

## Abstract

### **Case Reports of Hormone-Containing Personal Care Products and Premature Thelarche or Androgenization**

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**Background:** Many reports describe children with pubic hair growth, facial acne, breast development, and/or penile enlargement. In some cases, these signs have been associated with the use of unlabeled or poorly labeled hormone-containing creams, growth stimulants, hair care products, and/or cosmetics.

**Objective:** To determine whether use of hormone-containing personal care products contributes to the breast cancer disparity between young African-American women and their White counterparts.

**Methods:** A case series was developed of four African-American toddlers with precocious puberty by Chandra M. Tiwary, MD. In each instance, puberty was associated with the daily application of hormone-containing hair care products, which subsided when the use of the products ceased.

**Results:** Tables of pre- and post-levels of hormones show significant shifts in serum measures tied with use of personal care products. Premature thelarche in African-American toddlers regressed when exposures ended. A number of products were tested and found to contain estriol, placental extract and other active hormonal compounds.

**Discussion:** The literature consistently shows that the greater the lifetime exposure to estrogen, the greater the risk of the disease. Because hormone-containing hair care products are used much more commonly among African Americans, it is hypothesized that differential exposure to such hair care products may partially explain the increased risk and poorer prognosis of premenopausal breast cancer development in African Americans when compared to Caucasians.

**Proposed Studies:** By developing methods for characterizing, measuring and testing the hormonal activity of various personal care products; conducting *in vitro* studies of these compounds in cell cultures and identifying and validating molecular biomarkers of exposure to hormones and hormonal metabolites found in personal care products that will be used in a case-control study.