What You Should Know About Breastfeeding

Stopping cancer before it starts

American Institute for Cancer Research

Special Populations Series

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The American Institute for Cancer Research (AICR) and its affiliate, the World Cancer Research Fund in the U.K., published a landmark report, *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective*. The report was written by a panel of world renowned scientists who reviewed all the available evidence on diet, physical activity and weight management in relation to cancer prevention. They concluded that if everyone ate a healthy diet, was physically active every day and maintained a healthy weight, there would be a considerable reduction in the number of cancer cases worldwide.

The second expert report contains an important message for cancer prevention and survivorship. The recommended changes can be grouped into three guidelines.

**AICR Guidelines for Cancer Prevention**

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Choose mostly plant foods, limit red meat and avoid processed meat.

Be physically active every day in any way for 30 minutes or more.

Aim to be a healthy weight throughout life.

*And always remember – do not smoke or chew tobacco.*

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**How You Can Support Cancer Research and Education through Your Will**

You can help provide for future cancer research and education through a simple bequest in your will. Consult with your attorney when first writing your will or to add a simple paragraph to your existing will. Your bequest to help in the war against cancer can be a cash amount, a gift of the remainder of your estate or a portion of the remainder after obligations to your family and loved ones are met.

Your attorney can easily help you make a bequest to the American Institute for Cancer Research (AICR). To do so, your attorney will need to know:

- **AICR’s official name:** American Institute for Cancer Research
- **AICR’s mailing address:** 1759 R Street NW, Washington, DC 20009
- **AICR’s telephone number:** 202-328-7744
- **AICR’s identification:** A not-for-profit organization under Section 501(c) (3) of the Internal Revenue Code
- **AICR’s tax-exempt IRS number:** 52-1238026

For further information, contact AICR’s Gift Planning Department at 1-800-843-8114, or send an email to gifts@aicr.org.

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Breastfeeding and Cancer Prevention

What is “exclusive breastfeeding”? An exclusively breastfed infant receives only breast milk – no water, other liquids or solids. Health professionals recommend that women breastfeed infants exclusively for 6 months, introducing complementary foods such as baby cereal, fruit and vegetables gradually afterward. This 6-month target has been a longstanding recommendation.
How Does Breastfeeding Protect Mothers and Babies Against Cancer?

• **Women who breastfeed receive added protection from breast cancer.**

   The evidence examined by AICR’s international panel of experts showed, convincingly, that breastfeeding protects women against both pre- and postmenopausal breast cancer. Hormonal changes associated with breastfeeding delay the return of a new mother’s menstrual periods when she is breastfeeding. Delayed menstruation reduces a woman’s lifetime exposure to hormones like estrogen, which is linked to breast cancer risk. According to researchers, this may be one of the main reasons that breastfeeding protects women.

   Physical changes in breast tissue cells that accompany milk production provide some protection as well. During pregnancy and breastfeeding, breast tissue reaches the final stages of physical maturity where the milk-making cells grow and proliferate. In addition, shedding of breast tissue during lactation and the aimed at maximizing the immunity benefits infants receive through the transfer of antibodies in breast milk. However, breast milk does not meet infants’ vitamin D requirements. Check with your pediatrician about your baby’s vitamin D requirements. The American Academy of Pediatrics recommends that exclusively and partially breastfed infants receive daily vitamin D supplementation.
programmed cell death that follows lactation may also decrease cancer risk because cells with potential DNA damage are eliminated.

The AICR report found limited-suggestive evidence that lactation (breastfeeding) may decrease risk of ovarian cancer for the mother as well, but more research is needed.

- **Breastfed infants are less likely to become overweight children.**

The AICR report notes that breastfed babies are likely to receive protection from cancer. Evidence shows that breastfeeding probably decreases the likelihood that a child will be overweight at least during the early years of childhood.

Protection from weight gain is a particularly important finding because childhood overweight tends to continue into adulthood. Research clearly shows that adults with excess body fat are at increased risk of at least six different types of cancer, namely cancers of the pancreas, colorectum, breast (postmenopausal), endometrium, kidney and esophagus.

Experts suggest that the protective effect of breast milk could be due to its different chemical composition compared to formula. It might also be a result of other substances, such as the appetite-regulating hormone leptin, that are transferred to the infant through the breast milk. Also, researchers note that because breastfed babies are not encouraged to “finish the bottle,” they may learn to self-regulate their calorie intake more effectively.

**Other Health Benefits for Babies**

Breast milk has been termed the “perfect food” by the World Health Organization. As a first food, breast milk helps strengthen an infant’s immune system. Antibodies, which pass from a mother’s milk to her child, provide an infant with significant health benefits, including a lower risk
of ear infection and fewer respiratory problems and digestive system upsets.

In addition, some research suggests that the longer a baby is breastfed, the lower the chances that the infant will develop allergies later in childhood or as an adult. This applies to both food and environmental allergies.

Breastfed babies also exhibit slower growth than formula-fed infants – an outcome that is beneficial to a child’s long-term health. The combination of nutrition, hormones and genes determines how and when our cells divide, and thus how our bodies grow and develop. How tall we become, when growth spurts take place and how our bodies store fat are all determined by this complex combination of influences. These influences can make cancer more or less likely, and breastfeeding may slow the growth rate so that the chances of developing cancer later in life are lower.

Breastfeeding benefits at a glance:

- Breast milk has all the nutrients, calories and fluids your baby needs to be healthy.
- It’s easier for your baby to digest.
- It doesn’t need to be prepared.
- It’s always available.
- It doesn’t cost money.
- It has growth factors that ensure the best development of your baby’s organs.
- Protective substances in breast milk make breastfed children less likely to have:
  - ear infections
  - diarrhea
  - pneumonia, wheezing and bronchiolitis
  - other bacterial and viral infections, such as meningitis
- Research suggests that breastfeeding may help to protect against obesity, type 2 diabetes, sudden infant death syndrome (SIDS) and some cancers.

Source: American Academy of Pediatrics (AAP)
Additional Diet and Lifestyle Choices to Reduce Breast Cancer Risk

Some mothers may not be able to breastfeed or may prefer not to breastfeed. (See page 8 for a list of conditions that make breastfeeding inadvisable.) In these cases, there are other lifestyle choices a woman can make to protect herself from increased breast cancer risk.

• **Physical activity.** Research suggests that physical activity of all types probably protects against postmenopausal breast cancer. Aim to get at least 30 minutes of moderate physical activity, such as brisk walking, every day. To prevent excessive weight gain, try for 60 minutes per day of moderate activity, or 30 minutes of vigorous exercise (such as jogging or playing tennis).

• **Body fat.** There is convincing evidence that body fat – especially around the waist – increases risk for postmenopausal breast cancer. Fat cells actively produce the hormone estrogen, which is linked to breast cancer risk. Extra fat cells also increase production of proteins in the blood, called cytokines, that cause inflammation. Fat cells also increase levels of insulin, another hormone.

The more body fat you have, the more hormones and cytokines are constantly pumped into your bloodstream. This increases inflammation and insulin resistance, encouraging cells to grow and divide more quickly. With more cell division, there are more chances for cancer to develop. To keep levels of these substances low and decrease your risk, it’s important to maintain a healthy...
body weight after childbirth and throughout adulthood.

- **Alcohol.** There is convincing scientific evidence that alcohol increases risk for breast cancer. If consumed at all, alcoholic drinks should be limited to 1 standard drink a day for women and 2 a day for men.

For more information on breast cancer prevention, including free brochures you can download, visit AICR at www.aicr.org.

## Additional Resources

If you’re considering breastfeeding, it is important to have a good support team on hand. If questions or problems arise, speak with your infant’s pediatrician or request a referral to a lactation specialist. For additional information, contact:

- **La Leche League International (LLLI)**
  www.lalecheleague.org

- **International Lactation Consultant Association**
  http://www.ilca.org

- **American Academy of Pediatrics (AAP)**
  www.aap.org
  (Statement on Breastfeeding:
  http://aappolicy.aappublications.org/cgi/content/full/pediatrics;115/2/496)

- **USDA**
Q: I know that breastfeeding is best, but how long should mothers breastfeed their babies?

A: AICR’s expert report found that the longer mothers breastfeed, the more cancer protection they get. Most major health organizations agree that a minimum of 6 months of exclusive breastfeeding is best. After a baby reaches 6 months of age, it’s important to add additional foods (cereal, fruits, vegetables) to meet the infant’s changing nutritional needs. The American Academy of Pediatrics (AAP), recognized as a leader in infant health issues, recommends continuing breastfeeding until a baby is at least 1 year old. The World Health Organization, which addresses the concerns of the global community, advocates breastfeeding up to age 2 and beyond as a precaution for infants raised in less developed countries with water and food-safety concerns. In general, the health benefits described in this brochure are extended the longer a baby is breastfed.

Q: Should every mother breastfeed?

A: There are a handful of instances when breastfeeding is not recommended. One example is if an infant is diagnosed with galactosemia – a rare metabolic disorder. In addition, some infectious diseases and certain medications can be transmitted through breast milk. The Centers for Disease Control and Prevention (CDC) has compiled a list of instances when breastfeeding is not advisable, including when a mother:

- Has been infected with the human immunodeficiency virus (HIV)
- Is taking antiretroviral medications
- Has untreated, active tuberculosis
• Is infected with human T-cell lymphotropic virus type I or type II
• Is using or is dependent upon an illegal drug
• Is taking prescribed cancer chemotherapy agents, such as antimetabolites that interfere with DNA replication and cell division
• Is undergoing radiation therapies; however, such nuclear medicine therapies require only a temporary interruption in breastfeeding

For more information about breastfeeding and infectious diseases or medication contraindications, please see your physician or contact the International Lactation Consultant Association, http://www.ilca.org.

Q. What should I eat when breastfeeding?

A: When breastfeeding, it is fine to eat a balanced diet including fresh fruits, vegetables, meats and fish, whole grains, and lots of fluids. For good health and weight control, follow the AICR recommendations to eat a mostly plant-based diet, limit red meat, while avoiding processed meats and sugary drinks. Nursing mothers should avoid fish that have a high mercury content, including swordfish, shark, king mackerel and tilefish. Albacore tuna should be limited to two 3-ounce servings per week (canned light tuna has less mercury). Salmon, which may contain toxins called PCBs, should be limited to two 3-ounce servings weekly.

Most nursing mothers can eat healthy foods they enjoy, including spicy foods. It is not necessary to avoid foods that may produce gas such as broccoli, onions and garlic. Breast milk quality remains high as long as a woman has enough calories and is in good health herself. Small to moderate amounts of caffeine and an occasional celebratory glass of wine are also fine. The AAP recommends that mothers wait 2 hours after drinking alcohol before nursing an infant.
Breastfeeding and Cancer Prevention

Need More Help?
American Institute for Cancer Research
1759 R Street, NW, P.O. Box 97167
Washington, DC 20090-7167
1-800-843-8114 or 202-328-7744
www.aicr.org

Request additional brochures (up to 6 individual copies free):
• Guidelines for Cancer Prevention
• Recommendations for Cancer Prevention
• Eating Well for Cancer Prevention
• Staying Lean for Cancer Prevention
• Moving More for Cancer Prevention
• The New American Plate brochure series (with recipes)

Call the Toll-Free Nutrition Hotline
Dial 1-800-843-8114 to leave a message for a registered dietitian (who will return your call), Monday-Friday, 9 a.m.-5 p.m. Eastern Time. Or visit the AICR Hotline online at www.aicr.org.

AICR Research Grants (partial listing)
Effects of Linolenic Soy Oil and Low Linolenic High Oleic Soy Oil on the Progression of Breast Cancer
Young H. Ju, Ph.D.
Virginia Polytechnic Institute and State University

Prevention of Metastatic Breast Cancer Using a Novel Vitamin E Analog
Emmanuel T. Akporiaye, Ph.D.
University of Arizona

Use of Green Tea Polyphenol, Epigallocatechin-3-Gallate, as a Novel Treatment for Trastuzumab Resistant Breast Cancer
Sean Eddy, Ph.D.
Boston University School of Medicine

Selenium and Osteoblast Involvement in Breast Cancer Metastases in Bone
Andrea M. Mastro, Ph.D.
The Pennsylvania State University

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OUR VISION
American Institute for Cancer Research (AICR) helps people make choices that reduce their chances of developing cancer

OUR HERITAGE
We were the first cancer charity:
• To create awareness of the relationship between diet and cancer risk
• To focus funding on research into diet and cancer prevention
• To consolidate and interpret global research to create a practical message on cancer prevention

OUR MISSION
Today the American Institute for Cancer Research continues:
• Funding research on the relationship of nutrition, physical activity and weight management to cancer risk
• Interpreting the accumulated scientific literature in the field
• Educating people about choices they can make to reduce the chances of developing cancer

AICR is part of the World Cancer Research Fund global network, which consists of the following charitable organizations: American Institute for Cancer Research (AICR); World Cancer Research Fund (WCRF UK); World Cancer Research Fund Netherlands (WCRF NL); World Cancer Research Fund Hong Kong (WCRF HK); World Cancer Research Fund France (WCRF FR); and the umbrella association, World Cancer Research Fund International (WCRF International).

AICR Recommendations for Cancer Prevention

1. Be as lean as possible without becoming underweight.

2. Be physically active for at least 30 minutes every day.

3. Avoid sugary drinks. Limit consumption of energy-dense foods (particularly processed foods high in added sugar, or low in fiber, or high in fat).

4. Eat more of a variety of vegetables, fruits, whole grains and legumes such as beans.

5. Limit consumption of red meats (such as beef, pork and lamb) and avoid processed meats.

6. If consumed at all, limit alcoholic drinks to 2 for men and 1 for women a day.

7. Limit consumption of salty foods and foods processed with salt (sodium).

8. Don’t use supplements to protect against cancer.

Special Population Recommendations

9. It is best for mothers to breastfeed exclusively for up to 6 months and then add other liquids and foods.

10. After treatment, cancer survivors should follow the recommendations for cancer prevention.

   And always remember – do not smoke or chew tobacco.
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