

The Interaction and Outcomes of Acupuncture with Deep Oscillation Treatment

A case studies discussion

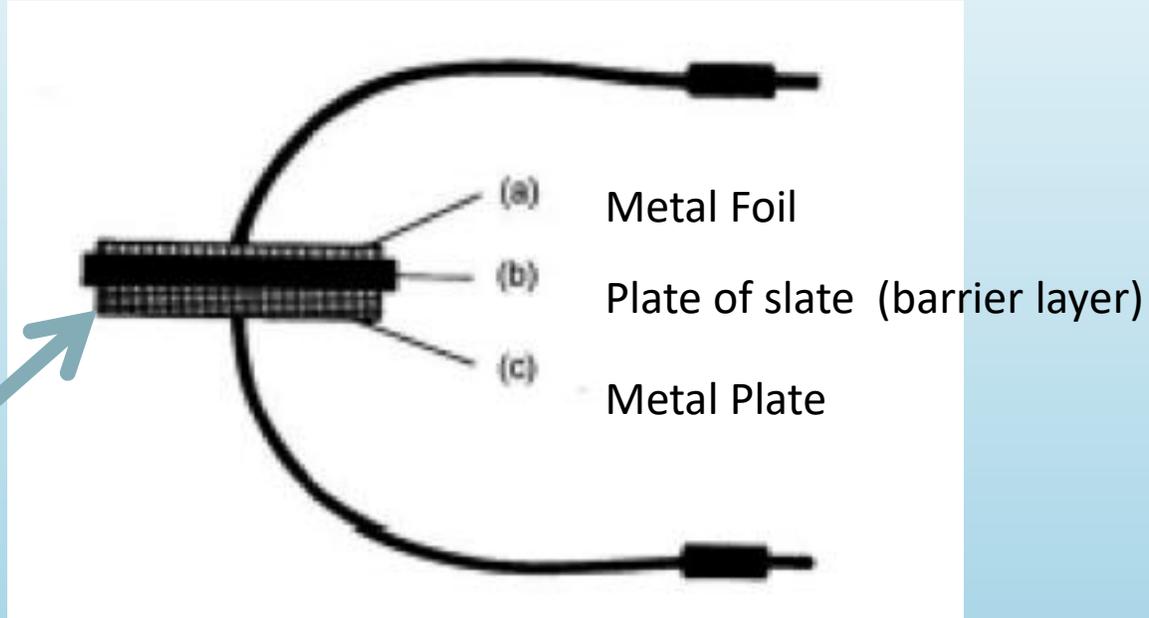
Chris Boynes, Chartered Physiotherapist
BEd(Hons) PE, MCSP, MACPSM, MAACP, Lic Acu, HPC

Content

- Deep Oscillation Treatment – background, what it is and how it works
- Case Studies – demonstrating how deep oscillation treatment has successfully interacted with acupuncture and manual therapy
- Deep Oscillation and Acupuncture – how needle insertion is always easier/softer and provides different feedback following deep oscillation. A look at the reasoning behind this.
- Reviews from other healthcare professionals using deep oscillation in practice with acupuncture and other treatment protocols



There was a **Physics Phenomenon** called “The Johnsen-Rahbek effect”



- Barrier layer (piece of slate) placed between 2 electrodes
- An attractive force was witnessed in the space between
- The strength of the force depended on voltage & materials used



- Early 80's - two German Physiotherapists, Wolfgang Walder and Hans Seidl researched the theory further with PHYSIOMED to see what therapeutic effect it could have on tissue.
- 1988 - HIVAMAT 200 gained its first patent and in 2002 it was FDA Approved.
- 2012 - PhysioPod became NHS Suppliers and it became a sought after therapy in the Premier League.

Deep Oscillation

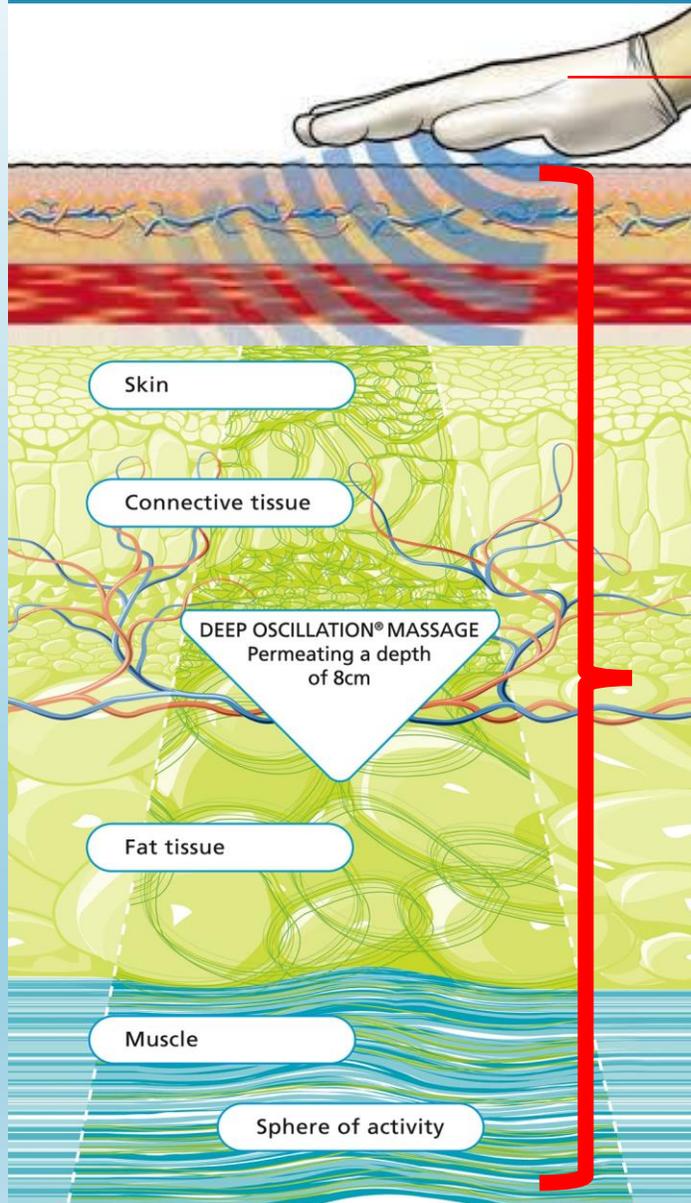
- Deep Oscillation creates a deep, resonant vibration in the tissue layers which has a gentle, yet powerful effect.
- It is applicable immediately after injury and day one post surgery, opening up new unequalled opportunities for treatment.
- It is now listed in 11 PubMed studies.

- No heat, no electrical stimulation (circuit never completed).
- Applied through vinyl gloved hands or applicators, which also enable self-management.
- Deep Oscillation supplements & intensifies all types of connective tissue work, without pressure and reaching 8 cm depth.
 - as proven by Solangel 2010 burns study and by ultrasonography, Luis Felipe Medina Cabezas.

http://www.physiopod.co.uk/assets/files/s_gb_DO_Solangel2010_burns.pdfNS.PDF

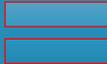
<http://www.youtube.com/watch?v=8Z7Sg3U9p8g>

What happens in treatment?



Tissue layers are attracted and released back to the hand in speed of the frequency selected

For instance:

- 5 Hz  5 times a second
- 250 Hz  250 times a second

Physiological Effects

- Highly effective in reducing pain
- Anti-inflammatory
- Promotion of wound healing
- Improvement in tissue quality
- Effective in resorbing oedema
- Tissue detoxification
- Improvement in trophicity
- Anti-fibrotic effect
- Rubor reduction

Clinical Effects

- Pain Relief
- Muscle and tissue relaxation
- Increased ROM
- Improves functional mobility and movement
- Decreases swelling and encourages movement of fluids



What happens in high frequencies (80-250 Hz)

- Pain significantly reduced
- Lymphatic drainage pathways opened & activated
- Trapped cellular metabolic waste/abnormal fluid build up broken down
- Hardened fibrotic tissue & scar tissue dispersed.

What happens in Low Frequencies (5-25 Hz)

- Vasodilation causes slight lowering of blood pressure.
- A powerful, gentle, pumping action causes strong movement in the tissue.
- Re-instigation of flowing fluids encourages essential nutrients back to the tissue.

What happens in Medium Frequencies (25–80Hz)

- Microcirculation in the interstitial spaces of the connective tissue is boosted.
- Tissue layers are relaxed.
- Biological waste products move out to the lymph system for removal.

Contra-indications

- Acute infections
- Acute systemic inflammations with pathogenic germs participation
- Active tuberculosis
- Acute venous diseases (untreated thrombosis)
- Untreated malignant diseases
- Erysipelas or cellulitis
- Patients with cardiac pacemakers or other electronic implants
- Untreated heart complaints and diseases
- Pregnancy
- Hypersensitivity to electrostatic fields Infectious skin diseases

Case Study: Caroline, aged 58

- Came to the clinic with longstanding neck, shoulder and left-sided facial pain
- PMH included 15 years neck pain. In Summer 2016 diagnosed with neuralgia. In 2017 diagnosed with TMJ problems.
- Problem list:
 - The lack of neck movement with both rotations and side flexions
 - Loss of c/spine extension/combined rotation/extension loss
 - Stiff th/spine from CTJ down to T8/9
 - Stiff 1st ribs bi-laterally
 - Neuralgic type left sided neck and cheek pain, sharp most of the time, always present and never cleared since dental work in 2014

Treatment

- Manual therapy (SNAGs, Joint Mobs, Connective Tissue Release)
- Deep Oscillation Therapy (DOT) for stiffness and pain and tissue 'softening' frequencies between 200hz and 60hz x 20 minutes or more in a session
- IMS to neck, shoulders and th/spine for tissue changes
- TCM points for neuralgic type pain
- Home exercise programme

Outcome

- After 8 x 1 hour sessions the patient was 98% better and no longer suffering from the neuralgic type constant pain
- The TCM points abolished the neuralgic type problem
- The IMS changed the tissue tension/pain.
 - Note: When I needled post DOT, the tissue feel was softer and less 'crampy' than pre DOT treatment
- DOT helped the tissue, stiffness and 'pain' and encouraged ROM

Case Study: Peter, aged 73

- Came to the clinic with severe migraine and blurred vision
- PMH – suffered with headaches/migraines in his 20s; past treatment with drugs had helped. Longstanding neck and shoulder stiffness. Patient felt that Beta Blockers had increased migraines.

Problem list:

- Joint and connective tissue tightness
- Reduced ROM with both shoulder joints
- No neural referral or S&S
- Headaches/migraines suggest GB channel with pain in the area of GB14 and GB20 in the neck.

Treatment

- Initial effects with Mulligans headache SNAG at C0/C1 and rotation at C1/2 made only a small change for the better.
- TCM & IMS.
- Manual therapy - SNAG's, mobilisations, adjustments at CTJ and th/sp
- DOT @ 200hz and 60Hz 20-40 mins, for pain and tissue 'softening'. This left the patient with an easier moving neck aided by warmth applied after treatment.
- Note: Patients believe DOT is giving out warmth but what they are feeling is the friction of gloves on skin.
- Home exercise programme.

- Within five sessions over six weeks Peter had no further headaches/migraines and less joint stiffness.
- However, five months later, although only intermittent headaches Peter's eyes were cloudy and he found it hard to keep them open.
- Treatment included: TCM and IMS, plus DOT.
- Post treatment Peter felt the DOT had eased the tissue and joint stiffness.
- Returned one week later with clear eyes and no headaches.

Outcome

- The TCM and IMS treatment got rid of his headaches and decreased much of his neck and shoulder tension.
- According to Peter, the whole of his neck and shoulders felt much improved after the DOT treatment. He had more mobility and the tissue felt very relaxed.
- He had a home exercise programme. Last seen 5 months ago.

Case Study: Michael, aged 30

- Professional singer working on Christmas Show over 12 weeks.
- Presented with an achy stiff lower back with loss of forward flexion and more left sided pain. No neural problems. This had been ongoing for a month or so.
- Problem list:
 - Pain and limited movement with lumbar spine flexion and left side flexion.
 - Note: Positive Sneeze – suggestive of a central disc type problem.

Treatment

- Initial treatment was for just ten minutes in First Aid room: MFTP's and adjustments to T5-T8 and L5/S1 left and right. Plus self-flexion SNAGS = 70% better.
- Seen 4 days later: movement better but pain still present.
- Treated with IMS and DOT.
- Advice with extension work regularly in standing and lying – using a centralisation type of approach.
- Improvement after two further sessions.
- Advice to work on better movement and counteraction of his flexion based normal movement.

Outcome

Michael continued to sing – sometimes two shows daily – with no problems until the show finished on the 23rd December and he went home for Christmas.

Overall

- IMS good outcome.
- DOT decreased pain and movement stiffness and when done PRE IMS, the needle entry was smoother and easier until you hit the Trigger Points.
- DOT used @ 200Hz and 60Hz x 15-20 mins each for pain relief and tissue changes (as explained in the literature).

Case Study: John, aged 42

- Carpenter, initially presented with severe pain in his right forearm and limited function. He had continued working, doing repeated movements with his right hand, using a nail gun.
- There was a dead feel to his arm/forearm and he mentioned that at times both arms felt 'dead'.

Problem List:

- Decreased grip, elbow extension, resisted supination
- Inability to actively do wrist extension
- Pain at TO site and muscle bellies of extensors
- Suggestion of some neural inhibition with possible interosseous nerve entrapment and an extensor tendinopathy

Treatment

- Initial Treatment: IMS and taping for fascial offloading.
- Four days later: 20% better. At this session I only used DOT at fibrosis setting, as the tissue still sore from IMS. Taped for a tennis elbow and fascial offloading.
- Four days later: He had increased active wrist DF which was severely restricted due to pain and dysfunction/neural inhibition of muscle power.
- Over six sessions, treated with: DOT, IMS, Taping and Manual Therapy to c/spine.

Outcome

- John continued with self-treatment involving tissue massage plus Mulligans self TE MWM.
- IMS worked really well.
- DOT decreased the pain and 'deep' ache John felt and the tissue/skin felt softer and less sore.
- Using DOT after IMS in 95% of times always eases the needling soreness and eases tissue tension.

Deep Oscillation & Acupuncture

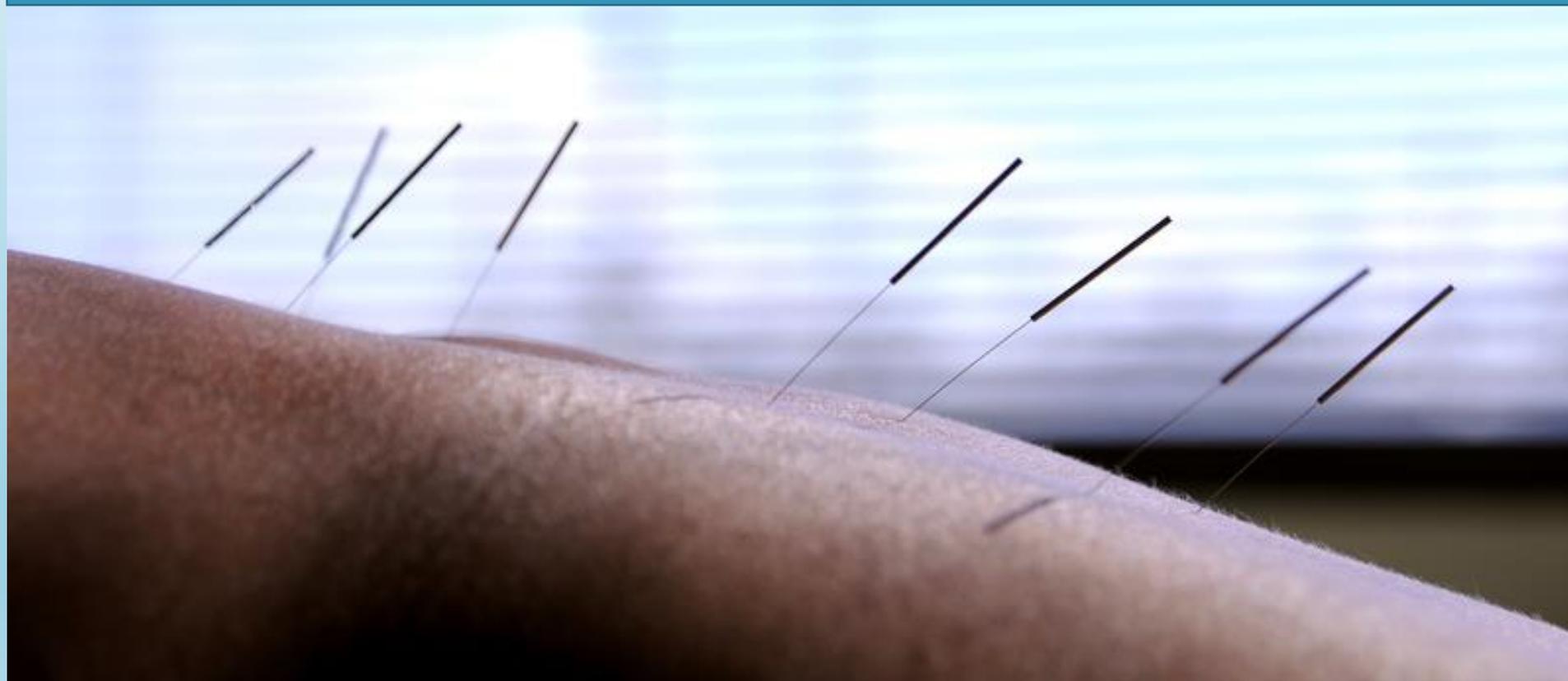
Why does DOT pre-needling make the needles go in more easily?

According to Dr Jens Reinhold, there are four possibilities:

1. The fact that acupuncture points are more sensitive to thermal or mechanical stimuli, involving a higher temperature, might be due to an increased number of TRPV1 pain receptors on the cells. BOISNIC et al 2013 studies showed DOT led to a significant reduction in the number of TRVP1 pain receptors on sensory cells, which is an explanation for the statistically significant pain alleviating potential DOT.

2. The mechanical resonance vibrations of DOT and their effects on afferent neurons might simply have analgesic effect by influencing the gate control mechanism (Melzack et al 1983).
3. Kuti-visceral or Somato-visceral effects resulting from DOT could have effects on pain reception, resulting in 'tissue softening'.
4. With regard to the properties that acupuncture points are subject to changes in state, depending on the overall physiological and psychological condition of the patient, maybe the DOT just relaxes the patient who lets go and tolerates the needles better.

Analysis of Acupuncture and Deep Oscillation Questionnaires



Questionnaire

- Do you use DEEP OSCILLATION pre or post acupuncture? What is the effect on tissue, does it help needling?
- Do you feel that using Acupuncture and Deep Oscillation has reduced treatment times? If so, by how much?
- What do you feel DOT does to help/interact Acupuncture
- What do your patients feel about your use of DOT, what feedback do you regularly get?
- The following are comments received on the questionnaires.

Do you use DEEP OSCILLATION pre or post acupuncture? What is the effect on tissue, does it help needling?

- *Pre –Acupuncture*
 - *Helps ease muscles, relaxes patient*
 - *Needle insertion more comfortable after using DOT*
- *Post-Acupuncture*
 - *Lessens the discomfort of needling*
 - *Generally used to enhance physiological changes brought on by needle insertion*
- *Good for pain and spasm*
- *Use a combination of DOT and Acupuncture for stubborn injuries*
- *Positive changes with Acupuncture and DOT on lymphatic presentations*

Do you feel that using Acupuncture and Deep Oscillation has reduced treatment times? If so, by how much?

- *Not sure if it has reduced treatment times, but result is more effective.*
- *Each treatment is longer but I'm seeing faster results in fewer sessions.*
- *DOT has helped with pain and movement in 85-90% of patients.*
- *Patients see results in probably 25% less sessions.*
- *Not treatment times, but perhaps the frequency of treatments.*

What do you feel DOT does to help/interact with Acupuncture?

- *Decreases tissue tension so needles insert easier.*
- *Increased ROM with DOT and needles.*
- *It softens tissue in areas where manual massage is difficult.*
- *Each treatment compliments each other; it offers a calming and soothing effect on clients.*
- *Encourages relaxation prior to needling; relaxation both of the patient mentally, and of the tissues physically.*

What do your patients feel about your use of DOT, what feedback do you regularly get?

- *Players generally comment that they feel that have come back quicker than they expected and feel a lot more mobile following treatment.*
- *They love it. They are surprised it is effective as it feels so comfortable.*
- *Reduction in pain, feels less tight and looser.*
- *Most patients respond favorably to DOT and are quite intrigued by its concept. Most have found relief of symptoms when applied to painful neck and shoulders.*

Thank You

