

Jeffrey Epstein Finances New Technology for Detecting Metastatic Cancer through Breast Cancer Research.

Thanks to funding from The Jeffrey Epstein VI Foundation new breast cancer research has uncovered techniques that could lead to early detection of Metastatic Cancer. Early detection is crucial due to the fact that most patients who die from cancer die from Metastatic Cancer, a cancer that has spread from the origin to another system in the body. Metastatic Cancer most commonly causes bone, liver, and lung cancer. When tumors are removed before metastasis the 5-year relative survival rate is 99%. The rate lowers to 84% when it spread to the breasts and hits a staggering 23% once metastasis enters the blood stream. In order to achieve successful long-term survival early detection is vital.

A research team led by Mount Sinai surgeon Dr. Jess Ting including molecular biologist Doris Germain, and breast oncologist Dr. Kerin Adelson have discovered that tumor's create a micro-environment in the body. Traditionally scientists have used patient's blood to analyze disease related biomarkers. Unfortunately blood's complex composition makes it difficult to glean information specific to the cancer in our bodies. The discovery of a tumor's micro -environment allows scientist to uncover the specific proteins, cytokines, and growth factors that are secreted by cells around the cancer source, these biomarkers are specific to the tumor and provide valuable prognostic information on disease progression.

Dr. Ting's team discovered the micro- environments by analyzing the fluid emitted from a post surgery wound site. The wound fluid, collected via draining tubes, contained all the proteins, growth factors and cytokines that were secreted by the cells around the cancer creating an ideal environment to study the cancer in vivo. Wound fluid from a breast cancer patient has a tremendous advantage of having an exact control specimen since both breasts are usually removed as a precaution. Wound fluid from the cancerous and the non-cancerous breast can be compared in order to discover the chances of future relapse or metastasis.

Over the past year, Dr. Ting and his team have identified key differences between cancerous wound fluid and non-cancerous in both test tubes and mice. These differences will be critical biomarkers in determining risk of future metastasis. "Identifying post- surgery patients at high risk of metastasis is vital," Jeffrey Epstein remarked. " It will be a key factor in prioritizing them for constant vigilance. The Dubin Breast Center is part of the Tisch Cancer institute, located on Mount Sinai School of Medicine campus and houses a range of highly advanced cancer services, including prevention and survivorship.

In the United States Breast Cancer awareness is now stronger than ever. Although progress has been made in breast cancer research and discovery, a cure has yet to be found. According to the American Cancer Society just this year an estimated 40,000 women will die from breast cancer. Surprisingly breast cancer is the leading cause of cancer deaths for women between the ages of 35 to 54.