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## Friendly' bacteria in the vagina could protect against ovarian cancer

Having too few 'friendly' bacteria in the vagina could increase the risk of ovarian cancer, suggests new research.

Researchers found that the number of healthy bacteria in the vagina can help to predict a woman's risk of [ovarian cancer](#). Those at high risk of the condition were found to have lower levels of protective 'friendly bacteria' called lactobacilli.

The study, led by the [department of women's cancer](#), EGA Institute for Women's Health, University College London, looked at samples from the cervix and vagina of 176 women who were eventually diagnosed with ovarian cancer, 109 women who were at high risk of the disease due to carrying the BRCA1 mutation and 295 women with no increased risk.

The team found that women with a mutant BRCA1 gene had nearly three times fewer lactobacilli in the vagina than those without the mutation. Additionally, over a quarter of young women under 30 with a BRCA1 mutation had low numbers of lactobacilli, whereas none of their peers without the mutation had low levels.

All of us have the [BRCA1 and BRCA2 genes](#) which suppress tumours and repair DNA. In around one in 300-400 people, the gene is mutated and cannot carry out its normal functions, putting the carrier at higher risk of breast and ovarian cancers. Annually, over 7,300 women are diagnosed with ovarian cancer in the UK. Over 4,000 women die from the disease each year as many are not diagnosed until the later stages. The average woman has a 2% lifetime risk of developing ovarian cancer but this risk jumps to 60-90% for women with the inherited BRCA1 mutation and 40-60% for those with the BRCA2 mutation.

The current prevention procedures for women with the BRCA mutation include life-changing surgery to remove both ovaries and Fallopian tubes and having a double mastectomy (both breasts removed) to drop their risk of ovarian cancer to almost zero.

It is hoped that the research could be used to develop a screening programme to monitor changes in the levels of lactobacilli in the vagina in young women with a high risk of ovarian cancer.

CEO of [gynaecological cancer](#) charity [The Eve Appeal](#) who co-funded the study, Athena Lamnisis, reflects that the current prevention techniques offer women a very difficult choice to make about their health. "This decision is not easy for many women, with implications for their fertility, being plunged into [early menopause](#) and the fact of undergoing surgery. This research is an exciting step forward in both understanding the factors that potentially impact on cancer development but also, and most importantly, in developing interventions that can reduce that risk. If that can be done by something as simple as adjusting the vaginal microbiome - that is a game-changer."

The research is the first of its kind to look at the link between the type of bacteria in the vagina and ovarian cancer. It reflects a growing awareness of the effect of the vaginal microbiome on health. The 'friendly' bacteria found in the vagina are believed to protect against unhealthy types of bacteria and stop them travelling up to the Fallopian tubes and ovaries where they can cause [pelvic inflammatory disease](#) and infertility. Researchers hope that further research will demonstrate that reintroducing healthy bacteria into the vagina could reduce the risk of developing ovarian cancer.

Lead researcher Professor Martin Widschwendter said: "This is a novel approach and could revolutionise the way that we can intervene and change the implications of being at high risk of ovarian cancer development. It's the first time that we have been able to demonstrate that women with gene mutations have a change in their vaginal microbiome."

As for the future of the project? "The vision is to put this information together with other evidence emerging from our multi-strand research programme and enable us to develop precise and informative risk prediction tests targeting several women's specific cancers, including ovarian cancer." The team will look into finding out if 'unfriendly' bacteria are also found in the Fallopian tubes where most ovarian cancers start.

This study was published in [The Lancet Oncology](#).

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