Fact Sheet for Health Professionals:

Lifestyle and Breast Cancer Risk

Body Size, Pubertal Timing, and Risk of Breast Cancer Later in Life

- The role of body size in breast cancer risk is complex and not fully understood. In addition, the role of body size and its relation to breast cancer risk changes throughout a woman's life.
- Girls with a higher body mass index (BMI) are more likely to have an early first period (or menarche). There is also a relationship between BMI and other indications of the beginning of puberty.[1]
    - Girls who begin puberty early may be at a greater risk for developing breast cancer later in life.[2]
    - A young girl who is suspected of entering puberty unusually early should be evaluated by her family physician or pediatrician, who may refer her to a pediatric endocrinologist or other specialist for further evaluation.[3 - 4]
- Today, about one in three children in the United States is considered overweight or obese.[5]
    - Obesity rates have nearly tripled among youths over the past three decades.[5]
    - Studies have examined several factors that predispose a person to increased BMI, including increases in total calories and in consumption of fast foods, decreases in physical activity, and, a factor not totally independent of the first two, an increase in hours spent watching television.[6]
    - The Centers for Disease Control and Prevention and the American Academy of Pediatrics recommend using body mass index (BMI) to screen for overweight and obesity beginning at two years of age and plot weight-for-height values at least once a year.[5]
- Advice to all children about healthy physical activity levels, food choices, and weight management during well-child visits are all important to obesity prevention.[5]

Diet and Breast Cancer Risk

- Research in animal models has found a link between eating too many foods high in animal fat and changes in mammary gland development that may increase the risk of mammary gland tumors.
    - Studies conducted in laboratory animals suggest that high fat diets may cause the animals to mature earlier than animals fed a standard diet.[7 - 8]
    - Some studies in humans have indicated that breast cancer risk is lower among women whose dietary intake was higher in soy than dairy products and animal fats during puberty and adolescence.[9 - 10]

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Lifestyle and Breast Cancer Risk (page 2)

Living a Healthy Lifestyle

- Both healthy eating and being active can help people maintain a healthy weight and body fat level, and may help to reduce the risk of developing breast cancer later in life.[11]
- Healthy eating guidelines[12] call for the inclusion of:
  - Fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products;
  - Lean meats, poultry, fish, beans (including soy), eggs, and nuts;
  - Foods that are low in animal fats, cholesterol, salt (sodium), and added sugars.
- A healthy diet can be relatively inexpensive. Healthy foods come in a variety of forms and a range of prices that likely fit just about anyone's budget.[13]
- Regular physical activity can help people of all ages, shapes, sizes, and abilities stay healthy.[14]
  - It is recommended that children from 6 to 17 engage in physical activity for periods of time that add up to about an hour each day.[14]
  - People who have disabilities or special conditions (pregnancy, chronic medical conditions) should discuss with their healthcare provider what types and amounts of physical activities are appropriate for them.
- Parents are encouraged to lead a healthy lifestyle as an example for their children, by choosing healthy foods and being physically active themselves.[5]

To learn more about environmental exposures and breast cancer risk, download a monograph for health professionals and/or patient education materials at www.info.bcerp.org.

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[1] Biro, F., Wolff, M., & Kushi, L. (2009). Impact of Yesterday's Genes and Today's Diet and Chemicals on Tomorrow's Women. *Journal of Pediatric and Adolescent Gynecology*, *22* (1), 3-6.
[2] Claudio, L. (2007). Centered on Breast Cancer. *Environmental Health Perspectives*, *115* (3), A132-133.
[3] Blondell, R.D., Foster, M.B., & Dave, K.C.(1999).Disorders of Puberty. *American Family Physician*, 60(1), 209-218.
[4] Wilson, G., Mooradian, A., Alexandraki, I., & Samrai, G.(2011).Endrocrinology.In David Rakel & R.E.Rakel (Eds.), Textbook of Family Medicine (8th ed., pp.756-800).Philadelphia, PA: Elsevier
[5] Barlow, S. E., & The Expert Committee. (2007). Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report. *Pediatrics*, *120* (Supplement 4), S164-S192.

[6] Biro, F., Khoury, P., & Morrison, J. (2006). Influence of obesity on timing of puberty. International Journal of Andrology, 29 (1), 272-277.
[7] Medvedovic, M., Gear, R., Freudenberg, J., Schneider, J., Bornschein, R., Yan, M., et al. (2009). Influence of fatty acid diets on gene expression in rat mammary epithelial cells. *Physiological Genomics, 38*, 80-88.
[8] Olson L.K., Tan Y., Zhao Y., Aupperlee M.D., & Haslam S.Z. (2010) Pubertal exposure to high fat diet causes mouse strain-dependent alterations in mammary gland development and estrogen responsiveness. *International Journal of Obesity*, *34(9),* 1415–1426. doi: 10.1038/ijo.2010.51
[9] Lee, A., Shu X., Li, H., Yang, G., Cai, H., Wen, W., et al. (2009). Adolescent and adult soy food intake and breast cancer risk: results from the Shanghai Women's Health Study. *The Amercian Journal of Clinical Nutrition, 89*(6), 1920-6.

[10] Korde, L., Wu, H., Fears, T., et al. (2009). Childhood soy intake and breast cancer risk in Asian American women. *Cancer Epidemiol Biomarkers Prev, 18*: 1050-9.
[11] Kushi, L. H., Doyle, C., McCullough, M., Rock, C. L., Demark-Wahnefried, W., Bandera, E. V., et al. (2012). American Cancer Society guidelines on nutrition and physical activity for cancer prevention. *CA: A Cancer Journal for Clinicians*, *62* (1), 30–67. doi: 10.3322/caac.20140.
[12] U.S. Department of Agriculture and U.S. Department of Health and Human Services. (2010). *Dietary Guidelines for Americans, 2010* (7th Edition ed.). U.S. Government Printing Office.
[13] Lino, M. (2011, August 25). *USDA Blog: Nutrition Doesn't Have to be Expensive*. Retrieved September 21, 2012, from the United States Department of Agriculture Web site: http://blogs.usda.gov/2011/08/25/nutrition-doesn%E2%80%99t-have-to-be-expensive/
[14] U.S. Department of Health and Human Services. (2008). 2008 Physical Activity Guidelines for Americans (ODPHP Publication No. U0036 ed.).