



## **Vertical Water Training and Back Pain**

### **Aquatic Vertical Traction Changes Spinal Length and Back Pain.**

#### **Summary**

A recent study looked at patients with low back pain and signs of nerve root compression which often results in pain in the back radiating into legs and feet. The study reported that water-based exercise intervention had a more pronounced reduction of pain caused by spinal issues than did land based intervention. Both treatments worked and produced elongation of the spine, but water therapy produced “significantly” greater reduction in pain than did land based therapy.

#### **The Study**

Ninety-eight subjects were recruited of which 60 completed the study. The subjects who completed testing included 28 men and 32 women with an average age of 60 years. The testing procedure consisted of each subject participating in 2 sessions. The first session was that of loaded walking for 15 minutes, followed by either 15 minutes of land-based supine flexion position or 15 minutes of aquatic vertical traction.

Spinal height change was determined after completing loaded walking and after each intervention. The mean height change of 4.99 millimetres after aquatic vertical traction was similar to that of 4.21 mm after the land-based supine flexion. Other statistical tests indicated that both interventions resulted in “significant” increase in height. It is interesting, yet not surprising, considering buoyancy, that the change for aquatic exercise is slightly greater than the change in height for a land-based exercise.

The good news is that pain reduction is more pronounced with aquatic intervention. Decreases in pain after aquatic intervention were statistically significantly greater than decreases after land intervention. And, “centralization of symptoms” was more pronounced after aquatic vertical suspension. In other words, the pain that radiates in the legs and feet due to spinal problems is reduced or even eliminated.

Centralization of symptoms is an interesting concept. The Centralization Phenomenon was first described 20 years ago. It refers to the abolition of distal pain emanating from the spine in response to therapeutic exercises. (Distal is farther away from the center of the body whereas proximal refers to body parts closer to the central core.) Centralization was consistently associated with a range of good outcomes, and failure to centralize was associated with poor outcomes related to pain. Centralization appears to identify a substantial sub-group of spinal patients; it is a clinical phenomenon that can be reliably detected, and is associated with a good prognosis. Studies have suggested that centralization is important to monitor in the examination of spinal patients.

A significant correlation between height change, pain reduction and centralization was observed for the aquatic intervention only.

#### **CONCLUSION**

Although both aquatic and land interventions produced significant increases in overall spinal height, the aquatic intervention produced greater pain relief and centralization response in subjects with low back pain and signs of nerve root compression.

Water Works!