

Science Article of the Week: LEAD

Directions:

B

Step 1: Read the article.

Step 2: Read the article again. List KEY WORDS for each section and write a one sentence summary using at least 4 or 5 of those key words.

Lead poisoning a contributor to higher crime rates?

By Chicago Tribune, adapted by Newsela staff

06.25.15

Word Count **708**

CHICAGO, Ill. — A hospital machine scanned the brains of a group of young adults.

These men and women had been around a dangerous type of metal called lead when they were toddlers. They had grown up in a poor neighborhood in Cincinnati. Now they were in their early 20s, and the machine showed that their brains had been damaged by the lead.

The part of the brain that was damaged is called gray matter. It allows you to pay attention and also helps you to control your feelings.

The scars left by lead have hurt the young people and their communities. As children, they struggled in school more than those who had not been around lead. As teens, they committed crimes more frequently.

A scientist said lead keeps people from developing normally. It makes it harder for people to make smart decisions.

Key Words:

Summary Sentence:

Older Cities Still Have Lead Problem

People have known for hundreds of years that lead is poisonous. It used to be found in gasoline and paint. Taking it out of gasoline and paint meant that fewer children had to be around lead.

Still, there is lead left in some places, especially in older cities like Cincinnati and Chicago.

When children are around lead, the bad effects don't show up until years later.

In Chicago lead is a big problem in poor neighborhoods. These neighborhoods also have a lot of crime.

In 1995 the children in these neighborhoods were tested. Most of the children had dangerous amounts of lead in their bodies.

Today those kids are in their early to mid-20s, which is the age group in which crime is the highest.

Key Words:

Summary Sentence:

Possible effects of lead exposure

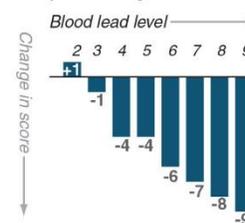
Recent studies have underscored the wide-ranging impact of lead pollution on cities like Chicago. In April, researchers reported in the journal *Environmental Health* that Chicago students who were exposed to lead in early childhood had lower test scores in third grade than other students. As exposure increased, the gap widened. Another study, from 2012, found that aggravated assault rates rose and fell in Chicago on a curve strikingly similar to the pattern seen as leaded gas emissions increased and then declined, about 20 years earlier.

Blood lead levels and test scores

Changes in third-grade ISAT performance as blood lead levels increase, relative to average score for children with the lowest lead levels at age 0-6. Blood lead level measured in micrograms per deciliter.

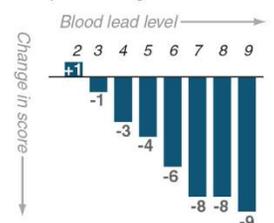
Math scores

Average score of students with a blood lead level of less than or equal to 1 mcg/dL: 161

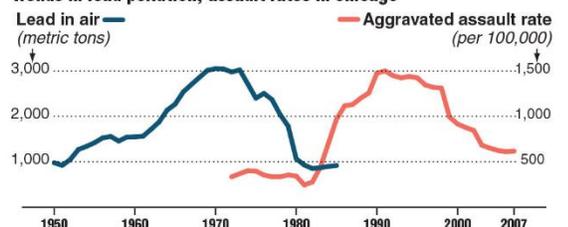


Reading scores

Average score of students with a blood lead level of less than or equal to 1 mcg/dL: 159



Trends in lead pollution, assault rates in Chicago



Source: Anne Evens, University of Illinois at Chicago; Howard Mielke, Tulane University School of Medicine; Sammy Zahran, Colorado State University
Graphic: Chicago Tribune, Tribune News Service

Researcher: Lead Poisoning, Crime Are Connected

Scientists see links between lead poisoning, poor school performance and crime. Some scientists are looking at this connection in Chicago.

Robert J. Sampson has been studying Chicago for more than 20 years.

Sampson added information on lead to his research on poverty, education and crime in Chicago neighborhoods. He has a map of lead poisoning among children younger than 6 in 1995. Another map shows crimes that were committed in 2012, when those children were 17 to 22 years old. The children with lead poisoning lived in major crime areas.

Sampson thinks lead poisoning and crime are connected, and together, they keep people in poverty for many generations.

Key Words:

Summary Sentence:

Lead Pollution: An Unsolved Problem

People who make laws seem to think that lead pollution was solved long ago. During the past five years, national and state leaders have stopped spending as much money on things like screening children, inspecting buildings and getting rid of lead.

Children ages 5 and under are the ones suffering more than anyone else. Many of these children live in neighborhoods that are mostly African-American.

Another study looked at the lead tests of thousands of children born in Chicago from 1994 to 1998. The researcher who did the study is named Anne Evens. She compared the results with how the children performed on standardized tests in third grade.

Her study found that being around lead during early childhood increased the chance that a student would fail reading and math tests.

What Evens found is shocking: At three-quarters of Chicago Public Schools, the average lead level of third-graders was higher than what the government says is OK.

Key Words:

Summary Sentence:

Third Grade Is Critical

Why is third grade so important? It is when children begin to use reading to learn other subjects, and studies show students who fail to master reading skills during such a critical year are more likely to fall behind in later grades and drop out of high school. Dropouts are much more likely to end up in jail than to ever graduate.

Some people know that kids exposed to lead as toddlers are more likely to act out. They also have trouble staying focused and they struggle to work well with classmates.

There is a lot of proof for a link between children being around lead and their behaving badly toward other people. Lead can cause parts of the brain to temporarily stop working, in particular the areas that help keep us from hurting others.

"Of all the problems that affect kids in these neighborhoods, lead is the easiest to solve," Evens said.

Key Words:

Summary Sentence: