

Sex hormones linked to breast cancer risk in women under 50

July 24 2013

Premenopausal women with high levels of sex hormones in their blood have an increased risk of breast cancer, an Oxford University study suggests, though further research is needed to understand this link.

Lead author Professor Tim Key of the Cancer Epidemiology Unit at the University of Oxford said: 'While the link between higher levels of sex hormones and [breast cancer](#) is well established in older, [postmenopausal women](#), it's much less clear what effect hormones have on [cancer risk](#) in younger, premenopausal women.

'But from this study we can say there appears to be a link, which has important implications for understanding the biology of breast cancer and for planning future research.'

The Oxford researchers looked at data on hormone levels in the blood of up to 760 premenopausal women with breast cancer and 1700 without, from seven earlier studies.

They found that women who had the highest levels of sex hormones were at an increased risk of breast cancer of between a fifth and a third, compared with women with the lowest hormone levels. These were the 'female' sex hormones oestradiol and oestrone, and 'male' sex hormones androstenedione, dehydroepiandrosterone sulphate (DHEAS) and testosterone.

The findings are published in *The Lancet Oncology* journal.

Professor Key explained: 'This analysis combined the results from seven previous studies to provide enough data for us to focus on the association of hormone levels with the risk for women developing breast cancer before the age of 50.'

'The results demonstrate a link between higher overall levels of the female sex hormones and breast cancer in premenopausal women – although due to the large variation in hormone levels over the [menstrual cycle](#) these findings cannot be used now to classify the risk for individual women.'

The researchers also looked at the association between increased [hormone levels](#) in [premenopausal women](#) and other lifestyle factors, such as drinking and smoking.

They found that women who smoked 15 or more cigarettes a day, or drank two or more glasses of wine a day, had higher levels of the [male sex hormones](#) compared with women who didn't smoke or didn't drink. Women who drank the most alcohol also had higher levels of oestrogens.

Hazel Nunn, head of health information at Cancer Research UK, which funded the work, said: 'This is a fascinating piece of research which is helping us to understand more about the role of sex hormones and the effect they might have on breast cancer.'

'With one in five breast cancers now diagnosed in women under 50 it's important that we find out as much as we can about what increases the risk for younger women. We don't yet know why having higher levels of some sex hormones might increase a woman's risk so further research is needed to investigate this link.'

Around 10,000 women under 50 are diagnosed with breast cancer every year, although 80% of all breast cancer diagnoses are in women over 50.

More information: [www.thelancet.com/journals/lan...
rticle/PIIS1470-2045\(2013\)2970301-2/abstract](http://www.thelancet.com/journals/lan/article/PIIS1470-2045(2013)2970301-2/abstract)

Provided by Oxford University

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