Obesity & Intelligence

The greater your weight, the lower your IQ, say scientists

By Nina GoswamiLast Updated: 2:25AM BST 16 Oct 2006

Ann Widdecombe said the research seems unsustainable

It is bad for your blood pressure, knocks years off your life and is a strain on your heart. Now scientists have discovered that gaining weight lowers your intelligence.

The findings follow last week's government figures that show Britain as the "fat man" of Europe, with nearly a quarter of adults and more than 14 per cent of children under 16 classified as obese.

The new five-year study of more than 2,200 adults claims to have found a link between obesity and the decline in a person's cognitive function. The research, conducted by French scientists, which is published in this month's Neurology journal, involved men and women aged between 32 and 62 taking four mental ability tests that were then repeated five years later.

The researchers found that people with a Body Mass Index – a measure of body fat – of 20 or less could recall 56 per cent of words in a vocabulary test, while those who were obese, with a BMI of 30 or higher, could remember only 44 per cent.

The fatter subjects also showed a higher rate of cognitive decline when they were retested five years later: their recall dropped to 37.5 per cent, whereas those with a healthy weight retained their level of recall.

According to British guidelines, a person with a BMI of between 18.5 and 25 is considered to be at an ideal weight, while 25 is overweight and 30 or more is regarded as clinically obese.

Dr Maxime Cournot, who headed the study, suggested that hormones secreted from fats could have a damaging effect on cerebral cells, resulting in decreased brain function. "Another explanation could be that since obesity is a widely known cardiovascular risk factor, due to the thickening and hardening of the blood vessels, that the same happens with the arteries in the brain," said Dr Cournot, an assistant professor in clinical

epidemiology at Toulouse University Hospital.
Dr David Haslam, the clinical director of the National Obesity Forum, said the research was alarming. "It goes to show obesity affects every single organ in the human body," said Dr Haslam.
But Ann Widdecombe, the former Tory minister, said that the research seemed unsustainable. "You just need to look around the world and you will see hundreds of thin nitwits and clever fat people," said Ms Widdecombe, who lost two stone when taking part in the television show Celebrity Fit Club.
"When I lost weight it was my waistline that improved, not my cerebellum."

Intelligence test score, education level and obesity - Obesity

Nutrition Research Newsletter, Nov, 2003 by Jytte Halkjer

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Several studies have examined the potential associations between various social factors, such as school performance, educational attainment, occupation, and income and BMI or weight changes. The results have been inconsistent. However, cross-sectional studies conducted on Danish draftees showed a clear inverse association between BMI above the median BMI and both intelligence test score and educational level. The same tendencies have also been seen in a Chinese study in children. These cross-sectional observations raise the obvious question of whether cognitive ability and educational level are determinants or consequences of changes in body weight and development of obesity. Therefore, some Danish researchers investigated intelligence test scores and educational levels in young adult men in relation to their subsequent changes in weight and risk of development and persistence of obesity.

Subjects were selected among men appearing at Danish draft boards. The men were divided into two groups: A group with juvenile-onset obesity, including all men with a BMI of greater than 31 kg/[m.sup.2]; and a non-obese group randomly selected as a 1% sample of the study population. The obese group and 50% of the non-obese group were invited to participate in follow-up studies between 1982 and 1984 and between 1992 and 1994. Among 907 men with juvenile-onset obesity and 883 non-obese men, age, region of examination, intelligence test score via the Borge Priens Prove 1953 test, education and BMI from baseline to first follow-up, were analyzed.

Within both groups, BMI significantly increased from baseline to both the first and second follow-ups. Education and intelligence, analyzed separately, were inversely related to BMI changes in both groups. A greater increase in BMI at the first follow-up occurred in the lowest intelligence test-score quintiles and in the group of less educated men in the non-obese control group. When adjusted for education, the association between intelligence score and BMI changes and the development of obesity vanished, whereas the inverse relationship for education persisted only for BMI changes. Intelligence score was not associated with the persistence of obesity in the obese group, whereas inverse relationships were found for education. The highest educated group had less than half the odds of remaining obese compared with the lowest-educated group.

Both intelligence test score and education level had an inverse effect on the subsequent BMI changes and risk of developing obesity. Educational attainment showed a strong inverse relationship with the persistence of obesity in the juvenile-onset obesity group, whereas the intelligence score had no effect. The authors speculate about several

reasons for their findings. High ability in intelligence testing and educational attainment may be related to stronger expectations of a slim physical appearance and, therefore, a higher motivation for weight regulation or loss. Through their high cognitive skills, the well-educated might also have a better ability to receive and implement general-health guidelines into their everyday lifestyle, compared with less-educated groups. However, better understanding of this interaction may allow improved targeting and, thereby, more effective prevention and treatment of obesity.

Jytte Halkjer, Claus Hoist, and Thorkild I.A. Sorensen, Intelligence Test Score and Educational Level in Relation to BMI Changes and Obesity, Obesity Research 11(10): 1238-1245 (October 2003) [Address correspondence to: T.I.A. Sorensen, Institute of Preventive Medicine, Kommunehospitalet opg. 23a, DK-1399 Copenhagen K, Denmark. E-mail: tias@ipm.hosp.dk]