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# THE FUNCTIONAL EVALUATION OF THE LOWER LIMBS IN OBESE SUBJECTS: STUDY EXPERIMENTAL FOR THE PREVENTION OF TRAUMA

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## **Background and Aims**

Obesity represents a major public health concern. It is defined as a condition involving excessive accumulation of adipose tissue, which may lead to significant health complications. The musculoskeletal system is significantly involved in the quality of life of individuals with obesity. The excessive accumulation of adipose tissue in the musculoskeletal and locomotor systems, particularly in the visceral region, places strain on the spine, leading the individual to adopt incorrect postures. This results in a shift of the body's center of gravity and a misalignment of the spine, which is no longer properly aligned. The increased body weight restricts the range of motion in daily activities, reducing overall quality of life. The aim of the study is to assess the functional overload affecting the musculoskeletal and osteoarticular systems in individuals with obesity, and to demonstrate how an effective adapted physical activity protocol can serve as a valuable tool for the prevention and management of the identified impairments.

## **Methods**

For the study, 63 participants aged between 50 and 65 years were recruited, including 30 males and 33 females. The experimental group participated in an adapted training program. The parameters assessed included joint pain levels (hip, back, and knee) and joint range of motion (ROM). These parameters were measured at three time points: baseline (T0), after 6 months (T1), and after 12 months of training (T2).

## **Results**

Our results indicate that the implemented exercise program may be a valid option for improving postural balance, reducing pain symptoms and functional limitations in individuals with obesity, while also enhancing their overall quality of life

## **Conclusion**

The present study demonstrated that the adapted physical activity protocol, tailored to the individual's needs and identified postural deviations, led to significant improvements in quality of life, physical performance, and a reduction in perceived pain levels.

**Keywords:** obesity, trauma, rehab, exercise