

Is there a link between physical activity and Amyotrophic Lateral Sclerosis?

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ABSTRACT

The Amyotrophic Lateral Sclerosis (ALS) is a chronic and progressive neuro-degenerative pathology that starts in adult age and usually leads patients to death for respiratory distress after 3 years from the onset of symptoms

In some studies, vigorous and continuous physical activity due to heavy working activity and sport is associated with ALS. On the other hand other studies are against this association. A study carried out in Europe found overall physical activity is associated with reduced odds of having ALS (OR=0.65, 95% CI=0.48-0.89), and the same protective factor is seen for work-related physical activity (OR=0.56, 95% CI=0.36-0.87) and organized sports (OR=0.49, 95% CI=0.32-0.75).

A recent literature review found that football/soccer may be considered as a possible risk factor for ALS (level C) and there is a strong need for further research that must take into account the numerous confounding factors that could be present in this field. However only well conducted observational studies, such as cohort and case-control studies, carried out with the same design in different countries could give a final answer to this suspected but still unconfirmed association

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BACKGROUND

The Amyotrophic Lateral Sclerosis (ALS) is a chronic and progressive neuro-degenerative pathology that starts in adult age and usually leads patients to death for respiratory distress after 3 years from the onset of symptoms (1). From the histological point of view this pathology is characterized by a damage of the motor neurons of the cerebral cortex, of the bulbar motor nucleus and/or anterior horn of spinal cord (1).

The incidence rate in Italy deeply varies between regions, with a minimum of 0.8 per 100.000 in Lombardy (2) and a maximum of 2.5 per 100.000 in Piedmont and Valle d'Aosta (3, 4). The prevalence of the diseases goes from a minimum in Sardinia (1.56 per 100.000) (5) to a maximum in Emilia Romagna (5.4 per 100.000) (6).

ALS is relatively rare before 40 years of age. As far as concerns gender differences, males have a higher risk (male:female ratio 1.3:1).