

September 4, 1953

Mr. Herbert E. Hillman
Technical Director
Eaglo-Paint and Varnish Corporation
49-20 Fifth Street
Long Island City 1, New York

Dear Mr. Hillman:

The problem of lead poisoning among young children is a serious one with which we have been concerned for a goodly number of years. Unfortunately we have published little on the subject and nothing of a comprehensive nature in any widely circulated publication, largely because of our primary preoccupation with diseases of industrial origin. On the other hand, we have been in touch with the work and observations of others elsewhere in this country, and have given diagnostic assistance here and there as occasion arose. Most of the actual and suspected cases in this general area, and some of those in other cities in which there are no analytical facilities, have come to our attention for analytical appraisal, and therefore we have a very considerable accumulation of information which relates to the incidence of the disease, the sources of exposure, the extent of the absorption of lead, and the rate of mortality.

I enclose a tabulation of the number of cases of which we have knowledge by years up to 1953. The data will give you some insight into the scope of the local problem. The year 1953 has been a bad one from the aspect of mortality. The season for the appearance of cases (most of which, for some unknown reason, come in during the hot months of the year) is not over, and I have not tabulated the results for the year, but the data, it appears, will resemble those of 1951.

One might conclude that the incidence of the disease is unduly high in Cincinnati, and that there has been a recent increase (during the past few years). We do not believe that either of these conclusions is justified. It is probable that we do not see anything like all of the cases in any year, and that the number found and recognized is a function of the local interest and diagnostic competence of physicians. For a number of reasons these have been heightened recently. In our experience, the incidence of the (recognized) disease in other cities, Baltimore, for example, varies with the application of satisfactory means of detection and diagnosis. Wherever there are facilities for modern diagnosis, the disease is found. I would estimate, on the basis of our experience, that there are considerably more than one

Mr. How

April, 1953

thousands.
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poisoning per year in the U. S. A.
rate of mortality in such cases,
hundred fatalities per year at the
estimate, deliberately designed
rate of mild cases must be very
public health problem of real
something should be done while it can

source of exposure in our cities.
other factors contribute. Lead
even the lead nipple shield, have
one of battery cases as household
instance, at least, the
rate of fume (which was
the surfaces with which the hands
biologic factor. Several cases,
of lead pipe to bring water into
city or in other remote places.

number of cases (but not all) come
areas of the city. Cracked and
baseboards and porch railings,
appear to be the principle source.
benches, beds, high chairs and the
without the precaution of using
important source. Some cases
putty, picked by small fingers
putty, as you know, doubtless,
compounds, while some
to be little justification for

solution of this problem, as I pointed
the Association at the Greenbrier
organized program of education and
manufacturers, and distributors, to
more than very minor lead
household and in the environment
voluntarily by a wise industry
properly, it will be accomplished
difficulties and disadvantages through

Mr. Herbert E. Hillman - (3) - September 4, 1953

This provides you with most of the facts and opinions derived from our observations. If I can be of any assistance to you and to the industry generally in dealing with this matter, I should be pleased to have you call upon me.

Sincerely yours,

Robert A. Kehoe, M. D.

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Cases of Lead Poisoning Among Children in Cincinnati,
in the Records of The Kettering Laboratory, by Years

<u>Year</u>	<u>Number of Cases</u>	<u>Number of Fatalities</u>	<u>Confirmed by Analytical Data</u>	
			<u>On Blood and</u> <u>Urine</u>	<u>on Tissue</u>
1928	2		2	
1931	1		1	
1932	1	1		1
1933	1	1		1
1934	3		3	
1935	5	2	3	2
1936	1		1	
1937	4	1	4	
1938	3	1	3	
1939	5		5	
1940	5	1	5	
1943	1		1	
1946	2	1	1	1
1947	2	1	1	1
1948	3		3	
1949	6	3	5	3
1950	12	4	8	4
1951	18	7?	16	3
1952	12	2?	11	1
All Years	87	25	73	17

Comments:

1. The histories of exposure as supplied were ill-defined in most instances. The full case records may have been more informative. These were not investigated at this time. Paint from toys, furniture, woodwork in house, porch railings and unspecified sources was incriminated, sometimes by implication only, in 16 cases; battery casings used as household fuel were implicated in 2 cases; metallic lead toys were involved in 2 instances, one of which was fatal, and a lead nipple shield was convicted in 1 case.

2. Pica was alleged as a factor in 22 cases.

LEAD POISONING IN CHILDREN

Historical - Comparatively rare disease

Use of lead nipple shields

Use of cosmetics - face and neck - contaminating breast - Japanese

Use of stains and dyes on hair - India

More recently

Frequent occurrence in Queensland

Calling attention to paints of high lead content

Present problem in USA

Sources

Inside paint - floors and other woodwork - painted plaster
walls - window sills

Immediate environment - playpens, high chairs, cribs, toys

Other - metallic lead toys - molten lead inhaled
solid lead chewed - bullets, etc.

Nipple shields still used occasionally

Use of storage battery boxes for fuel in household

Water supply - lead pipes

Bullets in body - especially within a joint

LEAD POISONING

A NURSERY THREAT

Lead is not a new product, it is among the first metals known to and used by mankind, and its use at present is very extensive in almost every part of human surroundings.

The most startling danger of lead, from the aspect of the public health, is that which involves small children.

Age of child most susceptible from NINE MONTHS TO THREE YEARS. This is the exploring age, when the child starts crawling and walking around the house. The child puts things into his mouth; and to relieve the discomfort of teething, the baby may chew on any available object.

The dangerous features of the disease in childhood are the following:

1. The child's exposure to lead often escapes the notice of the parents.
2. The disease is insidious in its development and the early symptoms often go unrecognized.
3. The disease in childhood is much more serious than that in late life, disablement or death being often the outcome.

Sources of lead poisoning:

1. Chewing paint on window sills, toys, furniture *and porch railings*
2. Constant sucking on small lead objects such as toy soldiers, paint rags, etc.
3. Swallowing chunks of painted plaster or loose flakes of old paint from inside or outside walls and eating them.
4. Removing putty from frames (windows, doors, pictures) and swallowing.

Keep in mind the following:

1. That all paint used for inside purposes should contain little or no lead.
2. Reputable toy and juvenile furniture manufacturers do not use toxic paint in their products.
3. The real DANGER is when AMATEURS REPAINT AND USE AN UNSUITABLE LEAD BASE PAINT.
4. Surfaces from which paint is cracking or peeling provides bits of paint as a source of lead poisoning.

Precautions to take:

1. When refinishing woodwork, toys, childrens furniture (cribs, chairs, tables) be sure to get non-lead paint for the job. Percentage of lead should be on the label, if not inquire. Paint for inside use, should never contain more than 1% or 2% of lead.
2. Prepared the surface before you start to paint, remove all old paint. Do not leave paint, turpentine, old plaster paint flake around for child to eat.
3. Check woodwork, furniture, toys in your home NOW. Watch for teeth marks and maintain a lead free environment.
4. Do not permit a small child to have or play with metallic lead in moulding sets or other toys. An older child with such a toy should be taught how to use and the dangers involved.

LEAD POISONING

How it affects small children

Lead is not a new product, it is among the first metals known to mankind. Lead colic and paralysis were among the first mentioned diseases, and were associated with industry. To a large extent, lead poisoning as the result of occupational hazard does not exist.

The chief danger today is when small children become affected.

Dangerous feature is the insidiousness of its development. The disease may become advanced in a child before it is suspected.

Age of child most susceptible from NINE months to THREE years.. This is the exploring age, when the child starts crawling and walking around the house. The child puts things into his mouth; and to relieve the discomfort of teething, the baby may chew on any available object.

Symptoms of poisoning are difficult for highly trained physicians to diagnosis Vomiting, loss of appetite, irritability and lethargy can occur with almost any illness of childhood.

By the time more pronounced symptoms occur, especially convulsions, irreparable damage has been done to the brain.

Sources of lead poisoning

1. Chewing lead paint on window sills, toys, furniture.
2. Constant sucking on small lead objects such as toy soldiers, paint rags, etc.
3. Swallowing chunks of plaster or loose flakes of old paint from inside or outside walls and eating them.

IMPORTANT: It is the day by day infiltration of lead that does the damage.

Keep in mind the following

1. It is recommended that inside woodwork be painted with material containing very little lead.
2. Reputable toy and juvenile furniture manufacturers do not use toxic paints in their products.
3. The real DANGER is when AMATEURS REPAINT AND USE AN UNSUITABLE LEAD BASE PAINT.

Precautions to take

1. When refinishing woodwork, toys, childrens furniture (cribs, chairs, tables) be sure to get non-lead paint for the job. Percentage of lead should be on the label, if not inquire.
2. Prepare the surface before you start to paint, remove all old paint. Do not leave paint, turpentine, old plaster paint flakes around for a child to eat.
3. Check woodwork, furniture, toys in your home NOW. Watch for teeth marks and maintain a LEAD FREE ENVIRONMENT AROUND A CHILD.

Greater Cincinnati Safety Council, in cooperation with *To be used to all parents of school children through PTA*

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among
Cases of Lead Poisoning in Children, Recorded
by The Kettering Laboratory, by Years

(No cases recorded during the years omitted)

Year	<i>Cincinnati only</i> Number of Cases		<i>Cincinnati only</i> Number of Fatalities		<i>Cincinnati only</i> Confirmed by Analytical Data		<i>Cincinnati only</i> On Blood and Urine		<i>Cincinnati only</i> On Tissue	
					By Blood	By Tissue	By both			
1928	2	2					2	2		
1931	1	1					1	1		
1932	1	1	1	1		1			1	1
1933	1	1	1	1		1			1	1
1934	1 Indianapolis → 4	3	1	1		1	3	3		1
1935	5	5	2	2		2	3	3	2	2
1936	1 Philadelphia → 2	1	1	1			2	1		1
1937	4	4	1	1			4	4		
1938	3	3	1	1			3	3		
1939	5	5					5	5		
1940	5	5	1	1			5	5		
1943	1	1					1	1		
1946	2	2	1	1		1	1	1	1	1
1947	2	2	1	1		1	1	1	1	1
1948	3	3					3	3		
1949	6	6	3	3		1	2	5	5	3
1950	12	12	4	4		4	8	8	4	4
1951	2 Louisville → 20	18	7?	9?	?	?	?	16	16	3
1952	12	12	2?	2?	?	?	?	12	11	1
All Years	91	87	25	29				75	73	17

Comments:

1. The histories of exposure as supplied were ill-defined in most instances. The full case records may have been more informative. These were not investigated at this time. Paint from toys, furniture, woodwork in house, porch railings and unspecified sources was incriminated, sometimes by implication only, in 16 cases; battery casings used as household fuel were implicated in 2 cases; metallic lead toys were involved in 2 instances, one of which was fatal, and a lead nipple shield was convicted in 1 case.

2. Pica was alleged as a factor in 22 cases.

3. Three of this series of cases occurred at considerable distances from Cincinnati (Philadelphia, Louisville and Indianapolis), the remainder being from Cincinnati or its environs.

omitted for A. G. Kettering's purpose in reporting Cincinnati cases

Frequency

Baltimore - from 1931 to July 1, 1949

<u>Age in Years</u>	<u>Number of cases</u>	<u>White</u>	<u>Colored</u>	<u>Number of Deaths</u>	<u>White</u>	<u>Colored</u>
Under 1	1					
1	37					
2	121					
3	32					
4	13					
5	8					
6	4					
7	2					
8	1					
10	1					
Total	220	78	142	78	27	51

Largest number in any one year - 31

Smallest number in any one year - 2

Cincinnati - Largest number of cases - 20 - 1951

87 from 1928 to 1953 - with 25 fatalities