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PREFACE

This bibliography contains publications resulting from research supported by the Cardiopulmonary Discipline of the NASA Space Physiology and Countermeasures Program during the years 1980-1990. It is one of a series of four bibliographies being published in 1992 of the disciplines of the Space Physiology and Countermeasures Program. Others in this series include publications from the Regulatory Physiology, Musculoskeletal, and Neuroscience Disciplines. Portions of this compilation have been published previously as part of a series of bibliographies of space biomedical research. Previous editions in this series cover the years 1980-1982 (NASA CR-3587), 1982-1983 (NASA CR-3739), 1983-1984 (NASA CR-3860), 1984-1986 (NASA CR-4184), and 1987-1988 (NASA CR-187840).

This bibliography is divided into sections: Fluid Shifts, Cardiovascular Fitness and Exercise, Cardiovascular Physiology, Pulmonary Physiology, and General Physiology. The Fluid Shifts section is concerned with the effects of the headward fluid shift, which occurs in weightlessness, on cardiovascular function, kidney function, and the renin-angiotensin system. (Other fluid and electrolyte references can be found in *Publications of the Space Physiology and Countermeasures Program, Regulatory Physiology Discipline: 1980-1990*, NASA CR-4469.) The Cardiovascular Fitness and Exercise section incorporates studies of cardiovascular fitness, exercise dynamics, and the correlation of differences in fitness levels and cardiovascular changes. The Cardiovascular Physiology section includes references on general cardiovascular functioning or references that incorporate elements of more than one of the previous sections. The Pulmonary Physiology section involves studies of the pulmonary system, including lung function and gas exchange. The last section, General Physiology, is included to provide the reader with additional, background material in space physiology research. NASA-funded investigators whose work resulted in these publications are identified by an asterisk. A principal investigator index of researchers conducting Cardiopulmonary investigations, as well as a list of Cardiopulmonary investigators and their affiliations, are also included in the bibliography.

As part of our continuing interaction with the scientific and professional community, we are pleased to present this bibliography in an effort to stimulate an exchange of information and ideas among scientists working in this discipline. I would like to thank April Commodore Roy and Audrey Robin Brown for their technical assistance in the production of this bibliography.

Janis H. Stoklosa, Ph.D.
Manager, Space Physiology and Countermeasures Program
INTRODUCTION

The Cardiopulmonary Discipline is part of the Space Physiology and Countermeasures Program of the NASA Life Sciences Division. Space life sciences research was initiated in 1960 with the goal of enabling human survival in space. Now, in the late 20th century, the program is evolving to ensure human health and productivity on space missions: on the space shuttle in the 1990s, then on Space Station Freedom, and ultimately on the Moon and missions to Mars.

The goals of the Cardiopulmonary Discipline are to understand the acute and long-term cardiovascular and pulmonary adaptation to space and readaptation to a gravity environment, including the associated mechanisms, and to develop physiological countermeasures to ensure crew health in space and on return to Earth. The Cardiopulmonary research program is comprised of two subdisciplines: Cardiovascular and Pulmonary. This multidisciplinary effort incorporates basic, applied, and operational research, both ground-based and in-flight. Research, conducted at NASA centers and in universities, includes human and animal (rats and non-human primates) subjects.

The Cardiovascular subdiscipline is concerned with the nature, time course, and sequence of cardiovascular adjustments to spaceflight. It also seeks to determine the most effective countermeasures (e.g., lower body negative pressure, fluid rehydration, pharmacology, centrifugation, exercise and/or anti-g devices) to combat adverse cardiovascular effects and when and how they should be applied. Other areas of interest include orthostatic hypotension, cardiovascular responses to extravehicular activity (EVA), and the relationship between the cardiovascular adjustments to spaceflight and those occurring in Earth-based models such as bedrest, immersion, and head-down tilt.

The Pulmonary subdiscipline includes the study of the effects of the space environment on lung function. Specific areas of interest include lung volume, ventilation and blood flow, changes in respiratory muscle structure and function, gas exchange, and the penetration by aerosol particles in the lung. It is also concerned with the relationship between the pulmonary adjustments to spaceflight and those occurring in Earth-based models such as bedrest, immersion, and head-down tilt.

Janis H. Stoklosa, Ph.D.
Manager, Space Physiology and Countermeasures Program
FLUID SHIFTS
The effect of continuous passive motion on muscle compartment pressure and femoral vein flow in the lower extremity (Abstract).  

Effect of simulated weightlessness on the postural response of microvascular cutaneous blood flow.  
*Physiologist 33(1, Suppl.): SS4-SS5, 1990.  (GWU 11705)

Variations of the renal flow in relation with the volemia.  
*Physiologist 33(1, Suppl.): S175-S176, 1990.  (GWU 11707)

Effects of a 10-day period of 6° head down tilt (HDT).  
*Physiologist 33(1, Suppl.): S163-S164, 1990.  (GWU 13528)

Fluid distribution pattern induced by intravenous fluid loading during HDT.  
Paper presented at the 40th Congress of the International Astronautical Federation, Malaga, Spain, October 7-12, 1989, 5 p.  (IAF-89-599)  (GWU 12620)

Barbella, Y.R.; Keil*, L.C.; Wurpel, J.N.D.; Severs*, W.B.  
Cerebrospinal fluid pressure during cerebroventricular infusion of angiotensin and vasopressin.  

Barney, C.C.; Threatte, R.M.; Fregly, M.J.  (Greenleaf, J.E. = P.I.)  
Water deprivation induced drinking in rats: Role of extracellular vs. intracellular components (Abstract).  
*Physiologist 24(4): 12, 1981.  (GWU 2296)

Barney, C.C.; Threatte, R.M.; Kikta, D.C.; Fregly, M.J.  (Greenleaf, J.E. = P.I.)  
Effects of serotonin and L-5-hydroxytryptophan on plasma renin activity in rats.  

Beckett, W.; Fortney*, S.; Turner, C.; Vroman, N.  
Plasma volume responses during exercise following bedrest (Abstract).  
*Federation Proceedings 42(3): 584, 1983.  (GWU 4794)

Ben, L.K.; Maselli, J.; Keil*, L.C.; Reid, I.A.  
Role of the renin-angiotensin system in the control of vasopressin and ACTH secretion during the development of renal hypertension in dogs.  

Benjamin, B.A.; Keil*, L.C.; Shapiro, M.S.; Kirschenbaum, M.A.; Bricker*, N.S.; Sandler*, H.  
Physiologic response of water immersion in the rhesus monkey (Abstract).  

Benjamin, B.A.; Shapiro, M.S.; Bricker*, N.S.; Sandler*, H.A.  
Water immersion in the conscious rhesus monkey (Abstract).  
Benjamin, B.A.; Shapiro, M.S.; Kirschenbaum, M.A.; Sandler*, H.; Bricker*, N.S. 
Studies of the biological control system for extracellular fluid (ECF) volume regulation: The search for a detector element (DE) (Abstract).

Berry, J.J.; Montgomery, L.D.; Goldwater*, D.; Bagian, J.; Sandler*, H. 
Hemodynamic response of women 46 to 55 years to +Gz acceleration before and after bed rest.

Bhagat*, P.K. 
Apparatus for determining changes in limb volume (Patent). 

An ultrasonic plethysmograph for space flight applications. 
Aviation, Space, and Environmental Medicine 51(2): 185-188, 1980. (GWU 1267)

Bhagat*, P.K.; Nickell, W.T.; Wu, V.C. 
Ultrasonic quantification of skin and muscle hemo dynamics (Abstract). 
Biomaterials, Medical Devices, and Artificial Organs 9(4): 320, 1981. (GWU 4563)

Bigaud, M.; Kohin, S.; Scicli, A.G.; Vatner*, S.F. 
Cardiovascular effects of endothelin in conscious dogs (Abstract). 

Bigaud, M.; Kohin, S.; Vatner*, S.F. 
Differential vasoconstriction induced by endothelin in conscious dogs (Abstract). 

Bigaud, M.; Vatner*, S.F. 
Effects of endothelin on cardiac function in conscious dogs (Abstract). 

Bigaud, M.; Vatner*, S.F. 
Opposing regional vasodilator and vasoconstrictor actions of endothelin-1 in conscious dogs (Abstract). 

The effect of metoclopramide on plasma aldosterone in the rhesus monkey (Macaca mulatta) (Abstract). 

The effects of dopamine and metoclopramide on the control of plasma aldosterone in the rhesus monkey (Abstract). 

Hormonal and renal response to plasma volume expansion in the primate Macaca mulatta. 
American Journal of Physiology 244: H201-H205, 1983. (GWU 4295)

Blamick, C.A.; Goldwater*, D.J.; Convertino*, V.A. 
Leg vascular responsiveness during acute orthostasis following simulated weightlessness. 

Blamick, C.A.; Goldwater*, D.J.; Convertino*, V.A. 
Vascular smooth muscle alpha receptor responsiveness during acute orthostasis following simulated weightlessness (Abstract). 
Physiologist 28(4): 345, 1985. (GWU 7085)
Blomqvist*, C.G.
Fluid and electrolyte shifts.

Bricker*, N.S.
The biologic control system for phosphate in health and its modifications in chronic renal disease.
*Contributions to Nephrology* 20: 46-55, 1980. (GWU 3092)

Bricker*, N.S.
Sodium homeostasis in chronic renal disease.

Bricker*, N.S.; Danovitch, G.M.
Extracellular fluid volume regulation: On the evidence for a biologic control system.

Bricker*, N.S.; Krishna, G.G.
The relationship of natriuretic factor (NF) to the natriuresis of central volume expansion (CVE) during day (D) vs. night (N) (Abstract).

Brooks, V.L.; Blakemore, L.J.; Keil*, L.C.
Intravenous vasopressin infusion decreases plasma ACTH concentration in conscious dogs.

The effect of metoclopramide and dopamine on plasma aldosterone concentration in normal man and rhesus monkeys (*Macaca mulatta*): A new model to study dopamine control of aldosterone secretion.

Buckey*, J.C.; Lane, L.D.; Plath, G.; Baisch, F.; Gaffney*, F.A.; Blomqvist*, C.G.
Effects of 10 days of head down tilt on the compliance of the lower limb (Abstract).
Abstract of a paper presented at the Eleventh Annual Meeting, IUPS Commission on Gravitational Physiology, Lyon, France, September 24-27, 1989, 1 p. (GWU 10730)

Buckey*, J.C.; Lane, L.D.; Plath, G.; Gaffney*, F.A.; Baisch, F.; Blomqvist*, C.G.
Effects of head down tilt for 10 days on the compliance of the lower limb.
*Physiologist* 33(1, Suppl.): S167-S168, 1990. (GWU 11709)

Buckey*, J.C.; Peshock, R.M.; Blomqvist*, C.G.
Deep venous contribution to hydrostatic blood volume change in the human leg.

Buckey, J.C.; Peshock, R.M.; Blomqvist*, C.G.
Limb compliance by NMR: Deep venous contribution to volume change (Abstract).

Buckey*, J.C.; Watenpaugh, D.E.; Lane, L.D.; Charles*, J.B.; Harvey, W.; Blomqvist*, C.G.
Central venous pressure during a simulated shuttle launch profile (Abstract).

Bungo*, M.W.; Charles*, J.B.; Johnson*, P.C., Jr.
Cardiovascular deconditioning during space flight and the use of saline as a countermeasure to orthostatic intolerance.
*Aviation, Space, and Environmental Medicine* 56(10): 985-990, 1985. (GWU 6731)
Bungo*, M.W.; Charles, J.B.; Johnson*, P.C., Jr.
Hemodynamic measurements of shuttle crews and the use of saline countermeasure (Abstract).

Bungo*, M.W.; Cintron*, N.M.; Charles*, J.B.; Huntoon*, C.L.
Biochemical effects of oral saline consumption as a countermeasure to post-space flight orthostatic intolerance (Abstract).
*Aviation, Space, and Environmental Medicine* 56(5): 481, 1985. (GWU 7930)

Bungo*, M.W.; Frey*, M.A.B.; Riddle, J.M.; Charles*, J.B.
Effect of hyperosmotic saline ingestion on plasma volume and urine flow (Abstract).
*Aviation, Space, and Environmental Medicine* 60(5): 499, 1989. (GWU 14338)

Carlson, W.; Feldman, R.; Haber*, E.
Three dimensional structure of renin and implications for the binding of renin inhibitors (Abstract).

Chan, A.Y.M.; Cheng, M.-L.L.; Keil*, L.C.; Myers, B.D.
Functional response of healthy and diseased glomeruli to a large, protein-rich meal.

Charles*, J.
Possible cardiovascular effects of exposure to gravity fields of between zero and one g (Abstract).

Charles*, J.B.; Bennett, B.S.; Mukai, C.N.; Elton, K.F.; Lathers, C.M.
Changes in blood pressure and total peripheral resistance associated with parabolic flight (Abstract).
*Aviation, Space, and Environmental Medicine* 60(5): 509, 1989. (GWU 14348)

Charles*, J.B.; Bungo*, M.W.
Cardiovascular physiology in space flight.

Charles*, J.B.; Elton, K.F.; Holt, T.A.; Bungo*, M.W.
Acute hemodynamic responses to weightlessness in humans (Abstract).

Cho, Y.I.; Back*, L.H.
Local pressure measurements and flow separation in a coronary artery cast (Abstract).

Cho, Y.I.; Back*, L.H.; Crawford, D.W.
Pressure difference-flow rate variation in a femoral artery branch casting of man for steady flow.
*Journal of Biomechanical Engineering* 105: 258-262, 1983. (GWU 5750)

Cho, Y.I.; Back*, L.H.; Crawford, D.W.; Cuffel, R.F.
Experimental study of pulsatile and steady flow through a smooth tube and an atherosclerotic coronary artery casting of man.
*Journal of Biomechanics* 16(11): 933-946, 1983. (GWU 6064)

Churchill*, S.E.; Natale, M.E.; Warach, S.J.; Moore-Ede*, M.C.
Renal and cardiovascular responses in a primate model (LBPP) for weightlessness-induced central volume expansion (Abstract).
In: *Abstracts of Papers, Physiologic Adaptation of Man in Space, 7th International Man in Space Symposium*, Houston, TX, February 10-13, 1986, 1 p. (GWU 8581)
Cody, R.J.; Burton, J.; Evin, G.; Poulsen, K.; Herd, J.A.; Haber*, E.  
A substrate analog inhibitor of renin that is effective in vivo.  

Vascular resistance vs. perfusate osmolarity: The short term microvascular effect of hypotonic and hypertonic perfusion in the isolated kidney.  

Convertino, V.A. (Greenleaf, J.E. = P.I.)  
Heart rate and sweat rate responses associated with exercise-induced hypervolemia.  

Convertino, V.A.; Benjamin, B.A.; Keil*, L.C.; Sandler*, H.  
Role of cardiac volume receptors in the control of ADH release during acute simulated weightlessness in man.  
*Physiologist* 27(6, Suppl.): S51-S52, 1984. (GWU 6224)

Role of cardiac volume receptors in the control of antidiuretic hormone (ADH) release in man (Abstract).  
*Physiologist* 26(4): A60, 1983. (GWU 4777)

Convertino*, V.A.; Doerr, D.F.; Flores, J.F.; Hoffler*, G.W.; Buchanan*, P.  
Leg size and muscle functions associated with leg compliance.  

Convertino*, V.A.; Doerr, D.F.; Flores, J.F.; Hoffler*, G.W.; Buchanan*, P.  
Physical and physiological factors associated with compliance of the leg (Abstract).  

Convertino*, V.A.; Doerr, D.F.; Stein, S.L.  
Changes in size and compliance of the calf after 30 days of simulated microgravity.  

Haemodynamic and ADH responses to central blood volume shifts in cardiac-denervated humans.  

Crenshaw, A.G.; Hargens*, A.R.; Gershuni, D.H.; Rydevik, B.  
Wide tourniquet cuffs more effective at lower inflation pressures.  

Crenshaw, A.G.; Hargens*, A.R.; Mubarak, S.J.  
A new fiber optic "transducer-tipped" catheter for measuring intramuscular pressures (Abstract).  

Crenshaw, A.G.; Styf, J.R.; Aratow, M.; Hargens*, A.R.  
A fiber optic transducer-tipped catheter for measuring intramuscular pressures during exercise (Abstract).  

Crenshaw, A.G.; Styf, J.R.; Mubarak, S.J.; Hargens*, A.R.  
A new "transducer-tipped" fiber optic catheter for measuring intramuscular pressures.  
Dallman, M.F.; Vernikos*, J.; Keil*, L.C.; O'Hara, D.; Convertino, V.
Hormonal, fluid and electrolyte responses to 6° anti-orthostatic bed rest in healthy male subjects.

Danovitch, G.M.; Krishna, G.G. (Bricker, N. = P.I.)
Renal responses to central vascular expansion in nephrotic syndrome (Abstract).

Effect of immobilization and knee flexion on uptake of 35-S sulfate in the meniscus (Abstract).

Regional cell density and nutrition of menisci with rest and continuous passive motion (CPM) (Abstract).

Regional cell density and nutrition of menisci with rest and continuous passive motion (CPM) (Abstract).

Increased transsynovial transport with continuous passive motion.

Davis', LE.; Vroman, N.B.; Tankersley, C.G.; Fortney*, S.M.
Forearm venoconstrictor responses following bedrest (Abstract).

Del Bo, A.; Sved, A.F.; Reis*, D.J.
Fastigial stimulation releases vasopressin in amounts that elevate arterial pressure.

Hormonal and renal responses to plasma volume expansion after horizontal restraint in the rhesus monkey.
*Physiologist* 25(6, Suppl.): S75-S76, 1982. (GWU 4231)

Hormonal and renal responses to plasma volume expansion after horizontal restraint in the rhesus monkey.

Hormonal and renal responses to plasma volume expansion after horizontal restraint in the rhesus monkey (Abstract).
*Physiologist* 25(4): 196, 1982. (GWU 3404)

Arginine vasopressin and prolactin after hemorrhage in the fetal lamb.

Aldosterone (ALDO) infusion into the subcommissural organ (SCO) affects adrenal morphology (Abstract).
Application of orthogonal transforms for classification of myocardial backscattered signals (Abstract).
_Ultrasonic Imaging_ 3(2): 207-208, 1981. (GWU 1751)

Biomechanical evaluation of the canine meniscus (Abstract).

The mechanical strength of healed tears in canine menisci (Abstract).

Biomechanical evaluation of the meniscus (Abstract).

Fortney*, S.; Drew, H.; LaFrance, N.
Plasma volume responses during bedrest in healthy women.
In: _Preprints of 1983 Annual Scientific Meeting, Aerospace Medical Association, Houston, TX, May 23-26, 1983._

Fregly, M.J. (Greenleaf, J.E. = P.I.)
Bethanechol-induced water intake in rats: Possible mechanisms of induction (Abstract).
_Federation Proceedings_ 41(3): 1368, 1982. (GWU 4072)

Fregly, M.J.; Fater, D.C. (Greenleaf, J.E. = P.I.)
Effect of the angiotensin I converting enzyme inhibitor, MK-421 on experimentally induced drinking (Abstract).
_Physiologist_ 24(4): 12, 1981. (GWU 2297)

Fregly, M.J.; Fater, D.C.; Greenleaf*, J.E.
Effect of the angiotensin I converting enzyme inhibitor, MK-421, on experimentally induced drinking.

Fregly, M.J.; Greenleaf*, J.E.; Rowland, N.E.
Effect of intraperitoneal and intragastric loading with water and isosmotic solutions of saline and glucose on water intake of dehydrated rats.

Fregly, M.J.; Kelleher, D.L.; Greenleaf*, J.E.
Antidipsogenic effect of clonidine on angiotensin II-, hypertonic saline-, pilocarpine- and dehydration-induced water intakes.
_Brain Research Bulletin_ 7: 661-664, 1981. (GWU 3441)

Fregly, M.J.; Kikta, D.C.; Greenleaf*, J.E.
Bethanechol-induced water intake in rats: Possible mechanisms of induction.

Fregly, M.J.; Rowland, N.E.; Greenleaf*, J.E.
Clonidine antagonism of angiotensin-related drinking: A central site of action.

Fregly, M.J.; Rowland, N.E.; Greenleaf*, J.E.
Effects of yohimbine and tolazoline on isoproterenol and angiotensin II-induced water intake in rats.
Fregly, M.J.; Rowland, N.E.; Greenleaf*, J.E.  
A role for presynaptic $\alpha_2$-adrenoceptors in angiotensin II-induced drinking in rats.  

Fregly, M.J.; Rowland, N.E.; Williams, C.M.; Greenleaf*, J.E.  
Effect of intracerebroventricularly administered octopamines and synephrines on angiotensin II-induced water intake in rats.  

Frey*, M.A.B.; Hoffler*, G.W.  
Association of sex and age with responses to lower-body negative pressure.  

Frey*, M.A.B.; Tomaselli, C.M.; Kenney, R.A.; Hoffler*, G.W.  
Cardiovascular dynamics during the first hour of 6° head-down tilt (Abstract).  
*Physiologist 28(4): 345, 1985. (GWU 7118)

Myoneural necrosis following high-frequency electrical stimulation of the cast-immobilized rabbit hindlimb.  

Fridén, J.; Sfakianos, P.N.; Hargens*, A.R.  
Blood indices of muscle injury associated with eccentric muscle contractions.  

Fridén, J.; Sfakianos, P.N.; Hargens*, A.R.; Akeson, W.H.  
Residual muscular swelling after repetitive eccentric contractions.  

Management of chronic exertional anterior compartment syndrome of the lower extremity.  

Fryer, T.B. (Lund, G.F. = P.I.)  
Induction powered biological radiosonde (Patent).  

Gaffney*, F.A.; Bastian, B.C.; Thal, E.R.; Atkins, J.M.; Blomqvist*, C.G.  
Passive leg raising does not produce a significant or sustained autotransfusion effect.  
*Journal of Trauma 22(3): 190-193, 1982. (GWU 4547)

The effects of a 10-day period of head-down tilt on the cardiovascular responses to intravenous saline loading.  
*Physiologist 33(1, Suppl.): S171-S172, 1990. (GWU 11710)

Gaffney*, F.A.; Nixon, J.V.; Karlsson, E.S.; Campbell, W.; Dowdey, A.B.C.; Blomqvist*, C.G.  
Cardiovascular deconditioning produced by 20 hours of bedrest with head-down tilt (-5°) in middle-aged healthy men.  

Gaffney*, F.A.; Raven, P.B.; Saito, M.; Schutte, J.; Blomqvist*, C.G.  
The effect of lower body negative pressure (LBNP) as modified by body surface cooling.  
(ESA SP-1033) (GWU 7262)


New osmometer for rapid, equilibrium measurement of swelling pressure of nucleus pulposus (Abstract).

Comparison of orthostatic intolerance following horizontal or -6° head-down bed rest simulation of weightlessness.

Goldwater*, D.J.; Conventino, V.A.; Sandler*, H.
Acceleration tolerance in 55 to 65 year old men after shuttle flight simulation.

Goldwater*, D.J.; O'Hara, D.B.; Sandler*, H.
Increased hematuria following hypergravic exposure in middle-aged women.
Physiologist 25(6, Suppl.): S167-S170, 1982. (GWU 3824)

Goldwater*, D.J.; O'Hara, D.B.; Sandler*, H.
Increased hematuria following hypergravic exposure in middle-aged women (Abstract).

Goldwater*, D.J.; Sandler*, H.
Orthostatic and acceleration tolerance in 55 to 65 y. o. men and women after weightlessness simulation.

Golin, R.; Gotoh, E.; Keil*, L.; Ganong, W.F.
Role of sympathetic nervous system and circulating vasopressin in the renin response to immobilization in rats (Abstract).
In: Abstract of Papers, Proceedings of the 12th Scientific Meeting of the International Society of Hypertension, Kyoto, Japan, May 22-26, 1988, Abstract No. 0972. (GWU 11359)

Golin, R.; Keil*, L.; Ganong, W.F.
Effect of head-up tilt on plasma vasopressin, heart rate, and blood pressure in anesthetized rats (Abstract).

Lack of effect of vasopressin replacement on renin hypersecretion in Brattleboro rats.

Gott, S.A.; Hargens*, A.R.; Garfin, S.R.; Rydevik, B.L.; Brown, M.D.
Swelling pressure of nucleus pulposus from herniated and intact human intervertebral discs (Abstract).

Comparative swelling pressures of intervertebral disc nucleus pulposus (Abstract).

Greenleaf*, J.E.
The body's need for fluids.

Greenleaf*, J.E.
Dehydration-induced drinking in humans.
Federation Proceedings 41(9): 2509-2514, 1982. (GWU 3363)
Greenleaf*, J.E.
Mechanism for negative water balance during weightlessness: An hypothesis.

Greenleaf*, J.E.
Mechanisms for negative water balance during weightlessness: Immersion or bed rest?
*Physiologist* 28(6, Suppl.): S38-S39, 1985. (GWU 6580)

Greenleaf*, J.E.
Mechanisms for negative water balance during weightlessness: Immersion or bed rest (Abstract).

Greenleaf*, J.E.
Physiology of fluid and electrolyte responses during inactivity: Water immersion and bed rest.

Greenleaf*, J.E.; Brock, P.J.
Na+ and Ca2+ ingestion: Plasma volume-electrolyte distribution at rest and exercise.

Effect of hypovolemia, infusion, and oral rehydration on plasma electrolytes, ADH, renin activity, and +G tolerance (Abstract).

Greenleaf*, J.E.; Brock, P.J.; Keil*, L.C.; Morse, J.T.
Drinking and water balance during exercise and heat acclimation.

Greenleaf*, J.E.; Fregly, M.J.
Dehydration-induced drinking: Peripheral and central aspects.
*Federation Proceedings* 41(9): 2507-2508, 1982. (GWU 3340)

Greenleaf*, J.E.; Geelen, G.; Keil*, L.C.; Kravik, S.E.; Wade, C.E.; Thrasher, T.N.; Barnes, P.R.; Pyka, G.; Nesvig, C.
Effects of drinking on plasma vasopressin, renin, and aldosterone in dehydrated humans (Abstract).

Greenleaf*, J.E.; Harrison, M.H.
Water and electrolytes.

Greenleaf*, J.E.; Hinghofer-Szalkay, H.

Greenleaf*, J.E.; Morse, J.T.; Barnes, P.R.; Silver, J.; Keil*, L.
Hypervolemia and plasma vasopressin suppression during water immersion in man (Abstract).
*Federation Proceedings* 41: 1750, 1982. (GWU 4059)

Greenleaf*, J.E.; Morse, J.T.; Barnes, P.R.; Silver, J.; Keil*, L.C.
Hypervolemia and plasma vasopressin response during water immersion in men.

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Effect of dehydration on thirst and drinking during immersion in men (Abstract).  

Greenleaf*, J.E.; Shvartz, E.; Keil*, L.C.  
Fluid-electrolyte shifts in man during water immersion (Abstract).  

Greenleaf*, J.E.; Shvartz, E.; Keil*, L.C.  
Hemodilution, vasopressin suppression, and diuresis during water immersion in man.  

Greenleaf*, J.E.; Shvartz, E.; Keil*, L.C.  
Fluid shifts and endocrine responses during chair rest and water immersion in man.  

Fluid-electrolyte shifts and thermoregulation: Rest and work in heat with head cooling.  

Effect of vasopressin blockade on blood pressure during water deprivation in intact and baroreceptor-denervated conscious dogs.  

Gregory, L.C.; Quillen, E.W., Jr.; Keil*, L.C.; Reid, I.A.  
Effect of baroreceptor denervation on the inhibition of renin release by vasopression.  

Gupta, V.N.; Bhagat*, P.K.; Ott, C.E.; Fried, A.M.  
Ultrasound characterization of acute renal failure.  

Haber*, E.  
Control of renin action: Inhibitors and antibodies.  
In: *Hypertension and the Angiotensin System: Therapeutic Approaches* (Doyle, A.E., Bearn, A.G., Eds.).  

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Immunological probes in cardiovascular disease.  

Halperin, E.S.; Summy-Long, J.Y.; Keil*, L.C.; Severs*, W.B.  
Aspects of salt/water balance after cerebroventricular infusion of angiotensin II.  
*Brain Research*  205: 219-221, 1981.  (GWU 1215)

Hargens*, A.R.  
Comparative aspects of interstitial fluid balance.  

Hargens*, A.R.  
Hemostasis at lower cuff pressures using wider tourniquets.  
Paper presented at the 54th Annual Meeting of the American Academy of Orthopaedic Surgeons, San Francisco, CA,  
January 22-27, 1987, 8 p.  (GWU 10694)
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## Abstract
A 10-year cumulative bibliography of publications resulting from research supported by the cardiopulmonary discipline of the Space Physiology and Countermeasures Program of NASA's Life Sciences Division is provided. Primary subjects included in this bibliography are fluid shifts, cardiovascular fitness, cardiovascular physiology, and pulmonary physiology. General physiology references are also included. Principal investigators whose research tasks resulted in publication are identified by an asterisk. Publications are identified by a record number corresponding with their entry in the Life Sciences Bibliographic Database, maintained at the George Washington University.

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