

# Physically active boys are smarter, study hints

*By Rachael Myers Lowe Rachael Myers Lowe Thu Dec 3, 2:16 pm ET*

NEW YORK (Reuters Health) – Jocks get new respect in a large Swedish study that suggests physically active teen boys may be smarter than their couch-potato counterparts.

The findings, the investigators say, have important implications for the education of young people. Increasing, not decreasing, physical education in schools can not only slow the shift toward sedentary lifestyles but, by doing so, reduce risk of disease and "perhaps intellectual and academic underachievement," they concluded.

Dr. H. Georg Kuhn and colleagues from the Institute of Medicine at the University of Gothenburg wanted to know if aerobic (cardiovascular) fitness and muscle strength were associated with brain power and future socioeconomic status.

They analyzed a physical and intelligence snapshot taken of all Swedish men (1.2 million) born between 1950 and 1976 when they reported for mandatory military duty at age 18.

They also assessed genetic and family influences by looking at the scores of brothers and twins and, over time, the association between all initial scores and measures of success at midlife, including education level and occupation.

The results show a strong positive link between cardiovascular fitness and smarts but not between muscle strength and intelligence measures.

The results also hint that positive fitness changes can have positive cognitive results in teen boys. "Male subjects with improved predicted cardiovascular fitness between 15 and 18 years of age exhibited significantly greater intelligence scores than subjects with decreased cardiovascular fitness," Kuhn and colleagues report in Proceedings of the National Academy of Sciences.

The validity of the findings rest on the strength of the data, Kuhn noted in an email to Reuters Health. "The data are 'objective' and standardized measurements of fitness and cognition and do not rely on self-rating scales and questionnaires," the researcher said.

The ability to compare twins' scores was another important strength allowing the researchers to remove the "influence of genetic, social and family backgrounds. With several thousand twins, we were able to show that, on average, the fitter twin has also the higher IQ score," Kuhn said.

The question remains: Are more-active boys smarter or smarter boys more active? This study does not answer that question. "More studies addressing causality are needed," Kuhn and colleagues emphasize in their report.

"We cannot assume that fitness per se increases cognitive function, so joining a gym does not by itself make you 'smarter'. But in order for optimal cognitive function/development to take place, regular cardiovascular exercise is needed," Kuhn told Reuters Health.

Do the results hold true for girls? The study can't say but, "there is no reason to assume that this cannot be extrapolated to girls. Women have more or less the same cardiovascular risk factors and therefore benefit from cardiovascular exercise in the same way," Kuhn said.

SOURCES: Proceedings of the National Academy of Sciences, December 8, 2009.