



*Rochester Committee
for Scientific Information
Rochester, NY*

*RCSI Bulletin 73
Lead Poisoning I. A Background Report*

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August 1967*

THE ROCHESTER COMMITTEE FOR SCIENTIFIC INFORMATION

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73(c)

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LEAD POISONING. I. A BACKGROUND REPORT

1. A field study in Rochester in 1964.

In September 1964, 5 cases of lead poisoning were discovered in a group of 12 children living in one apartment house in Rochester. This finding stimulated Drs. Arthur Kopelman and Evan Charney of the University of Rochester School of Medicine to measure the true prevalence of lead poisoning among children under five years of age in a slum area in the Third Ward. These tests were made in the fall of 1964 with the collaboration of the Monroe County Health Department.

A screening test for lead poisoning, called a urinary coproporphyrin determination, was carried out on samples of urine from 60 out of 65 pre-school children in an area amounting to approximately two city blocks. Eleven out of 60 showed a positive test and 8 of the 11 were still positive on a repeat exam. The screening test is sometimes positive in certain other illnesses; therefore, to confirm the presence of lead poisoning, the researchers took samples of blood from the eight children with positive tests and analysed the blood for lead. Three of the 8 children were found to have elevated blood lead levels. A fourth child, who was not included in the original screening but was a sister of one of the children found to have lead poisoning, was tested for blood lead level and also found to be positive.

On this basis then, it was shown that 4 of 61 children (6.6%) from a small slum area in Rochester were poisoned by lead.

2. Conclusions from this study.

Lead poisoning is a significant health menace among young children who swallow peeling, crumbling lead-containing paint and putty originating from walls and woodwork of rundown, dilapidated living quarters in Rochester. Some eat the paint while others swallow it when it contaminates hands, toys and food. Properly painted and repaired dwellings present less of a hazard when lead-containing debris is removed or covered thoroughly. Furthermore, modern paints sold for indoor use do not contain lead. It is clear that this serious problem is directly related to the existence of inadequate and substandard housing!

The figure of 6.6% of poisoning found in Rochester coincided quite well with the incidence of lead poisoning among pre-school slum children in Chicago (8.8%), Baltimore (7.1%) and Cleveland (6.4%). The seriousness of the existing situation is accentuated since lead poisoning damages the blood-forming system and the brain. If early treatment is not provided, permanent brain injury may result or the patient may die.

Drs. Kopelman and Charney thus proved in 1964 the existence in this community of an extremely serious public health and medical problem. Their findings were embodied in a report, which was sent to the Monroe County Health Department in the winter of 1964-65.

The report made 5 recommendations:

1. Screening of children for lead poisoning by the Monroe County Health Department.
2. Establishment of a blood lead testing service by the Health Department.
3. Treatment of recognized cases and adequate testing of children exposed in the same manner or who lived in the same house.
4. Education of parents, doctors, and visiting nurses to the hazard of pre-school children of eating paint in slum buildings.
5. Slum clearance.

3. Action By the R.C.S.I.

The R.C.S.I. established a lead poisoning subcommittee to check (1) what action was taken on this report, and (2) whether Rochester children are still threatened with lead poisoning.

The Committee will report current cases of lead poisoning, and will aid medical facilities in tracing the conditions responsible for the individual cases.

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