

# Squeeze the cancer out of breasts - research

12:00 PM Thursday Dec 20, 2012

Applying pressure to cancer cells returns them to a healthy state - research. Photo / Thinkstock  
Squeezing malignant breast cancer cells stops them from spreading, returning them to a healthy state, new research reveals.

This is the first time it's been found that mechanical forces alone can revert and stop growth of cancer cells, *Medical Daily* reports.

Scientists found transformation can happen even if the genetic mutations for the cancer remain, setting up a fight between nature and nurture to determine the fate of the cell.

The latest findings were presented at the annual meeting of the American Society for Cell Biology in San Francisco. Scientists said "tissue organisation is sensitive to mechanical inputs from the environment" during the beginning stage of a cell's growth and development.

"An early signal, in the form of compression, appears to get these malignant cells back on the right track," said Professor Daniel Fletcher, a researcher from UC Berkeley.

Scientists have tended to focus on genetic mutation within the cell by looking at cancer development. But recent studies show malignant cells don't always turn in to tumours and their outcome depends on how they interact with the cells around them.

"People have known for centuries that physical force can influence our bodies," co-researcher Gautham Venugopalan said.

"When we lift weights, our muscles get bigger. The force of gravity is essential to keeping our bones strong. Here we show that physical force can play a role in growth - and reversion - of cancer cells."

Researchers grew malignant breast cells and injected them in to chambers which allowed them to apply pressure in the first stages of development. When compressed, the cells grew in to more organised and healthy looking cells. Once the force was removed, the cells stopped growing.

"Malignant cells have not completely forgotten how to be healthy, they just need the right cues to guide them back into a healthy growth pattern," Venugopalan said.

Prof Fletcher said compression alone is probably not going to be a successful form of breast cancer therapy.

"But this does give us new clues to track down the molecules and structures that could eventually be targeted for therapies."

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