

June 2, 1960

R. E. Wehr, M. D.
Acting Health Commissioner
City of Cincinnati
Board of Health
City Hall
Cincinnati 2, Ohio

Dear Gene:

The variability of the compounds of lead, from the aspect of their absorbability, has long been a subject of speculation if not controversy. This is a valid consideration in relation to absorption through the skin, but it is of much less importance in relation to absorption from the lung or from the alimentary tract. In the latter situation, it is to be remembered that, (1) the absorption of any lead compound is poor and that, even under the best of conditions, only 8 to 12 percent of that ingested is likely to be absorbed; (2) that all compounds of lead have some degree of solubility, and that there is a long time (18 to 48 hours) between swallowing a substance and evacuating it from the alimentary tract; and (3) that, therefore, there is less difference than might be expected between different lead compounds with respect to their absorption from the alimentary tract. Accordingly, it is impossible to give any acceptable statement of the facts concerning the relative degrees of danger associated with the ingestion of various lead compounds. One might suppose that the chromate is less dangerous than the oxide, and that the oxide is less dangerous than the carbonate. The only thing I am prepared to say with reasonable certainty is that the sulfide and the silicate are much less dangerous than certain other compounds - for example the oxide - when inhaled. This, of course, has nothing to do with the danger from ingestion, for the sulfide is readily soluble in dilute hydrochloric acid, and, therefore, may readily be absorbed from the alimentary tract.

The facts in these matters, as you see, are obscure. We, here, are attempting at present to determine some of them in particular relation to lead suspended in the air. It is not safe to make any assumptions along the lines of your question, and I believe we have no choice, at present, but to limit the lead content of the paint (without regard to compound). I suggest that you should not allow anyone "to lead you down the garden path," with these considerations. And, with all due respect to Messrs. Foy and Gobel, who are fine gentlemen and are not, themselves, responsible for the dearth of information on these matters,

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