



Press release

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## Lundbeck scientists part of group achieving breakthrough in understanding schizophrenia

**New research reveals that genetic variations that increase the risk of developing schizophrenia have a direct and harmful effect on the brain, impairing the intellectual and cognitive function of people with these variations. Lundbeck scientists are part of the group behind the results, which are so ground-breaking that they were recently published in the peer-reviewed scientific journal *Nature*.**

For the first time in history, scientists have demonstrated that certain variations in the human genome, the copy-number variants, have a direct effect on the brain and are associated with impaired intellectual and cognitive function in people with these variations.

The findings are interesting because these genetic variations increase the risk of the bearers developing schizophrenia, a disabling and life-threatening brain disorder. In other words, the new research marks a breakthrough in understanding why some people develop schizophrenia.

This ground-breaking new research was conducted by an international team of scientists which included scientists from Lundbeck. The remarkable results were recently published in the peer-reviewed scientific journal *Nature*.

“Our research results offer hope that, in the future, we will be able to develop pharmaceuticals that could reduce the risk of certain persons developing schizophrenia and that we could also develop therapies for the so-called cognitive symptoms associated with the disease”, said Michael Didriksen, one of the two Lundbeck scientists involved in the *Nature* article; the other researcher involved is Tine Bryan Stensbøl.

Current drug therapies for schizophrenia treat the “positive” symptoms such as hallucinations and delusions, but a large unmet medical need persists for treating the “negative” and cognitive symptoms experienced by patients suffering from schizophrenia.

### **New knowledge result of unique public-private partnership**

The group of researchers behind the results was formed as part of the large-scale European IMI-NEWMEDS cooperation, in which universities and pharmaceutical companies have joined forces to promote greater knowledge about depression and schizophrenia. Without this unique partnership, this new knowledge would never have seen the light of day. The specific project is the result of a partnership between Icelandic biotech company deCODE genetics, the University of Heidelberg in Germany, King's College in London and Lundbeck.

For several years, Lundbeck has conducted research into copy-number variants and their effect on schizophrenia. These efforts included breeding mice to have these genetic variations: mice with the same basic biology as schizophrenic humans are very useful in



studying the disorder. The new findings confirm the high relevance of copy-number variants in schizophrenia and, by extension, the importance of Lundbeck's research in the field.

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### **About copy-number variants**

The human genome contains the complete genetic information that defines a human being. This genetic information in humans is organised in 23 chromosome pairs.

One member of each pair of chromosomes is inherited from the father, the other from the mother. The two chromosomes of a pair are not exactly the same but contain DNA encoding for the same genes. This means that a human being normally has two copies of each gene.

When genes from the mother and father are passed on to the child, abnormalities may occur. As a result, the child gets one or three copies of one gene instead of two copies; this is known as copy-number variants. All human beings carry copy-number variants. In most cases, they have no consequences, but some copy-number variants may lead to various diseases

### **About Lundbeck**

Lundbeck is a global pharmaceutical company highly committed to improving the quality of life of people living with brain diseases. For this purpose, Lundbeck is engaged in the entire value chain throughout research, development, production, marketing and sales of pharmaceuticals across the world. The company's products are targeted at disorders such as depression and anxiety, psychotic disorders, epilepsy, Huntington's, Alzheimer's and Parkinson's diseases. Lundbeck's pipeline consists of several mid- to late- stage development programs.

Lundbeck employs more than 5,800 people worldwide, 2,000 of whom are based in Denmark. We have employees in 57 countries, and our products are registered in more than 100 countries. We have research centers in Denmark, China and the United States and production facilities in Italy, France, Mexico, China and Denmark. Lundbeck generated revenue of approximately DKK 15 billion in 2012. For additional information, we encourage you to visit our corporate site [www.lundbeck.com](http://www.lundbeck.com).