Seven classes of breast cancer test 'offers new hope'

The test looks at key proteins in a breast cancer cell

Walking cuts breast cancer risk
A test that identifies seven classes of breast cancer could be available within two years, say UK scientists.

Writing in the British Journal of Cancer, the Nottingham researchers say it could help doctors tailor treatment better and boost survival rates.

Currently, two biomarkers are routinely screened for in breast tumours.

Last year researchers revealed that breast cancer can be divided into 10 different forms of the disease based on a patient's genetic make-up.

However, these can only be identified using detailed genetic profiling, which is costly and impractical for most patients.

Each cancer type has a different impact on survival rates, scientists report.

Now, a team led by Andy Green of the University of Nottingham has developed a method that screens for 10 key proteins that identify seven different biological types of breast cancer.

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Delyth Morgan Breast Cancer Campaign
Dr Green said that as treatment options available for breast cancer patients increase, decision-making regarding the choice of the most appropriate treatment method is becoming increasingly complex.

"Improvements in care and outcome for patients with breast cancer will involve improved targeting of effective therapies to appropriate patients," he said.
"Equally important should be improvement in parallel strategies to avoid unnecessary or inappropriate treatment and side effects."

The technology needed to measure the proteins in tumour samples already exists in most pathology laboratories across the UK, he added.

In the study, the scientists looked for the "signature" of each class of cancer in 1,073 tumour samples from a tissue bank.

They found that 93% fitted well into one of seven classes, while the remaining 7% were harder to categorise.

Further verification revealed that the seven classes are defined by different combinations and levels of 10 proteins found in breast cancer cells.

They include two proteins routinely identified in breast cancer cells - the oestrogen receptor (ER) and HER2 - as well as others not currently tested, such as p53, cytokeratins, HER3 and HER4a.

Baroness Delyth Morgan, chief executive of the Breast Cancer Campaign, which funded the study, said: "We need to ensure the life-saving and life-extending treatments we already have in the clinic are used more effectively - directing the right treatments to those who will benefit, and sparing others from unnecessary side effects, so that by 2050 we can achieve our ambition to overcome breast cancer.

"This new test could be a realistic step towards making the holy grail of personalised medicine a reality, offering hope to the 50,000 women diagnosed with breast cancer in the UK every year."

However, Dr Emma Smith, senior science information officer at Cancer Research UK, said further research was needed into the approach.

"Research and new cutting-edge technologies are beginning to give us a glimpse of what is on the horizon in this area," she said.

"But it's not clear whether this set of biomarkers will give doctors any more useful information than the tests already in place.

"We would need results from further studies or clinical trials to say for certain whether this approach could be a good way of identifying different treatments and improving survival for women with the disease."