

Metabolic Syndrome and Obesity Raise Breast Cancer Risk

The two metabolic conditions had different associations with breast cancer subtypes and mortality.

July 8, 2024 By [Sukanya Charuchandra](#)

Metabolic syndrome and obesity affect the risk of [breast cancer](#) in different ways and offer separate targets for cancer prediction and prevention strategies, according to study results published in [Cancer](#).

A growing body of evidence [links obesity to several types of cancer](#). Previous findings from the [Women's Health Initiative](#) (WHI) study showed that dietary intervention can lower breast cancer mortality, especially for women with more components of metabolic syndrome (MetS), a cluster of risk factors associated with cardiovascular disease. Metabolic syndrome includes obesity, as indicated by a large waist circumference or high [body mass index \(BMI\)](#), hypertension (high blood pressure), insulin resistance or diabetes, elevated triglycerides and low high-density lipoprotein (HDL) cholesterol.

In the current analysis, Rowan Chlebowski, MD, PhD, of the Lundquist Institute, and colleagues analyzed links between breast cancer and metabolic syndrome and obesity in postmenopausal women.

This analysis, part of the long-term follow-up of the WHI trials, included 63,330 postmenopausal women with known BMI and MetS scores at baseline. The [MetS score](#) takes into account high waist circumference, high blood pressure, history of high cholesterol and diabetes history. The women were grouped based on having a score of 0, 1 to 2 or 3 to 4. Over 23 years of follow-up, 4,562 women developed breast cancer and 659 had breast cancer as a cause of death.

The researchers found that, regardless of BMI, a high MetS score (3 to 4) was linked to more breast cancers with poor prognosis, a greater likelihood of having estrogen receptor-positive and progesterone receptor-negative cancers, 53% more deaths after breast cancer diagnosis and 44% higher breast cancer mortality.

On the other hand, obesity, regardless of MetS score, was associated with more total breast cancers, more cancers with good prognosis, a greater likelihood of estrogen receptor-positive and

progesterone receptor-positive cancers and more deaths after breast cancer diagnosis. However, only women with severe obesity (BMI of 35 or higher) had higher breast cancer mortality.

Ultimately, while metabolic syndrome and obesity both influence breast cancer risk and mortality, they do so in different ways, the study authors concluded.

“Postmenopausal women with higher MetS scores are a previously unrecognized population at higher breast cancer mortality risk,” Chlebowski said in a [press release](#). “Determination of MetS scores in the clinic requires only three questions regarding cholesterol, diabetes and hypertension history as well as waist circumference and blood pressure measurements, which are commonly determined during routine visits.”

[Another recent study](#) found that elevated and rising MetS scores were linked to increased risk for colorectal, endometrial, kidney and liver cancer, as well as breast cancer. Taken together, these findings suggest that assessment of MetS scores and management of metabolic syndrome components could help reduce the risk of cancer and its associated mortality.

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