Harmonic technique

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Definition of Harmonic Motion

The rhythmic and cyclical motion of an object between two spatial positions
Definition of Harmonic Technique

A manual technique which brings on a state of resonance within the body
Harmonic vs. Rhythmic

Harmonic

Rhythmic
Mechanics of harmonics

Pendulums

Springs
Spring- energy
Amplitude & frequency

Amplitude change

Frequency change
Dampened oscillation
Resonant frequency

Energy input

Amplitude of oscillation

Frequency
# Springs and pendulums in the body

<table>
<thead>
<tr>
<th>Frequency determined by:</th>
<th>Where in the body</th>
<th>Affected by:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass</td>
<td>Antagonistic tissue (as elastic strain energy)</td>
<td>Oedema</td>
</tr>
<tr>
<td>Stiffness</td>
<td>Tissues under compression (e.g. discs)</td>
<td>Scarring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adhesions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increase in muscle tension*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weight gains</td>
</tr>
<tr>
<td><strong>Pendulum</strong></td>
<td>Length of the arm</td>
<td>All masses are combinations of spring and pendulums, affected by above</td>
</tr>
<tr>
<td></td>
<td>Limbs Counter-motion of masses</td>
<td></td>
</tr>
</tbody>
</table>

* Can be diagnostic
Springs in the body

Pendulums in the body

Along Y axis

Along X axis

Along Z axis
Rotational pendulums

- Rotation around Y axis
- Rotation around X axis
- Rotation around Z axis
Is harmonic technique harmonic?

Free vibrating mass
Coupled motion
Free vibrating humans
Resonant frequency in human movement

In running

In walking
Resonance in rhythmic movement is associated with metabolic minima and stability of movement patterns compared to other frequencies


Resonant frequency in human movement

“Pendular oscillations of a limb or limb segment, attunement of the central nervous system to the resonant frequency minimizes the variables to be controlled and maximizes the predictability of the rhythmic movement's chaotic dynamics”


<table>
<thead>
<tr>
<th>Muscle Name</th>
<th>Graph Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leg acceleration</td>
<td></td>
</tr>
<tr>
<td>Hip position</td>
<td></td>
</tr>
<tr>
<td>Gluteus maximus</td>
<td></td>
</tr>
<tr>
<td>Quadratus lumborum</td>
<td></td>
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<tr>
<td>Int. oblique</td>
<td></td>
</tr>
<tr>
<td>Ext. oblique</td>
<td></td>
</tr>
<tr>
<td>Rectus abdominis</td>
<td></td>
</tr>
<tr>
<td>Iliocostalis thoracis</td>
<td></td>
</tr>
<tr>
<td>Latissimus thoracis</td>
<td></td>
</tr>
<tr>
<td>Iliocostalis lumborum</td>
<td></td>
</tr>
<tr>
<td>Multifidus</td>
<td></td>
</tr>
<tr>
<td>Rotatores</td>
<td></td>
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</tbody>
</table>
Getting it right

- The body masses have individual resonant frequency
- Each mass has up to six different patterns of oscillation
- Harmonic Technique is about amplifying these patterns
- If it's not easy it is unlikely to be Harmonic
Find out more:
Harmonic Technique
3 day course
And book

See: www,cpdo.net