

Immune cells open window to breast cancer risk

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University of Adelaide researchers have made a major discovery that highlights the important role played by immune cells in the risk of developing breast cancer.

Researchers have focused their efforts on immune cells known as macrophages in the breast, and how the role of these cells changes because of fluctuations in hormones during different times of the month.

The results of laboratory studies - published online ahead of print in the journal *Biology of Reproduction* - show that while the [immune cells](#) have a role to play in the normal function of the breast, at certain stages in the [menstrual cycle](#) they may help to make the breast more susceptible to cancer.

"These cells should be protecting our body from cancer, but at certain times of the month it appears macrophages might be allowing cancerous cells to escape immune system detection," says the lead author of the study Wendy Ingman, who is The Hospital Research Foundation Associate Professor of Breast Cancer Research / National Breast Cancer Foundation Early Career Fellow.

Associate Professor Ingman is Head of the Breast Biology & Cancer Unit with the University of Adelaide's School of Medicine, the Robinson Institute and the Queen Elizabeth Hospital.

"It's sort of a Jekyll and Hyde scenario - we need the [macrophages](#) to do

their job so that the breast can function normally, but at the same time they're giving [cancerous cells](#) the chance to survive.

"We think there is a window of risk that opens up around the time when women have their period. This is when levels of the hormone progesterone drop, and this affects how the breast functions. At this time, immune defences in the breast tissue are down and women could be more susceptible to the initiating factors that lead to breast cancer," she says.

Associate Professor Ingman says researchers have known for some time that there is a link between the number of years of menstrual cycling and breast cancer risk.

"We're now starting to understand the cell-to-cell interactions that are impacting on this risk," she says.

"One in eight Australian women will be diagnosed with breast cancer. By better understanding the biological factors that underpin breast cancer susceptibility, we might one day be able to close these windows of risk, and reduce women's lifetime risk of [breast cancer](#)."

More information: [www.biolreprod.org/content/ear ...
.113.109561.abstract](http://www.biolreprod.org/content/ear...113.109561.abstract)

Provided by University of Adelaide

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