

# Clinical calculator could spare breast cancer patients five years of unnecessary hormone therapy

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New research confirms that an algorithm, called CTS5, can accurately identify patients who are at a significantly low risk of their breast cancer returning at a later stage. In doing so it means some patients may need to take hormone therapy for five years, rather than 10, something that researchers say could have a huge impact both psychologically and physically.

The large majority of breast [cancer](#) patients will be prescribed at least five years of hormone [therapy](#) after having standard treatment (surgery, chemotherapy and/or radiotherapy) to lower the risk of cancer returning.

After five years, oncologists along with patients have to decide whether extending this type of therapy is worthwhile and appropriate. Hormone therapy can have significant side effects for some patients, including weakness of bone, blood clots, exacerbation of menopausal symptoms and the psychological burden of continuous treatment.

CTS5 was published in 2018, in a study that confirmed its prognostic value. However it had yet to be tested in a 'real world' setting, i.e. not on selected clinical trial patients, and on both pre- and [postmenopausal women](#). The CTS5 test is the only available clinical prognostic tool for determining late distance recurrence.

In this new study researchers at The Royal Marsden NHS Foundation

Trust and Queen Mary University London used the CTS5 to analyse data from 2428 non-trial patients at The Royal Marsden. The results will be presented at this weekend's American Society of Clinical Oncology (ASCO) Annual Meeting in Chicago.

The study confirmed that CTS5 was effective at predicting relapse of breast cancer after 5 years. The CTS5 test was able to categorise a group of 2428 female breast cancer patients into three clear risk groups: high, medium and low. Importantly 41% of the postmenopausal [women](#)—700 patients—were found to be at a significantly low risk of their breast cancer returning five to 10 years after their initial five year hormone therapy treatment. This risk is so low, researchers concluded; it would not warrant extending endocrine therapy to ten years. In contrast to the previously published tests on CTS5, this new analysis took into account pre-menopausal female patients as well as post.

Lead author Dr. Juliet Richman, Clinical Research Fellow at The Royal Marsden NHS Foundation Trust said: "Our analysis demonstrates that this tool works well in a varied population of breast cancer patients. This is crucial; in order for it to be useful in a clinical setting we need to know that CTS5 will be accurate for a variety of women.

"We can establish those who are at a very low risk of their breast cancer recurring, and say they would be extremely unlikely to benefit from extending hormone therapy past five years. In doing so they can avoid the possible side effects—both physically and psychologically—of continuing treatment."

Senior author Dr. Ivana Sestak, Queen Mary University of London said: "It is incredibly important to determine which women are at high risk of late recurrence, so that they can continue hormonal treatment. In addition to predicting late recurrence in postmenopausal women, for the first time we were able to show that CTS5 also predicts late recurrence

in premenopausal women. And by testing the model on actual hospital data of women treated for their early stage breast cancer, we were able to demonstrate that the use of our calculator is feasible in the real world.

"Our online calculator is freely available for oncologists around the world to use to determine their patients' risk of late recurrence. It is very easy to use and only requires information that is readily available to clinicians. We are now investigating further whether the tool could be used by research nurses, helping to free up clinicians' time."

Further research is needed to confirm that female [patients](#) who continue on [hormone therapy](#) after having a high CTS5 score, then benefit from this extension.

**More information:** CTS5 is for use in a clinic setting or with the guidance of an oncologist, and can be accessed here:

[www.cts5-calculator.com](http://www.cts5-calculator.com)

Provided by The Royal Marsden NHS Foundation Trust

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