

## **DDE Associations with Some Hormonal Risk Factors for Breast Cancer: Adolescent Weight Gain, Puberty, and Duration of Lactation**

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Because almost all breast cancer occurs in women, the role of female hormones in etiology has been a focus of study for decades. Some environmental pollutant chemicals have weak but persistent estrogen activity. One of the best studied of such agents is the pesticide DDT and its very stable breakdown product DDE. Although studies of DDT/DDE as a cause of breast cancer have been inconsistent, DDT/DDE exposure is associated with several of the established risk factors for breast cancer, perhaps through a mechanism involving occupancy of the estrogen receptor. There are three studies in which higher DDE levels are associated with shorter duration of lactation. The effect is similar to that seen with post-partum oral contraceptives, and may involve inhibition of prolactin's tropic effect on milk production. Two studies show earlier menarche with higher exposure, an effect partially consistent with estrogen exposure and also increasing lifetime exposure to estrogen in the affected girl. There are 3 studies in which women with higher BMIs have higher DDT or DDE levels. This may be due to higher exposures or different metabolism in heavier women. DDE is, if anything, negatively associated with child growth. Overall, DDE does show some evidence of acting as an estrogen in exposed women, but the evidence is stronger and more consistent for outcomes other than breast cancer.