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– PRESS RELEASE –

Girls Who Are More Physically Active in Childhood May Have Better Lung Function in Adolescence

A study of more than 2,300 adolescents underscores the pulmonary health benefits of physical activity

Barcelona, July 30, 2019. Physical activity has many well-known health benefits, but its association with lung function in childhood and adolescence is not well understood. A new study by the Barcelona Institute for Global Health (ISGlobal), a centre supported by "la Caixa", has **for the first time** demonstrated an association between **regular physical activity during childhood** and **higher lung-function values in adolescent girls**.

The study, published in the *International Journal of Epidemiology,* examined the relationship between physical activity, from childhood to adolescence, and lung function in adolescence in **2,300 boys and girls** participating in the Avon Longitudinal Study of Parents and Children (ALSPAC), a **United Kingdom**–based birth cohort also known as "Children of the 90s".

The children's **physical activity** was recorded using an Actigraph sensor over seven-day periods at **11, 13 and 15 years of age** and their **lung function** was analysed by spirometry at **8 and 15 years of age**. The children's parents also completed questionnaires on sociodemographic, psychological and lifestyle-related factors.

The researchers defined three physical-activity trajectories: **low, moderate and high**. "Girls in the **moderate and high physical-activity trajectories had a higher exhalation capacity**—that is, greater forced expiratory volume—than girls in the low physical-activity trajectory," explained lead author **Célina Roda**.

In contrast, **no such association was observed in boys**. One possible explanation, according to Roda, is that "**growth spurts occur earlier in girls than in boys**, so any effect of physical activity on lung function can be more easily observed at an earlier age in girls".

The findings showed that **less than 7% of the children** achieved the level of physical activity recommended by the World Health Organisation—a minimum of 60 minutes each day. At 11 years of age, boys engaged in an average of 24 minutes of physical activity per day, compared with 16 minutes in girls. In general, **boys were more active than girls** at all ages.

"The **high prevalence of physical inactivity observed in children** is worrying. Extrapolated to the population as a whole, this is a factor that could have a considerable impact on lung function," commented **Judith Garcia Aymerich**, Head of the Non-Communicable Diseases and Environment Programme at ISGlobal and coordinator of the study. "Strategies for **promoting physical activity in childhood** could be highly beneficial for the respiratory health of the population," she added.

"Further studies that take into account **environmental factors such as air pollution** are needed to determine whether these factors influence the benefits of physical activity on lung function."

This study was a part of the Ageing Lungs in European Cohorts (ALEC) project, coordinated by Imperial College London.

Reference

Physical-activity trajectories during childhood and lung function at 15 years: findings from the ALSPAC cohort. Roda C, Mahmoud O, Peralta GP, Fuertes E, Granell R, Serra I, Henderson J, Jarvis D, Garcia-Aymerich J. International Journal of Epidemiology, 2019, 1–11 doi: 10.1093/ije/dyz128

About ISGlobal

The Barcelona Institute of Global Health (ISGlobal) is the result of an innovative alliance between "la Caixa" and academic and government institutions. The Institute was set up to contribute to the efforts of the international community to address health challenges in a globalised world. ISGlobal has consolidated a hub of excellence in research and medical care that has its roots in work first started in the world of health care by the Hospital Clínic and the Mar Health Park and in the academic sphere by the University of Barcelona and Pompeu Fabra University. The pivotal mechanism of its work model is the transfer of knowledge generated by scientific research to practice, a task undertaken by the Institute's Education, Policy and Global Development departments. ISGlobal is a member of CERCA, the Catalan Government's network of research centres.

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