Study Finds Girls Now Enter Puberty Even Earlier Than Previously Thought

A new longitudinal1 study found that girls are developing breasts at an increasingly younger age, which is part of a disturbing trend in the sexual development of our children. American girls (and boys) are hitting puberty earlier than ever before, and upward trends in childhood obesity seem to be playing a major role.

You may be shocked by the latest childhood obesity statistics. As reported by*Huffington Post*:2

- 17 percent of children and adolescents are now obese
- Childhood obesity has nearly tripled since 1980
- Obesity among kids ages two to five has doubled over the past 30 years, and one in five kids is now overweight by age six
- More than half of obese children were overweight by their second birthday
- The food industry spends more than $1.8 billion marketing to kids each year3—and what they're selling is primarily processed food and junk food

Data for the puberty study, published in the November 2013 issue of*Pediatrics,4* came from a cohort of more than 1,200 girls in and around San Francisco, Cincinnati, and New York City between the ages of six and eight.

Researchers found some cultural variability, but overall, concluded that girls are entering puberty earlier than in the past. Early sexual maturation is not a recent development, nor is it a phenomenon limited to United States. It is a global phenomenon, especially in developed nations.5

Obesity May Be More Significant for Early Puberty Than Previously Thought

Maturing at a younger age brings many long-term risks, both in terms of physical and mental health.6 The pace of sexual development has generally been attributed to three primary factors, according to the website for Theo Colborn's*Our Stolen Future*:7

1. Obesity
2. Social factors (such as family environment, stress, overt sexuality in the media, etc.)
3. Toxic contamination (environmental chemicals and pollutants, hormones and hormone-mimics, pesticides, chemicals in plastics, etc.)

According to the featured study, obesity appears to be the most significant factor driving early puberty—or perhaps it's just the easiest to quantify. Overweight and obese girls in this study developed breasts about a year earlier than normal-weight girls (age eight versus age nine, respectively).

Obesity exposes girls to higher estrogen levels because estrogen is both produced and stored in fat tissue. Girls carrying excess body fat have more estrogen and leptin, which can lead to insulin resistance and the development of more fat tissue, which produces even more estrogen, a vicious cycle that can eventually result in premature puberty, among other problems.

Boys are not immune to the effects of estrogenic chemicals—males of all species are becoming more female, including human boys. Childhood obesity is a growing epidemic in developed countries and raises your child's risk for the following serious health concerns, often persisting into adulthood. However, this is just the tip of the iceberg.8

- Impaired insulin resistance and type 2 diabetes
- Cardiovascular disease, asthma, and other respiratory problems
- Fatty liver disease
- Joint and musculoskeletal problems, and lower extremity fractures9
- Gallstones and gastroesophageal reflux (GERD)

Obesity and Toxic Environmental Chemicals: Two Sides of Same Coin?

There is mounting scientific evidence that environmental contaminants have hormone-mimicking properties that may play a role in premature sexual development. However, it is difficult to measure these effects, as strong as their theoretical basis may be. In terms of research, it's much easier to correlate a child's age of onset of puberty with her body mass index (BMI) than with her level of exposure to plastics or pesticides.

However, the obesity and contamination factors are likely two sides of the same coin, having been linked in multiple scientific studies.

The same chemicals that contribute to precocious puberty are in fact also significant players in obesity, such as phthalates.10, 11, 12, 13 Even low levels of toxic chemicals (dioxins, PCBs, BPA, and phthalates) have been shown to cause metabolic changes in mice.

Perhaps the relationship between endocrine-disrupting chemicals and precocious puberty will be clearer in the near future, as the researchers in this latest longitudinal study plan to tackle the chemical exposure issue next.14 For a list of the top 10 chemicals that can potentially cause early puberty in your child, please refer to my previous article on this topic.

The Age of Onset of Puberty Has Dropped Four Years Since 1920

The age of puberty onset for both girls and boys has been steadily dropping throughout recorded history. According to German researchers,15 the onset of puberty for girls has shown the following disturbing trend over the past 150 years:

Age of Onset of Puberty for Girls	
Year	**Average Age (Years)**
1860	16.6
1920	14.6
1950	13.1
1980	12.5
2010	10.5

As you can see, the average age for girls has fallen by four years since 1920 and six years over the last century. The statistics for boys parallel those for girls, with a delay of about one year. According to another study in the journal *Pediatrics,*16 boys are now beginning sexual development anywhere from six months to two years earlier than the medically accepted standard. While some may shrug off the significance of this trend, it actually has quite profound implications as it can adversely affect your child's physical and emotional development in a number of ways. Premature puberty has both physical and psychosocial implications that may potentially affect your child well into adulthood—in fact, for the rest of his or her life.

The Physical Consequences of Precocious Puberty

Early onset puberty has been found to have a number of problematic effects. In terms of the physical, your child may

have increased risk for the following:

- Hormone-related cancers later in life for girls reaching puberty early, such as breast cancer, due to the early rise in estrogen
- Some have suggested early puberty may be linked to thyroid abnormalities, brain tumors, and testicular cancer in boys, although these effects have not been proven17, 18
- Short stature as adults—once puberty completes, growth generally stops

Far-Reaching Psychological Effects

Perhaps even more concerning are the psychosocial effects of premature puberty. An article containing an extensive review of the literature about the psychosocial effects of precocious puberty reveals just how potentially damaging early sexual development is to your child. When your child's physical body matures too early, there is not enough time for her mind to adjust to those changes, often producing feelings of fear, confusion, and social isolation.19 The authors explain:

"Early maturation ignites a series of negative environmental responses that influence the course of future development. For example, precocious maturation may cause peers to behave differently towards early maturing girls, which results in social difficulties and feelings of isolation. Early developing girls may seek out friends who are similarly mature or find themselves attracted to older boys, both of which might result in weakening peer relationships."

As a result of this increased stress, children experiencing early puberty have been shown to have an increased risk for a variety of social, emotional, and behavioral problems, as outlined in the following table. You will see that the effects are truly far reaching and can forever change the course of your child's life. This is not intended to scare you or bring

doom and gloom, but to raise your awareness in the event your child is an early maturer, so that you can provide her the emotional support needed to deal with it. If she reaches puberty ahead of schedule, you will need to be especially aware of and sensitive to her unique developmental needs and challenges.

Depression and Anxiety: There is a link between early menarche and anxiety, especially panic attacks. Panic attacks have been found to occur more frequently among sixth and seventh grade girls who display early sexual development. Early maturers are also more likely to report psychosomatic symptoms, such as headaches, upset stomachs, and sleep disturbances.
Eating Disorders: Early maturing girls are more likely to report body dissatisfaction and poor self-esteem during adolescence and to engage in excessive dieting and disordered eating. Poor body image seems to persist among early maturers even after same-age peers have achieved puberty. Girls may internalize their changing physical appearance as a way that they are “different” from peers, which may manifest as self-consciousness or attempts to “reduce” their changing bodies. Body dissatisfaction seems to be amplified by concurrent life stressors.
Substance Abuse: Early pubertal development is associated with increased (and earlier onset) smoking, drinking, and illegal drug experimentation with increased likelihood of life-long substance abuse. Conversely, late pubertal maturation predicts abstinence well beyond the end of puberty.
Premature Sexual Activity: Girls who experience earlier menarche begin to date before their peers and tend to be sexually active earlier. By the age of18, girls who have experienced early menarche are more than twice as likely to have given birth or terminated a pregnancy than their peers.

Delinquency: Early menarche has been associated with shoplifting, vandalism, fighting, and weapon possession. Early maturation significantly predicts engagement in violent delinquent behavior (such as burglary, fighting, gang membership, and shooting or stabbing another person), according to one study. Girls who develop early can be targeted by other girls for bullying, and by older boys for unwanted sexual attention.20
Reduced Academic Performance: Early maturing girls are more likely to exhibit poor academic performance in high school than on-time or later maturing peers. Conversely, later maturation has been associated with higher grades. Early maturers are more likely to report getting in trouble at school, absenteeism, and truancy. They report less interest in academic subjects and are less likely to pursue college education and tend to have lower-paying jobs. This effect is magnified in girls experiencing extremely early puberty.

Tips for Preventing Obesity and Reducing Exposure to Hormone-Disrupting Chemicals

As you can see, precocious puberty is much more than an incidental trend. You can minimize problems by taking steps to optimize your child's physical and emotional health, beginning the day she is born—or failing that, beginning today! In addition to avoiding excess sugar, junk food, and toxic products, make sure your children get adequate exercise, which is crucial in preventing them from becoming overweight or obese. Physical activity is important for both physical and mental health.

You can cut back on your family's exposure to dangerous chemicals by implementing the following 16 guidelines. Pregnant women and women who may become pregnant should pay

particular attention to reducing their exposure as much as possible, in order to protect the health of their unborn babies.

1. Eat fresh, whole, non-GMO, preferably organic produce and free-range, organic meats to reduce your exposure to added hormones, pesticides, and fertilizers. Also, avoid milk and other dairy products that contain the genetically engineered recombinant bovine growth hormone (rBGH or rBST). Processed, prepackaged foods are a major source of soy and chemicals such as BPA and phthalates.
2. Rather than eating conventional or farm-raised fish, which are often heavily contaminated with PCBs and mercury (which also has hormone-disrupting effects), supplement with a high-quality purified krill oil, or eat fish that is wild-caught and lab tested for purity. Wild-caught Alaskan salmon is about the only fish I eat for these reasons.
3. Filter your tap water—both for drinking and bathing. In fact, if you can only afford to do one, filtering your bath water may be more important, as your skin absorbs contaminants. To remove the endocrine disrupting herbicide Atrazine, make sure the filter is certified to remove it.
4. Avoid non-fermented soy, especially if you're pregnant. Also, never use soy-based infant formula.
5. Optimize your (and your child's) vitamin D levels. A 2011 study found that girls who are vitamin D deficient may be more than twice as susceptible to premature puberty as girls with optimal vitamin D levels.
6. Store your food and beverages in glass rather than plastic containers, and avoid using plastic wrap and canned foods (which are often lined with BPA-containing liners).
7. Use glass baby bottles and BPA-free Sippy cups for your little ones, and never, ever, ever microwave your child's food in plastic containers. (It's best to avoid

microwaving food altogether.)

8. Make sure your baby's toys are BPA-free, such as pacifiers, teething rings, and anything your child may put in her mouth.
9. Use only natural cleaning products in your home to avoid phthalates and other toxic ingredients.
10. Switch over to natural brands of toiletries such as shampoo, toothpaste, deodorant, and cosmetics. Avoid all fluoride-containing products and fluoridated water. The Environmental Working Group's Skin Deep Database21 is a great resource for finding personal care products that are free of phthalates, parabens, and other potentially dangerous chemicals.
11. Avoid using artificial air fresheners, dryer sheets, fabric softeners, and synthetic fragrances.
12. Replace your non-stick pots and pans with ceramic or glass cookware.
13. When remodeling your home, look for "green," toxin-free alternatives in lieu of regular paint and vinyl floor coverings.
14. Replace your vinyl shower curtain with a fabric one.
15. When buying new products such as furniture, mattresses, and infant cribs, or carpet padding, ask what type of fire retardant it contains. Be mindful of and/or avoid items containing PBDEs, antimony, formaldehyde, boric acid, and other brominated chemicals—all of which can have an adverse effect on your hormones. As you replace these toxic items around your home, select those that contain naturally less flammable materials, such as leather, wool, and cotton.
16. Avoid stain- and water-resistant clothing, furniture, and carpets to avoid perfluorinated chemicals (PFCs).