

Boys have higher death rates from many causes, study shows

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Finds their risk is greater than girls; experts say many factors may be involved.

(HealthDay)—Males may be the more vulnerable sex when it comes dying young—not just from accidents, but from a range of causes, a new study finds.

Looking at a decade's worth of data on U.S. children and teenagers, researchers found that boys had higher [death rates](#) than girls from 17 of 19 broad causes.

Those included not only accidents—in which boys' greater risk-taking can come into play—but also cancer and diseases of the heart, lungs and nervous system.

Past research has suggested that girls have a certain [survival advantage](#). In many countries, for example, [infant mortality](#) is higher for boys. And it's well known that [teenage boys](#) are more likely than girls to die from trauma—whether from accidents, [homicide](#) or suicide.

"But do we see it across a range of ages? Do we see it across a range of causes?" asked Dr. Chris Feudtner, a [pediatrician](#) at the Children's Hospital of Philadelphia who led the new study.

The answer, his team reports, is "yes."

While it is rare for children to die, the study based on [government data](#) for 1999 to 2008 found that in the United States, boys have a relatively higher risk: Across all ages—[infancy](#) to age 20—boys and young men were 44 percent more likely to die than girls.

Over the decade, there were about 76,700 more deaths among boys than girls, according to the report published online Sept. 2 in *Pediatrics*.

The biggest [gender gap](#) was seen among those 15 to 19 years old, which was expected, Feudtner said. When it came to cause of death, injuries accounted for the biggest divide: Boys were more than twice as likely to die of an "external cause."

"But that clearly is not the whole explanation" for boys' higher overall death rates, Feudtner said. When the researchers looked at broad disease categories, boys were more likely to die from most of those causes, too.

Feudtner's team also had information on seven different types of [pediatric cancer](#), including [leukemia](#) and [brain cancer](#). Boys were at slightly greater risk of death from each cancer—either because they were more likely to develop the cancer, were more likely to die from it, or both.

The question is, why?

Feudtner said boys may have some inherent "vulnerability" to developing serious disease, and once they do, to die from it. Or, he said, girls may have an inherent "robustness."

"This could be a story of resilience and ability to overcome," Feudtner added. "Maybe there's some robustness factor that males are missing."

The findings are "important," if not surprising, according to Dr. James Perrin, president-elect of the American Academy of Pediatrics.

Experts have long known that boys have higher risks of developing a number of chronic health conditions—from asthma to certain cancers to developmental disorders, said Perrin, a pediatrics professor at Harvard Medical School in Boston. So it makes sense that they would have higher rates of death, not just from injury but from disease, he added.

Both Perrin and Feudtner said genes are probably at least partly to blame. Girls have two "X" sex chromosomes, while boys have an "X" and a "Y"—and there are key differences between the two. For one, when the body's cells divide and reproduce themselves, they have a tougher time repairing any damage to genes on the Y chromosome versus the X.

Feudtner said there could also be important "epigenetic" differences between boys and girls—that is, differences in which genes are "turned on" or "turned off" at various points during development.

Figuring out why boys have higher death rates could also aid in the wider understanding of different diseases, Feudtner noted. "It could help everyone if we understand the factors at work," he said.

Perrin pointed out that since the 1960s, the overall rate of chronic disease diagnosed among U.S. children has quadrupled. Some of that is due to greater awareness and changes in diagnosis—with autism and attention-deficit/hyperactivity disorder being examples.

But that does not explain all of the increase, Perrin said. Studying the reasons for boys' higher risks could shed some light on why childhood chronic disease is generally on the rise, he said.

More information: The U.S. Centers for Disease Control and Prevention has more on [childhood diseases](#).

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