

Lead Industries Association

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May 19, 1949

Robert A. Kehoe, M. D., Director
Kettering Laboratory of Applied Physiology
University of Cincinnati
College of Medicine
Eden Avenue
Cincinnati 19, Ohio

Dear Bob:

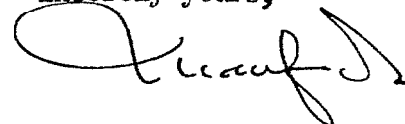
As you will deduce from my enclosure, we are considering the production of a motion picture, to be made available to both medical students and medical society members, as a step towards straightening out some of the misconceptions (in some cases, the almost complete absence of conceptions) about plumbism which are so common among even very able medical men.

You will readily see that the outline herewith leaves much to be desired, but I am submitting it "as is" to a small group of authorities in the hope that, through their independent criticisms, we may evolve something less crude and more adequate for presentation to our Board of Directors, who must of course give their approval before we can embark on so costly an undertaking.

I hope that you will be willing to give me your frank opinion of the probable value of such a film and of the likelihood of a real demand for it from medical schools and societies, as well as your specific criticisms of the outline itself. Our plan is to issue the picture under joint sponsorship with the Council on Industrial Health of the American Medical Association, with the anticipation that it may be only the first of a series of presentations on various occupational diseases, put out under the A.M.A. aegis and financed by appropriate industries.

What I am asking of you is, I think, justified by the potentialities of the proposal, and I hope that you will agree.

Sincerely yours,



enc.
mb/sd

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THE SAFE USE OF LEAD IN MODERN INDUSTRY

Prepared for

The Lead Industries Association

by

The Jan Handy Organization

May, 1949

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A thirty minute sound motion picture in Kodachrome designed to acquaint doctors and future members of the profession with modern methods of recognition and hygienic control of occupational lead poisoning.

The picture will be narrated by some accepted authority in this field. One or two brief scenes will establish lead poisoning as having been recognized for years. A quotation in Latin from Ramazzini dissolves to the English translation and is read by the narrator. We learn that the lead used in wine processing was recognized as a contributing factor to the disease in those early days. Also, the famous painter Raphael was thought to have died as a result of lead poisoning.

Three centuries ago, the Devonshire Colic in England was known to have been caused by wine in leaden vessels.

Our own Ben Franklin, interested among other things in the distillation of liquors, found the cause of lead poisoning in the lead "worms" used in distillation apparatus. He gave the disease the picturesque and highly descriptive name of "Dry Gripes."

The narrator now refers to the incidence of the disease with relation to other industrial disabilities.

As he speaks of the importance of the metal in modern industry and our modern mode of living we illustrate his talk with a montage of modern conveniences which we have come to accept as necessities. Batteries in streamlined automobiles, a steel frame of a sky scraper being covered with red lead, a neat Colonial residence receiving a coat of white paint, modern enamelled kitchen equipment and utensils, a variety of rubber articles, people buying and reading newspapers and people using telephones.

The narrator stresses the fact that while lead is one of the commonest poisons used in modern industry today, the industrial use of lead can be made relatively safe with proper engineering and medical control, the latter being essentially a problem for the general practitioner.

While several hundred industries use lead in one form or another, there are about fourteen which head the list and which are responsible for the vast majority of lead poisoning.

We see close shots of some of the hazardous jobs so that the narrator can point out the exposure to lead and the method of absorption. For example, a shot of a worker on storage batteries in a cloud of dust as the narrator refers to the finely divided particles of lead compounds suspended in the cloud and inhaled, causing lead absorption and intoxication, the greatest source of lead

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In another scene we see a worker skimming dross from lead pots. He is exposed to the poisonous vapor and inhales it. These two ways of inhaling lead, from dust and vapor account for approximately 95% of all cases of industrial exposure and absorption.

We see a painter working on a small home or on some steel construction puff at a cigarette which he holds with paint-stained fingers. In another close shot, another painter with paint-covered hands eats a sandwich as the narrator declares that "eating of lead" accounts for X number of cases of lead poisoning. Another scene will show a child with face smeared as it sits on the floor near the base board which has some paint chips peeled off.

Another workman is shown reaching for a can marked 'gasoline.' He pours some on a bit of waste and rubs it over his hands and forearms to get some grime off. The narrator points to this method of absorption of tetraethyl through the skin as rare but dangerous. NOTE: The scenes to be shown in industry should, if possible, be played deliberately under old fashioned, obviously dangerous conditions so as to serve as a marked contrast to modern factory scenes to be shown in a summary at the end of the film to emphasize what cooperation between engineering and the medical profession can accomplish to protect the health of the workman.

The narrator now introduces the typical patient and his complaint. We see patient and doctor in office. As the doctor lets the patient tell of his symptoms, the narrator interjects brief comments which point to the cause and what the doctor should look for next by way of getting more conclusive evidence. Thus we bring out the following typical symptoms:

Headache
Pain in stomach around navel. Very painful.
Constipation
Loss of appetite. Breakfast most distasteful.
Bad taste in mouth. Tastes like sucking on penny.
Getting weak. Arms weak. Right arm worse than left.
Can't even pick up hammer.
Losing weight. . . 12 pounds in three weeks.

The narrator points out that the first question which the doctor should ask today is the same that Ramazzini asked three hundred years ago: "What trade are you of?" The doctor continues with the patient and asks the following:

Do you breathe dust?
Is there an exhaust system?
How good is your grip?
Do you sweat much?
When did constipation begin?
What meal do you dislike most?
Will ordinary laxatives relieve your constipation?

Thus, while the conversation between doctor and patient develops, the interjections of the narrator will give our audiences a glimpse of the clinical pic-

Now with the aid of an anatomical drawing in simple outline plus animation or pointer action, the narrator points out the organs involved in lead poisoning as he traces the course beginning with the respiratory tract or the alimentary canal. Using the chart as the starting point, he points out the need for physical examination of the gums for the 'lead line'. Examination of the red blood cells for basophilic granulation (stippling). Eliminate Hodgkins, leukemias and pernicious anemia. Urinalysis (collected for 24 hours). Objective evidence if over the normal lead level. X-ray of bones of a child. In each of these instances, actual cases will be shown.

Now follow actual cases to show emergency and post emergency treatment and giving the underlying principles of treatment, the duration of disability and possible residual disability.

The narrator appears again. This time he has a chart before him listing Belknap's suggestions for industry.

1. Suspect all lead dust.
2. 95% absorption through nose.
3. Ordinary masks and respirators do not protect.
4. Lead poisoning must have absorption plus disabling symptoms.
5. Diagnosis requires physical exam, blood studies and urinalysis.

As the doctor points to the above headings, scenes in factories will be recorded to illustrate each of them.

Finally, the narrator points out that here is a metal which is important in modern living. It is a necessary poison which can be controlled. It is up to the medical profession to guide industry in its safe handling. And following are some sound rules which will minimize the danger:

1. Pre-employment examination to avoid susceptibles.
2. Re-examination to discover impending disabling intoxication.
3. Improve worker's average health.
4. Systematic factory inspection and worker's protection.
5. Get cooperation of workers with frank expression as to the dangers involved. Frequent examinations and prompt treatment.

In these latter scenes, new factory methods designed to protect the workers should contrast with the early dangerous factory sequences.

Finally the narrator summarizes briefly giving some statistics on the vast improvement during the past twenty years in both engineering and medical control and ends with a note of caution. He points out that while available statistics show that there has been a progressive decline in the incidence of fatal lead poisoning in the United States, the frequency of occurrence of occupational lead poisoning in this country is still such as to reveal serious shortcomings in the application of available hygienic knowledge and technique.

The use of lead compounds and lead-bearing materials of all kinds, as employed in the production of commodities and in serving the needs of the modern community, should be subjected to careful scrutiny, from a hygienic point of view, to the end that the potential hazards associated with such use may be recognized and brought under adequate control.