

TMS TRENDS

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BRAIN STRUCTURE IMPLICATED IN DEPRESSION MAY BE INHERITED

A large body of human clinical research indicates a strong association in depression between mothers and daughters, while many previous animal studies have shown that female offspring are more likely than males to show changes in emotion-associated brain structures in response to maternal prenatal stress. Until now, however, there have been few studies that attempted to link the two streams of research. A study published in the *Journal of Neuroscience* showed for the first time that the structure of the brain known as the corticolimbic system is more likely passed down from mothers to daughters than from mothers to sons or from fathers to children of either sex. The corticolimbic system governs emotional regulation and processing and plays a role in mood disorders, including depression.

The research team led by Fumiko Hoeft, MD, PhD, used non-invasive magnetic resonance imaging (MRI) to measure grey matter volume (GMV) in the corticolimbic systems of parents and their biological offspring from 35 healthy families. The association between mothers' and daughters' corticolimbic GMV was significantly greater than that between mothers and sons, fathers and sons, and fathers and daughters. This study is the first to use MRI in both parents and their children to study intergenerational transmission of the pattern of brain structures, says Hoeft. "This gives us a potential new tool to better understand depression and other neuropsychiatric conditions, as most conditions seem to show intergenerational transmission patterns," she said.

One limitation of the study, said Hoeft, is that it does not differentiate between the potential effects of genetics, prenatal conditions and postnatal conditions on the inheritance of brain structures. It is her hope that new research now underway utilizing MRI to study brain structures in families where children have been conceived and delivered using different types of in vitro fertilization will address that shortcoming.

SERIOUS DEPRESSION SYMPTOMS INCREASE RISK FOR STROKE AND HEART DISEASE

Depression and its symptoms increase as people age, and have been linked to heart disease and stroke in both middle-aged and older adults. However, whether depression and its symptoms are risk factors for these two dangerous conditions has been unclear.

In a study published in the *Journal of the American Geriatrics Society*, researchers set out to learn more about whether depression affects heart disease and stroke in older adults. None of the 7,313 participants had a history of heart disease, stroke, or dementia at the start of the study. Researchers conducted face-to-face interviews with participants when the study began and checked them again 3 times – 2 years, 4 years, and 7 years later.

The researchers discovered that adults 65-years-old and older who had high levels of depressive symptoms in one, two, three, or four occasions during the study had 15 percent, 32 percent, 52 percent and 75 percent greater risk, respectively for experiencing heart disease or stroke events over the 10 years of the study. As a result, the researchers concluded that depression could be a risk factor for heart disease or stroke. They suggested that physicians pay close attention to symptoms of depression in older adults under care.

NEW COVERAGE FOR TMS

We are pleased to inform you of a new TMS coverage policy with Capital BlueCross. Effective January 1, 2016, this coverage decision will now provide access to TMS Therapy for approximately 1.3 million members living in Pennsylvania.