

Two studies show U.S. girls are developing earlier: Now what?

Two prominent studies in the 1990s surprised medical professionals and researchers alike when they reported that U.S. girls were entering puberty and attaining their first menstrual periods at younger ages than earlier analyses had shown, said Marcia E. Herman-Giddens, lead author of one of the two 1990s studies. She reviewed the current understanding of puberty and future research areas in her keynote speech, "Sexual Maturation in U.S. Girls: What Do We Know and What Should We Be Asking?," at the 2005 conference on Emerging Topics in Breast Cancer and the Environment Research.

Herman-Giddens, P.A., Dr.P.H., University of North Carolina School of Public Health, explained that her study, called Secondary Sexual Characteristics and Menses in Young Girls, conducted by PROS or Pediatric Research in Office Settings of the American Academy of Pediatrics, sampled more than 17,000 Caucasian and African-American girls seen in pediatric practices across both the United States and Puerto Rico. Both PROS and the second major study in the 1990s, called NHANES or National Health and Nutrition Examination Surveys, documented the ages of girls at various stages during puberty.

Their results countered the conventional wisdom, which was mostly based on a classic 1969 study of British girls and on a 1963-70 U.S. study. "That's one of the reasons it was quite upsetting when PROS and NHANES data came out," Dr. Herman-Giddens said. For example, she noted, the 1963-70 U.S. report showed the average age of the first menstrual period was 12.8 in white girls, and 12.5 in black girls. "In NHANES collective data from 1988-1994, there was a statistically significant drop over the 25-year period for white girls down to 12.6, and for black girls to 12.1."

The lowering of ages in attaining pubertal development should demand the attention of the scientific community and the public, she said. "Two of the issues that I think are important and should be quite concerning are: How far down is this going to go? and Is it healthy?" She added, "We need more data about the timing of pubertal development, as a conference like this points out. We need ongoing cross-sectional data in order to track trends among different cultural groups, and we need more longitudinal studies."

An understanding of pubertal development is an extremely important public health issue for many reasons including that the timing of development might be tied to increased breast cancer risk, she said. In addition to time of onset of pubertal stages, studies of the pace of puberty are also important. According to PROS and NHANES, she said, "For white girls, 2.5 years is the average for transition from the onset of breast development to menses. It's a little bit longer for African-Americans. What this shows as far as implications for breast-cancer risk, we don't know, but this is a question to consider."

Besides timing and pace of puberty, she said many other research areas demand attention. Some of these include:

- the impact of sexualizing children in the media — She displayed advertisements from widely available magazines showing pre-teens and teens in suggestive poses. "Some studies indicate exposure to erotica raises sex hormones in adults," she said. She asked whether teen ads are increasing levels of female hormones in young girls, too, and are possibly connected to their earlier pubertal development.

- stress and changes in family structure – Homes with absent fathers can be especially stressful and may affect the pace of puberty, she said.
- obesity – "Our kids don't go outside and play, they have too much too eat, too many calories, too much protein – exactly what is done with livestock to get them to mature and grow more quickly. For instance, schools have stopped P.E. classes, they have stopped recess, and yet they have junk food in the schools, such as soda machines." As young boys and girls have become increasingly overweight during the past 20 years, she said, "breast cancer has increased by about 25 percent in males and about 15 percent in females."
- additive hormones – Numerous foods and drinks contain growth and bioactive sex hormones, and non-food items contain hormones that may have the potential to affect development, she said.
- antibiotic use – "Some children receive a great deal of antibiotics for such things as ear infections. Since antibiotic use is linked to growth enhancement in animals, what is it doing in children?"

In summary, Dr. Herman-Giddens said, a wide variety of research studies should be undertaken to not only understand what constitutes normal pubertal development among different cultural groups, but also to gain an appreciation for the potential impact of diet, obesity, environmental chemicals, the influence of the media, cultural changes, and other individual stressors, as well as their cumulative effects, on breast cancer risk.

Summary of Dr. Herman-Giddens's keynote presentation at the November 2005 BCERC Scientific Symposium: Sexual Maturation in US Girls: What Do We Know and What Should We Be Asking?
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