Does weight and BMI affect breast cancer? The role of belly fat

By Linda Carroll
December 26, 2018

For decades, experts have warned middle aged women that being overweight or obese could raise the risk of breast cancer. A healthy body mass index was thought to obliterate at least that risk factor.

But a recent study shows it's not so simple and that postmenopausal women who have belly fat, despite having a "normal" BMI, may be at increased risk for developing breast cancer.

That study, which included only women with normal BMIs, found those with the highest levels of fat in the truncal area had nearly twice the risk of developing invasive breast cancer compared to those with the least amount of fat.

"Just being told your BMI is normal is a bit misleading," said study coauthor Dr. Andrew Dannenberg, a professor of medicine and associate director of cancer prevention at the Meyer Cancer Center at Weill Cornell Medicine. "Plenty of women have a normal BMI, but excess body fat. Now we know that can lead to an increased risk of breast cancer."

The new findings help explain how women with no known risk factors might develop the disease, Dannenberg said. "It's estimated that each year there are 250,000 new cases of breast cancer in the United States alone," he added. "Previously, it was uncertain why a woman who did not have a genetic predisposition would develop breast cancer. We can now say that, in some, unrecognized excess body fat is the explanation."

Dannenberg isn't exactly sure of how belly fat might lead to breast cancer, but there were some hints in the study. "We did find abnormal inflammatory and metabolic measurements in those high risk women, such as higher levels of circulating insulin," he said. "There is a link between high levels of insulin and the pathogenesis of breast cancer."

To take a closer look at the possible impact of excess fat in women with normal BMIs, Dannenberg and his colleagues pored over data collected by the Women's Health Initiative, which followed women for a median of 16 years, tracking changes in their health. The researchers focused on the records of 3,460 postmenopausal women aged 50 to 79 who had a normal BMI and whose body composition had been determined with dual-energy X-ray absorptiometry, or DEXA, scans, which measure the amount of bone, lean mass and fat in the body.

By the end of the study, 182 women had been diagnosed with invasive breast cancer. When the researchers compared the women with the most body fat to those with the least, they found a big difference when it came to the risk of developing invasive breast cancer. Women with more body fat were 1.88 times as likely to develop the cancer compared to women with the least fat, after accounting for factors such as age, educational level, race, ethnicity, age when a first child was born, hormone replacement therapy, alcohol intake and smoking.

It also mattered where women stored their fat. Those with the most trunk fat were 1.89 times as likely as those who had the least fat in this region to develop invasive breast cancer.

Dannenberg and his colleagues also found women with more fat had higher levels of substances that are markers for inflammation and insulin resistance, including higher levels of insulin, C-reactive protein, white blood cells, interleukin 6 and leptin.

Those measurements may help explain why normal BMI women with higher levels of body fat are at greater risk for breast cancer, said Dr. Charles Shapiro, a professor of medicine and director of Translational Breast Cancer Research and director of Cancer Survivorship at the Mt. Sinai Health System.

Researchers have known for decades that overweight and obesityare risk factors for getting breast cancer and for having a worse prognosis, said Shapiro, who was not involved in the new study. “This study provides a new wrinkle,” he added. “It stands to reason that it would be true that if you have more fat, despite being normal weight, you would have a higher risk of breast cancer.”

It’s also known “higher fasting levels of insulin are associated with a greater risk of getting breast cancer and a worse prognosis,” Shapiro said. “Tumors are rich in insulin growth factor receptors. It’s a well-known mechanism: you stimulate breast cancer cells with insulin and they grow.”

The new findings don’t mean we should throw out BMI as a risk factor for breast cancer, said Dr. Kala Visvanathan, a professor of oncology and epidemiology at the Johns Hopkins Kimmel Cancer Center. “But they do add important nuance showing that BMI alone is not enough,” said Visvanathan, who was not involved in the new research. “And for someone who feels reassured because they have a normal BMI, this may be saying you need to work on shifting [where you carry] your weight.”

While you may have been able to simply diet to stay thin when younger, “I think the issue here is that as women — and men — get older, fat tends to deposit more centrally,” Visvanathan said.

You don’t need a DEXA scan to know whether your excess pounds are piling up in the wrong places, experts said.

“Simplistically, if you look in the mirror, you can see if the fat is concentrated in your middle rather than your chest and legs,” said Dr. William Gradishar, a breast cancer specialist and a professor of medicine at Northwestern University. “You don’t need to be a fashion editor or scientist to see that.”

The practical advice for postmenopausal women who have some belly fat and want to lower their risk of breast cancer is to “make sure you’re doing some sort of weight bearing exercise,” said Dr. Deanna Attai, a breast surgeon and an assistant professor of surgery at the David Geffen School of Medicine at the University of California, Los Angeles. “We already know that exercise is an independent protective factor against breast cancer. We also know that it helps lower insulin levels and inflammatory mediator levels.”

Basically, Attai said," fat is bad and muscle is good. Remember, exercise is not just about weight loss, especially after menopause when the normal aging process is for muscle mass to decline. You have to work to maintain it."

https://www.today.com/health/does-weight-bmi-affect-breast-cancer-role-belly-fat-t145737

NBC NEWS

Belly fat increases risk of breast cancer despite normal BMI, study finds
By Linda Carroll
December 22, 2018

For decades, experts have warned middle- aged women that being overweight or obese could raise the risk of breast cancer. A healthy body mass index was thought to obliterate at least that risk factor.

But now, a new study shows that it's not so simple, and that postmenopausal women who have belly fat, despite having a "normal" BMI, may be at increased risk for developing breast cancer. That study, which included only women with normal BMIs, found that those with the highest levels of fat in the truncal area had nearly twice the risk of developing invasive breast cancer compared with those with the least amount of fat.

"Just being told your BMI is normal is a bit misleading," said study co-author Dr. Andrew Dannenberg, a professor of medicine and associate director of cancer prevention at the Meyer Cancer Center at Weill Cornell Medicine in New York. "Plenty of women have a normal BMI, but excess body fat. Now we know that can lead to an increased risk of breast cancer."

The new findings, published Dec. 6 in JAMA Oncology, help explain how women with no known risk factors might develop the disease, Dannenberg said. "It's estimated that each year there are 250,000 new cases of breast cancer in the United States alone," he added. "Previously it was uncertain why a woman who did not have a genetic predisposition would develop breast cancer. We can now say that, in some, unrecognized excess body fat is the explanation."

Dannenberg isn't exactly sure how belly fat might lead to breast cancer, but there were some hints in the study. "We did find abnormal inflammatory and metabolic measurements in those high- risk women, such as higher levels of circulating insulin," he said. "There is a link between high levels of insulin and the pathogenesis of breast cancer."

To take a closer look at the possible effects of excess fat in women with normal BMIs, Dannenberg and his colleagues pored over data collected by the Women's Health Initiative, which followed women for a median of 16 years, tracking changes in their health. The researchers focused on the records of 3,460 postmenopausal women aged 50 to 79 who had a normal BMI and whose body composition had been determined with dual-energy X-ray absorptiometry scans, which measure the amount of bone, lean mass and fat in the body.

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"As women — and men — get older, fat tends to deposit more centrally,” Visvanathan said. You don’t need a DEXA scan to know whether your excess pounds are piling up in the wrong places, experts said.

“If you look in the mirror, you can see if the fat is concentrated in your middle rather than your chest and legs,” said Dr. William Gradishar, a breast cancer specialist and a professor of medicine at Northwestern University. “You don’t need to be a fashion editor or scientist to see that.”

Postmenopausal women who have some belly fat and want to lower their risk of breast cancer should make sure to do some weight-bearing exercise, said Dr. Deanna Attai, a breast surgeon and an assistant professor of surgery at the David Geffen School of Medicine at the University of California, Los Angeles. “We already know that exercise is an independent protective factor against breast cancer. We also know that it helps lower insulin levels and inflammatory mediator levels.”

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https://www.nbcnews.com/health/womens-health/belly-fat-increases-risk-breast-cancer-despite-normal-bmi-study-n951246

Normal BMI But High Body Fat After Menopause Tied To Higher Breast Cancer Risk
By Marilynn Larkin
December 12, 2018

NEW YORK (Reuters Health) - Postmenopausal women with higher body fat levels may be at increased risk for breast cancer, even if their body mass index (BMI) is normal, researchers say.

"Normal BMI is an inadequate proxy for the risk of breast cancer in postmenopausal women," Dr. Andrew Dannenberg of Weill Cornell Medicine in New York City told Reuters Health in an email. "Measurements of body composition are easily done using DXA scans or bioimpedance testing and can enable healthcare providers to provide a more accurate risk assessment than relying on BMI, which can lead to misleading recommendations."

Dr. Dannenberg and colleagues analyzed data from the Women's Health Initiative on 3,460 women (mean age, 63.6 at baseline) with a normal BMI (18.5 to 24.9). Participants completed questionnaires on family and medical history, diet and lifestyle; had body fat measurements using dual-energy x-ray absorptiometry (DXA) at years 1, 3, 6 and 9; and were followed for a median of 16 years.

During follow-up, 182 incident breast cancers were identified, including 146 that were estrogen receptor (ER)-positive.

Adjusted hazard ratios for the risk of invasive breast cancer were 1.89 for the highest quartile of whole-body fat and 1.88 for the highest quartile of trunk fat mass, according to the December 6 online report JAMA Oncology.

Corresponding aHRs for ER-positive breast cancer were 2.21 and 1.98, respectively.
For those in the uppermost versus the lowest quartiles of trunk fat mass, circulating levels of insulin, C-reactive protein, interleukin 6, leptin, and triglycerides were higher, whereas levels of high-density lipoprotein cholesterol and sex hormone-binding globulin were lower.

Summing up, the authors state, "In postmenopausal women with normal BMI, relatively high body fat levels were associated with an elevated risk of invasive breast cancer and altered levels of circulating metabolic and inflammatory factors."

For these women, Dr. Dannenberg said, "a critical next step is to develop either lifestyle interventions or pharmacological strategies that lead to a reduction in body fat and hopefully a decreased risk of diseases, including breast cancer."

"In ongoing studies," he added, "we will elucidate the biological basis for the increased risk of estrogen-dependent breast cancer in (this population)."

Dr. Isabel Pimentel of Mount Sinai Hospital, University of Toronto, coauthor of a related editorial, told Reuters Health by email, "More refined measures of body composition, including assessment of muscle mass and the amount and location of adiposity, are needed to more accurately understand the association of body size with cancer."

"The finding that some individuals with normal BMI may have increased breast cancer risk is likely also relevant to risk and outcomes of other obesity-associated cancers, including endometrial cancer," she added.

Editorial coauthor Dr. Pamela Goodwin, also of Mount Sinai Hospital, University of Toronto, said in the same email, "These findings may lead to novel prevention strategies that target obesity-associated physiology or body composition in those with normal BMI."

"Potential interventions might include agents such as metformin that could target insulin resistance when it is present despite a normal BMI, or lifestyle interventions designed to increase muscle mass in those with high visceral adiposity and low skeletal muscle mass," she concluded.

SOURCE: http://bit.ly/2Pyxlju and http://bit.ly/2Pxhn9a

JAMA Oncology 2018.

http://www.mdalert.com/news/article/normal-bmi-but-high-body-fat-after-menopause-tied-to-higher-breast-cancer-risk

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Sanctity Of Truth
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Study Links Body Fat to Risk of Breast Cancer in Women
By Appolonia Adeyemi
December 10, 2018

Scientists in the United States (US) said older women with excess body fat, even if they have what's considered a normal body-mass index (BMI), could be at greater risk for breast cancer. Findings of the new study were published in the medical journal 'JAMA Oncology'. According to the authors of the study, having excess body fat, even when one has a normal BMI, is associated with an increased risk for breast cancer.

A 'normal' BMI is considered to be between 18.5 and 24.9, according to the study. One of the author's study and director of cancer prevention at the Sandra and Edward Meyer Cancer Center at Weill Cornell Medicine in New York, Dr. Andrew Dannenberg, said, "We do find that excess body fat in those who are post-menopausal with a normal BMI is associated with about a doubling in the risk of estrogen-dependent breast cancer."

A cancer is called estrogen- receptor-positive (or ER+) if it has receptors for estrogen. This suggests that the cancer cells, like normal breast cells, may receive signals from estrogen that could promote their growth. The cancer is progesterone receptor- positive (PR+) if it has progesterone receptors. Cancer is the second leading cause of death globally, and is responsible for an estimated 9.6 million deaths in 2018. Globally, about one in six deaths is due to cancer.

Approximately 70 per cent of deaths from cancer occur in low- and middle-income countries. According World Health Organisation (WHO), over 100,000 Nigerians are diagnosed with cancer annually, and about 80,000 die from the disease, averaging 240 Nigerians every day or 10 Nigerians every hour. The research team found that a five-kilogram (11-pound) increase in wholebody fat mass was associated with a 35 per cent increased risk of this kind of breast cancer.

A five-kilogram increase in fat mass of the trunk was associated with a 56 per cent increase in risk. Trunk fat is "defined by the fat contained in the torso apart from head and limbs," according to the study. The study also found that for invasive breast cancer, which has spread into the surrounding breast tissue, a five-kilogram increase in whole-body fat mass was related to a 28 per cent risk increase. The same increase in trunk fat was tied to a 46 percent increase in the risk of invasive breast cancer.

https://www.newtelegraphng.com/2018/12/study-links-body-fat-to-risk-of-breast-cancer-in-women/

Health Highlights: Dec. 7, 2018
By HealthDay Editors
December 7, 2018

Excess Body Fat May Increase Older Women's Breast Cancer Risk: Study

Excess fat may increase older women's risk of breast cancer, even if they're not overweight or obese, according to a new study.

It included 3,460 American women, ages 50-79, who had gone through menopause. An 11-pound increase in total body fat was associated with a 35 percent increased risk of ER-positive breast cancer and a 28 percent increased risk of invasive breast cancer.

An 11-pound increase in torso fat was associated with a 56 percent increased risk of ER-positive breast cancer and a 46 percent increased risk of invasive breast cancer, *CNN* reported. The study was published Dec. 6 in the journal *JAMA Oncology*.

"The main takeaway is that having excess body fat, even when you have a normal body mass index, is associated with an increased risk for breast cancer," said study author Dr. Andrew Dannenberg, director of cancer prevention at the Sandra and Edward Meyer Cancer Center at Weill Cornell Medicine, *CNN* reported.

The study highlights "the importance of research differentiating the contributions of body size, body composition, and metabolic profiles to breast cancer risk," Dr. Isabel Pimentel, Dr. Ana Elisa Lohmann and Dr. Pamela Goodwin wrote in an accompanying editorial.

They said "these observations suggest that components of metabolic health, rather than the presence of full metabolic syndrome, may contribute to breast cancer risk."

https://consumer.healthday.com/health-technology-information-18/press-medical-and-health-reporting-news-552/health-highlights-dec-7-2018-740406.html

Body fat levels linked to breast cancer risk in post-menopausal women
By Naomi Thomas
December 6, 2018

Older women with excess body fat, even if they have what's considered a normal body-mass index, could be at greater risk for breast cancer, according to a study published Thursday in the medical journal JAMA Oncology.

"We do find that excess body fat in those who are post-menopausal with a normal body mass index is associated with about a doubling in the risk of estrogen-dependent breast cancer," said Dr. Andrew Dannenberg, one of the study's authors and director of cancer prevention at the Sandra and Edward Meyer Cancer Center at Weill Cornell Medicine.

The American Cancer Society says estrogen-dependent cancers, called ER-positive breast cancer in the study, occur when the receptor proteins in or on cells attach to the hormone estrogen and rely on it to grow.

The researchers studied 3,460 American women between the ages of 50 and 79 who had gone through menopause. The women were part of the Women's Health Initiative and had their body composition measured at the beginning of that program, Dannenberg said. Of those women, 146 developed ER-positive breast cancer, and the researchers looked for a relationship between excess body fat and the development of this cancer.

They found that a 5-kilogram (11-pound) increase in whole-body fat mass was associated with a 35% increased risk of this kind of breast cancer. A 5-kilogram increase in fat mass of the trunk was associated with a 56% increase in risk.

Trunk fat is "defined by the fat contained in the torso apart from head and limbs," according to the study.

The study also found that for invasive breast cancer, which has spread into the surrounding breast tissue, a 5-kilogram increase in whole-body fat mass was related to a 28% risk increase. The same increase in trunk fat was tied to a 46% increase in the risk of invasive breast cancer.

"The main takeaway is that having excess body fat, even when you have a normal body mass index, is associated with an increased risk for breast cancer," Dannenberg said.

A person's BMI is calculated through a formula involving their height and weight; a "normal" BMI is considered to be between 18.5 and 24.9, according to the study.

The researchers also looked at blood data taken at the start of the Women's Health Initiative for other factors that are known to play a part in the development of breast cancer, such as elevation of insulin molecules.

The results "highlight the importance of research differentiating the contributions of body size, body composition, and metabolic profiles to breast cancer risk," Drs. Isabel Pimentel, Ana Elisa Lohmann and Pamela J. Goodwin wrote in an editorial published alongside the study.

The editorial authors also point out that other researchers have looked into the subject with differing results and note that "these observations suggest that components of metabolic health, rather than the presence of full metabolic syndrome, may contribute to breast cancer risk."

A particular strength of the research for Hoda Anton-Culver, distinguished professor in the Department of Medicine at the University of California, Irvine, was the analysis of the location on the body of the fat levels.

"I think it's a good step forward that takes us from looking at the BMI as an indicator of obesity to really looking at the particular site of the fat concentration in the body," said Anton-Culver, who was not involved in the research.

Scientists have known that there was an association between obesity and cancer, but Anton-Culver says the new study moves the research beyond that general association.

"They say it correctly in the summary, that obesity is associated with breast cancer, but more specifically, obesity around the abdomen is more specific for that association," she said. Although Anton-Culver thinks the research is strong, she pointed out that it looked only at a specific cancer.

"I don't know if we look at the same issues with other cancers as the outcome, what it's going to be, is it specific to breast cancer?" she said. "We need to ask that question next, because obesity is a risk factor for other cancers."

https://www.cnn.com/2018/12/06/health/breast-cancer-body-fat-study