



Appraisal of the Efficacy of the ONGO®Energie based on Measurements taken using Ultrasound Topometry on a Test Person with Spinal Pain during Physiotherapeutic Movement Training



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Introduction

Having to withstand significant stress while remaining highly flexible at the same time makes the spine so susceptible to injuries that, statistically speaking, eight out of ten people in our civilized society have experienced back pain at some point in their lives. The treatment of back pain has undergone considerable changes in recent years, and these changes are based on the realization that mechanical stress is in fact good for the back. Every part of the spine – the bones, muscles, ligaments, and the intervertebral discs – adapts to exercise programs and becomes stronger. This is how the spinal column becomes less susceptible to injuries or overstrain.

Based on the aforementioned findings, the ONGO®Ercule was designed as a stool with a movable seat which has a ball track built into the foot of the stool that operates like a feedback mechanism. As a result, in addition to the usual exercises carried out while seated (like rotating, bending, and stretching), the stool also targets the gyration of the pelvis, and as such, the connection between the pelvis and the spine. In order to assess whether this movement is of any significance in the treatment of back pain and, in this respect, whether the ONGO®Classic represents an innovation in the prevention and treatment of backaches, the Institute for Movement Analysis and Musculoskeletal Quality Control, IBQ, located in Bonn, Germany, was hired to conduct this study.

In the study, a healthy test person was compared to a patient suffering from functional complaints of the spine. The subjects were examined before treatment and after a four-week treatment program comprising eight minutes of daily exercise, which consisted of rotating movements while sitting on the ONGO®Classic. The examination process consisted of analyzing ultrasonic impulses transmitted using an ultrasonic transmitter and recorded by ultrasonic receivers (**ultrasound topometry**).

The study **demonstrates** that the patient suffering from back pain saw a significant improvement after exercising on the ONGO®Classic for eight minutes daily over a period of four weeks. The patient's combined shoulder/pelvis movement was improved considerably, and her gait and general movement became more coordinated.

Furthermore, the patient's posture became straighter, the displacement of her spine toward the left side of her body was almost completely eliminated, and her preexisting pelvic obliquity

also saw improvement. In addition, the patient's preexisting functional limitations of the spine and lower extremity as well as her static disabilities when standing and bending to the side were also almost completely eliminated.

The results can be explained through knowledge of the lumbar spine's anatomy and the principles governing its movement. Thanks to the gyrating movement on the ONGO®Classic, the muscle strands in the lumbar region returned to their normal function, particularly those which run diagonally. The rhythmic strain and release of all the muscles supporting the spinal column led to a reactivation of the weakened muscles and, as a result, to a reflex inhibition of the overexerted muscles. This led to an improvement in the nerve-controlled input of the lower extremity as well as a general harmonization of the spinal column's statics.

The benefits of the ONGO®Classic are exhibited simply when sitting on the stool, since the induced balance activates the major muscle groups responsible for the stability of the torso, as well as when conducting specific exercises. In this context, one particularly positive aspect is that the user has a safe position from which they can control and successively increase the circumference of their rotations and the speed of their movement.

The results lead to the following conclusion:

The patient's preexisting functional limitations of the spine and lower extremity were also almost completely eliminated – in particular, the painful affliction to her left leg and her static disabilities when standing and bending to the side. The angle of her shoulders and pelvis when walking saw only a minimal level of functional improvement, and require further physiotherapeutic treatment. It must be noted that, overall, the patient reported a significant abatement of her symptoms.

The results can be explained through knowledge of the lumbar spine's anatomy and the principles governing its movement. Thanks to the gyrating movement on the stool, the muscle connections in the lumbar region returned to their normal function, particularly those which run diagonally. Since the patient could control the rotational movement herself, she was initially able to move along a small circumference without experiencing any pain. She then increased the scope and speed of her movements over the course of her exercise program.

The rhythmic strain and release of all the muscles supporting the spinal column led to a reactivation of the weakened muscles and, as a result, to a reflex inhibition of the overexerted muscles. This led to an improvement in the nerve-controlled input of the lower extremity as well as a general harmonization of the spinal column's statics.

The fact that the spinal column's function could not be fully restored on the treadmill is chiefly due to the fact that the patient primarily treats the lumbar area while exercising on the ONGO®Classic. In addition, the shoulder's smaller range of movement during the repeated exercises demonstrates that the focus was on the lumbar spine and that the shoulder was moved in a more controlled manner.

Furthermore, we also know that complex walking movements such as the shoulder-pelvic tilt and the shoulder-pelvic rotation when walking can only be improved by practicing exactly these movements. The ONGO®Classic is a perfect form of concomitant treatment for patients with dorsalgia. Patients should exercise on the ONGO®Classic in a pain-free manner. If they do so, the benefits of the gyrating movements on the ONGO®Classic lead to the patient regaining normal spinal column function by isolating the pelvis from the chest.

<http://www.ongo.eu/de/gesunder-ruecken>