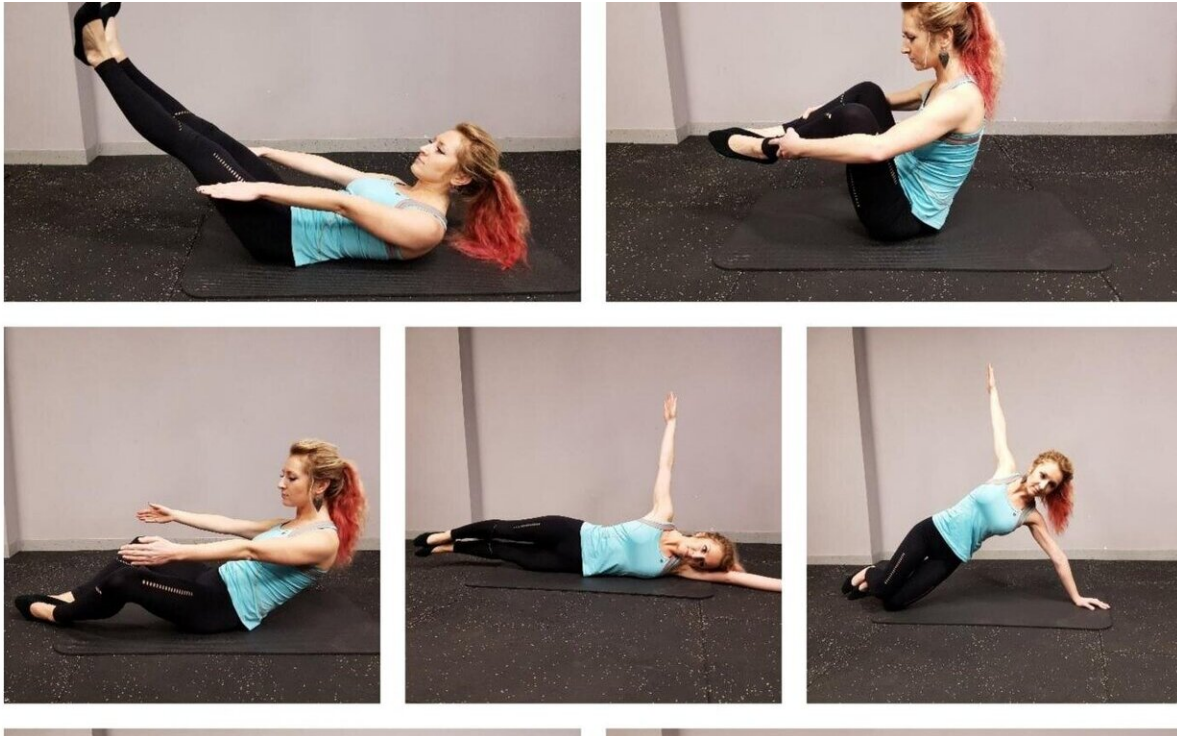


# Keeping lower back pain at bay

March 23 2020

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The exercises are aimed at strengthening the muscles which support the spine at the lower back. Credit: KTU

With the significant part of the global population forced to work from home, the occurrence of lower back pain may increase. Lithuanian scientists have devised a spinal stabilisation exercise programme for managing lower back pain for people who perform a sedentary job. After testing the programme with 70 volunteers, the researchers have

found that the exercises are not only efficient in diminishing the non-specific lower back pain, but their effect lasts 3 times longer than that of a usual muscle strengthening exercise programme.

According to the World Health Organisation, lower back pain is among the top 10 diseases and injuries that are decreasing the quality of life across the global population. It is estimated that non-specific low back pain is experienced by 60% to 70% of people in industrialised societies. Moreover, it is the leading cause of activity limitation and work absence throughout much of the world. For example, in the United Kingdom, low back pain causes more than 100 million workdays lost per year, in the United States—an estimated 149 million.

Chronic lower back pain, which starts from long-term irritation or nerve injury affects the emotions of the afflicted. Anxiety, bad mood and even depression, also the malfunctioning of the other bodily systems—nausea, tachycardia, elevated arterial blood pressure—are among the conditions, which may be caused by lower back pain.

During the coronavirus disease (COVID-19) outbreak, with a significant part of the global population working from home and not always having a properly designed office space, the occurrence of lower back pain may increase.



The static positions are to be held from 6 to 20 seconds; each exercise to be repeated 8 to 16 times. Credit: KTU

"Lower back pain is reaching epidemic proportions. Although it is usually clear what is causing the pain and its chronic nature, people tend to ignore these circumstances and are not willing to change their lifestyle. Lower back pain usually goes away itself, however, the chances of the recurring pain are very high," says Dr. Irina Kliziene, a researcher at Kaunas University of Technology (KTU) Faculty of Social Sciences, Humanities and Arts.

Dr. Kliziene, together with colleagues from KTU and from Lithuanian Sports University has designed a set of stabilisation exercises aimed at strengthening the muscles which support the spine at the lower back, i.e. lumbar area. The [exercise](#) programme is based on Pilates methodology.

According to Dr. Kliziene, the stability of lumbar segments is an essential element of body biomechanics. Previous research evidence shows that in order to avoid the lower back pain it is crucial to strengthen the deep muscles, which are stabilising the lumbar area of the spine. One of these muscles is multifidus muscle.

"Human central nervous system is using several strategies, such as preparing for keeping the posture, preliminary adjustment to the posture, correcting the mistakes of the posture, which need to be rectified by specific stabilising exercises. Our aim was to design a set of exercises for this purpose," explains Dr. Kliziene.

The programme, designed by Dr. Kliziene and her colleagues is comprised of static and dynamic exercises, which train the muscle strength and endurance. The static positions are to be held from 6 to 20 seconds; each exercise to be repeated 8 to 16 times.

In order to check the efficiency of the programme, 70 female volunteers were randomly enrolled either to the lumbar stabilisation exercise programme or to a usual muscle strengthening exercise programme. Both groups were exercising twice a week for 45 minutes for 20 weeks. During the experiment, ultrasound scanning of the muscles was carried out.

As soon as 4 weeks in lumbar stabilisation programme, it was observed that the cross-section area of the multifidus muscle of the subjects of the stabilisation group has increased; after completing the programme, this increase was statistically significant (p

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