

## Boggs **Anatomy Period 3**

### Off-Site Learning Packet Day 8

#### *Procedure*

Read the article, Puberty Gap: Heavy Boys hit it Later, Girls Sooner, and answer the following questions in detail, using complete sentences.

#### Article Questions

1. What is the link between weight and the onset of puberty?
  
  
  
  
  
  
  
  
  
  
2. How does our society view the physical changes associated with puberty in girls? In boys?

From your experience, is what the article says about this accurate? Back up your answer in detail, using a minimum of 2-4 supporting statements.

3. According to the article, early maturing girls and late maturing boys are more likely to report symptoms of depression. Why is this?

In your personal experience, does this seem accurate? Back up your answer in detail, using a minimum of 2-4 supporting statements.

4. What is the link between late maturing boys and behavioral problems?

In your personal experience, does this seem accurate? Back up your answer in detail, using a minimum of 2-4 supporting statements.

## Puberty gap: Heavy boys hit it later, girls sooner

Adolescent males at top of the BMI chart may be delayed

By Elizabeth Cooney

**msnbc.com contributor**

updated 8:25 a.m. ET, Thurs., Feb. 11, 2010

Dr. Deanna L. Aftab Guy sees the pain on the faces of her patients' mothers. They don't want their daughters to go through early puberty, developing bodies that set them apart from their friends and cut their childhoods short. But while more girls are increasingly entering puberty at younger ages, new research indicates that some boys are actually starting later.

At a time when one-third of American youngsters are overweight, delayed puberty in boys may be yet another consequence of the childhood obesity epidemic. Previous research has linked body fat to early puberty in girls — overweight girls can start their transition as early as 8 years old.

Puberty for boys typically begins about age 10, but for those at the top of the body mass index charts, the earliest changes of puberty may not begin until age 11 and a half or later, according to the University of Michigan in Ann Arbor study of 401 boys. Researchers followed them from age 2 to 11 and a half.

The report, just published in the Archives of Pediatrics and Adolescent Medicine, found about 14 percent of the heaviest boys studied showed no changes by age 11 and a half, compared to 8 percent of those who had the lowest BMI. By that age, most girls are well into puberty.

"I see more early puberty in girls than I do delayed puberty in boys," said Aftab Guy, a pediatric endocrinologist who practices at Children's Hospital at Vanderbilt in Nashville. However, "it's something to watch for and maybe pay attention to in our overweight boys."

If high BMI has opposite effects on adolescent boys and girls, it won't be the only way puberty plays out differently in girls and boys. Just as puberty is a stew of shifting hormones, moods, and physical transformation, the social context in which those changes play out is equally complicated.

"In our culture some of the physical changes girls go through during puberty are often thought of as not very desirable," said Karen D. Rudolph, a professor of psychology of the University of Illinois at Urbana-Champaign. "The opposite is true for boys."

Girls of all sizes tend to gain fat as they develop. In a society that idealizes slender women, pounds that come with puberty, perhaps on top of being overweight already, can be a burden for a girl who already may feel like she's being treated differently. Early puberty for boys, however, is viewed more positively, from increased muscle mass to changed voices. And because most girls mature before most boys anyway, it's the early girls and the late boys who are alone at opposite ends of the spectrum.

While the new study contradicts previous research on male adolescence, which suggested boys, like girls, are entering puberty earlier, scientists do agree that obesity seems to be affecting how youngsters are developing. Those changes can be painful if they mean the adolescent is off pace with classmates. During that time when peer approval reigns supreme, standing out as different can be agonizing.

### **'No one should have to go through this'**

Boys face different trials than girls. Anguished parents posting on blogs recount how self-conscious their sons are who didn't enter puberty with their peers.

"My son is 16 years old and his voice has not deepened and there is no visible body or facial hair," wrote one on [ehealthforum.com](http://ehealthforum.com). "He is extremely stressed over his voice ... to the point of refusing participate in reading out loud. He has developed anger and depression thinking everyone at school will ridicule him if they hear his voice."

One 17-year-old who says he's 5 feet 1 inch tall, a "bit overweight" and hasn't entered puberty yet posted on a forum at [www.steadyhealth.com](http://www.steadyhealth.com) that he's so embarrassed he doesn't want to go see a doctor. "Being my size at this age is very, very embarrassing," he wrote. It hurts the most when most people compare me to ninth graders, no one should go through this."

Early-maturing girls and late-maturing boys are both more likely to report symptoms of depression than late girls or early boys, Rudolph discovered in a recent study. The happy medium really is the group of right-on-time girls and boys in the middle.

"When the timing is wrong, it doesn't inevitably mean this person is in for trouble, but they're going to be physically distinguished from the others," said David E. Sandberg, director of child behavioral health at University of Michigan Medical School in Ann Arbor. He was not involved in the puberty study.

### **More behavior problems**

New research is emerging about late-maturing boys as they reach older adolescence, said Julia A. Graber, an associate professor of psychology at the University of Florida in Gainesville. As these boys leave high school, they are more likely to have disruptive behavior problems,

including alcohol abuse, than their peers, recent studies have shown. One reason might be the accumulated stress these boys feel while so many of their peer relationships are changing, including the beginning of romantic interests. Not looking as physically mature can affect how a boy feels about being part of this new social world.

"I think we really have to delve into this situation for the late-maturing boys," she said. "With boys, we haven't really paid as much attention to it, or it hasn't been as striking as the information for [early-maturing] girls."

Theories on what might cause late puberty in overweight boys center on hormones produced in fat cells. Obese males have higher levels of estradiol, a relative of estrogen that may interfere with the male hormone androgen.

Boys who reach age 12 and have not begun puberty can be treated with testosterone injections for a few months. But parents shouldn't be alarmed by news reports of the latest study, said Dr. Paul B. Kaplowitz, a pediatric endocrinologist at Children's National Medical Center in Washington, D.C.

"I don't think [the researchers] can say every boy who's overweight is going to have delayed puberty. I think what they're saying is that boys who are overweight on average mature a little later," Kaplowitz said. "It doesn't mean they don't go into puberty."

At a time when so many children are overweight, parents should be more concerned about obesity than puberty, said Dr. Laura K. Bachrach, a professor of pediatrics at the Stanford University School of Medicine.

"They should be worried about the food they're putting on the table."

*Elizabeth Cooney is a Boston-based freelance writer who has covered health for eight years. Her work has appeared in The Boston Globe, the Worcester (Mass.) Telegram & Gazette, and the Sarasota Herald-Tribune.*

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