

## Delee video transcript

Everybody knows that cancer is a public health problem worldwide, but what most of us ignore is that at any given point in their lives, one in every 5 men and one in every 6 women will develop cancer.

Only in the last year over 9.6 million people died because of cancer, and despite the many technological advances in the medical field, it is estimated that by 2040 the number of deaths will increase to approximately 16.3 million persons per year.

One of the main reasons this disease has such a high mortality rate is due to the lack of clinical tests, that could be recurrently performed, with sufficient sensitivity and specificity to enable an early diagnosis. Additionally, the scarcity of technological resources to provide the effective monitoring of the applied treatments, significantly reduces the patients' chances of survival. The isolation of circulating tumor cells, also known as CTCs, is a novel alternative that addresses these issues.

For most types of cancer, when a tumor arises, even if it hasn't spread yet, it releases CTCs into the bloodstream. As the cancer progresses it becomes invasive and the tumor starts shedding more and more cells into the vascular system, developing metastasis in other organs.

Being able to detect CTCs in the bloodstream can be extremely helpful for the diagnosis of cancer at early stages, and their analysis would enable the identification of their genetic characteristics. This would allow the monitoring of the diseases' evolution, significantly improving the understanding of each patient's cancer, and providing invaluable information for the personalization and optimization of their treatments.

However, this is not an easy task. The main problem relies on the rareness of CTCs in comparison to other cells in blood, 7 ml of blood contains approximately 35 billion cells, while the number of tumor cells that can be found in the same volume of blood from a cancer patient typically ranges between 1 and 50 cells, making their isolation extremely challenging.

At DELEE we are experts in creating scientific devices, our team is comprised of specialists in the fields of molecular biology, electronics, artificial intelligence, oncology, design and manufacture; and together we've found a way to overcome these challenges.

We've created the CytoCatch, a device that is capable of isolating CTCs from patient blood samples, in a highly efficient way. It is an automated platform that was carefully designed to achieve the required levels of sensitivity and specificity to capture those rare cells. The CytoCatch is intuitive, easy to use and it can process the blood sample in a matter of minutes without human intervention.

Our device also integrates an imaging system with embedded ARTIFICIAL INTELLIGENCE algorithms that automatically counts the fluorescent events categorized as CTCs, this eliminates the subjective interpretation of operators and increases the reproducibility of analysis, while reducing the time needed to manually enumerate the CTCs captured. The CytoCatch allows the individual collection of tumor cells, enabling the performance of a molecular analysis to assess these cells genetic characteristics, in order to facilitate the early detection of cancer and the personalization of the patient's therapies.

Currently, the functional prototype of the CytoCatch is being successfully tested on prostate cancer, however this is just the beginning, we are aiming to broaden our research for testing with other types of cancer and developing a commercial version of our device.

At DELEE we are certain that our technology will revolutionize the way cancer is detected and treated. We are fully committed on the completion of CytoCatch, so in the near future it could be at everyone's reach to take a simple blood test as a routine check up, and if something is not right, the optimal measures could be taken, so the patients have a better chance of defeating this terrible disease.

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Cancer survival is a matter of time, is a matter of precision, is a matter of all.

Join us and become part of the solution.