OMT and Percussion: History and recent advancements

ChooseKnowledge

Disclosures

Affiliate for HyperVolt

Disclosures: Alexander King, DO, ONMM PGY-2

Relevant Financial Relationships:

I am an official Hyperice HyperVolt affiliate and receive financial compensation for selling HyperVolt percussion devices.

I am currently employed as a PGY-2 Resident in the PCOM Osteopathic Manipulative Medicine Department.
A Brief History of Osteopathic Percussion

- Studied under Dr. William G. Sutherland
- Introduced the concept of Percussion into Osteopathic Treatment (Foredom Massager / Fulford Percussor) in 1955 (He first presented it in 1986)
- He used concepts of Dysfunctional energy states and Polarity within tissues
- There are Specialized courses to learn his specific Percussion techniques and philosophy

Fulford Percussor / Foredom Massager:

- Fulford believed it could treat “energy sinks” within the body (energetic somatic dysfunction)
- Treating Piezoelectric fascial properties

“When a trauma, physical or emotional, takes place in the tissues or bone, a current of injury is created. This results in a depressed area in the tissue known as a “sink.” This creates a blockage in flow of the piezoelectric current.

It took a force of energy to create the blockage. In order to create normal flow, it will require energy of the same frequency of the current injury and a greater intensity to release the energy sink.”

- Dr. Fulford
How does Percussion work?

- Mechanical Energy delivered into tissue directly via Percussion Hammer
- Percussions Per Minute / Per Second (Hertz)
- Foredom Percussor Range: 100-4,400 cycles per min = 1.7-73 Hz
- Pacinian (Lamellar) corpuscles (sens 30-800 Hz), located in superficial and deep fascial layers, communicate with Muscle Spindles

Latest research on Vibration & Percussion Therapy

1) The optimal frequency range to affect the musculoskeletal systems is 20-40 Hz (20-25)

1) Vibration therapy in a frequency range of 20 to 40 Hz for 30 seconds to 5 minutes for 1 to 2 repetitions has been shown to improve lower extremity flexibility (10-12).

1) Vibration therapy in a frequency range of 20 to 40 Hz for 1 to 10 minutes for 1 to 5 repetitions has been shown to reduce post-exercise delayed onset muscle soreness (DOMS) (27-29).

1) Vibratory foam rollers decrease muscle soreness and increase flexibility over non-vibratory foam rollers.
Clinical Considerations:

- Your goal is to create a **harmonic standing wave** within the tissue (palpatory)

- **Adjustment of the frequency is the key** to finding the right resonance with the somatic dysfunction

- Extremities require **lower frequencies**, while dense tissues require **higher frequencies**

Current Advancements:

- **HyperVolt Percussion Hammer**
- Created by Hyperice
- 3 speeds:
  1. 2,400 PPM = 40 Hz
  2. 2,800 PPM = 47 Hz
  3. 3,200 PPM = 54 Hz
- Wireless, Rechargeable (4-5 hrs of battery life), Multiple heads

Shoulder Protocol: **5 minutes (30s per step)**

1. Superior fibers of the trapezius, between the superior border of the scapula and the inferior nuchal line.
2. Medial border of the scapula
3. Intercostoclavicular groove of the humerus to treat the infraspinatus
4. Posterior deltoid
5. Glenohumeral bursa of the biceps
6. Lateral deltoid
7. Posterior deltoid
8. Posterior scapular
9. Posterior clavicle along the coracoid and the anterior axillary fold
References:

- Chila DO, A.G. Ed (2010). Foundations of Osteopathic Medicine, Lippincott Williams & Wilkins