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Early Experience with High-Risk Fathers Changes Puberty in Daughters

A new study shows that girls get their first period earlier when they experience disruptive homes in early childhood. When a girl starts life with a high-risk father in the home, and then a divorce occurs and that father leaves, her timing of puberty changes. Her first menstruation occurs 11 months earlier than does either her older sister's or other girls' from divorced families whose fathers do not display high-risk behaviors.



Background

Research strongly suggests that girls who go through puberty early are at greater risk for poor health, mental, and social outcomes. Compared to girls who start to menstruate later, girls who mature earlier are at increased risk for breast cancer, mood disorders, drug abuse, and teen pregnancy. For this reason, researchers want to know what factors influence the timing of puberty.

Many studies have linked disruption in the family and/or an absent father with early puberty. That is, girls whose parents divorce or separate and who then live without their

biological fathers tend to start their periods earlier. Girls who grow up in intact families—with both their mother and father—tend to start their periods later. What researchers are still trying to figure out is whether a disturbed home or the presence or absence of a father actually causes the timing of puberty to change. If so, does girls' exposure to different types of fathers (functional or dysfunctional) within the family at different points in their childhood matter?

About the Study

A recent study by Jacqueline Tither at the University of Canterbury and Bruce Ellis at the University of Arizona attempted to



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sort out these issues by comparing sisters in the same family. The study looked at what happens to a girl's sexual development when she experienced the following:

- the divorce or separation of her parents
- different amounts of her childhood living in a disrupted home, and
- different levels of exposure to fathers who showed deviant or antisocial behavior (i.e., high-risk fathers)

The study asked two questions:

- 1 Did the sisters' ages of first menstruation differ depending on which sister lived with her father longer?
- 2 Did living longer with a certain type of father lead to differences in the sisters' timing of puberty?

To answer the first question, the researchers created a unique study design. Sixty-eight pairs of biological sisters from disrupted families with an absent father were compared with 93 similar pairs of sisters from intact families. Why did the researchers choose these two groups? Because they wanted to see whether living longer in a disrupted family without a dad led the younger sister to get her first period earlier than her older sister. Consider a typical sister pair. They have the same biological mother and father, but one was 5 and the other 12 when the parents broke up and the dad moved out. On the one hand, the younger sister spent more of her childhood (7 more years) in a disrupted family without her father in the home; on the other hand, the older sister spent more of her childhood in an intact family with her father there. In other words, they differed by 7 years in the amount of time they lived with their dad. Did that different length of exposure to their father lead to differences in when the two sisters got their first periods?

A Unique Experimental Design

The study design examined the influence of fathers on daughters' puberty, independent of possible genetic factors and of environmental conditions that are shared by entire families, such as poverty or religion.

- The researchers compared sisters with the same biological parents who grew up in the same home. In previous studies, girls who lived without a father were compared to girls who lived with both parents. These girls differed not only in whether they lived with their father. They also differed in genetic risks, race, religion, socioeconomic status, and everything else that differs between families. Therefore, if previous studies found a link between father absence and early puberty, the researchers still would not know what caused the early puberty. It could be any factor linked to an absent father.
- To handle environmental influences, the investigators of this study compared sisters who grew up in the same home. These sisters shared the same race, religion, and many other features. To handle genetic influences, the researchers studied full biological sisters who differed in age (birth order). Scientific evidence shows that birth order has nothing to do with genetic risk. That is, there is no known reason to expect that older sisters, as a group, are more at risk for certain genes than their younger sisters are. For example, imagine 100 families that have four children and a genetic risk for alcoholism. On average, the 100 first-borns of each family will have the same genetic risk for alcoholism as the 100 second-borns, and so on.

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The second question came out of previous research, which suggests that a parent's personal characteristics can change the course of a child's development. For example, living with a father who displays high-risk behavior (e.g., a history of violence, depression, imprisonment) leads to bad results for the child. The researchers wondered whether the timing of a girl's puberty might also depend on the amount of high-risk behavior displayed by the father.

Findings

The study revealed that what determined whether a sister's age at first menstruation changed based on how long she lived with her father was the type of father she had.

- Younger sisters in disrupted families reached puberty earlier than their older sisters. The opposite was true for younger sisters in intact families. They did not experience puberty earlier.
- These younger sisters only reached puberty earlier, however, if they had been exposed *in early to middle childhood (typically ages 5-7) to high-risk fathers*, and then that father moved out of the house.
- These younger sisters got their first periods about a year early, compared with their older sisters. These younger sisters also got their period about a year earlier than other younger sisters who lived in disrupted families but whose father did display high-risk behaviors.
- In other words, the reason these girls got their periods earlier was not because they lived for different amounts of time with any father. They reached puberty earlier because they lived for different amounts of time with a *certain type of father* when they were young.

A Comparison: International Adoption Studies

Research on girls from developing countries adopted into wealthy Western families sheds light on this study's finding. Before they are adopted, these girls regularly experience neglect, abuse, disease, and poor nutrition. After their adoption, they experience much earlier puberty than children do from their same countries of origin or their host countries. Further, girls who are older when they are adopted (i.e., more than 2 years old) experience puberty at even younger ages.

“More important than the presence or absence of a father is his behavior.

It is not enough simply to have a cardboard cut-out of a father sitting on the couch.

What he does in the family is critical,” says Bruce J. Ellis, the John & Doris Norton Endowed Chair in Fathers, Parenting, and Families; professor of Family Studies and Human Development at The University of Arizona; and one of the study's authors.

The adoption studies indicate that, under very high stress conditions, girls' bodies “shut down,” and their growth is stunted. Similar to the effect of a high-risk father leaving the home, when the stressors are removed by their being adopted into stable families with plenty of food and social support, something happens for these girls. Their bodies seem to respond to a window of reproductive opportunity. They seem

to speed up puberty as if to take advantage of the dramatically improved situation. Some researchers say this phenomenon occurs only during a “sensitive time period” in development. Girls in early to middle childhood who transition from a very stressful to a much less stressful home environment may experience an important speeding up of puberty. This increased pace does not occur in their older sisters or in the population as a whole.

Implications for Practitioners

- Parents and clinicians need to know that stressors such as divorce and exposure to high-risk fathers put girls at increased risk during sensitive periods in their development. Girls’ experiences can result, on average, in the speeding up of puberty by one year. That one-year acceleration increases girls’ risk of breast cancer by 5%. It also makes it more difficult for them to manage the challenges of adolescence.
- This research offers insight into the debate over what type of parenting gives children the most advantages in life. Is “perfect” parenting better for kids than “good enough” parenting is? In this study, when

a father functioned within normal range, the amount of time his daughter lived with him had little effect on her first menstruation. Only time spent with a father who showed deviant or antisocial behavior, followed by his absence, put the daughter at risk for earlier puberty.

This research brief summarizes the following report:

Tither, J. M., & Ellis, B. J. (2008). Impact of fathers on daughters’ age at menarche: A genetically and environmentally controlled sibling study. *Developmental Psychology*, 44, 1409-1420.

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