

BROOKHAVEN NATIONAL LABORATORY

Brookhaven National Laboratory

MEMORANDUM

Upton, L. I., New York

DATE: 10 Feb. 1950

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TO: BNL Committee on Use of Radioactive Isotopes in Human Subjects
FROM: Lee E. Farr, M. D. *LSA*

REPOSITORY Records Holding Area Bldg. 494 SUBJECT: Project H-2: Use of Na-24 for
COLLECTION Protocols - Clinical determination of extracellular
fluid space (sodium space) in
BOX No. 4 adult patients with Graves
disease, in adult patients with
FOLDER Human Protocols 1950-1963 metastatic thyroid carcinoma
and in children with the nephrotic
syndrome

It is proposed to use Sodium 24 for determination of extracellular fluid space in adults with metastatic thyroid carcinoma rendered myxedematous with thiouracil, in adults with hyperthyroidism before and after treatment, and in children with the nephrotic syndrome. The patients will be studied metabolically and from the standpoint of renal function to relate these observations if possible to changes in distribution of body water as measured by the sodium. A quantity of Na-24 will be used in each instance which will produce a total of not more than 0.15 rep, and whenever possible a dose will be chosen providing less than a total of 0.1 rep.

The patients will be kept in the Brookhaven National Laboratory Hospital for the period of study and for considerable periods thereafter for continuing studies on their disease processes. The patients will be under the care of Drs. Lee E. Farr, Wade N. Miller and James S. Robertson.

It should be pointed out that the thyroid patients will receive the Na-24 at times intermediate between I-131 administrations to minimize extraneous radiation effects. The nephrotic children are not being treated with radioactive materials otherwise.

Medical Department

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In each group therapy will be spaced in relation to half life of the radioactive element so that it will not be given more frequently than at approximately eight half lives because of possible radiation damage.

While in Brookhaven National Laboratory Hospital the patients will be under the immediate supervision of Drs. Lee E. Farr, physician-in-chief, Wade N. Miller, assistant in medicine, and James S. Robertson, assistant physician. Drs. Rulon W. Rawson and J. B. Trunnell of Memorial Hospital, New York City, will act as consultants. Dr. D. D. Van Slyke will collaborate on the renal function studies.

Since April 1949, patients with metastatic thyroid carcinoma have been cared for in Brookhaven National Laboratory Hospital. These patients were all sent here from Memorial Hospital in New York. A total of seven of these patients have thus far been observed, together with three patients with hyperthyroidism. Their care has been the charge of the staff of Brookhaven National Laboratory Hospital including besides the above physicians Drs. R. A. Love, W. C. Sacks and D. L. Jellinger (radiologist). Iodine was given the patients first by Drs. Trunnell and Rawson and then by the staff of this hospital under their supervision, in order to be certain all staff members were properly indoctrinated. There are available for consultation in addition to the above, both physicists and radiologists of Memorial Medical Center, New York, and physicists of other departments of Brookhaven National Laboratory.

Medical Department

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