New CUP Report Links Obesity to Ovarian Cancer

For the first time, a comprehensive report from the leading authority on diet, weight, physical activity and cancer risk finds that being overweight increases women’s risk of ovarian cancer, the most deadly gynecological cancer in the United States.

The report, an analysis of the global research by the American Institute for Cancer Research and World Cancer Research Fund (AICR/WCRF), means that ovarian cancer now joins the list of cancers whose risk is increased by carrying excess body fat.

That list includes cancers of the breast (postmenopausal), colorectum, endometrium, esophagus, kidney, gallbladder and pancreas. Added together, approximately 585,600 cases of these eight cancers are diagnosed in the United States every year. AICR now estimates that being at a healthy weight could prevent one in five of these cases—approximately 120,000 cancer cases every year (see page 3).

“This is an important finding because it shows a way for women to reduce their chances of getting ovarian cancer,” said Elisa V. Bandera, MD, PhD, Associate Professor of Epidemiology at Rutgers Cancer Institute of New Jersey, and one of the expert panelists who authored the new AICR/WCRF Continuous Update Project (CUP) report. “There is so much we don’t know about preventing ovarian cancer, but now we can tell women that keeping to a healthy weight can help protect against this deadly disease.”

Ovarian Cancer 2014 Report: Food, Nutrition, Physical Activity and the Prevention of Ovarian Cancer analyzed 128 population studies that investigated how diet, weight and activity link to ovarian cancer. The 25 studies that focused on weight included 4 million women, 16,000 of whom developed ovarian cancer. The report showed a dose-response relationship: a six percent increased risk of developing ovarian cancer for every five-unit increase in body mass index (BMI).

The increased risk started at the highest categories of overweight—at a BMI of 28.4, suggesting it is obese women at the highest risk. Obesity is categorized starting at a BMI of 30.

“There is so much we don’t know about preventing ovarian cancer, but now we can tell women that keeping to a healthy weight can help protect against this deadly disease.”

Stark Statistics

Every year in the United States, approximately 14,000 women die from ovarian cancer. It is the fifth leading cause of cancer death, mainly because many women are not diagnosed until the disease’s later stages.

Approximately two-thirds of women are overweight or obese, placing them at increased risk for developing any of the eight cancers now known to be related to body weight.

These latest findings offer another reminder that our weight and our lifestyle play an integral role in cancer risk for both women and men, says AICR Associate Director of Nutrition Programs Alice Bender, MS, RDN.

“This is really an empowering message. There are no guarantees, but it’s important that people understand how adding activity into this is crucial steps we all can take today to reduce risk of cancer, along with other chronic conditions.”

Rolling Evidence

The CUP monitors and analyzes research on cancer prevention and draws conclusions on how weight, diet and physical activity can reduce the risk of developing cancer.

The CUP is now the world’s largest resource of scientific literature on food, nutrition, physical activity and cancer. The process of updating the research on a rolling basis is underway in order to provide comprehensive cancer research reports.

Similar to the 2007 report, Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective, scientists at Imperial College London conduct the systematic literature reviews. A panel of independent experts then analyzes the research and determines whether the scientific evidence has changed. This latest ovarian cancer report adds to the previous CUP reports on the prevention of breast, colorectal, pancreatic and endometrial cancers.

“The CUP is unprecedented,” said AICR Director of Research Susan Higginbotham, PhD, RD. “Our systematic review is the first undertaking of its kind and will help us gain a deeper understanding of cancer prevention and progression.”

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The Latest Findings on Supplements and Cancer

For cancer risk, the question of dose has been tested for numerous compounds found in foods. After all, AICR’s expert report and its updates show that eating plant foods high in specific vitamins, minerals and other phytochemicals reduce risk of many cancers. Yet the global evidence has led AICR to recommend that people should not rely on supplements to prevent cancer but instead, get the healthful compounds from foods.

Two new publications – recommendations by the US Preventive Services Task Force (USPSTF) and a study on prostate cancer risk – again find that the evidence does not show supplements offer cancer protection and in some cases, they may increase risk.

“These new recommendations [from the US Preventive Services Task Force] provide further evidence that vitamin and mineral supplements do not protect healthy adults against cancer,” said AICR Director of Research Susan Higginbotham, PhD, RD. “Although it’s possible that as evidence continues to accumulate, certain supplements will be found to be helpful for specific populations, for now research indicates there is no benefit from most supplements and some can even be harmful.”

No Evidence of Benefit

The USPSTF recommendations first published online in February came from an analysis of the research. USPSTF is a government-appointed group of experts tasked to give recommendations on issues of public health. The task force investigated whether vitamin, mineral or multivitamin supplements prevented either cancer or cardiovascular disease.

For both diseases, USPSTF made no recommendation on almost all single dose supplements and multivitamins because there was not enough research to weigh the benefit against the harms.

The evidence, they concluded, is inadequate.

The only two vitamin supplements they found with enough research were B-carotene and vitamin E. For these, the task force recommends against taking either supplement for cancer and cardiovascular prevention. B-carotene supplements increase the risk for lung cancer in smokers, who are at increased risk for this cancer, they concluded. And the evidence showed that vitamin E supplements provide no overall protection.

As the paper notes, many expert organizations along with AICR – including the American Heart Association – recommend that healthy people get their nutrients by eating a variety of foods rather than supplements.

Increased Prostate Cancer Risk

The recent study involving prostate cancer focused on selenium and vitamin E supplements, finding that high doses of both increase the risk of the advanced form of prostate cancer. The increased risk from each supplement depended upon whether men start out with relatively low or high amounts of selenium in their bodies.

This study builds on data from the Selenium and Vitamin E Cancer Prevention Trial (SELECT), a large trial that was stopped in 2008 when it found the supplements did not offer protection and vitamin E may even increase risk of prostate cancer. SELECT started in 2001 with approximately 35,000 healthy men randomly placed into groups who either took selenium and/or vitamin E or neither supplement. The men were asked to stop taking the supplements and researchers continued to follow up on their health.

This study used data from the 1,739 men who were diagnosed with prostate cancer, compared to a randomly selected subgroup of approximately 3,000 men from the original study, matched by age and other factors.

For men who began the study with a high amount of selenium, taking selenium supplements increased the risk of high-grade prostate cancer by 91 percent. Among men with low selenium at the start, vitamin E supplementation increased their total risk of prostate cancer by 63 percent. It also increased risk of high-grade cancer by 111 percent. There was no increased risk of prostate cancer among men who did not take supplements.

The dose of supplements the men took was relatively high. For selenium, it was 200 mcg/day – about four times the recommended daily intake – vitamin E supplements were 400 IU/day.

Whole Foods Are Powerful

There are many reasons a person may need to take supplements. Folic acid supplements are recommended for women who are or may become pregnant, for example. And these studies in general included healthy adults, over age 50 typically.

Yet for many people, food appears to be the best way to take in nutrients because there’s a lot we don’t know about how high doses of otherwise healthy compounds affect our body, says Higginbotham. “But we know the compounds in every apple or other plant food act synergistically. Whole foods are powerful.”

Research Findings
Cancer Prehab: Lessening Treatment Problems Before Treatment

F rom the moment a patient is diagnosed with cancer to the time of treatment is a chunk of time that offers possibilities for exercise and other therapies that can improve patient outcomes, finds a recent review of the evidence in a new and emerging area of research: cancer prehabilitation.

The review is the first on cancer prehabilitation, a distinct period of time that occurs after diagnosis and before treatment.

“This time period is a real window of opportunity,” said Julie K. Silver, MD, an assistant professor at Harvard Medical School in the Department of Physical Medicine and Rehabilitation and the lead author of the review.

Cancer prehabilitation involves therapeutic exercise designed to prevent specific problems. These exercises need to be prescribed by specialized health care professionals involved in the patient’s care. Similar to rehabilitation, fitness professionals are not qualified to treat impairments such as rotator cuff disorders.

For the review, Silver and her colleague turned to history and non-cancer patients to analyze the evidence on how prehabilitation can help patient outcomes. Numerous studies involving orthopedic surg-
**Cancer Prehab: Lessening Treatment Problems Before Treatment**

Numerous studies involving orthopedic rehabilitation can help patient outcomes. Nutritionists can analyze the evidence on how prehabilitation can help cancer and non-cancer patients. These exercises need to be prescribed to treat impairments and return to history and non-cancer patients to their pre-diagnosis state.

Cancer prehabilitation involves therapies such as rotator cuff disorders. Research shows prehabilitation should not delay cancer treatment, so clinicians should use whatever time is available, whether that is days or weeks. Many cancer patients are getting second and third opinions, says Silver, and there is often a built-in delay. After diagnosis, patients undergo physical and psychological assessments, in order to target interventions.

“The earlier they [patients] start, the better the outcome: the better they can function and return to work; it’s a teachable moment,” says Silver. Prehabilitation exercise therapies involving cancers of the lung, colorectum and prostate have the most research to date, says Silver. But it makes sense that prehabilitation would benefit many other cancers, such as women with breast cancer who often experience upper extremity problems. More research is needed and a growing awareness of this area will hopefully stimulate more studies in this discipline.

Research also suggests that the most effective prehabilitation uses an approach that deals with both the physical and emotional health of the patient. “One thing we know from a lot of research on distress is that it is a leading cause of physical disability,” says Silver. “Patients are thinking, after diagnosis: ‘How can I make this better?’ They are going into this storm and they want something to help them. Prehabilitation can really help patients reduce their stress and give them the tools to make them strong.”

Silver is also the co-founder of Oncology Rehab Partners, which developed the STAR Program (Survivorship Training and Rehabilitation).


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**Diet and Health for Ovarian Cancer Survivors**

Compared to other cancers, there are relatively few studies on how diet and other lifestyle factors affect ovarian cancer survivors. With increasing numbers of survivors along with a growing understanding of the disease progression, the research is emerging.

Last year marked the start of the first major nationwide trial to determine how diet and physical activity can improve the quality of life and survival for women who have completed ovarian cancer treatment. The goal for the Lifestyle Intervention for Ovarian Cancer Enhanced Survival (LiVES) study is to include 1,070 stage II-IV ovarian cancer survivors, randomly assigning each woman to either a two-year intervention or usual care group.

“About 70 percent of women are diagnosed with advanced ovarian cancer, and after surgery and chemotherapy they may go on to die, it’s a great tragedy,” said David S. Alberts, MD, University of Arizona Cancer Center director and co-chair of the LiVES study. “That’s the impetus for doing this lifestyle change study.”

For the trial, women in the intervention group are instructed to consume a low-fat diet high in vegetables and fruit and to be physically active, walking 4,000 steps a day or the equivalent. Participants receive a combination of telephone and web-based coaching. The study has accrued more than a quarter of the participants in its first year and has already shown that lifestyle and usual care groups have different lifestyle habits.

Women can join the study when they have completed treatment. Women often gain 15 to 20 pounds following chemotherapy that they never lose, says Alberts. Many are sedentary before diagnosis, which continues or worsens afterward. “It’s a vicious cycle, the more sedentary they are, the more they eat.”

A key goal of the trial is to reduce weight. “It’s our point of view that unless you reduce weight, you won’t see the impact in survival,” said Alberts.

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**Obesity and Cancer**

AICR estimates that approximately 120,000 cases of cancer occurring in the United States every year are attributable to excess body fat. The figure has increased steadily over the years. In 2009, AICR reported that excess body fat was a cause of 100,000 cases of cancer and in 2013 that estimate had risen to almost 117,000. The higher estimate is due in part to adding ovarian cancer to the obesity-related cancers.

One-third of US adults are obese and another one-third are overweight, according to the most recent government statistics. And approximately one-third of children and adolescents ages 6 to 19 are overweight or obese.

Aside from not smoking or using tobacco, getting to and staying a healthy weight is the most important action people can take to reduce their cancer risk.

There are several ways in which excess body fat may increase cancer risk. Fat tissue produces proteins called cytokines that can cause chronic inflammation, which increases cancer risk. Being overweight and obese also increases blood levels of insulin and related hormones that can spur the growth of cancer cells.

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### Percentage of Cancers That Could Be Prevented by Staying Lean

<table>
<thead>
<tr>
<th>Cancer Site</th>
<th>% linked to excess body fat: MEN</th>
<th>% linked to excess body fat: WOMEN</th>
<th>Cases Prevented Annually</th>
</tr>
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<tbody>
<tr>
<td>Ovarian</td>
<td>—</td>
<td>5%</td>
<td>1,099</td>
</tr>
<tr>
<td>Breast (postmenopausal)</td>
<td>—</td>
<td>17%</td>
<td>39,554</td>
</tr>
<tr>
<td>Endometrium</td>
<td>—</td>
<td>50%</td>
<td>26,315</td>
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<tr>
<td>Kidney</td>
<td>20%</td>
<td>28%</td>
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<td>Gallbladder</td>
<td>11%</td>
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<tr>
<td>Esophagus</td>
<td>32%</td>
<td>38%</td>
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<tr>
<td>Pancreas</td>
<td>17%</td>
<td>20%</td>
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<tr>
<td>Colorectum</td>
<td>17%</td>
<td>15%</td>
<td>21,961</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>120,437</strong></td>
</tr>
</tbody>
</table>

AICR Recommendations and Mortality

A study in the February issue of Cancer Causes & Control suggests that healthy people who follow at least five of AICR’s Recommendations for Cancer Prevention have a lower risk of dying from cancer by more than half compared to those who don’t follow any. The lower risk was seen with vitamin D supplements.

For each additional recommendation met, cancer mortality was lowered by an average of 10 percent. This was after taking into account people’s age, smoking habits and other factors that affect cancer mortality.

Activity, Lifespan and Cancer Survivors

Research already shows that being active can reduce the risk of developing several cancers. A recent study suggests that men taking a brisk daily walk after a cancer diagnosis may lengthen their life. The study was published in the Journal of Physical Activity and Health.

Study researchers looked at activity and other data collected from a group of about 1,000 male cancer survivors in 1988. The data were updated five years later. Men were categorized according to how many calories burned each week.

During the 12 years of follow-up, the more active men were, the less likely they were to die. The men in the most active group had a 48 percent lower risk of dying during the course of the study compared to the least active. When only looking at deaths from cancer, more physical activity was linked to lower risk of dying during the course of the study. The same link held with heart disease.

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