Breakthrough on Huntington's disease

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Researchers at Lund University have succeeded in preventing very early symptoms of Huntington's disease, depression and anxiety, by deactivating the mutated huntingtin protein in the brains of mice.

"We are the first to show that it is possible to prevent the depression symptoms of Huntington's disease by deactivating the diseased protein in nerve cell populations in the hypothalamus in the brain. This is hugely exciting and bears out our previous hypotheses", explains Åsa Petersén, Associate Professor of Neuroscience at Lund University.

Huntington's is a debilitating disease for which there is still neither cure nor sufficient treatment. The dance-like movements that characterise the disease have long been the focus for researchers, but the emotional problems affect the patient earlier than the motor symptoms. These are now believed to stem from a different part of the brain – the small emotional centre called the hypothalamus.

"Now that we have been able to show in animal experiments that depression and anxiety occur very early in Huntington's disease, we want to identify more specifically which nerve cells in the hypothalamus are critical in the development of these symptoms. In the long run, this gives us better opportunities to develop more accurate treatments that can attack the mutated huntingtin where it does the most damage", says Åsa Petersén.

As the role of the hypothalamus in Huntington's disease is gradually mapped, knowledge might be gained from drug research for other psychiatric diseases. It is likely that similar mechanisms control different types of depression, according to Åsa Petersén.

More information: Hypothalamic expression of mutant huntingtin contributes to the development of depressive-like behavior in the BAC transgenic mouse model of Huntington's disease, Hum. Mol. Genet. (2013) doi: 10.1093/hmg/ddt203 . First published online: May 22, 2013

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