

January 28, 1944

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Dr. J. J. Durrett, Director,
Medical Advisory Division,
Federal Trade Commission,
Washington 25, D. C.

Dear Dr. Durrett:

I am very sorry that your letter of October 16 has gone unanswered for so long. I have just returned to my desk, and I hope the delay has not made my reply entirely useless to you. I am very glad to give you my opinion for what it may be worth on the question raised. Also I have gone over the memorandum for the Commission (including the testimony of Dr. Smith), which you included with your letter.

Regarding the memorandum, first I may say that I am in general agreement with the manner in which the subject has been presented. However, I think an unnecessarily severe analysis has been made of the lead exposure involved in the use of hair dyes of this type. I certainly deplore the use of both lead and bismuth hair dyes, but one finds it rather difficult to make a very bad case against them. There is much too much tendency to ascribe the occurrence of disabling cases of lead poisoning to the absorption of minute quantities of lead compounds. It is true beyond any possible doubt that medical literature is full of misinformation on this subject. Moreover, the misinformation is not limited to the older publications. Some of the worst articles have appeared within recent years. Most of these are based on the belief that even the most minute quantities of lead absorbed into the body tend to accumulate and eventually will produce illness. This is distinctly untrue, the evidence against it being overwhelming. For example, it is now perfectly apparent that all of us take in lead with our food in quantities of such magnitude that the average American adult takes in approximately one third of a milligram per day. There is not the slightest evidence that this ever results in damage to anyone, and unless the dosage is materially increased above this level, one can confidently rely on the maintenance of good health insofar as lead absorption is concerned. I believe this evidence has not been taken sufficiently into account. Moreover, the statement that an intake of as little as 1/65th of a grain per day will frequently produce lead intoxication, fails to take into account the fact that this is a rather large dosage. It is

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certainly most unusual for individuals to take a dose of lead of this order of magnitude daily, for this is equivalent to one milligram per day. In this connection, I might point out that in the course of experimental observations I have fed a healthy human subject one milligram of lead per day in excess of that which was in his diet for a period of four years, without the slightest indication of any illness or injury or symptomatic deviation from the normal. For reasons which developed out of our day to day study of the lead intake and output of this individual, I am quite willing to agree that this is too large a dose of lead to continue for an indefinite period of years. However, I think I can say categorically, that the ingestion of a dose of this order of magnitude over a period of a few months is most unlikely to result in the slightest harm.

There is a point in Dr. Smith's testimony with which I would take issue. I believe there is no sound evidence whatever to indicate that lead in the form in which it exists in these hair dyes can be absorbed through the scalp in any measurable amounts. The statement has frequently been made that abrasions of the skin will result in the absorption of lead in solution. In my opinion, this is assumption. I know of no experimental evidence back of this statement. It is my opinion that application of lead acetate to an open wound will produce a coagulation of the surface whereby actual absorption is largely prevented. Almost certainly some slight absorption at the surface would take place for a very short period of time, but in my opinion, this would be negligible. There is one other point in the testimony which I think has been given undue weight. I refer here to the emphasis put on the factor of susceptibility. It is quite true that individuals vary somewhat in their response to lead absorption. Years of experience in lead industries has taught me that the variability is not remarkable, and that most of the interpretations based on undue individual susceptibility are false. Actually, we usually find that the individual who responds dramatically to lead absorption is an individual who for one reason or another has absorbed a great deal more lead than anybody believed possible under the circumstances. I could cite many examples of cases of undue "susceptibility" that have been traced to an unforeseen and misinterpreted severity of exposure.

Despite all that I have said above, there are certain risks to the public involved in the use of hair dyes containing lead and other cosmetic preparations containing moderate or high concentrations of lead compounds. The risk is not so much to the individual who makes use of the dye from time to time as it is to the individual who makes regular use of it as a professional hair dresser. Such an individual, unaware of the risk, is likely

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to ingest appreciable quantities with some degree of regularity. Moreover, children, or rather infants in intimate contact with the mother's skin and hair, may take in appreciable quantities. It is not stated in the record which you forwarded to me, but it is a fact nevertheless that most of the cases of lead poisoning originating out of the use of face powder and face enamels have been nursing infants. The incidence of lead poisoning from this cause has been particularly high in the Orient, where such powders are used more commonly than they are among us. For these reasons, it is my opinion that any hair dye containing lead or other poisonous metals should be so labeled as to indicate the presence and approximate concentration of the potentially dangerous material. In general, I consider the risk to be slight, but I think the individual ought to have the right of choice as to whether he is willing to take the risk. He certainly should not be led ignorantly into taking any risk that he would not take if he were properly informed.

I shall now attempt to answer your specific questions. I agree that there will be no significant absorption of lead from an intact scalp. I agree also that if the hands are soiled with the preparation, they may contaminate the food or otherwise introduce lead into the mouth. In the case of the average individual who might treat his own hair at fairly wide intervals, this should not give rise to serious difficulties. In fact, in my opinion, it constitutes little risk, unless there should be the grossest carelessness. In the case of the hair dresser, this might well constitute a significant risk because of the frequency with which some degree of carelessness might result in the ingestion of lead. I do not think that abrasions of the scalp, such as are likely to exist, would be an important factor in the absorption of the lead compound. Moreover, I think that if there were serious denudation of the scalp, the individual would be unwilling to apply the dye upon it because of the pain invoked thereby. For this reason I scarcely think there is any need in warning the individual against contact of the dye with the scalp. (The fact is I should consider such a warning as likely to be ineffectual even if it were given, for purely psychologic reasons.) I do think the individual should be advised against soiling his hands and then allowing them to go unwashed.

I believe this covers my ideas as well as possible in so limited a space. However, if I can be of any further assistance, please do not hesitate to call upon me.

Very truly yours,

Robert A. Kehoe, M. D.

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