



Dear Dr. Hoo,

At the Womens Wellness Show this past weekend, you commented on the risk of hormone replacement therapy in the development of some cancers. Can you elaborate on this?

My comment referred to women who are currently receiving long term hormone replacement therapy (HRT), either for the treatment of a particular condition or for the prevention of heart disease and osteoporosis.

A study published in **Cancer Research 59:4870-4875 (1999)**, noted a four-fold increase risk in the development of breast cancer in individuals who had specific genetic aberrations. These are known as genotype polymorphisms which, when present in the liver, may significantly impact how hormones such as estrogens are metabolized and detoxified. Specifically, the authors, C.S Huang et al., implicated genotypes for the enzymes *COMT*, *CYP1A1* and *CYP17* which, when damaged, increased the production of catechol estrogens, known to cause tissue damage and increased the risk of breast cancer development. The risk was also higher for women who had prolonged exposure to estrogens.

As such, women who have a higher pool of circulating estrogens from external sources such as xenoestrogens, contraceptive pills and HRT, as well as internal sources such as higher body mass index (BMI) or higher fat mass to fat-free mass ratios may be at higher risk for breast cancer development. Of note, a higher fat mass contributes to higher conversion of androgens to estrogens via the aromatase enzyme.

Genetic tests are available to evaluate the presence and quality of genotypes in women, and therefore, assess one's risk for cancer development; of course, this information is evaluated with an appreciation for the global assessment of one's dietary habits, lifestyle and environmental toxin exposure.

Please call us for more information about testing options, treatment options for hormonal imbalances, or to evaluate for your degree of risk.

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