

# BREAST CANCER PREVENTION

Mammography may currently be the best way we have to detect breast cancer, but what about the risk factors we can look at prior to that dreaded finding on mammogram? Statistics show that 1 out of 6 mammograms done will result in a call back to the patient to suggest an ultrasound, biopsy or repeat mammogram. What if we paid better attention to the female aging process and related risk factors to prevent breast cancer? No, I am not an ObGyn or breast specialist, I am simply a functional medicine doc who looks at any disease or condition and asks myself, "what are the environmental, genetic and lifestyle factors at play here?"

The aging female body is subject to particular hormonal and metabolic imbalances. We now know that females in their late 30s and early 40s are already experiencing irregularity in their estrogen levels and gut microbiome disturbances. These and other factors can predispose women to breast cancer. So, what about hormone replacement? Is it the evil that we once thought? It turns out that estrogen is only "bad" if it is sent down the wrong detoxification pathways in the liver. We also know that medroxyprogesterone (provera) is also sent down the more toxic, potent pathway and micronized (natural) progesterone is more protective. So, it's the kind of hormones we are taking but also the ability of the liver to properly get rid of these bad hormone metabolites. For many peri- or post-menopausal, life without estrogen can be devastating. Research shows that low estrogen can actually change the chromosomes (carry genetic information) in our cells. Women with low estrogen and progesterone find it hard to sleep or can wake up between 1 and 3 a.m. This can result in dysregulation of the immune system and ultimately, more aggressive aging. Low estrogen levels can also make it difficult to lose weight, repair skeletal muscle, maintain bone health and have adequate energy or brain function. Whether or not we decide to take hormones, the liver and gut detoxification process is the key to reducing one's risk for breast cancer.

So, let's talk detoxification and hormones. Once hormones are manufactured from cholesterol, the liver has the job of off-loading the less favorable estrogen by-products. This has to be done efficiently in Phase I and II of liver detoxification so that these by-products or metabolites cannot go back to the sensitive breast tissue and wreak havoc. Drugs like Tamoxifen act by binding to the estrogen receptors on mammary (breast) cells and so block the action of estrogen. Phase I of liver detoxification basically converts toxins into smaller substances and then makes them water-soluble. In Phase II, the liver takes these water-soluble metabolites/toxins and gets rid of them through bile, urine and stool. A key process in Phase II of liver detoxification is the Methylation Cycle. As it relates to breast cancer, this cycle actually "turns off" the bad genes and stops them from duplicating. 40-50% of the population expresses an MTHFR genetic defect making us inefficient in the Methylation Cycle. In simple terms, it's important for all of us to get the B vitamin, folate, from dark leafy vegetables DAILY and/or take a supplement that provides "methylated" B vitamins to ensure this cycle and liver detoxification.

Lastly, having a diverse gut microbiome is key to proper functioning of our Methylation Cycle and Liver Detoxification processes. As we approach perimenopause and then menopause, estrogen dysregulation results in less diversity of our gut bacteria. This is serious because if we do not have the right bacteria then we cannot eliminate properly and, therefore, Phase II of liver detoxification cannot be completed. Plant diversity consumption has now been proven to be the number one factor that affects the gut microbiome.

Clearly, breast cancer is a disease that has many different risk factors. We haven't even addressed factors like high fasting insulin/glucose, high BMI, inflammatory markers like CRP (C-reactive protein), stress (high cortisol) and nutrient deficiencies. This is exactly the reason why bloodwork is key when putting together a plan to prevent breast cancer or support a survivor.



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