

# ***DEFEAT Cancer***

## **CURRENT PEER-REVIEWED MEDICAL LITERATURE and MEDIA COMMENTS on EXERCISE & NUTRITION during/after CANCER**

October-November 2007

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### **Exercise**

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#### ***Effects of aerobic and resistance exercise in breast cancer patients receiving adjuvant chemotherapy: A multicenter randomized controlled trial***

Kerry S. Courneya, Roanne J. Segal, John R. Mackey, Karen Gelmon, Robert D. Reid, Christine M. Friedenreich, Aliya B. Ladha, Caroline Proulx, Jeffrey K.H. Vallance, Kirstin Lane, Yutaka Yasui, Donald C. McKenzie

Journal of Clinical Oncology, Vol 25, No 28 (October 1), 2007: pp. 4396-4404

From the University of Alberta; Cross Cancer Institute, Edmonton; Alberta Cancer Board, Calgary, Alberta; Ottawa Hospital Regional Cancer Center; University of Ottawa Heart Institute, Ottawa, Ontario; British Columbia Cancer Agency; and the University of British Columbia, Vancouver, British Columbia, Canada

**Purpose:** Breast cancer chemotherapy may cause unfavorable changes in physical functioning, body composition, psychosocial functioning, and quality of life (QOL). We evaluated the relative merits of aerobic and resistance exercise in blunting these effects.

**Patients and Methods:** We conducted a multicenter randomized controlled trial in Canada between 2003 and 2005 that randomly assigned 242 breast cancer patients initiating adjuvant chemotherapy to usual care (n = 82), supervised resistance exercise (n = 82), or supervised aerobic exercise (n = 78) for the

duration of their chemotherapy (median, 17 weeks; 95% CI, 9 to 24 weeks). Our primary end point was cancer-specific QOL assessed by the Functional Assessment of Cancer Therapy–Anemia scale. Secondary end points were fatigue, psychosocial functioning, physical fitness, body composition, chemotherapy completion rate, and lymphedema.

**Results:** The follow-up assessment rate for our primary end point was 92.1%, and adherence to the supervised exercise was 70.2%. Unadjusted and adjusted mixed-model analyses indicated that aerobic exercise was superior to usual care for improving self-esteem ( $P = .015$ ), aerobic fitness ( $P = .006$ ), and percent body fat (adjusted  $P = .076$ ). Resistance exercise was superior to usual care for improving self-esteem ( $P = .018$ ), muscular strength ( $P < .001$ ), lean body mass ( $P = .015$ ), and chemotherapy completion rate ( $P = .033$ ). Changes in cancer-specific QOL, fatigue, depression, and anxiety favored the exercise groups but did not reach statistical significance. Exercise did not cause lymphedema or adverse events.

**Conclusion:** Neither aerobic nor resistance exercise significantly improved cancer-specific QOL in breast cancer patients receiving chemotherapy, but they did improve self-esteem, physical fitness, body composition, and chemotherapy completion rate without causing lymphedema or significant adverse events.

**Dr. Bleyer:**

- Exercise alone had limited benefit, albeit by itself it can improve self-esteem and help get through chemotherapy.
- Exercise and nutrition *together* could have improved quality of survival.
- As previously reported, exercise does not increase lymphedema

***Exercise can ease some aspects of chemotherapy***

Mon Oct 15, 2007

NEW YORK (Reuters Health) - For women undergoing chemo for breast cancer, an exercise program doesn't do much to improve their quality of life -- but it can boost their self-esteem, physical fitness, and chemotherapy completion rates.

"Breast cancer chemotherapy may cause unfavorable changes in physical functioning, body composition, psychosocial functioning, and quality of life," Dr. Kerry S. Courneya, of the University of Alberta in Edmonton, Canada, and colleagues write in the *Journal of Clinical Oncology*.

The researchers examined the possible beneficial effects of aerobic and resistance exercise on these changes in a study involving 242 breast cancer patients beginning chemotherapy. The women were randomly assigned to usual care, supervised resistance exercise, or supervised aerobic exercise for the duration of their chemotherapy.

The average length of the exercise intervention was 17 weeks, and 70 percent of the participants stuck with it.

Compared to usual care, aerobic exercise was significantly better in improving patients' self-esteem, aerobic fitness, and percent body fat. Resistance exercise was also superior to usual care for improving self-esteem, lower and upper body strength, lean body mass, and chemotherapy completion rates.

However, neither type of exercise significantly improved any cancer-related quality-of-life measures such as fatigue, depression, or anxiety.

Nonetheless, the authors suggest that cancer doctors consider recommending an aerobic or resistance exercise program to women being treated for breast cancer.

Source: *J Clin Oncol* 2007;25:4396-4404.

**Dr. Bleyer:**

- This media report emphasizes the value of the exercise benefit that was reported in the above study
- Remarkably, 70% of the subjects completed the exercise program during an average of 4 months of chemotherapy; an active exercise program during chemotherapy can be accomplished

***Cancer-specific QOL unimproved by exercise program***

NEW YORK (Reuters Health) Oct 15

Neither aerobic nor resistance exercise significantly improves cancer-specific quality of life (QOL) in patients receiving adjuvant chemotherapy for breast cancer, according to findings published in the October issue of the *Journal of Clinical Oncology*.

However, the exercise programs did improve the patients' self-esteem, physical fitness, body composition, and chemotherapy completion rates. "Breast cancer chemotherapy may cause unfavorable changes in physical functioning, body composition, psychosocial functioning, and QOL," Dr. Kerry S. Courneya, of the University of Alberta in Edmonton, Canada, and colleagues write. In a multicenter, randomized, controlled trial, the researchers examined the possible beneficial effects of aerobic and resistance exercise on these changes. A total of 242 breast cancer patients initiating adjuvant chemotherapy were recruited between 2003 and 2005. Of these, 82 were randomly assigned to usual care, 82 to supervised resistance exercise, and 78 to supervised aerobic exercise for the duration of their chemotherapy.

The primary end point was cancer-specific QOL, which was assessed by the Functional Assessment of Cancer Therapy-Anemia scale. Follow-up data on patient-rated outcomes were obtained from 223 (92.1%) subjects. The median length of the exercise intervention was 17 weeks. Adherence to the exercise intervention was 70.2%.

Compared to usual care, aerobic exercise was significantly superior in improving patients' self-esteem, aerobic fitness, and percent body fat. Resistance exercise was also superior to usual care for improving self-esteem, lower and upper body strength, lean body mass and chemotherapy completion rate. However, aerobic exercise or resistance exercise did not significantly improve any cancer-specific QOL measures, fatigue, depression, or anxiety.

"Two participants experienced an adverse event related to exercise after baseline maximal treadmill testing," Dr. Courneya and colleagues noted.

"One participant became lightheaded, hypotensive, and moderately nauseous," they note. "A second participant experienced dizziness, weakness, and mild diarrhea."

The investigators report that both individuals recovered quickly. Based on these findings, they suggest that cancer clinicians consider recommending an aerobic or resistance exercise program to their breast cancer patients.

Source: J Clin Oncol 2007;25:4396-4404.

**Dr. Bleyer:**

- This media report evaluates the same report with a recommendation in favor of aerobic or resistance exercise.
- Self-esteem and the increased likelihood of chemotherapy completion occurs with exercise alone
- If nutrition had been combined with exercise, a greater benefit could have ensued.

***Yoga can give women with breast cancer a boost***

Mon Oct 15, 2007

NEW YORK (Reuters Health) - Special yoga classes can significantly improve the quality of life and well being of women with breast cancer patients -- particularly those who are not taking chemotherapy -- a new study shows.

A diverse group of low-income women participated in the study, Dr. Alyson B. Moadel of the Albert Einstein College of Medicine in the Bronx, New York, noted in an interview with Reuters Health. "Our patients really enjoyed the yoga classes, it was very well received by them," she said. "It really fit in with their own cultural interests."

There is mounting evidence that yoga can improve quality of life in both healthy and chronically ill people, Moadel and her team point out in the Journal of Clinical Oncology, while quality of life may be particularly affected for cancer survivors who belong to ethnic minorities and other underserved minority populations.

To investigate whether yoga could help cancer patients and survivors feel better, the researchers randomly assigned 128 women to a 12-week yoga intervention or a wait list "control" group.

Classes were offered three times a week, and participants were urged to attend at least one class a week, and also instructed to do the exercises at home with the help of an audiotape. The Hatha yoga-based exercises had been developed especially for breast cancer patients by one of the study's authors, and were done while participants were either sitting in a chair or lying down.

During the course of the study, patients in the control group showed greater declines in well being than women in the yoga group. When the researchers omitted patients undergoing chemotherapy from their

analysis, they found that the women who did yoga showed improvements in quality of life; greater emotional, social and spiritual well being; and less distress.

People often feel fatigued and sick while undergoing chemo, Moadel noted, which is likely why yoga didn't appear to be helpful for study participants on chemotherapy.

Just 69% of the women in the yoga group actually attended classes, and those who did attended an average of seven during the course of the study. Study participants had many demands to cope with, from medical and health issues to taking care of family members, Moadel noted, which may explain why many didn't make the classes.

Nevertheless, the women who did attend the classes enjoyed them, she added, and the more classes they attended, the more benefit they experienced.

Hospitals and cancer centers are increasingly offering yoga programs to cancer survivors, Moadel said, and interested people should contact local facilities or advocacy groups like the American Cancer Society to find out if there are yoga programs in their area. However, she cautioned that breast cancer survivors should talk with their doctor before starting an exercise program, and should only take classes specifically designed for them.

"I would not recommend a regular yoga class at a studio that is not geared or targeted to someone with cancer, particularly if they are undergoing treatment," Moadel said, noting that breast cancer patients frequently have arm and shoulder problems that could be aggravated by some exercises.

SOURCE: Journal of Clinical Oncology, October 1, 2007.

**Dr. Bleyer:**

- The benefit from yoga may have been greater if nutrition advice had been provided and followed.
- Even without attention to nutrition, yoga 1-3 times per week improved quality of life; emotional, social and spiritual well being; and distress levels.

***Switch It up with interval training***

(Advice from American Institute for Cancer Research, AICR)

*Extreme workouts aren't the only way to improve your physical health. Learn how interval training helps make physical activity more fun while offering a variety of health benefits.*

What are your reasons for not exercising? If "no time" and "too tired" top your list, interval training can be a great option for you. Interval training means alternating bursts of high-intensity exercise with periods of low-intensity exercise, back to back in the same workout session. It can involve switching between muscle groups, using the same muscles in different ways or simply varying your speed.

Recent studies suggest that it is possible to participate in interval training safely and gain health benefits well into our 50s and beyond. That's because interval training can be tailored to any fitness level.

According to a 2005 study by Dr. Darren Warburton of the University of British Columbia, heart patients who engaged in high-intensity interval training saw similar improvements in their aerobic fitness and completed daily activities more easily compared to heart patients who engaged in traditional aerobic exercise training. Once you get your physician's OK, interval training can be a great boredom buster by mixing up your regular routine.

**Alternate for Your Health**

There are many benefits to varying your routine. First, you may be working more and different muscle groups by switching things up. Second, by varying your speed, you may give your metabolism a jolt that assists fat-burning. Physical activity is categorized according to its intensity: light, moderate or vigorous. Slow walking, light housework and leisurely gardening are examples of light activity. Moderate physical activities might include slow cycling and swimming, yoga, golf or dancing – where you can carry on a conversation while in motion. Vigorous activities leave you little breath for discussion and could include tennis, basketball, aerobics or jogging 10-minute miles.

According to Dr. Barbara Bushman, of Missouri State University, most forms of exercise – jogging, biking, walking – can be woven into interval training. Jog in short bursts, from one street corner to the next. Or switch back and forth from a vigorous sidestroke in the pool to a nice, lazy crawl. Runners and walkers – toss in some hills. In addition to switching intensities, you can also use different skills during the same mode of exercise.

For example, a 30-minute interval training session could start with 15 minutes of walking, a faster jog for the next 5 minutes, then walk again for 10 minutes. Think about running in an area that offers more than flat ground because hills work your leg muscles differently. If swimming laps is your exercise of choice, alternate strokes from breaststroke to front crawl, making one more intense than the other.

For seniors, activities that don't put stress on the joints, like bicycling and swimming, are good options, but so is walking. Spinning classes allow people of different fitness levels to do the same basic workout during a group session.

### **Consider Your Time**

Interval training works by stimulating muscle fibers that don't get much of a workout during exercise routines that feature steady, continuous activity. This increases fat burning capacity and oxygen intake.

Dr. Martin Gibala of McMaster University points to studies showing that working out at a higher intensity in a shorter amount of time seems to improve a person's overall capacity to exercise. People who practice some form of interval training appear to get fit more quickly. The reason, Gibala says, is simple: Interval training is efficient. You achieve more, in less time.

But the most important thing to do is to start by picking an activity you truly enjoy, says Bushman. If you don't like it, you won't do it. And when it comes to physical activity, doing something – no matter how you go about doing it – is better than doing nothing.

### **Dr. Bleyer:**

Spurts of exercise seem to be better than, or at least as good as, sustained exercise.

Using an activity one enjoys for exercise is obviously good advice.

### ***Exercise Prevents Bone Loss From Prostate Cancer Therapies CME***

News Author: Allison Gandey, CME Author: Laurie Barclay, MD

American Society for Therapeutic Radiology and Oncology 49th Annual Meeting: Poster 2214. Presented October 28, 2007.

Medscape Medical News - (Los Angeles) — Walking exercise programs appear to slow and might even reverse bone loss from androgen deprivation therapy and radiation for prostate cancer, a surprise finding shows. Presented at the American Society for Therapeutic Radiology and Oncology 49th Annual Meeting, this small study has attendees talking.

"It's a fundamentally simple study," Phillip Devlin, MD, from the Brigham and Women's Hospital in Boston, Massachusetts, and the editor of ASTRO News, told reporters attending the meeting. "But it is an important and elegant study," he said. "I would like to compliment the authors on this work."

The investigators were actually exploring the effects of exercise on other quality-of-life measures, such as fatigue, the ability to sleep, nausea, and cardiac fitness, but the dual energy x-ray absorptiometry (DEXA) scans collected during those analyses showed such dramatic and compelling results that the research team went back to develop this new study.

The analysis included 70 sedentary men with stage 1, 2, or 3 prostate cancer who were randomly assigned to either a walking program or no exercise during radiation treatment. More than half of these patients were also receiving hormone therapy. The researchers collected data before and after radiation therapy, including DEXA scans and self-reported physical activity. Just 34 patients returned for posttreatment DEXA scans.

Because the authors had not initially designed the study to explore bone loss, repeat DEXA scans were not reportedly part of the study protocol. The investigators also say they were working with a number of patients from outside of the area who were traveling for treatment and could not return for follow-up.

### **Patients Receiving Hormone Therapy Lose 4% to 13% of Bone Density**

It is estimated that men undergoing androgen deprivation therapy lose between 4% and 13% of their bone mass each year — a rate that is much higher than the average healthy middle-aged man, who is said to lose no more than 1% of his bone mass per year.

The research team found that prostate cancer patients who did not exercise lost more than 2% of their bone density in just 8 to 9 weeks. "We did not at all anticipate seeing this kind of change in such a short period of time," lead author Paula Chiplis, PhD, RN, CPNP, from John Hopkins University in Baltimore, Maryland, told Medscape Oncology. "It's fairly amazing," she said. "Exercise has important and demonstrable positive effects in preserving bone mass."

The researchers found that patients who walked about 5 times a week for 30 minutes at a moderate pace maintained or gained bone density. Men are not typically considered to be at risk for osteoporosis and

bone fractures, yet their rate of bone loss has been reported to be often greater than that of the average postmenopausal woman.

"We tend to pay less attention to bone loss in men," co-author Jennifer Wenzel, PhD, RN, CCM, also from John Hopkins, said during an interview. "It was extremely concerning to see the bone loss occurring in our patients in just 8 weeks," she said. "This has important implications, considering prostate cancer is the leading cancer for men."

Dr. Wenzel admits the study sample was small but suggests that the statistically significant finding in such a small group of patients only serves to strengthen the result.

Dr. Devlin agrees: "It was a statistically significant finding and, for the size of the study, the statistics were good," he said. "This was the responsible way to do this and now we can investigate the possibility of a larger national study."

Dr. Wenzel told Medscape Oncology that clinicians working at the cancer centers included in this study were so encouraged by the results that they urged the authors to present at ASTRO.

"It is exciting to realize that clinicians can counsel patients to pursue a very accessible and fairly easy intervention to decrease the side effects of cancer therapies," Dr. Wenzel said. She says that patients tend to feel a loss of control with any cancer diagnosis and that an intervention like this can help patients feel back in control.

"Cancer patients are often encouraged to slow down, to let their body heal, and so they sit down and don't exercise," Dr. Devlin told reporters. "This finding encourages the opposite — to get up, to get out, and to exercise."

**Dr. Bleyer:**

In this study, patients undergoing androgen deprivation therapy for prostate cancer who did not exercise lost more than 2% of their bone density in 8 to 9 weeks.

Patients who walked about 5 times a week for 30 minutes at a moderate pace maintained or gained bone density.

## Nutrition

### ***Western diet may increase recurrence, mortality risk in patients with colon cancer***

Higher intakes of meat, fat and grain associated with decreased disease-free, recurrence-free and overall survival.

Hem/Onc Today - October 2007

For patients treated for stage III colon cancer, a diet high in meat, fat, refined grains and dessert foods may increase the risk for cancer recurrence or death, according to results from a recent study.

Researchers conducted a prospective observational study of patients with stage III colon cancer. They analyzed data from 1,009 patients who were part of the Cancer and Leukemia Group B (CALGB) adjuvant therapy trial between April 1999 and May 2001. Patients answered a questionnaire about dietary intake during adjuvant therapy and six months after treatment. Researchers followed patients for cancer recurrence or death.

Results were published in the Journal of the American Medical Association.

Using factor analysis, researchers identified two major dietary patterns among respondents: the prudent and the Western. The prudent pattern was characterized by high intakes of fruits and vegetables, poultry and fish. The Western pattern was characterized by high intakes of meat, fat, refined grains and dessert. At a median follow-up of 5.3 years, 324 patients had cancer recurrence, 223 died of cancer and 28 died without known cancer recurrence. The researchers observed an association between a higher intake of a Western diet after cancer diagnosis and significantly worse disease-free survival.

When the researchers compared patients with the lowest intakes of a Western diet with those with the highest intakes, they found that patients with the highest intakes had a decreased disease-free survival (HR=3.25; 95% CI, 2.04-5.19).

Overall survival

The researchers also found that the Western diet pattern was similarly associated with a detriment in recurrence-free survival (HR=2.85; 95% CI, 1.75-4.63) and overall survival (HR=2.32; 95% CI, 1.36-3.96) when they compared the patients with the highest and lowest intakes of the Western diet.

Sex, age, nodal stage, BMI, physical activity level, baseline performance status and treatment group did not significantly affect the reduction in disease-free survival among the patients.

The researchers observed no significant association between the prudent dietary pattern and cancer recurrence or mortality.

“The data suggest that a diet characterized by higher intakes of red and processed meats, sweets and desserts, french fries and refined grains increases the risk for cancer recurrence and decreases survival,” the researchers wrote. “Further analyses are underway to better delineate specific nutrients or food groupings that may have the strongest association.”

Editor’s note: These data are derived from a study of chemotherapy that was ultimately negative, so it shows that we can learn from negative trials. Often, patients with cancer ask us what they can do to prevent recurrence and we do not usually have an answer. This study will allow us to at least make a confident recommendation on diet patterns. – Alan Venook, MD

For more information: Meyerhardt JA, Niedzwiecki D, Hollis D, et al. Association of dietary patterns with cancer recurrence and survival in patients with stage III colon cancer. *JAMA*. 2007;298:754-764.

**Dr. Bleyer:**

- ☑ Previously published, in one of the most difficult journals to accept reports, this is a cogent summary, in physicians medical newsmagazine, of the value of the study
- ☑ The Cancer and Leukemia Group B (CALGB) is one of the three largest cooperative research groups in the U.S.
- ☑ In this study, they took a negative result with respect to chemotherapy they were testing to treat colon cancer and found a nutrition benefit. If they had looked at the combination of nutrition and physical activity, the benefit may have been greater

***Low-fat diet after menopause seems to reduce risk of ovarian cancer*** [prevention article]

By Lauran Neergaard

ASSOCIATED PRESS - October 9, 2007

WASHINGTON – Try fewer burgers and more veggies after menopause: Cutting dietary fat may offer a long-sought protection against deadly ovarian cancer – if you stick with the diet long enough.

Low-fat diets have long been promoted as a way to reduce the risk of different cancers, with decidedly mixed results when put to the test.

But Tuesday, researchers unveiled the first hard evidence that switching to a low-fat diet late in life can lower the odds of ovarian cancer, a malignancy with a particularly dismal survival rate.

The study tracked almost 40,000 women ages 50 to 79, some of whom were assigned to cut the total fat in their diets to 20 percent of calories – from an average of 35 percent – while others continued their usual diets.

For the first four years, the menu changes didn't make a difference. But those who kept the fat low for eight years cut their chances of ovarian cancer by 40 percent, researchers reported in the *Journal of the National Cancer Institute*.

“This is really good news,” said Dr. Jacques Rossouw of the National Institutes of Health, which funded the work. “But you have to stick with the diet.”

Until now, the only known prescription against ovarian cancer – aside from surgically removing the ovaries – was for women of childbearing age to use birth control pills. Use for five years can lower the ovarian cancer risk by up to 60 percent, protection that lingers years after pill use ends.

The new findings offer an option for postmenopausal women to try.

It's arguably the most promising finding of the mammoth Women's Health Initiative dietary study, which enrolled tens of thousands of healthy women to track the effects of teaching them to cut fat and eat more fruits and vegetables.

So far, the diet has had seemingly little impact on rates of breast cancer, colorectal cancer and even, surprisingly, heart disease. There are a number of theories: Maybe the women started healthier eating too late; most were overweight, a major risk factor, and the diet wasn't designed to shed pounds. Nor did most women actually cut enough fat.

Despite all those hurdles, a low-fat diet did appear protective against ovarian cancer – and the women who started with the worst diets and cut fat the most, got the most benefit.

Ovarian cancer is fairly rare, affecting one in 60 women compared with the one in 9 who will get breast cancer. But it is particularly lethal because it usually is detected only after it has spread throughout the abdomen, making it much harder to treat. Only 45 percent of patients survive five years.

The American Cancer Society estimates that 22,430 U.S. women will be diagnosed with ovarian cancer this year; 15,280 women will die of it.

Ovarian cancer can strike anytime in adulthood, but risk increases with age. Mutations in the so-called breast cancer genes BRCA1 and BRCA2 also increase the risk of ovarian cancer – and women in the new study have not yet been tested for those genes, to see if the low-fat diet proves more or less beneficial for them.

Why would diet affect ovaries? The theory is that fat intake increases the amount of estrogen circulating in the blood, which may in turn overstimulate sensitive ovaries.

Indeed, blood tests showed study participants on the low-fat diet experienced a 15 percent reduction in estradiol, a key form of estrogen, while non-dieters experienced no change, said study co-author Dr. Ross Prentice of Seattle's Fred Hutchinson Cancer Research Center.

“It's quite noteworthy,” Prentice said of the ovarian protection. “We're really pleased to have something positive to say to American women – that undertaking a low-fat diet likely reduces your risk of ovarian cancer and perhaps other cancers as well.”

Estrogen plays a role in breast cancer, too. Yet when researchers last year checked women in this same study, they found only a 9 percent drop in breast cancer risk, not quite large enough to be sure it wasn't due to chance. Perhaps a bigger estrogen drop is required for breast cancer. Still, the women who cut the most fat fared better – just like with the new ovarian cancer data.

Most of the dieters cut their fat intake to 24 percent of calories, not quite as much as recommended. And over time, the fat crept back: Eight years later, they were up to 29 percent – still lower than the average American diet, noted Rossouw, of NIH's National Heart, Lung and Blood Institute.

“It's feasible,” he said of the diet. “Once there is news that this does work, it may be easier to motivate people to do.”

**Dr. Bleyer:**

☑ Although this is a study of cancer prevention, which we have not included in these monthly reports, it does provide the first hard evidence that switching to a low-fat diet late in life can lower the risk of developing ovarian cancer, the “silent killer” malignancy that has a particularly dismal survival rate.

☑ There was a reduction in breast cancer too, albeit the magnitude of the drop was not statistically significant

***Low-Fat Diet May Lower Risk of Ovarian Cancer*** [\[prevention article\]](#)

By NICHOLAS BAKALAR

New York Times - October 30, 2007

*Low-Fat Dietary Pattern and Cancer Incidence in the Women's Health Initiative Dietary Modification Randomized Controlled Trial*

A low-fat diet may reduce a postmenopausal woman's risk for ovarian cancer, but only if the diet lasts for many years, a new randomized trial has found.

Researchers randomly assigned 19,541 women to a low-fat regimen reinforced with behavioral modification that included 18 group sessions in the first year and quarterly maintenance sessions after that, along with careful recording of food intake.

A group of 29,294 women consumed their regular diets, which were about 10 percent higher in fat and lower by about one serving a day in fruit and vegetables.

There were no significant differences between the two groups in age, race, body mass index, physical activity level and other variables.

For the first four years, there was no difference in cancer rates. But for the next 4.1 years, women on the low-fat diet had a 40 percent reduced risk for ovarian cancer. Although that is a substantial percentage difference, the absolute risk for ovarian cancer is not great. Over the eight years of the study, 57 women in the diet group and 103 in the comparison group got ovarian cancer.

Still, "this is not a trivial matter," said Ross L. Prentice, the lead author and director of public health sciences at the Fred Hutchinson Cancer Research Center in Seattle. "About 20,000 women a year die from ovarian cancer. We're happy to be able to say that a dietary change can reduce the risk for a serious disease."

Source : Oct. 17 issue of The Journal of the National Cancer Institute.

**Dr. Bleyer:**

- This is an analysis of the same report in the preceding news item (pages 7-8).
- Whereas low fat diets by themselves (without exercise or other nutrition components) have not been shown to have much cancer benefit, here's one
- The cancer that was affected, ovarian cancer, is one of the most difficult to cure or detect early

**Fruit compound fights head, neck cancer – study [laboratory study]**

Oct 16, 2007 4

HONG KONG, Oct 16 (Reuters) - Lupeol, a **compound in fruits like mangoes, grapes and strawberries, appears to be effective in killing and curbing the spread of cancer cells in the head and neck**, a study in Hong Kong has found.

An experiment with **mice** showed lupeol worked most effectively with chemotherapy drugs and had almost no side effects, scientists at the University of Hong Kong said in a report published in the September issue of the journal Cancer Research.

"It can suppress the movement of cancer cells and suppress their growth and it is found to be even more effective than conventional drugs (eg. cisplatin)," said Anthony Yuen, a professor at the University of Hong Kong's surgery department.

"It's even more effective if we combine it with chemotherapy drugs, and has very little side effects," he said.

The team plans another round of animal test and hopes to proceed eventually to human clinical trials, though it would not commit itself to a timeframe.

Head and neck cancers involve cancers of the nose, oral cavity, throat, voice box, thyroid and salivary glands and they more commonly afflict Asians than Westerners.

Some of the risk factors include smoking, excessive alcohol consumption, chewing betel nut and diets rich in preserved foods, like salted fish.

Such cancers are difficult to treat. Fifty percent of victims are typically diagnosed in advanced stages, when cure rates would be so low they would be considered inoperable.

Surgeries on the head and neck are always difficult because they involve the removal of large areas of diseased skin and soft tissues and surgeons need to first figure out how to cover up these open wounds before they can try to excise the tumours.

Yuen said **lupeol - also found in vegetables, olive seed, figs and saw palmeto - appeared to block a natural protein NFkB**, which helps cells repair and grow, even cancer cells.

In the experiment, lupeol was given to mice infected with malignant head and neck cancer cells.

"From the animal models, not only did it suppress the spread, the tumour got smaller. Compared to conventional drugs, lupeol reduced the size of the tumour far faster," said Terence Lee, another member of the research team.

"Conventional drugs made the mice a lot thinner, but lupeol mice retained their bulk." Emaciation is usually viewed as a bad sign in the fight against cancer.

Yuen hopes lupeol can be applied to other cancers that are similarly dependent on the NFkB protein to grow and spread.

"It may be possible to use (lupeol) in other cancers because it is able to suppress the NFkB protien, which is activated in many cancers like prostate cancer, breast cancer, liver cancer," Yuen said.

**Dr. Bleyer:**

- Although this is a laboratory study, which we have not included in these monthly reports, this report helps explain why fruits are beneficial to cancer patients.
- The cancer that was affected, head/neck cancer, is one of the most difficult to cure in humans

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**Another quaff of confusion about alcohol** [prevention article]

New York Times - October 9, 2007

Does alcohol threaten a woman's health? (Owen Franken for The New York Times) A new study linking alcoholic beverages to breast cancer has left many women in a panic. Should you give up evening cocktails? Should you stop cooking with wine?

The latest data, gathered by researchers at Kaiser Permanente in Oakland, Calif., are based on the drinking habits of more than 70,000 women who supplied dietary information during health examinations between 1978 and 1985. The truth is, the findings aren't nearly as scary as they sound.

The highest risk of breast cancer was found among women who consumed on average more than three alcoholic beverages a day. Among those who consumed less, one drink a day didn't increase breast cancer risk at all and two drinks a day raised the odds only slightly. The main finding of the new research is that a woman's overall risk was the same whether she drank white wine, red wine, beer or spirits.

The findings about breast cancer are consistent with those from other large studies of women and alcohol, including the well-known Nurses' Health Study at Harvard University. Most research shows that for both men and women the benefits of moderate alcohol consumption usually outweigh the risks. Alcohol is linked to a lower risk of heart attack, diabetes, dementia and stroke, and a slightly higher risk of colon cancer. Two drinks a day raises the risk of oral cancer and esophageal cancer, but those cancers are so rare that for most people the individual increase in risk is not worrisome.

For men, moderate drinking translates into about two servings of alcohol a day, and for women just less than one. A serving is typically defined as a 5 ounce glass of wine, 12 ounces of beer, or a shot (1.5 ounces) of distilled spirits.

Much of the research on alcohol's risks and benefits comes from studies that observe people over time, rather than controlled clinical trials, which are more reliable. So while the evidence for moderate consumption of alcohol is strong, it isn't conclusive. Public health officials have long advised that if you don't drink now, the potential health benefits aren't a reason to start. And for people on certain medications or with substance abuse problems, any amount of alcohol is a bad idea.

The question for most women now, though, is whether the apparent health benefits associated with moderate drinking outweigh the slight increase in breast cancer risk. Scientists don't know how exactly alcohol contributes to breast cancer, but they know levels of circulating estrogen tend to be higher in women who drink.

The Kaiser study found a 30 percent increase in risk with three drinks a day. A pooled analysis by Harvard researchers of six studies on alcohol and breast cancer shows that a woman's risk increases by about 9 percent for every 10 grams of alcohol a day that she drinks. In the United States, a typical drink delivers about 12 grams to 14 grams of alcohol. That means just two drinks a day might increase a woman's risk for breast cancer by 27 percent. That's about the same increase associated with long-term use of estrogen or smoking a pack a day of cigarettes.

But before you panic, remember these scary percentages translate into very small risks for the individual woman. A typical 50-year-old woman has a five-year breast cancer risk of about 3 percent. If her risk jumps by 30 percent, her individual risk is still only about 4 percent.

**Dr. Bleyer:**

- A very large study, involving more than 70,000 women, adds more balance to the benefit-risk ratio of limited alcohol consumption.
- The one-drink-a-day benefit appears to have been substantiated.
- New is that the type of alcohol didn't seem to matter.
- That all the French data appear to favor red wine was not confirmed in this study.

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**Tangerine peel could help fight cancer** [prevention article]

Sep 11, 2007

LONDON (Reuters) - Tangerine peel could help in the fight against certain cancers, researchers said on Wednesday.

Human cancer cells, which contain an enzyme called P450 CYP1B1, were destroyed by a compound contained in tangerine peel, Salvestrol Q40, scientists at Leicester School of Pharmacy found.

The findings may offer a new approach to uncovering a treatment for cancers such as breast, lung, prostate and ovarian cancer, the scientists said.

Medicinal chemist Dr. Hoon L. Tan said: "It is very exciting to find a compound in food that can target cancers specifically.

"Salvestrols may offer a new mechanism of dietary anti-cancer action.

"Indeed, the depletion of salvestrols in the modern diet is due to the fact that many people no longer eat the skin of fruits and this may be a major contributory factor to the increasing incidence of some cancers in the human population."

The breakthrough was being presented at the British Pharmaceutical Conference held in Manchester.

But he warned that the research was still in its early days and many tests will be needed before reaching the clinical trial stage, which could take between five and seven years.

The researchers have formed a private company, Nature's Defence Investments, to protect and promote their research, with the potential of designing a natural anti-cancer alternative based on the new technology.

**Dr. Bleyer:**

- Reports like this are not of much help since finding substances in our food that can be demonstrated to kill cancer cells in the laboratory is quite easy and much more often than not dead ends (pun intended)
- Whenever scientists are quick to form a private company, I worry that their financial motivation will interfere with objective assessment of the value of their discovery
- This one is of more than usual interest since it describes a molecule with a new mechanism of action that may lead to the discovery of other molecules with the same mechanism that may be effective

***At the moment, Vitamin D may fight cancer*** [\[prevention article\]](#)

By Terri Coles

TORONTO (Reuters) -- As winter gets closer, the days get shorter -- and along with a shortage of light, many North Americans may also find themselves short of vitamin D, a potential cancer fighter.

A study released this week showed a connection between the sunshine vitamin, so-called because sunlight is our main source, and cancer prevention. It's the latest indication that people deficient in the vitamin may be at higher risk for a variety of health problems, including cancer.

Vitamin D is a fat-soluble vitamin that is found in fish oil, but most of our food sources -- chiefly milk -- are fortified with the vitamin. That's important because people living at higher latitudes, as in Canada and parts of the United States, don't have access to strong sunlight from about October to early March. As a result, a lot of people are deficient in the vitamin, said Joan Lappe, a professor of nursing and medicine at Creighton University in Omaha, Nebraska.

Lappe said a low vitamin D intake of about 200-400 international units (IU) -- the recommended daily dosage in the United States and Canada is about 200 IU for adults - is enough to help prevent some symptoms of deficiency, such as bone-related problems. But much higher levels may provide benefits for the prevention of cancer and other diseases, she said.

The Canadian Cancer Society agrees. It recently broke with Canada's public health policy on nutrition, which is aligned with the United States, to recommend people with light skin take 1,000 IU of vitamin D daily, through supplements, during fall and winter. People with darker skin, people who spend little time outside, and those who follow a cultural or religious dress code that requires they cover most of their body should take that amount year-round.

"We're recommending 1,000 IUs daily because the current evidence suggests this amount will help reduce cancer risk with the least potential for harm," said Heather Logan, director of Cancer Control Policy at the Canadian Cancer Society, in a statement announcing the decision. "More research is needed to clearly define the amount of Vitamin D that will maximize health benefits."

The Canadian Cancer Society made the recommendation in June, after the publication of a large placebo-controlled study led by Lappe that found a group of women taking 1,100 IU of vitamin D daily showed a substantial drop in cancer risk.

The women in the study, published in the *American Journal of Clinical Nutrition*, were given the higher dose of vitamin D over a four-year period. The group taking the supplement had a 60 percent lower cancer incidence than the placebo group. When the women who developed cancer during the first year were removed from the results, a 77 percent reduction in cancer incidence was seen, Lappe said. Vitamin D experts in the United States also want to see more research into the vitamin's benefits, Lappe said. Last month, the Canadian Cancer Society contacted organizations like the U.S. National Institutes of Health and the National Cancer Institute of Canada to call for a large clinical trial using dosages of at least 1,000 IU to determine the amount required for cancer prevention.

"I have to commend the Canadian Cancer Society," Lappe said. "They're right out in the lead there on changing the recommendations to 1,000 IU a day. I was pretty impressed."

Determining the levels of vitamin D deficiency in the general population is also important, said Dr. Kenneth H. Cooper, chairman and chief executive officer of the Cooper Aerobics Center and Cooper Clinic in Dallas. His clinic now regularly tests for vitamin D in patients, he said, and deficiencies are common.

"Something as simple as vitamin D, and apparently as safe as vitamin D, personally, I think has tremendous potential in the future," Cooper said. "But we need more good, solid, double-blind clinical trials. Observational trials are good, but very few of them are double-blind clinical trials. And that's what we need more than anything else before we can strongly recommend regular use of vitamin D, particularly at the higher levels."

A group of leading vitamin D scientists called for an upper limit of 10,000 IU in a paper published in *American Journal of Clinical Nutrition* earlier this year, and studies have shown that dosages up to that limit appear to be safe, Lappe said. At his clinic, some patients are given very high dosages if they are especially deficient in vitamin D, Cooper said, and higher doses can quickly raise a person's blood levels of the vitamin without adverse effects.

But future recommendations on vitamin D intake may not be as simple as picking a new number and applying it to the population across the board, Lappe said, because so many factors can affect levels in the blood.

"I don't think there's going to be something that comes out that says everyone should take 1,500 IU a day," Lappe said. "I don't think it's going to be that simple. I think the answer will be measuring the blood levels of vitamin D to see where an individual stands."

Getting that dosage from food would be quite difficult - to get 1,000 IU from milk, you'd have to drink 10 glasses a day. Sunlight can provide a good dosage during the summer when much of the skin is exposed, but this isn't an option for most North Americans year-round, and concerns about UV exposure and skin damage or cancer are also a factor.

"Supplementation is the safest and most inexpensive way of getting vitamin D," Lappe said. Vitamin D supplements are inexpensive and easy to make -- they're produced using the lanolin from sheep's wool. People buying supplements should look for those containing vitamin D3, which is more effective than vitamin D2.

"Even if we don't get the big, definitive studies," Lappe said, "it would be interesting for people to just start taking (supplements) and see if in 10, 15 years from now we get a decrease in the instances of cancer as well as some of the other major chronic diseases."

### **Exercise and Nutrition**

#### ***Obesity Society Annual Meeting: Reports from New Orleans***

Nanci Hellmich, USA TODAY, October 23, 2007

Researchers at the University of Pittsburgh found that the combination of exercise and improved nutrition was more effective in weight reduction and maintenance of weight loss than exercise alone. In a study of 170 overweight and obese women, participants were given instruction on improvement of eating habits, encouraged to increase exercise by 150 to 300 minutes per week, and received phone calls at least twice a month from health professionals who offered guidance and encouragement.

Some women were able to lose 5-7% of the weight by changing their eating habits but not exercising a lot more. But those who lost 10% or more of their starting weight—an average of at least 31 pounds—and kept it off for two years, changed their eating habits and exercised an additional 50 minutes a day above what they were doing at the beginning of the program.

John Jakicic, Director of Physical Activity and Weight Management Research Center at the University of Pittsburgh, noted that there is some evidence that exercise is an appetite suppressant. “People who exercise report feeling less hungry throughout the day. If you feel hungry and go for a walk, then you may not feel hungry anymore.”

**Dr. Bleyer:**

- ☑ Although this is not a study of cancer patients, I included this report because the most impressive research results reported at the Annual Meeting of the Obesity Society is that which combines exercise and nutrition
- ☑ The evidence that exercise itself is an appetite suppressant refutes the counter opinion that exercise makes one hungry
- ☑ My personal experience, which I am loathe to rely on as generalizable, is that physical activity reduces hunger and food intake by elevating mood and spirit, which in turn reduces appetite, and reducing the time available for dining and snacking.

***Unhealthy lifestyles blamed for rising rates of breast cancer among urban Chinese women***  
 [prevention article]

The Associated Press - October 30, 2007

BEIJING: An increasing taste for Western-style junk food and unhealthy lifestyles have caused the rate of breast cancer among urban Chinese women to jump sharply over the past decade, a state-run newspaper said Tuesday.

In China's commercial center of Shanghai, 55 out of every 100,000 women have breast cancer, a 31 percent increase since 1997, the China Daily reported.

About 45 out of every 100,000 women in Beijing have the disease, a 23 percent increase over 10 years.

"Unhealthy lifestyles are mostly to blame for the growing numbers," professor Qiao Youlin of the Cancer Institute and Hospital of the Chinese Academy of Medical Sciences told the newspaper. Poor diets, environmental pollution and increased stress are among the provoking factors, he said.

The report is the latest illustration of how Chinese are increasingly being diagnosed with diseases more common in the developed world, even while the national health care system remains fragile, expensive and out of reach to many Chinese.

Rising affluence has led to more fat and junk food in Chinese diets, which traditionally consisted mainly of vegetables, tofu and grains such as rice. An estimated 60 million Chinese — equal to the population of France — already are obese and rates of high blood pressure and diabetes are climbing.

Earlier research has linked alcohol, tobacco and unhealthy diets — full of fat and salt — to various types of cancer. ...

Breast cancer is the leading form of the disease attacking women in Asia, followed by cervical cancer.

Both can greatly be reduced by screening — such as mammograms and pap smears or the new HPV vaccine that protects against a virus that can cause cervical cancer. However, cost, cultural barriers and lack of awareness have hampered early detection.

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**Dr. Bleyer:**

- ☑ Although this is not a study of cancer patients, I included this report because the theme is occurring in many Eastern countries
- ☑ I recommend reading *The China Syndrome*, written by Colin Campbell, Ph.D. and his son.

**Related Articles**

***Emotions do not affect cancer survival***

Oct 22, 2007 - WASHINGTON (Reuters)

People who are depressed about their cancer are no more likely to die than people who keep a positive outlook, U.S. researchers reported on Monday.

Cancer patients are often encouraged to stay as happy as possible and many people believe that a positive outlook helps recovery and survival.

Dr. James Coyne and colleagues from the University of Pennsylvania set out to see if this was really true. They analyzed data from two studies of the emotional states of 1,093 patients with head and neck cancer. Over the time of the two studies, 646 patients died.

The analysis showed that emotional status was not associated with survival rate. A person's emotions were not associated with survival even after taking into account other factors, such as gender, tumor site or disease stage, Coyne and colleagues report in the journal *Cancer*.

"The hope that we can fight cancer by influencing emotional states appears to have been misplaced," Coyne said in a statement.

"If cancer patients want psychotherapy or to be in a support group, they should be given the opportunity to do so. There can be lots of emotional and social benefits. But they should not seek such experiences solely on the expectation that they are extending their lives."

**Dr. Bleyer:**

- Emotion alone is not enough, as has been previously shown in a number of studies.
  - Physical activity and nutrition were not evaluated in this report.
  - The combination of the two may have improved emotion and survival.
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