

Exercise increases pupils' mental age

Survey finds 15 minutes of exercise daily helps children achieve higher scores in number and memory tests

CHILDREN who take vigorous exercise every day boost their mental age by an average of 10 months, compared with their sedentary classmates, according to new research.

The study found that eight to 11-year-olds who took daily exercise of just 15 minutes achieved significantly higher scores in a range of number and memory tests.

Academics from Aberdeen and Leeds universities examined the performance of about 1,000 primary school pupils as part of the ground-breaking study into the link between exercise, concentration and mental agility.

The children, from schools in Aberdeen, were asked to perform a series of mental tests at the end of the school day after taking classroom-based exercises at lunchtime, such as running on the spot and hopping to music.

The tests included basic addition, recalling numbers in reverse order and placing a series of items in order of size. Children were also tested during a week when they did not engage in physical activity.

On average, pupils' scores were 3.4% higher if they had exercised earlier in the day — equivalent to a difference in mental age of about 10 months.

The study, published in the scientific journal *Developmental Medicine and Child Neurology*, concludes that there is compelling evidence that physical activity between lessons is a "valuable component of the school curriculum, for academic as well as physical development".

While it is known that exercise can help brain function in the elderly, the research is believed to be the first to demonstrate similar benefits in children.

"This is the first and largest study of its kind and our results show that 15 minutes of exercise in the classroom improved performance on cognitive tests conducted later in the day," said Dr Justin Williams, a co-author of the study and senior lecturer in child and adolescent psychiatry at Aberdeen University.

"While further research is required, this could change the way we think about exercise in schools. As well as being important in tackling obesity and promoting a healthy lifestyle, exercise can help with learning."

Mark Mon-Williams, professor of cognitive psychology research at Leeds University who also worked on the study, said the mechanism by which exercise boosts concentration and mental agility was not yet known.

"However exercise works, this research is important because it suggests that exercise in schools might help academic learning," he added.

The findings will prompt fresh debate over the provision of physical education in schools. Under government guidelines, Scottish schools should provide pupils with two hours of PE per week.

However, figures released earlier this year showed that of 1,866 primary schools, only 657 (35%) were meeting the target. The proportion fell to 17% in secondary schools, with only 55 out of 329 providing two hours of PE every week.

Last year, Holyrood's health committee published a highly critical report that blamed councils for the "lamentable" failure and called for an overhaul of the way PE is taught.

While most local authorities are failing to meet the target, Perth and Kinross and East Renfrewshire, which has some of the best-performing schools in the country, have done so.

Martin Greig, vice-convenor of Aberdeen council's education, culture and sport committee, which co-funded the study with Scottish Enterprise, said the findings supported calls for a minimum amount of PE to be built into the school day.

"There are clearly educational advantages in providing a varied and interesting learning environment that responds to the individual needs of pupils," he said.

The Scottish government is investing £12m a year to provide extra opportunities for sport and physical activity in schools. "We are committed to children throughout Scotland receiving two hours' quality physical education every week," said a spokeswoman.

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