

Brooks AFB

## Administration of Radioactive Materials to Humans for Research Purposes

<u>NUMBER</u>	<u>TITLE OF INVESTIGATION</u>	<u>MATERIAL INVOLVED # SUBJECTS</u>	<u>DESCRIPTION OF RESEARCH AIMS</u>	<u>CONSENT</u>
1	Pulmonary Blood Flow and Ventilation Distribution During Weightlessness (1967)	133 Xenon (1.0 mCi) 10	Study changes of pulmonary blood flow and ventilation from 1 G to weightless conditions	Yes mentioned in the license
2	none (1967)	51 Cr, 59 Fe (dose is below the lower limits allowed) 8	To quantitate the rate of erythropoiesis during bedrest with application of ferrokinetics	Not with the protocol
3	Effects of Acceleration on Glomerular Filtration Rate and Effective Renal Plasma Flow (1967)	I 125, I 131 (50 mC of each) 10	To study renal glomerular filtration rates and effective renal plasma flow in human experimental subjects during acceleration stress on the USAFSAM HumanCentrifuge	Yes, implied as subjects from an experimental panel at USAFSAM
4	The Effect of Total Body Exercise on the Metabolic and Cardiovascular Consequences of Prolonged Weightlessness (1968)	Cr 51, I 125, Deuterium, Fe 59 32	Determine the effect of total body exercise on prevention of metabolic and cardiovascular consequences of weightlessness. Also to determine the amount of exercise required to prevent complications of weightlessness.	Yes informed, and written consent in the protocol
5	The Use of Chlorothiazide Under Simulated Flying Conditions (1968)	Cr 51, I 125 (40 millirads) 24	Study physiologic responses and psychomotor performance of human volunteers under simulated flying conditions following the administration of chlorothiazide.	Yes informed, and written consent in the protocol
6	Hematologic Responses to a Continuous 30-Day Exposure to an Atmosphere of Hypobaric Oxygen Accompanied by Exaggerated Activity and Inactivity Followed by an Acute Exposure to Transverse G Forces (1969)	Cr 51 (85 mC) I 125 (6 mC) C 14 (50 mC) 8	Observe testosterone, thyroid, kidney, and RBCs looking for alterations during hyperoxia and possible alterations in RBC mass.	Yes informed, and written consent in the protocol
7	Relationship of Thyroid Hormone Metabolism and Physical Activity in USAF Aircrew Personnel (1971)	I 125 (50-100 mC) I 131 (50-100 mC) 25	To investigate the relationship of increased and decreased states of physical activity and thyroid function. Also, to relate the findings observed to overall performance capability in USAF aircrew.	Extensive prescreening probably did involve consent

Brooks AFB

Administration of Radioactive Materials to Humans for Research Purposes

8	Measurement of Thyroxine / Triiodothyronine Turnover in Relation to Level of Physical Activity in Man (1972)	I 125 (30 mC) I 131 (0.05-0.12 mCi)	28	To investigate the relationship of an increased state of physical activity and thyroid metabolism. to determine the physiologic responses to provocative, sub-maximal exercise tests both before and after a period of intense exercise training.	Yes informed, and written consent in the protocol
9	Metabolic Responses to Sustained High G Accelerational Stress in USAF Personnel (1973)	I 131 labeled T3 (62.5 mCi twice during the experiment)	32	To quantitate metabolic responses to operational stress utilizing isotopic techniques to assess the peripheral metabolism, secretion, and plasma concentration of triiodothyronine (T3). Also to evaluate adrenocortical response to the centrifugal stress by the measurement of levels of plasma cortisol and urinary glucocorticoid metabolites.	Yes informed, and written consent in the protocol