

Gene linked to low IQ

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(Medical Xpress)—Children with both a common gene variant and lower thyroid hormone levels, which occurs in approximately 4% of the population, are four times more likely to have a low IQ, according to research presented today by the University at the Society for Endocrinology annual BES conference.

It is well established that thyroid hormones are essential for brain development in childhood. More recently, scientists have looked at a certain enzyme, called deiodonase-2, involved in processing thyroid hormones inside cells. A variant in the gene coding this enzyme has already been associated with key health outcomes including diabetes and high blood pressure, although the precise mechanism remains unclear.

In this study, researchers from Cardiff and the University of Bristol examined the genetic data and thyroid function of 3,123 [children](#) aged 7 who also had their IQ tested, as part of the Avon Longitudinal Study of Parents and Children (ALSPAC). The researchers found that children with thyroid hormone levels in the lower part of the normal population range who also possessed this genetic variant were four times more likely to have an IQ under 85.

This result stood true after taking into account various differences in environmental and socio-economic factors such as social class. Children with lower thyroid hormone levels alone did not have an increased risk of lower IQ, highlighting that without genetic analysis the population at risk could not be identified.

The study's results will need to be confirmed in other groups of children. "If other studies confirm our finding then there may be benefit in carrying out a genetic test for this gene variant in addition to the standard neonatal thyroid screening, which would identify children most at risk of developing low IQ," said lead researcher Dr Peter Taylor, from the School of Medicine. "Children with satisfactory thyroid [hormone levels](#) together with the genetic variant have normal IQ levels, which raises the possibility that children at risk could be treated with standard thyroid hormone tablets to compensate for impaired [thyroid hormone](#) processing," he added.

Provided by Cardiff University

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