

Cells involved with Down syndrome restored

January 24 2006

Johns Hopkins University scientists in Baltimore say they've restored the normal growth of nerve cells in the brains of mouse models of Down syndrome.

The restoration occurred in the cerebellum -- the rear, lower part of the brain that controls signals from the muscles to coordinate balance and motor learning.

The finding is important, investigators say, because the cells rescued represent potential targets for therapy in human babies with Down syndrome. And it suggests similar success for other DS-related disruptions of brain growth might lead to additional treatments, perhaps prenatally, that restore memory and the ability to orient oneself in space.

Down syndrome is caused by an extra chromosome 21, a condition called trisomy -- a third copy of a chromosome in addition to the normal two copies. Children with Down syndrome have a variety of abnormalities, such as slowed growth, abnormal facial features and mental retardation. The brain is always small and has a greatly reduced number of neurons.

A report on the Hopkins work appears in the Jan. 24 issue of the Proceedings of the National Academy of Sciences.

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Citation: Cells involved with Down syndrome restored (2006, January 24) retrieved 2 May 2024 from <https://phys.org/news/2006-01-cells-involved-syndrome.html>

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