



Breast cancer preventative strategies

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Some of the risk factors that increase one's risk for breast cancer include :

- Positive family history.
- Young menarche <12.
- Late menopause >55.
- Obesity.
- Alcohol.
- Having no children.
- Hormone imbalances.

The following hormonal imbalances lead to overstimulation of the estrogen receptor and thus increase one's risk for breast cancer:

- Stress elevates cortisol, depletes DHEA and results in a change in the immune system from a TH1 (normal bacterial and viral and cancer cell killing immune system) to a TH2 immune response (autoimmune type of response, and increased cancer risk type of immune response. Aging per se also changes the immune response to a Th2 response.
- Underactive thyroid and elevated insulin like in type 2 diabetes or the metabolic syndrome decreases SHBG (sex hormone binding globulin) and this increases the amount of free estrogen and causes overstimulation of the estrogen receptor.
- Xenoestrogens (ex ddt, exhaust fumes, estrogen farmed chickens, plastics) we are all exposed to, and these increase our risk as well if we do not metabolize them properly and detoxify through the liver.
- Low progesterone. Progesterone deficiency occurs before estrogen deficiency in the perimenopause, and the risk for breast cancer goes up as the progesterone level goes down. Progesterone has antiproliferative effects on the breast and uterus. In antiaging medicine we never replenish estrogen without replen-

ishing progesterone. Progesterone is protective against breast cancer, unlike progestins which potentially increase your risk for breast cancer. It is also recommended by antiaging physician's to supplement progesterone even in hysterectomized women.

- Low melatonin ; high prolactin.
- Testosterone replenishment has been shown in trials to lower risk for breast cancer.

However too much testosterone like in polycystic ovarian syndrome can increase one's estrogen level due to aromatization of the testosterone into estradiol with overstimulation of the estrogen receptor.

So to prevent breast cancer a good start would be to balance one's hormones, lose weight if this is an issue and try and ensure that you metabolize estrogen in a healthy fashion.

So let us take a closer look at the metabolism of estrogen in the liver.

Estrogen is metabolised through two pathways in the liver. The first phase detoxification in the liver is hydroxylation of the estrogen molecule, either to 2,4 or 16 hydroxyestrone. These molecules are fat soluble and in order to eliminate them you need to make these molecules water soluble, through phase 2 detoxification which is either through methylation, sulfation or glucuronidation.

2OH estrone is harmless, whereas 4OH and 16OH estrone are carcinogenic.

To increase the phase 1 production of 2OH estrone rather than 4 or 16OH estrone is a nice way to lower one's risk for dangerous metabolites:

- Cruciferous vegetables, I3C (Indole-3-carbinol, D-Indolemethane/DIM).
- Moderate exercise.
- Whey protein.
- Soy.

e) Omega 3 fish oil.

f) Flax.

g) Vit b6, b12, folic acid (in fact these simple vitamins protect from the dangers of alcohol use in increasing one's risk for breast cancer).

However taking I3C on its own is not sufficient since phase two detoxification needs to be supported as well. This phase two elimination is essential to excrete toxins and estrogen metabolites as well as for drug metabolism. Methylation can be enhanced by methyl donors for example vit b6, vit b12, sam-e, TMG.

Sulfation can be enhanced by increasing glutathione (the body's most potent antioxidant).

The following nutrients increase glutathione :

- NAC (N-acetylcysteine).
- L-glutamine, glycine, mg, methionine, SAmE.
- Minimize depletion of glutathione with alpha lipoic acid, silymarin (milk thistle), ginkgo, whey protein.
- Brassica based diets (diets high in cruciferous vegetables.
- Allium diet (leak/onion family.... these increase GST (glutathione sulphur transferase function).

New lab tests are becoming available through Ampath Laboratories.

The following tests will be particularly helpful in our fight to prevent breast cancer:

- Estrogen quotient (E3/(E2+E1) >1.
- 2:16 OH estrone ratio in the urine >2, <9. More than 9 would increase one's risk for osteoporosis since 16OH estrone is a potent estrogen whereas 2OH estrone is a weak estrogen at the receptor site. 2OH estrone is also an antioxidant and a blood vessel protector.