NEWS

Genetics: Changes in the womb linked to autism in the child

BY **JESSICA WRIGHT**

25 JANUARY 2011

Maternal effect: A gene variant in the mother can affect her child by creating certain conditions in the womb.

High levels of serotonin in the womb **may up the risk of autism** in the child, according to a study published in December in the *American Journal of Medical Genetics*.

The serotonin transporter gene — which controls the amount of serotonin transported into cells — is regulated by a DNA sequence that contains variable repeats of the sequence 5-HTTLPR.

More repeats are associated with higher levels of serotonin in cells. Changes in the regulation of serotonin transport have been linked to several psychological disorders, including depression, and studies have **linked lower activity of the serotonin transporter to autism**.

Surprisingly, studies have linked the presence of both the long and short version of the 5-HTTLPR region to autism. Specifically, the longer variant in the mother or the shorter variant in the child increases the risk of autism in the child, the researchers found. This discrepancy is the result of a so-called 'maternal effect' of the longer variant on the fetus in the womb.

The researchers also found parent-of-origin effects in particular aspects of autism. When the

shorter form of the sequence is inherited from the mother, children have a higher likelihood of language delay: 47 percent compared with 33 percent in children who inherit it from their fathers.