

As seasons change, so should diet for breast cancer survivors

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Just as the four seasons bring changes in nature, they also impact how our bodies assimilate and metabolize food. Research indicates winter brings higher metabolic rates compared with summer, and so it calls for energy efficient foods.

And some foods such as red meats that may cause higher inflammation levels in summer actually assimilate better in the winter, new research suggests.

While there are excellent dietary guidelines for the [general population](#), not enough emphasis is given to subgroups of people such as cancer survivors and how they should adapt their diets. That is what a San Diego State University nutrition researcher set out to study, in breast cancer survivors.

Tianying Wu previously found that diets higher in acidic foods hurt the mortality rates of survivors, especially those who had also smoked in the past. Traditional Chinese medicine advises adapting diet according to the season, and while it is one of the research emphasis features of the National Center for Complementary and Integrative Health, studies in this area are limited. So Wu looked at data to determine whether metabolism and inflammation levels associated with certain foods differed across seasons.

By analyzing the results of blood tests done during different times of the year for inflammation biomarkers in nearly 3,000 women who are breast cancer survivors, Wu and her student researchers found fruits and vegetables offered the most benefits in spring and summer while [red meat](#) consumed in small quantities in winter was better than none.

"Meat is a thermogenesis [food](#), meaning it generates heat, which helps with [blood circulation](#) and [energy expenditure](#), and favors the retention of lean muscle mass," Wu said.

The biomarker she studied, C-reactive protein, indicates inflammation levels in blood circulation. She chose to focus on red meat since it's been much maligned in recent years. Her findings were published in the *Journal of Clinical Medicine* on Feb. 7.

Wu cautioned that these findings pertain only to women who were breast cancer survivors, and inflammation markers may behave very differently in someone who is generally healthy.

About 40% of her study subjects were past smokers and the rest had no smoking history. Deeper analysis showed that seasonal diet had less of an impact in improving inflammation in women who had a long and intense smoking history, compared to those who had not smoked for long or were non-smokers, who did gain from adjusting their diet.

Red meat is a heavily acidic food which makes it harder to process, especially for cancer survivors who have a reduced ability to excrete acids. Given this concern, she recommends consuming about 100 grams or 3.5 ounces per week of fresh, unprocessed beef, lamb, or pork. Although she observed benefits in winter among women who consumed unprocessed red meat at and even above 100 grams per week, the upper limit of red meat intake in winter will need to be determined in future studies.

"Such small amounts are easier for them to process, especially if they don't have an intense smoking history. If they have smoked a lot in the past, then it's best to focus on a diet low in acidic foods," Wu said.

An associate professor of epidemiology whose research at the SDSU School of Public Health focuses on nutrition and aging related outcomes among cancer survivors, Wu's interest in this subgroup was kindled by close relatives who are [breast cancer survivors](#). She also observed that aging becomes accelerated in [cancer survivors](#).

Wu did a cross-sectional, ancillary study drawing on data collected from a larger cohort, the Women's Healthy Eating and Living (WHEL) study undertaken by John Pierce, professor emeritus of [cancer](#) research with the department of family medicine and public health at the University of

California San Diego.

More information: Tianying Wu et al. Interrelationship of Seasons with Inflammation, Red Meat, Fruit, and Vegetable Intakes, Cardio-Metabolic Health, and Smoking Status among Breast Cancer Survivors, *Journal of Clinical Medicine* (2021). [DOI: 10.3390/jcm10040636](https://doi.org/10.3390/jcm10040636)

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