

Rocker bottom shoes help reduce chronic low back pain

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Summary: A new study confirms that rocker bottom shoes helps strengthen back muscles, improving the spine's curvature and thus reducing low back pain.

FULL STORY

A new study confirms that rocker bottom shoes helps strengthen back muscles, improving the spine's curvature and thus reducing low back pain.

Researchers of the Sports Physiotherapy master's degree at Valencia's CEU Cardenal Herrera university have confirmed, in a new study of their research work into back pain, that unstable shoes improve the strength of back muscles in order to maintain balance and stability when walking. This muscular strengthening contributes to reducing low-intensity chronic low back pain, which can be disabling for those who suffer it. The results of this new study, headed by CEU UCH teachers Juan Francisco Lisón and Pablo Salvador, co-authors of the first international study on this matter, have been published in the Q1 edition of scientific magazine *Clinical Rehabilitation*.

As the coordinator of the CEU UCH master's degree, Pablo Salvador, explains, "patients with chronic low back pain are usually advised to perform exercises to strengthen the muscles in their back, which improve stability of the spine in the lower back area, although it is always hard to make sure they comply with this type of exercises. What this new study shows is that the use of unstable shoes for several hours during a patient's day-to-day life, without any other specific exercises, effectively contributes to the muscular strengthening of their back and improves the degree of curvature of the spine in the lumbar area, thus helping to reduce chronic pain."

Six hours a day

Forty patients with low-intensity chronic low back pain took part in the CEU UCH's study. Half of them wore this type of shoes with curved soles for four weeks, and the other half used their normal shoes. Researchers evaluated the degree of activation of the back muscles that stabilise the lumbar area with electromyography, specifically, the rectus abdominis, external oblique and internal oblique of the abdomen, as well as the erector spinae.

The research team, composed of teachers and students of the master's degree, also evaluated the curvature degree of the lower spine while wearing rocker bottom shoes, compared to ones with flat soles. These physical results were then contrasted with the degree of pain and disability expressed by the patients, using the internationally-validated Roland-Morris Disability questionnaire.

CEU UCH teacher Pablo Salvador is the author of the first doctoral thesis on the subject, under the leadership of teacher Juan Francisco Lisón. And both are co-authors of the previous study published in the *European Journal of Physical Rehabilitation and Medicine*. They stress that the results of their latest work, now published in *Clinical Rehabilitation*, "have allowed us to confirm that everyday use of rocker bottom shoes for several

hours a day reduces the disability suffered by patients with chronic low back pain. The next step is to increase the number of participants and confirm these effects over a longer period of time in future studies within this same line of research of the Master of Sports Physiotherapy degree of the CEU UCH."

CEU UCH teachers Pablo Salvdaor, of the Department of Physiotherapy, Juan Francisco Lisón and Julio Doménech, of the Department of Medicine of the CEU UCH have collaborated with Daniel Sánchez Zuriaga, of the Anatomy Department of the Universitat de València along with CEU UCH Sports Physiotherapy master's degree graduates Borja Ortega Santana, Álvaro Antón Nogués, Palmy González Requena and Cristina Vera Hervás, who crafted their End Of Master's Degree projects based on the results of this research, financed by the CEU Cardenal Herrera University and the Instituto de Salud Carlos III of Madrid.

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Journal Reference:

1. Juan Francisco Lisón, Borja Ortega-Santana, Álvaro Antón-Nogués, Palmy González-Requena, Cristina Vera-Hervás, Julio Doménech-Fernández, Daniel Sánchez-Zuriaga, Pablo Salvador-Coloma. **Effects and underlying mechanisms of unstable shoes on chronic low back pain: a randomized controlled trial.** *Clinical Rehabilitation*, 2018; 026921551775397 DOI: 10.1177/0269215517753972

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