

June 13, 1973

Dr. J. C. McNulty, Director
Occupational Health Division
Department of Public Health
Box 134, G.P.O.
Perth, 6001, Western Australia

Re: JCMcN/MT

Dear Doctor McNulty:

I was not at home at the time of the receipt of your letter of 21st of May, at my office, which will account for some of the delay in my reply. I am pleased to give you such an opinion as I am able, on the strength of the information which you have supplied with your letter.

First, let me say that it appears from the analytical data which you have sent, that this man is very close to the maximum threshold value of a dangerous degree of absorption of lead. Since, apparently, he is not ill, I hardly think that one should be unduly concerned over the comparatively high values of the findings.

I regard 0.08 mg. of lead per 100 grams of apparently normal blood (i.e., 80 mcg. per 100 grams) as potentially dangerous, as being about the lowest concentration of lead capable, in suitable persons, of inducing acute symptoms of plumbism. (Very ill persons have higher concentrations, as a rule.) On this account, I should not believe him suitable (i.e., safe) for continuance at the same work. I should undertake to reduce considerably the exposure which has been capable of inducing this result, and I should take this man off of the job until such time as he excretes lead at a much lower rate and has less lead in his blood (only little above 0.04 mg/100 grams of whole blood).

In answer to your specific questions, I would say: (a) that this level of concentration of lead in the blood and urine means a high rate of absorption (which, however, will decline, promptly, but afterward gradually, after the discontinuance of the further exposure). (b) In my experience, renal damage is rare in such instances, and, therefore, I would not expect it. (c) I do not approve of chelation therapy in a man who is not ill. It may not be harmful, but in my view, it is better to accomplish the desired purpose by prompt reduction of the exposure to lead. This man should be removed from further exposure, but can be returned to work if the magnitude of the exposure to lead is reduced to a safe level (for him and others).

I raise the question as to the other employees in this work. If they are systematically lower (in lead in urine and blood) than this man, he is being subjected to an unusual degree of exposure to lead. How is this, and what can be done about it? What can be done, should be done at once. I shall be glad to hear from you further.

Cordially yours,

Robert A. Kehoe, M.D.

KE 0012518

N13167

Your Ref.

Our Ref.

Enquiries Mr.

JCMcN/MT

DEPARTMENT OF PUBLIC HEALTH

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LETTERS:
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Professor R.A.Kehoe, M.D.,
Director, Kettering Laboratory,
Department of Preventive Medicine
& Industrial Health,
University of Cincinnati,
Cincinnati, Ohio,
U.S.A.

21st May 1973.

Dear Professor Kehoe,

A.L.

This man has been engaged in the manufacture of batteries for many years and occasionally has engaged in lead recovery from lead batteries. His urinary lead has been elevated for a long time, occasional blood leads are elevated but the coproporphyrins are usually within the normal range and he has never shown any signs and symptoms of lead poisoning. Full blood counts, etc. essentially normal. Copy of findings attached.

Clinically he is well, no hypertension, no albuminuria, etc. His working environment has been investigated and there does not appear to be any significant health risk, his colleagues urinary lead excretions, urinary coproporphyrins and blood leads are acceptable for lead workers.

My colleagues and I are interested in

- (a) Does this continued high level infer a continued high lead absorption?
- (b) Is he likely to suffer renal damage?
- (c) Is a high urinary lead a measure of lead excretion, and a good thing?
- (d) Should he be removed from all further lead exposure? and
- (e) Would chelation be helpful and eventually lower the excretion rate?

Knowing of your deep interest in all clinical problems associated with lead I would be grateful for your opinion on the above.

Yours sincerely,

J.C.McNULTY

N13167.01

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Mr. A.L.

6.10.66	Urine	24 hr.	0.26 p.p.m.	Excreted	0.25 mgs.
27.10.66	"	"	0.10	"	0.16 "
25.9.67	"	"	0.19	"	0.14 "
27.5.68	"	"	0.13	"	0.18 "
24.4.69	(Urine	"	0.12	"	0.11 "
	(Copro.		202 $\mu\text{g}/24\text{hr.}$		
18.12.69	(Urine	"	0.13 p.p.m.		0.18 "
	(Copro.		357 $\mu\text{g}/24\text{ hr.}$		
2. 6.70	Urine	"	0.23 p.p.m.		0.39 "
11.11.70	Blood lead		76 $\mu\text{g}/100\text{ ml.}$		
25.2.71	(Urine	24 hr.	0.18 p.p.m.		0.43 "
	(Copro.		108 $\mu\text{g}/24\text{ hr.}$		
11. 6.71	Blood lead		91 $\mu\text{g}/100\text{ ml.}$		
2.10.72	(Urine		0.20 p.p.m.		0.31 "
	(Copro.		230 $\mu\text{g}/24\text{ hr.}$		
30.4.73	(Urine		0.26 p.p.m.		0.34 "
	(Copro.		450 $\mu\text{g}/24\text{ hr.}$		
11.5.73	Blood		86 $\mu\text{g}/100\text{ ml.}$		

N13167.02

KE 0012520