

'Fatty apron' fuels ovary cancer



Ovarian cancer

A "fatty apron" in the abdomen helps fuel the spread of ovarian cancer, research suggests.

In 80% of cases, it has spread to this apron, called the omentum, by the time it is diagnosed.

The [Nature Medicine research](#) found once ovarian cancer cells reach the omentum, they take it over.

UK experts said the study was important in aiding understanding of ovarian cancer, the fifth most common cancer in women in the UK.

The omentum lies in the upper abdomen near the stomach. It helps support the organs nearby, but it is not essential.

Often, cancer growth in the omentum exceeds the growth of the original ovarian tumour.

The University of Chicago team injected ovarian cancer cells into the abdomen of healthy mice. They reached the omentum within 20 minutes.

They found that protein signals emitted by the omentum attracted the tumour cells. Disturbing these signals reduced this attraction by at least 50%.

Once ovarian cancer cells reach the omentum, they were found to change so they could feed off the fat cells.

Feeding cancer spread

The researchers suggest that a protein known as fatty acid binding protein (FABP4), a fat carrier, could be key to the process and could be a target for treatment.

Tumour cells next to fat cells in the omentum were found to produce high levels of FABP4, while cancer cells far away from fat cells did not.

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End Quote Prof Ernst Lengyel, Lead author

When the action of FABP4 was blocked, the transfer of nutrients from fat cells to cancer cells was drastically reduced. It also reduced tumour growth and the ability of tumours to generate

new blood vessels.

Lead author Ernst Lengyel, professor of obstetrics and gynaecology at the University of Chicago, said: "The cells that make up the omentum contain the biological equivalent of jet fuel.

"They feed the cancer cells, enabling them to multiply rapidly. Gaining a better understanding of this process could help us learn how to disrupt it."

The researchers suggest fat metabolism may also contribute to other cancers, such as breast, gastric and colon.

Dr Kat Arney, of Cancer Research UK, said: "These are important results because they suggest that fat cells in the stomach can fuel the spread of ovarian cancer, and point towards potential targets for the development of new treatments for the disease.

"But at the moment these are still early experiments using mice and cells grown in the lab, so there's still a lot of work to be done to turn this knowledge into a treatment that could help women with ovarian cancer."