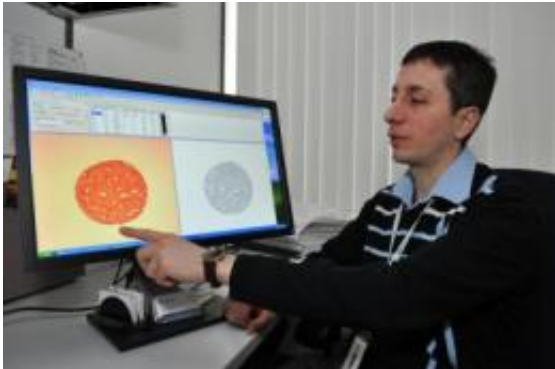


Breast cancer prognosis goes high tech

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Mauro Tambasco, Ph.D., analyzes breast tissue samples on his computer. Credit: Bruce Perrault

Cancer researchers at the University of Calgary are investigating a new tool to use for the prognosis of breast cancer in patients. This new digital tool will help give patients a more accurate assessment of how abnormal and aggressive their cancer is and help doctors recommend the best treatment options.

Currently, a useful factor for deciding the best treatment strategy for early-stage breast cancer is tumour grade, a score assigned by a pathologist based on how abnormal [cancer cells](#) from a patient tissue sample look under the microscope. However, tumour grade is somewhat subjective and can vary between pathologists. Hence, there is a need for more objective methods to assess cancer tissue, which could improve risk assessment and therapeutic decisions.

Using a mathematical computer program developed at the U of C , Mauro Tamabsco, PhD, and his team used fractal dimension analysis to quantitatively assess the degree of abnormality and aggressiveness of breast [cancer tumours](#) obtained through biopsy. Fractal analysis of images of [breast tissue](#) specimens provides a numeric description of tumour growth patterns as a continuous number between 1 and 2. This number, the fractal dimension, is an objective and reproducible measure of the complexity of the tissue architecture of the biopsy specimen. The higher the number, the more abnormal the tissue is.

According to the team's published study, this novel method of analysis is more accurate and objective than pathological grade. "This new technology is not meant to replace pathologists, but is just a new digital tool for them to use" says Tambasco, a medical physicist at the University of Calgary Faculty of Medicine and the Tom Baker Cancer Center.

Researchers say they will continue to study this new digital method and hope in the next few years that it could become another tool used in the clinical setting.

The retrospective study analysed tissue specimens from 379 [breast cancer](#) patients and the findings were published in the January 2011 edition of the *Journal of Translational Medicine*.

Provided by University of Calgary

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