Low-calorie diet 'could stop spread of breast cancer'

A low-calorie diet may reduce the chances of breast cancer spreading to other parts of the body, a new study has shown.

Scientists have discovered that calorie restriction, whereby food intake is decreased by a certain percentage, could prevent triple negative breast cancers - known as TNBC and one of the most aggressive forms of cancer, as well as the least responsive to standard treatment - from spreading to other organs by strengthening the tissue surrounding the tumour.
The study, which was conducted by the department of radiation oncology at Thomas Jefferson University in Philadelphia, and was published in Breast Cancer Research and Treatment, involved feeding one group of mice a third less than another group. The results showed that TNBC was less likely to spread to new sites in the body when the mice had a restricted diet.

“The diet turned on an epigenetic program that protected the mice from metastatic disease,” said Nicole Simone, associate professor at Thomas Jefferson University.

According to the study, microbes found to increase TNBC were decreased the most when mice were treated with both radiation and calorie restriction.

This decrease, in turn, increased the production of proteins involved in strengthening the tissue surrounding the tumour.

Dr Simone says it is important to look at metabolism when treating women with cancer. Recent studies have shown that weight gain makes standard treatments for breast cancer less effective, and those who gain weight during treatment have worse cancer outcomes.

However, patients with the disease are often treated with methods such as hormonal therapy to block tumour growth and steroids to counteract the side effects of chemotherapy, both of which can alter patients’ metabolism and lead to weight gain.

The study will give researchers a molecular target for diagnosing cancers that are more likely to metastasise, and could, potentially, help develop a new drug to treat the cancers.