Commentary: Height and intelligence

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In 1892, WT Porter published a study of 33,500 students entitled ‘The physical basis of precocity and dullness’ in which he reported that taller students performed better academically than did shorter students of the same age. Since then, many studies in developed and developing countries have shown that children who are shorter or whose linear growth is retarded tend to gain lower scores in tests of cognitive function. Further evidence of this link is the way adults and peers treat them. Years of cumulative indirect effect on their cognitive development by influencing determinants, both genetic and environmental, many of which show a continuous distribution, are likely to have multiple mechanisms underlie the association between height and intelligence. Evidence that nutrition and cognitive function were produced after 2 years of nutritional supplementation and cognitive stimulation. Only those children who received both interventions caught up with the non-growth retarded control group. Cognitive stimulation, but not nutritional supplementation, had a long-lasting effect on intelligence, as shown by test results at age 11 years.

Studies in developing countries suggest that whatever mechanisms underlie the association between height and intelligence, their effects may be particularly important in very early childhood because this is a period of rapid growth and cognitive development. It is a pity that Pearce and colleagues decided to include only the data on height at ages 9 and 13 years and IQ at age 11 years in their analyses. In their book on this Newcastle cohort, FJW Miller and colleagues describe strong associations between height at age 3 and 5 years and scores on tests of cognitive function at age 11 and 12 years. Miller’s analyses are not adjusted for potential confounding factors but their findings and the exclusion of these data from Pearce and colleagues’ paper make it hard to interpret these new results in relation to height at ages 9 and 13 years.

The Newcastle cohort was born at a time when height may have been a more powerful indicator of childhood environment than it is for children growing up in today’s economically developed countries. In a study of 9-year-olds born in 1992—who were on average 3 cm taller than the Newcastle 9-year-olds—height was not a significant predictor of intelligence, though height was related to IQ in their mothers. Evidence from Denmark suggests that the association between height and IQ...
has weakened in successive birth cohorts. Perhaps as standards of living increase and variations in height between social groups diminish, similar trends will be evident in other populations.

References