



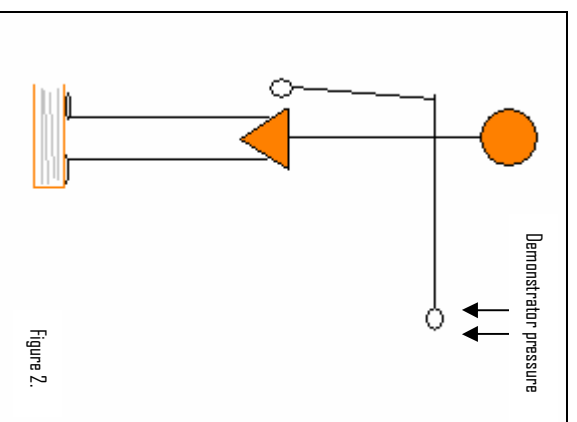
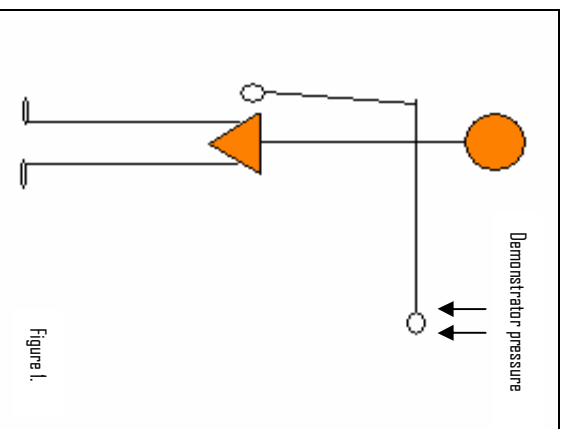
Demonstration of product

Introduction

It has been discovered that the body, when on uneven or rocky surface, takes on a protective role and switches on its spinal stabilising muscles to protect the spine and prepare the body to maintain balance. Tai Chi uses this principle and has been found to improve balance. This can be simulated by standing on some yellow pages as they are unstable.

DEMONSTRATION:

- Position 1:**
- Standing with arm to the side at 90 degrees (shoulder abduction), demonstrator pushes down at wrist – weak resistance (Fig. 1)
 - Stand on yellow pages in same position, demonstrator pushes down at wrist – stronger resistance (Fig.2)



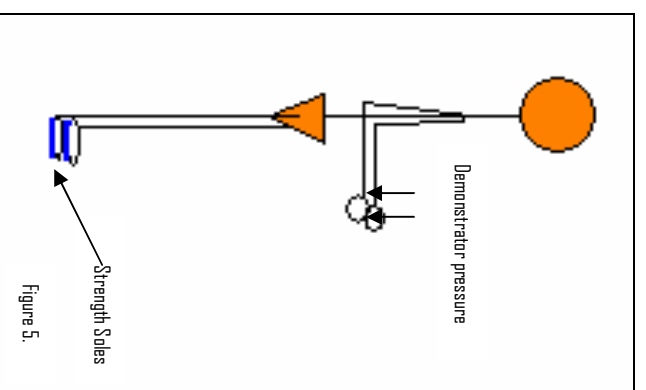
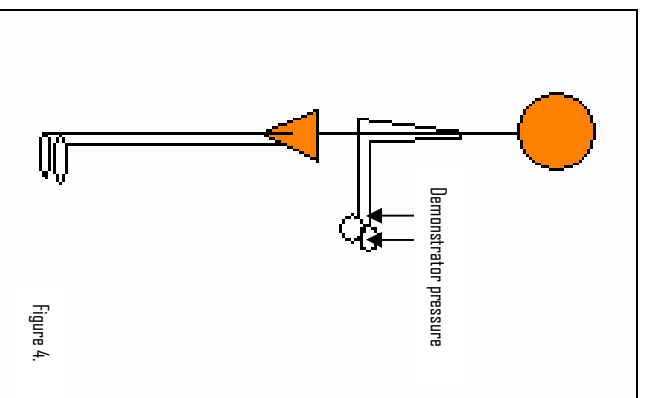
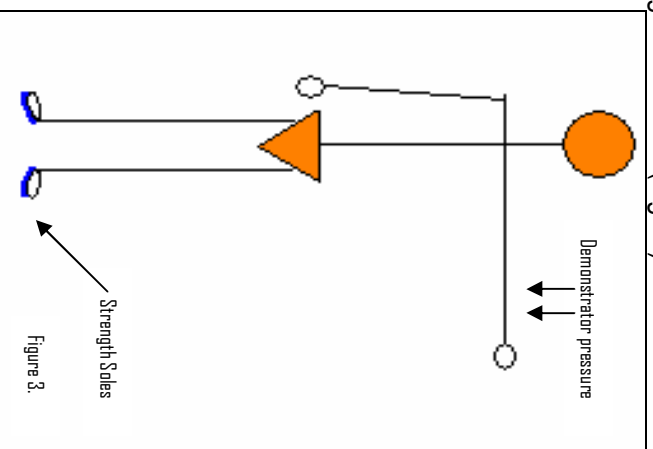
Using this principle a device was developed to simulate an uneven surface, a slightly angled plane, which causes the same response – these are known as **Strength Soles**.

DEMONSTRATION:

- Position 1:**
- Standing with arm to the side at 90 degrees (shoulder abduction), demonstrator pushes down at wrist – weak resistance (Fig. 1)
 - Standing on **Strength Soles** in same position, demonstrator pushes down at wrist – stronger resistance (Fig. 3)

Position 2:

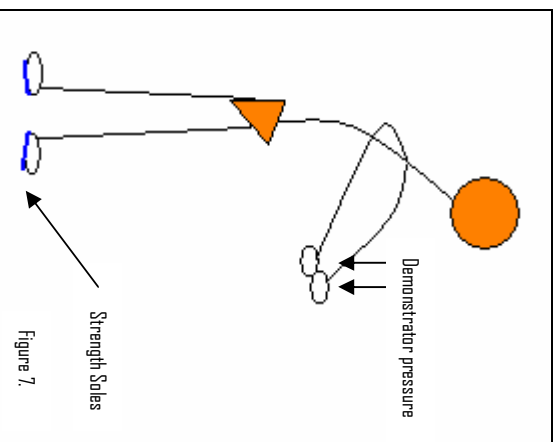
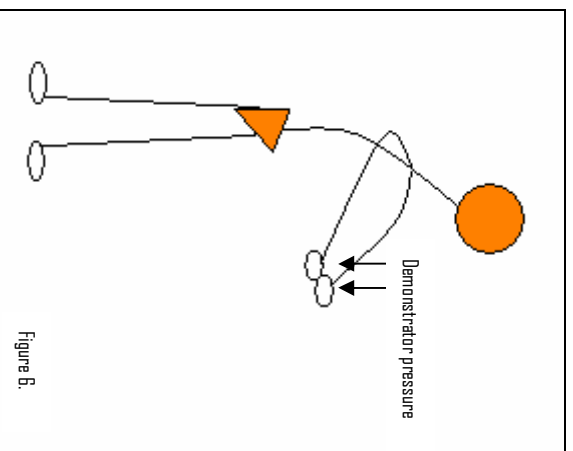
- Standing with both arms bent to 90 degrees at elbow, elbows by side, palms up, demonstrator pushes down at wrist – weak resistance (Fig. 4)
- Standing on **Strength Soles** in same position, demonstrator pushes down at wrist – stronger resistance (Fig. 5.)



Obviously these positions are rarely functional positions therefore we like to demonstrate the effect of wearing the Strength Soles in a common, often potentially unsafe position i.e. when bending and twisting to pick up your dishes or the like.

Position 3:

- Standing half rotated to the left and slightly bent forwards with arms out as in position 2, demonstrator pushes down at wrist – weak resistance, may over-balance (Fig. 6.)
- Standing on **Strength Soles** in same position, demonstrator pushes down at wrist – stronger resistance and improved balance (Fig. 7.)



Other test positions can target specific requirements of the client including sporting postures i.e. at the point of a swing that requires the most force/strength e.g. during tennis, baseball or golf.

Repeated bending and twisting will “switch off” any muscles that have been turned on to protect the spine thus placing someone at risk of injury however when on the Strength Soles this “switching off” does not occur [can be DEMONSTRATED in position 1]

Some external muscles can be palpated and shown to be active when moving from off to on the Strength Soles however these muscles are NOT the significant muscles involved with stabilising the spine however they do contribute and demonstrate that “something” is happening as a result of the soles.

NOTE

Ensure demonstration is repeated exactly the same on and off the Strength Soles i.e. external forces are applied in the same manner (direction and strength). May need subject in Position 2 to hold broom handle and demonstrator pushes on that in a downward motion to illicit a comparable response.

Subjects with weaker spinal stabilising muscles and poor coordination of contraction of these muscles will show greater change on versus off the Strength Soles. Those subjects that have stronger spinal stabilising muscles and good coordination will show less of a response (i.e. those heavily involved with Pilates, TA exercises, pelvic floor exercises etc)

Conclusion

These Strength Soles are creating a slightly altered surface which in turn we believe is activating the spinal stabilising muscles in your trunk which:

- increases back strength (and over time strengthens core stabilising muscles)
- protects the spine from injury as these muscles take pressure off the spine and its ligaments and capsules
- improves balance and reactions to challenges to balance
- may, over time, improve posture
- increases sporting strength

People most likely to benefit

1. Ideal for people who work on their feet and who are required to complete manual work whilst in this position i.e. lifting, bending or twisting as we believe that these Strength Soles will support and assist in the protection your spine from potential injury or strain.
2. The elderly with balance problems who still have good proprioception in their feet
3. People with weakened spinal stabilising muscle who need to strengthen this group of muscles to prevent and/or reduce low back pain.

Shoes

Can be worn in all types of shoes however they must not have internal arch support as this disrupts the scientifically developed angle on which the foot rests. Enclosed, lace up shoes are ideal. Shoes can also be slightly heeled (i.e. sloped front to back). It is important to note that the entire foot (including toes) must be in contact with the Strength Sole for it to work effectively.

Orthotics?

The Strength Soles will not usually work with Orthotics or innersoles designed to conform to the under surface of the foot or stabilise the heel as this reduces the bodies protective response of switching on the spinal stabilising muscles.

How often should they be used?

Strength Soles need to be worn regularly. Some benefits of wearing these inserts can be seen straight away however, like going to the gym and lifting weights you can not do it just once and see long term gains. It may take up to 2-6 weeks, wearing the Strength Soles daily for 6-7 hours a day for significant benefits to be achieved.

Initial soreness

Unfortunately, wearing the Strength Soles may be like starting out at the gym. If you have weak muscles to start with you may initially find wearing these innersoles for long periods difficult as muscles will fatigue e.g. like lifting weights in the gym you can only do so many repetitions to start with. The key is to build up to wearing the Strength Soles. We recommend wearing them for short periods of time (this depends on initial strength of muscles however may be as short as 20-30 minutes) and slowly build up to as often as possible to gain maximum benefit. There may also be some associated discomfort or delayed onset muscle soreness (DOMS) initially due to working muscles differently and for longer periods of time than what they are used to.

Discomfort should resolve after a few days of use of the Strength Soles. If not, then you should cease wearing and seek assistance from your allied health practitioner.