Department of Defense

Report on Search for Human Radiation Experiment Records

1944 - 1994

Volume 3

Assistant to the Secretary of Defense for
Nuclear and Chemical and Biological Defense Programs

Department of Defense

Report on Search For Human Radiation Experiment Records

1944 - 1994
Volume 3

Assistant to the Secretary of Defense for
Nuclear and Chemical and Biological Defense Programs

October 2002

This page left intentionally blank

TABLE OF CONTENTS

This page left intentionally blank.

INTRODUCTION

The Report on Search for Human Radiation Experiment Records documents the Department of Defense (DoD) involvement in ionizing radiation research with human subjects between 1944 and 1994. Volumes 1 and 2, released in August 1997, provided the most complete information available at the time the volumes were prepared. After that time, historical research continued to be conducted to identify residual studies, projects, or experiments that might not have been discovered during earlier searches. Volume 3 deals with supplementing previously identified reported events with additional information and with providing newly identified human radiation research information discovered by the DoD Radiation Experiments Command Center with the help of the Military Departments. The Department of Defense is committed to openness in government and will continue to make relevant information available to the public.

This page left intentionally blank.

1944-1974 Human Radiation Experiments, Projects, Studies as Reported by the Services and DoD Organizations

Previously Identified, but presented with new information

Army 1944-1974

Fitzsimons Army Medical Center, Aurora, CO

Start Date	Number	Title
1970	ACIR70000-H	**Radioactive Iodine 131 Serum Albumin Lumbar-Cisternography and Ventriculography**

Abstract: From 1970 to a presently undetermined date, this study was conducted at the Fitzsimons Army Medical Center, Aurora, CO. No further information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Start Date	Number	Title
1970	ACIR70000-I	**Diagnosis of Functioning Metastasis for Thyroid Carcinoma with I-131 and Scintilation Camera**

Abstract: From 1970 to a presently undetermined date, this study was conducted at the Fitzsimons Army Medical Center, Aurora, CO. No other information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Fitzsimons General Hospital, Aurora, CO

Start Date	Number	Title
1965	ACIR65000-A	**Blood Volume Parameters at 5,200 Feet Altitude**

Abstract: From December 1965 until June 1967, this study was conducted at Fitzsimons General Hospital, Aurora, CO. Investigators employed chromium 51-labeled red blood cells and iodine 125-labeled serum albumin during the course of this study. At least 31 subjects participated. No other information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Start Date	Number	Title
1965	ACIR65000-B	**Metabolism of C-14 Thiazole-labeled Thiamine in Man**

Abstract: From 1965 to a presently undetermined date, this study was conducted at the US Army Medical Research and Nutrition Laboratory, Fitzsimons General Hospital, Aurora, CO. During the course of this study, at least one subject was administered 46.9 microcuries of carbon 14. No other information is available at this time.

Previously Identified, but presented with new information

ARMY 1944-1974 (CONTINUED)

Fitzsimons General Hospital, Aurora, CO

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Start Date	Number	Title
1967	ACIR67000-F	**Metabolism of Ascorbic-1-C-14 Acid in Experimental Human Scurvy**

Abstract: From 1967 to 1971, investigators at the US Army Medical Research and Nutrition Laboratory (USAMRNL), Fitzsimons General Hospital, Denver, CO and University of Iowa, Iowa City, IA investigated the deficiency of ascorbic acid in 12 healthy male prison volunteers in a combination of 2 studies. Investigators sought to induce clinical scurvy by depriving the volunteers of Vitamin C for a prolonged period of time and to replete ascorbic acid labeled with carbon 14 (C-14) to observe ascorbic acid metabolism. The first study involved six male volunteers. The initial labeled dose of the radioactive ascorbic acid was administered orally on day 23 of depletion and consisted of 0.86 milligrams of L-ascorbic-l-C-14 acid with a total activity of 23.9 microcuries, based on the cumulative loss of radioactive material in the urine. The men were provided a synthetic liquid diet deficient in Vitamin C for 99 days, until the body pool of ascorbic acid had been largely depleted and symptoms of clinical scurvy became apparent. Repletion of the ascorbic acid was begun on day 100, using L-ascorbic-l-C-14 acid administered in controlled doses ranging from 4 to 64 milligrams daily (0.5 microcuries per milligram). The total ascorbic acid intake during the repletion phase ranged from 6.5 to 66.5 milligrams. Four of the six original subjects completed the study. Evolved C-14-O2 from the breath was estimated for a period of 20 minutes immediately following the administration of the C-14-labeled ascorbic acid. Labeling the body ascorbic acid pool during the depletion phase resulted in no detectable urinary excretion of C-14-labeled reduced ascorbic acid or dehydroascorbic acid. The second study was performed to provide additional information on the size of the body pool of ascorbic acid, the rate of catabolism of Vitamin C, the correlation between body pool size and blood plasma levels and the relationship of all three to clinical signs and symptoms of scurvy. Initially, six male prison volunteers were involved, but one subject withdrew from the study prior to the development of clinical scurvy. As in the previous study, clinical scurvy was attained using dietary ascorbic acid deprivation. Body pool labeling with L-ascorbic-l-C-14 acid was accomplished in all men one week before commencing depletion. Two men additionally received tritium-labeled L-ascorbic acid. Once obvious evidence of clinical scurvy was seen in the subjects (after 84-97 days), repletion was achieved using differing intakes of Vitamin C. Chest x-rays and electrocardiograms were taken at intervals. Twenty-four hour collections of urine and feces were made daily for determinations of urinary and fecal nitrogen and for radiometric assay. Samples of expired air were collected for radiometric assay following the administration of the labeled L-ascorbic acid. During this second study, the subjects developed a more severe degree of scurvy--despite the deprivation period being somewhat shorter than in the previous study. The radioisotopic studies indicated progressive depletion of the body pools during the depletion phase of the study and repletion in proportion to the amount of ascorbic acid administered daily. This study confirmed and extended the observations made in the previous study that the full clinical syndrome does not appear until the normal ascorbic acid body pool has been depleted to less than 300 milligrams. Results of these combined studies indicated that the minimal amount of ascorbic acid necessary to prevent or cure scurvy appeared to be slightly less than 10 milligrams daily.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Document: Authors: Eugene M. Baker; Robert E. Hodges; James Hood; Howerde E. Sauberlich; Steven C. March. Title: The American Journal of Clinical Nutrition (Metabolism of Ascorbic-1-C-14 Acid in Experimental Human Scurvy): Journal: American Journal of Clinical Nutrition, Vol 22, Issue 5. Document Types: Journal Article. Document Date: May 1969.

Previously Identified, but presented with new information

ARMY 1944-1974 (CONTINUED)

Fitzsimons General Hospital, Aurora, CO

Document: Authors: Robert E. Hodges; James Hood; John E. Canham; Howerde E. Sauberlich; Eugene M. Baker; John E. Canham. Title: Clinical Manifestation of Ascorbic Acid Deficiency in Man and Metabolism of C-14 and H-3-labeled L-ascorbic Acid in Human Scurvy: Journal: American Journal of Clinical Nutrition, Vol 24. Document Types: Table of Contents/Index; Journal Article; Index. Document Date: January 1971.

Document: Authors: [Unstated]. Title: Appendix A, Detailed Information on Studies Involving Human Exposure to Ionizing Radiation: Metabolism of 14C and 3H Labeled L-Ascorbic Acid in Human Scurvy. Document Types: Attachment/Appendix. Document Date: 24 April 1994.

University of Iowa, Iowa City, IA

Start Date	Number	Title
1967	**ACIR67000-F**	**Metabolism of Ascorbic-1-C-14 Acid in Experimental Human Scurvy**

(For abstract and documentation see Fitzsimons General Hospital, Aurora, CO)

US Army Medical Research and Nutrition Laboratory, Chicago, IL

Start Date	Number	Title
1948	**ACIR52000**	**Studies in Phosphorous Metabolism in Man, III**

Abstract: From 1948 until 1952, this study was conducted at the US Army Medical Research and Nutrition Laboratory, Chicago, IL. Investigators examined the distribution, exchange and excretion of phosphorous in man in vivo using phosphorous 32 (P-32) as a tracer. As an inorganic phosphate, 100-200 microcuries of P-32 were administered to at least six subjects. No other information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Document: Authors: [Various]. Title: Research Program 01 October - 31 December 1949, includes project reports. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 December 1949.

Document: Authors: [Various]. Title: Research and Development Program, 1 October - 31 December 1948. Document Types: Report; Table of Contents/Index. Document Date: 1948 est.

US Army Medical Research and Nutrition Laboratory, Fitzsimons, Aurora, CO

Start Date	Number	Title
1961	**ACIR61000**	**Metabolism of C-14-6-D-glucuronolactone and C-14-6-D-glucuronic Acid in Man**

Abstract: From 1961 to a presently undetermined date, this study was conducted at the US Army Medical Nutrition Laboratory, Fitzsimons General Hospital, Aurora, CO. Participating subjects were administered 20 microcuries of each of the labeled carbohydrates. No other information is available at this time.

Previously Identified, but presented with new information

ARMY 1944-1974 (CONTINUED)

US Army Medical Research and Nutrition Laboratory, Fitzsimons, Aurora, CO

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Start Date	Number	Title
1963	ACIR63000	**Respiratory Catabolism in Man of the Degradative Intermediates of L-ascorbic-1-C-14 Acid**

Abstract: From 1963 to a presently undetermined date, this study was conducted at the US Army Medical Research and Nutrition Laboratory, Fitzsimons General Hospital, Aurora, CO. At least 3 subjects were administered 20 microcuries of carbon 14 during the course of this study. No other information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Start Date	Number	Title
1965	ACIR65000-B	**Metabolism of C-14 Thiazole-labeled Thiamine in Man**

(For abstract and documentation see Fitzsimons General Hospital, Aurora, CO)

Start Date	Number	Title
	ACIR65000-C	**The Metabolism of C-14-labeled Monodehydroascorbic acid complex in Man**

Abstract: From 1965 to a presently undetermined date, this study was conducted at the US Army Medical Research and Nutrition Laboratory, Fitzsimons General Hospital, Aurora, CO. At least 2 subjects were administered 24.7 microcuries of carbon 14 during the course of this study. No other information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Start Date	Number	Title
1967	ACIR67000-F	**Metabolism of Ascorbic-1-C-14 Acid in Experimental Human Scurvy**

(For abstract and documentation see Fitzsimons General Hospital, Aurora, CO)

Previously Identified, but presented with new information

ARMY 1944-1974 (CONTINUED)

US Army Medical Research and Nutrition Laboratory, Fitzsimons, Aurora, CO

Start Date	Number	Title
1970	**ACIR70000-F**	**Clinical Manifestations of Experimental Scurvy**

Abstract: From 1970 to a presently undetermined date, this study was conducted at the US Army Medical Research and Nutrition Laboratory, Fitzsimons General Hospital, Aurora, CO. At least nine subjects were administered L-ascorbic-1-C-14 acid during the course of this study. No other information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Start Date	Number	Title
1970	**ACIR70000-G**	**Excretion and Body Load of Ascorbic-1-C-14 Acid in Clinical Human Scurvy**

Abstract: From 1970 to a presently undetermined date, this study was conducted at the US Army Medical Research and Nutrition Laboratory, Fitzsimons General Hospital, Aurora, CO. At least five subjects were administered ascorbic-1-C-14 acid during the course of this study. No other information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Start Date	Number	Title
Unknown	**ACIR62000-B**	**Tracer Studies of Vitamin C Utilization in Men: Metabolism of D-glucuronolactone-6-C-14, D-glucuronic-6-C-14 acid and L-ascorbic-1-C-14 acid**

Abstract: From a presently undetermined date until approximately 1962, this study was conducted at the Army Medical Nutrition Laboratory, Fitzsimons General Hospital, Aurora, CO. At least 5 subjects were administered 20 microcuries of carbon 14 during the course of this study. Expelled air and urine were serially collected and quantitation of the three tracers in question was performed. No other information is available at this time.

Document: From: Michael Lieberman, Lieutenant Colonel, Department of Clinical Investigation To: Chief, Clinical Investigation Regulatory Office, Army Medical Center and School, Fort Sam Houston, Texas. Subject: Human radiation research report. Document Types: Memorandum. Document Date: 01 March 1994.

Document: Authors: [Unstated]. Title: Appendix B, Detailed Information on Studies Involving Human Exposure to Ionizing Radiation, "Tracer Studies of Vitamin C Utilization in Men: Metabolism of D - Glucourolactone - 6 - C14, D Glucaronic 6 - C14 Acid, and L Ascorbic - 1 - C14 Acid". Document Types: Protocol; Attachment/Appendix. Document Date: 1994 est.

Previously Identified, but presented with new information

NAVY 1944-1974

Beth Israel Hospital, Boston, MA

Start Date	Number	Title
1947	ONR-39	**The Use of I-131 in Treatment of Heart Diseases and Long Term Radiation Effects of I-131 in Man**

Abstract: From 1947 to 1952, researchers at Beth Israel Hospital in Boston, MA conducted studies to establish a dose range of iodine 131 (I-131) that would produce no functional or anatomical changes in the thyroid gland, a range that would produce reversible changes and a range producing permanent functional and pathological changes in the thyroid and other organs. Investigators examined the effects of I-131 on 29 clinically euthyroid cardiac patients between the ages of 38 and 72. Twenty of the patients had angina and 9 had congestive heart failure (CHF). Each patient received a preliminary tracer dose of I-131 to determine normal thyroid function prior to the start of the study. As part of the research, each patient received 25.5-176 millicuries of I-131 in a single or divided doses. The largest single dose was 61 millicuries. None of the patients experienced any toxic symptoms. Final results showed that hypothyroidism could be regularly induced in 23 of the 29 euthyroid patients by one or more appropriate doses of I-131. (For six of the patients, the period of observation was too short to be included in the results of the study.) Angina was significantly reduced in 11 of 17 patients with intractable cardiac pain. Researchers believe that I-131 was a viable means for treating angina pectoris and CHF and sought to study the treatment further in the long term.

Document: From: D.M. Mole, Captain, Medical Corps, Navy Bureau of Medicine and Surgery To: D. Michael Schaeffer, Radiation Experiments Command Center. Subject: Human radiation research report. Document Types: Letter. Document Date: 01 August 2002.

Document: Authors: Herrman L. Blumgart; A. Stone Freedberg; George S. Kurland. Title: Notice of Research Project: The use of I-131 in the treatment of heart disease and long term radiation effects (support terminated) Document Types: Report. Document Date: December 1952.

Document: Authors: Herrman L. Blumgart; A. Stone Freedberg; George S. Kurland. Title: Hypothyroidism Produced by Radioactive Iodine (I-131) in the Treatment of Euthyroid Patients with Angina Pectoris and Congestive Heart Failure. Journal: Circulation, vol. 1. Document Types: Journal Article. Document Date: 1950.

Document: Authors: A. Stone Freedberg; Herman L. Blumgard; George S. Kurland; David L. Chamovitz. Title: The Treatment of Euthyroid Cardiac Patients with Intractable Angina Pectoris and Congestive Failure with Radioactive Iodine. Journal: The Journal of Endocrinology, vol. 10. Document Types: Journal Article. Document Date: 1950.

Document: Authors: Herrman L. Blumgart; A. Stone Freedberg; George S. Kurland; Alvin L. Ureles. Title: Treatment of Intractable Angina Pectoris and Congestive Heart Failure in Euthyroid Patients by Producing Hypothyroidism with I-131. Journal: Transactions of the Association of American Physicians, vol. 62. Document Types: Journal Article. Document Date: May 1949.

Newly Identified Events

AIR FORCE 1944-1974

George Washington University School of Medicine, Washington, DC

Start Date	Number	Title
1949	RECC153	**Metabolism of Radioactive Ascorbic Acid and its Relation to Adrenal Cortical Responses**

Abstract: From 30 September 1949 until a presently undetermined date, researchers from the Department of Biochemistry, George Washington University School of Medicine, Washington, DC studied the metabolic fate of ascorbic acid in normal guinea pigs and humans and investigated the possibility that ascorbic acid is a normal precursor of adrenal cortical hormones. Metabolic pathways of ascorbic acid in animals under stress were examined under stress produced by cold, heat and various types of radiation. These studies were performed in an effort to ultimately identify biological mechanisms that increase an individual's resistance to conditions of stress. As of 30 June 1952, the above studies had only been performed with animals; however, researchers planned to involve human subjects as soon as adequate quantities of radioactive ascorbic acid became available. Information on radiation dose, on the total number of participants and on results is not available at this time.

Document: Authors: Mary B. Mills. Title: Metabolism of Radioactive Ascorbic Acid and its Relation to Adrenal Cortical Responses. Document Types: Research Summary. Document Date: 30 June 1950.

Harvard School of Public Health, Department of Nutrition, Boston, MA

Start Date	Number	Title
1952	RECC175	**Studies of Fat Metabolism**

Abstract: From November 1952 until October 1955, researchers from the Department of Nutrition, Harvard School of Public Health, Boston, MA performed various studies on fat metabolism. Investigators studied intermediary fat metabolism using carbon 14-labeled fatty acids with emphasis on the nature of the aceto acetate formed and the mechanism of its formation, and ketone body formation and disappearance on high fat intakes from both oral and intravenously administered fat. Researchers also examined gastric physiology following high fat intake, particularly with regard to overcoming the distressing side effects of high fat intakes. Information on radiation dose, on the total number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Notice of Research Project [set of research summaries for the Biomedical Sciences Information Exchange, National Academy of Sciences]. Document Types: Research Summary. Document Date: 1956 est.

Newly Identified Events

AIR FORCE 1944-1974 (CONTINUED)

Northwestern University, Chicago, IL

Start Date	Number	Title
Unknown	RECC154	Effect of Irradiation of P-32 Uptake by Bone Marrow

Abstract: The inclusive dates for this study conducted by researchers from Northwestern University, Chicago, IL are presently undetermined. Irradiation was known to impair bone marrow phosphorous 32 (P-32) uptake. Researchers were thus interested in examining the effect of drugs, hormonal factors, nutritional constituents and environmental conditions (anoxia) on P-32 uptake. Information on radiation dose, on the total number of participants and on final results is not available at this time.

Document: Authors: Henry M. Sweeney; Seymour Schwartz; Edward Kendricks. Title: Minutes, Research Council Meeting, US Air Force, School of Aerospace Medicine, 02 November 1954. Document Types: Minutes; Excerpt. Document Date: 02 November 1954.

Document: From: John D. Stoeckle, First Lieutenant, Panel Director, Committee on Radiation Sciences To: Chairman and Members, Joint Panel on the Medical Aspects of Atomic Warfare. Subject: Department of Defense Research Program under the technical objective of AW-6. Document Types: Report; Memorandum. Document Date: 15 December 1952.

Document: Authors: [Unstated]. Title: Trip Reports Prepared for the School of Aviation Medicine (17 January 1955 - 30 June 1955). Document Types: Report. Document Date: 30 June 1955.

Document: From: Seymour Schwartz, Captain, US Air Force, Medical Service Corps To: Commanding General, Air Materiel Command. Subject: Negotiation of cost reimbursement contract. Document Types: Memorandum. Document Date: 26 September 1950.

School of Aerospace Medicine, Brooks Air Force Base, TX

Start Date	Number	Title
Unknown	RECC178	External Measurement of 59Fe Ferrokinetics

Abstract: Sometime prior to March 1970, researchers from the School of Aerospace Medicine, Brooks AFB, TX developed a counting system for the determination of circulating radioisotope activity by means of external measurement of the ventral surface of the wrist. One patient participated in this study during which both the external counting system and the normal blood-drawing system were compared. The external counting system was found to be unsuitable for measurement of plasma iron clearance, but it accurately measured the percentage of iron uptake into new red cells. The use of the external counting system eliminated the need to perform ten venipunctures to draw 70 milliliters of blood. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Summary of Search Results Event: AF#0002 [Results of Air Force study concerning radioisotope activity in the bloodstream]. Document Types: Search Printout. Document Date: March 1995.

Newly Identified Events

AIR FORCE 1944-1974 (CONTINUED)

School of Aerospace Medicine, Brooks AFB, TX

Document: From: Anna M. Beachem, Administrative Assistant, Air Force Medical Operations Agency To: Tammy-jean Beatty, Radiation Experiments Command Center. Subject: Reviews of Studies. Document Types: Memorandum; Event Profile. Document Date: 26 February 2002.

Start Date	Number	Title
Unknown	**RECC179**	**Modified Method for Determining 51Cr Red Cell Volume**

Abstract: Sometime prior to October 1969, researchers from the School of Aerospace Medicine, Brooks AFB, TX examined a method for reducing--by a factor of ten or greater--the radiation dose associated with determining red cell volume with chromium 51 (Cr-51). Investigators produced curves that allowed selection of a minimal exposure dose or sample size, at counting rates of 2,000 or 400 counts per minute. Twenty-eight days was the minimum time interval between repeated Cr-51 red cell volume determinations with a constant dosage, which gave reproducible results. Information on radiation dose and on the number of participants is not available at this time.

Document: From: Anna M. Beachem, Administrative Assistant, Air Force Medical Operations Agency To: Tammy-jean Beatty, Radiation Experiments Command Center. Subject: Reviews of Studies. Document Types: Memorandum; Event Profile. Document Date: 26 February 2002.

Newly Identified Events

ARMY 1944-1974

24th Evacuation Hospital, Vietnam

Start Date	Number	Title
Unknown	RECC065	Serial Measurements of Blood Volume and Fluid Compartments Following Trauma

Abstract: From a presently undetermined date until approximately June 1968, researchers from the US Army Medical Research Team Vietnam (out of Walter Reed Army Institute of Research) and Institute Pasteur of Vietnam examined the redistribution of fluid through body compartments following injury and its relation to the extent of injury during acute phases and during convalescence. Forty patients with severe trauma and blood loss due to combat injury participated at the 3rd Surgical Hospital and 24th Evacuation Hospital, Vietnam. Blood volume was measured by using isotope dilution. Red cell and plasma volumes were determined by injecting red blood cells tagged with 50 microcuries of chromium 51 and serum albumin tagged with 5 microcuries of iodine 125, respectively. Extracellular fluid volume was determined by injection of 100 microcuries of sulfur 35 in 10 milliliters of water and total body water was measured using 250 microcuries of tritium. Researchers observed that undertransfusion of patients during the early post-operative period was the rule and that plasma volume refilling extended from the second to the fourth hospital day. Information on radiation dose is not available at this time.

Document: Authors: Donald B. Doty; Roger V. Moseley. Title: Serial Measurement of Blood Volume and Fluid Compartments Following Trauma [from Annual Progress Report: 01 September 1967-30 June 1968, US Army Medical Research Team (WRAIR) Vietnam and Institute Pasteur of Vietnam]. Document Types: Report; Cover. Document Date: 1968 est.

3rd Surgical Hospital, Vietnam

Start Date	Number	Title
Unknown	RECC065	Serial Measurements of Blood Volume and Fluid Compartments Following Trauma

(For abstract and documentation see 24th Evacuation Hospital, Vietnam)

406th Medical General Laboratory, Far East

Start Date	Number	Title
1952	RECC066	P-32 Blood Volume Studies in Hemorrhagic Fever

Abstract: From 1952 until 1953, researchers from the 406th Medical General Laboratory, Far East reported on the use of a modified Reeve-Veall radioactive phosphorous (P-32) red blood cell tagging technique for the determination of blood volume in various phases of hemorrhagic fever. Twenty patients were studied. Researchers found that plasma volume (PV) and total blood volume (TBV) fell in the febrile stage, while red cell volume (RCV) remained normal. In the shock phase, RCV decreased. In the oliguric phase, RCV was low while the PV was normal to low and the TBV remained low to low normal. In the diuretic phase, the RCV remained low and the PV was normal to high and the TBV was normal to high. Information on radiation dose and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

406th Medical General Laboratory, Far East

Document: Authors: [Unstated]. Title: P32 Blood Volumes [from 406 Medical General Laboratory Annual Historical Report, 1952]. Document Types: Report; Excerpt. Document Date: 1952.

Start Date	Number	Title
Unknown	**RECC071**	**Blood Volume Studies**

Abstract: From a presently undetermined date until 1953, researchers from the 406th Medical General Laboratory and Far East Medical Research Unit (Korea) used chromium 51 (Cr-51) to perform post-operative blood volume studies in Korea on 27 patients to assess the adequacy of pre-operative transfusion and its effect on maintaining blood volume. Blood samples were collected from patients every 20 to 40 minutes until successive counts differed by less than 5 percent. Researchers found that patients were rarely over-transfused and that post-operative blood volume was usually lower than normal. Nine patients were involved in additional studies to eliminate the possibility of low blood volume determinations being the result of large sequestered pools not accessible for mixing with the tagged cells. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Blood Volume Studies and Thyroid Studies [from 406th Medical General Laboratory and Far East Medical Research Unit Clinical Laboratory and Research Report, 1953]. Document Types: Report; Excerpt. Document Date: 1953 est.

Start Date	Number	Title
Unknown	**RECC072**	**Blood Flow, Blood Volume and Other Studies of the Circulation**

Abstract: From a presently undetermined date until 1953, researchers from the 406th Medical General Laboratory and Far East Medical Research Unit (Korea) examined cardiac output and peripheral resistance in patients in shock. Patients underwent blood volume studies during which chromium 51 was administered to tag red blood cells (RBCs). Only 10 patients were studied early in the disease and the circulating RBC mass was found to be normal even though the hematocrit was high. Four of 10 patients studied late in oliguria and early in diuresis showed decreased RBC mass. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Blood Volume Studies and Thyroid Studies [from 406th Medical General Laboratory and Far East Medical Research Unit Clinical Laboratory and Research Report, 1953]. Document Types: Report; Excerpt. Document Date: 1953 est.

Start Date	Number	Title
Unknown	**RECC073**	**Thyroid Studies**

Abstract: From a presently undetermined date until 1953, researchers from the 406th Medical General Laboratory and Far East Medical Research Unit (Korea) examined thyroid gland iodine uptake in patients with hemorrhagic fever. Although a marked increase in iodine 131 (I-131) uptake was noted in approximately one-third of the early cases, there was no clinical evidence of any damage to the thyroid. Researchers believed that renal failure might have affected the uptake. There was a tendency toward normal uptake values during convalescence. Information on radiation dose and the number of participants is not available at this time.

Document: Authors: [Unstated]. Title: Blood Volume Studies and Thyroid Studies [from 406th Medical General Laboratory and Far East Medical Research Unit Clinical Laboratory and Research Report, 1953]. Document Types: Report; Excerpt. Document Date: 1953 est.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Armed Forces Institute of Pathology, Washington, DC

Start Date	Number	Title
Unknown	RECC040	**A Sex Difference in the Response to Titrated Irradiation Therapy (P32) of Patients with Chronic Granulocytic Leukemia**

Abstract: From a presently undetermined date until February 1956, researchers from the Armed Forces Institute of Pathology and Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC studied 14 patients (7 men and 7 women) treated for chronic granulocytic leukemia (CGL). The researchers observed that women required less phosphorous 32 (P-32) than men in the treatment of leukemia. Upon arrival at the clinic, the patients were treated by means of titrated total-body irradiation using intravenous injections of P-32. Women received on average 20 microcuries of P-32 per kilogram of body weight per month compared to 83 microcuries for men. The woman given the largest amount of P-32 received 35 microcuries per kilogram per month; the man given the smallest amount of P-32 received 50 microcuries. Researchers could not explain the difference, but believed it to be statistically significant. CGL was suggested to be a less severe disease in women than in men. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: US Walter Reed Army Institute of Research, Walter Reed Army Medical Center Washington, D.C. Research Reports, WRAIR-66-56 to WRAIR-100-56. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: April 1956.

Army Hepatic and Metabolic Center, WRAMC, Washington, DC

Start Date	Number	Title
1951	RECC138	**Iron Metabolism in Liver Disease**

Abstract: From 1951 to 1953, researchers from the Army Hepatic and Metabolic Center, Walter Reed Army Medical Center, Washington, DC investigated the uptake and metabolism of radioactive iron. The purpose of this study was to determine how rapidly iron is absorbed from the gastrointestinal tract of patients with acute and chronic hepatitis and siderosis (hemochromatosis) of the liver compared to the absorption time in normals. The radioactive iron (Fe-59) was administered by various techniques. It is estimated that 12 individuals were given Fe-59. Oral iron was administered to five normal individuals and two patients with siderosis of the liver were given Fe-59. Intravenous radioactive iron was administered to two patients with acute hepatitis and to three normals. Results of this study indicated that the turnover rate of radioactive iron in patients with acute hepatitis is two to three times faster than the turnover rate in normals. Researchers believed that the results were due to the fact that the iron turnover rate reflected red blood cell production, and it seemed that hepatitis was accompanied by a definite increase in red blood cell destruction. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1952, 01 January - 31 March 1952. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1952.

Document: Authors: [Unstated]. Title: Research Program, Priority 1C and 2 Projects [includes progress reports: "Radiation Injury in Man and Animals," "Ionization Effects," and "Effects of Irradiation"]. Document Types: Report. Document Date: 30 September 1951.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Army Medical Component, SEATO, Bangkok, Thailand

Start Date	Number	Title
1964	RECC183	Evaluation of Iron Stores in RBC G-6-PD Deficiency

Abstract: From 1 December 1964 until 31 March 1966, researchers from the US Army Medical Component, SEATO, Bangkok, Thailand studied Glucose-6-Phosphate Dehydrogenase (G-6-PD) deficient, non-hemolytic Thai subjects to determine if iron loading was present. Ninety-eight students from Kasetsart University were tested to determine hemoglobin, hematocrit, G-6-PD activity, serum iron and total iron binding capacity. Ten males, previously identified as having absent G-6-PD activity, underwent serum iron determinations. To quantitate iron stores, three subjects with G-6-PD deficiency and five normal subjects (students from Kasetsart University) underwent more detailed studies. Bone marrow examination for stainable iron was performed in all and liver biopsy for stainable iron was performed in six subjects--all of whom then underwent repeated phlebotomy until evidence of iron deficiency was observed. Iron 59 (Fe-59) absorption studies were performed and iron stores were repeated. At the conclusion of blood sampling, all subjects showed hypochromic anemia. Fe-59 absorption studies showed over 90 percent absorption of the tracer dose in all cases. No evidence of iron storage could be seen in G-6-PD deficient subjects when compared to control subjects. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, US Army Medical Component (Bangkok, Thailand). Document Types: Report; Table of Contents/Index. Document Date: 15 April 1966.

Start Date	Number	Title
1966	RECC184	Evaluation of Body "Compartments" in Normal Thai Subjects

Abstract: From sometime prior to 15 April 1966 until a presently undetermined date, researchers from the US Army Medical Component, SEATO, Bangkok, Thailand measured, by isotope dilution techniques, a variety of body "compartments" in normal Thai subjects. Emphasis was placed on determining normal values for plasma volume, red blood cell volume and total body water. Preliminary results indicated that normal values would be higher in relation to body weight than Western standards. No further information is available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, US Army Medical Component (Bangkok, Thailand). Document Types: Report; Table of Contents/Index. Document Date: 15 April 1966.

Start Date	Number	Title
Unknown	RECC182	Gastrointestinal Studies in Normal Thais

Abstract: Sometime prior to 15 April 1966, researchers from the US Army Medical Component, SEATO, Bangkok, Thailand studied small bowel histology, bacteriology and function in asymptomatic individuals to provide baseline data for future studies of diarrheal disease. Thirty-four volunteer adult Thai villagers without a history of recent gastrointestinal complaints were hospitalized for gastrointestinal study. Lactose tests, xylose tests and small bowel biopsies done using a biopsy capsule were done in nearly all subjects. Urinary excretion of xylose was comparable to reported values of 114 normal American subjects and no evidence of hepatic disease--which could possibly affect xylose metabolism--was seen in any subject. Lactose tolerance tests were abnormal in 33 of the 34 subjects tested. Diarrhea occurred in 19 of the 34 subjects and was usually accompanied by mild cramps. Of the 23 glucose tolerance tests performed, only 3 were found to be abnormal. When the test was repeated in two of the three abnormal subjects using larger doses of glucose, one responded normally. Cobalt 57-labeled Vitamin B-12 was administered together with Intrinsic Factor to 23 patients and to 1 patient without Intrinsic Factor. Absorption was found to be normal in all patients. Serum beta-carotene concentrations were

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Medical Component, SEATO, Bangkok, Thailand (continued)

found to be normal in all 28 subjects tested. Vitamin A tolerance tests were performed in 20 subjects using a dose of 250,000 international units of the vitamin in corn oil. Four subjects were found to have abnormal serum vitamin concentrations–one of whom also had abnormal fecal fat excretion. A large discrepancy was noted in jejunal lactase activity between tissue vs. protein measurements. Whether the difference was real or related to the storage of the tissue before the assay was unknown. Radiological examination of the small bowel was normal in all 11 subjects examined, with the exception of an increased transit time in 1 and evidence of ascariasis in 2. Researchers had not yet completed pathologic and histologic studies of the mucosal biopsies at the time of report. Thirty orphaned children aged 2.5 to 9.5 years were also given general medical and laboratory examinations as part of this study. All of the children had normal glucose tolerance, half had normal xylose tolerance and only one child showed normal lactose tolerance. Small bowel biopsies using the Crosby-Kugler biopsy capsule were also performed, but the pathology and histology results at the time of report were incomplete. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, US Army Medical Component (Bangkok, Thailand). Document Types: Report; Table of Contents/Index. Document Date: 15 April 1966.

Army Medical Service Graduate School, WRAMC, Washington, DC

Start Date	Number	Title
1952	RECC141	Eye Tumor Localization with Phosphorus 32

Abstract: From 1952 until 1953, researchers at the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, DC performed eye tumor localization procedures using phosphorus 32. Five patients were studied. Three patients had suspicious intraocular lesions and two patients had widespread metastatic melanosarcoma without intraocular lesions. Researchers did not observe any evidence of tumor in any of the five subjects. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: 1 July - 30 September 1953 [includes multiple studies on the effects of ionizing radiation]. Document Types: Report; Excerpt. Document Date: 30 September 1953.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Start Date	Number	Title
1952	RECC146	Prevention of Transfusion Reactions

Abstract: From sometime before July 1952 to sometime after June 1953, investigators at the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, DC performed a series of studies in an effort to prevent reactions to blood transfusions. Some of these studies involved the use of radioisotopes. One study concerned the metabolism of radioiron, in which observations of the plasma clearance of radioiron and the subsequent cell utilization of this iron were made. This study was performed in a variety of clinical conditions, including aplastic anemia, hemolytic anemia, and hemochromatosis. Another study attempted to use cobalt as a treatment for aplastic anemia, but was found to be ineffective. An additional study used both phosphorus 32 and chromium 51 (Cr-51) in performing red cell volume determinations. This study

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Army Medical Service Graduate School, WRAMC, Washington, DC (continued)

was performed on selected patients with anemia and polycythemia. Cr-51 was also used to tag cells that were transfused into normal individuals in an attempt to determine whether chromium is re-utilized to tag other cells when the original cells are hemolyzed. Cr-51 was also given to patients undergoing splenectomy. Researchers were also interested in using radio-tagged antibodies in the examination of hemolytic syndromes, particularly in hemolytic disease of the newborn. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: First Quarterly Report Fiscal Year 1953, 01 July – 30 September 1952. Document Types: Report; Excerpt. Document Date: 30 September 1952.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1953 (1 January – 31 March 1953). Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1953.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Start Date	Number	Title
1953	RECC139	**Albumin Turnover Studies in Patients with Liver Disease and those Showing Impaired Recovery from Injuries**

Abstract: Sometime before 30 June 1953, researchers from the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, DC used iodine 131 (I-131)-labeled albumin to study albumin metabolism kinetics in 22 patients (9 patients with acute hepatitis, 2 with cirrhosis, 4 post-traumatic patients and 7 controls). Researchers found that patients with viral hepatitis showed a decreased exchangeable albumin pool and a shorter biologic half-life as compared to known normal values. Patients with delayed convalescence from injuries also showed a decreased albumin half-life. Studies in one patient demonstrated that a low-protein diet shortened the half-life of albumin. Once the patient was placed on a normal diet, the turnover rate reverted to normal. Investigators planned to further study chronically ill and wounded individuals and normals and to compare the I-131 method against the nitrogen 15 (N-15)-labeled glycine method. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1953 (1 January – 31 March 1953). Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1953.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Army Medical Service Graduate School, WRAMC, Washington, DC

Start Date	Number	Title
Unknown	RECC142	Quantitative Studies of Thyroidal Dynamics

Abstract: From a presently undetermined date until April 1953, researchers at the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, DC performed research in collaboration with the Army Quartermaster Corps Climatic Research Laboratory. The shift of iodine 131 (I-131) at short times after administration was studied using counters and scintillation crystals. The study involved examination of the thyroidal dynamics of humans subjected to prolonged cold. The results of the research were to have been incorporated in a report issued under the auspices of Quartermaster Corps. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Baylor College of Medicine, Houston, TX

Start Date	Number	Title
Unknown	RECC116	Radiation and Thermal Burns

Abstract: From a presently undetermined date until 30 June 1953, researchers from Baylor University, Waco, TX carried out studies on urea, para-amino hippurate, insulin and radioactive sodium (Na-24) and correlated the studies with renal blood flow and urinary output data to determine the extent of renal dysfunction following thermal injury. Tests in six patients showed normal or increased glomerular filtration rates. The data suggested that an elevated rate occurs during the early acute phase of adequately treated patients. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Boston City Hospital, Boston, MA

Start Date	Number	Title
Unknown	RECC174	Iodide-Concentrating and Iodide-Iodine Conversion Capacity of Thyroid Gland

Abstract: Sometime during the early 1950s, researchers from Boston City Hospital, Boston, MA applied new methods in a study of thyroidal function in various disease states. Scintillation counting equipment was standardized and calibrated for the continuous estimation of thyroidal iodine 131 (I-131) accumulation following administration of tracer doses of radioactive iodine. Investigators studied thyroidal iodide space and rate of organic binding under conditions of stress. Both parameters of thyroidal function were depressed in two patients following continuous administration of adrenocorticotropic hormone for 48 hours and in one patient exhibiting prolonged hypoglycemia. Quantitative responsiveness of the thyroid to exogenous thyrotropin was measured in two patients with panhypopituitarism. Information on radiation dose and on the results of this study is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Boston City Hospital, Boston, MA

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Brooke Army Medical Center, Army Surgical Research Unit, Fort Sam Houston, TX

Start Date	Number	Title
Unknown	**RECC150**	**Use of Radioactive Chromium in the Measurement of Circulating Red Cell Volume**

Abstract: The dates for this study conducted by researchers from the Brooke Army Medical Center, Surgical Research Unit, Fort Sam Houston, TX are presently undetermined. Investigators employed chromium 51 (Cr-51) to label the red blood cells of rabbits, dogs and two humans in an effort to determine blood volume from red cell volume and hematocrit. Preliminary results indicated that the labeling technique would prove to be reliable once perfected and more experience in isotope handling was achieved. Researchers also used Cr-51 to examine the effect of intravenous fat emulsions on hemolysis and found that when intravenous fat was infused, a marked increase in the initial excretion of radiochromium from labeled cells was observed. Further study was planned. Information on radiation dose, on the total number of participants and on final results are not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: First Quarterly Report Fiscal Year 1953, 01 July - 30 September 1952. Document Types: Report; Excerpt. Document Date: 30 September 1952.

Brooke Army Medical Center, Fort Sam Houston, TX

Start Date	Number	Title
Unknown	**RECC123**	**Thermal Burns/Turnover Rates of Iodinated Albumin in Burned Patients**

Abstract: From a presently undetermined date until approximately June 1953, researchers from Brooke Army Medical Center, Fort Sam Houston, TX studied the rate of albumin turnover in burned versus normal patients. Investigators sought to clarify the mechanisms of the severe protein loss seen in acute post-burn patients. Tracer doses were administered to seven normal and six convalescing burn patients. Lugol's solution was given to block the uptake of degraded radioiodine by the thyroid. The subjects were followed for 14 days with daily blood samples and complete 24-hour urine collection. Daily in vivo measurements were made with a scintillation counter. Analysis of plasma disappearance rates indicated that in most of the subjects (with the exception of two normal individuals) the half-life of the injected serum albumin was 7.7 days with a standard deviation of 8 percent. External radioactivity measurements were found to be difficult to interpret. Radioactivity disappearance rates as measured in vivo could not be correlated directly with any of the rates obtained from the urine or plasma determinations. Researchers planned to use a "phantom" to simulate, under exactly controlled conditions, the situations met clinically. Acutely burned individuals, chronically ill patients, and convalescing patients were to be studied in future research. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Brooke Army Medical Center, Fort Sam Houston, TX

Start Date	Number	Title
Unknown	**RECC124**	**Thermal Burns/Study of Protein Catabolism Rates by the Use of I-131-labeled Human Serum Albumin**

Abstract: From a presently undetermined date until approximately June 1953, researchers from Brooke Army Medical Center, Fort Sam Houston, TX studied the rate of iodine 131-labeled albumin catabolism calculated by precise curve-fitting techniques applied to the graphic time-course of plasma radioactivity for 19 human subjects for 2 weeks. Half of the individuals were normal controls and the others were among convalescing patients. The rates of albumin degradation for the two groups revealed no significant statistical difference. The rate of accumulation of radioactivity in the urine was followed to double-check the rate of loss of radioactivity in the plasma. Urine accumulation was faster than plasma degradation, showing a half-life of accumulation of 5.4 days with a variation coefficient equal to 4 percent. This unexpected discrepancy led to the postulate that albumin is stored in some depot other than the extracellular fluid, presumably an organ depot. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Start Date	Number	Title
Unknown	**RECC125**	**Thermal Burns/External Counting of Radioactive Iodine as a Measure of Absolute Uptake of I-131-labeled Compounds**

Abstract: From a presently undetermined date until approximately June 1953, researchers from Brooke Army Medical Center, Fort Sam Houston, TX studied conventional chemical estimates of the rates of albumin degradation with iodinated (iodine 131) human serum albumin based on urine and plasma samples compared with those obtained by external counting. Apparatus was constructed to minimize the fluctuations resulting from experimental technique. Researchers hoped to develop an exact procedure for relating external counting to absolute quantity of radioactive material within the body. The number of plasma and urine samples necessary for patient study would thereby be minimized. Information on radiation dose, the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Start Date	Number	Title
Unknown	**RECC126**	**Thermal Burns/Estimation of the Mean Life of the Red Blood Cell, Using Radioactive Chromium**

Abstract: From a presently undetermined date until approximately June 1953, researchers from Brooke Army Medical Center, Fort Sam Houston, TX devised a procedure to examine the causes of anemia which accompanies severe burns. After a volume of red cells was tagged, the cells were replaced in the circulating blood of the individual. The subsequent excretion of the chromium 51 (Cr-51) into the urine measured the aging and disintegration of the tagged circulating red cells. By using probit analysis, researchers were able to determine the mean life of the red cell after only 2 or 3 weeks of measuring urinary chromium excretion. This methodology proved to be

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Brooke Army Medical Center, Fort Sam Houston, TX (continued)

advantageous because the mean life of a group of cells, which could be close to 100 days, could be determined by probit extrapolation after a relatively few days and cell fragility could be estimated even when an increase or decrease was present for only a short time. Additional studies were planned to compare red cell life in the normal human compared with early post-traumatic individuals. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Brooke Army Medical Center, Fort Sam Houston, TX

Start Date	Number	Title
Unknown	**RECC127**	**Thermal Burns/Measurement of the Rates of Protein Anabolism and Catabolism by the use of S-35-labeled Methionine**

Abstract: From a presently undetermined date until approximately June 1953, researchers from Brooke Army Medical Center, Fort Sam Houston, TX measured the rates of protein anabolism and catabolism in both humans and rabbits. The human phase of the study involved injection of the labeled amino acid into both normal individuals and those who had experienced extensive trauma, such as burns. Rates of protein anabolism and catabolism between the two groups were then compared. Injections of growth hormone after trauma showed that the total rate of metabolism was shifted markedly toward the anabolic side when measured with radioactive sulfur-35-labeled methionine. Researchers hoped to clarify nutrition problems such as the maintenance of positive nitrogen balance after extensive trauma. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Carnegie Institution of Washington, Baltimore, MD

Start Date	Number	Title
1951	**RECC112**	**Plasma Volume Expanders**

Abstract: From sometime before December 1951 until March 1952, researchers at the Carnegie Institute of Washington, Baltimore, MD investigated the decrease in the plasma levels and the uptake of dextran by various organs of the body, and the effects of dextran on blood volume. In one experiment, polyvinylpyrrolidone (PVP) was injected and blood volume measurements were made using the phosphorus 32 method checked by hematocrit changes. Information on radiation dose, the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Document: From: John D. Stoeckle, First Lieutenant, Panel Director, Committee on Radiation Sciences To: Chairman and Members, Joint Panel on the Medical Aspects of Atomic Warfare. Subject: Department of Defense Research Program under the technical objective of AW-6. Document Types: Memorandum; List. Document Date: 15 December 1952.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Carnegie Institution of Washington, Baltimore, MD

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1952, 01 January – 31 March 1952. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1952.

Charity Hospital, New Orleans, LA

Start Date	Number	Title
1946	RECC078	Protein Metabolism in Disease and Injury

Abstract: Between July 1946 and 30 June 1950, researchers from Tulane University and Charity Hospital, New Orleans, LA conducted studies of protein metabolism in patients preparing for operation, during recovery from illness or injury and during convalescence. The investigation included the use of phosphorous 32 (P-32) to measure blood volume. Radioactive iodine (I-131) was used for plasma volume measurement and it was found to be superior to the dye method. The term "chronic shock" was introduced to describe the condition seen in chronically ill and debilitated patients who show a significant anemia due to a decreased red cell volume. Studies on protein metabolism indicated that the negative nitrogen balance frequently seen after surgery was not necessarily due to an inability to handle protein but rather to increased excretion or some other mechanism. Work during the last year of the contract was mostly concerned with an experimental study on the exchange of albumin between plasma and lymph. The work yielded quantitative data on the disappearance of albumin from plasma as well as information regarding lymph flow and albumin. Information on radiation dose and the total number of participants is not available at this time.

Document: From: L.A. Wogan, Secretary-Treasurer To: M.E. Lapham, Dean, Tulane School of Medicine. Subject: [Extracts from the report of President Harris to the administrators of the Tulane educational fund at their meeting, 20 April 1948]. Document Types: Letter. Document Date: 30 April 1948.

Document: Authors: [Various]. Title: Research and Development Program, 1 October - 31 December 1948. Document Types: Report; Table of Contents/Index. Document Date: 1948 est.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1953 (1 January - 31 March 1953). Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1953.

Document: Authors: [Unstated]. Title: Research and Development Program, 1 January - 31 March 1947. Document Types: Table of Contents/Index. Document Date: 1947 est.

Document: Authors: [Unstated]. Title: Research and Development Program, 1 July - 30 September 1948. Document Types: Table of Contents/Index. Document Date: 1948 est.

Document: Authors: [Unstated]. Title: Research Program, 01 January - 30 June 1950. Document Types: Report; Table of Contents/Index; Cover. Document Date: 30 June 1950.

Document: Authors: [Unstated]. Title: Medical Research and Development Board, Office of the Army Surgeon General, Research and Development Program, 01 April - 30 June 1948 [includes table of contents and project reports for several projects]. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1948.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Chiangmai University, Chiangmai, Thailand

Start Date	Number	Title
1972	RECC067	**Complement Activity in Protein-Calorie Malnutrition**

Abstract: Between April 1972 and approximately 1973, researchers from the Anemia and Malnutrition Center, Chiangmai University, Chiangmai, Thailand; St. Louis University, School of Medicine, Chiangmai; SEATO Medical Research Laboratory and the SEATO Clinical Research Center, Bangkok, Thailand examined the susceptibility of children with protein-calorie malnutrition (PCM) to infection. Researchers studied children with PCM and evaluated them for serum hemolytic complement (CH-50) activity and for anti-complementary (AC) activity during the critical phase of the disease and throughout recovery. In 60 percent of children with PCM who were admitted to the hospital, the activity of the CH-50 serum had been depressed. Researchers found that with nutritional repair, fewer children had CH-50 activity depression. Studies of C3 (a complement protein) turnover with iodine-125-labeled C3 were initialized to determine whether the depression in CH-50 activity was secondary to increased consumption of complement in PCM. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: Walter Reed Army Institute of Research. Title: The Annual Progress Report of the SEATO Medical Research Laboratory, April 1972 - March 1973 [excerpt]. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: March 1973.

Children's Hospital, Bangkok, Thailand

Start Date	Number	Title
1972	RECC068	**Catabolic Rates of C3 and C1q of Patients with Dengue Hemorrhagic Fever**

Abstract: Between April 1972 and March 1973, researchers from the Ramathibodhi Hospital, Bangkok, Thailand and the Children's Hospital, Bangkok, Thailand; the SEATO Medical Research Laboratory and Clinical Research Center, Bangkok, Thailand examined the causes of low levels of serum complement components in the most severe form of dengue hemorrhagic fever (DHF), dengue shock syndrome. Researchers sought to confirm the results of a previous study by conducting catabolic studies of two complement proteins, C3 and C1q, with DHF patients. Twenty-three DHF patients participated in either a C3 or C1q metabolic study. In the C3 study, patients received 15 microcuries of iodine 125 (I-125)-labeled C3 and 15 microcuries of iodine 131 (I-131)-labeled immunoglobulin G (IgG) intravenously. The I-131-labeled IgG was used as a marker to determine the degree of extravasation of serum proteins during shock. Eight blood samples were taken during the first 24 hours. Two additional samples were taken for days 2 through 8. In the C1q study, patients received 15 microcuries of I-125-labeled C3 and 15 microcuries of I-131-labeled IgG intravenously. Blood samples were drawn at 1 minute, 10 minutes, 30 minutes, 1 hour, 3 hours, 6 hours, 24 hours, 36 hours, 48 hours and 60 hours. Results indicate that the catabolic rates of C3 were increased in the latter stages of the disease over that of the controls. The catabolic rates of C1q were also increased. Information on radiation dose is not available at this time.

Document: Authors: Walter Reed Army Institute of Research. Title: The Annual Progress Report of the SEATO Medical Research Laboratory, April 1972 - March 1973 [excerpt]. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: March 1973.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Chulangkorn Hospital Medical School, Bangkok, Thailand

Start Date	Number	Title
Unknown	**RECC038**	**Pathophysiology of Acute Asiatic Cholera**

Abstract: From a presently undetermined date until 1960, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC and Chulalongkorn Hospital Medical School, Bangkok, Thailand studied the cause of diarrhea in acute Asiatic cholera during the 1959 Thailand epidemic. Prompt and complete absorption of tritiated water and iodine 131 molecules by the upper intestine was shown in acute cholera during periods when transit time through the bowel was less than two hours. Information on radiation dose and the number of participants is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report from Walter Reed Army Institute of Research. Document Types: Report; Excerpt. Document Date: 30 June 1960.

Columbia University Medical Center, New York, NY

Start Date	Number	Title
1952	**RECC101**	**A Study to Correlate Total Body Radiation in Humans with Bone Marrow Depression as Reflected by the Plasma Iron Turnover Rate**

Abstract: From January 1952 until June 1952, researchers from Francis Delafield Hospital, Columbia University Medical Center, New York, NY correlated total body irradiation (TBI) in humans with bone marrow depression as reflected in plasma iron turnover rate. Cancer patients undergoing therapeutic TBI were intensely studied from the laboratory viewpoint. Five patients received TBI at 50-200 rads; three patients received 5 or 10 milligrams of nitrogen mustard and three received 5 or 10 milligrams of tri-ethylene melamine. Blood counts, plasma iron concentration and turnover rates, gastric analyses, icteric indices, plasma protein and bone marrow morphologies were followed as closely as possible. Lab results were correlated against the symptoms and clinical conditions of the patient. Plasma iron turnover and assimilation of the iron by the red blood cells was followed using iron 59 (Fe-59) as a tracer. Researchers noted a significant change in the plasma iron concentration or in the plasma iron turnover rate, or in both. The changes were noted after radiation dosage levels that caused no changes in any of the other laboratory data studied, or at a time considerably earlier than any of the other changes resulting from higher dosages. Investigators believed that the plasma iron concentration and turnover rate were closely dependent on other fundamental functions such as intestinal absorption, liver storage and release, bone marrow uptake and red cell formation, release from red cell breakdown in the spleen and elsewhere, etc. Generally, data indicated that acute human tolerance to single dose TBI was much greater than was previously estimated. Information on the radiation dose from the Fe-59 tracer is not available at this time.

Document: From: John D. Stoeckle, First Lieutenant, Panel Director, Committee on Radiation Sciences To: Chairman and Members, Joint Panel on the Medical Aspects of Atomic Warfare. Subject: Department of Defense Research Program under the technical objective of AW-6. Document Types: Memorandum; List. Document Date: 15 December 1952.

Document: Authors: [Unstated]. Title: Notice of Research Project [set of research summaries for the Biomedical Sciences Information Exchange, National Academy of Sciences]. Document Types: Research Summary. Document Date: 1956 est.

Document: Authors: [Unstated]. Title: Research Progress Report: First Quarterly Report Fiscal Year 1953, 01 July – 30 September 1952. Document Types: Report; Excerpt. Document Date: 30 September 1952.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

DC General Hospital, Washington, DC

Start Date	Number	Title
1958	RECC034	**Research in Biomedical Sciences**

Abstract: From May 1958 until 1972, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC; Georgetown Medical Division, DC General Hospital, Washington, DC and Georgetown University Medical School, Washington, DC studied a variety of hematologic abnormalities produced by chemicals, drugs and infectious agents encountered primarily in military populations and in natives of areas of potential military operations. Functions and disorders of blood and blood-forming organs were examined. Researchers studied the effect of oral urea therapy in patients with sickle cell anemia to ascertain if the rate of hemolysis was affected by treatment. Eight black volunteers (six male and two female) with sickle cell disease had red blood cell (RBC) survival measured with chromium 51 (Cr-51) before and after urea therapy. Five male volunteers received both Cr-51 and diisopropyl fluorophosphate (DFP) labeled with phosphorus 32. Three volunteers only received Cr-51. Blood samples were obtained from all volunteers at 2 to 4-day intervals to determine RBC survival rates. Before a second RBC survival determination, volunteers ingested urea two to five times daily for at least 3 weeks. Five patients had more than one erythrocyte survival study performed at intervals of 2 months to 7 years in the absence of any urea therapy. No significant change in the rate of RBC survival was observed even though patients had an increased hematocrit following therapy. At least two white volunteer hospital patients with glucose-6-phosphate dehydrogenase (G6PD) deficiency were studied to determine the effects of repeated primaquine doses and degree of hemolysis and its relation to the properties of the G6PD enzyme. Iron 55 and iron 59 were used to label aged and young cellsrespectively, and Cr-51 was used to label all ages of erythrocytes to quantify hemolysis. Researchers found that after the initial dose of primaquine, 10 to 30 percent of radiolabeled cells were hemolyzed. The ages and initials of the volunteers are provided. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, 01 July 1971 - 30 June 1972, Volume 1. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1972.

Duke University, Durham, NC

Start Date	Number	Title
1948	RECC164	**Metabolic Studies with Radioactive Isotopes**

Abstract: From 30 June 1948 to a presently undetermined date, researchers at Duke University, Durham, NC worked toward three study goals—two of which included an unknown number of human subjects. First, investigators planned to measure the turnover rates of organic phosphates in renal tissue under circumstances where the kidney is required to perform different degrees of "work," e.g., in excrete, dilute, and concentrate urine, acid or alkaline urine, after administration of pituitary, parathyroid adrenocortical extracts, etc. Researchers were then to compare the turnover rate with actual renal performance. Secondly, researchers planned to investigate mechanisms controlling the maintenance of fluid and electrolyte balance. At the time of this study, scientists believed that the effects of pathological upsets to normal electrolyte balance were limited to extracellular fluid and simply assumed osmotic equilibrium with cellular fluid. Researchers planned to reinvestigate this belief. Humans and dogs were to be subjected to processes that produced dehydration, acidosis, and alkalosis. These subjects were then to be studied with the aid of radioactive sodium and radioactive potassium to determine the effect on volume and composition of extracellular and intracellular fluids. Information on radiation dose, on the number of subjects and on results is not available at this time.

Document: Authors: [Unstated]. Title: List of Contracts of the Medical Sciences Division by Research and Development Board Number. Document Types: Report; Abstract; Excerpt. Document Date: 01 October 1947.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Emory University, Atlanta, GA

Start Date	Number	Title
1946	**RECC117**	**Peripheral Vascular Disease**

Abstract: From 1946 until 1952, researchers at Emory University Hospital, Emory University, GA investigated the use of sodium 24 (Na-24) in developing a new and objective method of evaluating the circulatory insufficiency in the extremity following arterial injury or disease. Na-24 was administered to over 100 individuals. Researchers also injected radioactive sodium chloride intramuscularly to measure its rate of disappearance. Patients with vascular diseases were the subjects of this study. This study provided a critical method of determining circulatory insufficiency. Information on radiation dose, on the total number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research and Development Program, 1 January - 31 March, 1947. Document Types: Table of Contents/Index. Document Date: 1947 est.

Document: Authors: [Unstated]. Title: Research and Development Program, 1 January - 31 March 1947. Document Types: Table of Contents/Index. Document Date: 1947 est.

Document: Authors: [Unstated]. Title: Medical Research and Development Board, Office of the Army Surgeon General, Research and Development Program, 01 April - 30 June 1948 [includes table of contents and project reports for several projects]. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1948.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1952, 01 January - 31 March 1952. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1952.

Start Date	Number	Title
Unknown	**RECC077**	**Research in Peripheral Vascular Diseases and Injuries**

Abstract: Sometime before 30 June 1948, researchers from Emory University, Atlanta, GA examined the formation of collateral channels after arterial injury or disease and the effect of sympathectomy upon blood flow in the extremities, renal blood flow and other problems. A series of patients with vascular diseases were injected with radioactive sodium chloride intramuscularly and the rate of disappearance was measured electronically to assess circulation. Researchers believed the method would ultimately aid in the evaluation of therapies thought to be beneficial in the treatment of vascular problems. Information on radiation dose, the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research and Development Program, 1 January - 31 March 1947. Document Types: Table of Contents/Index. Document Date: 1947 est.

Document: Authors: [Unstated]. Title: Medical Research and Development Board, Office of the Army Surgeon General, Research and Development Program, 01 April - 30 June 1948 [includes table of contents and project reports for several projects]. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1948.

Document: Authors: [Unstated]. Title: Research and Development Program, 1 July - 30 September 1948. Document Types: Table of Contents/Index. Document Date: 1948 est.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Emory University, Atlanta, GA

Start Date	Number	Title
Unknown	**RECC172**	**Plasma Volume Expanders**

Abstract: Sometime after 30 June 1953, researchers from Emory University, Atlanta, GA were to study the clinical effects of dextran on the dynamics of circulation and kidney function. They were to investigate the hydrolysis of dextran by body tissues and extracts (muscle, liver, and spleen) and by body enzymes--specifically, 1-6 glucosidase. Investigators were also to perform tracer experiments, using dextran labeled with carbon 14 (C-14) to determine excretion, storage and metabolic breakdown in the body. The evaluation of dextran in clinical patients, for shock and for its effects on patients with liver and kidney diseases was also planned. Researchers also planned to develop analytic methods for the examination of dextran in body tissues and fluids. Information on radiation dose, on the number of participants and on the results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Document: From: John D. Stoeckle, First Lieutenant, Panel Director, Committee on Radiation Sciences To: Chairman and Members, Joint Panel on the Medical Aspects of Atomic Warfare. Subject: Department of Defense Research Program under the technical objective of AW-6. Document Types: Report; Memorandum. Document Date: 15 December 1952.

Document: Authors: F. Lloyd Mussells. Title: Current Projects: Committee on Medical Sciences. Document Types: Report. Document Date: 30 July 1952.

Document: From: John D. Stoeckle, First Lieutenant, Panel Director, Committee on Radiation Sciences To: Chairman and Members, Joint Panel on the Medical Aspects of Atomic Warfare. Subject: Department of Defense Research Program under the technical objective of AW-6. Document Types: Memorandum; List. Document Date: 15 December 1952.

Far East Medical Research Unit, Korea

Start Date	Number	Title
Unknown	**RECC071**	**Blood Volume Studies**

(For abstract and documentation see 406th Medical General Laboratory, Far East)

Start Date	Number	Title
	RECC072	**Blood Flow, Blood Volume and Other Studies of the Circulation**

(For abstract and documentation see 406th Medical General Laboratory, Far East)

Start Date	Number	Title
	RECC073	**Thyroid Studies**

(For abstract and documentation see 406th Medical General Laboratory, Far East)

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Fitzsimons General Hospital, Aurora, CO

Start Date	Number	Title
1963	RECC018	**Amino Acids: Investigations on the Metabolism of Amino Acids in the Human with the Use of Carbon 14-labeled Compounds**

Abstract: From 1963 until a presently undetermined date, researchers from the US Army Medical Research and Nutrition Laboratory (USAMRNL), Denver, CO and Fitzsimons General Hospital, Denver, CO planned to study the metabolism of carbon 14 (C-14)-labeled amino acids. Researchers were to determine whether C-14-labeled glycine-1 and glycine-2 are partially converted to and excreted as oxalate at a constant rate per day and to assess the amount excreted per day as urinary oxalate. An examination of pool size, turnover rates and metabolites of various C-14-labeled amino acids to assess protein and amino acid requirements in humans was to be done as well. No more than ten male USAMRNL staff members between the ages of 20 and 46 were to participate. Each volunteer was to ingest 20 microcuries of glycine-1-C-14. Immediately following, volunteers were to exhale into a vibrating reed electrometer until no radioactivity was detected. Twenty-four hour urine collection was to be performed on every third day for 2 weeks. Volunteers were to receive 20 microcuries of glycine-2-C-14 40 to 80 days after receiving glycine-1-C-14. Researchers estimated a total radiation dose of 0.005 rem from glycine-1-C-14 and a total dose of 0.056 rem from glycine-2-C-14. Available documentation includes a sample volunteer consent form. Information on the results of this study and the total number of participants is not available at this time.

Document: Authors: US Army Medical Research and Nutrition Laboratory and Fitzsimons General Hospital. Title: Request for Approval for Human Use of Radioisotopes in Tracer and Amounts in Volunteer Experimental Research Subjects. Document Types: Form; Proposal. Document Date: 18 November 1963.

Document: Authors: [Unstated]. Title: Research, Development, Training and Evaluation (RDTE) Facilities Fact Sheet. Document Types: Fact Sheet. Document Date: 18 November 1963.

Document: From: Stephen Ailes, Secretary of the Army To: Chief of Staff, Army. Subject: Request for Approval to Use Radioisotope Tracers in Volunteers. Document Types: Memorandum; Form. Document Date: 22 February 1964.

Document: From: Irvin C. Plough, Lieutenant Colonel, Medical Corps To: Marion E. McDowell, Lieutenant Colonel, Medical Corps. Subject: Request for approval to use isotopes away from MRNL and FGH [includes memorandum and application for byproduct material license number 5-46-13 (A66)]. Document Types: File. Document Date: 1964.

Fort Bliss, TX

Start Date	Number	Title
1963	RECC032	**Metabolism of Fission Products from Fallout**

Abstract: From 1 July 1963 to 30 June 1964, researchers from Fort Bliss, TX and Walter Reed Army Institute of Research (WRAIR), Walter Reed Army Medical Center, Washington, DC examined the effect of external radiation on the metabolism of internal emitters. Researchers sought to ultimately develop a method to beneficially alter the introduction, uptake and excretion of fission products. Researchers used the human whole body counter and low radioactivity counter at WRAIR to gather information on workers with accidental or occupationally acquired body burdens and on laboratory animals and human volunteers after specific radionuclide administration. Additionally, researchers examined the exchange of fission and activation products between man and environment; the acute metabolism of various nuclides in the rat; long term whole-body turnover of an unspecified chromium isotope in rats, dogs and man; whole body turnover of manganese and chromium in irradiated rats and the surveillance of 250 people who were occupationally exposed to radiation. Information on radiation dose, on the total number of participants and on results is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Fort Bliss, TX

Document: Authors: [Unstated]. Title: Walter Reed Army Institute of Research, Annual Progress Report (1 July 1963 - 30 June 1964), Volume I. Document Types: Table of Contents/Index; Excerpt; Annual Report. Document Date: 30 June 1964.

Francis Delafield Hospital, New York, NY

Start Date	Number	Title
1952	RECC101	**A Study to Correlate Total Body Radiation in Humans with Bone Marrow Depression as Reflected by the Plasma Iron Turnover Rate**

(For abstract and documentation see Columbia University Medical Center, New York, NY)

Georgetown University Medical School, Washington, DC

Start Date	Number	Title
1958	RECC034	**Research in Biomedical Sciences**

(For abstract and documentation see DC General Hospital, Washington, DC)

Harvard Medical School, Cambridge, MA

Start Date	Number	Title
1946	RECC167	**Isotope Research and Medicine: Research with Isotopes on Medical Problems-Studies relating to the Formation of Cerebrospinal Fluid Using Na-24 and Other Isotopes**

Abstract: Sometime between 1 June 1946 and 30 June 1949, researchers from Harvard Medical School, Boston, MA performed studies relating to the formation of cerebrospinal fluid using sodium 24 and other radioactive isotopes. Radioactive phosphorous uptake in the normal brain compared with brain tumor was also examined. No further information is available at this time.

Document: Authors: [Unstated]. Title: List of Contracts of the Medical Sciences Division by Research and Development Board Number. Document Types: Report; Abstract; Excerpt. Document Date: 01 October 1947.

Start Date	Number	Title
1946	RECC170	**Isotope Research and Medicine: Research with Isotopes on Medical Problems-Circulation Studies with Radioactive Isotopes and the Therapeutic Value of Radioactive Phosphorous**

Abstract: Sometime between 1 June 1946 and 30 June 1949, researchers from Harvard Medical School, Boston, MA performed studies on the uptake of radioactive phosphorous and radioactive sodium by the tissues in cases of disturbance of the peripheral circulation, such as diabetic gangrene. Circulation time studies in various conditions of impaired circulation were also performed using the isotopes. Investigators also examined the therapeutic value of radioactive phosphorous in leukemia, plasma cell myeloma and polycythemia vera. No further information is available at this time.

Document: Authors: [Unstated]. Title: List of Contracts of the Medical Sciences Division by Research and Development Board Number. Document Types: Report; Abstract; Excerpt. Document Date: 01 October 1947.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Harvard Medical School, Cambridge, MA

Start Date	Number	Title
1951	RECC151	Plasma Volume Expanders

Abstract: From November 1951 until late 1952, researchers at Harvard Medical School, Boston, MA evaluated the use of Periston as a blood substitute. Investigators studied its distribution, excretion and disposition in tissues using various methods. Plasma volume determinations were performed on two patients before an infusion of 1,000 cubic centimeters of 4.3 percent polyvinylpyrolidone (PVP) in 0.85 percent saline solution, and 1, 6 and 12 hours after the infusion, using the radio-iodo-albumin technique. Two other patients received 1.0 liter of PVP and the same observations were made. In all four patients, the plasma volume showed a moderately good expansion in 6 hours. Iodine 131 (I-131) PVP appears in the urine very soon after its infusion into the blood stream. When a carbon 14 (C-14)-labeled preparation was infused into man, the blood disappearance and urinary excretion curves were similar to those obtained with I-131 labeled PVP. The amount of radioactive carbon dioxide in the expired air after the infusion of the same C-14-labeled PVP preparation was measured. After 36 hours, no radioactivity could be detected in the expired air. To assess the distribution of PVP in the tissues, researchers injected C-14-labeled PVP intravenously into five pre-terminal patients. The largest fraction was found in the skeletal muscle and in skin and subcutaneous tissues. From these studies, investigators determined that PVP was of no value as an effective plasma volume expander. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1952, 01 January – 31March 1952. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1952.

Document: Authors: [Unstated]. Title: Research Progress Report: First Quarterly Report Fiscal Year 1953, 01 July– 30 September 1952. Document Types: Report; Excerpt. Document Date: 30 September 1952.

Harvard University, Cambridge, MA

Start Date	Number	Title
1947	RECC162	Fluid, Electrolyte and Protein Requirements of Patients with Surgical Disease

Abstract: From 15 January 1947 to a presently undetermined date, researchers from Harvard University, Cambridge, MA reviewed the nutritional requirements of fluid, electrolytes and proteins for an unknown number of individuals under stress related to surgical disease. The balances of nitrogen, potassium and sodium were measured. Metabolism of single tracer doses of potassium was measured to assess the conditions in which avidity for potassium exists. Researchers determined equilibrium rates for an injected dose of radioactive potassium by measuring the specific activity of blood cells, serum, urine, muscle and other tissues. Body fluid spaces were measured. The studies with radioactive potassium measured: 1) the total mass of exchangeable potassium in the body; 2) the rate of excretion of injected potassium; 3) the basal rate of excretion and 4) the rate at which equilibrium is reached when potassium is exchanged in tissues and body fluids. Investigators observed that red cell permeability to potassium is somehow different from that of other body cells and that there is significant variation in the potassium content of red cells between well and depleted individuals. Researchers also studied the effect of simultaneous insulin and glucose administration on potassium levels. A drop in serum potassium concentration was observed in the administration of glucose both with and without insulin. Information on radiation dose and on the number of participants is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Harvard University, Cambridge, MA

Document: Authors: [Unstated]. Title: List of Contracts of the Medical Sciences Division by Research and Development Board Number. Document Types: Report; Abstract; Excerpt. Document Date: 01 October 1947.

Start Date	Number	Title
1947	RECC166	Radioactive Iodine Therapy of Graves Disease

Abstract: From 15 February 1947 to a presently undetermined date, researchers at Harvard University, Cambridge, MA studied iodine metabolism in blood, urine, body fluids and the thyroid by using radioactive iodine. Investigators focused on the relative effectiveness of iodine 130 and iodine 131 and the short and long-life isotopes for irradiation therapy. Researchers were also interested in studying the preparation of cardiac patients for radiation (non-surgical) controlled thyroidectomies and the effectiveness of various goiterogens on iodine metabolism. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: List of Contracts of the Medical Sciences Division by Research and Development Board Number. Document Types: Report; Abstract; Excerpt. Document Date: 01 October 1947.

Hematology Clinic, DC General Hospital, Washington, DC

Start Date	Number	Title
Unknown	RECC037	Uptake of I-131-labeled L-Triiodothyronine in Various Erythrocyte Abnormalities

Abstract: From a presently undetermined date until April 1960 researchers from Walter Reed Army Institute of Research, Walter Reed General Hospital and the Hematology Clinic, DC General Hospital, Washington, DC studied the effect of various erythrocyte abnormalities on the uptake of iodine-131 (I-131)-labeled l-triiodothyronine. This study may have involved in vivo use of I-131. Twenty-seven male and female clinically euthyroid volunteers from the hematology service, Walter Reed General Hospital and the Hematology Clinic, DC General Hospital participated. Investigators also looked for possible consistent variations in several conditions including sickle-cell anemia, sickle-cell-thalassemia, thalassemia minor, hemolytic anemia, acute leukemia, Hodgkin's Disease and polycythemia. Results of in vitro tests indicate that abnormalities of in vitro erythrocyte uptake of I-131 labeled l-triiodothyronine may occur in the absence of thyroid disease. Information on in vivo results and radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report from Walter Reed Army Institute of Research. Document Types: Report; Excerpt. Document Date: 30 June 1960.

Highland Alameda County Hospital, Oakland, CA

Start Date	Number	Title
1951	RECC152	Studies in Sulfur Metabolism/Wound Healing

Abstract: From 1951 until 1954, researchers at Highland Alameda County Hospital, Oakland, CA investigated the use of sulfur 35 (S-35) as a tracer in determining the rate of wound healing in humans under normal and abnormal conditions; in evaluating the metabolism of methionine, cystine, glutathione and other organic sulfur containing materials; and in determining the rate methionine and cystine incorporation into specific tissues and organs. Investigators administered S-35-labeled methionine to an 18-year-old male patient with severe nephrotic syndrome. This diagnostic and prognostic technique was determined to be feasible for patients with liver damage. Researchers also administered 5 microcuries of S-35-labeled methionine to two cancer patients to determine the effect upon the widespread neoplastic state and to obtain labeled plasma protein

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Highland Alameda County Hospital, Oakland, CA (continued)

for re-infusion into other patients. There was an area of condensation in the left lung field of the first cancer patient following the administration of the labeled methionine. Labeled plasma albumin was administered to a normal individual to establish the half-life for albumin in the subject. The administration of S-35-labeled methionine to patients with widespread cancer resulted in only very transitory benefits to the patients. In another phase of study, far-advanced breast cancer patients were administered up to 50 millicuries of S-35-labeled methionine in a single dosage. The rate of the progression of the cancer was significantly inhibited, but the total course of the neoplastic process was only slowed. A larger dosage was to be used in other patients. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1954, 1 January – 31 March 1954 [includes Research Development Board project card on metabolism and nutrition]. Document Types: Table of Contents/Index. Document Date: 31 March 1954.

Document: Authors: Unknown. Title: Research Progress Report, Army Medical Service. Document Types: Report. Document Date: 1953 est.

Document: Authors: [Unstated]. Title: Research Program, Priority 1C and 2 Projects [includes progress reports: "Radiation Injury in Man and Animals," "Ionization Effects," and "Effects of Irradiation"]. Document Types: Report. Document Date: 30 September 1951.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1952, 01 January – 31 March 1952. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1952.

Document: Authors: [Unstated]. Title: Research Progress Report: First Quarterly Report Fiscal Year 1953, 01 July – 30 September 1952. Document Types: Report; Excerpt. Document Date: 30 September 1952.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Institute Pasteur of Vietnam, Saigon, Vietnam

Start Date	Number	Title
Unknown	**RECC065**	**Serial Measurements of Blood Volume and Fluid Compartments Following Trauma**

(For abstract and documentation see 24th Evacuation Hospital, Vietnam)

Jefferson Medical College of Philadelphia, PA

Start Date	Number	Title
1958	**RECC079**	**Immunity After Irradiation and Marrow Transplantation**

Abstract: From 1 July 1958 to 30 June 1963, researchers from the Jefferson Medical College of Philadelphia, Philadelphia, PA conducted a multi-phased study that examined the immunologic potential of bone marrow transplant patients exposed to whole body radiation. One of two phases involved human exposure to ionizing radiation. In one phase of the study, six patients with acute leukemia and one patient with disseminated neuroblastoma received a single dose of roentgen radiation ranging between 170 and 800 rads. Immediately following, the patients received infusions of bone marrow from donors who had shortly before been given a booster dose of tetanus toxoid. In five patients who received 170 rads to 490 rads, immunologic response was vigorous. The two volunteers who received 800 rads had no increase in circulating diphtheria antitoxin. Results indicate that secondary immunologic responses were not severely depressed

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Jefferson Medical College of Philadelphia, PA (continued)

by total body radiation with as much as 490 rads. In another phase of the study, 36 Schick-negative patients with carcinoma received between 3,600 and 6,000 rads of roentgen radiation over a period of 4 to 6 weeks. During the fourth or fifth week, volunteers received a booster dose of diphtheria toxoid. In 29 patients, immunologic response was vigorous. Results suggested that for a small percentage of carcinoma patients, secondary immunologic response would be inhibited or impaired by roentgen radiation.

Document: From: [Unstated] To: W. Paul Havens, Jr, Jefferson Medical College. Subject: Reporting requirements of contract DA-49-007-MD-963. Document Types: Letter. Document Date: 28 May 1958.

Document: From: [Unstated] To: [Unstated]. Subject: Research Project, Project GF 963: To Investigate Immunity After Irradiation and Marrow Transplantation [Includes other notices of Dr. Haven's research grants]. Document Types: File. Document Date: 1959.

Document: Authors: W. Paul Havens, Jr. Title: Immunity after Irradiation and Marrow Transplantation, 01 March 1958 to 28 February 1959. Document Types: Paper. Document Date: 28 February 1959.

Document: From: Charles H. Moseley, Colonel, Medical Corps, US Army, Executive Secretary To: W. Paul Havens, Jr, Jefferson Medical College. Subject: Receipt of research contract renewal application DA-49-007-MD-963 and DA-49-193-MD-2079 [includes memoranda related to the contract]. Document Types: Letter. Document Date: 19 February 1962.

Document: From: Stefano Vavona, Major, Medical Corps, Chief, Preventive Medicine Research Branch To: Chief, Purchasing Office. Subject: Contract number DA-49-007-MD-963: The Jefferson Medical College, Philadelphia, Pennsylvania (Dr. W. Paul Havens). Document Types: Memorandum. Document Date: 21 May 1959.

Document: From: Stefano Vavona, Major, Medical Corps, Chief, Preventive Medicine Research Branch To: W. Paul Havens, Jr, Jefferson Medical College. Subject: Approval of renewal application for research contract DA-49-007-MD-963. Document Types: Letter. Document Date: 22 May 1959.

Document: Authors: W. Paul Havens, Jr. Subject: Application for research contract: "Immunity After Irradiation and Marrow Transplantation", DA-49-007-MD-963. Document Types: Proposal. Document Date: 14 February 1962.

Document: Authors: W. Paul Havens, Jr. Subject: Application for research contract: "Immunity After Irradiation and Marrow Transplantation", DA-49-007-MD-963. Document Types: Contract. Document Date: 25 January 1960.

Document: Authors: W. Paul Havens, Jr. Subject: Application for research contract: "Immunity after Irradiation and Marrow Transplantation", DA-49-007-MD-963. Document Types: Contract. Document Date: 19 January 1961.

Document: Authors: W. Paul Havens, Jr. Subject: Application for research contract: "Immunity After Irradiation and Marrow Transplantation", DA-049-007-MD-963. [includes related memoranda]. Document Types: Contract. Document Date: 04 February 1959.

Document: From: W. Paul Havens, Jr To: John Rizzolo, Colonel, Medical Corps, US Air Force, Executive Secretary, Armed Forces Epidemiological Board. Subject: Transmittal letter for application for renewal of contract no. DA-49-007-MD-963. Document Types: Letter. Document Date: 01 February 1960.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Jefferson Medical College of Philadelphia, PA

Document: Authors: W. Paul Havens, Jr. Title: Immunity After Irradiation and Marrow Transplantation, 01 March 1960 to 28 February 1961. Document Types: Abstract. Document Date: 28 February 1961.

Document: From: Thomas B. Dunne, Lieutenant Colonel, Medical Corps, Chief, Preventive Medicine Research Branch To: W. Paul Havens, Jr, Jefferson Medical College. Subject: Approval of contract renewal application for research contract DA-49-007-MD-963. Document Types: Letter. Document Date: 23 May 1960.

Document: Authors: W. Paul Havens, Jr. Title: Immunity after Irradiation and Marrow Transplantation. Document Types: Paper. Document Date: 29 February 1960.

Document: Authors: [Unstated]. Subject: DA-49-007-MD-963, To investigate immunity after irradiation and marrow transplantation [includes memoranda related to the contract]. Document Types: Contract. Document Date: 1964 est.

Document: From: Stefano Vivona, Major, Medical Corps, Chief, Preventive Medicine Research Branch, Research and Development Division To: W. Paul Havens, Jr, Jefferson Medical College. Subject: "Immunity After Irradiation and Marrow Transplantation". Document Types: Letter. Document Date: 20 June 1958.

Document: Authors: W. Paul Havens, Jr., Professor of Clinical Microbiology and Professor of Medicine. Title: Immunity After Irradiaton and Marrow Transplantation. Document Types: Report; Memorandum. Document Date: 12 June 1964.

Document: Authors: W. Paul Havens, Jr.. Title: Immunity After Irradiation and Marrow Transplantation, 01 March 1961 to 28 February 1962. Document Types: Abstract. Document Date: 28 February 1962.

Document: Authors: W. Paul Havens, Jr. Title: Annual Report to the Commission on Viral Infections of the Armed Forces Epidemiological Board: Immunity After Irradiation and Marrow Transplantation, DA-49-007-MD-963. Document Types: Report; Excerpt. Document Date: 1959 est.

Document: From: Colin Vorder Bruegge, Colonel, Medical Corps, Deputy Commander To: W. Paul Havens, Jr, Jefferson Medical College. Subject: Approval of contract renewal application for research contract DA-49-007-MD-963 [includes related memoranda]. Document Types: Letter. Document Date: 31 May 1962.

Start Date	Number	Title
Unknown	**RECC140**	**Metabolism of Gamma Globulin and Certain Steroids in Hepatic Disease**

Abstract: From a presently undetermined date until 30 September 1953, investigators from Jefferson Medical College, Philadelphia, PA searched for the origins of unusually large amounts of circulating antitoxin in patients with chronic hepatic disease following the injection of purified diphtheria toxoid. Normal human gamma globulin labeled with iodine 131 (I-131) was injected intravenously into 8 patients with hepatic cirrhosis and 10 controls. In four experiments, the half-life of injected gamma globulin measured from 5.2 to 10.8 days in patients with hepatic cirrhosis and from 10.6 to 16.6 days in the control patients. The rates of disappearance of radioactivity from the blood were rapid and similar in both groups during the first 24 hours; 16 to

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Jefferson Medical College of Philadelphia, PA (continued)

25 percent disappeared during the first 4 hours after injection and 25 to 50 percent had disappeared after 24 hours. Quantitative evaluation of the radioactivity in the urine made in three patients during the first 4 days after injection revealed that 40 to 60 percent of the isotope was still present. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Kasetsart University and School of Public Health, Bangkok, Thailand

Start Date	Number	Title
1964	**RECC062**	**Survey: Incidence and Etiology of Anemia in Thailand**

Abstract: From approximately 1964 until approximately 1965, researchers from the SEATO Medical Research Laboratory and the SEATO Clinical Research Center, in collaboration with the Kasetsart University and the School of Public Health, Bangkok, Thailand, surveyed the prevalence of anemia in Thailand. In an addendum to the original study, researchers measured fecal iron excretion in 12 adult (7 female and 5 male) Thai subjects to determine whether the dietary intake of iron was adequate in Bangkok adults and to determine whether they could respond to orally administered iron (ferrous sulfate). Participant ages are identified in the available documentation. To correct fecal iron data for intestinal blood loss during the collection period, erythrocytes labeled with chromium 51 (Cr-51) were employed, after which, subjects collected all stool passed during a 5-day period. Researchers observed negligible amounts of Cr-51 in the stool and determined that the subjects had marginal iron intake. The response to oral iron was modest in most subjects. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report: SEATO Medical Research Laboratory Clinical Research Center (Bangkok, Thailand). Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 15 April 1965.

Madigan Army Hospital, Fort Lewis, WA

Start Date	Number	Title
Unknown	**RECC173**	**Studies on Hip Joint Using Lateral Roentgen View of Hip**

Abstract: Sometime before 30 June 1953, researchers from Madigan Army Hospital, Fort Lewis, WA began an anatomic study of femoral torsion and its relationship to congenital dislocation of the hip and to other hip pathology. The x-ray techniques described in this study were found to be as helpful in diagnosing pathologic conditions of the acetabulum as the lateral view is in the study of long bones. Four hundred normal and abnormal hip joints in adults and children were studied. In all pathological conditions studied, the lateral x-ray view of the acetabulum made possible by this technique simplified the diagnosis and distinctly aided in outlining the treatment. Investigators felt that the technique would allow further understanding of some of the basic pathologic entities of the hip joint. Information on radiation dose, on the number of subjects and on the results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Madigan General Hospital, Fort Lewis, WA

Start Date	Number	Title
1966	RECC145	**Panoramic Radiography as a Screening Measure for Routine Dental Evaluation**

Abstract: In 1966, researchers at Madigan General Hospital, Fort Lewis, WA were to evaluate the value of the panoramic dental x-ray as a screening device in comparison with standard methods of evaluation then being utilized. Investigators were to perform standard clinical examinations and routine x-rays, as well as panoramic x-rays, on one thousand consecutive "routine" patients without specific dental complaints. The films were not to be available to the examining doctor. The investigators were to evaluate the panoramic x-ray and compare the findings to the standard x-ray. A time study and a comparison of clinically silent radiologic lesions were to be made. Information on radiation dose and on results is not available at this time.

Document: Authors: Henry C. Thompson. Title: Pilot study: Panoramic radiography as a screening measure for routine dental evaluation. Document Types: Proposal. Document Date: 19 November 1965.

Massachusetts General Hospital, Boston, MA

Start Date	Number	Title
1951	RECC168	**Radioactive Sodium Versus Thiocyanate in the Measurement of Extracellular Space**

Abstract: From July 1951 to June 1953, researchers at the Massachusetts General Hospital, Boston, MA compared the use of radioactive sodium versus thiocyanate in measuring edema volume in burn patients. The results indicated that the radioactive sodium and the thiocyanate measured the same space. Information on radiation dose and on the number of participants is not available.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Start Date	Number	Title
Unknown	RECC120	**Whole Blood Versus Plasma as the Colloid Therapy of Choice**

Abstract: From a presently undetermined date until 1953, researchers from Massachusetts General Hospital in Boston, MA searched for a better laboratory method to determine the red cell mass and the need for red cell replacement. Homologous skin grafts as a temporary life-saving measure were to be investigated and metabolic studies using radioactive tracers were to be made. Determinations of the red cell volume in nine burned human patients were done using the chromium 51 erythrocyte-tagging technique developed in this study. Researchers thought that the mass of red cells destroyed initially by the burn was probably not over 10 to 12 percent of the expected normal mass for these patients. This minimal need for red cell replacement soon after injury contrasted sharply with the later need if infection developed. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Massachusetts General Hospital, Boston, MA

Start Date	Number	Title
Unknown	**RECC169**	**The Intermediary Nitrogen Metabolism**

Abstract: From a presently undetermined date until approximately June 1953, researchers from Massachusetts General Hospital in Boston, MA performed amino acid analyses on the urine of burned patients. A greater than normal quantity of the few nonessential amino acids--none of which are seen in the urine of normals--was seen in the burn patients' urine. The excretion of both nonessential and essential amino acids was larger than expected from the increased nitrogen excretion in the burned patients. Seven extensively burned hospital patients were placed on nitrogen balances and their urinary amino acid excretion was studied by paper chromatography. The qualitative and quantitative aspects of amino-aciduria appeared to correspond with burn severity. Amino-aciduria was then studied in three patients with active Cushing's disease to identify the role of the adrenal hormones in producing the increased amino acid excretion. The total nitrogen partition was then examined in cases of trauma and Cushing's disease. In an effort to determine the role of the adrenal cortex in amino acid distribution, the disposition of sulfur 35-tagged amino acids in body fluids was measured and partition quantified in Cushing's disease. Information on radiation dose, on the number of patients exposed to the radioisotope and on the final results of this study is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Start Date	Number	Title
Unknown	**RECC198**	**Thermal Burns: Metabolism**

Abstract: Sometime before 30 June 1952, researchers from Massachusetts General Hospital, Boston, MA observed 10 severely and 3 moderately burned patients from the time of injury through wound healing. The metabolic rates of six surgical patients without burns were also determined. An elevated metabolic rate was seen following extensive thermal trauma for as long as 2 months. The rate gradually normalized through the healing process. In burns involving 15 to 20 percent of the body, the metabolic rate was found to be normal or slightly elevated. Metabolic rate in the surgical patients rose slightly during the first days following surgery. A high protein diet was not found to significantly alter the metabolic rate in the non-burned patient. In the seven patients tested, serum protein-bound iodine and iodine 131 (I-131) thyroid uptake measurements were normal. Researchers determined that the elevated metabolic rate of nine severely burned patients accounted for the wasting that the patients suffered, that the thyroid played no part in elevating the metabolic rate and that the increased adrenal cortex activity following thermal trauma is coincidental, not causal. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Medical College of Virginia, Richmond, VA

Start Date	Number	Title
1948	RECC114	**Infused Red Cells as a Source of Protein in Man**

Abstract: Beginning in 1948, researchers at the US Army Medical Research and Nutrition Laboratory, Chicago, IL investigated the relationship between infused red blood cells and excess nitrogen. They discovered that only a small amount of nitrogen was made available to the metabolic pool as a result of erythrocyte infusions. This project was transferred to the Medical College of Virginia, Richmond, VA from 1949 to 1950. Iron 59 and nitrogen 15-labeled glycine were used as tracers in these studies. Four normal adult males were made polycythemic by transfusions. Researchers also investigated this relationship in patients during anabolic and catabolic states. Two nutritionally depleted patients--African-American men, ages 60 and 65 years--were administered 24 grams of nitrogen and 3,600 calories per day for 2 weeks. The men were in positive nitrogen balance and were gaining weight progressively. Both patients were transfused with identifiable red cells. The results in these two patients were found to be the same as in the normal male subjects. Investigators additionally studied three patients in an anabolic state and one patient in a catabolic state. Red blood cells were infused into the three anabolic patients and survival of the infused red blood cells was found to be normal. The patient in the catabolic phase was infused with red blood cells and the survival of the infused red blood cells was normal. A normal young adult male was then infused with red blood cells, and 6 weeks later was administered 850 cubic centimeters of red cells. Researchers found that nitrogen made available to the metabolic pool as a result of erythrocyte infusions would contribute little to overall nutritional requirements. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Agenda for the Third Meeting to be Held at Argonne National Laboratory, 15 and 16 December 1949. Document Types: Agenda. Document Date: 1949.

Document: Authors: Levenson. Title: Infused Red Cells as a Source of Protein in Man [Includes report: Medical aspects of atomic bomb, 31 December 1950]. Document Types: Report. Document Date: 31 December 1949.

Start Date	Number	Title
1951	RECC143	**Kinetics of Phosphorus 32 Metabolism in Man**

Abstract: During 1951, researchers at the Medical College of Virginia, Richmond, VA investigated the metabolism of phosphorus 32 (P-32) in man. The researchers administered P-32 intravenously and then analyzed the excretion of P-32 and calculated the rate at which P-32 leaves the body (0.85 percent per minute), the size of the labile body phosphorus pool (1.3 grams) and the rate of phosphorus turnover in the normal adult male (0.7 percent per minute). Investigators also studied the partition of P-32 among the various fractions of plasma and red blood cells. Results indicated that approximately 85 percent of the injected P-32 was found in the inorganic form at peak uptake while most of the remainder was found in the acid soluble organic fraction. Information on radiation dose and on the number of participants in this study is not available at this time.

Document: Authors: [Unstated]. Title: Research Program, Priority 1C and 2 Projects [includes progress reports: "Radiation Injury in Man and Animals," "Ionization Effects," and "Effects of Irradiation"]. Document Types: Report. Document Date: 30 September 1951.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Percy Jones General Hospital, Battle Creek, MI

Start Date	Number	Title
1947	RECC107	**Effects of Cobaltous Chloride in Chronic Suppurative Infections and Various Refractory Anemias**

Abstract: Beginning in 1947, researchers at Percy Jones General Hospital, Battle Creek, MI investigated cobalt chloride as a treatment for chronic anemia of infection. This research was divided into two areas of study. In the first study, the hematologic response to cobalt therapy was followed in patients with various types of anemia. Sixteen patients with anemia of infection were treated with cobalt chloride, which was administered orally at a dose of up to 60 milligrams daily. In nine patients with chronic suppurative infections, a good response was obtained following the therapy without toxic effects. Response in refractory anemia was also studied, with little or no response to the cobalt therapy reported. In the second study, four healthy young men were studied intensively for 3 months, using cobalt chloride. No response was observed, perhaps because the daily intake of ascorbic acid was estimated to be at a level where it would inhibit the polycythemic effects of the cobalt. A group of three students who would subsist on a diet low in ascorbic acid were to be studied. Information on radiation dose and on the final results is not available at this time.

Document: Authors: [Unstated]. Title: Medical Research and Development Board, Office of the Army Surgeon General, Research and Development Program, 01January - 31 March 1949 [includes table of contents and project reports for several projects]. Document Types: Report; Excerpt. Document Date: 1949 est..

Document: Authors: Army Medical Research and Development Board. Title: Medical Department Research and Development Program, 1 January - 31 to March 1947. Document Types: Report; Annual Report. Document Date: 1947.

Document: Authors: [Unstated]. Title: Medical Research and Development Board, Office of the Army Surgeon General, Research and Development Program, 01 April - 30 June 1948 [includes table of contents and project reports for several projects]. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1948.

Document: Authors: [Various]. Title: Research and Development Program, 1 October - 31 December 1948. Document Types: Report; Table of Contents/Index. Document Date: 1948 est.

Peter Bent Brigham Hospital, Boston, MA

Start Date	Number	Title
1956	RECC119	**Study of Platelet Physiology**

Abstract: From 1 January 1956 through 31 December 1956, researchers from Peter Bent Brigham Hospital, Boston, MA were to evaluate plastic equipment in the preparation, preservation and transfusion of human blood platelets. Platelets were to be tagged with radioactive sodium chromate for evaluation in normal control subjects. Investigators also planned to explore other methods of tagging platelets with radioactive material. Information on radiation dose, on the total number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Notice of Research Project [set of research summaries for the Biomedical Sciences Information Exchange, National Academy of Sciences]. Document Types: Research Summary. Document Date: 1956 est.

Document: Authors: [Unstated]. Title: Army Medical Service, Consolidated Research and Development Annual Project Report, (Excluding G M). Document Types: Excerpt; Annual Report. Document Date: 31 December 1956.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Ramathibodhi Hospital, Bangkok, Thailand

Start Date	Number	Title
1972	RECC068	**Catabolic Rates of C3 and C1q of Patients with Dengue Hemorrhagic Fever**

(For abstract and documentation see Children's Hospital, Bangkok, Thailand)

SEATO Clinical Research Center, Bangkok, Thailand

Start Date	Number	Title
1964	RECC063	**Red Blood Survival in G-6-PD Deficiency**

Abstract: From approximately October 1964 until approximately March 1965, researchers from the SEATO Medical Research Laboratory and the SEATO Clinical Research Center, Bangkok, Thailand studied whether Thai subjects with red blood cell deficiency have hemolytic disease in the absence of known hemolytic agents or infection. In a preliminary study involving three African-Americans, a shortened half-time of tagged cells was demonstrated. Six male Thai subjects with a complete absence of red blood cell Glucose-6-Phosphate Dehydrogenase (G-6-PD) activity were studied by chromium 51 red blood cell tag to determine half times. The subjects were asymptomatic, without evidence of anemia of hemolysis and they avoided drugs during the course of the study. Researchers found no definite evidence of hemolysis in the six Thai subjects and planned to perform further studies with DFP-32. Information on radiation dose is not available at this time.

Document: Authors: Craig J. Canfield. Title: RBC Survival in G-6-PD Deficiency [from SEATO Medical Research Laboratory Clinical Research Center, Bangkok, Thailand: Quarterly Research Progress Report, 1 October 1964 - 31 December 1964]. Document Types: Report. Document Date: 31 December 1964.

Document: Authors: [Unstated]. Title: Annual Progress Report: SEATO Medical Research Laboratory Clinical Research Center (Bangkok, Thailand). Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 15 April 1965.

Start Date	Number	Title
1966	RECC059	**Studies of Malabsorption, IV: The Effect of Tropical Climates on the Normal American Intestine**

Abstract: From August 1966 until a presently undetermined date, researchers from the SEATO Medical Research Laboratory and the SEATO Clinical Research Center, Bangkok, Thailand examined whether healthy North American individuals stationed in Thailand develop intestinal absorption and histologic patterns characteristic of normal Thai people. The frequency of sub-clinical and clinical malabsorption of Americans living in Thailand under local conditions was also of interest. Within 48 hours of arrival in Bangkok from abroad, Peace Corps Volunteers were asked to participate in this study. Thirty-four individuals originally volunteered; 32 remained as participants for the duration. The study involved histories and physical examinations, taking chest x-rays and body weight measurements, blood work, urinalysis, and stool examination, xylose and lactose tolerance tests, Schilling tests of vitamin B-12 absorption and jejunal biopsies (Crosby capsule). Both baseline and follow-up studies were done. Researchers found that (with one or two exceptions) during the first 10 months in Thailand, the group developed a variety of abnormalities without significant gastrointestinal symptoms. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report: SEATO. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 15 April 1968.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

SEATO Clinical Research Center, Bangkok, Thailand

Start Date	Number	Title
1972	RECC067	Complement Activity in Protein-Calorie Malnutrition

(For abstract and documentation see Chiangmai University, Chiangmai, Thailand)

Start Date	Number	Title
	RECC068	Catabolic Rates of C3 and C1q of Patients with Dengue Hemorrhagic Fever

(For abstract and documentation see Children's Hospital, Bangkok, Thailand)

Start Date	Number	Title
Unknown	RECC042	Fluid Compartmentalization Studies in Thai Subjects

Abstract: From a presently undetermined date until April 1968, researchers from the SEATO Medical Research Laboratory and the SEATO Clinical Research Center, Bangkok, Thailand measured fluid compartments in normal Thai subjects to determine if genetic, nutritional and environmental factors cause significant differences from accepted western standards. The researchers ultimately sought to establish baseline values for total body water (using tritium), extracellular (using sulfur 35) and intracellular fluid, red cell mass (using chromium 51), plasma volume (using radioiodinated serum albumin) and total blood volume in the Thai population. By April 1968, 201 Thai subjects (92 females and 109 males) were studied. Information on radiation dose and on the results is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, SEATO, 1967. Document Types: Table of Contents/Index; Excerpt; Annual Report. Document Date: 15 April 1967.

Document: Authors: [Unstated]. Title: Annual Progress Report: SEATO. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 15 April 1968.

Start Date	Number	Title
Unknown	RECC043	Neomycin Enteropathy and Malabsorption

Abstract: From a presently undetermined date until March 1967, researchers from the SEATO Medical Research Laboratory and SEATO Clinical Research Center, Bangkok, Thailand evaluated the acute effects of neomycin and studied the evolution of intestinal functional and structural changes. Thirty normal Thai adults (27 females and 3 males with an average age of 25.3 years) gave informed consent to participate in this study. All were hospitalized and studied before, during and after drug administration. Neomycin was given orally as a sulfate in 0.5 gram tablets. Xylose and sucrose tolerance tests were performed and fecal fat content was determined. In five subjects, Vitamin B-12 absorption was tested using the Schilling cobalt 57 labeling technique and in six cases, intestinal water absorption was measured. Biopsy specimens were obtained with the Crosby-Kugler capsule and in four cases, jejunal tissue was cultured. Researchers found that within 6 hours of a single dose of neomycin, xylose and sucrose were malabsorbed, intestinal epithelial cells appeared to be injured and histochemical abnormalities were found. Additionally, researchers noted fat malabsorption and the accumulation of "bacteria-like" organisms. All changes reverted to normal after neomycin was stopped. Investigators believed that the drug may directly affect protein synthesis in the human intestinal epithelial cell and that this may be the underlying reason for the neomycin-induced malabsorption. Information on radiation dose is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

SEATO Clinical Research Center, Bangkok, Thailand

Document: Authors: [Unstated]. Title: Annual Progress Report, SEATO, 1967. Document Types: Table of Contents/Index; Excerpt; Annual Report. Document Date: 15 April 1967.

Start Date	Number	Title
Unknown	**RECC044**	**The Study of Acute Diarrhea in Thais**

Abstract: From a presently undetermined date until September 1966, researchers from the SEATO Medical Research Laboratory and SEATO Clinical Research Center, Bangkok, Thailand assessed the histologic changes in the upper small bowel and measured the degree of malabsorption occurring during acute diarrhea and the extent of recovery one to three months later. Twenty-one adult male patients with acute diarrhea were kept at bed rest, had small intestine biopsies, a xylose excretion test, Schilling test, fecal fat analysis and gastric analysis. Blood studies were done upon admission to the hospital. Eleven patients returned 4 to 11 weeks later for follow-up studies (Crosby/Carey capsule biopsy). Researchers found that the appearance of the jejunal mucosa in the patients was not too different from that of normal Thais and that no significant changes were noted between acute and recovery biopsy specimens. Moderate impairment of xylose absorption was seen and decreased Vitamin B-12 absorption was noted in four of seven patients. Fecal fat excretion was normal in all but one of the 15 patients. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, SEATO, 1967. Document Types: Table of Contents/Index; Excerpt; Annual Report. Document Date: 15 April 1967.

Start Date	Number	Title
Unknown	**RECC045**	**Studies on the Nonspecific Jejunal Abnormality of Thai People**

Abstract: From a presently undetermined date until December 1966, researchers from the SEATO Medical Research Laboratory and the SEATO Clinical Research Center, Bangkok, Thailand assessed jejunal lesions as possible precursors of tropical sprue in 40 normal volunteer subjects (22 females and 18 males). Five-hour urinary d-xylose excretion and 2-hour serum xylose levels were measured in fasting subjects. Vitamin B-12 absorption was measured by the Schilling test using cobalt 57 with Intrinsic Factor. Vitamin A absorption was measured, lactose tolerance tests were performed, glucose absorption was tested and stool fat analysis was done. Additionally, fluoroscopic examinations of the upper gastrointestinal tract with small bowel follow-through studies were made and small bowel biopsies (Crosby/Carey capsule) were performed. Researchers found that the volunteers displayed normal absorption of fat, Vitamin B-12, Vitamin A and glucose in comparison to North American subjects. Xylose and lactose absorption and the histologic appearance of the jejunal mucosa were different. However, the researchers concluded that there was not enough evidence to support a definitive relationship between non-specific jejunal abnormality and clinical tropical sprue. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, SEATO, 1967. Document Types: Table of Contents/Index; Excerpt; Annual Report. Document Date: 15 April 1967.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

SEATO Clinical Research Center, Bangkok, Thailand

Start Date	Number	Title
Unknown	**RECC057**	**Fluid Compartmentalization in the Nephrotic Syndrome**

Abstract: From a presently undetermined date until April 1968, researchers from the SEATO Medical Research Laboratory and the SEATO Clinical Research Center, Bangkok Thailand assessed how fluid compartmentalization effects the pathophysiology of nephrotic syndrome and if changes in fluid compartmentalization could be an indication of steroid therapy effectiveness. By April 1968, eight patients with nephrotic syndrome were admitted to this study. Investigators measured total body water (using tritium), extracellular fluid (using sulfur 35), intracellular fluid, red cell mass (using chromium 51), plasma volume (using radioiodinated serum albumin) and total blood volume. Researchers reported that the data from this study did not permit more than preliminary interpretation and that further work was required. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report: SEATO. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 15 April 1968.

Start Date	Number	Title
Unknown	**RECC058**	**Fluid Compartmentalization Studies During Peritoneal Dialysis**

Abstract: From a presently undetermined date until March 1968, researchers from the SEATO Medical Research Laboratory and the SEATO Clinical Research Center, Bangkok, Thailand assessed the changes in total body water, extracellular fluid and blood volume that occur in peritoneal dialysis patients. Ten patients were studied before and after peritoneal dialysis. Researchers measured plasma volume (using radioiodinated serum albumen), red cell mass (using chromium 51), whole blood volume, total body water (using tritium) and extracellular fluid volume (using sulfur 35). Because the hypovolemia observed in the patients was produced over a 36-hour period without clinical deterioration, researchers believed that the patients were able to temporarily compensate for the reduction in blood volume. The investigators felt that the findings of this study supported the clinical impression that hypovolemia is the cause of the hypotension that sometimes complicates peritoneal dialysis. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report: SEATO. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 15 April 1968.

Start Date	Number	Title
1964	**RECC062**	**Survey: Incidence and Etiology of Anemia in Thailand**

(For abstract and documentation see Kasetsart University and School of Public Health, Bangkok, Thailand)

Start Date	Number	Title
	RECC063	**Red Blood Survival in G-6-PD Deficiency**

(For abstract and documentation see SEATO Clinical Research Center, Bangkok, Thailand)

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

SEATO Medical Research Laboratory, Bangkok, Thailand

Start Date	Number	Title
	RECC064	**Red Blood Survival in G-6-PD Deficiency**

Abstract: From December 1964 until March 1966, researchers from the SEATO Medical Research Laboratory and the SEATO Clinical Research Center, Bangkok, Thailand examined whether Thai subjects with red blood cell (RBC) Glucose-6-Phosphate Dehydrogenase (G-6-PD) demonstrate evidence of increased iron stores. By March 1965, 14 male Thai subjects with absence of enzyme activity and no evidence of hemolysis participated. Significant hemolysis was excluded by normal chromium 51 half times in six patients and normal hemoglobin level and reticulocyte count in the remainder. In addition, one homozygous and three females with RBC G-6-PD activity less than normal male subjects were studied. A group of Kasetsart University students served as control patients for serum iron concentration. By March of 1966, 98 students underwent blood testing and 10 male subjects underwent serum iron determination. Additionally, three subjects with G-6-PD deficiency and five normal subjects (students) underwent bone marrow examination. In six subjects, liver biopsy and iron 59 absorption studies were performed. Researchers saw no evidence of increased iron storage in RBC G-6-PD deficient subjects as compared to controls. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report: SEATO Medical Research Laboratory Clinical Research Center (Bangkok, Thailand). Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 15 April 1965.

Start Date	Number	Title
1964	**RECC070**	**Cardiac Metabolism in Thyrotoxicosis**

Abstract: Between 1 October 1964 and 31 December 1964, researchers from the SEATO Clinical Research Center and Pra Mongkut Klao Hospital Bangkok, Thailand and the Siriraj Medical School, Thonburi, Thailand examined coronary blood flow to understand cardiac metabolism in individuals with thyrotoxicosis. During the period covered by the available report, researchers obtained krypton 85 and were able to perform one determination. Further technique development was to occur upon the arrival of necessary radioisotope equipment. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: Porn Piskanok. Title: Cardiac Metabolism in Thyrotoxicosis [from SEATO Medical Research Laboratory Clinical Research Center, Bangkok, Thailand: Quarterly Research Progress Report]. Document Types: Report. Document Date: 31 December 1964.

Start Date	Number	Title
1966	**RECC059**	**Studies of Malabsorption, IV: The Effect of Tropical Climates on the Normal American Intestine**

(For abstract and documentation see SEATO Clinical Research Center, Bangkok, Thailand)

Start Date	Number	Title
1972	**RECC067**	**Complement Activity in Protein-Calorie Malnutrition**

(For abstract and documentation see Chiangmai University, Chiangmai, Thailand)

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

SEATO Medical Research Laboratory, Bangkok, Thailand

Start Date	Number	Title
	RECC068	**Catabolic Rates of C3 and C1q of Patients with Dengue Hemorrhagic Fever**

(For abstract and documentation see Children's Hospital, Bangkok, Thailand)

Start Date	Number	Title
Unknown	**RECC042**	**Fluid Compartmentalization Studies in Thai Subjects**

(For abstract and documentation see SEATO Clinical Research Center, Bangkok, Thailand)

Start Date	Number	Title
	RECC043	**Neomycin Enteropathy and Malabsorption**

(For abstract and documentation see SEATO Clinical Research Center, Bangkok, Thailand)

Start Date	Number	Title
Unknown	**RECC044**	**The Study of Acute Diarrhea in Thais**

(For abstract and documentation see SEATO Clinical Research Center, Bangkok, Thailand)

Start Date	Number	Title
	RECC045	**Studies on the Nonspecific Jejunal Abnormality of Thai People**

(For abstract and documentation see SEATO Clinical Research Center, Bangkok, Thailand)

Start Date	Number	Title
	RECC057	**Fluid Compartmentalization in the Nephrotic Syndrome**

(For abstract and documentation see SEATO Clinical Research Center, Bangkok, Thailand)

Start Date	Number	Title
	RECC058	**Fluid Compartmentalization Studies During Peritoneal Dialysis**

(For abstract and documentation see SEATO Clinical Research Center, Bangkok, Thailand)

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Sloan Kettering Institute for Cancer Research, New York, NY

Start Date	Number	Title
Unknown	**RECC131**	**Plasma Substitutes/Studies with Endogenously Labeled Human Plasma Protein**

Abstract: From a presently undetermined date until approximately1953, researchers from Sloan-Kettering Institute for Cancer Research, New York, NY studied the metabolic fate of human plasma protein after infusion into a recipient in the form of whole blood, plasma or any plasma fraction. Investigators approached this problem by in vivo labeling of the plasma proteins in humans with carbon 14 (C-14)-labeled precursors. Patients were given radioactive carbon-labeled acetate, glycine or methionine and the radioactivity levels of their plasma proteins were measured over a prolonged period. While researchers noted a characteristic rate of change of specific activity of the serum proteins after the administration of either C-14-acetate or glycine, the albumin fractions consistently seemed to turn over more slowly than the globulin fractions. Fractionation of the plasma into alpha and beta lipoproteins indicated that the protein component of these fractions turned over at approximately the same rate. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

St. Louis University School of Medicine, Chiangmai, Thailand

Start Date	Number	Title
1972	**RECC067**	**Complement Activity in Protein-Calorie Malnutrition**

(For abstract and documentation see Chiangmai University, Chiangmai, Thailand)

Tulane University, School of Medicine, New Orleans, LA

Start Date	Number	Title
1946	**RECC078**	**Protein Metabolism in Disease and Injury**

(For abstract and documentation see Charity Hospital, New Orleans, LA)

Start Date	Number	Title
Unknown	**RECC197**	**Serum Proteins in Liver Disease**

Abstract: Sometime before 30 June 1952, researchers from Tulane University School of Medicine, New Orleans, LA investigated serum lipid and protein behavior in liver disease using an analytic centrifugation technique. Phosphorous 32 (P-32) studies were carried out in three normal individuals and in one case of polycythemia. Researchers observed a rapid rate of lipid phosphorous labeling at some levels in the column of cenrtifugate and a low rate in others. An examination of complete caloric starvation in a healthy but obese medical student was also done. P-32 labeling in the student indicated that the fall in concentration of neutral fat in the cream layer and the increase in concentration of lipids in the low-medium density zone were associated with an increased rate of turnover of phospholipids in these regions. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

University of Chicago, Chicago, IL

Start Date	Number	Title
1947	RECC110	**Ionization Effects on Experimental Animals and Human Subjects**

Abstract: From 1947 to 1952, investigators at the University of Chicago, Chicago, IL studied the effects of ionization on experimental animals. This study led to a study at the Army Medical Service Graduate School at Walter Reed Army Medical Center, Washington, DC from 1951 to 1952, which involved the use of isotopes on human beings. Radioactive iodine was used experimentally as a diagnostic tracer in thyroid uptake studies on approximately 300 patients. Researchers also examined thryoxine production and secretion. Investigators examined subjects with normal thyroid function, hyperthyroid function, hypothyroid function, thyroiditis and one subject who had a bilateral adrenalectomy for prostatic carcinoma. The radioactive iodine tracer was administered orally. Twenty-four hour uptake counts, 3-day slopes, and gradient determinations were made. Therapeutic doses of radioactive iodine were given to two patients with thyroid carcinoma and the concentration of radioactive thyroxine in the serum of these two patients was followed for 6 weeks after administration. Phospohorus-32 (P-32) was used therapeutically in three patients with advanced multiple metastasis. All three cases showed no improvement following administration of the P-32. Another five patients with malignant disease with widespread metastases were therapeutically given divided doses of P-32 at weekly intervals. A second series of therapeutic P-32 was administered to these same five patients, which provided marked improvement in most cases. Information on radiation dose is not available at this time.

Document: From: William S. Stone, Colonel To: Chief, Research and Development Division. Subject: Supplemental fiscal year 1951 Research and Development budget. Document Types: Memorandum. Document Date: 19 July 1950.

Document: Authors: [Unstated]. Title: Ionization Effects on Experimental Animals and Human Subjects. Document Types: Report. Document Date: 01 November 1947.

Document: Authors: Medical Research and Development Board. Title: Research Program: Priority 1A and 1B Projects, Cumulative Annual Report, 30 June 1951. Document Types: Report; Excerpt. Document Date: 30 June 1951.

Document: Authors: [Unstated]. Title: Medical Research and Development Command, Office of the Army Surgeon General Research Progress Report, Second Quarter, Fiscal Year 1952, 01 October - 31 December 1951 [includes table of contents]. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 December 1951.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Document: Authors: [Unstated]. Title: Notice of Research Project [set of research summaries for the Biomedical Sciences Information Exchange, National Academy of Sciences]. Document Types: Research Summary. Document Date: 1956 est.

Document: From: John D. Stoeckle, First Lieutenant, Panel Director, Committee on Radiation Sciences To: Chairman and Members, Joint Panel on the Medical Aspects of Atomic Warfare. Subject: Department of Defense Research Program under the technical objective of AW-6. Document Types: Memorandum; List. Document Date: 15 December 1952.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

University of Chicago, Chicago, IL

Document: Authors: [Unstated]. Title: Ionization Effects. Document Types: Research Summary. Document Date: 31 December 1949.

Document: Authors: Pendergrass; Evans; Allen; Burch. Title: Research Program 01 July - 31 December 1950, Includes Project Reports. Document Types: Report; Table of Contents/Index; Cover. Document Date: 31 December 1950.

Document: Authors: [Unstated]. Title: Research Program, 01 January - 30 June 1950. Document Types: Report; Table of Contents/Index; Cover. Document Date: 30 June 1950.

Document: Authors: [Unstated]. Title: Research Program, Priority 1C and 2 Projects [includes progress reports: "Radiation Injury in Man and Animals," "Ionization Effects," and "Effects of Irradiation"]. Document Types: Report. Document Date: 30 September 1951.

Start Date	Number	Title
1958	**RECC135**	**Primaquine Sensitivity**

Abstract: Beginning in 1958 until sometime before 1961, researchers from the University of Chicago Medical School and the Army Medical Research Unit, Chicago, IL investigated various metabolic processes in 80 normal and primaquine-sensitive African-American males. The rate of glucose oxidation by the whole body was determined by measuring carbon 14 (C-14)-labeled carbon dioxide in the expired air of primaquine-sensitive African-American males following the administration of glucose-1-C-14 and glucose-6-C-14. The results of this study indicated that the amount of C-14-labeled carbon dioxide in the expired air was markedly below normal in these subjects. Investigators also administered chromium 51 (Cr-51) to measure the erythrocyte survival time. Results indicated that hemolysis increased when primaquine was administered to primaquine-sensitive individuals. Information on radiation dose is not available at this time.

Document: Authors: Alvin R.Tarlov; George J. Brewer; Paul E. Carson; Alf S. Alving. Title: Primaquine Sensitivity (Glucose-6-Phosphate Dehydrogenase Deficiency), An Inborn Error of Metabolism of Medical and Biological Significance [includes bibliography and charts]. Document Types: Report. Document Date: 25 August 1961.

University of Denver, Denver, CO

Start Date	Number	Title
Unknown	**RECC161**	**The Physiologic and Pathologic Effects of Radioactive Cobalt**

Abstract: The inclusive dates for this study are presently undetermined. Researchers from the University of Denver, Denver, CO compared radioactive cobalt and non-radioactive cobalt. In small doses, cobalt had been shown to stimulate red cell production while radioactive cobalt has the opposite effect (anemia). Researchers sought to determine the radioactive cobalt dosage at which the destruction action overcomes the stimulating effect of non-radioactive cobalt and whether cobalt is actually a compound of the red cell. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: List of Contracts of the Medical Sciences Division by Research and Development Board Number. Document Types: Report; Abstract; Excerpt. Document Date: 01 October 1947.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

University of Iowa, Iowa City, IA

Start Date	Number	Title
1949	RECC133	**Preservation of Blood for Transfusion**

Abstract: From 1949 until 1953, investigators at the University of Iowa, Iowa City, IA researched the use of radiation and isotopes in blood preservation and in transfusions. Different phases of the study were carried out over the course of the 4-year project. During 1951, donor blood was irradiated in vitro with 2000 rads of x-irradiation and transfused to normal recipients. Results of this study showed that x-irradiation had not damaged the blood cells appreciably. In another phase of this study, four women with inoperable carcinoma of the cervix were administered 3000 to 5000 rads of x-irradiation following a transfusion of fresh donor blood. The four women were also treated with cervical radium implants. In all four patients the rate of erythropoiesis was accelerated. Another phase of this study concerned the change in blood volume after transfusion using phosphorus 32 and human serum albumin labeled with iodine 131. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: First Quarterly Report Fiscal Year 1953, 01 July - 30 September 1952. Document Types: Report; Excerpt. Document Date: 30 September 1952.

Document: Authors: James E. McCormack. Title: Joint Panel on Medical Aspects of Atomic Warfare (agenda for the third meeting to be held at Argonne National Laboratory, 6111 University Avenue, Site B, Conference Room, Chicago 37, Illinois, 15 and 16 December 1949). Document Types: Agenda. Document Date: 31 December 1949.

Document: Authors: Unknown. Title: Research Progress Report, Army Medical Service. Document Types: Report. Document Date: 1953 est.

Document: Authors: [Unstated]. Title: Research Program, Priority 1C and 2 Projects [includes progress reports: "Radiation Injury in Man and Animals," "Ionization Effects," and "Effects of Irradiation"]. Document Types: Report. Document Date: 30 September 1951.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

University of Mississippi Medical Center, Jackson, MS

Start Date	Number	Title
1956	RECC118	**Investigation of a Human Brain Extract in the Treatment of Thrombocytopenic States**

Abstract: From January 1956 until a presently undetermined date, researchers from the University of Mississippi Medical Center, Jackson, MS examined the use of a chloroform human brain extract in the treatment of patients bleeding with acute leukemia. Nineteen patients were treated intravenously with the extract and showed encouraging preliminary results. The protein-free phospholipid extract was found to be more stable when combined with cadmium chloride, but investigators sought to further purify the material further. Researchers also planned to study the effect of the extract on normal red cells in vitro and in vivo in rabbits and humans to determine whether it would produce hemolytic phenomena. Preliminary results did not indicate that undue

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

University of Mississippi Medical Center, Jackson, MS

hemolysis was taking place. Since investigators had shown that the saturation of the unsaturated fatty acids of the extract would not impair its activity, they planned to tag the extract with iodine 131 and follow its distribution in the living body. Information on radiation dose, on the total number of participants and on final results is not available at this time.

Document: Authors: [Unstated]. Title: Notice of Research Project [set of research summaries for the Biomedical Sciences Information Exchange, National Academy of Sciences]. Document Types: Research Summary. Document Date: 1956 est.

University of North Carolina, Chapel Hill, NC

Start Date	Number	Title
Unknown	**RECC163**	**Blood Flow Volume in Kidney and Liver**

Abstract: The inclusive dates for this study are presently undetermined. Researchers from the University of North Carolina, Chapel Hill, NC conducted this investigation in two phases. One phase dealt with animal experimentation, the second with clinical application. Researchers applied a mathematical analysis of factors controlling humoral distribution and tissue uptake of agents. This activity was part of a method for measuring cerebral blood flow by means of water and radiokrypton. The disappearance curve of a substance in the blood stream is a function of blood flow when the substance is completely cleared by the tissue. Clearing the substance is best accomplished by following the disappearance of a radioactive compound specifically taken out by the tissue, particularly the liver and kidney. It was found that iodine 131 emits a satisfactory gamma ray making it possible to follow the curve without taking blood samples. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: [Unstated]. Title: List of Contracts of the Medical Sciences Division by Research and Development Board Number. Document Types: Report; Abstract; Excerpt. Document Date: 01 October 1947.

University of Pennsylvania, Philadelphia, PA

Start Date	Number	Title
Unknown	**RECC122**	**Vein Ligation - Acute Arterial Occlusion**

Abstract: During 1950, researchers at the University of Pennsylvania, Philadelphia, PA used Kety's radiosodium clearance method to evaluate calf-muscle circulation in various circumstances. Investigators determined the mean "k" value--where "k" is the rate of disappearance of sodium 24 (Na-24) from the site of injection-- in forty-six normal subjects. Using the same method, the mean "k" value of eleven subjects with arteriosclerosis and the "k" values for 16 normal subjects after exercise of the leg muscles were determined. Results indicated that the Kety method was capable of reflecting changes in the calf-muscle circulation in man. A study of calf-muscle circulation in 45 postoperative patients indicated that operation does not adversely affect calf-muscle circulation. Researchers also examined the effects of direct heat and intravenous priscoline on calf-muscle circulation in 20 normal subjects. The "k" value was determined in 12 of these individuals after direct heating of the right leg. The other eight subjects were administered priscoline intravenously. The results indicated that increasing blood flow by either of these methods reduced effective calf-muscle circulation. The final study involved the effects of reflex heat. Heating pads were applied to the trunks of fourteen normal subjects and the "k" values were determined using the Kety method. The mean "k" value remained the same as in previous determinations that were performed under control conditions. Information on radiation dose is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

University of Pennsylvania, Philadelphia, PA

Document: Authors: Pendergrass; Evans; Allen; Burch. Title: Research Program 01 July - 31 December 1950, Includes Project Reports. Document Types: Report; Table of Contents/Index; Cover. Document Date: 31 December 1950.

Start Date	Number	Title
Unknown	**RECC149**	**Burns Involving the Respiratory Tract**

Abstract: The dates for this study conducted by researchers from the University of Pennsylvania, Philadelphia, PA are presently undetermined. Burns of the respiratory tract were studied with emphasis on pulmonary edema, laryngospasm and the influence of drugs. In previous studies, investigators found that the early development of pulmonary edema in cases of respiratory burns was linked to increased capillary permeability and capillary congestion from pulmonary venous constriction. Researchers sought to find drugs, which would correct these functional pulmonary abnormalities. Vascular pressure, flow and capillary blood volume were measured during the course of study. Phosphorous 32 (P-32) was employed to measure capillary blood volume. Identified "decongesting drugs" were to be tried in the therapy of respiratory burns and evaluated by the reduction of pulmonary congestion (using P-32) and of edema (using iodine 131). Information on radiation dose, on the total number of participants and on final results is not available at this time.

Document: From: John D. Stoeckle, First Lieutenant, Panel Director, Committee on Radiation Sciences To: Chairman and Members, Joint Panel on the Medical Aspects of Atomic Warfare. Subject: Department of Defense Research Program under the technical objective of AW-6. Document Types: Report; Memorandum. Document Date: 15 December 1952.

Document: Authors: [Unstated]. Title: Research Progress Report: First Quarterly Report Fiscal Year 1953, 01 July - 30 September 1952. Document Types: Report; Excerpt. Document Date: 30 September 1952.

University of Texas Southwestern Medical School, Dallas, TX

Start Date	Number	Title
1955	**RECC157**	**Studies on Lipid Metabolism Using C-14-labeled Materials**

Abstract: Between September 1955 and December 1958, researchers at the University of Texas Southwestern Medical School, Dallas, TX, studied lipid metabolism using carbon 14 (C-14)-labeled lipids. Investigators proposed to follow the distribution of the label in the various plasma lipid fractions and examine the distribution of the C-14 in other lipids including those washed from the gastrointestinal tract. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Notice of Research Project [set of research summaries for the Biomedical Sciences Information Exchange, National Academy of Sciences]. Document Types: Research Summary. Document Date: 1956 est.

Document: Authors: [Unstated]. Title: Army Medical Service, Consolidated Research and Development Annual Project Report, (Excluding G M). Document Types: Excerpt; Annual Report. Document Date: 31 December 1956.

Document: Authors: [Unstated]. Title: Army Medical Service Consolidated Research and Development Annual Project Report (excluding GM), 01 January - 31 December 1959. Document Types: Report. Document Date: 31 December 1959.

Document: Authors: [Unstated]. Title: Army Medical Service Consolidated Research and Development Annual Project Report (excluding GM), 01 January - 31 December 1958. Document Types: Report. Document Date: 31 December 1958.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

University of Texas, TX

Start Date	Number	Title
1956	RECC136	**Chromium 51 Method for Study of Erythrocyte Survival in Burned Patients With Late Anemia**

Abstract: From 1956 until possibly 1958, researchers at the University of Texas Medical Branch, Galveston, TX developed and applied a method to determine erythrocyte survival. Investigators used chromium 51 as a tracer in control patients and patients with various anemic conditions. It was determined that the control patients with normal blood findings had survival half-times of 50-60 days, the patients with anemic conditions had short survival times, and patients with chronic burn anemia had survival half-times of 6 to 32 days. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: [Unstated]. Title: Army Medical Service Consolidated Research and Development Annual Project Report (excluding GM), 01 January - 31 December 1957. Document Types: Report. Document Date: 31 December 1957.

Document: Authors: [Unstated]. Title: Army Medical Service Consolidated Research and Development Annual Project Report (excluding GM), 01 January - 31 December 1958. Document Types: Report. Document Date: 31 December 1958.

Document: Authors: [Unstated]. Title: Army Medical Service, Consolidated Research and Development Annual Project Report, (Excluding G M). Document Types: Excerpt; Annual Report. Document Date: 31 December 1956.

US Army Human Engineering Laboratories, Aberdeen Proving Ground, MD

Start Date	Number	Title
1969	RECC108	**The Endocrinological and Psychological Aspects of Human Performance**

Abstract: From 1969 until a presently undetermined date, researchers from the US Army Human Engineering Laboratories, Aberdeen Proving Ground, MD were to study the physiological and endocrinological responses with performance measures in human volunteers to develop biological and psychological criteria for selection of riflemen who maintain high performance under battlefield conditions. Investigators proposed to measure the cortisol and testosterone secretion rates and catecholamine turnover rates for correlation with other data. At the time, secretion and turnover rates were the most sensitive and specific techniques for measuring endocrine gland function in vivo. Four to six experiments were anticipated. In each experiment, two groups of six enlisted men were to be studied. The groups were to be homogenous in physical characteristics and educational background. After a period of 2 to 3 weeks, the men were to perform a number of field tests of a demanding nature. Endocrine changes, autonomic nervous system changes, performance scores in each test and general behavior were examined. Each individual participating in the study was to be studied with isotopes no more than three times, which were to be separated by a minimum of 7 days. The cortisol secretion rate was to be determined by intravenous injection of 10-15 microcuries of carbon 14 (C-14)-labeled cortisol and measurement of the specific activity of one or two urinary metabolites. The testosterone secretion rate was to be determined by intravenous injection of 10-15 microcuries of C-14-labeled testosterone in the same manner as the cortisol secretion rate. For the catecholamine turnover rates, 50 microcuries of C-14 or tritium (H-3) norepinephrine, or epinephrine were to be injected intravenously. Urine was to be collected at 1 to 6 hour intervals. Radiation dose in the cortisol secretion rate study was expected to be 0.369 rads for the C-14 and 0.0475 rads for the H-3. The dose in the testosterone secretion rate study was expected to be 0.389 rads for the C-14 and 0.0475 rads for the H-3. The radiation dose in the catecholamine turnover rate study was expected to be 1.29 rads for C-14 and 0.158 rads for H-3. Results of this study are not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

US Army Human Engineering Laboratories, Aberdeen Proving Ground, MD

Document: From: A.W. Betts, Lieutenant General, Army, Office of Chief of Research and Development To: Chief of Staff, Army; Assistant Secretary of Army, Research and Development. Subject: Approval of Proposed Human Research. Document Types: Memorandum. Document Date: 31 December 1968.

Document: From: Claude McClure, Jr, Colonel, Army, Office of Chief of Research and Development, Life Sciences Division To: For Record. Subject: Approval of Proposed Human Research. Document Types: Memorandum. Document Date: 17 December 1968.

Document: From: Robert W. Green, Colonel, Army, Office of the Surgeon General, Acting Executive Officer To: Chief, Army, Office of Chief of Research and Development. Subject: Use of Volunteers as Subjects of Research. Document Types: Memorandum. Document Date: 13 November 1968.

Document: Authors: William F. Kendall; Longstreet C. Hamilton. Subject: Walter Reed Army Medical Center Radioisotope Committee recommends approval of a study. Document Types: Statement. Document Date: 23 August 1968.

Document: From: Stanley R. Resor, Secretary of the Army To: Army, Chief of Research and Development. Subject: Protocol for Research Use of Radioactive (C-14, H-3) Cortisol, Testosterone, and Catecholamines in Human Volunteers. Document Types: Letter. Document Date: 09 January 1969.

Document: From: John Weisz, Technical Director, US Army Human Engineering Laboratories To: Army, Office of the Surgeon General. Subject: Use of Volunteers as Subjects of Research. Document Types: Memorandum. Document Date: 27 September 1968.

Document: From: N.L. Klein, Chief, Office of Research and Laboratories, Research and Laboratory Operations Division To: Army, Office of the Surgeon General, Research Division. Subject: Use of Volunteers as Subjects of Research. Document Types: Memorandum. Document Date: 01 October 1968.

Document: From: Joe M. Blumberg, Major General, Army, Office of the Surgeon General, Special Assistant for Research and Development To: Director, Professional Service. Subject: Use of Volunteers as Subjects of Research. Document Types: Memorandum. Document Date: 21 October 1968.

Document: Authors: William G. Troyer, Jr; Robert M Rone. Title: Protocol for Research Use of Radioactive (C-14, H-3) Cortisol, Testosterone, and Catecholamines in Human Volunteers [also includes forms to request to use radioactive material]. Document Types: Protocol. Document Date: 23 August 1968.

US Army Medical Research and Nutrition Laboratory, Chicago, IL

Start Date	Number	Title
1948	**RECC114**	**Infused Red Cells as a Source of Protein in Man**

(For abstract and documentation see Medical College of Virginia, Richmond, VA)

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

US Army Medical Research and Nutrition Laboratory, Fitzsimons, Aurora, CO

Start Date	Number	Title
1963	**RECC018**	**Amino Acids: Investigations on the Metabolism of Amino Acids in the Human with the Use of Carbon 14-labeled Compounds**

(For abstract and documentation see Fitzsimons General Hospital, Aurora, CO)

US Army Medical Research Team (WRAIR), Saigon, Vietnam

Start Date	Number	Title
Unknown	**RECC065**	**Serial Measurements of Blood Volume and Fluid Compartments Following Trauma**

(For abstract and documentation see Institute Pasteur of Vietnam, Saigon, Vietnam)

US Army Medical Research Unit, Landstuhl, Germany

Start Date	Number	Title
1962	**RECC137**	**Biological Hazard of Fallout**

Abstract: From July 1962 until June 1963, investigators at the US Army Medical Research Unit, Europe studied radioactivity in man. A series of studies were performed under this contract using the Whole Body Counter (WBC) in Landstuhl, Germany. Clinical studies on patients with thyroid carcinoma were performed using iodine 131 (I-131) on small residuals of thyroid tissue. On the first day of the test, the patient received 1-2 microcuries of I-131 orally. Whole body counting for the I-131 was then performed on that day and the succeeding 3 days. The results revealed that 22 patients with no clinical evidence of metastatic functioning thyroidal tissue had a much lower retention of the I-131 than the eight patients with recurrent metastatic thyroidal carcinoma at the end of 72 hours. Researchers also measured the total body fat on 60 young, healthy US Air Force pilots by various methods. The study compared the WBC method to the tritiated whole body water method. The subjects were given 1.0 millicurie of tritium orally in the form of tritiated water. Results indicated that the WBC was as good a method, if not a more accurate one, than any other method. In another study, five patients were given approximately 1.0 microcurie of I-131 Triolean orally along with a liquid meal containing 500 calories of fat. The patients were then counted daily in the WBC for three days and the body retention of I-131 was calculated. The results of this Triolean adsorption study indicated that it had advantages over the standard protocol because the dose of I-131 was 10 to 100 times smaller than with the conventional assay methods. Another study involved the administration of I-131 Hippuran to eight patients. The patients were counted in the WBC at various time intervals over a period of 72 hours to determine the effective half-life of the I-131 Hippuran. One other study in this series involved the oral administration of cobalt 60 (Co-60)-labeled Vitamin B-12 to three patients. The patients' retention of the Co-60 was then followed for 7 days, at daily intervals using the WBC. Information on radiation dose and on results is not available at this time.

Document: Authors: Edward J. Huycke; Jon W. Blumenstock; Erich Oberhausen. Title: Annual Progress Report [for the project Biological and Medical Aspects of Ionizing Radiation, Biological Hazard of Fallout]. Document Types: Report. Document Date: 30 June 1963.

Document: From: Robert E. Blount, Brigadier General, Special Assistant for Research and Development To: Chief of Research and Development, US Army. Subject: FY 65 Nuclear Weapons Effects Research (NWER) Program [includes list of FY 1965 proposals #03.008 - #03.108 and their project cards]. Document Types: Memorandum. Document Date: 14 May 1963.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Vanderbilt University School of Medicine, Nashville, TN

Start Date	Number	Title
1958	RECC082	**Human Internal Radiation Dosimetry: Instrumentation, Prophylaxis, and Therapy**

Abstract: From 1958 until a presently undetermined date, researchers from the Vanderbilt University School of Medicine, Nashville, TN examined the biologic half-life of chromium 51 (Cr-51) in volunteers. Volunteers received Cr-51-labeled blood and were assayed in the whole body counter to determine red blood cell survival rates. Early results indicated that the biologic half-life of Cr-51 in an individual would probably vary with the red cell life span. Plans were underway to include examinations of iron turnover (iron 59), whole body sodium turnover (with sodium 22) and the biologic half-lives of iodine 131 and cobalt 60-labeled Vitamin B-12 in subsequent areas of study. Researchers had also hoped to examine kinetic patterns in the distribution and excretion of cesium 137 and rubidium 86. Information on radiation dose and on the number of participants is not available at this time.

Document: From: William W. Cox, Lieutenant Colonel, Medical Corps, Chief, Medical Research Branch To: Con O.T. Ball, Assistant Administrative Director, Vanderbilt University. Subject: Modification of contract DA-49-007-MD-995 [includes related letter]. Document Types: Letter. Document Date: 02 February 1959.

Document: Authors: George R. Meneely. Title: Human Internal Radioisotope Dosimetry Instrumentation, Prophylaxis and Therapy. Document Types: Report. Document Date: 30 June 1961.

Document: Authors: Robert M. Heyssel; George R. Meneely. Title: Human Internal Radioisotope Dosimetry Instrumentation, Prophylaxis and Therapy. Document Types: Report. Document Date: 30 June 1962.

Document: From: William W. Cox, Lieutenant Colonel, Medical Corps, Chief, Medical Research Branch, Medical Research and Development Command To: Timmerman, Colonel. Subject: Research support from Federal Civil Defense Administration (FCDA). Document Types: Memorandum. Document Date: 10 July 1958.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Document: From: William W. Cox, Lieutenant Colonel, Medical Corps, US Army Medical Research and Development Command To: George R. Meneely, Vanderbilt University. Subject: Availability of advance funding for contract DA-49-007-MD-995. Document Types: Letter. Document Date: 24 November 1958.

Document: From: William W. Cox, Lieutenant Colonel, Medical Corps, Chief, Medical Research Branch, Medical Research and Development Command To: Timmerman, Lieutenant Colonel. Subject: New application for research contract entitled "Human Internal Radioisotope Dosimetry. Instrumentation, Prophylaxis and Therapy. Document Types: Memorandum. Document Date: 01 July 1958.

Document: Authors: George R. Meneely. Title: Application for Research Contract, Human Internal Radiation Dosimetry. Instrumentation, Prophylaxis and Therapy [includes forwarding memorandum and disposition memoranda]. Document Types: Proposal. Document Date: 31 March 1960.

Document: From: Richard C. Taylor, Lieutenant Colonel, Medical Corps, Chief, Research Division To: Director of Walter Reed Army Institute of Research. Subject: Evaluation of research contract, George R. Meneely: Human internal radiation dosimetry [includes related memoranda]. Document Types: Memorandum. Document Date: 06 July 1960.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Vanderbilt University School of Medicine, Nashville, TN

Document: From: [Unstated] To: George R. Meneely, Associate Professor of Medicine, Vanderbilt University School of Medicine. Subject: Comments on renewal application for human internal radiation dosimetry. Document Types: Letter. Document Date: 02 August 1960.

Document: From: William J. Darby, Chairman, Advisory Committee on Metabolism To: L.M. Hursh, Colonel, Medical Research Branch. Subject: Reviews of proposal for renewal of research contract entitled "Human Internal Radiation Dosimetry. Instrumentation, Prophylaxis and Therapy" by Dr. George R. Meneely, Associate Professor of Medicine and Director Radioisotope Center. Document Types: Letter. Document Date: 15 June 1960.

Document: Authors: [Unstated]. Title: Establishment and operation of low-level whole body counting facility. Document Types: Contract. Document Date: 1958 est.

Document: From: L.M. Hursh, Colonel, Medical Research Branch To: George R. Meneely, Associate Professor of Medicine, Vanderbilt University. Subject: To acknowledge receipt of renewal application for: Human internal radiation dosimetry, instrumentation, prophylaxis and treatment [includes application transmittal letter]. Document Types: Letter. Document Date: 04 May 1959.

Start Date	Number	Title
1958	RECC092	Iron Metabolism

Abstract: From 1 September 1958 until 31 August 1962, researchers from the Division of Nuclear Medicine and Biophysics, Department of Medicine at Vanderbilt University School of Medicine, Nashville, TN conducted parallel studies comparing different methods for determining the rate of iron absorption. Volunteers received an intravenous injection of a solution containing iron 59. For 7 to 10 days, volunteers were either assayed in a whole body counter or had their stool collected for measuring the rate of iron absorption. Researchers concluded that the whole body counter provided more accurate determinations and required less active participation by volunteers. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Start Date	Number	Title
1958	RECC094	Whole Body Counting in Protein Turnover Studies

Abstract: From 1 September 1958 until a presently undetermined date, researchers from the Division of Nutrition and the Departments of Medicine and Biochemistry at Vanderbilt University School of Medicine, Nashville, TN compared whole body counting and standard dilution techniques in a protein turnover study. Fifteen diseased and normal volunteers received an intravenous injection of iodine 131-labeled human serum albumin. For 10 days, volunteers were either assayed in a whole body counter or had excreta collected for turnover determinations. Researchers concluded that in long-term studies, the whole body counting technique would provide less cumulative error than standard dilution techniques. Information on radiation dose is not available at this time.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Vanderbilt University School of Medicine, Nashville, TN

Start Date	Number	Title
1958	RECC095	**Use of Computers in Measuring Body Electrolytes by Gamma Spectrometry**

Abstract: From 1958 until September 1962, researchers from the Division of Nuclear Medicine and Biophysics, Department of Medicine at Vanderbilt University School of Medicine, Nashville, TN investigated total body potassium as a function of age, sex and race. The whole body counting facility was calibrated experimentally and all data was electronically processed. Fifteen volunteers (fourteen men and one woman) were selected because they displayed a wide spectrum of weight and height variance. Volunteers were healthy and varied in height from 62 to 75.5 inches and in weight from 96 to 296 pounds. Each volunteer was counted in the whole body counter. No restrictions on diet, bowel movements, or urination were in place. Following their count, a variable volume of sterile potassium 42 (K-42) was drawn into a syringe and counted for one minute. Immediately following this measurement, the K-42 solution was injected into the volunteer. The syringe and needle were then counted again to measure residual radioactivity. Volunteers returned 24 hours after the injection to be counted again. All urine was collected from the time of injection until the second count and was counted. Volunteer initials are provided in available documentation. Information on radiation dose and on the results of the study is not available at this time.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Start Date	Number	Title
1958	RECC190	**Whole Body Potassium Measurements In Humans**

Abstract: From September 1958 to August 1963, investigators at Vanderbilt University, Nashville, TN researched a method for determining the identity and quantity of gamma emitting radioisotopes naturally occurring in the human body. Researchers found that potassium 40 (K-40), a naturally occurring isotope of potassium, presented a means for measuring total body potassium in humans. A calibration factor for potassium was determined by various means, including the injection of potassium 42 (K-42) into human volunteers, using subjects of differing weight and height. Results indicated that small subjects gave more counts per microcurie than did larger individuals and whole body potassium content appeared to be proportional to basal heat production. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: G.R. Meneely; R.M. Heyssel; J.L. Ferguson; O.C. Parrent; R.L. Weiland. Title: Whole Body Potassium Measurements in Humans [supported by Atomic Energy Commission AT(40-1)2401 and MRDC-DA-49-007-MD-995]: Journal: Physiologist, Vol 3, Issue 3. Document Types: Abstract. Document Date: August 1960.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Vanderbilt University School of Medicine, Nashville, TN

Start Date	Number	Title
1958	RECC191	**Human Internal Radioisotope Dosimetry, Instrumentation, Prophylaxis and Therapy**

Abstract: From 1 September 1958 until 1964, researchers at the Vanderbilt University School of Medicine, Nashville, TN investigated iron metabolism using the Whole Body Counter (WBC). Researchers injected iron 59 (Fe-59) intravenously into patients with paroxysmal nocturnal hemogloburia. Following the injection of Fe-59, the count rate rapidly fell, coinciding with the clearance of Fe-59 from the plasma and deposition of iron in tissue sites, primarily in bone marrow. Over the next 7 to 10 days, the whole body Fe-59 counts gradually returned to pre-injection levels. The results of this study suggested the possibility of using the WBC as a method for studying ferro-kinetics in humans. Information on radiation dose and on the number of participants is not available at this time.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Document: Authors: [Unstated]. Title: Medical Information Sheets [on the use of radiation in medicine]. Document Types: Fact Sheet. Document Date: 1994.

Document: From: Richard C. Taylor, Lieutenant Colonel, Medical Corps, Chief, Research Division To: Director of Walter Reed Army Institute of Research. Subject: Evaluation of research contract, George R. Meneely: Human internal radiation dosimetry [includes related memoranda]. Document Types: Memorandum. Document Date: 06 July 1960.

Document: Authors: [Unstated]. Title: Army Medical Service Consolidated Research and Development Annual Project Report (excluding GM), 01 January - 31 December 1958. Document Types: Report. Document Date: 31 December 1958.

Document: From: L.M. Hursh, Colonel, Medical Research Branch To: George R. Meneely, Associate Professor of Medicine, Vanderbilt University. Subject: To acknowledge receipt of renewal application for: Human internal radiation dosimetry, instrumentation, prophylaxis and treatment [includes application transmittal letter]. Document Types: Letter. Document Date: 04 May 1959.

Document: Authors: [Unstated]. Title: Utilization of low-level whole body counting facility in the measurement of electrolyte composition and metabolism in man. Document Types: Contract. Document Date: 1962.

Start Date	Number	Title
1958	RECC192	**Chromium 51 Blood Volumes**

Abstract: From 1958 until 1962, researchers at Vanderbilt University School of Medicine, Nashville, TN studied the correlation between intraduodenal osmotic pressure changes and blood volumes in men with normal stomachs. Blood volume determinations were performed during induced dumping using the chromium 51 labeling technique. Information on radiation dose, on the number of participants and on the results of the study is not available at this time.

Document: From: Richard C. Taylor, Lieutenant Colonel, Medical Corps, Chief, Research Division To: Director of Walter Reed Army Institute of Research. Subject: Evaluation of research contract, George R. Meneely: Human internal radiation dosimetry [includes related memoranda]. Document Types: Memorandum. Document Date: 06 July 1960.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Vanderbilt University School of Medicine, Nashville, TN

Document: Authors: [Unstated]. Title: Army Medical Service Consolidated Research and Development Annual Project Report (excluding GM), 01 January - 31 December 1958. Document Types: Report. Document Date: 31 December 1958.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Document: From: L.M. Hursh, Colonel, Medical Research Branch To: George R. Meneely, Associate Professor of Medicine, Vanderbilt University. Subject: To acknowledge receipt of renewal application for: Human internal radiation dosimetry, instrumentation, prophylaxis and treatment [includes application transmittal letter]. Document Types: Letter. Document Date: 04 May 1959.

Start Date	Number	Title
1958	RECC194	Iodine 131 Albumin Turnover

Abstract: From 1958 until 1964, researchers at Vanderbilt University School of Medicine, Nashville, TN investigated the use of the Whole Body Counter (WBC) in determining the rate of albumin turnover. Iodine 131 (I-131) was used to label the albumin. Fifteen subjects were studied in a comparison of standard metabolic techniques to data derived from repetitive whole body counts. The two methods showed similar values for rate of degradation or loss of albumin. Information on radiation dose is not available at this time.

Document: From: Richard C. Taylor, Lieutenant Colonel, Medical Corps, Chief, Research Division To: Director of Walter Reed Army Institute of Research. Subject: Evaluation of research contract, George R. Meneely: Human internal radiation dosimetry [includes related memoranda]. Document Types: Memorandum. Document Date: 06 July 1960.

Document: From: L.M. Hursh, Colonel, Medical Research Branch To: George R. Meneely, Associate Professor of Medicine, Vanderbilt University. Subject: To acknowledge receipt of renewal application for: Human internal radiation dosimetry, instrumentation, prophylaxis and treatment [includes application transmittal letter]. Document Types: Letter. Document Date: 04 May 1959.

Document: Authors: [Unstated]. Title: Medical Information Sheets [on the use of radiation in medicine]. Document Types: Fact Sheet. Document Date: 1994.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Document: Authors: [Unstated]. Title: Utilization of low-level whole body counting facility in the measurement of electrolyte composition and metabolism in man. Document Types: Contract. Document Date: 1962.

Document: Authors: [Unstated]. Title: Army Medical Service Consolidated Research and Development Annual Project Report (excluding GM), 01 January - 31 December 1958. Document Types: Report. Document Date: 31 December 1958.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Vanderbilt University School of Medicine, Nashville, TN

Start Date	Number	Title
1958	RECC195	Use of Computers in Measuring Body Electrolytes by Gamma Spectrometry

Abstract: From 1958 until 1962, researchers at Vanderbilt University School of Medicine, Nashville, TN investigated the use of the Whole Body Counter in measuring total body potassium. Researchers performed whole body counts on 15 healthy, ambulatory subjects varying in height and weight, before and after injecting each subject with potassium 42 (K-42). Variable amounts of K-42 were injected, but counts of the syringe containing the K-42 were taken before and after the injection in order to determine the exact amount of K-42 injected into each subject. Each subject was counted 24 hours after injection and all urine was collected from time of injection until the 24-hour count was performed. The collected urine was then counted in order to determine K-42 loss. Various calculations were made using the data from the whole body counts, subject size and weight measurements, and this collective data was electronically processed. Information on radiation dose and on the results of this study is not available at this time.

Document: Authors: [Unstated]. Title: Army Medical Service Consolidated Research and Development Annual Project Report (excluding GM), 01 January - 31 December 1958. Document Types: Report. Document Date: 31 December 1958.

Document: From: L.M. Hursh, Colonel, Medical Research Branch To: George R. Meneely, Associate Professor of Medicine, Vanderbilt University. Subject: To acknowledge receipt of renewal application for: Human internal radiation dosimetry, instrumentation, prophylaxis and treatment [includes application transmittal letter]. Document Types: Letter. Document Date: 04 May 1959.

Document: Authors: [Unstated]. Title: Nuclear Weapons Effects Research, Semi-annual Progress Summary, 01 October 1962. Document Types: Report; Excerpt. Document Date: 01 October 1962.

Document: Authors: [Unstated]. Title: Medical Information Sheets [on the use of radiation in medicine]. Document Types: Fact Sheet. Document Date: 1994.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Document: From: Richard C. Taylor, Lieutenant Colonel, Medical Corps, Chief, Research Division To: Director of Walter Reed Army Institute of Research. Subject: Evaluation of research contract, George R. Meneely: Human internal radiation dosimetry [includes related memoranda]. Document Types: Memorandum. Document Date: 06 July 1960.

Start Date	Number	Title
Unknown	RECC187	Treatment of Pleural and Peritoneal Effusion with Intracavity Colloidal Radiogold

Abstract: In 1959, researchers from Vanderbilt University, Nashville, TN, under contact with the US Army Medical Research and Development Command, published an article reporting on the treatment of pleural and peritoneal effusion with intracavitary colloidal radiogold (Au-198). No further information is available at this time.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Vanderbilt University School of Medicine, Nashville, TN

Start Date	Number	Title
Unknown	RECC188	**Factors Which Influence the Amount and Distribution of Total Body Sodium and Potassium**

Abstract: In 1960, researchers from Vanderbilt University, Nashville, TN, under contact with the US Army Medical Research and Development Command, published an article reporting on the factors which influence the amount and distribution of total body sodium and potassium. No further information is available at this time.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Start Date	Number	Title
Unknown	RECC189	**Absolute Tissue Radioisotope Concentration Measured In Vivo With a Focusing Gamma-ray Colimator (sic)**

Abstract: In 1960, researchers from Vanderbilt University, Nashville, TN, under contact with the US Army Medical Research and Development Command, presented the results of research on the absolute tissue radioisotope concentration measured in vivo with a focusing gamma-ray collimator. Results were presented at the Fourth Meeting of the Biophysical Society in Philadelphia, PA, February 24-26 1960 and were made available in the meeting's abstracts publication. No further information is available at this time.

Document: Authors: Robert M. Heyssel. Title: Final Technical Report, Contract No. DA-49-007-995. Document Types: Report; Chart. Document Date: 31 August 1963.

Walter Reed Army Institute of Research, Washington, DC

Start Date	Number	Title
1954	RECC158	**Clinical Use of Radioisotopes (Eye Tumor Localization Using Phosphorus 32)**

Abstract: From 1954 until 1956, researchers at the Walter Reed Army Institute of Research, Washington, DC investigated the use of phosphorus 32 (P-32) in detecting eye tumors. Five hundred microcuries of P-32 was administered to 18 patients for definitive eye tumor localization. Information on radiation dose and on the results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 1 January - 31 December 1954 [includes Research and Development Board project card on biological and medical aspects of ionizing radiation]. Document Types: Report; Excerpt. Document Date: 31 December 1954.

Document: Authors: [Unstated]. Title: Army Medical Service, Consolidated Research and Development Annual Project Report, (Excluding G M). Document Types: Excerpt; Annual Report. Document Date: 31 December 1956.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Start Date	Number	Title
1956	RECC155	Clinical Use of Radioisotopes (Cardiac Output)

Abstract: Sometime during 1956, researchers at the Walter Reed Army Institute of Research, Washington, DC studied cardiac output. One hundred determinations in people with normal and abnormal cardiac output were performed. Researchers found that, in the people with normal cardiac output, the range determined by the external in vivo method was within plus or minus 5 percent of that determined simultaneously by the intra-arterial method of continuous blood sampling. In December 1956, this study was being evaluated and further refinements of this technique were to be explored. Information on radiation dose and on the results is not available at this time.

Document: Authors: [Unstated]. Title: Army Medical Service, Consolidated Research and Development Annual Project Report, (Excluding G M). Document Types: Excerpt; Annual Report. Document Date: 31 December 1956.

Document: Authors: [Unstated]. Title: Research Progress Report, 1 July 1957 through 30 June 1958. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: June 1958 est.

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Start Date	Number	Title
1956	RECC156	Clinical Use of Radioisotopes (Rose Bengal Uptake and Excretion)

Abstract: Sometime during 1956, researchers from Walter Reed Army Institute of Research, Washington, DC examined the rate of liver uptake and excretion of radioactive rose bengal (tetraiodo-tetrachlor-fluoroscein) in 25 normal patients and 12 with liver disease. Following mathematical analysis, researchers were unable to make a definitive correlation with liver disease. Further investigation was planned. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, 1 July 1957 through 30 June 1958. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: June 1958 est.

Document: Authors: [Unstated]. Title: Army Medical Service, Consolidated Research and Development Annual Project Report, (Excluding G M). Document Types: Excerpt; Annual Report. Document Date: 31 December 1956.

Start Date	Number	Title
1956	RECC159	Use of Chromium 51 in Study of Hematologic Problems (Epidemic Hemorrhagic Fever)

Abstract: During 1956, investigators at the Walter Reed Army Institute of Research, Washington, DC completed a study on patients with epidemic hemorrhagic fever. The researchers concluded that the diminishing red cell mass in these patients was due to actual loss of erythrocytes by hemolysis or by extravasation through damaged epithelium of small vessels rather than due to sequestration of red cells during shock. Information on radiation dose and on the number of participants is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Document: Authors: [Unstated]. Title: Army Medical Service, Consolidated Research and Development Annual Project Report, (Excluding G M). Document Types: Excerpt; Annual Report. Document Date: 31 December 1956.

Start Date	Number	Title
1956	RECC160	**Red Blood Cells Labeled with Chromium 51**

Abstract: During 1956, investigators at the Walter Reed Army Institute of Research, Washington, DC studied the behavior of red blood cells in 38 patients with hematologic disorders. By labeling the red blood cells with chromium 51, the researchers developed a procedure that aided in the differential diagnosis of anemia. Information on radiation dose and on the results is not available at this time.

Document: Authors: [Unstated]. Title: Army Medical Service, Consolidated Research and Development Annual Project Report, (Excluding G M). Document Types: Excerpt; Annual Report. Document Date: 31 December 1956.

Start Date	Number	Title
1957	RECC085	**Use of Phosphorus 32 in the Treatment of Patients with Chronic Leukemia**

Abstract: From 1 July 1957 until a presently undetermined date, researchers from the Radioisotope Clinic and the Department of Hematology, Walter Reed Army Institute of Research, Walter Reed Army Medical Center (WRAMC), Washington, DC examined the efficiency of controlling chronic leukemia with phosphorous 32 (P-32). One hundred fourteen patients were treated with P-32 at WRAMC during fiscal year 1958; however, it is unclear how many participated in this efficacy study. Information on radiation dose and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, 1 July 1957 through 30 June 1958. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: June 1958 est.

Start Date	Number	Title
1957	RECC086	**Red Blood Cell Survival with Chromium 51**

Abstract: From 1 July 1957 until 30 June 1958, researchers from the Radioisotope Clinic and the Department of Hematology, Walter Reed Army Institute of Research, Walter Reed Army Medical Center (WRAMC), Washington, DC examined red blood cell survival rates using chromium 51 labeled red blood cells. One hundred eighteen red cell survival determinations were made at WRAMC during FY 1958; however, it is unclear how many patients participated in this study. Information on radiation dose and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, 1 July 1957 through 30 June 1958. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: June 1958 est.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Start Date	Number	Title
1957	RECC087	**Changes in the Red Blood Cells of Cirrhotic Patients Using a Chromium 51 Technique**

Abstract: From 1 July 1957 until 30 June 1958, researchers from the Radioisotope Clinic and the Department of Hematology, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC employed chromium-51 to examine red blood cell changes in cirrhotic patients. Information on radiation dose, the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, 1 July 1957 through 30 June 1958. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: June 1958 est.

Start Date	Number	Title
1958	RECC034	**Research in Biomedical Sciences**

(For abstract and documentation see Georgetown University Medical School, Washington, DC)

Start Date	Number	Title
	RECC048	**Task 18: Whole Body Counting Facility**

Abstract: From 1 July 1958 to 30 June 1959, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC examined the retention and excretion rates of a number of radioisotopes. Forty volunteers were either normal adults or hospitalized patients. Volunteers received doses of strontium 85, iodine 131 (I-131), serum albumin I-131, triolein I-131, Vitamin B-12 labeled with cobalt 60, iron 59, and chromium 51. The volunteers and their excrement were counted in the whole body counter and were monitored for up to 4 months. Information on radiation dose and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Start Date	Number	Title
1958	RECC049	**Statistical Analysis of Diagnostic Tests for Thyroid Function**

Abstract: From 1 July 1958 to 30 June 1959, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington DC in collaboration with the personnel and facilities of the Radioisotope Clinic, statistically evaluated diagnostic and therapeutic uses of iodine 131 (I-131). Researchers sought the most effective way to study thyroid function by comparing parameters such as clinical impression, basal metabolic rate, cholesterol, protein-bound iodine, and I-131 uptake by the thyroid gland. Emphasis was placed on the evaluation of gradient or fractional thyroid uptake of I-131. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report (1 July 1958 - 30 June 1959, volume I). Document Types: Report. Document Date: 30 June 1959.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Start Date	Number	Title
1958	RECC051	**The Study of the Metabolism of I-131-labeled Triolein Using the Total Body Counter**

Abstract: From 1 July 1958 to 30 June 1959, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington DC in collaboration with the personnel and facilities from the Radioisotope Clinic, studied the metabolic differences between normal patients and patients with abnormal absorptive mechanisms. Patients were given small amounts of iodine 131 (I-131) labeled triolein, had their urine, blood, and feces collected and were monitored at regular intervals with a total body counter. The researchers studied the absorption of triolein and monitored the incorporation of triolein into the body triolein pool. A series of at least 20 patients were followed for several weeks. Information on radiation dose and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Document: Authors: [Unstated]. Title: Research Progress Report (1 July 1958 - 30 June 1959, volume I). Document Types: Report. Document Date: 30 June 1959.

Start Date	Number	Title
1958	RECC052	**Transfusion of Incompatible Red Blood Cells Using Cr-51 as a Tag**

Abstract: From 1 July 1958 to 30 June 1959, researchers from the Walter Reed Army Institute of Research (WRAIR), Walter Reed Army Medical Center, Washington, DC in collaboration with the personnel and facilities of the Radioisotope Clinic and the Department of Hematology, WRAIR studied the transfusion of incompatible red blood cells. Researchers studied Type A recipients transfused with Type B cells tagged with chromium 51 (Cr-51), both before and after therapy with prednisilone. White blood count, platelet count, serum hemoglobin, plasma, and whole body radioactivity counts were made. Researchers sought to determine the effect of prednisilone on the rate of red cell destruction in the transfusion of incompatible cells. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report (1 July 1958 - 30 June 1959, volume I). Document Types: Report. Document Date: 30 June 1959.

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Start Date	Number	Title
1958	RECC053	**Study of Red Cell Survival in Various Lymphomas with Splenectomy using Cr-51**

Abstract: From 1 July 1958 to 30 June 1959, researchers from the Walter Reed Army Institute of Research (WRAIR), Walter Reed Army Medical Center, Washington, DC, in collaboration with personnel and facilities from the Radioisotope Clinic and the Department of Hematology, WRAIR, examined chromium 51-labeled red cell survival times in lymphoma patients with suspected hemolytic anemia. In cases where splenectomy was required, red cell survival time was repeated to examine the post-operative effect on the hemolytic process. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Document: Authors: [Unstated]. Title: Research Progress Report (1 July 1958 - 30 June 1959, volume I). Document Types: Report. Document Date: 30 June 1959.

Start Date	Number	Title
1958	RECC055	**Study of Absorption of Fe-90 by the Gastrointestinal Tract**

Abstract: From 1 July 1958 to 30 June 1959, researchers from the Walter Reed Army Institute of Research (WRAIR), Walter Reed Army Medical Center, Washington, DC, in collaboration with the personnel and facilities from the Radioisotope Clinic and the Department of Hematology, WRAIR examined iron absorption in normal individuals and patients with hematological abnormalities. Patients were given tracer doses of radioactive iron (Fe-59) and were measured in the total body counter. Absorption was also compared with the red cell incorporation curves and fecal excretion. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Document: Authors: [Unstated]. Title: Research Progress Report (1 July 1958 - 30 June 1959, volume I). Document Types: Report. Document Date: 30 June 1959.

Start Date	Number	Title
1958	RECC056	**Study of Absorption of Co-60 in Normal Patients and Patients with Chronic Myelogenous Leukemia**

Abstract: From 1 July 1958 to 30 June 1959, researchers from the Walter Reed Army Institute of Research (WRAIR), Walter Reed Army Medical Center, Washington, DC, in collaboration with the personnel and facilities from the Radioisotope Clinic and the Department of Hematology, WRAIR, examined the clearance and excretion of intravenous tracer doses of cobalt 60 (Co-60) in patients with chronic myelogenous leukemia. Patients with chronic lymphocytic leukemia were studied as controls. Researchers measured urinary and fecal excretion, plasma clearance, and utilized the whole body counter. Information on radiation dose, on the number of participants and on results is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Document: Authors: [Unstated]. Title: Research Progress Report (1 July 1958 - 30 June 1959, volume I). Document Types: Report. Document Date: 30 June 1959.

Start Date	Number	Title
1958	RECC060	Protein-bound Iodine Determinations

Abstract: From 1 July 1958 to 30 June 1959, researchers from the Walter Reed Army Institute of Research (WRAIR), Walter Reed Army Medical Center, Washington, DC, in collaboration with personnel and facilities from the Radioisotope Clinic and the Department of Chemistry, WRAIR, studied protein-bound iodine (PBI) levels in selected patients from the Radioisotope Clinic. It is unclear whether researchers were using an administered radioisotope to make their determinations. The researchers drew blood and sent samples to the Department of Chemistry for PBI determination. Researchers sought to determine the relationship between PBI level and the clinical condition. Information on possible radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Start Date	Number	Title
1958	RECC061	Measurement of the Total Body Potassium Burden by Use of the Total Body Counter

Abstract: From 1 July 1958 until a presently undermined date, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC measured total body potassium burden. It is unclear whether researchers were examining naturally occurring total body potassium or using an administered radioisotope to make their determinations. Volunteers with various diseases were assayed in the whole body counter. Early findings indicated that renal disease, hypertension and diuril therapy have the greatest impact on total body potassium. Information on possible radiation dose, on the number of participants and on final results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, Volume 1, Walter Reed Army Institute of Research, 1 July 1958 to 30 June 1959. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1959.

Start Date	Number	Title
1958	RECC074	The Use of the Human Counter in the Study of Serum Albumin Metabolism: I. Preliminary Data

Abstract: Between 1958 and 1959, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC performed a three phase study to compare whole body counting to the traditional urinary excretion method of determining serum albumin turnover. Researchers believed that using the whole body counter would reduce the amount of radioactivity a patient would be exposed to. The first phase involved calibrating the counter for iodine 131 (I-131). The second phase involved performing an I-131 uptake similar to those used in thyroid studies. One volunteer had a baseline count performed in the whole body counter. The volunteer

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC (continued)

ingested 5.4 microcuries of I-131, was placed in the counter for 2 hours and was counted at every 6 hours for the next 2 days, after which, counts were performed every 24 hours for 15 days. Urine and feces were collected and counted. In the third phase, two volunteers received 6 microcuries of I-131-labeled radio-iodinated human serum albumin (IHSA) intravenously. Volunteers were counted before the IHSA was administered, 20 minutes afterwards and then daily for 35 days. Urine and feces were collected and counted as well. Researchers found a number of advantages to using the whole body counter to measure serum albumin turnover over conventional techniques. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Reports Submitted by Students, Military Medicine and Allied Sciences Course. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 1959.

Start Date	Number	Title
1958	RECC075	**A New Method of Studying the Kinetics of Iron Metabolism: The Whole Body Liquid Scintillation Counter**

Abstract: Between 1958 and 1959, researchers from the Walter Reed Army Institute of Research tested the utility of whole body counting in the determination of total body iron metabolism. The three study participants included a 22-year-old normal male, a 30-year-old normal female and a 30-year-old iron deficient male. Volunteers received a baseline reading at the start and then received 2.5 microcuries of iron 59 (Fe-59) orally in water on a fasting stomach. After another hour of fasting, volunteers resumed normal diet habits. Volunteers were counted five times weekly for 40 days. Counts were made for 600-second intervals. Stool, urine, and menstrual pads were collected and counted each day and blood was drawn three times weekly to determine Fe-59 uptake by red blood cells. Blood and excreta were collected to compare the whole body counter method for determining iron metabolism to conventional methods. Researchers concluded that the whole body counter provided a number of advantages over conventional methods in determining total body iron metabolism. Volunteer initials are provided in available documentation. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Reports Submitted by Students, Military Medicine and Allied Sciences Course. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 1959.

Start Date	Number	Title
1961	RECC047	**Medical Aspects of Ionizing Radiation**

Abstract: From 1 July 1961 to 30 June 1962, researchers from Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC conducted a multi-phased study to examine the medical aspects of ionizing radiation. Researchers examined the absorption of Vitamin B-12 labeled with cobalt 60. Thirty-four volunteers ingested the labeled vitamin and were assayed in the whole body counter. Preliminary findings indicated that an absorption rate greater than 41 percent of the oral dose would reflect normal Vitamin B-12 transport. An absorption rate less than 10 percent would be indicative of pernicious anemia while an absorption rate between 11 percent and 40 percent would signal small bowel malabsorption. This study also involved performing assays on occupationally exposed personnel as well as on normal subjects in the United States, Europe and the Far East. The whole body counter was also used to examine the excretion rate of mercury 203 in connection with brain and kidney scans. Information on radiation dose is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Document: Authors: [Unstated]. Title: Annual Progress Report, Walter Reed Army Institute of Research, 1 July 1961 - 30 June 1962. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1962.

Start Date	Number	Title
1963	RECC032	**Metabolism of Fission Products from Fallout**

(For abstract and documentation see Fort Bliss, TX)

Start Date	Number	Title
1969	RECC084	**Basic Research in Support of Military Medicine: Radiobiology-Mechanisms: Human Whole Body Radiation Detection**

Abstract: Sometime before 1 July 1969, researchers from Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Nuclear Medicine Service, Isotope Clinic, Washington, DC began using the human whole body radiation counter for kinetic and distribution studies. In vivo studies were done in patients receiving strontium 85 (Sr-85) for bone scintiscans. Researchers planned to perform kinetic studies on other isotopes as well. Information on radiation dose, on the number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, Volume II, Research in Biological and Medical Science, Walter Reed Army Institute of Research. Document Types: Table of Contents/Index; Excerpt; Annual Report. Document Date: 30 June 1969.

Start Date	Number	Title
Unknown	RECC037	**Uptake of I-131-labeled L-Triiodothyronine in Various Erythrocyte Abnormalities**

(For abstract and documentation see Hematology Clinic, DC General Hospital, Washington, DC)

Start Date	Number	Title
	RECC038	**Pathophysiology of Acute Asiatic Cholera**

(For abstract and documentation see Chulangkorn Hospital Medical School, Bangkok, Thailand)

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Start Date	Number	Title
Unknown	RECC040	A Sex Difference in the Response to Titrated Irradiation Therapy (P32) of Patients with Chronic Granulocytic Leukemia

(For abstract and documentation see Armed Forces Institute of Pathology, Washington, DC)

Start Date	Number	Title
	RECC041	The Use of Radio-iodinated Albumin in Metabolic Studies

Abstract: From a presently undetermined date until August 1957, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC studied the catabolism of human iodinated serum albumin (HISA) under various levels of dietary protein, 1-triiodothyronine (T-3) and atropine administration. Modified methods were used in an effort to overcome objections to its use due to poor reproducibility. Eleven male patients confined to the metabolic ward were fed controlled liquid diets, were given Lugol's solution thrice daily, and had blood, urine and feces collected for analysis. Five patients participated in more than one facet of the study. Approximately 100 microcuries of HISA were administered intravenously in each 16-day study; the dose was doubled for each additional 8 days of study, but did not exceed 400 microcuries. Sufficient HISA was given so that a single label would extend throughout both a control and an experimental period. Researchers found that high protein intake and administration of T-3 accelerated serum albumin catabolism and that atropine administration had the opposite effect. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: The Use of Radio-Iodinated Albumin in Metabolic Studies. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: August 1957.

Start Date	Number	Title
Unknown	RECC076	Intestinal Mucosal Mechanisms Controlling Body Iron Content

Abstract: From a presently undetermined date until July 1960, researchers from the Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, DC conducted an eight-part study to examine the extent to which gastrointestinal absorption and excretion plays a role in the regulation of total body iron. Only parts one and eight involved human volunteers. In the first part, 10 (9 men and 1 woman) iron-deficient and 25 (24 men and 1 woman) normal volunteers were assayed in a whole body counter for approximately 3 minutes. All volunteers ingested a solution containing 1.0 microcurie of iron 59 (Fe-59) in 50 milliliters of water following an overnight fast. Gastrointestinal absorption was measured by assaying the volunteers in a whole body counter. Nine volunteers collected their stool for 2 weeks following Fe-59 administration. Three volunteers made complete collection of urine. The 25 normal volunteers absorbed 10 percent or less of the Fe-59. The 10 iron-deficient volunteers absorbed 29 to 71 percent. Part eight of the study was conducted in two phases. Phase one involved transfusing volunteers with 10 milliliters of plasma labeled with 0.25 microcuries of Fe-59. Retention was measured in a whole body counter 5 days per week for 100 days. Sweat collected in surgical scrub suits and stool were collected and assayed. Results indicated that volunteers had lost 29 percent of the Fe-59. Phase two involved drawing blood from the same volunteers, labeling the blood with 20 microcuries of chromium 51 and transfusing it back into the volunteers. Six days later, plasma labeled with 0.5 microcuries of Fe-59 was administered intravenously. Sweat collected in surgical scrub suits and stool were collected and assayed. Results of the study indicate that administering a large dose of iron to a normal person produces a relative block to further iron absorption. Information concerning the total number of participants and radiation dose information for the entire study is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Institute of Research, Washington, DC

Document: Authors: Marcel E. Conrad, Jr., Major, MC. Title: Intestinal Mucosal Mechanisms Controlling Body Iron Content [from Research Reports Submitted by Students, Military Medicine and Allied Science Course ,1961-1962, Walter Reed Army Institute of Research, Walter Reed Army Medical Center]. Document Types: Report; Cover. Document Date: 1962 est.

Walter Reed Army Medical Center, Washington, DC

Start Date	Number	Title
1947	RECC110	**Ionization Effects on Experimental Animals and Human Subjects**

(For abstract and documentation see University of Chicago, Chicago, IL)

Start Date	Number	Title
1950	RECC196	**Total Circulating Albumin in Infectious Hepatitis**

Abstract: Sometime after June 1950, researchers from Walter Reed Army Medical Center, Washington, DC were to use iodinated human albumin as a tracer in an effort to clarify the dynamics of protein metabolism. For each test, researchers were to administer 30 to 40 microcuries of iodine 131-labeled albumin intravenously. Periodic samples were to be drawn and the counts per cubic centimeter were to be plotted on semi-log paper. The sensitivity of the isotope method was to be tested by injecting known amounts of unlabeled serum albumin and repeating the estimation immediately thereafter. Initially, only normal individuals were to be tested with the expectation of testing patients with liver disease in the future once the proper technique had been established. Information on radiation dose, on the number of participants and on results is not available at this time. The larger hepatitis study--of which this was a part--was originally begun at Valley Forge General and was moved to Walter Reed in June 1950.

Document: Authors: [Unstated]. Title: Research Program, Priority 1C and 2 Projects [includes progress reports: "Radiation Injury in Man and Animals," "Ionization Effects," and "Effects of Irradiation"]. Document Types: Report. Document Date: 30 September 1951.

Document: Authors: [Unstated]. Title: Research Program, Priority 1C and 2, Cumulative Annual Report, 30 June 1951. Document Types: Report; Table of Contents/Index. Document Date: 30 June 1951.

Start Date	Number	Title
1951	RECC109	**Physiologic Changes Associated with Arteriovenous Fistulas**

Abstract: From 1951 until 1952, researchers at the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, DC studied the circulation through traumatic arteriovenous fistulas in man. A large number of patients were injected intravenously with iodine 131 (I-131)-labeled albumin, T-1824 or sodium 24 (Na-24). This study included 7 individuals with pre-operative fistulas, 8 individuals with postoperative fistulas, 11 controls and 3 subjects before and after manual occlusion of the fistula. Plasma and blood volume, circulating plasma albumin and globulin measurements were performed. Investigators also studied the kinetics of mixing T-1824 and I-131-labeled albumin with the circulating blood, the possible dissociation of the test material from its protein bond, and its possible loss into the tissues of the lung during its first passage. Several leg clearances were performed in man in vivo to complete the kinetics work Na-24 was also studied in relation to its possible loss into the tissues of the lung. Researchers studied protein turnover on a small group of subjects with fistulas, using I-131-labeled albumin. Information on radiation dose, the total number of participants and on results is not available at this time.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Medical Center, Washington, DC

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Document: Authors: [Unstated]. Title: Research Progress Report: Third Quarterly Report, Fiscal Year 1952, 01 January – 31 March 1952. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 31 March 1952.

Document: Authors: [Unstated]. Title: Research Program, Priority 1C and 2 Projects [includes progress reports: "Radiation Injury in Man and Animals," "Ionization Effects," and "Effects of Irradiation"]. Document Types: Report. Document Date: 30 September 1951.

Start Date	Number	Title
1957	RECC085	**Use of Phosphorus 32 in the Treatment of Patients with Chronic Leukemia**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC086	**Red Blood Cell Survival with Chromium 51**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC087	**Changes in the Red Blood Cells of Cirrhotic Patients Using a Chromium 51 Technique**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC088	**Effect of Salicylate Therapy on Iodine 131 Uptake Techniques**

Abstract: From approximately July 1957 until 30 June 1958, researchers from the Department of Medicine, Walter Reed Army Medical Center, Washington, DC examined the effect of salicylate therapy on iodine 131 uptake techniques. Information on radiation dose, the number of participants and on the results of this study is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, 1 July 1957 through 30 June 1958. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: June 1958 est.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Medical Center, Washington, DC

Start Date	Number	Title
1957	RECC089	**Turnover and Clearance Rates of Iodine 131 in Disease States**

Abstract: From approximately1957 until 1958, researchers from the Department of Medicine, Walter Reed Army Medical Center, Washington, DC examined the turnover and clearance rates of iodine 131 in patients with various diseases. Information on radiation dose, the number of participants and on the results of this study is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, 1 July 1957 through 30 June 1958. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: June 1958 est.

Start Date	Number	Title
1957	RECC090	**Evaluation of the Pancreatic Function Measuring the Absorption of Iodine 131 Tagged Fats**

Abstract: From 1 July 1957 until a presently undetermined date, researchers from the Walter Reed Army Medical Center (WRAMC), Washington, DC evaluated pancreatic function by measuring the absorption of triolein iodine 131. Nine absorption tests were conducted at WRAMC during fiscal year 1958; however, it is unclear how many patients participated in this study. Information on radiation dose and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report, 1 July 1957 through 30 June 1958. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: June 1958 est.

Start Date	Number	Title
1958	RECC048	**Task 18: Whole Body Counting Facility**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC049	**Statistical Analysis of Diagnostic Tests for Thyroid Function**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC051	**The Study of the Metabolism of I-131-labeled Triolein Using the Total Body Counter**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC052	**Transfusion of Incompatible Red Blood Cells Using Cr-51 as a Tag**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Medical Center, Washington, DC

Start Date	Number	Title
	RECC053	**Study of Red Cell Survival in Various Lymphomas with Splenectomy using Cr-51**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC055	**Study of Absorption of Fe-90 by the Gastrointestinal Tract**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC056	**Study of Absorption of Co-60 in Normal Patients and Patients with Chronic Myelogenous Leukemia**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC060	**Protein-bound Iodine Determinations**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
1958	**RECC061**	**Measurement of the Total Body Potassium Burden by Use of the Total Body Counter**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC074	**The Use of the Human Counter in the Study of Serum Albumin Metabolism: I. Preliminary Data**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Medical Center, Washington, DC

Start Date	Number	Title
	RECC075	**A New Method of Studying the Kinetics of Iron Metabolism: The Whole Body Liquid Scintillation Counter**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
1961	RECC047	**Medical Aspects of Ionizing Radiation**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
1963	RECC032	**Metabolism of Fission Products from Fallout**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
1965	RECC083	**To Determine Sodium Space and Total Exchangeable Sodium by Administration of Sodium Chloride 22**

Abstract: Between 1 April 1965 through approximately 30 June 1965, researchers from the Walter Reed Army Medical Center, Washington, DC examined sodium space and total exchangeable sodium as an indication of fluid balance in disease states such as renal failure, dehydration and severe burns. Prior to participation, patients were to avoid excess salt in food, discontinue physical activity and completely void urine. Researchers used 5 to 30 microcuries of sodium 22 (Na-22) diluted to 30 to 50 milliliters (or 10 milliliters in some cases) in isotonic sodium chloride. The solution was injected into the patient's intravenous infusion tubing (IV) of a 5 percent dextrose continuous drip and urine was collected for 24 hours after injection. At twenty-four hours post injection, a 10-milliliter sample of blood was drawn from the arm opposite the IV for immediate centrifuge to obtain supernatant serum. Two milliliters of serum and 2 milliliters of urine were each counted in the scintillation counter for 10 minutes. Researchers assumed a concentration of one microcurie per kilogram of body weight evenly distributed, and thus expected a total absorbed radiation dose of 1.19 rads. Information on the number of participants and on results is not available at this time.

Document: From: Gerald S. Johnston, Major, Radioisotope Section, Walter Reed General Hospital To: [Unstated]. Subject: Authorization to use radioactive material. Document Types: Form. Document Date: 27 April 1965.

Document: Authors: James E. Roy, Jr. Title: Individuals Authorized for New used of Radioisotopes in Humans. Document Types: List. Document Date: 21 July 1965.

Document: Authors: [Unstated]. Title: Protocol for Experiment to Determine Sodium Space and Total Exchangeable Sodium by Administration of Sodium Chloride 22. Document Types: Protocol. Document Date: 1965 est.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Medical Center, Washington, DC

Start Date	Number	Title
1967	RECC033	Development of a Meningococcal Immunizing Agent

Abstract: From 1967 until a presently undetermined date, researchers from the Walter Reed Army Medical Center, Washington, DC examined an Escherichia coli polysaccharide as a meningococcal vaccine as part of a large scale test in the search for a successful meningococcal immunizing agent. In one facet of this study, four volunteers received 50 micrograms of carbon-14-labeled vaccine (EC-1) subcutaneously to examine antibody response. Volunteers were followed for 4 weeks after vaccination. The E. coli antigen was found to be immunogenic in rabbits but not in human volunteers. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Annual Progress Report, 01 July 1971 - 30 June 1972, Volume 1. Document Types: Report; Table of Contents/Index; Excerpt. Document Date: 30 June 1972.

Start Date	Number	Title
1969	RECC084	Basic Research in Support of Military Medicine: Radiobiology-Mechanisms: Human Whole Body Radiation Detection

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
Unknown	RECC036	Red Cell Shape and Red Cell Life Span in Hereditary Spherocytosis

Abstract: From a presently undetermined date until May 1960, researchers from the Walter Reed Army Medical Center, Washington, DC demonstrated that changing the shape of spherocytes does not affect how they are processed by the spleen. Researchers examined two healthy, young, white male patients (ages 18 and 21) with hereditary spherocytosis. The first patient and a volunteer recipient each received a transfusion of the patient's blood labeled with chromium 51 (Cr-51) to determine red blood cell (RBC) survival. Over the course of 6 weeks, the patient had 6 liters of blood drawn to induce iron deficiency anemia. After an additional 6 weeks had passed to allow the formation of new hypochromic red cells, the patient and the volunteer recipient each received another transfusion of Cr-51-labeled blood. No significant difference in RBC survival was noted. Following a splenectomy, the patient received Cr-51-labeled blood to determine RBC survival. The test showed normal RBC survival rates. The second patient and another volunteer recipient each received a transfusion of the second patient's blood labeled with Cr-51 to determine RBC survival. The second volunteer then had 9,500 milliliters of blood drawn over 59 days to induce iron deficiency anemia. A RBC survival test using Cr-51 showed no significant change in survival. Following a splenectomy, the second patient underwent another RBC survival test, which showed normal RBC survival rates. Researchers found that iron deficiency corrected spherocytosis, but did not correct the hemolytic disease and that a splenectomy corrected the hemolytic disease, but did not correct the spherocytosis. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report from Walter Reed Army Institute of Research. Document Types: Report; Excerpt. Document Date: 30 June 1960.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Medical Center, Washington, DC

Start Date	Number	Title
Unknown	**RECC041**	**The Use of Radio-iodinated Albumin in Metabolic Studies**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC076	**Intestinal Mucosal Mechanisms Controlling Body Iron Content**

(For abstract and documentation see Walter Reed Army Institute of Research, Washington, DC)

Start Date	Number	Title
	RECC171	**Transfusion Reactions: Blood Volume Studies with Isotopic Tags**

Abstract: Sometime before 30 June 1953, researchers from the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, DC performed blood volume studies with isotopic tags as part of a larger study examining transfusion reactions. Researchers found good correlation between chromium 51 (Cr-51) and Ashby survival when compared in severely hemolytic patients and Cr-51 disappearance in normal subjects seemed to follow a relatively reproducible curve. Investigators also found that Cr-51-tagged cells were immediately destroyed when injected into subjects of incompatible blood type. No Cr-51 activity was detected in the blood even though labeled hemoglobin was released into the plasma. However, when Cr-51-labeled hemoglobin was injected, radioactivity was detected and then disappeared in proportion to the hemoglobin disappearance. Information on radiation dose and on the total number of participants is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Start Date	Number	Title
Unknown	**RECC199**	**Plasma Pulmonary Clearance During the First Circulation**

Abstract: Sometime before 30 June 1952, researchers from the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, DC investigated the sensitivity of the simultaneous indicator technique by modifying the Stewart Principle to evaluate the net exchange of micromolecular solutes across capillary beds. Investigators administered T-1824 in various combinations with iodine 131-labeled albumin, inorganic iodine 131, sodium 24 and deuterium intravenously to 24 subjects. The results indicated that neither significant transcapillary exchange nor extravascular dilution of electrolytes within the lesser circulation were observed by using this method. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Walter Reed Army Medical Center, Washington, DC

Start Date	Number	Title
Unknown	RECC200	Kinetics of Simultaneously Administered T-1824 and I-131-labeled Human Serum Albumin

Abstract: Sometime before 30 June 1952, researchers from the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, DC investigated and compared the effects of the simultaneous administration of T-1824 and iodine 131 (I-131)-labeled albumin versus the mixing of T-1824 and I-131-labeled albumin in the same vial prior to injection. T-1824 and I-131-labeled albumin were simultaneously injected into separate sites in 10 subjects. The results indicated that the transport of T-1824 and that of I-131 albumin were practically identical. In the second portion of this study, 35 subjects were injected with a mixture of T-1824 and I-131-labeled albumin. The results indicated that there was a rapid abstraction of 10 to15 percent of the I-131 albumin. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report Annual Report, 1 July 1951 - 30 June 1952 [includes multiple irradiation studies]. Document Types: Report; Excerpt. Document Date: 30 June 1952.

Walter Reed General Hospital, Washington, DC

Start Date	Number	Title
1965	RECC081	Determination of the Rate of Protein Synthesis in Patients with a Variety of Acute and Chronic Diseases. Patients with a Chronic Renal Insufficiency

Abstract: From 1965 until a presently undetermined date, researchers from Walter Reed General Hospital, Washington, DC examined the rate of protein synthesis in patients with chronic renal insufficiency. Volunteer hospital patients were placed on a controlled protein diet. After 15 days, volunteers intravenously received methionine labeled with 0.5 microcuries of sulfur 35. Six blood samples were taken before and after the isotope was administered. Urine was collected for at least 48 hours after administration of the isotope. Researchers estimated that volunteers would receive a total dose of 1.1 rads. Information on the number of participants and the on results is not available at this time.

Document: From: William E. Froemming, Lieutenant Colonel, Preventive Medicine Division To: Chief, Consultant Division; Chief, Medical Consultant Branch; Chief, Nuclear Medicine Branch; Chief, Radiology Branch; Occupational Medicine Consultant. Subject: AMEDS Radioisotope Committee report [includes minutes of meeting on 20 September 1965; list of authorizations for human radioisotope use; list of radioisotopes procured, used, in storage, and disposed]. Document Types: Report; Memorandum. Document Date: 10 November 1965.

Document: Authors: [Unstated]. Title: Quarterly Report of Radioisotopes - 01 January - 31 March 1965. Document Types: Report. Document Date: 31 March 1965.

Document: Authors: [Unstated]. Title: Protein Synthesis in Patients with Chronic Renal Insufficiency. Document Types: Protocol. Document Date: 01 March 1965.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

William Beaumont Army Medical Center, El Paso, TX

Start Date	Number	Title
1966	RECC027	**Effects of Sustained Programmed Exercise on the Cardiovascular, Pulmonary and Renal Systems in Normal Men between the Ages of 30-45 Years**

Abstract: From sometime after May 1966 until a presently undetermined date, researchers from the Department of Medicine, William Beaumont Army Medical Center Fort Bliss, El Paso, TX examined the effects of sustained programmed exercise on the cardiovascular, pulmonary, and renal systems in normal men between the ages of 30 and 45 to assess whether the astronaut training program required modification. Thirty-six volunteers were divided by age into 3 groups of 12. To qualify as a participant for the study, volunteers had to pass a complete physical. Qualified volunteers began a daily exercise program which gradually worked up to a 2 mile run, 30 push-ups twice daily, 30 deep knee bends twice daily and 30 sit-ups twice daily. This program continued for 6 months. Each month, volunteers returned to the lab for physiological tests. In a resting condition, cardiac output and blood volume were measured by administering radioiodinated human serum albumin (RISA) containing 5 microcuries of iodine 131 (I-131) and drawing a blood sample 10 minutes later. Volunteers then ran on a treadmill until the test was completed, the volunteer became exhausted or they reached a heart rate of 180 beats per minute. Following the exercise, cardiac output and blood volume were calculated. It was estimated that during the course of the study, volunteers received 50-70 microcuries of I-131. Critical organs received a maximum dose of 0.188 rads and the thyroid a maximum of 10.8 rads. Information on the results of this study is not available at this time.

Document: From: Thomas R. Ostrom, Lieutenant Colonel, Army, Office of the Chief of Research and Development, Life Sciences Division To: [Unstated]. Subject: Request for Approval of the Use of Human Volunteers for Research. Document Types: Memorandum. Document Date: 26 April 1966.

Document: From: W.C. Gribble, Jr, Major General, Army, Office of the Chief of Research and Development To: [Unstated]. Subject: Request for Approval of the Use of Human Volunteers for Research. Document Types: Research Summary. Document Date: 29 April 1966.

Document: From: Allan L. Forbes; Sven A. Bach, Colonel, Army, Office of the Chief of Research and Development, Scientific Analysis Branch, Life Sciences Division To: Chief, M&B Branch. Subject: Request for Approval of the Use of Human Volunteers for Research - "Effects of Sustained Programmed Exercise on the Cardiovascular, Pulmonary, and Renal Systems in Normal Men Between the Ages of 30-45 Years". Document Types: Memorandum. Document Date: 21 April 1966.

Document: From: Stanley R. Resor, Secretary of the Army To: Chief of Staff, US Army. Subject: Approval For Use of Human Volunteers for Research. Document Types: Memorandum. Document Date: 02 May 1966.

Document: Authors: Moser et al. Subject: Study the Effects of Sustained Programmed Exercise on the Cardiovascular, Pulmonary and Renal System in Normal Men Between Ages 30-45. Document Types: Report; Attachment/Appendix. Document Date: 18 January 1965.

Document: From: Colin F. Vorder Bruegge, Brigadier General, Army, Office of the Chief of Research and Development, Special Assistant for Research and Development To: Army Office of the Chief of Research and Development. Subject: Request for Approval of the Use of Human Volunteers for Research. Document Types: Memorandum. Document Date: 12 April 1966.

Document: From: Tyron K. Huber, Colonel, General Staff, Office of the Chief of Research and Development, Life Sciences Division To: Army Office of the Surgeon General. Subject: Request of Approval of the Use of Human Volunteers for Research. Document Types: Memorandum. Document Date: 11 May 1966.

Document: From: W.C. Gribble, Jr., Major General, General Staff, Deputy Chief of Research and Development To: Thomas R. Ostrom, Lieutenant Colonel. Subject: Request for Approval of the Use of Volunteers for Research. Document Types: Memorandum. Document Date: 29 April 1965.

Newly Identified Events

ARMY 1944-1974 (CONTINUED)

Yale University School of Medicine, New Haven, CT

Start Date	Number	Title
Unknown	**RECC129**	**Plasma Volume Expanders**

Abstract: From a presently unknown date until approximately1953, researchers from Yale University School of Medicine, New Haven, CT investigated the effects of plasma expanders on the metabolism and excretion of water and electrolytes in normal and edematous patients. Iso-oncotic or hyperoncotic isotonic solutions of the expanders were to be used to determine whether the plasma expanders were capable of inducing diuresis in edematous patients. Researchers planned to study the utilization of chromium-tagged red cells for measurement of blood volume and sulfur 35 (S-35) in the measurement of extracellular fluid volume. Information on radiation dose, on the number of participants and on results is not available at this time. This study was approved in January of 1951.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Start Date	Number	Title
Unknown	**RECC134**	**Measurement of Extracellular Space**

Abstract: From a presently undetermined date until June 1953, investigators from Yale University School of Medicine, New Haven, CT studied the measurement of the volume of circulating blood and extracellular space and the rate of turnover of serum proteins. Progress as of June 1953 included assembling and control of all apparatus used for measurement of isotopic activity and control work associated with measurement of chromium 51 (Cr-51) and iodine 131 (I-131). Attempts were made to simplify the measurement of blood volume with chromium-tagged red cells in normal patients and in patients with heart failure before and after edema. Measurements of the I-131 albumin space and its decay were made in an unknown number of normal patients and on one or two pathologic cases. Information on radiation dose, on the total number of participants and on results is not available at this time.

Document: Authors: [Unstated]. Title: Research Progress Report: Annual Report, 01 July 1952 - 30 June 1953 [includes multiple studies on the medical effects of radiation and weapons effects]. Document Types: Report; Excerpt. Document Date: 30 June 1953.

Newly Identified Events

NAVY 1944-1974

Donner Laboratory, University of California, Berkley, CA

Start Date	Number	Title
1946	RECC009	Function of Liver in Carbon Monoxide Metabolism

Abstract: From approximately 1946 to 1948, while under contract with the Office of Naval Research, researchers from Donner Laboratory, University of California, Berkley, CA examined the role of the liver in carbon monoxide (CO) uptake using radioactive isotopes. In vivo studies were done to measure CO concentration in the liver and certain aspects of general circulation. Both carbon 11 and carbon 14 were to be employed as tracers. Researchers preliminarily found that the rate of release of CO by human subjects was slower with increasing age and that the effect was approximately one percent longer half time of desaturation with each increased year of age. Information on subjects, radiation dose and final results of the study is not available at this time.

Document: Authors: Nello Pace; Robert Loevinger; Enrique Strajman. Title: In Vivo Geiger-Muller Gamma-Ray Counter for Radioisotope Distribution Studies: Journal: Science, Issue January 16, 1948. Document Types: Journal Article. Document Date: 16 January 1948.

Document: Authors: [Unstated]. Title: Human Radiation Studies: Remembering the Early Years. Document Types: Report; Resume. Document Date: June 1995.

Document: Authors: [Unstated]. Title: Physiological Basis of Treatment and Rehabilitation. Document Types: Report. Document Date: 01 July 1950.

Document: Authors: C.A. Tobias; J.H. Lawrence; F.J.W. Roughton; W.S. Root; M.I. Gregersen. Title: The Elimination of Carbon Monoxide from the Human Body with Reference to the Possible Conversion of Carbon Monoxide to Carbon Dioxide. Document Types: Journal Article. Document Date: 1 October 1945.

Document: Authors: Navy. Subject: Study entitled "Function of Liver in Carbon Monoxide Metabolism" to be added to the RECC HRE database. Document Types: Event Profile. Document Date: May 2001 .

Document: From: D. M. Mole, Captain, Medical Corps, United States Navy To: D. Michael Schaeffer, Radiation Experiments Command Center, Defense Threat Reduction Agency. Subject: Letter pertaining to liver function study performed by the Navy. Document Types: Letter. Document Date: 16 March 2001.

Document: Authors: [Unstated]. Title: Clinical and Nutritional Biochemistry. Document Types: Report. Document Date: 30 June 1950.

Naval Blood Research Laboratory, Chelsea, MA

Start Date	Number	Title
1968	RECC147	Evaluation of Frozen Blood Cells

Abstract: In 1968 researchers at the Naval Blood Research Laboratory, Chelsea, MA were to begin a 2-year investigation of the effect of freezing on blood platelets and red blood cell (RBC) survival. Frozen RBCs were to be labeled with 10 microcuries of chromium 51 (Cr-51) chromate and transfused into approximately 50 normal volunteers. The total body radiation dose was expected to be 3.5 millirads, and 13 millirads to the spleen. Investigators were to inject intravenously 5 microcuries of Cr-51 chromate into 50 anemia patients prior to transfusing them with frozen RBCs. RBC volume determinations were to be performed on both groups of subjects. Two subsequent RBC volume determinations were to be performed over a 3-month period in the patient group, using 5

Newly Identified Events

NAVY 1944-1974 (CONTINUED)

Naval Blood Research Laboratory, Chelsea, MA (continued)

microcuries of Cr-51 each time. The total body dose for 15 microcuries of Cr-51 was expected to be 5.25 millirads, and the spleen dose was expected to be 19.5 millirads. Ten of the subjects in each group also were to receive 5 microcuries of iodine 131 (I-131)-labeled human serum albumin (RISA) to indirectly measure RBC mass. The total body dose from the 5 microcuries of I-131-labeled RISA was expected to be 8.5 millirads. In another portion of the study, researchers proposed to investigate frozen platelet survival in a combination of 50 thrombocytopenic patients and normal volunteers. Intravenously administered platelets labeled with 25 microcuries of Cr-51 were expected to provide a total body radiation dose of 8.5 millirads and 16 millirads to the spleen. Information on results is not available at this time.

Document: From: C. Robert Valeri, Boston University School of Medicine To: R.S. Thompson, Commander, Medical Science Corps, Naval Environmental Health Detachment. Subject: Commander Thompson's curriculum vitae, highlighting papers which involved the radiolabeling of red blood cells, white blood cells, and platelets.. Document Types: Letter; Resume. Document Date: 26 February 2002.

Document: From: Robert Thompson, Commander, Naval Dosimetry Center To: Cesare R. Valeri. . Document Types: Letter. Document Date: 22 February 2002.

Document: Authors: Radiation Experiments Command Center research staff. Subject: Human Radiation Experiment RECC147. Document Types: Event Profile. Document Date: 2002.

Document: Authors: Ray Fong, Commander, Navy Bureau of Medicine and Surgery. Subject: Human Radiation Experiment Review. Document Types: Cover. Document Date: 6 March 2002.

Document: From: [Various] To: [Various]. Subject: Request for approval for use of human volunteers in studying effects of freezing platelets and red blood cells. Document Types: Memorandum; Protocol; File. Document Date: May 1968.

Document: From: [Various] To: [Various]. Subject: Authorization to use human volunteer subjects in studying the effects of freezing on blood platelets and red blood cell survival. Document Types: Memorandum; Protocol; File. Document Date: July 1968.

Naval Hospital, Bethesda, MD

Start Date	Number	Title
1949	**NNMC-146**	**Radioactive Di-iodofluoresin in Diagnositc Studies (NM 007 089.10)**

Abstract: From 1949 until 1950, researchers at the Naval Hospital, Bethesda, MD studied the localization of brain tumors using radioactive di-iodofluoresin. Tracer studies were conducted on six individuals who had brain tumors which could not be localized well enough for surgical removal. Patients were to be screened with the radioactive dye after adequate and complete x-ray studies were performed. The positive result in the final clinical analysis and pathology were not significantly lower than that reported by other institutions. There was a relatively large normal variation and a small amount of increased concentration in the areas of pathology. Diagnostic value was found to be quite limited. Before the study had progressed sufficiently enough to yield reportable data, personnel transfers and work load shifts incident to the Korean crisis caused suspension of the study in 1950.

Document: From: Jennifer Young, Radiation Experiments Command Center To: For the Record. Subject: Approval to include Navy studies in the event database. Document Types: Memorandum. Document Date: 29 June 1998.

Newly Identified Events

NAVY 1944-1974 (CONTINUED)

Naval Hospital, Bethesda, MD

Document: From: K.G. Mendenhall, Captain, Medical Service Corps, US Navy To: Joan Ma Pierre, Director, Radiation Experiments Command Center. Subject: Response to May 7, 1998 memorandum regarding studies at Naval Hospital in Bethesda from 1950 - 1954. Document Types: Letter. Document Date: 18 May 1998.

Start Date	Number	Title
1949	NNMC-147	Radioactive Tracers in Studying Blood Flow (NM 007 089.11)

Abstract: From 1949 until 1950, researchers at the Naval Hospital, Bethesda studied radioactive tracers and blood flow. The objectives of the study were to study the value of radioactive tracers as an aid in the determination of the vascular supply of extremities in acute and chronic vascular conditions; to determine the site of election for amputation; and to determine the efficiency of the various methods of treatment of vascular disorders. Injured or diseased extremities were to be compared with the normal extremities for the amount of tracer substance present. Criteria used in this study for this type of method had been that it could be used routinely on all cases presenting the special diagnostic problems which might have been referred to the laboratory. The original plan in this study had been to use radioactive sodium 24, Na-24, as the tracer substance, which was to be used intravenously and intramuscularly. However, radioactive gallium 72, Ga-72, was used. It was significant that the activity strength and the shielding problems with Ga-72 were almost exactly the same as those which would have likely been encountered with Na-24. It was considered that the experience gained had been of definite value in the use of radiogallium and of radioiodine, and became routinely used in the laboratory. Before the study had progressed sufficiently enough to yield reportable data, personnel transfers and work load shifts incident to the Korean crisis caused suspension of the study in 1950.

Document: From: Jennifer Young, Radiation Experiments Command Center To: For the Record. Subject: Approval to include Navy studies in the event database. Document Types: Memorandum. Document Date: 29 June 1998.

Document: From: K.G. Mendenhall, Captain, Medical Service Corps, US Navy To: Joan Ma Pierre, Director, Radiation Experiments Command Center. Subject: Response to May 7, 1998 memorandum regarding studies at Naval Hospital in Bethesda from 1950 - 1954. Document Types: Letter. Document Date: 18 May 1998.

Start Date	Number	Title
1953	NNMC-148	Use of S-35-labeled Sulfate to Measure Extracellular Fluid (NM 007 089.29)

Abstract: From 1953 until a presently undetermined date, researchers at the Naval Hospital, Bethesda studied the use of sulfur 35 labeled sulfate to measure extracellular fluid. The objectives of the study were to make available to the Navy a practical method of measuring extracellular fluid volume as an aid in management of patients and to determine the effect of medical therapy or surgery upon blood volume and extracellular fluid volume in selective patients. The technique was incorporated into a routine laboratory procedure. Information on the number of participants, on radiation dose and on results is not available at this time.

Document: From: K.G. Mendenhall, Captain, Medical Service Corps, US Navy To: Joan Ma Pierre, Director, Radiation Experiments Command Center. Subject: Response to May 7, 1998 memorandum regarding studies at Naval Hospital in Bethesda from 1950 - 1954. Document Types: Letter. Document Date: 18 May 1998.

Document: From: Jennifer Young, Radiation Experiments Command Center To: For the Record. Subject: Approval to include Navy studies in the event database. Document Types: Memorandum. Document Date: 29 June 1998.

Newly Identified Events

NAVY 1944-1974 (CONTINUED)

Naval Medical Research Unit 2, Taipei, Taiwan

Start Date	Number	Title
1973	NMRU2-10	Body Composition and Starvation (Physiology of Weight Loss and Weight Gain)

Abstract: From July 1973 to June 1976 researchers from the Naval Medical Research Unit 2 Taipei, Taiwan were to have investigated the processes of weight gain and weight loss under diet and exercise to examine changes in body composition under stress introduced by these weight changes. The objective of this proposed investigation was to select the most useful program for both weight loss and gain. A whole body counter was to be used in the determination of lean body mass and a tritium dilution to determine total body waters. Krypton-85 and specific gravity would also have been used to generate the percentage of fat. American volunteers from the American Taipei community and military-age varsity team members from the Taipei American School swimming and track teams were to be included in the study. Abdominal fat shielding among obese patients when attempting to use the whole body counter and the high altitude environment would have posed potential difficulties in obtaining the desired measurements. Anthropomorphic measurements, exchangeable sodium and potassium in adults, as well as clinical histories could have been used to gain correlation with other measurements in these cases. Information on the number of participants, on radiation doses and study results is not available at this time.

Document: Authors: R.T. Devine, Colonel. Title: Physiology of Weight Loss and Weight Gain. Document Types: Report. Document Date: July 1976 est.

Document: Authors: R.T. Devine. Subject: Study NMRU2-10: Body Composition and Starvation [investigation of physiological changes]. Document Types: Event Profile. Document Date: 1994.

Document: Authors: [Unstated]. Title: The Department of the Navy Report of Human Radiation Experiments: Identification of Organizations That Might Have Conducted or Sponsored Human Radiation Experiments. Document Types: Report. Document Date: 28 February 1994.

Document: From: Claud Bailey, Jr, Colonel, Deputy Director, Command Center To: Captain Mendenhall, Officer-in-Charge, Naval Dosimetry Center. Subject: Review of human radiation experiment material. Document Types: Memorandum; List. Document Date: January 1996 est.

Document: From: J.W. Murray, Captain To: Inquirer [name redacted]. Subject: Follow up on inquiry. Document Types: Letter. Document Date: 28 April 2000.

University of California, Berkeley, CA

Start Date	Number	Title
1947	RECC115	Distribution of Gases, Electrolytes and Water in the Body

Abstract: From February 1947 until approximately 1951, researchers from the University of California, Berkeley, CA performed studies on the tissue distribution of inhaled radioactive carbon monoxide. They found that a very fast component (half-time of 0.28 to 0.88 minute) was believed to represent the mixing of carbon monoxide with blood. Investigators examined various techniques for studying the distribution dynamics of intravenously administered substances. A technique was perfected and then applied with sodium 24 (Na-24), sulfur 35 (S-35), radioactive water, and red blood cells labeled with phosphorous 32 (P-32). Researchers found that a relationship of diagnostic interest between the distribution time and cardio-vascular disease existed. The components in the distribution curve were believed to represent such phases of mixing as intra-vascular blood mixing, extra-vascular fluid mixing, penetration into cells and cell accretions, and elimination. S-35-labeled sulfate ion was administered intravenously in five young, normal

Newly Identified Events

NAVY 1944-1974 (CONTINUED)

University of California, Berkeley, CA (continued)

men and one young, normal woman and arterial plasma concentration curves were obtained. Urine concentration measurements with labeled sulfate reflected the behavior of plasma concentration. It was also noted that 4 days after the intravenous administration of labeled sulfate more than 13 percent of the dose was not eliminated in the urine. Simultaneous measurement of labeled sulfate excretion in the feces revealed that only 1.5 percent of the total administered was lost by this route. Investigators believed that approximately 15 percent of labeled sulfate injected intravenously was incorporated into a body pool of sulfur from which it was released slowly with a half-time of about 16 days. Further studies were anticipated using labeled water, radiopotassium and radiosodium. Information on radiation dose is not available at this time.

Document: Authors: [Unstated]. Title: Clinical and Nutritional Biochemistry. Document Types: Report. Document Date: 30 June 1950.

Document: Authors: [Unstated]. Title: Physiological Basis of Treatment and Rehabilitation. Document Types: Report. Document Date: 01 July 1950.

Document: Authors: Nello Pace; Robert Loevinger; Enrique Strajman. Title: In Vivo Geiger-Muller Gamma-Ray Counter for Radioisotope Distribution Studies: Journal: Science, Issue January 16, 1948. Document Types: Journal Article. Document Date: 16 January 1948.

Document: Authors: [Unstated]. Title: Human Radiation Studies: Remembering the Early Years. Document Types: Report; Resume. Document Date: June 1995.

Document: Authors: Ray Fong, Commander, US Navy. Title: HRE Review Comment Sheet [Distribution of Gases, Electrolytes and Water in the Body]. Document Types: Event Profile; Research Summary. Document Date: 6 March 2002.

LAST PAGE