

By ~~Stefan Zorzi~~ Stefan Zorzi, Science Editor

The Mother's Hip Size and Shape Predict the Health of Her Daughter's Breasts

Scientists link higher breast cancer risks to the mother's large and round hips

Apparently, the undulating hips of a woman can 'establish' the health of her daughter's breasts. This is the conclusion reached by Dr. David J.P. Barker and Dr. Kent Thornburg, of Oregon Health & Science University, after investigating maternity records of over 6,000 women. Wide, round hips, pointing to high sex hormone levels in the mother rose her daughter's likelihood for developing breast cancer. A woman's hips develop at puberty when the hip bones growth is determined by the sex hormones and nutrition. Every woman's personal sex hormone signature determined at puberty keeps on being the same through her reproductive life. This research reveals for the first time that the pubertal growth boost of girls is strongly linked with the likelihood of breast cancer in their daughters. The research made on 6,370 female subjects born in Helsinki from 1934 to 1944 whose mothers' pelvic bones were measured during routine prenatal care. Breast cancer levels were over thrice higher among the women with wide-hipped mothers. The risk was seven times higher if those mothers had already one or more offspring. A subject's vulnerability to breast cancer was higher if her mother's "intercristal diameter", the largest distance between the wing-like parts at the top of the hip bone, overcame 30 cm (11.8 in) or the wing-like parts were round. The women were 2.5 times more exposed to breast cancer if their mothers had the widest distance with 3 cm longer than the front distance. The new research suggests that that breast cancer is triggered in the first trimester of a pregnancy by the contact of the embryo's developing breast tissue to the mother's sex hormones from her bloodstream. The breast lobules develop in the embryo at just 10 weeks. The fetal breast is activated by hormones in the mother's bloodstream, sometimes so intensively that 50 % of all newborn babies present breast secretions. "Our findings support the hypothesis that wide round hips reflect high levels of sex hormone production at puberty, which persist after puberty and adversely affect breast development of the daughters in early gestation," wrote the researchers. "Catechol estrogen, a metabolite of estradiol, is thought to cause chromosomal instability by breaking DNA strands. High catechol estrogen concentrations in the maternal circulation could produce genetic instability in differentiating breast epithelial cells, which would make the breast vulnerable to cancer in later life." they suggested. "For those of us involved in identifying the earliest molecular causes of cancer, these fascinating results define the types of questions we need to ask. It is important to consider these cell populations because only by understanding the initial cause can we begin to develop rational strategies to prevent this very common cancer." said Dr. Grover Bagby, deputy director of the OHSU Cancer Institute. The daughters were born during 1934-1944 in Helsinki. 300 developed breast cancer; 48 died of it, and the average age of when the disease was discovered was 54. "Mothers whose daughters developed breast cancer were of similar height to the other mothers. This suggests that they had similar nutrition through childhood. Our findings do not therefore indicate that good nutrition through childhood is linked to breast cancer in the next generation. But they do show that the pubertal growth spurt of girls, which reflects the level of nutrition, is strongly associated with the risk of breast cancer in their daughters." wrote the authors.