
Breast-Cancer: The Environment in Which You Grow Before Born Matters

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Breast cancer is a global public health problem [1]. It is the most common cancer in American women, being the second leading cause of cancer-related death in this group. Strategies to reduce breast cancer risk should become a major priority since this could substantially reduce death numbers, treatment cost along with providing quality health benefits [2].

The breast cancer risk development can be acquired through germline mutation. Somatic mutations cause approximately 80% of all breast cancer [3]. Recently, their growing field research has proposed that the risk of developing breast cancer may have a fetal origin, namely, that exposure to a variety of environmental chemicals such as, some pesticides during critical periods of development can influence the epigenome - the non-coding alterations that affect DNA and thus influence gene expression - which might programming the cells and tissues to metabolic dysfunction and/or breast cancer development across their lifespan [4].

Furthermore, nutrition status can, also, severely impact fetal growth and subsequent risk of developing breast cancer in adult life [5-7]. Experimental evidence has shown that nutrition status flows across generation: Daughters from parents that consume a high-fat diet may have a higher breast cancer risk. More recently, paternal malnutrition induced metabolic changes in early-life and dysfunction of amino acids metabolism in offspring mammary tumours [8].

There is clear evidence that exposure to environmental chemicals, nutrition status and life-style during the window of development can increase breast cancer risk.

How can we decrease or eliminate breast cancer risk? When we realize that the future's not only in our genes, but also in our day-to-day.

Adoption of a healthy lifestyle, involving diet and exercise, could decrease breast cancer risk.

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