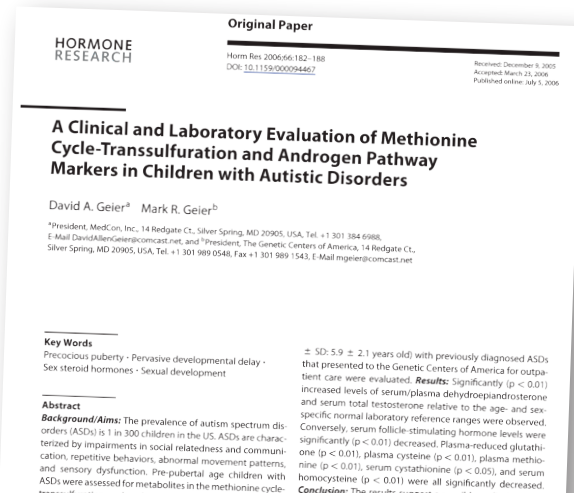


# A flawed rationale for treatment

Dr. Mark Geier and son David have developed an autism therapy involving Lupron, a drug used to treat early, or “precocious,” puberty. The Geiers often point to a 2006 paper in the journal *Hormone Research* (right) as evidence that many autistic children have a form of precocious puberty, citing in particular signs of high testosterone. But three top pediatric endocrinologists – specialists in childhood hormones – told the *Tribune* the Geiers’ data do not show that at all.



In the table below, the Geiers reported that 15 of 16 children they examined with autism spectrum disorders showed clinical symptoms that they say indicate high testosterone.

**An endocrinologist's response:**

*“Masturbation and particularly aggressive behavior often occur independently of increased androgens.”*

**Dr. Paul Kaplowitz**  
Chief of endocrinology, Children's National Medical Center, Washington, D.C.

Patient	Age years	Sex	Race	Clinical symptoms
1	8	M	Caucasian	Masturbation, growth spurt, aggressive behavior, body hair
2	6	M	Caucasian	Masturbation, Tanner stage 2.5, aggressive behavior, body hair
3	4	M	Hispanic	Masturbation
4	4	M	Caucasian	Masturbation, growth spurt
5	6	M	Hispanic	Masturbation, body hair, growth spurt
6	9	M	Caucasian	Facial hair, aggressive behavior, masturbation
7	3	M	Black	None
8	10	F	Caucasian	Body hair, facial hair, genital development, masturbation, growth spurt
9	3	M	Black	Body hair
10	6	M	Caucasian	Body hair, facial hair, genital development, interest in female sexual organs, growth spurt, masturbation
11	8	M	Caucasian	Masturbation, growth spurt, aggressive behavior
12	5	M	Caucasian	Aggressive behavior
13	7	M	Caucasian	Aggressive behavior, growth spurt
14	5	M	Caucasian	Aggressive behavior
15	7	M	Caucasian	Masturbation, interest in female sexual organs, aggressive behaviors, growth spurt
16	4	F	Black	Aggressive behavior, central pattern baldness

In another table, the Geiers provide test results that they say show high levels of testosterone and other key indicators.

**An endocrinologist's response:**

Referring to **1**

*“Some [children are] above the age at which precocious puberty can be diagnosed.”*

Referring to **2**

*“FSH levels are irrelevant and low.”*

Referring to **3**

*“The 0-10 ng/dl range is so far below the level of detectability ... that the conclusions are worse than meaningless.”*

**Dr. Alan Rogol** | Pediatric endocrinologist, Riley Hospital for Children, Indianapolis

Patient	Age years	Sex	Serum FSH mIU/ml (ref. range)	Serum total testosterone, ng/dl (ref. range)	Serum/plasma DHEA, ng/dl (ref. range)
1	8	M	1.2 (0.2–2.7)	25 (0–25)	NA
2	6	M	0.6 (0.2–2.7)	0 (0–20)	NA
3	4	M	NA	20 (0–10)	NA
4	4	M	0.3 (0.2–2.7) <sup>a</sup>	13 (0–10)	120 (26–72)
5	5	M	NA	23 (0–10)	NA
6	9	M	0.3 (0.2–2.7) <sup>a</sup>	24 (0–25)	284 (53–135)
7	3	M	0.4 (0.2–2.7)	14 (0–10)	107 (26–72)
8	10	F	0.8 (0.4–5.0) <sup>b</sup>	27 (0–30)	251 (234–529)
9	3	M	0.7 (0.2–2.7)	19 (0–10)	85 (26–72)
10	5	M	0.3 (0.2–2.7) <sup>a</sup>	17 (0–10)	118 (29–66) <sup>b</sup>
11	8	M	0.3 (0.2–2.7)	10 (0–25) <sup>a</sup>	181 (53–135)
12	5	M	0.3 (0.2–2.7)	14 (0–10)	100 (26–72)
13	7	M	0.3 (0.2–2.7) <sup>a</sup>	23 (0–20)	148 (29–66)
14	5	M	0.3 (0.2–2.7) <sup>a</sup>	14 (0–10)	NA
15	7	M	0.4 (0.2–2.7)	24 (0–20)	67 (29–66)
16	4	F	1.2 (0.4–6.6)	5 (0–10) <sup>c</sup>	94 (19–42)

**An endocrinologist's conclusion:**

*“None of the data verify or even suggest that any of these patients have precocious puberty.”*

**Dr. Peter Lee** | Pediatric endocrinologist, Penn State College of Medicine

## The Geiers respond:

Mark and David Geier respond to critical endocrinologists by saying these specialists do not treat children with autism and thus are not qualified to discuss hormone disorders in autistic children. “It would be very nice if people who have comments would have done lab testing,” Mark Geier said in an interview. These are the opinions of “people who don’t know what they are talking about.” A mainstream lab did their tests, he said, and the levels are clearly outside the reference range. “It’s so obvious,” Geier said. “It’s so common sense.”

SOURCES: “A Clinical and Laboratory Evaluation of Methionine Cycle-Transsulfuration and Androgen Pathway Markers in Children with Autistic Disorders” by Dr. Mark Geier and David Geier; analysis by Dr. Paul Kaplowitz, Dr. Alan Rogol and Dr. Peter Lee; *Tribune* reporting

TRINE TSOUDEROS AND KEITH CLAXTON/ TRIBUNE