



Neuro café 7th December

Neuro pilates

History

- Joseph Hubertus pilates, born in Germany in 1883. he worked as a boxer, circus performer and trained detectives in self defence.
- Moved to England in 1912 and worked in a hospital during WW1.
- He was appalled to see so many ill people in bed doing no exercise and developed an exercise regime.
- He progressed his exercises with springs from old beds!
- Those practicing Joe's exercises were improving faster. He continued to develop his exercise regime within the dance world.
- Pilates has evolved over the years and is a popular exercise method in sports training, physiotherapy and group exercise.

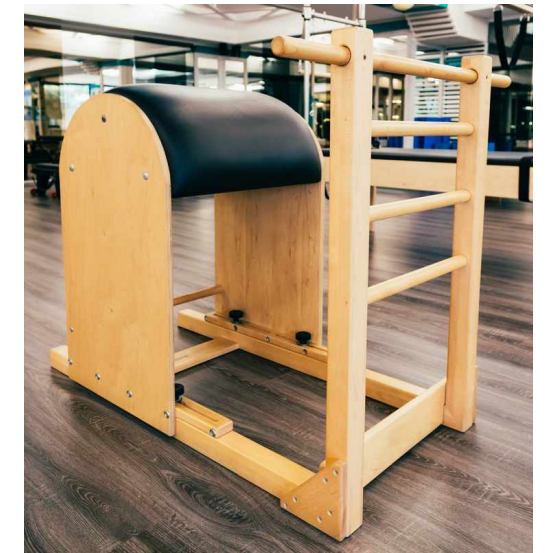


What is pilates?

- Focus on “central core of stability” in the lumbo-pelvic region.
- From the central core, differing limb movements and resistance is added, combined with breathing control.
- “Mind-body” technique
- Alter abnormal movement patterns and carry over to daily function.
- Correct muscle imbalance.
- Different postural sets



Mat work, machines and equipment



Key pilates elements

1. Breathing

- Pilates encourages natural mechanics of the ribcage when breathing.
- Focus on ribcage expanding and relaxing.
- Promotes efficient gas exchange and avoids unnecessary muscle tension.

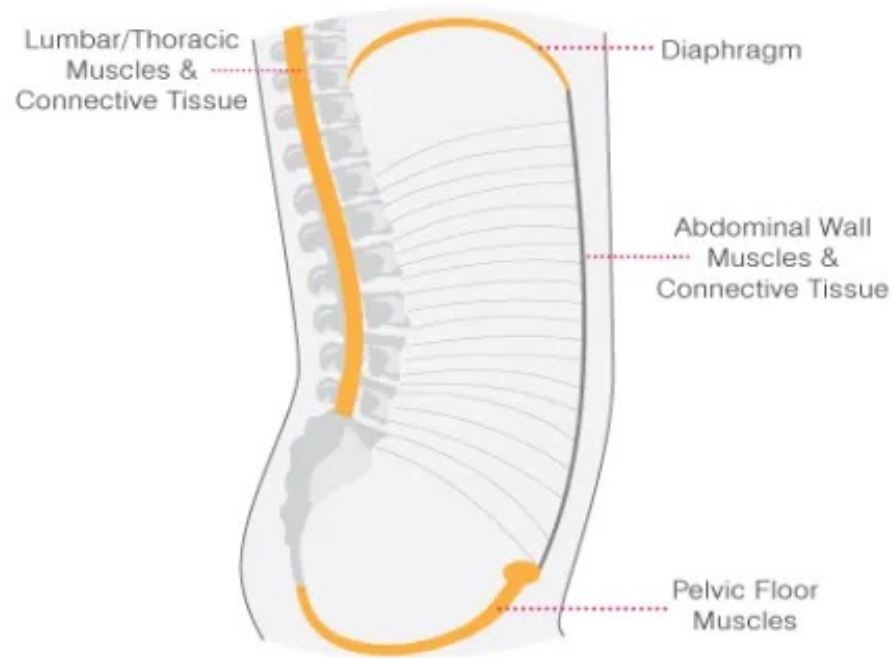




**Mobilise your ribcage
through breathing**



Key pilates elements



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2. Centering

- Engagement of deep abdominal, back muscles and pelvic floor in unison.
- Maintaining a neutral position in pelvis
- There are different techniques and cues to activate these muscles.
- Visual imagery: belt notches, stomach away from trousers.
- Pelvic floor: Same muscles use when needing to pee and holding.

Keypilates elements

3. Ribcage placement

- By optimizing ribcage placement during exercises ensure activation of core muscles.
- Ribcage should be positioned directly over the ribcage in sitting and standing.
- Visual imagery: Lying – ‘ribcage sinking into floor.’ Seated – spring ‘connecting bottom of ribcage to hips.’

4. Shoulder blade placement

- Awareness of shoulder blade movements during upper limb work.
- Many muscles attach to the shoulder blade. Muscle imbalances can be caused by slouching postures, injury and weakness caused by neurological conditions.
- Can contribute to shoulder/neck pain and affect quality of upper limb movement.



Muscle slings



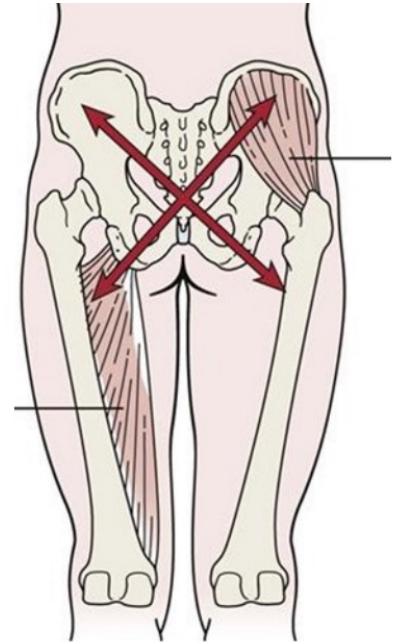
Anterior Oblique Sling



Posterior Oblique Sling



Deep Longitudinal Sling



The Lateral Sling

Pilates research in neuro population

- MS: 12 weeks, twice weekly, Pilates improved walking performance and functional ability.

Whitney 2018

- PD: Systematic review showed positive impact on fitness balance and function.

Sudrez- Iglesias 2019

- Stroke: 8 weeks of pilates training effective in improving functional balance and quality of life compare with “conventional therapy.”

Surbala 2013





Pilates and neurological conditions

Motor learning

- Many aspects of motor learning in neuro rehabilitation is used in pilates; movement imagery and errorless learning, tactile/visual/verbal feedback.
- Neuroplasticity!!
- Increase load by changing gravity, base of support and lever lengths.
- Progressing from closed chain > open chain movements
- Progress to improve strength, endurance and speed.

Pilates and neurological conditions

Spasticity and hypertonia

- Focus on stretch allows reduction of non neural stiffness prior to more challenging exercises.
- Use equipment and increase base of support to increase stability and reduce tone.



Pilates and neurological conditions

Sensation and motor integration

- 3 sensory inputs – somatosensory, visual and vestibular
- Change weighting of each input with head movements, use of foam surfaces and visual/auditory cues.
- Proprioceptive input from weighted balls and bands.



Pilates and neurological conditions

Postural orientation

- Focus on key elements and rest position
- Equipment to support reinforce symmetrical posture during exercises. Bands, weighted balls, rings, bolsters.

Postural Control

- Focus on arm and leg movements from stable trunk.
- Trunk control can improve sitting and standard balance
- Efficient lower and upper limb movement generated with a stable core.

Introduction to beginner seated pilates



Where?

- LEGS – Currently a face to face class in Putney on Thursday afternoons. Mat work based, participants need to be able to get on/off floor independently.
- Interest for a LEGS online pilates class?
- APPI registered physiotherapists – NHS or private
- <https://mstrust.org.uk/information-support/exercise-ms/move-it-ms-pilates-jo-pritchard>
- <https://www.parkinsons.org.uk/information-and-support/your-magazine/experts/pilates-and-parkinsons>