

WHAT CAN PARENTS DO?

Limit Contact with Environmental Toxins

- ? Endocrine-disrupting chemicals like Bisphenol-A and phthalates (both found in plastics) and polybrominated biphenyl (PBB), used in flame-retardant fabrics have been shown to cause DNA damage and hormone changes linked to early onset of puberty. Choose natural fabric clothing and eliminate or reduce the use of plastic containers (including baby bottles/nipples), water/soda bottles, etc. and don't cook/heat food wrapped in plastic.
- ? Hormones in meat and in milk are believed to be linked to rapid development of children. Buy organic meats and milk, when possible, and/or limit consumption of these foods as diets high in protein are also linked to early puberty. Choose diets rich in whole grains, fruits, and vegetables.
- ? Nicotine and other chemicals in tobacco (smoking during pregnancy AND exposure to second-hand smoke during early childhood) has been found to lower age of onset of puberty in girls by about 4 months (Windham, 2004). Avoid exposing children to these toxins en utero and via second-hand smoke

Remedy Childhood Obesity and Lack of Exercise

- ? Each standard deviation increase in BMI doubled the odds for early menarche because fat tissue makes enzymes that convert androgens to estrogen so that the increased estrogen triggers the body to begin sexual development (Steingraber 44). Help youth find activities they like to stay active and choose low fat diets rich in fruits and vegetables.

Limit Television Viewing, Video Game and Computer Time

- ? Time in front of the TV, computer, or playing video games = time not spent doing something active, which can lead to obesity. The electronic light and electromagnetic radiation may disturb melatonin production, interfering with normal sleep cycles, disrupting the hormone balance and thereby accelerate pubertal onset. Researchers found that children ages 6 - 13 denied access to TV, computers and video games for one week experienced a 30 percent increase in melatonin levels (51).

Create a De-Stressed Home/School Environment

- ? Father absence has been linked to early onset of puberty perhaps because emotional stress can cause the body to produce cortisol and other stress responses that affect the endocrine system responsible for the timing of body changes (Susman, 2006). More time spent by fathers caring for children and showing affection all appear to be protective against early puberty among U.S. girls (49).
- ? Emotional stress at school (like bullying, low self-esteem and feeling disconnected from peers, etc) can cause the body to produce these same chemicals. Get to know your child's teacher and peers, ask about his/her day, and watch for signs of undue stress. Make sure your child is getting an adequate amount of rest and time for play/recreation without too heavy a workload (academic and extra curricular).

grown up
grown up
soon
soon

“Precocious Puberty,” onset of the physical changes of puberty much earlier than the typical range of “normal age” is becoming a common concern for parents, educators, and healthcare practitioners.

If children grow up a little faster these days, who cares? *What's the big deal?* While some seem to regard children as little adults whose parents “race” to see their child reach developmental milestones before their child's peers, others see the results of becoming too grown up too soon as disastrous. Some, however, have begun to ask **WHY**.

One such person is biologist and author Sandra Steingraber, an interdisciplinary scholar at Ithaca College whose research indicates that certain factors are affecting the acceleration of puberty. Childhood obesity and environmental exposure to chemicals, particularly endocrine disruptors, play a significant role.

“Something sinister in our environment may be sabotaging the complex hormonal system that governs sexual development.”
-- Chris Lydgate

As youth are increasingly exposed to environmental toxins, many of which disrupt the body's production of hormones, early puberty can be viewed as a “non-adaptive outcome” resulting from attacks on the body's endocrine system from a number of fronts (Steingraber 12). Some of the factors linked to early onset of puberty are: exposure to environmental toxins, obesity and lack of exercise, excessive media use and TV viewing, stressful home/school environments.

The childhoods of girls are being significantly shortened –

Girls as young as 7 or 8 increasingly begin breast development, menstruation, and growth of body hair – biological milestones that only 2 decades ago typically occurred at 13 or older (10). The acceleration in recent years has been so significant that the American Academy of Pediatrics redefined the threshold of “normal,” scaling it back to 8 for Caucasian girls and 7 for African-American girls.

While some sources suggest the trend is an “evolutionary change” similar to the early maturation and improved fertility of other mammals gained by improved nutrition and control of infectious-disease, others see the trend as a dangerous “ecological disorder” (59).

Adolescents entering puberty earlier than 12 are more likely to smoke, drink, abuse drugs, and have sex at a younger age. “Almost everything bad that could happen to a teenager . . . happens more often, and more intensely” to children whose bodies grow up before they’re mature (Steingraber qtd in Lydgate).

Works Consulted

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Stages of Cognitive Development – Jean Piaget

The Preoperational Period (2-7 years)

Characteristics: [first 2 years] increased use of verbal representation, but speech is egocentric. The child can think about something without the object being present, but “magical thinking” still persists. From 4-7, speech becomes more social. The child has the ability to grasp basic logical concepts, but there is a tendency to focus attention on one aspect of an object while ignoring others. “Magical thinking” persists and perceptions dominate clear judgment. In the moral-ethical realm, the child relies more on simple *do*'s and *don't*s imposed by authority figures and memorized rather than internalized and truly “believed” or felt.

Period of Concrete Operations (7-11 years)

Characteristics: The child can consider another person's feelings. Communication becomes less egocentric and more social. Capable of concrete problem-solving and of using organized, logical thought (applying a rule to a different but similar scenario) and logical sequencing (ordering objects in a logical sequence). Thought is rooted in the present with real objects. The child gains a recognition of reciprocity (what a fixed quantity gains in one dimension, it loses in another) and reversibility (3+4=7 and 7-4=3, etc.).

Period of Formal Operations (11-15 years)

Characteristics: ability to “think like an adult” begins between 12-14 (later for some). Thinking is less tied to concrete reality, the present time, and tangible objects. Can think abstractly, reason logically, and draw conclusions from available information and apply all these processes to hypothetical situations. Begins to use formal logic to generate multiple hypotheses and possible outcomes / consequences. Only during this stage can the child fully understand intangible concepts such as “justice,” “love,” see multiple perspectives, contemplate others' feelings objectively, understand logical proofs, and develop ethical/moral values.

Jean Piaget in the mid 1900's created the theory of cognitive development documenting *stages of intellectual development* coinciding with periods of physical development and major developments in brain growth. Until a child's brain has developed fully, (as early as 12, but usually closer to 15), he/she is incapable of reasoning as an adult with adult logic and a true understanding of possible outcomes / consequences. When puberty occurs earlier than 12, a child not yet capable of adult logic begins to develop an adult body with the physical maturity and capability of reproduction but with the emotional and mental maturity of a child. The result is often babies having babies.