**Scientists find genetic link to depression**

**Posted on 16/05/2011**

Research led by King’s College London has discovered the first solid evidence that genetic variations on chromosome 3 may cause depression.

In a rare occurrence in genetic research the findings have been replicated concurrently by another group from Washington University, and both papers are published today in the American Journal of Psychiatry.

Major depression affects approximately 20 per cent of people at some point in their lives and is forecast to become the disorder with the highest disease burden in the world by 2020, with only heart disease rivalling it in impact as a public health problem.

Severe and recurring depression affects up to 4 per cent of the population and is notoriously hard to treat.

Family studies have long indicated that depression has a genetic link with over 40 per cent of the risk for developing depression thought to be contributed by genes.

Until now, few if any regions of the genome, have been shown to contribute to this risk.

Dr Gerome Breen, lead author and lecturer at King's College London Institute of Psychiatry said:  ‘In a large number of families where two or more members have depression we found robust evidence that a region called chromosome 3p25-26 is strongly linked to the disorder.

These findings are truly exciting as possibly for the first time we have found a genetic locus for depression.’

The new findings represent work by a worldwide team of scientists from the UK, Germany, Denmark, Italy, Switzerland, Finland, the Netherlands, Australia and USA.

The study led by King’s, presents the results of 10 years of work from the Depression Network project of over 800 families with recurrent depression.

The study led by Washington University is an analysis of depression and heavy smoking in a series of families from Australia and Finland.

The studies were independent and not collaborating on any level.

Dr Breen continued:  'Though these findings will not result in a test for depression they will help us track down specific genes that are altered in people with this disease.

This breakthrough in understanding the risk for depression may get us closer to developing more effective therapies though patients should not expect to see these available for 10-15 years.

‘Any one of 40 genes in chromosome 3p25-26 could be responsible so we are currently conducting detailed sequencing examinations in 40 of the families involved, to identify specific genes and variations that are causing the linkage.

Results of these studies should be available next year.’

Peter McGuffin, senior author and Professor of Psychiatric Genetics at the Medical Research Council Social Genetic and Developmental Psychiatry Centre at King's Institute of Psychiatry said: 'These findings are ground breaking as until now few, if any, regions of the genome have been shown to contribute to depression risk.

We acknowledge however, that our finding represents only a small part of the genetic risk for depression and more and larger studies will be required to find the other parts of the genome involved.'

Dr Michele Pergadia, lead author and Research Assistant Professor of Psychiatry at Washington University said:  ‘I think we are just beginning to make our way through the maze of influences on depression and this is an important step toward understanding what may be happening at the genetic and molecular levels.

Our future research may focus on trying to learn more about how heavy smoking and depression are linked in this area.'

Dr Breen concluded: ‘What is remarkable is that two different data sets, gathered for different purposes and studied in different ways found exactly the same region.

Normally in genetic studies of depression, replication of findings is very difficult and frequently takes years to emerge, if ever.

It shows that family studies hold considerable promise for genetic research in this area.’