DEEP OSCILLATION®

The Physiology of Deep Oscillation and the presentation of 2 Case Studies for pain and fibrosis

By
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HANDS-ON PHYSIOTHERAPY

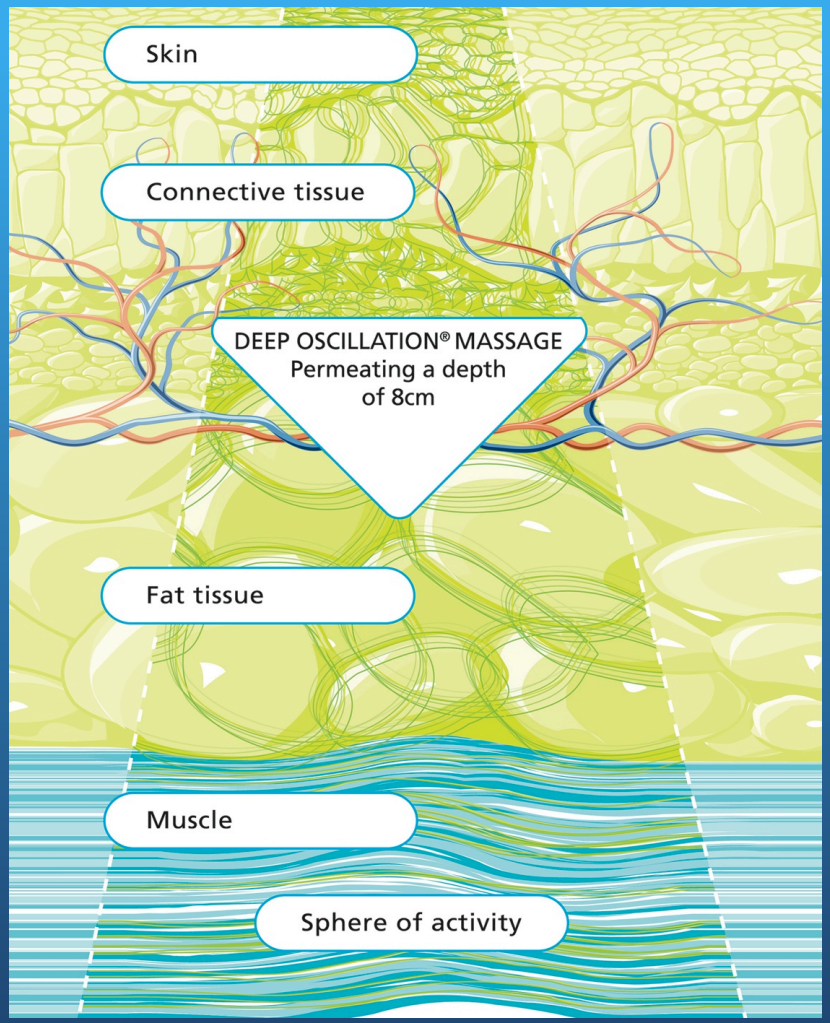
AIM OF TODAYS PRESENTATION

- Obtain a basic understanding of DEEP OSCILLATION® & the contraindications
- View videos links/fields of application/clinically documented biological effects
- View units available
- Understand the methods of application
- View two case studies for **Pain and Fibrosis**

What is DEEP OSCILLATION ® ?

- Intermittent, electrostatic, massage therapy
- Supports & enhances physical forms of therapy
- Non-invasive, non-traumatic, non-thermal
- Safe over implanted pins and plates
- Effective in acute injury situation
- Can be applied day one post operatively via vinyl gloves or applicators
- Saves physiotherapists hands

What makes DEEP OSCILLATION ® unique?



In contrast to externally applied, mechanical forms of therapy, (e.g. vibration), the therapy effect of DEEP OSCILLATION® takes place in the tissue itself and works through the entire depth of the tissue layers (skin, connective tissue, subcutaneous fat, muscles, blood and lymph vessels) to a **depth of *8 cm**

(*Solangel, 2010)

Fields of application

- Pre and Post Operative Therapy
- Lymphoedema
- Lipoedema
- Mechanical Traumata and damage from overstraining
- Training aftercare and performance stabilisation in sport
- Secondary wound healing
- Burns (second degree)
- Chronic pain syndromes
- Neurorehabilitation

What happens during treatment?

- Tissue is *intermittently, electrostatically, attracted and released back to the hand or applicator in the speed of the frequency selected:

200 Hz = 200 times per second

5 Hz = 5 times per second

- * As the therapy changes polarity, the circuit is dislodged via an active discharge device fitted inside the unit; this is part of the international patent
- The physiotherapist creates biologically efficient oscillations throughout the soft tissue layers & connective tissue to a depth of 8 cm, regardless of frequency selected (Solangel, 2010)

What do the different frequencies do in the tissue layers?

High: 80 Hz -200 Hz

Alleviation of pain & activation of lymphatic drainage

Break down of cellular metabolic waster (protein solids, acids, cytokines, spent neurotransmitters, toxins etc. and abnormal lymph fluid accumulation)

Causes the dispersal of hardened and fibrotic tissue

Low: 5 Hz -25 Hz

- Lowering of blood pressure due to vasodilation
- Powerful pumping & fluid displacement, strong movement of tissue
- Effective flooding out and disintegration of obstructions
- Re-instigation of the flow of fluids and essential nutrients around the body
- Direct and relieving effect on peripheral nerve pain and limb immobility

Medium: 25 Hz – 80 Hz

Aiding micro-circulation in the interstitial spaces of the tissue

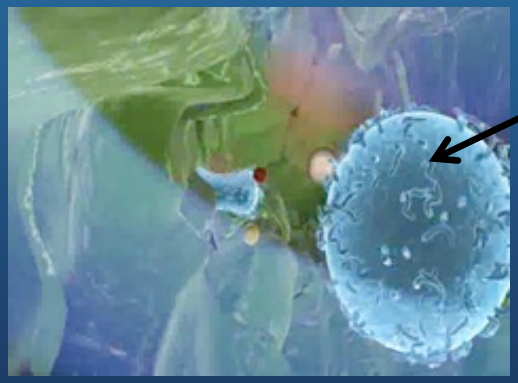
Boosting the recovery period of over acidified muscles (DOMS)

Creating a relaxation of the tissue layers, promotion of mobility & a movement in the collection of the biologically trapped matter to the lymph system

Schematic representation of interstitial oedema



- Resonant vibrations caused by DEEP OSCILLATION® have a dissolving effect.
- Lymph and lymphatic ingredients (protein bodies, cell debris, etc.) are mobilized, whirled up and distributed
- Via the anchoring filaments, DEEP OSCILLATION® acts on junctions in the endothelial structure of initial lymph vessels



Interior view of initial lymph vessel

Opening of septa encourages resorption of lymph and ingredients (interstitial drainage).

DEEP OSCILLATION® DEVICES

EVIDENT

PERSONAL

HIVAMAT® 200

Clinical effects of DEEP OSCILLATION®

- **Prevention & reduction of secondary & primary lymphoedema**
- **Prevention of fibrotic remodelling processes, reduction of fibrosis.**
- **Strong pain-alleviating potential - acute traumatic & chronic pain conditions**
- **Anti-inflammatory effect**
- **Preventative fibrotic conversion processes, fibrosis reduction**
- **Muscle relaxation, promotion of physical activity, mobilisation.**
- **Support of wound healing processes**
- **Normalisation of haemodynamic skin parameters and influence on biological ageing through preventative impact on premature ageing**

DEEP OSCILLATION® References which show the clinically proven effects

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Contraindications

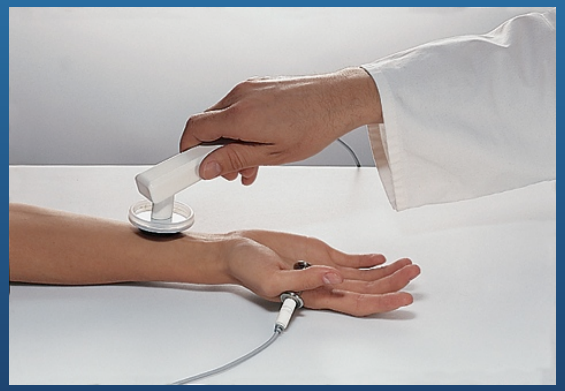
- Acute infections
- Acute systemic inflammations with pathogenic germs participation
- Active tuberculosis
- Acute venous diseases (untreated thrombosis)
- Untreated malignant diseases
- Erysipelas or cellulitis
- Patients with cardiac pacemakers or other electronic implants
- **Untreated** heart complaints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

DEEP OSCILLATION® Application: Method One: Physiotherapist to Patient Via Vinyl Gloves

Gentle pressure saves Physiotherapists hands

- Physiotherapist puts of gloves and connects via an electrode/spiral lead
- Patients holds titanium bar
- Talcum powder is applied to the area in order to help therapy to glide
- Physiotherapist feel a pleasant vibration in their hands as they work; no new techniques required
- Patient feels a gentle, pleasant, & relaxing deep vibration in the tissue layers.

Method Two: Physiotherapist to Patient via applicator (applicators also used for self treatment)



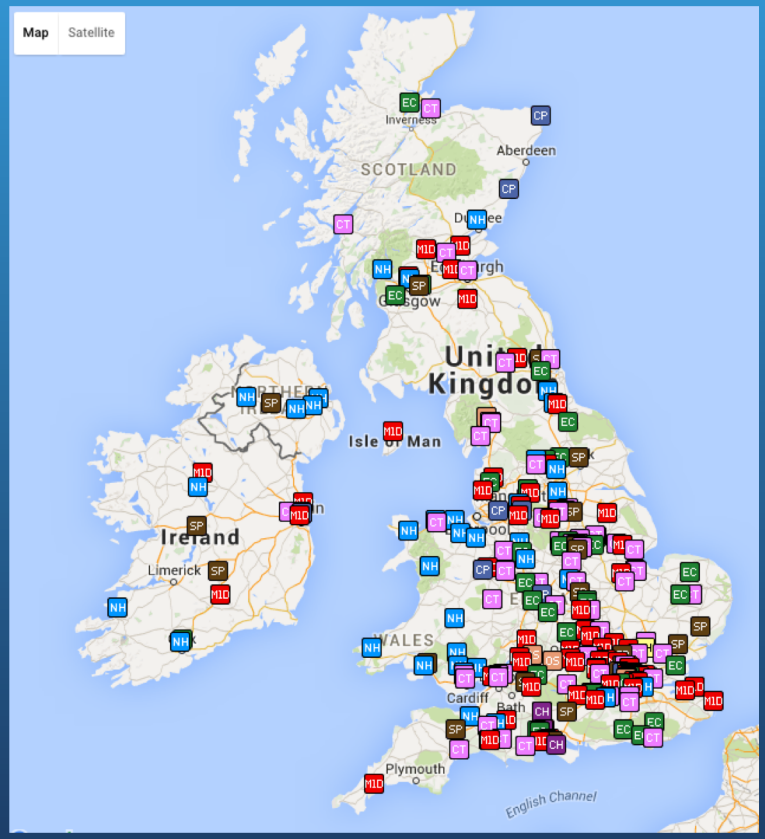
- Vinyl covered applicator head moved over tissue segment undergoing treatment
- Patient holds a small titanium bar loosely in the palm of their hand or between fingers or toes
- Applicators vary in size for area being treated (1.5 cm, 5 cm, 9.5cm)
- The patient feels a pleasant, gentle relaxing vibration deep within their tissue layers

DEEP OSCILLATION® Therapists in the UK & Ireland

Zoom in to find a therapist near you

Key:

CP The Chartered Society of Physiotherapy | PH Private Hospital | EC Equine & Canine | CT Complementary | M1D Manual Lymphatic Drainage | SP Sports | CH Chiropractors | OS Osteopaths | NH NHS | LC Lactation Consultants | PD Podiatrists



CASE STUDY A:
62-year-old female patient

Since age 24 long history of LBP, started then falling off her bike, soft tissue injury, no bony injury at the time identified

2015: MRI scan showed L4/5 spondylolisthesis

L3/4, L4/5 mild bulging discs

L4/5 moderate spinal stenosis

(R) > (L)

Symptoms - general ache over the lower back and constant pain patches over the (R) buttock and over the posterolateral calf muscles P.S. = 1-9, in both areas of the leg.

Aggs - worse first a.m. and as the day goes on

- turning over in bed, standing still for >5mins

CASE STUDY A

Eases: Walking
Sitting, upright in an office chair
PWB / NWB ex's

Objective Signs: Flat back posture
Low tone in abs
Gluts (deconditioned)

SLR (R) 70 degrees, (L) 90 degrees

All movements ltd, non segmental movements, moving above L1 and flexion in particular increase buttock and calf pain.
No dermatome, no reflex changes and no specific myotomal weakness.

Clinical Reasoning

1. Chronic LBP with a long history of loss of normal movement and dysfunction
2. Three pathologies complicating treatment choices
3. Unable to function in ADL due to Pain being the over riding problem

Treatment Success

- After 5 sessions, using 250Hz 10 mins, 185Hz 10 mins, 60 Hz 10 mins, over the Lx and (R) buttock and lateral calf:
- Patient A felt subjectively 50% better.
- Her only measurable sign: SLR is now 90 degrees no pain.
- Restored normal segmental movement at the lumbar spine
- At 4 months she was able to start a simple gym programme and had no pain in the right leg

CASE STUDY B
48-year-old male patient

- 15 yrs ago pt sustained an ACL rupture
- 3 weeks prior to surgical repair the patient had been put in a splint and left it on continuously
- C/O constant pain P.S. = 2-5, agg with 1 hr of walking
- This caused a fibrotic lesion in the Quads muscle- indented ring around the middle of Vastus lateralis

CASE STUDY B

On Examination

- Tight (R) PKB 3 cm from buttock. (L) touches buttock
- Quads layers felt very tight and immobile when moved sideways
- Tight MT junction of RF insertion into the superior patella fascia

Treatment

- Scar Tissue / Fibrosis setting 170-200Hz 15 mins, 85Hz 5 mins
- Progressive Quads Rehab with final rehab including Gluts and FWB work
- Started DO on 22/01/15
- On 5/02/15 P.S.= 2 and already felt much improved
- On 11/02/15 similar to above but intermittent pain
- On 18/02/15 noted increase in muscle bulk in vas lat, still remaining less painful
- On 4/03/15 much improved, hardly any pain now, just odd ache vas lat

Links to useful videos:

- http://www.physiopod.co.uk/hivamat-200.shtml

  10 minutes duration– “How it works”

- http://www.physiopod.co.uk/deep-oscillation-effect-in-tissues-recorded-by-ultrasound-imaging.shtml

  Effect in tissues as DEEP OSCILLATION® is applied

- http://www.physiopod.co.uk/pauline-bexon-shares-a-video-testimonial-self-management-with-the-deep-oscillation-personal.shtml

  Patient self-management testimonial

Thank you for listening!

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