Breast Cancer Prevention Strategies

Jeremie Pederson D.C.

October is National Breast Cancer Awareness Month. Pink ribbons decorate the workplace, classrooms, and even the uniforms of professional athletes. Almost every person in the United States will know someone who is diagnosed with breast cancer. According to the Centers for Disease Control (CDC), "Breast cancer is the most common cause of death from cancer among Hispanic women, and the second most common cause of death from cancer among white, black, Asian/Pacific Islander, and American Indian/Alaska Native women. In the United States in 2006 (the most recent year for which statistics are available), 191,410 women were told they had breast cancer, and 40,820 women died from it."

One of the first steps in early breast cancer detection is to perform monthly self breast examinations. Research has shown that people who give themselves breast exams are more likely to discover abnormalities compared to a health care practitioner who may not be as familiar with a patient's normal breast tissue variations. This method is great for early detection but there are better laboratory tests that can help to identify increased risks before abnormal breast changes are felt during a self examination.

Simple urinary tests for estrogen metabolites, or byproducts of estrogen metabolism, have been shown to help identify a person's increased or decreased risk of developing estrogen related cancers. The most important metabolites to test are 2-OHE1, 2-MeOHE1, 4-OHE1, 4-MeOHE1, and 16-aOHE1. Let's look at the protective estrogen metabolites first.

Good protective metabolites:

- 2-OHE1, 2-MeOHE1, 4-MeOHE1
- High ratios of 2/16 estrogen metabolites have been shown to correlate with decreased risks of developing estrogen induced breast cancers. There are some current research studies that have identified no decreased risk or protective effect from 2/16 estrogen metabolite ratios. These studies are not conclusive and more research is needed to clarify the issue.

Harmful metabolites:

- 4-OHE1, 16a-OHE1, and low ratios of 2/16 estrogen metabolites.

www.houstonbackclinic.com

If a person is found to have low levels of 2-MeOH and 4-MeOH levels or high levels of 16a-OHE1, I recommend they have a simple genetic test panel completed to rule out genetic abnormalities. This panel should include the following items:

- COMT = This causes the 2-OHE1 and 4-OHE1 to undergo methylation to 2 and 4-MeOHE1, the protective metabolites.
- CYP3A4 = Converts estrone to 16a-OHE1. Mutations could increase or decrease the production of 16-OHE1.
- CYP1A1 = Converts estrone to 2-OHE1
- CYP1B1 = Converts estrone to 4-OHE1

Now that you have more information about how to analyze your breast cancer risk factors, what should you do with it? There are some simple lifestyle and nutritional strategies that have helped people manage their estrogen balances and metabolite production. Below are a few simple strategies to consider **after speaking with your health care practitioner:**

- Try to consume 40 to 60 grams of fiber every day. Fiber helps to bind excessive hormones and metabolites that are excreted in your stool. The addition of fiber will also help to bind and excrete excessive fats. If you have trouble consuming larger quantities of fiber from foods you can use supplements such as Konsyl, a psyllium product that is gluten free.
- Eat raw organic broccoli, Brussels sprouts, kale, or cauliflower three times per week. A recent clinical trial found that these vegetables produce the substances indole – 3 – carbinol (I3C) and diindolymethane (DIM). They help to stimulate or make more CYP1A1, which is responsible for making more 2-OHE1. If you remember from the information listed above, increased ratios of 2-OHE1 to 16a-OHE1 are thought to be protective against breast cancer formation.
- Take 600 – 800 mg of DHA omega 3 fatty acids per day. The easiest way to do this is through supplementation. This helps to prevent overall inflammation in the body.
- Take a good multivitamin in order to ingest adequate amounts of nutrients necessary to convert estrogen metabolites to the protective methyl forms such as 2-MeOHE1. Specifically you want adequate amounts of methyl folic acid, methyl cobalamin, and vitamin B6. (Consult your health care practitioner prior to taking a multi vitamin).
- Avoid processed sugars or excessive amounts of natural sugars. Excess sugar is stored as fat in humans. Estrogen loves to store itself in fat cells. These stored estrogens can be released or converted, causing more effects of estrogen dominance. This can increase a person's risk of estrogen-induced cancers.
- Exercise 5 times per week for 30 minutes each time, including 3 days of resistance training. This helps to control excessive body weight and increases natural regulation of sex hormones.
- Avoid contact or ingestion of pesticides and/or chemical irritants. Many common chemical products cause DNA damage in cells, making them more susceptible to developing cancers. This is an important topic and will be covered in future articles.
- Avoid genetically modified foods or foods with chemical preservatives. Many of these types of foods have been shown to cause cellular damage.

www.houstonbackclinic.com

- Avoid excess consumption of processed soy products as they may increase your risk of estrogen metabolite production.
- Keep your stress levels as low as possible. I can't even begin to tell you about the damages stress and stress related hormones play in your overall health.
- If you wish, take 200 – 300 mg of indole-3-carbinol and 100–200 mg of diindolymethane 3 times per week. This can be done in place of eating the vegetables listed above, but there is not strong evidence that they will work as well as eating the vegetables.
- Consider taking calcium D-glucorate, which stops the enzyme beta glucoronidase from functioning. Beta glucoronidase is believed to unwind or unravel waste products in the stool or urine, which allows them to be re-absorbed. By taking D-glucorate you can prevent this and potentially increase the amount of waste products and estrogen metabolites exiting your body.

Breast cancer is a condition or disease that will affect many women we know and love. There are numerous types with numerous prognoses that vary with each individual case. Treatment options are becoming more effective, and early diagnosis is saving more lives. We can and need to do better. I challenge all of you to use the information presented in this article in order to try and prevent breast cancer before it is detectable. Science is changing every day, and in the future we may find that these metabolites have no correlation with the onset of breast cancer. In the meantime, I challenge all of you to have them tested once a year to identify how your body is metabolizing estrogens.

For more detailed information about estrogen metabolites, see below:

- 2-OHE1 is formed when a specific form of estrogen called estrone is broken down by the body to 2-OHE1. Increased amounts of 2-OHE1 have been shown to decrease the risk of estrogen induced cancers. Too much of the 2-OHE1 metabolite has been shown to have the negative effect of increasing a women's chances of developing osteoporosis.
- 2-OHE1 is converted to 2-MeOHE1 by methylation, or adding a methyl chemical group to the metabolite. This new compound 2-MeOHE1 is the main protective metabolite in this group. Most clinicians only test the 2-OHE1 as they assume it will convert properly to 2-MeOHE1. I never make this assumption as millions of people have methylation problems due to genetic factors that interrupt this process. This is why I suggest everyone test both of these protective metabolites.
- 4-MeOHE1 is also a protective estrogen metabolite that is formed by methylation of 4-OHE1. Both 4-OHE1 and 4-MeOHE1 must be tested as problems of the methylation pathway can be present.
- 4-OHE1 is created from the breakdown of estrone. 4-OHE1 has been shown to have increased risks of harmful effects if converted to quinones. Quinones have been shown to damage DNA in cells and increase mutation or risk of cancers.
- 16a-OHE1 is the other main harmful estrogen metabolite that is tested. People with elevated amounts of this metabolite have been shown to have an increased risk of developing breast and other cancers. 162-OHE1 will convert to another form of estrogen called estriol, or be bound to a protein and inactivated by the body.

www.houstonbackclinic.com