# A lot of Studies Explains How Obesity Contributes to Breast Cancer

## Description

A growing body of evidence confirmed the relationship between overweight or obesity and breast cancer. The underlying mechanisms that would explain this link were largely unknown until now. The latest study finally explained how excessive weight contributes to breast cancer.

## Excessive weight and breast cancer

For decades, one study after another found that being overweight or obese increases the chances of developing breast cancer. Details about this relationship have been inconclusive, but *Stephan Herzig*, *Mauricio Berriel Diaz*, and a team of researchers at the *Technical University Munich* made an important discovery that could explain how obesity contributes to this severe disease. In order to get their answers, scientists investigated the activity of the enzyme acetyl-CoA-carboxylase 1 (ACC1) in mouse-derived breast cancer cell lines and in breast tissue obtained from patients with metastatic breast cancer.

In the journal *Cell Metabolism*, a group of researchers reports that breast cancer tissue contains an increase in blood levels of specific cytokines, which decreases the activity of the ACC1 enzyme. As a result, the accumulation of acetyl-CoA (precursor of fatty acid) occurs and heightens the metastatic ability of breast cancer cells. Basically, this action makes breast cancer strong enough to spread to other tissues and organs. Findings showed that the secretion of these cytokines is more pronounced in women who are obese.

Upon further investigation, scientists discovered that obesity intensifies the release of cytokines transforming growth factor-beta and leptin in a personâ€™s bloodstream. In turn, the released cytokines proceed to inhibit the enzyme ACC1 in cancerous cells in breast tissue.

Not only did the study identify a mechanism by which obesity increases the risk of breast cancer, but it also discovered a potential treatment for the disease. The same group of researchers carried out an experiment wherein they used an antibody to inhibit a pathway linked with the release of leptin in breast cancer cells. Results showed that the antibody prevented metastasis of breast cancer cells, and it also protected ACC1 from getting inhibited.

## Scientists discover gene mutations linked with breast cancer

A separate study that involved 300 institutions around the globe helped identify 72 previously unknown gene mutations that are associated with the development of breast cancer. Of these, 65 gene mutations are common among women with breast cancer, but they remained unknown primarily because most studies focused only on BRCA1 and BRCA2 genes.

Even though newly identified gene mutations do not have an enormous individual impact like BRCA1 and BRCA2, there are so many of them, and their overall contribution to breast cancer formation is larger. For example, some women may have two or three smaller gene mutations, but her chances of getting breast cancer are increased due to their combined effects.

## Breast cancer in numbers

- One in eight US women (12%) will develop invasive breast cancer at some point in her lifetime
- Around 85% of breast carcinoma develops in females without a family history of cancer.
- About five to 10% of breast cancers are attributed to gene mutations inherited from a patientâ€™s mother or father
- As of March 2017, there are more than 3.1 million women with a history of breast cancer in the US
- About 40,610 women will die from breast cancer in 2017
- In 2017, it was expected that 252,710 new cases of breast cancer would be diagnosed

## Conclusion

The latest studies showed that overweight or obesity increases the risk of breast cancer due to the heightened release of cytokines that inhibit the activity of an important enzyme. As a result, breast cancer cells became stronger and spread to other tissues and organs. Blocking this pathway poses as a potentially effective method of breast cancer treatment that scientists have to research more thoroughly.

**Category**

1. Articles

**Tags**

1. bioresonance
2. Breast Cancer

**Date Created**
2020/01/09
**Author**
drahmedzayed