

Sugar in milk is linked to increase in the retention of lead in babies

The Associated Press

WASHINGTON — The sugar in milk increases the body's absorption and retention of lead, and this may help explain why babies are more susceptible to lead poisoning than older children, scientists reported today.

But despite the findings, researchers at the University of Wisconsin at Madison said more study is needed to determine the overall effect of milk.

The researchers said experiments with rat pups show that the milk sugar lactose greatly increases the amount of orally ingested lead the intestines absorb. And tissues apparently keep more lead because more is taken into the body through the intestine, they added.

Too much lead can cause brain damage and sometimes death. Lead poisoning can lead to neurological problems and retardation. The condition has been tied to children breathing lead pollutants and eating

old, lead-based paint as it flakes off walls.

Drs. Philip J. Bushnell and Hector F. DeLuca said that while milk is generally good for children, its role in lead poisoning has been questioned because of conflicting test results. Some show milk protects against absorbing lead, while others say it increases the amount of the toxic substance the body retains.

Depending upon circumstances, Bushnell said in a telephone interview, milk apparently can do both. But the exact reasons milk appears to have opposite effects is unknown, he added.

Bushnell said the pre-weaning diet of most babies consists almost exclusively of milk. Younger children absorb much more lead than older ones and it can do more damage to them, he said.

"Maybe this is due to consuming so much milk, but this is what we are looking into," Bushnell said.

"We really don't know the overall effect of milk," he said. "Milk is

very complex and what we are saying . . . is that we should look at the components to see what each does."

Bushnell said milk is rich in minerals that appear to have a protective effect against lead.

"On the one hand, its lactose content would enhance absorption of lead, as shown here, whereas its high concentrations of calcium, phosphorus, zinc and protein would be expected to reduce the retention of lead," the scientists said in a report published in Science magazine.

Bushnell said milk probably would be protective against lead poisoning if there were no lead in it to begin with.

"Normally, there isn't much lead in milk," he said, "but there may be a problem in some canned milk in which there may be lead in the solder" used to seal the can.

There also are other ways in which lead can get into milk, he said, but whatever the source, the important thing is that the lactose sugar could help it get into the body.

Affluent Kids Also Harmed By Toxic Lead

By NANCY NUSSE

Staff Reporter of THE WALL STREET JOURNAL

Long perceived as a problem facing only ghetto dwellers, lead poisoning has started turning up in the homes of the affluent.

In Washington, D.C., a professional couple in a partly renovated neighborhood noticed that one of their eight-month-old twins was growing more slowly and eating less than the other. At first they blamed the vagaries of infants. But it turned out that the child had an unusually high level of lead in her blood, presumably from eating leaded-paint dust that accumulated as the walls of their house were being sanded.

Another Washington couple, who live in a posh section of Capitol Hill, found that their normally agreeable three-year-old had suddenly turned cantankerous, a symptom of lead poisoning. The child had swallowed enough toxin from sucking on a lead-painted gate to cause slight learning disabilities.

These families aren't alone. Dr. Vernon Houk, director of environmental health ser-

vice at the Centers for Disease Control in Atlanta, says that "lead toxicity is not, as once thought, confined to lower income urban areas," although it is still concentrated there. He says, "but in cities, children of af-

fluent families, like poorer children, ingest lead from automobile emissions and from leaded paint.

"A General Ignorance" "There's a general ignorance about it among the middle class," says Devra Lee Davis, director of toxic substances for the Environmental Law Institute in Washington. "They just don't think it happens to their own kids." The result, she says, is that lead-poisoned middle-class children can go unchecked by both parents and pediatricians.

Absorbed by eating or breathing, lead mainly affects children, particularly those with iron deficiencies. It can cause headaches, vomiting and behavioral problems such as hyperactivity and shortened attention span as well as minor or severe brain damage and death. The toxin is found in air, soil and such products as batteries, tin cans, water pipes, pesticides and, most notably, leaded paint.

The greatest danger comes from paint that's still around from before World War II, when many paints contained lots of lead. The paint can chip off walls that are poorly maintained or can turn into dust when buildings are renovated. In the 1940s, paints containing lead pigment were banned. Then, in 1977, the use of lead as a drying agent in paint was also prohibited. But paint that contains lead is still sold in some stores.

Lead can be removed from the body through chemical injections, a process called chelating that's normally used only when lead levels exceed 55 micrograms per 100 milliliters. Some of the behavioral and learning problems that result from lead poisoning can be corrected through special education, Dr. Houk says, but reduction in intelligence is irreversible.

New Studies

The discovery that lead threatens children at all economic levels follows new estimates of its effects. In the past few years, some researchers have concluded that small amounts of lead, which were once considered harmless, can cause slight brain damage and behavioral problems.

For example, Dr. Houk says, more than 20 micrograms of lead, a level found in 1% to 3% of U.S. children, can lead to hyperactivity and reduction of intelligence, attentiveness and memory. He says there's also concern, though no proof, that 15 micrograms of lead—below the average found in the bloodstreams of city youth and equal to

the amount in rural children—can produce the same results.

Dr. Houk cites a study of 3,000 children in the Boston suburbs of Chelsea and Somerville that found that those with higher lead levels scored an average of four points lower on intelligence tests and had more behavioral problems like hyperactivity and short attention spans. Directed by Herbert Needleman, a Harvard psychiatrist, the 1978 study was a major breakthrough, Dr. Houk says. It indicated that the lead levels of children with learning disabilities were well below levels that had been thought harmless.

A new study conducted on the suburbs of Birmingham, England, apparently duplicates the Needleman results. The study hasn't been released yet, but its director, Mark Hamlin, a University of Birmingham research associate, says his findings are similar, according to Dr. Houk.

The Lead Industries Association disagrees about lead's effects. "Connecting low blood lead levels to such damage doesn't reflect current knowledge," says Jerome Cole, director of the group's environmental-health division. He cites a recent review of 22 studies on lead's effects that was published last November by researchers from the University of Cincinnati and the Environmental Protection Agency. The review found that only five of the 22 studies were methodologically sound and that, of the five, only two—including Dr. Needleman's—linked low lead

levels to learning and behavioral damage. In any case, the children of middle-class families are rarely screened for any amount of lead poisoning. Government projects to locate lead-poisoned children are carried out through Medicaid and other social-welfare programs. And the Housing and Urban Development Department's effort to rid houses of leaded paint applies only to federally owned housing, thereby excluding most middle-class homes.

Mrs. Davis maintains, though, that ghetto children don't fare much better than middle-class kids because efforts to locate and treat lead-poisoned children are inadequate. She says most cities don't conduct any screening programs, and at best only about 3% of the nation's children under six are tested for lead.

Behavioral Problems Among 3,000 Children With Low And High Lead Levels

	Low Lead (%)	High Lead (%)
Distractible	14	36
Not persistent	9	21
Dependent	10	23
Disorganized	10	20
Hyperactive	8	16
Impulsive	9	25
Easily frustrated	11	25
Daydreamer	15	34
Does not follow simple directions	4	14
Sequence of directions	12	34
Low overall functioning	8	26

Source: The New England Journal of Medicine

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