**Women who live in cities with high air pollution may be at higher risk of breast cancer, major study suggests**

* **A study of nearly 280,000 women assessed their exposure to sooty particles**
* **They found a link between pollution and a higher chance of dense breast tissue**
* **Breast density is known to be one of the strongest risk factors of the disease**

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Women who live in areas with high air pollution may be at higher risk of developing [**breast cancer**](http://www.dailymail.co.uk/news/cancer/index.html), research suggests.

A major study of nearly 280,000 women concluded exposure to sooty particles had an increased chance of having dense breast tissue.

Breast density is known to be one of the strongest risk factors of breast cancer, with women who have highly dense breasts up to six times as likely to develop the disease.

The new study, led by experts at the [**University of Florida**](http://www.dailymail.co.uk/news/florida/index.html), reveals a strong correlation between air pollution and breast density for the first time.

It highlights a specific link between breast risk and the fine air particles that are particularly a problem in the emissions of diesel cars.

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Medical experts are increasingly aware of the impact of diesel air pollution fumes on human health, including the risk of asthma, heart disease and dementia, but this is the first time such a strong link has been made to breast cancer.

Fumes and toxins in polluted air are already estimated to contribute to the deaths of 40,000 people in Britain every year - but the new evidence suggests they may also be linked to some of the 11,400 breast cancer deaths recorded annually.

The UK is notoriously bad at controlling air pollution, with 37 cities across Britain persistently breaching legal limits of air toxins.

The researchers, whose work is published in the journal Breast Cancer Research, examined mammogram scans from 279,967 women in the US.

They found that women with high breast density were 19 per cent more likely to live in areas with high levels of fine particle pollution.

For every one unit increase in the particles - known as PM2.5 - a woman's chance of having dense breasts went up 4 per cent.

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Study leader Dr Lusine Yaghjyan said: 'Our findings suggest that previously reported geographic variation in breast density could, in part, be explained by different air pollution patterns in urban and rural areas.

'Breast density is a well-established and strong breast cancer risk factor so future studies are warranted to determine if the observed associations are causal, which if confirmed may have implications for risk prevention.'

Scientists suspect the chemical toxins in PM2.5 air pollution disrupt the body's hormones, triggering the growth of different types of cells in the breasts.

Dense breast tissue contains more glandular tissue and less fat - although it usually feels no different to the touch, it contains many more cells that are likely to turn cancerous.

To make matters worse, tumours in dense breast tissue are much harder to detect using standard breast screening – meaning that women are 18 times as likely to only realise they have cancer when they start seeing symptoms, rather than as a result of screening.

Health charities, medical leaders and environmental groups earlier this year warned that Britain is facing a major health emergency unless diesel cars are taken off the roads.

**DENSE BREAST TISSUE**

Breast tissue is composed of milk ducts and glands, dense breast tissue and fatty tissue - sometimes referred to as non-dense.

Mammograms determine whether or not someone does have dense breasts - making tumours much harder to detect.

This is because fat is transparent on a scan of a breast, but dense tissue is solid and can make it difficult to see through.

It is estimated that around 60 per cent of younger and slightly under half of older women have dense breasts.

But there isn't much someone can do to reduce their density, according to previous research.

One drug, tamoxifen, reduces cancer risk and lowers density - but it comes with serious side effects.

They have called for a new law to rival Anthony Eden's Clean Air Act, which in 1956 years ago spelled an end to the 'pea souper' smogs that had blighted our cities.

Professor John Middleton, president of the UK Faculty of Public Health, said in February: 'It is time for diesel to be recognised as the health emergency that it is.'

Catherine Priestley, clinical nurse specialist at Breast Cancer Care, said last night: 'Having dense breasts is a known risk factor for breast cancer, so new insight into how this might be influenced by external causes such as air pollution is welcome.

'However, we cannot look at this in isolation. Breast cancer is a complex disease, and it is not possible to pinpoint any one cause.

'It's important to stress that, while studies like this are interesting, the main risk factors for breast cancer remain outside our control – being female, getting older and, for some, a significant family history of the disease.'

Baroness Delyth Morgan, chief executive at the charity Breast Cancer Now, added: 'Breast density is an important risk factor in the development breast cancer.

'This is a thought-provoking finding, however the direct association between air pollutants and breast cancer risk remains unclear.

'The evidence in this study linking air pollution to the highest levels of breast density was inconclusive and so further research is now needed.'

Read more: <http://www.dailymail.co.uk/health/article-4385718/Women-live-cities-risk-breast-cancer.html#ixzz4h9lqZ6T4>   
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