

Scientists discover that squeezed cells pop out of overcrowded tissues

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(Medical Xpress) -- Cancer Research UK scientists have shown that increasing pressure ejects surplus healthy cells from overcrowded tissues, revealing a possible link between this process and the spread of cancer, according to a study published in Nature.

The interdisciplinary UCL team used hi-tech imaging techniques in flies, and computer analysis to reveal that excess cells are squeezed out of overcrowded healthy tissues in order to maintain the correct [tissue](#) size.

The healthy cells are ‘kicked out’ when they lose the competition for space and automatically die.

This discovery has implications for cancer because tumours that have excessive cell growth, may also ‘eject’ surplus cancer cells. And cancer cells, unlike healthy cells, could find ways to survive and resettle in a different part of the body to form new tumours.

Dr Buzz Baum, Cancer Research UK scientist at UCL, said: “Our research shows that cells are increasingly squeezed by their neighbours until they ‘pop out’ and leave healthy tissue as part of the body’s natural control processes to maintain the correct tissue size.

“The next stage of this research is to find out what happens when we block the ability of [healthy cells](#) to die once they have been ‘squeezed out’ of overcrowded tissues.

“We’re also investigating whether what we are seeing in healthy tissues is also happening in tumours - if so it could reveal a new trigger behind cancer spread.”

Dr Julie Sharp, Cancer Research UK’s senior science information manager, said: “This discovery provides a clue that could help scientists understand how cancer spreads - one of the most important questions in cancer research.

“Most cancer deaths are caused when [cells](#) spread to other parts of the body and grow as secondary tumours. Cancer that has spread is more difficult to treat but our researchers are working hard to tackle this problem and stop [cancer](#) in its tracks.”

More information: Live cell delamination counterbalances epithelial growth to limit tissue overcrowding. Marinari, Mehonic et al. *Nature*.

Provided by Cancer Research UK

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