

**STRICTLY EMBARGOED UNTIL 18:00 5 JULY**

## **Moles hold the key to melanoma genes**

A research team led by the Twin Research Department, at King's College London with colleagues from Imperial College London, The Wellcome Trust Sanger Institute, Brisbane and Leeds has found novel genes for melanoma in one of several studies to be published today in *Nature Genetics*.

Melanoma incidence has risen rapidly over the last 30 years so discovering genes which may predict those most at risk of this deadly tumour may prevent increased cases of mortality. It is already known that large numbers of moles (nevi) are the most important risk factor for melanoma (more so than over exposure to sunshine or use of sunbeds).

Professor Tim Spector, Senior author and Director of the Department of Twin Research added. *"These novel genes regulating moles can lead to a doubling in melanoma risk. The study shows the unique value of the TwinsUK volunteer cohort. Twins have helped us over the last 13 years to find that moles are heritable and then isolating the gene regions and now the actual genes involved."*

The King's team had previously shown that genes influencing the number of moles (nevi) might overlap with those for melanoma. The recent Genome-Wide Association (GWA) study allowed scientists to examine differences in people's DNA code at a third of a million sites and through this also uncovered two novel genes for melanoma.

For this project researchers performed a Genome Wide Association study looking at common changes in genes for nevus counts in 1,524 healthy adult female twins from the TwinsUK registry using 300,000 genetic markers known as (SNPs). SNPs in 2 genes, on chromosome 9 (MTAP) and chromosome 22 (PLA2G6), were significantly associated with higher mole (nevus) counts.

Dr Veronique Bataille, Consultant Dermatologist in charge of the skin research programme at the Twin Research Department at King's, and first co-author of the study said: *"These new genes may be useful for screening but will also help in understanding melanoma genetic pathways with possible therapeutic targets."*

These initial results were replicated in an independent sample of 4,107 adolescent twins from Brisbane. These two genes also predict melanoma risk in several thousand cases of melanoma from around the world (the Genomel Melanoma Consortium). The risk of having double copies of both these gene variants increases melanoma risk by up to two fold. The effect appears to be mediated by the increased number of moles (nevi).

Dr Bataille went on to say: *"Moles are common in all European populations and the chance of any of them changing into a melanoma is very small. However, if you do have many moles, especially large moles, it is recommended that you have them checked."*

**-ENDS-**

## Notes to editors:

For further interest there will be a photo opportunity with twin case studies on Friday 3<sup>rd</sup> July at 10.30am at The Department of Twin Research and potential interviews with Dr Bataille and Prof Spector. If you would want to take advantage of this please contact: Kate Moore, Public Relations Officer (Health Schools) King's College London on 0207 848 4334.

The paper, *Locl at 9p21 and 22q13 harbour alleles for development of cutaneous nevi and melanoma* will be published online in *Nature Genetics* on. To view the paper, please visit: <http://www.nature.com/ng/index.html>

## Further information

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**The Department of Twin Research and Genetic Epidemiology** at King's College London has a database of 11,000 twins and studies a wide variety of diseases and human behaviours and traits, leading to several high profile publications. For more information and pdf-copies of other publications please phone: 020 7188 6765 or visit the website: [www.twinsUK.ac.uk](http://www.twinsUK.ac.uk)

## King's College London

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King's has a particularly distinguished reputation in the humanities, law, the sciences (including a wide range of health areas such as psychiatry, medicine and dentistry) and social sciences including international affairs. It has played a major role in many of the advances that have shaped modern life, such as the discovery of the structure of DNA and research that led to the development of radio, television, mobile phones and radar. It is the largest centre for the education

of healthcare professionals in Europe; no university has more Medical Research Council Centres.

King's College London and Guy's and St Thomas', King's College Hospital and South London and Maudsley NHS Foundation Trusts are part of King's Health Partners. King's Health Partners Academic Health Sciences Centre (AHSC) is a pioneering global collaboration between one of the world's leading research-led universities and three of London's most successful NHS Foundation Trusts, including leading teaching hospitals and comprehensive mental health services. For more information, visit: [www.kingshealthpartners.org](http://www.kingshealthpartners.org).

The research was funded by the Wellcome Trust and the NHS NIHR. Genotyping was performed by the Sanger Institute

#### About Imperial College London

Consistently rated amongst the world's best universities, Imperial College London is a science-based institution with a reputation for excellence in teaching and research that attracts 13,000 students and 6,000 staff of the highest international quality.

Innovative research at the College explores the interface between science, medicine, engineering and business, delivering practical solutions that improve quality of life and the environment - underpinned by a dynamic enterprise culture.

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