

DEFEAT Cancer

EXERCISE & NUTRITION during/after CANCER

**CURRENT PEER-REVIEWED MEDICAL LITERATURE
and EXPERT COMMENTARY from RELIABLE MEDIA SOURCES and DR. BLEYER**

March 2008
2/28/2008

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Exercise and Nutrition

After Breast Ca Diagnosis: Weight Gain Increases Mortality

Clinical Oncology - 2/2008, Vol: 02:08

Barbara Boughton

This very large scale study of breast cancer patients quantifies the increased risk of cancer recurrence with weight gain after diagnosis

PHILADELPHIA—A recent study highlights the dangers of weight gain for women living with a breast cancer diagnosis.

The study of 3,993 breast cancer survivors, presented at the **American Association for Cancer Research** Frontiers in Cancer Prevention meeting, showed that for every 5 kg (11 lb) gained in the five years following a breast cancer diagnosis, women experienced a 14% increased risk for mortality. Women who reported even more weight gain—10 kg (22 lb) of weight gain—after their breast cancer diagnosis had an 80% increased risk for mortality from their disease, according to the study. Women who were obese after diagnosis also doubled their risk for mortality compared with those who were normal weight.

“Our study shows that weight gain after diagnosis matters—that it influences outcomes,” said lead author **Hazel Nichols, MS**, of the **Johns Hopkins** Bloomberg School of Public Health, Baltimore. While other studies have looked at the influence of weight on prognosis after a breast cancer diagnosis, the new study by Nichols and colleagues is one of the first to analyze the influence of weight gain following breast cancer diagnosis and treatment.

“The message we can take home from this study is that for **all women with a breast cancer diagnosis, trying to avoid additional weight gain may have benefit in terms of mortality risk**,” said **Craig Thompson, MD**, director of the Abramson Cancer Center at the **University of Pennsylvania**, Philadelphia.

“It has grown increasingly apparent that as obesity and metabolic syndrome have become increasingly severe, we are seeing linkage with cancer incidence and prognosis,” Dr. Thompson said. “No common malignancy has escaped the link to obesity.”

For the analysis, data on body weight before and after a breast cancer diagnosis, as well as on diet and physical activity, were obtained from women aged 20 to 79 who had previously participated in a population-based, multicenter case-control study. The study was conducted in Wisconsin, Massachusetts and New Hampshire. A total of 18,273 women with incident invasive breast cancer were enrolled from a parent study into the Collaborative Women’s Longevity Study (CWLS).

Current body weight was obtained in the CWLS questionnaire mailed to approximately 14,500 breast cancer survivors from 1998 to 2001. Almost 6,000 women returned the questionnaire—a response rate of about 40%. Women were excluded from the study if they had distant metastases, recurrence of breast cancer before follow-up, unintentional weight loss of greater than 5% of body weight or if their disease or treatment interfered with their diet.

After six years, there were 121 breast cancer deaths and 421 total deaths. In addition to increasing the risk for death from breast cancer, weight gain also predicted all-cause mortality. For every 5 kg (11 lb) gained, risk for dying from other causes increased by 14%. Women who were obese after diagnosis had a 1.46 increased risk for dying from all causes compared with normal-weight women.

Ms. Nichols noted that one of the limitations of the study was that the researchers had scarce information on medical conditions related to weight gain that could influence mortality. The low response rate to their questionnaire as well as a potential selection bias for a healthier cohort may have influenced their results, the researchers also noted.

The researchers now hope to analyze the ways that diet and exercise impact mortality from breast cancer and other causes. “We’d like to study these questions because **we know that diet and exercise do have the potential to improve survival**,” Ms. Nichols said. “We have the data to address these questions, and **it would be interesting to see if physical activity influences breast cancer mortality, as did weight.**”

Dr. Bleyer:

- This is a *tour de force* study, with 14000 questionnaires sent to breast cancer survivors and 6000 returned
- When this study is published (it was presented at a meeting of a very reputable group – AACR), it will be helpful to see the charts that correlate cancer recurrence risk with weight gain after diagnosis of breast cancer
- The comment by Craig Thompson, MD, a reliable (friend, colleague and) expert, is important
- The investigators got it right, in DEFEAT terms, by concluding that they need to analyze physical activity, not just weight (and nutrition)

Body-mass index and incidence of cancer: a systematic review and meta-analysis of prospective observational studies

Renahan AG^a, Tyson M^b, Egger M^{c,d}, Heller RF^b, Zwahlen M^c

The Lancet 2008; 371:569-578

This retrospective analysis of the world literature extend the association between overweight, as measured by the body mass index (BMI), and cancer to include more than 10 different types

Background Excess bodyweight, expressed as increased body-mass index (BMI), is associated with the risk of some common adult cancers. We did a systematic review and meta-analysis to assess the strength of associations between BMI and different sites of cancer and to investigate differences in these associations between sex and ethnic groups.

Methods We did electronic searches on Medline and Embase (1966 to November 2007), and searched reports to identify prospective studies of incident cases of 20 cancer types. We did random-effects meta-analyses and meta-regressions of study-specific incremental estimates to determine the risk of cancer associated with a 5 kg/m² increase in BMI.

Findings We analysed 221 datasets (141 articles), including 282,137 incident cases. In men, a 5 kg/m² increase in BMI was strongly associated with oesophageal adenocarcinoma (RR 1.52, p<0.0001) and with thyroid (1.33, p=0.02), colon (1.24, p<0.0001), and renal (1.24, p<0.0001) cancers. In women, we recorded strong associations between a 5 kg/m² increase in BMI and endometrial (1.59, p<0.0001), gallbladder (1.59, p=0.04), oesophageal adenocarcinoma (1.51, p<0.0001), and renal (1.34, p<0.0001) cancers. We noted weaker positive associations (RR <1.20) between increased BMI and rectal cancer and malignant melanoma in men; postmenopausal breast, pancreatic, thyroid, and colon cancers in women; and leukaemia, multiple myeloma, and non-Hodgkin lymphoma in both sexes. Associations were stronger in men than in women for colon (p<0.0001) cancer. Associations were generally similar in studies from North America, Europe and Australia, and the Asia–Pacific region, but we recorded stronger associations in Asia–Pacific populations between increased BMI and premenopausal (p=0.009) and postmenopausal (p=0.06) breast cancers.

Interpretation Increased BMI is associated with increased risk of common and less common malignancies. For some cancer types, associations differ between sexes and populations of different ethnic origins. These epidemiological observations should inform the exploration of biological mechanisms that link obesity with cancer.

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Dr. Bleyer:

- ☑ With now more than 10 cancers having a link with high BMI, the association of body weight and cancer continues to get stronger, albeit the mechanism of cancer development in overweight persons remains elusive
- ☑ The report below includes a critique of limitations of the findings of this study
- ☑ For conversion of the kilogram values to pounds, see the next article

Being overweight may increase risk of developing up to dozen types of cancer [Prevention]

By Maria Cheung, Associated Press

February 15, 2008

This report reviews the above study and presents the data in pounds instead of kilograms

LONDON - Being obese or even overweight may increase a person's risk of developing up to a dozen different types of cancer, European researchers report in a new study.

Doctors have long suspected a link between weight gain and certain cancers, including colon and breast cancers. But the new study, published Friday in the journal *Lancet*, suggests it could also increase chances for cancer of the esophagus, thyroid, kidney, uterus and gall bladder, among others.

While the study suggests a link, there is no definitive proof that being fat in itself causes cancer.

"To make the link between cause and effect, we need to tick several boxes," said **Dr. Andrew Renehan**, the study's lead author and senior lecturer at the University of Manchester. "This study begins to tick the first two or three boxes, but more research is needed to confirm it."

The researchers compiled data from 141 studies and considered more types of cancers and more diverse populations than had been done previously. The research covered more than **280,000** cases from North America, Europe, Australia and Asia.

The subjects, both overweight and normal weight, were followed for about nine to 15 years, with researchers tracking their body mass index, or **BMI** — a calculation based on weight and height — and correlating it with incidents of cancer.

In men, an average weight gain of 33 pounds increased the risk of esophageal cancer by 52 percent, thyroid cancer by 33 percent, and colon and kidney cancers each by 24 percent, the research found. In women, a weight gain of 29 pounds increased the risk of cancer in the uterus and gall bladder by nearly 60 percent, esophagus by 51 percent and kidney by 34 percent, the study said.

The link was weaker for bone and blood cancers, for both men and women.

In Asian populations, there appeared to be a stronger link between increased BMI and breast cancer.

"This study provides a lot of circumstantial evidence about the dangers of obesity," said **Dr. David Robbins**, a gastroenterologist at **Beth Israel Medical Center in New York**, who was not involved in the study. "It also highlights the cancer crisis we face as obesity rates increase worldwide."

Scientists are unsure how being overweight could make people more susceptible to cancer.

"One of the hypotheses is that the presence of excess fat cells could affect the levels of hormones in your body," Renehan said. "At a cellular level, that may favor the development of tumors in humans."

Because many studies have found that fatter people are more likely to get cancer, experts often recommend losing weight to reduce cancer risk.

"The simple message is that, if you manage to keep a healthy body weight, you will have a lower risk of developing cancer," said **Ed Yong**, of Cancer Research United Kingdom.

The *Lancet* study was paid for by British Medical Association, the University of Manchester and the University of Bern, Switzerland.

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Dr. Bleyer:

- ☑ This is the largest metanalysis (method of combining the results of multiple studies into one) conducted to date on the relationship between BMI and the incidence of cancer
 - ☑ The evidence may be circumstantial, and the scientific explanation wanting, but the increasing strength of the association can not be denied
 - ☑ I don't expect hormone differences in overweight persons to be the reason, if there is a single one
 - ☑ Much more likely, there will be multiple factors, including the insulin mechanism described below in the Exercise report from the Dana Farber Cancer Institute and in the June 2007 E&N News
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Exercise

Using pedometers to increase physical activity and improve health: A systematic review

Dena Bravata, MD, MS; Crystal Smith-Spangler, MD; Vandana Sundaram, MPH; Allison Gienger, BA; Nancy Lin, ScD; Robyn Lewis, MA; Christopher Stave, MLS; Ingram Olkin, PhD; John Sirard, PhD
Stanford University

JAMA. 2007;298(19):2296-2304.

This review of pedometer studies includes 8 randomized controlled trials, every of which showed a statistically significant benefit for pedometers, within a mean of 4-5 months and including BMI reduction

Context. Without detailed evidence of their effectiveness, pedometers have recently become popular as a tool for motivating physical activity.

Objective. To evaluate the association of pedometer use with physical activity and health outcomes among outpatient adults.

Data Sources. English-language articles from MEDLINE, EMBASE, Sport Discus, PsychINFO, Cochrane Library, Thompson Scientific (formerly known as Thompson ISI), and ERIC (1966-2007); bibliographies of retrieved articles; and conference proceedings.

Study Selection. Studies were eligible for inclusion if they reported an assessment of pedometer use among adult outpatients, reported a change in steps per day, and included more than 5 participants.

Data Extraction and Synthesis. Two investigators independently abstracted data about the intervention; participants; number of steps per day; and presence or absence of obesity, diabetes, hypertension, or hyperlipidemia. Data were pooled using random-effects calculations, and meta-regression was performed.

Results. Our searches identified 2246 citations; 26 studies with a total of 2767 participants met inclusion criteria (8 randomized controlled trials [RCTs] and 18 observational studies). The participants' mean (SD) age was 49 (9) years and 85% were women. The mean intervention duration was 18 weeks. In the RCTs, pedometer users **significantly increased their physical activity by 2491 steps per day** more than control participants (95% confidence interval [CI], 1098-3885 steps per day, $P < .001$). Among the observational studies, pedometer users significantly increased their physical activity by 2183 steps per day over baseline (95% CI, 1571-2796 steps per day, $P < .0001$). Overall, pedometer users increased their physical activity by 26.9% over baseline. An **important predictor of increased physical activity was having a step goal such as 10,000 steps per day** ($P = .001$). When data from all studies were combined, pedometer users significantly **decreased their body mass index by 0.38** (95% CI, 0.05-0.72; $P = .03$). This decrease was associated with older age ($P = .001$) and having a step goal ($P = .04$). Intervention participants **significantly decreased their systolic blood pressure by 3.8 mm Hg** (95% CI, 1.7-5.9 mm Hg, $P < .001$). This decrease was associated with greater baseline systolic blood pressure ($P = .009$) and change in steps per day ($P = .08$).

Conclusions. The results suggest that the use of a pedometer is associated with significant increases in physical activity and significant decreases in body mass index and blood pressure. Whether these changes are durable over the long term is undetermined.

Dr. Bleyer:

- ☑ When interviewed, Dr. Bravata, the senior author, said "Much to my surprise, these little devices were shown to increase physical activity by about one mile of walking per day. *Nothing is simpler than getting a pedometer.*"
 - ☑ After 8 randomized controlled trials, each of which demonstrated benefit in the pedometer group, there is no need for more controlled trials; the answer is: *pedometers are effective*, period.
 - ☑ I'm impressed, but not surprised, with the statistically and clinically significant reduction in BMI
 - ☑ My son has a device from Nike that he puts in his running shoes and communicates by blue tooth (wireless) to his iPod and tells him how many steps he's run every 1000 strides and encourages to keep going, including a message from Lance Armstrong
 - ☑ The question is how to sustain the benefit; pedometers, like any other device with the possible exception of the cell phone, tend to be used less and less; the answer may be to add pedometers to cell phones and have them auto-call when insufficient walking (or running) is detected by the cell phone
-

Impact of a mixed strength and endurance exercise intervention on insulin levels in breast cancer survivors

Jennifer A. Ligibel, Nancy Campbell, Ann Partridge, Wendy Y. Chen, Taylor Salinardi, Haiyan Chen, Kristie Adloff, Aparna Keshaviah, Eric P. Winer

Journal of Clinical Oncology, Vol 26, No 6 (February 20), 2008: pp. 907-912

From the **Dana-Farber Cancer Institute**, Brigham and Women's Hospital, Harvard Medical School, Channing Laboratory, Boston, MA

With just four months of exercise, overweight breast cancer patients significantly reduced their hip circumference and blood insulin level; patients randomized to routine care did not

Purpose: Accumulating data suggest that exercise may affect breast cancer risk and outcomes. Studies have demonstrated that high levels of insulin, often seen in sedentary individuals, are associated with increased risk of breast cancer recurrence and death. We sought to analyze whether exercise lowered insulin concentrations in breast cancer survivors.

Methods: One hundred one sedentary, overweight breast cancer survivors were randomly assigned either to a 16-week cardiovascular and strength training exercise intervention or to a usual care control group. Fasting insulin and glucose levels, weight, body composition, and circumference at the waist and hip were collected at baseline and 16 weeks.

Results: Baseline and 16-week measurements were available for 82 patients. Fasting insulin concentrations decreased by an average of 2.86 $\mu\text{U/mL}$ in the exercise group ($P = .03$), with no significant change in the control group (decrease of 0.27 $\mu\text{U/mL}$, $P = .65$). The change in insulin levels in the exercise group seemed greater than the change in controls, but the comparison did not reach statistical significance ($P = .07$). There was a trend toward improvement in insulin resistance in the exercise group ($P = .09$) but no change in fasting glucose levels. The exercise group also experienced a significant decrease in hip measurements, with no change in weight or body composition.

Conclusion: Participation in an exercise intervention was associated with a significant decrease in insulin levels and hip circumference in breast cancer survivors. The relationship between physical activity and breast cancer prognosis may be mediated, in part, through changes in insulin levels and/or changes in body fat or fat deposition.

Supported by the American Society of Clinical Oncology and Lance Armstrong Foundation.

Dr. Bleyer:

- No only may the insulin level be a factor in explaining how weight gain increases cancer recurrence (cf. 1st report above in Exercise & Nutrition section), it can be reduced by exercise
- And within just 4 months of moderate exercise, along with decreased hip circumference
- Weight (and BMI) did not decrease significantly but could have if nutrition was also addressed in this study

Walking an hour a week cuts colon cancer risk [Prevention]

Jan 21, 2008

NEW YORK (Reuters Health) - A large new study confirms that physical activity reduces colon cancer risk.

Among 40- to 65-year-old females, walking just an hour a week significantly reduced the occurrence of colon cancer; walking more than an hour week reduced it further.

While just an hour of walking a week seemed to protect against the disease, the more strenuously women exercised, the lower their risk, **Dr. Kathleen Y. Wolin** of **Washington University** School of Medicine in St. Louis and colleagues found.

"Our findings suggest that participation in lower intensity activities may be sufficient to reduce risk though more vigorous activity provides comparable or perhaps additional risk reduction," they write in the *International Journal of Cancer*.

Research showing that exercise reduces colon cancer risk has been "consistent and convincing," Wolin and her team say, but questions remain about the intensity of exercise necessary to reduce risk.

To investigate, they followed at **79,295 women, aged 40 to 65 years old**, for 16 years, during which time 547 developed colon cancer. All were participating in the **Nurse's Health Study**.

Women who walked for 1 to 1.9 hours each week were 31 percent less likely to develop colon cancer than those who didn't walk at all, the researchers found. And women who exercised at moderate or vigorous intensity for more than 4 hours weekly were at 44 percent lower risk of colon cancer than those who exercised for less than an hour a week.

There was no link between exercising over the long term and colon cancer risk, but the researchers note that the number of long-term exercisers may have been too small to detect a relationship.

They conclude: "Leisure-time physical activity should be encouraged for all adults for health benefits, including colon cancer prevention."

SOURCE: International Journal of Cancer, December 15, 2007.

Dr. Bleyer:

- This study appears to demonstrate that minimal exercise (walking 1 hour weekly) protects against colon cancer
- This study only addressed colon cancer (since many prior studies have associated physical activity with a reduced risk of colon cancer); it should have at least indicated whether other cancers were (or will be) investigated
- If moderate walking is also true for cancer recurrence, adding cancer-reducing nutrition to the equation should amplify the benefit.

Nutrition

Vitamin and mineral supplement use among US adults after cancer diagnosis: A systematic review

Christine M. Velicer, Cornelia M. Ulrich

Journal of Clinical Oncology, Vol 26, No 4 (February 1), 2008: pp. 665-673

From the Fred Hutchinson Cancer Research Center and University of Washington, Seattle, WA

Despite published randomized controlled trials that indicate vitamins and mineral supplements may interfere with cancer therapy or stimulate cancer growth, biologic supplements are commonly taken by cancer patients during and after therapy, usually without knowledge of the patient's oncologist

Vitamin and mineral supplement use is thought to be common among the 10 million adults in the United States who have been diagnosed with cancer; however, well-conducted studies of this topic are sparse. Moreover, the biologic effects of supplement use among cancer survivors are not well established and not necessarily beneficial. We present a systematic summary of studies published between 1999 and 2006, 32 in total, addressing vitamin and mineral supplement use among US adult cancer patients and survivors. Supplement use is widespread among cancer patients and longer-term survivors. In studies combining different cancer sites, 64% to 81% of survivors reported using any vitamin or mineral supplements and 26% to 77% reported using any multivitamins. In contrast, approximately 50% of US adults use dietary supplements and 33% use multivitamin/multimineral supplements. Between 14% and 32% of survivors initiate supplement use after diagnosis, and use differs by cancer site. Breast cancer survivors reported the highest use, whereas prostate cancer survivors reported the least. Higher level of education and female sex emerged as factors most consistently associated with supplement use. Up to 68% of physicians are unaware of supplement use among their cancer patients. These results highlight the need for further studies of the association between dietary supplement use and cancer treatment toxicity, recurrence, survival, and quality of life to support evidence-based clinical guidelines for dietary supplement use among cancer patients and longer-term survivors.

Dr. Bleyer:

- The desire (and desperation) to help oneself (e.g. improving one's immune system) and achieve some sense of control flies in the face of scientific evidence (reviewed in the next article)
- Ironically those with a higher level of education and socio-economic status are the most likely to take the risk, as has been demonstrated in studies of alternative medicines
- Having additional resources (financial and access means) to purchase supplements and alternative 'medicines' may also explain the higher use of these agents by the most educated and privileged
- The next article from the New York Times reviews this report

Despite risks, vitamins popular with cancer patients

Tara Parker-Pope

New York Times - February 6, 2008

Editorial comment on the prior report that underscores the risk of vitamins and minerals

The findings [of the above report] ... are worrisome because little is known about how megadoses of vitamins affect cancer. Some lab studies have suggested that antioxidants can improve the effectiveness of cancer treatments. But many more studies raise questions about the use of these supplements. A 1995 report in *The Journal of Biological Chemistry* showed that cancer cells in a petri dish thrive in the presence of vitamin C.

The American Cancer Society says use of vitamins and supplements during cancer treatments should be avoided. A 2005 report in the medical journal *CA* cites several studies that show the use of vitamins by cancer patients doesn't help and may even cause harm.

For instance, **two randomized trials** of patients with advanced cancer found no benefit from vitamin C supplements and suggested that **survival may have been worse in the vitamin group**. Two large trials of smokers and former smokers found that **beta carotene supplements appeared to increase lung cancer risk**. A 2004 study in *The Lancet* found that **antioxidants** didn't prevent gastrointestinal cancers and may have **increased mortality risk**. A 2002 study of **early-stage breast-cancer** patients undergoing treatment was inconclusive, but it suggested **survival may be worse in the antioxidant users**. A study of **vitamin E** showed patients with cancers of the head and neck who took supplements **increased their risk for developing a second cancer**.

"While supplement use may be beneficial for some patients, such as those who cannot eat a balanced diet, **research suggests that certain supplements may actually interfere with treatment or even accelerate cancer growth**," said senior author **Cornelia Ulrich** of the **Fred Hutchinson Cancer Center**.

Survivors of breast cancer reported the highest use of supplements, ranging from 75 percent to 87 percent, whereas prostate cancer survivors reported the least, with 26 percent to 35 percent taking supplements. Cancer survivors who were female and highly educated were more likely to take supplements.

"Cancer survivors report that they hope to strengthen their immune system with supplement use or gain a sense of control and empowerment," Dr. Ulrich said.

But **many cancer survivors don't discuss supplement use with their doctors**, with estimates ranging from 31 percent to 68 percent for those who don't disclose what they are taking.

"Evidence clearly suggests the need for caution," Dr. Ulrich said. "We really need more research to understand whether use of these supplements can be beneficial or do more harm than good."

Dr. Bleyer:

- ☑ The American Cancer Society article referred to in this report is the landmark publication on the topic that states use of vitamins by cancer patients doesn't help and may even cause harm
- ☑ Yet, as found by the Fred Hutchinson Cancer Center investigators, the majority of cancer patients continue to take vitamins during cancer therapy (radiation or chemotherapy)
- ☑ My colleagues in radiotherapy at the Cancer Treatment Center advised against vitamin supplementation until at least after the radiation therapy has been completed and several weeks elapse (the effects of radiation on cancer cells continue for weeks, even months, after the radiation is given)
- ☑ As with most controversies, more data are needed, but in the meantime, there is no need to supplement a balanced diet with extra vitamins and there well may be a detriment

Should cancer survivors take supplements?

21 Feb 2008

By Terri Coles

Another editorial comment on the vitamin-minerals report that emphasize author's concerns re: adverse interactions with treatment and psychological reasons survivors turn to supplements

TORONTO (Reuters) - Cancer survivors are turning to nutritional supplements much more often than the general population, but those supplements may be doing more harm than good, a study showed.

While vitamin and mineral supplements may help some cancer patients -- those who cannot eat a balanced diet, for example -- others may interfere with prescribed cancer treatments or even encourage the growth of the cancer, said **Dr. Cornelia Ulrich** of the **Fred Hutchinson Cancer Research Center** in Seattle.

"They nearly always assume that it's beneficial to take supplements. What's concerning about that is that some research suggests that it may not be beneficial," Ulrich said.

In research funded by the National Cancer Institute and published this month in the *Journal of Clinical Oncology*, Ulrich and Dr. Christine Velicer reviewed 32 studies published between 1999 and 2006. They found that 64 to 81 percent of cancer survivors take vitamin and mineral supplements, compared to only 50 percent of adults in the general population. That includes multivitamins as well as other supplements like megadoses of specific vitamins and herbal treatments.

Breast cancer survivors reported the highest percentage of supplement use, from 75 to 87 percent, where prostate cancer survivors reported the lowest, from 26 to 35 percent. It was not clear if this difference was because women more frequently use nutritional supplements in general or if another factor was at play, Ulrich said. Highly educated women were most likely to use supplements, the research found.

The research also showed that **people were more likely to initiate supplement use after a cancer diagnosis**: between 14 and 32 percent of patients began taking supplements after they learned they had cancer. The **patients began supplement use for a variety of reasons**, Ulrich said. Some hoped to strengthen their immune system while others used supplements to help them deal with the stress of the diagnosis and its treatment.

One problem is that many people don't inform their doctors that they're taking supplements. Even if they do, their physicians may not record the information: up to 68 percent of physicians in the studies reviewed weren't aware of supplement use by their patients. "There's a discrepancy between what patients actually take and what physicians know or document that they take," Ulrich said. Thirty-one to 68 percent of adults with cancer didn't volunteer information on their supplement use to their doctors or their doctors didn't write the information in their medical records.

This is of concern because the use of supplements could have side effects and counterindications with other medications, Ulrich said. There is a lack of sufficient research on the effects of different supplements on cancer survivors, positive or negative, she said. For example, St. John's Wort may interfere with chemotherapy.

In reviewing the studies, the researchers came to four conclusions. It was clear that adult cancer survivors had a high incidence of supplement use; what was not clear is whether or not that supplement use was helpful. The physicians for these patients often don't know about -- or don't document -- their use of vitamin and mineral supplements. And with the supplements being so popular among this group of people, more research and resources should be devoted to determining their effects.

"Knowing that patients take supplements, it's very important that we do well-defined studies to see if they improve their quality of life, their survival, their risk of having recurrences." Considering that we know how many cancer patients and survivors do take supplements, she said, it's surprising that there is not more research specifically focused on them, especially when recent studies suggest that some supplements may actually interfere with their treatment.

"It's very interesting that **there may be some nutrients that are beneficial in some respects but then harmful in other respects or at different doses**," Ulrich said. "Some is good, more is not always better." Because the research is minimal and inconclusive, the advice to cancer patients about supplement use is often confusing, Ulrich and Velicer wrote in their review. The American Cancer Society warns patients that taking supplements during cancer treatment is controversial and might be harmful, but also says that a multivitamin is of benefit to anyone who cannot eat a healthy diet. The National Cancer Institute recommends that patients avoid supplement use during cancer treatment, unless advised otherwise by their doctor.

One supplement of particular interest is folic acid, a nutrient commonly found in food, Ulrich said. A Tufts University study published last summer showed there may be a link between folic acid fortification and rates of colon cancer in Canada and the United States. There is concern that folic acid supplements

may actually speed up the growth of tumors, and Ulrich's team is looking into grant funding to study that possibility. "That's, I think, one area where we really have to learn more."

Dr. Bleyer:

- ☑ This study documents, once again, that cancer motivates and that survivors try to help themselves
- ☑ The motivation should be directed towards endeavors that are known to be beneficial (e.g. exercise and nutrition) than expended on supplements that are not known to be beneficial and may be deleterious.
- ☑ Most things in life are two-edge swords. Chemotherapy and radiation therapy both destroy and cause cancer. Vitamins and minerals appear to be no exception. *Everything in moderation* cuts through confusion until science explains what else to do.

Diet tied to breast and ovarian cancer risks [Prevention]

Thu Feb 21, 2008

Another study, this one from Italy, tying meat and dairy product with cancer and fruits and vegetables against cancer

NEW YORK (Reuters Health) - A new study suggests that women who eat diets rich in meat and dairy may have a decreased risk of breast cancer, while those who bulk up on fiber, fruits and vegetables show a lower risk of ovarian cancer.

The findings, published in the **International Journal of Cancer**, add to questions surrounding the role of diet in women's risk of the cancers.

High alcohol intake has been consistently linked to breast cancer risk, but when it comes to other facets of the diet, studies have yielded conflicting results, according to the researchers on the current work, led by **Dr. Valeria Edefonti of the University of Milan**.

Some studies, for example, have found that women who eat a lot of red and processed meat are more likely to develop breast cancer than other women; but other studies have found no such link. Saturated fat, found mainly in animal products, has been tied to higher breast cancer risk in some studies, but not in others.

While many of these studies have looked at single nutrients or food groups, another way to address the question is to look at dietary patterns -- the combination of nutrients and foods that a person tends to favor.

For their study, Edefonti and her colleagues assessed dietary patterns among 3,600 women with either breast or ovarian cancer, and 3,413 healthy women of the same age.

Using detailed dietary questionnaires, the researchers identified four common dietary patterns in the study group: an "animal product" pattern, which was heavy in meat and saturated fat, but also zinc, calcium and certain other nutrients; a "vitamins and fiber" pattern, which besides fiber was rich in vitamin C, beta-carotene and other nutrients found in fruits and vegetables; an "unsaturated fat" pattern that contained high amounts of vegetable and fish oils, as well as vitamin E; and a "starch-rich" pattern high in simple carbohydrates, vegetable protein and sodium.

Overall, the study found, women who followed a pattern rich in vitamins and fiber had a 23 percent lower risk of ovarian cancer than women who consumed the lowest amounts of those foods and nutrients.

On the other hand, the **animal-product pattern** was linked to a similar reduction in breast cancer risk. Women who followed the unsaturated-fat pattern had a slightly reduced risk of breast cancer, while the starch-rich diet was tied to elevated risks of both cancers.

It's not yet clear what to make of the findings, in part because they show associations between dietary patterns and cancer risk -- and not that the foods directly affect cancer development.

In terms of general health, experts usually recommend limiting red meat and saturated fat, while eating more fruits, vegetables, whole grains and sources of "good" unsaturated fat -- like fish, nuts and olive oil.

SOURCE: International Journal of Cancer, February 2008.

Dr. Bleyer:

- ☑ Just how many more studies do we need to show that animal-based diets are more carcinogenic than plant-based nutrition?

Related Articles

Some breast cancer Web sites inaccurate, study finds

WASHINGTON (Reuters) - Five percent of breast cancer Web sites have mistakes, with those involving alternative or complementary medicine the most likely to be misleading, U.S. researchers reported on Monday.

5% of breast cancer pages on the internet misinform; 38% of sites espousing alternative medicine have false or misleading information

But breast cancer information available on the Internet is more accurate than others carrying health information, the team at the University of Texas M.D. Anderson Cancer Center in the University of Texas School of Health Information Sciences at Houston found.

"Our current recommendation to patients is to be skeptical, make sure what patients read is applicable to their specific medical well-being and not to take action without consulting a clinician," said Dr. Funda Meric-Bernstam, who led the study.

Writing in the journal *Cancer*, Meric-Bernstam and colleagues said they could not find an easy way to flag the inaccurate sites.

"Most consumers find online information by using general-purpose search engines rather than medical sites or portals, and most do not go beyond the first page of search results," her team wrote in the journal *Cancer*.

"Therefore, we used five popular search engines -- Google, Yahoo Directory, Alta-Vista, Overture, and AllTheWeb -- to identify Web pages that consumers are likely to encounter."

They examined 343 Web pages and found one in 20 had inaccuracies. They found 41 inaccurate statements on 18 of the Web sites, or 5.2 percent of sites.

Those displaying complementary and alternative medicine were 15 times more likely to contain false or misleading health information, they reported.

Meric-Bernstam said breast cancer patients often came to her well-informed, which is a good thing. "In contrast, there are times patients read about treatments that clearly do not apply to them, which can increase their level of anxiety or expectations for a treatment that they are not a candidate for," she said in a statement.

"The question that we really tried to answer was, if we could separate Web sites that have misinformation from sites that have more accurate content," added Dr. Elmer Bernstam from the University of Texas.

"No combination of the criteria allowed us to differentiate the Web sites with accurate information versus those that did not."

"Many consumers are satisfied with the information they find online and make treatment choices on the basis of this information," the researchers wrote.

But they were troubled to find the sites addressing complementary and alternative therapies had the most inaccuracies, as doctors have less opportunity to correct mistaken beliefs about these.

"In some cases, patients do not discuss their use of online complementary and alternative medicine treatments with their clinicians," they wrote.

(Reporting by Maggie Fox, editing by Philip Barbara)

Dr. Bleyer:

- Dr. Funda Meric-Bergstam (a breast cancer surgeon) and her husband, who I know from M.D. Anderson, were confronted by patients who had misinformation from the internet
 - I am surprised however by the relative rarity of inaccurate statements in breast cancer websites (95% were reliable) and attribute this to the cancer and its visibility; other cancer websites won't be as fortunate
 - I'm not surprised that it was the alternative and complementary care sites that had most of the misinformation; such sites should raise suspicion since they are often derived via subjective reasoning
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