

FIFTEEN NEW BREAST CANCER GENETIC RISK 'HOT-SPOTS' REVEALED

Monday, March 9, 2015 - Scientists have discovered another 15 genetic 'hot-spots' that can increase a woman's risk of developing breast cancer, according to research published in [Nature Genetics](#).

In a study funded by Cancer Research UK*, scientists compared tiny variations in the genetic make-up of more than 120,000 women with and without breast cancer, and identified 15 new variations – called single nucleotide polymorphisms (SNPs) – that are linked to a higher risk of the disease.

This new discovery means that a total of more than 90 SNPs associated with breast cancer have now been revealed through research. These genetic markers, which explain around a seventh (16 per cent) of inherited increased risk of breast cancer, can be used to help predict which women are most likely to develop the disease and could lead to improved cancer screening and prevention.

Study author Professor Doug Easton, professor of genetic epidemiology at the University of Cambridge, said: "Our study is another step towards untangling the breast cancer puzzle. As well as giving us more information about how and why a higher breast cancer risk can be inherited, the genetic markers we found can help us to target screening and cancer prevention measures at those women who need them the most.

"The next bit of solving the puzzle involves research to understand more about how genetic variations work to increase a woman's risk. And we're sure there are more of these variations still to be discovered."

The study, carried out by dozens of scientists across the world working together**, is part of the Collaborative Oncological Gene-environment Study. Each of the genetic variations, identified through this study and other research, is known to raise a woman's risk of breast cancer by a small amount - but some people have lots of these variations which add up to a more significantly increased risk. It's estimated that about five per cent of women have enough genetic variations to double their risk of developing breast cancer – the average lifetime risk for women in the UK is around 12 per cent.

Breast cancer is the most common type of cancer in the UK, with almost 50,000 women diagnosed every year. Death rates are falling as we learn more about breast cancer and how to diagnose and treat it, and around 77 per cent of people now live for at least 10 years after diagnosis.

Dr Nell Barrie, senior science communications manager at Cancer Research UK, said: "We're gradually uncovering breast cancer's secrets at a genetic level and learning how best to beat this disease which still claims far too many lives. This latest study adds to the genetic blueprint we already have of breast cancer risk and could help to develop new ways to identify those most at risk so we can spot breast cancer earlier in the future."

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For media enquiries contact the Cancer Research UK press office on 020 3469 8309 or, out of hours, on 07050 264 059.

Notes to editor:

* 'Genome-wide association analysis of more than 120,000 individuals identifies 15 new susceptibility loci for breast cancer' – Kryptaki Michailidou et al.

Funders of the study included Cancer Research UK, the European Union, the Canadian Institutes of Health Research, the Ministry of Economic Development, Innovation and Export Trade of Quebec, and The National Institute of Health.

** Researchers were based at 170 institutions across the world, including the Centre for Cancer Genetic Epidemiology at the University of Cambridge. All women involved in the study were of European ancestry.

About Cancer Research UK

- Cancer Research UK is the world's leading cancer charity dedicated to saving lives through research.
- Cancer Research UK's pioneering work into the prevention, diagnosis and treatment of cancer has helped save millions of lives.
- Cancer Research UK receives no government funding for its life-saving research. Every step it makes towards beating cancer relies on every pound donated.
- Cancer Research UK has been at the heart of the progress that has already seen survival rates in the UK double in the last forty years.
- Today, 2 in 4 people survive cancer for at least 10 years. Cancer Research UK's ambition is to accelerate progress so that 3 in 4 people will survive cancer within the next 20 years.
- Cancer Research UK supports research into all aspects of cancer through the work of over 4,000 scientists, doctors and nurses.
- Together with its partners and supporters, Cancer Research UK's vision is to bring forward the day when all cancers are cured.

For further information about Cancer Research UK's work or to find out how to support the charity, please call 0300 123 1022 or visit www.cancerresearchuk.org. Follow us on [Twitter](#) and [Facebook](#).

For more information on the Cross Cancer Out campaign, and ways the public can get involved, visit cruk.org/crosscancerout and join the conversation on twitter using **#CrossCancerOut**.