just not fast enough to explain Ki effects in the body. A study of changes in the visual cortex of the brain linked to stimulation of Bladder meridian points indicated for treating the eyes on the foot showed that nervous system transmission would be too slow to explain the connection. Electromagnetic signals through the connective tissue matrix are a more likely explanation.

The semiconductor properties make the connective tissue potentially a large memory bank – like a computer memory. Memory can be strongly kinaesthetic – if we think back to a stressful or shocking event we can often feel our bodies contract. This may be part of the reason why it is possible for us to work “held” emotional patterns via the meridian system.



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## **Summary: Suggested explanations for different stages and experiences within Shiatsu energy-work**

### **Alignment and centring**

Resonance between alpha rhythms and Schumann resonance, a quieting of the biomagnetic field of the practitioner to enable perception of the client's field.

### **Hara Diagnosis**

Complex meta-perception based on filtering and interpreting different aspects the client's biomagnetic field varyingly - depending on depth - combined with touch communication with the living matrix via a local area visceral connection.

### **Ki Projection**

An intentional extension of the biomagnetic emissions from the hands into a meridian or other body structure, amplified by the Schumann resonance to 1,000 times the normal field strength of our body.

### **Tuning the touch to different meridians**

Examples include Pauline Sasaki's mindset method and the 6 forms of touch of Bill Palmer. Possibly a biofeedback-generated adjustment of the practitioner's bio-magnetic field to resonate with aspects of the field related to different functions.

### **Meridian Functions**

Signature component of the wider biomagnetic field associated with the functioning of organs and other body processes related to the meridian.

### **Meridian pathways**

Connecting pathways emanating coherent biophoton emissions characterised by lower skin resistance linked to meridian functions possibly by embryological patterns in the connective tissue.



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## **2 – handed connection**

Subjective experience of connection within the living-matrix – probably electrical and biomagnetic connection transmitted in the meridians via the connective tissue and /or nervous or perinervous systems, possibly related to increased coherence of water molecules in connective tissue.

## **Tsubos**

Specific points on meridians within the living matrix evidenced by reduced electrical skin resistance provide nodes where the piezo-electric property of compressed connective tissue is transmitted to the meridian pathways

## **Rhythm and tempo**

Repeated piezo-electric stimulation by compression of the connective tissue, adjusted to create optimum change in the listening hand.

## **Depth**

A combination of biomagnetic stimulation via Ki penetration and compression of the connective tissue leading to a directed electrical and electromagnetic stimulation of the connective tissue and therefore the meridian system, in practice this is adjusted (with tempo) to optimise change in the listening hand

## **Ki Flow**

A meta-concept incorporating connectivity on multi-layers within the living matrix including the connective tissue gel-sol, water coherence and the biomagnetic field of the receiver.

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