

Stressful events linked to genetic changes that increase risk of depression

March 28 2014, by Thomas Deane

(Medical Xpress)—Researchers from Trinity College Dublin's Institute of Neuroscience and Department of Psychiatry believe stressful life events greatly enhance the risk of depression affecting people in later life. They link this phenomenon to changes in genetic expression, which only occur following exposure to a stressful event.

Epigenetics is a field of research devoted to understanding how [environmental factors](#), such as [childhood abuse](#) or deprivation, affect [genetic expression](#) in the body. Although functional changes that occur this way do not alter the all-important DNA code, they do alter the way our bodies follow the 'recipes' it writes. What is especially interesting is that these changes can be passed on to children.

The authors recently published their findings in the *Journal of Affective Disorders*. After conducting a major systematic review of epigenetic research relating to depression, they feel that patient-specific epigenetic profiles could be useful in diagnosing and treating depression. The associated costs of depression account for 1% of the EU economy, or €113 billion per year for all mood disorders. The World Health Organisation predicts that depression will be the world's second-most debilitating disorder by 2020.

"Recent research shows that depressed patients have a different epigenetic profile compared with control subjects. What is particularly interesting is that any epigenetic changes that result from stressful events can also be passed on through subsequent generations," said Research

Fellow in Trinity College's Institute of Neuroscience, Dr Victoria Dalton.

"On a deeper level, we are of course seeking to combat depression, which is such a terrible, debilitating disease for so many people. These findings give some hope that if we are able to reverse or bring about compensatory epigenetic changes, we might be on the right path to developing successful antidepressant therapies."

More information: Victoria S. Dalton, Erik Kolshus, Declan M. McLoughlin, "Epigenetics and depression: return of the repressed," *Journal of Affective Disorders*, Volume 155, February 2014, Pages 1-12, ISSN 0165-0327, [dx.doi.org/10.1016/j.jad.2013.10.028](https://doi.org/10.1016/j.jad.2013.10.028).

Provided by Trinity College Dublin

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