

# Predictive Diagnostic Test for Anti-Depressant Related Suicide Risk

Published date: Feb. 1, 2012

## Technology description

A number of studies have reported a potential link between antidepressant treatment and suicides. Although the scientific basis for this phenomenon is not known, the Food and Drug Administration (FDA) required a black box warning of worsening depression and/or emergence of suicidality (i.e., development of suicidal thoughts or behavior) in both adult and pediatric patients taking several antidepressants. While use of antidepressants fell subsequent to the black box warning, recent studies suggest that pediatric suicides may actually be rising. This has led to concerns that untreated depression due to the black box warning could potentially result in an overall increase in suicides. To determine whether a genetic basis for suicidal risk exists for a sub-group of depressed patients, NIH researchers genetically screened patients with major depression treated with the serotonin selective reuptake inhibitor (SSRI) citalopram (Celexa) in the NIMH-funded Sequenced Treatment Alternatives for Depression (STAR\*D) trial. Versions of two genes coding for components of the brain's glutamate chemical messenger system were linked to suicidal thinking associated with antidepressant use. Having both implicated versions increased risk of such thoughts more than 14-fold.

Market: Depression ranks among the ten leading causes of disability and will become the second-largest cause of the global health burden by 2020. An estimated 121 million people worldwide suffer from a depressive disorder for which they require treatment. It is estimated that 5.8% of all men and 9.5% of all women will suffer from a depressive disorder in any given year and that 17% of all men and women will suffer from a depressive disorder at some point in their lives.

## Application area

Diagnostic tests predicting the likelihood of suicide during anti-depressant treatment.

## Advantages

By identifying those patients who need close monitoring, alternative treatments and/or specialty care, these genetic tests should prevent the under prescribing of anti-depressant drugs and the resulting possibility of suicide due to sub-optimal treatment.

Institution

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