

Brookhaven National Laboratory

BROOKHAVEN NATIONAL LABORATORY

Upton, L. I., New York

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MEMORANDUM

DATE: July 29, 1955

REPOSITORY *Records Holding Area Bldg 494*
COLLECTION *Protocols - Clinical*
BOX No. *4*
FOLDER *Human Protocols 1950-1963*

TO: BNL Committee on Use of
Radioactive Isotopes in Humans
FROM: J. A. James, M. D. JM
SUBJECT: Proj. H-39: Use of Cr⁵¹ as
tracer in children.

It has been observed that the infusion of 25 percent salt-poor albumin into one nephrotic child caused a marked decrease in all plasma lipid fractions. Albumin causes a marked increase in plasma volume, and it is desirable to determine how much of the change in lipid concentration could be accounted for by dilution and how much may represent a more significant change in lipid metabolism.

It is proposed that the plasma volume be measured at the beginning and end of the course of albumin infusions (about 7 - 10 days) using Cr⁵¹ as CrCl₃.

Method

It has been calculated that 20 µc Cr⁵¹ would deliver a dose of 600 mr to the blood, assuming no excretion and no loss from the plasma compartment. Since such losses are considerable it is suggested that 50 µc could be given safely on two occasions within one month.

Reference:

Frank, H. and Gray, S.J. Measurement of plasma volume by radiochromic chloride, Jnl of Clin. Invest. 32, 991 (1953).

Approved:

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