

Status of Human Lead Inhalation Experiment as of February 1954

A. Subject I [REDACTED] who spent two years (7 hours/day) in the chamber exposed to $.075 \text{ mg/M}^3$ lead sesquioxide, .05 micron median diameter, has now been out of the chamber a little over 1 year, during which time he has continued under observation, except for a short vacation, ~~period~~. It appears that he has excreted the lead which had been accumulated during his exposure, but it is necessary to follow his intake of lead in food and beverages and his output in the feces and urine for some additional months before this can be established unequivocally.

B. Subject II [REDACTED] is still in the chamber and so far has been exposed (7 hours/day) for $1\frac{1}{2}$ years to $.15 \text{ mg/M}^3$ lead sesquioxide .05 micron median diameter. It is apparent that he has almost, but perhaps not quite, reached an equilibrium with respect to his intake and output of lead, at a point where the total quantity of lead retained in his body during the experiment is just about twice that retained by Subject I during the same approximate period of time.

Some months of additional time in the chamber will be necessary to establish the facts with respect to this equilibrium.

C. Further Experiments

Plans are being made, equipment is being assembled,

and preliminary tests are in progress to provide a controllable concentration of lead salts of larger median size than has heretofore been used in our experiments. It is possible that this experiment can be carried out under conditions which simulate more nearly the physical (and chemical) state of the lead in the exhaust of the automobile, but that remains to be seen.

A further experiment will call for a suitable experimental subject. It has been believed until very recently that Subject I could be used again in this experiment. It is possible that this may be found to be undesirable. If this is so decided, a new subject will be found and used in preliminary observations in preparation for this experiment. The preliminary observations will not need to be quite so extensive and prolonged as those carried out in the first two experiments. In any case, no prolonged delay will be involved, since the observations on both Subject I and Subject II will be continued for some months longer.