USSR Space Life Sciences Digest

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Edited by
Lydia Razran Stone
Lockheed Engineering & Sciences Company
Washington, D.C.

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# USSR SPACE LIFE SCIENCES DIGEST

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  - 370-Day antiorthostatic hypokinesia: Goals and research protocol
- On the Pathogenesis of Weightlessness:
- Report on Twenty-first Symposium on Space Biology and Medicine
- The work of the section on Aviation and Space Medicine of the Moscow Physiological Society.
- In the Interests of Public Health
- Medical investigations of long-term manned space flight on-board Salyut-7-Soyuz-T.
- Review of the major results of medical research during the flight of the second prime crew of the Mir Space Station.
- Ninth All-Union Conference on Space Biology and Medicine, Kaluga 18-21 July, 1990

### KEY WORD INDEX
HOW TO USE THIS DOCUMENT

The first section of this document provides bibliographic citations and key words for all abstracts published in Issues 26-29 of the USSR Space Life Sciences Digest. Citations are grouped according to the topic area categories under which the corresponding abstracts were originally included and listed within categories according to issue number. Issue numbers are provided as headings and, in addition, the first number in parentheses after abstract number refers to the appropriate Digest issue. As always, topic areas are presented in alphabetical order.

The second section of this document, starting on page 75, is a key word index. Numbers following each entry in the index refer to page number of the present document. Within the key word list, topic area names are printed in bold face, as are the page numbers for the primary topic area listing. Page numbers not in bold following topic area names refer the reader to relevant abstract originally included under other topic areas.
ADAPTATION

ISSUE 27

MONOGRAPH:

M160(27/90) Vinogradov VV. Gormony, Adaptatsiya i Sistemnyye Reaktsii Organizma; Гормоны, Адаптация и Системные Реакции Организма; [Hormones, Adaptation, and Systemic Reactions.]
[223 pages; 19 Tables; 56 Figures; 538 references]
Affiliation (book): Institute of Biochemistry; Belorussian Academy of Sciences

KEY WORDS: Adaptation; Endocrinology, Hormones, Stress; Biological Rhythms, Seasonal Rhythms; Metabolism; Cardiovascular and Respiratory System

ISSUE 28

PAPERS:

P1239(28/90)* Ivnitskiy YuYu, Moiseyev NYa., Tolerance of mice to various types of hypoxia and X-ray irradiation after exposure to hypoxia. Kosmicheskaia Biologiya i Aviakosmicheskaya Meditsina. 24(1): 32-33.
[21 references; 10 in English]

Tolerance, Hypoxia; Radiobiology, X-rays
Mice
Adaptation, Hypoxia

P1281(28/90)** Shatemirova KK, Zelenshchikova VA, Min'ko YuV. Catalytic properties of monoamine oxidase in adaptation to barochamber hypoxia. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(2): 54-56.
(15 references; 5 in English)

Enzymology, Monoamine Oxidase, Mitochondrial Membrane
Rats
Adaptation, Hypoxia

CONFERENCE REVIEW:


Key Words: Adaptation, High Altitude, Hypoxia, Personnel Selection, Human Performance
ISSUE 29:

PAPER:

P1328(29/90)** Balandina TN, Nikitin Yel, Kovalenko YeA, Savina VP. Biochemical aspects of human adaptation to the combined effects of head-down tilt, decreased barometric pressure and increased level of \( O_2 \). Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(4): 56-57; 1990. [5 references; 1 in English]

Biochemistry, Metabolism, Lipid Peroxidation; Hematology, Erythrocytes
Humans, Males
Adaptation, Head-Down Tilt, Low Barometric Pressure, Hyperoxia, Exercise

BOOK REVIEW:


KEY WORDS: Adaptation, Microclimate, Heat, Human Performance, Industrial Hygiene, Countermeasures, Endocrinology, Metabolism, Mineral Metabolism
AVIATION MEDICINE

ISSUE 27

PAPER:


BOOK REVIEW:


ISSUE 28

PAPERS:

P1252(28/90)* Vlasov VV, Kopanev VI. The effects of working in aviation on health status (epidemiological data). Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(1): 4-9. [56 references; 43 in English] Aviation Medicine, Health Status Humans, Aviation Personnel Aviation Professions

P1271(28/90)**Demircoglan GG, Konakhevic YuG, Petlyuk VKh, Peshkov RV, Khlomenok PN, Sholpo LN, Brazhnik VI. Experimental evaluation of the displacement of center of mass of the body in a man-chair system when the head is nodded. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(2): 24-25; 1990. [1 references; none in English] Biomechanics, Displacement of Center of Mass, Head Nodding Humans Aviation Medicine, Ejection Sear
AVIATION MEDICINE

P1270(28/90)** Nikolayevskiy YeYe.
Diurnal rhythm of lipids, carbohydrates, and certain hormones in blood plasma in healthy pilots.
[22 references; 6 in English]

Metabolism, Lipids, Carbohydrates; Endocrinology
Aviation Medicine, Humans, Pilots
Biological Rhythms, Diurnal Rhythms

ISSUE 29:

PAPER:

P1294(29/90)* Ponomarenko VA.
The category of health as a theoretical problem in aerospace medicine.
[15 references; none in English]

Aviation Medicine, Human Performance, Health, Prophylaxis
Humans, Flight Personnel; Research Program, Equipment and Instrumentation,
Computer Systems
Extreme Factors, Countermeasures, Neurophysiology, Neurotransmitters, Nutrition,
Drugs, Non-Traditional Medicine, Immunology, Psychology, Stress, Stress Protectors,
Metabolism, Endocrinology
BIOLOGICAL RHYTHMS

ISSUE 26

PAPERS:

P1193(26/90) Alyakrinskiy BS.
_The problem of desynchronosis in space flight._
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(5):4-8; 1989.
[33 references; 5 in English]

Biological Rhythms, Desynchronosis; Circadian Rhythms, Work Schedules
Humans, Cosmonauts, Animals
Space Flight; Adaptation Syndrome

P1187(26/89) Alpatov AM.
_An raster-method for analyzing the periodic structure of biological rhythms._
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[4 references; 1 in English]

Biological Rhythms, Periodic Structure
Theoretical Article
Mathematical Modeling, Raster Method

MONOGRAPH:

M158(26/90) Gazenko OG, Editor.
Bioritmologicheskiye issledovaniya v kosmicheskoy biologii i meditsine
[Biological Rhythms In Space Biology and Medicine;]
Volume 64 In series: Problemy Kosmicheskoj Biologii,
[197 pages]

KEY WORDS: Biological Rhythms; Adaptation, Space Flight, Metabolism, Fat, Carbohydrates;
Stress; Cardiovascular and Respiratory Systems; Human Performance, Shift Work,
Endocrinology, Thyroid
BIOLOGICAL RHYTHMS

ISSUE 27

PAPER:

P1204(27/90)* Alpatov Am, Yevstratov YuA., Chernyshev VB, Lebedev MI, Zotov VA.
Free running circadian rhythms in the darkling beetle after space flight.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[9 references; 5 in English]

Biological Rhythms, Circadian Rhythms, Free-Running, Motor Activity
Beetles, Darkling
Space Flight, COSMOS-1887

ISSUE 29:

PAPER:

P1330(29/90)** Komarov FI, Chirkova EN, Suslov LS, Klionskaya AG, Bobina LV, Makarova TB.
Association of annual biological rhythms in red blood counts in healthy individuals and annual rhythms of changes in solar activity.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[11 references; none in English]

Biological Rhythms, Hematology, Red Blood Counts
Humans, Males and Females
BIOSPHERICS

ISSUE 27

MONOGRAPH:

M161(27/9) Khantseverov FR, Ostroukhov VV. Modelirovaniye Kosmicheskikh Sistem Izucheniya Prirodnykh Resursov Zemli; Моделирование Космических Систем Изучения Природных Ресурсов Земли; [Modeling of Space Systems for Studying the Earth's Natural Resources]
Moscow: Mashinostroyenie; 1989.
[264 pages; 69 Figures]

KEY WORDS: Biospherics, Mathematical Modeling, Space Systems, Remote Sensing, Natural Resources
BODY FLUIDS

ISSUE 26

PAPER:

P1180(26/90) *Lobachik VI, Zhidkov VV, Abrosimov SV.

*Body fluid status during a 120-day period of hypokinesia with head-down tilt.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[6 references; none in English]

Body Fluids, Hydration, Extracellular Fluid; Metabolism, Mineral, Fats
Humans
Hypokinesia With Head-Down Tilt, Long-Term; Pharmacological Countermeasures, Physical
Exercise, Ultraviolet Therapy

ISSUE 29:

PAPERS:

P1338(29/90) Zavadovsly AF, Korotayev MM, Vavakin YuN.

*Increasing human resistance to headward fluid redistribution.*
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Kosmicheskaya Biologiya i Aviakosmicheskaya
Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. [Space Biology and Aerospace Medicine:
IXth All-Union Conference]
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;
Institute of Biomedical Problems, USSR Ministry of Health
Page 63.

Body Fluids, Headward Fluid Shifts, Cardiovascular and Respiratory Systems, Cerebral
Hemodynamics
Humans, Age Differences, Patients, Atherosclerosis
Countermeasures, Head-Down Tilt, Repeated Exposure

P1331(29/90) Abashev VYu, Andriyako LYa, Bubeyev YuA, Degtyarev VA, Remisov YuV.

*A technique for individual assessment of the level of redistribution of blood in
humans during the acute period of adaptation to weightlessness.*
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Kosmicheskaya Biologiya i Aviakosmicheskaya
Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. [Space Biology and Aerospace Medicine:
IXth All-Union Conference]
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;
Institute of Biomedical Problems, USSR Ministry of Health
Pages 5-6.

Body Fluids, Fluid Redistribution, Cardiovascular and Respiratory Systems
Humans, Males
Assessment Technique, Tilt Test, Composite Index

8
BOTANY

ISSUE 27

PAPER:

P1213(27/90)* Nevzgodina LV, Maksimova YeN, Kaminskaya YeV.
The effects of single hits by heavy ions of galactic cosmic radiation on Lactuca sativa seeds flown on board Salyut-6 and Salyut-7 space stations.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; 6 in English]

Genetics, Aberrations
Botany, Lettuce, Seeds
Space Flight, Long-term, Salyut-6, Salyut-7; Radiobiology, Heavy Ions

ISSUE 28

PAPERS:

P1235 (28/90)* Anikeyeva ID.
Genetic studies of Arabidopsis seeds on space flights.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[14 references; 4 in English]

Genetics, Damage, Mutations, Accelerated Aging
Botany, Arabidopsis, Seeds
Space Flight, Short-Term, Long-Term; Zond-8, Soyuz, COSMOS, Salyut; Radiobiology, Cosmic Radiation

P1236(28/90)*Nevzgodina LV, Maksimova YeN, Akatov YuA, Kaminskaya YeV, Marennyy AM.
The effect of the vacuum of space on seeds of lettuce (Lactuca sativa) exposed on COSMOS series biosatellites.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[10 references; 4 in English]

Genetics, Cytogenetic Effects
Botany, Lettuce Seeds
Space Flight, COSMOS-1129, -1514, -1760; Radiobiology, Cosmic Radiation, Solar Radiation

P1253(28/90) Abramova VM, Vasil'yeva NG, Verigo VV, Marennyy AM, Portman AI.
Study of the biological effects of heavy charged particles of cosmic radiation on a population of higher plants -- Wolffia arrhiza.
Pages 562-563.
Authors' affiliation Institute of Biomedical Problems, USSR Ministry of Health.

Botany, Biological Effects
Wolffia arrhiza, Duckweed
Radiobiology, HZE Particles
P1249(28/98)* Rumyantseva VB, Merzlyak MN, Mashinskiy AL, Nechitaylo GS.
*The effects of space flight factors on the pigment and lipid components of wheat plants.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; 7 in English]

Botany, Pigment, Lipid Components
Wheat
Space Flight, Mir

**MONOGRAPH:**

M162(28/90) Grodzinskiy DM
*Radiobiologiya Rasteniy,* Радиобиология Растений [Radiobiology of Plants].
[384 pages; 85 Figures; 7 Tables; 800 references]
Affiliation: N.G. Kholodnyy Botanical Institute, Ukrainian Academy of Sciences.

KEY WORDS: Botany, Radiobiology, Ionizing Radiation, Genetics, Mutagenesis, Cell Death

**ISSUE 29:**

**PAPER:**

P1292(29/90) Laurinavichyus RS, Kenstavichene PF.
*The significance of the force of gravity in formation and growth of callus tissue in Arabidopsis.*
In: M164(29/90) Flom TV (editor)
*Trudy XXIII Chteniy Posvyashchennykh Razrabotke Nauchnogo Naslediya i Razvitiyu Idey K.E. Tsiolkovskogo: Sektsiya "Problemy Kosmicheskoy Meditsiny i Biologii" Mediko-Biologicheskiye Problemy Obespecheniya Kosmicheskikh Poleotov v Svete Idey K.E. Tsiolkovskogo*
Труды XXIII Чтений Посвященных Разработке Научного Наследия и Развитию Идей К.Э. Циолковского. Секция «Проблемы Космической Медицины и Биологии» Медико-Биологические Проблемы Обеспечения Космических Полетов в Свете Идей К.Э. Циолковского
Affiliation: Commission on Development of the Scientific Heritage of K.E. Tsiolkovskiy, USSR Academy of Sciences; K.E. Tsiolkovskiy State Museum on the History of Cosmonautics
Pages 65-70.
[6 references; 3 in English]

Morphology, Cytology, Plant Tissue Culture, Callus Tissue, Dedifferentiation, Developmental Biology
Botany, *Arabidopsis*
Space Flight, Salyut-7, Weightlessness Simulation, Horizontal Clinostatting
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

ISSUE 26

PAPERS:

P1179(26/90)* Mikhailov VM, Machinskiy GV, Buzulina VP, Geogriyevskiy VS, Nechayeva EN, Kryutchenko SG.
Tolerance for provocative tests under conditions of a 1-year exposure to hypokinesia with head-down tilt.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(5): 54-56; 1989.
[7 references; none in English]

Cardiovascular and Respiratory Systems, Orthostatic Intolerance, Aerobic Capacity
Humans, Males
Hypokinesia with Head-down Tilt, Prophylactic Countermeasures, Physical Exercise, Drugs,
Anti-g Suit; Provocative Tests, Tilt, Exercise Loading

P1181(260)* Yevdokimova AG, Radzevich AE, Solovyeva FB, Vinokhodova TV, Mamayev VI,
Belyayev SM, Ovchinnikova LK.
A study of orthostatic tolerance and status of central and peripheral hemodynamics in hypertensive subjects undergoing a 7-day period of "dry" immersion.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[9 references; 2 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, Central and Peripheral, Orthostatic Tolerance
Humans, Males, Patients, Hypertension
Immersion, Dry; Tilt Test

P1182(26/90)* Varosyan MA.
Functional and metabolic changes in the heart during adaptation to high-altitude hypoxia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[11 references; 3 in English]

Cardiovascular and Respiratory Systems, Cardiac Hypertrophy, Metabolism, Heart, Nucleic Acids
Rabbits
Adaptation, High Altitude Hypoxia

P1186(26/90) Kuznetsov VI.
Cardiac contractility in rats after chronic stress and thyroid.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[33 references; 8 in English]

Cardiovascular and Respiratory Systems, Cardiac Contractility
Rats, Female
Stress, Immobilization, Coarctation; Endocrinology, Thyroid Hormones
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P1190(26/90) Tikunov BA, Kayfadzhyan MA, Oganesyan SS.
Ca\(^{2+}\) reactivity of ventricular actomyosin in rats exposed to gravitational loading.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[8 references; 3 in English]

Cardiovascular and Respiratory Systems, Ca\(^{2+}\) Reactivity, Ventricular Actomyosin
Rats, Male
Hypergravity, Acceleration

ISSUE 27

PAPERS:

P1202(27/90)* Turchaninova VF, Yegorov AD, Domracheva MV.
Central and regional hemodynamics on long-term space flights.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[20 references; 6 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, Central, Regional
Humans, Cosmonauts
Space Flight, Long-term, Salyut-6, Salyut-7, Exercise

P1208(27/90)* Kuznetsov VI.
Cardiac contractility of guinea pigs exposed to long-term continuous stress.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[18 references; 3 in English]

Cardiovascular and Respiratory Systems, Cardiac Contractility
Guinea Pigs
Psychology, Stress

P1226(27/90) Beketov AI, Konyayeva Yel.
Circulation and oxygen pressure in the brains of alert and anesthetized rabbits in a head-down tilt position.
Fiziologicheskii Zhurnal SSSR im I.M. Sechenova
75(11): 1548-1553.
Authors' affiliations: Medical Institute of Crimea, Simferopol; Sechenov Institute of Evolutionary Physiology and Biochemistry, Leningrad

Cardiovascular and Respiratory Systems, Circulation, Oxygen Pressure, Brain
Rabbits, Alert, Anesthetized
Head-Down Tilt
PAPERS:

P1231(28/90)* Gazenko OG, Shulzenko YeV, Grigor'yev AI, Atkov OYu, Yegorov AD. *Medical investigations during an 8-month flight on Salyut-7-Soyuz-T.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(1): 9-14. [16 references; 7 in English]

Cardiovascular and Respiratory Systems, Neurophysiology, Vestibular System, Perception, Sensory Systems, Body Fluids, Endocrinology, Metabolism, Nutrition, Humans, Cosmonauts, Space Flight, Long-Term, Salyut-7, Prophylactic Countermeasures, EVA


Cardiovascular and Respiratory Systems, Hemodynamics, Intracardiac and Systemic, Humans, Males, Weightlessness Simulations, Immersion, Hypokinesia with Head-Down Tilt


Cardiovascular and Respiratory Systems, Metabolism, Humans, Males, Physical Exercise, Graded, Horizontal

P1238(28/90)* Chernysheva ON. *Lipids in the cell membrane of the heart in rats after multiple exposure to an alternating magnetic field with frequency of 50 Hz.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(1):30-31; 1990. [12 references; 2 in English]

Cardiovascular and Respiratory Systems, Cell Membrane of the Heart, Rats, Radiobiology, Magnetic Field, Alternating
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P1243(28/90)* Ivanov SG, Markova Li.
*The use of the method of "dry" immersion in treatment of hypertensive crisis.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[16 references; 1 in English]

Cardiovascular and Respiratory Systems, Hypertensive Crisis
Humans, Patients, Essential Hypertension, Males and Females
Dry Immersion, Treatment

P1243(28/90)* Turbasov VD, Artamonova NP, Nechayeva Yel.
*Assessment of bioelectric activity of the heart during head-down tilt using traditional and modified EKG leads.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[12 references; 3 in English]

Cardiovascular and Respiratory Systems, Bioelectric Activity of the Heart
Humans, Males, Patients, Atherosclerosis
Hypokinesia with Head-Down Tilt, Countermeasures, Exercise, Muscle Stimulation, Drugs, Equipment and Instrumentation, EKG Leads

P1245(28/90)* Korolev AB.
*Methods for measuring intracranial blood and cerebrospinal fluid circulation in chronic experiments involving induction of decompression sickness.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[2 references; 1 in English]

Cardiovascular and Respiratory Systems, Circulation, Blood, Neurophysiology, Brain,
Cerebrospinal Fluid
Rabbits
Decompression Sickness

*Criteria of endurance of a hypercapnic-hypoxic test*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[3 references; none in English]

Cardiovascular and Respiratory Systems, Endurance Criteria
Humans, Men, Individual Differences
Hyperoxia, Hypercapnia
The composition of exhaled air, gas and energy exchange and biochemical parameters in blood and urine of humans under conditions of long-term exposure to hypercapnia and hypoxia.


Cardiovascular and Respiratory Systems, Exhaled Gas, External Respiration, Biochemical Parameters, Metabolism, Lipid Peroxidation, Nitrogen Metabolism
Humans, Males, Older Subjects
Hypercapnia, Hypoxia, Pressurized Environment, Long-Term

ISSUE 29:

PAPERS:

P1296(29/90)*Meyerson FZ.
The phenomenon of adaptive stabilization of the structures and protection of the heart.
[57 references; 31 in English]

Cardiovascular and Respiratory Systems, Cardiac Structures, Protection
Rats, Isolated Hearts
Adaptation, Preadaptation, Stress, Immobilization, Ischemia, Reperfusion, Endocrinology, Adrenergic System, Calcium

P1297(29/90)* Fedorov BM, Sebekina TV, Sinitsyna TM, Streltsova YeN, Vakulenko VM, Nikolayeva TG.
Stress and circulation in humans.
[36 references; 16 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, General, Cerebral
Humans, Males
Human Performance, Mental Work, Stress, Hypokinesia

P1307(29/90)* Beketov Al, Konyayeva Yel.
Characteristics of the effects of caffeine on circulation and oxygen tension in the brain of alert rabbits undergoing head-down tilt.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(3): 64; 1990.

Cardiovascular and Respiratory Systems, Neurophysiology, Brain Circulation, Oxygen Circulation
Rabbits
Head-Down Tilt, Caffeine
**CARDIOVASCULAR AND RESPIRATORY SYSTEMS**

P1323(29/90)** Suvorov PM, Doroshev VG, Ivanchikov AP, Sidorova KA.  
*Types of hemodynamics in flight crews and their significance for clinical and flight certification practice.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[18 references; 1 in English]  
Cardiovascular and Respiratory Systems, Hemodynamics, Typology  
Humans, Flight Crews, Patients, Neurocirculatory Asthenia, Myocardial Dystrophy, Myocardial Sclerosis, Essential Hypertension, Age Effects  
Aviation Medicine

P1332(29/90) Alferov IV, Anashkin OD, Voronova OK, Poyedintsev GM.  
*Changes in hemodynamic parameters on long-term space flights.*  
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health  
Pages 8-9.

Cardiovascular and Respiratory Systems, Hemodynamic Parameters, Typology  
Humans, Males, Cosmonauts  
Space Flight, Repeated Flights

P1335(29/90) Vil'-Vil'yams IF, Kotovskaya AR, Kokova NI, Sukhanov YuV.  
*Endurance of +Gx acceleration in humans after a 370-day period of hypokinesia.*  
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health  
Pages 31-32.

Cardiovascular and Respiratory Systems, Acceleration Tolerance, +Gx  
Humans, Males  
Hypokinesia With Head-Down Tilt, Long-Term, 370 Day, Countermeasures, Exercise
DEVELOPMENTAL BIOLOGY

ISSUE 28

SPECIAL FEATURE: The First Baby Born in Space: The Unique “Incubator-2” Experiment is a Success

Translation of an article by I. Nekhamkin in Sovetskiy Soyuz: June 1990

ISSUE 29:

PAPERS:


Developmental Biology, Regeneration, Limbs, Lens Amphibians, Tritons Space Flight, COSMOS-1667, -1887, -2044


Developmental Biology, Oocyte Growth, Genetics, Delayed Effects Amphibians, Spanish Tritons Space Flight, COSMOS-1887, -939
DIGESTIVE SYSTEM

ISSUE 29:

MONOGRAPH:

M165(29/90) Smirnov KV.

KEY WORDS: Digestive System, Hypersecretory Stomach, Dysbacteriosis, Hypokinesia
ENDOCRINOLOGY

ISSUE 27

PAPERS:

P1203(27/90)* Prodan NG (USSR) and Baranska V (Poland).
Morphological research on the adrenal glands of rats after flight on COSMOS-1667.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; 1 in English]

Endocrinology, Adrenal Glands, Morphology
Rats, Males
Space Flight, COSMOS-1667

P1211(27/90)* Yangalycheva EA.
Hypothalamus/pituitary neurosecretory system in rats exposed to high-altitude hypoxia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(6): 54-62; 1990.
[21 references; 3 in English]

Endocrinology, Hypothalamus, Pituitary; Neurophysiology, Neurosecretory Apparatus;
Morphology
Rats
Adaptation, Hypoxia, High-Altitude

P1219(27/90)* Zagorskaya YeA.
Endocrine response to low frequency electromagnetic fields of continuous and intermittent generation.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(6): 4-15; 1990.
[126 references; 54 in English]

Endocrinology, Endocrine Response
Humans and Animals, Review Article
Radiobiology, Low-Frequency Electromagnetic Fields, Constant, Intermittent

ISSUE 28

PAPERS:

P1275(28/90)**Goncharov SS, Shekhovalo AN.
Hormonal response of the steroid-producing glands of female hamadryas baboons to long-term hypokinesia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[12 references; 4 in English]

Endocrinology, Reproductive System, Steroids, Biological Rhythms, Menstrual Cycle, Diurnal Rhythms
Primates, Hadryas Baboons, Female
Hypokinesia, Long-Term
ENDOCRINOLOGY


Endocrinology, Catecholamines, Thermal Protection Humans Immersion, Chilling, Pharmacological Countermeasures, Sidnocarb, Neurophysiology

P1282(28/90)** Zagorskaya YeA., Rodina GP. The responses of the endocrine system and peripheral blood in rats to single and repeated exposure to a pulsed low-frequency electromagnetic field. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(2): 56-60; 1990. [25 references; 11 in English]

Endocrinology, Adrenal Cortex, Thyroid, Testes Rats Radiobiology, Electromagnetic Field, Pulsed, Low Frequency; Immobilization Stress

ISSUE 29:

PAPERS:


Endocrinology, Hormonal Regulators, Calcitonin, Gastrin, PTH. Metabolism, Calcium, Body Fluids, Fluid-Electrolyte Balance Humans, Cosmonauts Space Flights, Short and Long-Term


Endocrinology, Thyroid, Morphology, Hormone Levels Rats Space Flight, Short-Term, COSMOS-1667, -1887, Adaptation, Initial, Transitional
Endocrinology, Pituitary-Thyroid System
Humans, Males
Hypokinesia, Head-Down Tilt, Countermeasures, Exercise

P1316(29/90) Kabitskiy YeN.
Functional activity of the pituitary-thyroid system in response to a 370-day period of hypokinesia with head-down tilt.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; 8 in English]

Endocrinology, Pituitary-Thyroid System
Humans, Males
Hypokinesia, Head-Down Tilt, Countermeasures, Exercise

P1346(29/90) Besova NV, Savel'yev SV.
Morphological changes in the ultimobranchial glands of caudate amphibians under conditions of space flight.
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health
Pages 288-289.

Endocrinology, Ultimobranchial Glands, Morphology
Amphibians, Tritons
Space Flight, COSMOS, Foton
ISSUE 26

PAPERS:

P1182(26/90)* Potapov PP.
*Changes in activity of mitochondrial oxidative enzymes in skeletal muscles of rats during the recovery period after hypokinesia varying in duration.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[12 references; 1 in English]

Enzymology, Oxidative Enzymes; Musculoskeletal System, Skeletal Muscles, Mitochondria
Rats
Hypokinesia, Long- and Short-term, Recovery Period

P1183(26/90)* Ivashkevich AA, Nosar’ VI, Kurbakov LA.
Neutral peptide hydrolases in the blood serum and lungs under conditions of hypoxia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(5): 70-75; 1989.
[18 references; none in English]

Enzymology, Peptide Hydrolases, Blood Serum, Lungs, Proteolysis, Tissue Respiration
Rats, Males
Cardiovascular and Respiratory System, Hypoxia; Adaptation, Barochamber Training

ISSUE 27

PAPER:

P1225(27/90) Shepotinovskiy VI, Rogoznyaya NA, Mikashinovich ZI.
Activity of digestive enzymes in response to immobilization stress and its pharmacological correction with adrenoreceptor blocking agents.
Patologicheskaya Fiziologiya i Eksperimental’naya Terapiya.
[10 references; none in English]
Authors’ Affiliation: Central Scientific Research Laboratory, Rostov Medical Institute

Enzymology, Digestive Enzymes; Gastrointestinal System
Rats
Adaptation; Immobilization Stress; Pharmacological Countermeasures; Adrenoblockers
PAPER:

P1234(28/90)* Potapov PP. Activity of certain oxidative enzymes and transaminase in the liver of rats during recovery after hypokinesia up to 30 days in duration. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(1):20-22; 1990. [16 references; 1 in English]

Enzymology, Oxidative Enzymes, Transaminase, Liver Rats Hypokinesia, Immobilization Cages
EQUIPMENT AND INSTRUMENTATION

ISSUE 28

PAPER:

P1244(28/90)* Demina GN, Kirichenko GI.
Algorithm for automatic recognition of base points on an impedance plethysmogram.
[8 references; none in English]

Cardiovascular and Respiratory Systems
Humans
Equipment and Instrumentation, Impedance Plethysmography, Base Points

ISSUE 29:

PAPER:

P1311(29/90)** Adamovich BA, Bayevskiy RM, Berseneva AP, Funtova II.
State-of-the-art automated evaluation of functional state in cosmonautics and preventive medicine today.
[26 references; 1 in English]

Equipment and Instrumentation, Automated Diagnosis and Prognosis, Avtosan-83, Kontrol, Vita, Ritm
Humans
Operational Medicine, Space Medicine, Preventive Medicine
EXOBIOLOGY

ISSUE 26

PAPER:

P1194*26/90) Larentyev GA, Rakitin LYu, Piskunova LA.
Simulation of abiogenic thermal polycondensation of amino acids in the Earth's lithosphere in areas of intense volcanic activity.
[13 references; 11 in English]
Authors' Affiliation: A.N. Bakh Institute of Biochemistry, USSR Academy of Sciences

Exobiology, Abiogenesis, Thermal Polycondensation
Amino Acids
Lithosphere, Simulation, Volcanic Activity

MONOGRAPH:

M156(26/90) Kustov VV, Belkin VI, Kruglikov GG.
Biologicheskiye Effekty Lunnogo Grunta; Биологические Эффекты Лунного Грунта; [The Biological Effects of Lunar Soil]
[103 pages; 47 references; 6 in English]

KEY WORDS: Exobiology, Lunar Soil, Biological Effects, Fibrogenesis

ISSUE 27

PAPER:

P1229(27/90) Kuzicheva YeA, Malko IL.
Abiogenic thermal synthesis of nucleotides in the presence of lunar soil.
[13 references; 4 in English]
Authors' Affiliation: Institute of Cytology, USSR Academy of Sciences, Leningrad

Exobiology; Abiogenic Synthesis; Thermal
Nucleotides
Lunar Soil

25
Genetics

ISSUE 29:

PAPERS:

P1324(29/90)**Gus’kov YeP, Shkurat TP, Shimanskaya Yel, Yanusheyevich SV, Nikolayeva YeYe.

Cytogenetic consequences of treatment with hyperbaric oxygen.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[29 references; 17 in English]

Genetics, Cytogenetic Mutations, Hematology, Lymphocytes
Humans, Patients
Hyperbaric Oxygenation
HABITABILITY AND ENVIRONMENT EFFECTS

ISSUE 27

PAPER:

P1210(27/90)* Mukhamediyeva LN, Savina VP, Nikitin Yel.  
Thermoregulatory responses in humans to moderate levels of hypercapnia.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
23(6): 51-54; 1990.  
[20 references; 7 in English]

Thermoregulatory Response  
Humans, Males  
Habitability and Environment Effects, Hypercapnia; Pressurized Environment

ISSUE 28

PAPER:

P1280(28/90)**Berlin AA.  
The functional status of the skin in humans inhabiting pressurized environments of limited size.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
24(2): 52-54; 1990.  
[9 references; none in English]

Skin, Protective Function, Desquamation  
Humans, Males, Females  
Habitability and Environment Effects, Pressurized Environment, Personal Hygiene

ISSUE 29:

PAPERS:

P1293(29/90*)Gazenko OG, Grigor'ev AI, Meleshko GI, Shepelev YeYa.  
Habitability and man-rated bioregenerative life support systems  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
24(3): 12-17; 1990.  
[24 references; 3 in English]

Habitability and Environment Effects, Biospherics, Ecological Specifications, Human Ecology  
Theoretical Article, Humans  
Life Support Systems, Bioregenerative, CELSS, Space Flights, Long-Term, Mars Mission
HABITABILITY AND ENVIRONMENT EFFECTS

MONOGRAPH:

M163(29/90) Beregovoy GT, Yarpolov VI, Baranetskiy II, Vysokanov VA, Shatrov YaT.
Spravochnik po Bezopasnosti Kosmicheskikh Poletov
Справочник по Безопасности Космических Полетов
[Handbook on Space Flight Safety]
Moscow: Mashinostroyeniye; 1989.
[366 pages; 68 Figures; 30 Tables; 63 References; 2 in English]

KEY WORDS: Habitability and Environmental Effects, Space Flight, Safety, Radiobiology, Equipment and Instrumentation, Cosmonaut Selection, Cosmonaut Training, Human Performance, Contingency Situations, Survival
HEMATOLOGY

ISSUE 27

PAPER:

P1215(27/90)* Orlova TA, Kiselev RK.
Use of a ferrocerone test to measure iron reserves under various living conditions.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(6): 77-81; 1990.
[15 references; 2 in English]

Hematology, Nutrition, Blood Iron; Ferrocerone Test
Humans
Hypokinesia with Head-Down Tilt

ISSUE 28

PAPERS:

P1257(28/90) Gubin AT, Sakovich VA, Shafirkin AV.
The development of radiation damage in the hemopoietic system.
Pages: 904-905.
Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Hematology, Hemopoietic System
Mathematical Modeling
Radiobiology, Radiation Damage

P1259(28/90) Smirnova OA, Zukhbaya TM.
The stimulating effect of chronic irradiation with small dose rates on lymphopoiesis and granulocytopoiesis. (Results of mathematical modeling and experimental data).
Pages: 923-924.
Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Hematology, Granulocytopoiesis, Lymphocytopoiesis, Chalone Mechanism
Mathematical Modeling, Mammals, Rats
Irradiation, Chronic, Low Dose
HEMATOLOGY

P1251(28/90)* Rachkov AG, Rachkova LG, Daniyarov SB.
*Hemostasis in prolonged exposure to γ-irradiation at high altitudes.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[10 references; none in English]

Hematology, Hemostasis
Dogs
Radiobiology, γ-Irradiation, High Altitudes

P1285(28/90)** Pak GD, Sverchkova VS, Danilevskaya TN.
The hemostasis system under conditions of various levels of hypoxic hypoxia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(2): 4-9; 1990.
[62 references; 18 in English]

Hematology, Hemostasis
Literature Review
Hypoxia, Hypoxic

ISSUE 29:

PAPER:

P1317(29/90)** Ivanov AP, Goncharov IB, Repenkova LG.
Changes in rheological parameters and hemodynamics in response to a 14-day period of hypokinesia with head-down tilt.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(4): 30-32; 1990.
[19 references; 7 in English]

Hematology, Rheological Parameters, Cardiovascular and Respiratory Systems, Hemodynamics
Humans, Males
Hypokinesia, Head-Down Tilt

P1329(29/90)** Belchenko DI.
Rosette formation in peripheral blood of rats exposed to hypokinesia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[12 references; none in English]

Hematology, Rosette Formation, Macrophages, Histology
Rats, Males
Hypokinesia, Immobilization Cages
HEMATOLOGY

P1339(29/90) Kalandarova MP.
Results of hematological studies in long-term hypokinesia with head-down tilt.
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая
Медицина.Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;
Institute of Biomedical Problems, USSR Ministry of Health
Pages 76-77.

Hematology, Blood Parameters, Immunology
Humans, Males
Hypokinesia, Head-Down Tilt, Long-Term, 370 Days
P1189(26/90) Kirzhner VM, Kordenko AN, Ushakov IB.  
Reactions of skin basophils of rats to exogenous hypoxia: A study of certain correlations.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[1 references; none in English] 

Histology, Skin Basophils  
Rats  
Hypoxia
HUMAN PERFORMANCE

ISSUE 26

PAPERS:

P1169(26/90) *Ponomarenko VA, Lapa VV, Nikitin IS.
*Psychophysical characteristics of sensorimotor performance of an operator after short-term exposure to simulated hypogravity.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(5): 9-12; 1989.
[[11 references; none in English]

Human Performance, Sensorimotor Performance; Neurophysiology, Proprioception
Humans, Operators
Hypokinesia with Head-down Tilt, Immersion

P1199(26/90) Bobko NA.
*Diurnal variations in the efficiency of operator mental performance in shift work.*
Fiziolgicheskiy Zhurnal.
[20 references; 4 in English]

Author's Affiliation: Research Institute of Occupational Hygiene and Diseases, Ukrainian Ministry of Public Health

Human Performance, Shift Work; Cognitive Task
Humans, Operators
Biological Rhythms, Diurnal Variations

MONOGRAPH:

M155(26/90) Frolov AA.
Apparatura i Metody Issledovaniya Deyatel'nosti Operatory;
Аппаратура и Методы Исследования Деятельности Операторы
*Apparatus and Methods for Investigating Operator Performance;*
Moscow: Nauka; 1989.
[112 pages]
Affiliation: Institute of Higher Nervous Activity and Neurophysiology, USSR Academy of Sciences

KEY WORDS: Human Performance; Humans; Operators; Equipment and Instrumentation;
Research Apparatus; Research Methods; Psychology; Neurophysiology
P1248(28/90)* Yegorov SV, Kostrina VG. 
**Evaluation of operator's readiness to act in an emergency**
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[4 references; none in English]

Human Performance, Evaluation, Emergency Response
Human, Operator
Monotony

P1269(28/90)** Ivanov VL, Ivanov VI.
**Techniques and means for optimizing functional status of flight school cadets during preflight activity.**
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[37 references; none in English]

Human Performance, Optimization, Functional Status
Humans, Flight School Cadets
Preflight Training, Exercise, Feedback

P1283(28/90)** Matseychik Ya, Terelyak Ya (Poland).
**The effect of relaxation on perceptual/motor performance of humans.**
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[6 references; 3 in English]

Human Performance, Perception, Perceptual/Motor Performance
Humans
Autogenic Training, Relaxation

ISSUE 29:

PAPERS:

P1308(29/90)* Sapova NI, Grozov VM.
**The effect of various pharmacological agents on general state, heart rhythm, and performance efficiency of operators.**
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(3): 64; 1990.

Human Performance, Performance Efficiency, Cardiovascular and Respiratory Systems, Heart Rhythm
Humans, Males, Operators
Mental Tasks, Pharmacological Agents
HUMAN PERFORMANCE

P1342(29/90) Ioseliani KK, Khisambeyev ShR.  
Predicting mental performance of cosmonauts on long-term flights. 
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина.Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]  
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health  
Pages 236-237.

Human Performance, Mental Tasks,  
Humans, Males, Cosmonauts  
Space Flight, Long-Term, Equipment and Instrumentation, Pleven-87

P1345(29/90) Salnytskiy VP, Shevchenko AG, Dudukin AV, Ryabov EV, Nikonov AV.  
A technique of semi-full-scale simulation and its use inflight to increase psychological readiness of cosmonauts.  
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина.Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]  
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health  
Pages 271-273.

Human Performance, Psychological Readiness  
Humans, Males, Cosmonauts  
IMMUNOLOGY

ISSUE 27

PAPERS:


Immunology, Immune Status
Humans, Males, Individual Differences
Adaptation, High Altitude Sickness

P1216(27/90)* Novikov VS, Bortinovskiy VN. The effect of smoking on human resistance in a pressurized environment. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(6): 81-85; 1990. [20 references; 8 in English]

Immunology, Resistance; Cardiovascular and Respiratory Systems; Exercise Tolerance
Humans, Men
Smoking, Habitability and Environment Effects; Pressurized Environment


Immunology, Skin, Protective Function
Humans
Operational Medicine

ISSUE 28

PAPER:


Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Immunology, Humoral Immunity
Mathematical Modeling, Mammals
Radiobiology, Irradiation
Lesnyak AT, Vorotnikova IYe, Rykova MP, Meshkov DO.

**Proliferative, suppressor, and cytotoxic activity of splenocytes of rats in the experiment on COSMOS-2044.**

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]


Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health

Page 320-321.

Immunology, Splenocytes, Proliferation, Suppressor, Cytotoxic

Rats

Space Flight, COSMOS-2044, Tail Suspension
PAPERS:

P1173(26/90)* Levinskikh MA, Sychev VN.
*Growth and development of one-celled algae as a component of an "algobacterial cenosis - fish" ecosystem under space flight conditions*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[12 references; 1 in English]

Life Support System, CELSS; Algobacterial Cenosis-Fish Ecosystem
Microbiology, Algae, *Chlorella*; Fish
Space Flight; COSMOS-1187

P1174(26/90)* Sychev VN, Levinskikh MA, Livanskaya OG.
*Investigation of the growth and development of Chlorella exposed to space on COSMOS-1887.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[9 references; none in English]

Life Support System, CELSS
Microbiology, Algae, *Chlorella*
Space Flight, COSMOS-1887

P1175(26/90)* Drugova NA, Chernova LS, Mashinskiy AL.
*The formation of a wheat microbial cenosis on a manned space flight.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[10 references; 1 in English]

Life Support Systems, CELSS
Botany, Wheat, Microbiology
Space Flight, Manned

P1185(26/90)* Vasilenko II, Shevel' NM, Snyak YuYe.
*Matter balance during the catalytic oxidation of water mixtures by hydrogen peroxide.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(5): 75-78; 1989.
[11 references; 2 in English]

Life Support System, Water Regeneration, Catalytic Oxidation, Low Temperature
Hydrogen Peroxide
Matter Balance
LIFE SUPPORT SYSTEMS

ISSUE 28

PAPER:

P1242(28/90)* Kozyarin IP, Suk VG, Maslenko AA, Khil'ko OK.
_Hygienic evaluation of oxygen produced by a system containing a solid polymer electrolyte._
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina
[20 references; none in English.]

Evaluation, Oxygen
Rats, Humans
Life Support System, Solid Polymer Electrolyte

ISSUE 29:

PAPERS:

P1299(29/90)* Kozyarin IP.
_A hygienic evaluation of certain moisture and carbon dioxide absorbers recommended for cleaning the air of pressurized environments._
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina
[12 references; none in English]

Hygienic Evaluation, Microbiology
Moisture and Carbon Dioxide Absorbers, Zeolite, Silica Gel
Life Support Systems, Air Cleaning, Pressurized Environments

P1304(29/90)* Adamovich BA, Ratner GS.
_A methodology for evaluating and selecting a life support system during the early stages of design._
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina
24(3): pp. 56-57; 1990
[9 references; 1 in English]

Life Support Systems, Regenerative, Evaluation, Selection
Theoretical Article
Mathematical Modeling

P1322(29/90)** Ivanova l'Ye, Derednyayeva TA, Alekhina TP, Shaydarov Yul.
_The higher plant component in man-rated biological (bioregenerative) life support system._
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[18 references; none in English]

Functional Characteristics
Botany, Higher Plants, Wheat, Peas, Carrots, Beets, Cabbage
Life Support System, Bioregenerative, CELSS, Higher Plants-Man-Mineralization
LIFE SUPPORT SYSTEMS

P1347(29/90) Ivanov IYe, Derendyayeva TA, Mashinskiy AL, Nechitaylo GS.
The effect of space flight on the sowing and productive properties of seeds.
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health

Developmental Biology, Plant Development, Genetics, Mutations
Botany, Plants, Seeds, Lettuce, Dill, Radish, Garden Cress
Life Support Systems, Space Flight, Long-Term, Mir, Radiobiology

P1299(29/90)* Kozyarin IP.
A hygienic evaluation of certain moisture and carbon dioxide absorbers recommended for cleaning the air of pressurized environments
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsyna
[12 references; none in English]

Hygienic Evaluation, Microbiology
Moisture and Carbon Dioxide Absorbers, Zeolite, Silica Gel
Life Support Systems, Air Cleaning, Pressurized Environments

P1304(29/90)* Adamovich BA, Ratner GS.
A methodology for evaluating and selecting a life support system during the early stages of design.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsyna
24 (3): pp. 56-57; 1990
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Life Support Systems, Regenerative, Evaluation, Selection
Theoretical Article
Mathematical Modeling

P1322(29/90)**Ivanova IYe, Derednyayeva TA, Alekhina TP, Shaydarov Yul.
The higher plant component in man-rated biological (bioregenerative) life support system.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsyna.
[18 references; none in English]

Functional Characteristics
Botany, Higher Plants, Wheat, Peas, Carrots, Beets, Cabbage
Life Support System, Bioregenerative, CELSS, Higher Plants-Man-Mineralization
P1347(29/90) Ivanov IYe, Derendyayeva TA, Mashinskiy AL, Nechitaylo GS.
The effect of space flight on the sowing and productive properties of seeds.
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая
Медицина.Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace
Medicine: IXth All-Union Conference]
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences;
Institute of Biomedical Problems, USSR Ministry of Health

Developmental Biology, Plant Development, Genetics, Mutations
Botany, Plants, Seeds, Lettuce, Dill, Radish, Garden Cress
Life Support Systems, Space Flight, Long-Term, Mir, Radiobiology
P1258(28/90) Smirnova OA.
*Dynamics of critical systems and radiation death of mammals (Mathematical modeling).*
Pages: 922-923.
Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Radiobiology, Radiation Death, Hematology, Hemopoiesis; Gastrointestinal System, Intestinal Follicles
Mammals
Mathematical Modeling

P1272(28/90)** Grigoryan SS, Simonov LG, Tsaturyan AK.
*A mathematical model of intracranial blood and cerebrospinal fluid circulation system as applied to the study of the effects of extreme conditions.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[27 references; 14 in English]

Cardiovascular and Respiratory Systems, Circulation, Blood, Neurophysiology, Body Fluids, Cerebrospinal Fluid
Mathematical Modeling, Humans
Extreme Conditions, Tilt Tests, Provocative Tests

ISSUE 29:

PAPER:

P1298(29/90)*Kondrachuk AV, Sirenko SP.
*A model of the caloric response of the semicircular canal.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(3): 40-43; 1990.
[11 references; 6 in English]

Neurophysiology, Semicircular Canal
Mathematical Modeling
Caloric Response, Space Conditions
ISSUE 26

PAPERS:

P1178(26/90)* Zaytsev LB, Larina ON, Popova IA.
Serum proteins and products of nitrogen metabolism in humans undergoing long-term hypokinesia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(5) 50-53; 1989.
[7 references; 6 in English]

Metabolism, Nitrogen; Serum Proteins
Humans
Hypokinesia With Head-down Tilt, Long-Term; Countermeasures; Drugs; Physical Exercise

P1195(26/90) Kuznetsov VI, Sarayev YuV, Chirkin AA.
Activation of glycolysis, decreased glycogen reserves and lack of glucocorticoid control of enzymes of carbohydrate metabolism in the liver of rats undergoing long-term hypokinetic stress.
Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya
[13 references; 3 in English]
Authors' Affiliations: Department of Biochemistry, Vitebsk Medical Institute.

Metabolism, Carbohydrate; Glycolysis; Enzymology
Rats, Males
Hypokinesia, Long-Term; Immobilization Stress

ISSUE 27

PAPERS:

P1209(27/90)* Tarasov YuA, Ostovsky YuM, Satanovskaya VI, Liopo Av, Velichko MG, Abakumov GZ.
Endogenous ethanol in the blood and tissues of rats exposed to hypobaric hypoxia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
23(6): 47-51; 1990.
[29 references; 11 in English]

Metabolism, Endogenous Ethanol
Rats
Hypoxia, Hypobaric
METABOLISM

P1217(27/90)* Tolkacheva NV, Levachev MM, Kobozev GV, Safronova LG, Sorokina AG. 
Use of the method of thin layer chromatography to study lipid ligands in the serum albumin of athletes.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[23 references; 2 in English]

Metabolism, Lipid Peroxidation, Serum Ligands 
Humans, Athletes 
Exercise

P1218(27/90)* Potapov PP. 
Activity of NADP-dependent cytoplasmic dehydrogenases in the liver and adipose tissue of rats during recovery after hypokinesia. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[11 references; none in English]

Metabolism, Cytoplasmic Dehydrogenases, Liver, Fat 
Rats 
Hypokinesia, Recovery

ISSUE 29: 
PAPERS:

P1301(29/90)*Gorozhanin VS, Lobkov VV. 
Hormonal and metabolic reactions of the human body to long-term fasting. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
24(3): 47-50; 1990. 
[18 references; 3 in English]

Metabolism, Endocrinology 
Humans, Males 
Nutrition, Fasting, Long-Term

P1305(29/90)* Klimovich VV, Lukashik NK. 
Parameters of thiamine metabolism in tissues of rats exposed to hypokinesia. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[17 references; 7 in English]

Metabolism, Thiamin 
Rats, Males 
Hypokinesia, Immobilization Cages
MICROBIOLOGY

ISSUE 26

MONOGRAPH:

M152 (26/90) Parfenov GP.
Невесомость и Элементарные Биологические Процессы; Nevesomost' i Elementarnyye Biologicheskiye Biologicheskiye Protsessy, [Weightlessness and Elementary Biological Processes;]
Volume 57 in series: Problemy Kosmicheskoy Biologii,
[272 pages; 46 Tables; 26 Figures; 631 references]

KEY WORDS: Microbiology, Precellular Organisms, One-Celled Organisms, Botany, Plant and Animal Cells, Cytology, Histology, Tissue Cultures; Space Flight, Radiobiology, Ionizing Radiation
MUSCULOSKELETAL SYSTEM

ISSUE 26

PAPERS:


Musculoskeletal System, Skeletal Bones, Mineral Density
Humans
Hypokinesia With Head-Down Tilt; Countermeasures; Physical Exercise

P1196(26/9) Volozhin AI, Amelkina GV. *Changes in the periodontium in long-term hypodynamia and the use of diphosphonates and silatran to prevent these changes.* Patologicheskaya Fiziologiya i Eksperimental'naia Terapiya. 1989(3): 72-75. [12 references; 1 in English]. Authors' Affiliation: N.A. Semashko Moscow Medical Stomatological Institute

Musculoskeletal System, Periodontium
Rats, Males
Tail Suspension; Prophylactic Countermeasures; Silicon; Diphosphonates

MONOGRAPH:


Musculoskeletal System, Skeletal System
Humans, Cosmonauts; Rats, Tortoises
Space Flight, Long-Term

ISSUE 27

PAPERS:

P1206(27/90)* Belakovskiy MS, Khaidakov MS. *Effects of active metabolites of Vitamin D3 on the bones of rats exposed to different hypokinesia paradigms.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(6): 36-39; 1989. [18 references; 11 in English]

Musculoskeletal System, Bones; Metabolism, Calcium, Phosphorus
Rats, Male
Nutrition, Vitamin D3 Metabolites, Hypokinesia, Tail Suspension, Immobilization Cages

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MUSCULOSKELETAL SYSTEM


Musculoskeletal System, Bone Tissue; Metabolism, Calcium Rats, Male Hypokinesia, Immobilization Cages, Hydroxymethyl Aminopropylidene Diphosphonate


Musculoskeletal System, Bone; Mechanical Properties; Bone Minerals Humans, Cosmonauts, Patients, Osteoporosis Space Flight, Salyut-6, Bedrest


Musculoskeletal System, Bone Humans Reduced Functional Loading, Osteoporosis, Rapid and SlowDeveloping
MUSCULOSKELETAL SYSTEM

P1224(27/90) Stupakov GP, Volozhin Al.
Changes in human bone under conditions of bedrest and weightlessness: General principles of bone changes under conditions of weightlessness and its simulations.
150-158.
In: M157(26/90) Stupakov GP, Volozhin Al.
Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость
[The Skeletal System and Weightlessness].

Musculoskeletal System, Bone; Metabolism, Metabolic Rate, Calcium
Humans, Rats, Dogs
Weightlessness, Simulated Weightlessness

ISSUE 28

PAPERS:

P1273(28/90)** Tatarinov AM, Dubonos SL, Yanson KhA, Oganov VS, Dzenis VV, Rakhmanov AS.
Ultrasound diagnosis of the status of the tibia in humans undergoing a 370-day period of head-down tilt.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; 6 in English]

Musculoskeletal System, Tibia Bone, Ultrasound
Humans
Hypokinesia With Head-Down Tilt, 370-Day, Prophylactic Countermeasures, Exercise

P1274(28/90)** Morukov VB, Orlov OI, Belakovskiy MS, Kazeykin VS, Zaychik VYe, Shvets VN, Tumanova IYu.
The effect of simulated weightlessness on calcium metabolism and state of bone tissue in experimental animals.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(2): 31-34.
[25 references; 13 in English]

Musculoskeletal System, Bone; Metabolism, Calcium; Endocrinology
Rats, Male
Hypokinesia, Immobilization Cages; Hypodynamia, Tail Suspension
MUSCULOSKELETAL SYSTEM

P1286(28/90) Stupakov GP, Volozhin.
The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on the weight-bearing bones of rats: Restructuring of bone tissue.
In: M157(26/90) Stupakov GP, Volozhin AI.
Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость
[The Skeletal System and Weightlessness].
Volume 63 In series: Problemy Kosmicheskoy Biologii,
Pages: 49-61.

Musculoskeletal System, Weight-Bearing Bones, Femur, Tibia, Brachium
Rats
Space Flight, COSMOS-615, -782, -936, 1129

P1287(28/90) Stupakov GP, Volozhin.
The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on the weight-bearing skeleton of rats: State of organic and mineral components.
In: M157(26/90) Stupakov GP, Volozhin AI.
Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость
[The Skeletal System and Weightlessness].
Volume 63 In series: Problemy Kosmicheskoy Biologii,
Pages: 61-65.

Musculoskeletal System, Weight-Bearing Bones, Vertebrae, Femur, Organic and Mineral Components
Rats
Space Flight, COSMOS-936, -1129

P1288(28/90) Stupakov GP, Volozhin.
The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on the weight-bearing bones of rats: Mechanical properties of bone tissue.
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Kostnaya Sistema i Nevesomost'; Костная Система и Невесомость
[The Skeletal System and Weightlessness].
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Pages: 65-76.

Musculoskeletal System, Weight-Bearing Bones, Femur, Tibia, Humerus; Mechanical Properties
Rats
Space Flight, COSMOS-615, -782, -936, -1129
MUSCULOSKELETAL SYSTEM

P1289(28/90) Stupakov GP, Volozhin.
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Kostnaya Sistema i Neeesomost'; Kostnaya Sistema i Neeesomost;
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Pages: 76-79.

Musculoskeletal System, Weight-Bearing Bones, Tibia Rats Space Flight, COSMOS-936; Artificial Gravity

P1290(28/90) Stupakov GP, Volozhin.
The skeletal system of experimental animals under conditions of weightlessness: The effects of space flight on non-weight-bearing bones of rats.
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Kostnaya Sistema i Neeesomost'; Kostnaya Sistema i Neeesomost;
[The Skeletal System and Weightlessness].
Pages: 79-82.

Musculoskeletal System, Non-weight-bearing Bones, Ribs, Jaw, Teeth Rats Space Flight, COSMOS-936, -1129

ISSUE 29:

PAPERS:

P1291(29/90) Stupakov GP, Volozhin Al.
The bone system of experimental animals under conditions of weightlessness: The effect of space flight on the skeleton of tortoises.
In: M157(26/90) Stupakov GP, Volozhin Al.
Kostnaya Sistema i Neeesomost'; Kostnaya Sistema i Neeesomost;
[The Skeletal System and Weightlessness].
Pages: 82-90.

Musculoskeletal System, Bones, Skeleton; Metabolism, Low Tortoises Space Flight, Short- and Long-Term, COSMOS-782, -605, -613, Soyuz-20
MUSCULOSKELETAL SYSTEM

P1313(29/90)** Oganov VS, Cann C, Rakhmanov AS, Ternovoy SK
A computer tomographic investigation of the musculoskeletal system of the spine in humans after long-term space flight.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[11 references; 6 in English]

Musculoskeletal System, Bones, Spine, Computer Tomography, Muscle Density; Mineral Loss
Humans, Cosmonauts
Space Flight, Long-Term, Salyut-7, Hypokinesia with Head-Down Tilt

P1314(29/90)**Iлина-Какуйева Yel.
Morphohistochemical investigation of the skeletal muscles of rats in an experiment on biosatellite COSMOS-1887.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[21 references; 9 in English]

Musculoskeletal System, Skeletal Muscles, Morphohistochemical Analysis, Fast-Twitch; Slow-Twitch
Rats
Space Flights, COSMOS-1887
NEUROPHYSIOLOGY

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Neurophysiology, Sleep
Monkeys
Space Flight, COSMOS-1667


Neurophysiology, Vestibular System; Morphology; Receptor Organs
Rats, Male
Space Flight, COSMOS-1667

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Neurophysiology, Pathogenesis; Brain
Rabbits
Decompression Sickness


Author’s Affiliation: Belorussian Research Institute on Neurology, Neurosurgery and Physiotherapy, Minsk

Neurophysiology, Vestibular Activity
Humans, Males
Orthostatic Loading, Stand Test, Tilt Test

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ISSUE 27

PAPERS:

P1205(27/90)* Karkishchenko NN. specification for an "ideal" drug to prevent space motion sickness (space adaptation syndrome). Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(6): 33-36; 1989. [16 references; 3 in English]

Neurophysiology, Space Adaptation Syndrome; Human Performance, Mental Work Capacity Humans, Patients, Vestibular Tolerance, Diminished Rotation, Pharmacological Countermeasures

P1214(27/90)* Verbitskaya LB, Fedorenko VS, Kabitsyna RA. Remote ultrastructural changes in cerebellar cortex of rats after exposure to accelerated carbon ions. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 23(6): 71-77; 1989. [2 references; 1 in English]

Neurophysiology, Cerebral Cortex Rats Radiobiology, Accelerated Carbon Ions, γ-Radiation; Remote Effects

P1227(27/90) Moskalenko YuYe, Beketov AI, Maksimiuk VF, Skoromnyy NA. Cerebrovascular effects of motion sickness. Fiziologicheskiy Zhurnal SSSR im I.M.Sechenova. 75(11): 1560-1567; 1989. [12 references; 2 in English]

Authors' Affiliations: Institute of Evolutionary Physiology and Biochemistry, Leningrad; Crimean Medical Institute, Simferopol

Neurophysiology, Cerebrovascular Effects; Cardiovascular and Respiratory Systems, Cerebral Circulation Rabbits Motion Sickness, Head-Down Tilt

ISSUE 28

PAPERS:


Neurophysiology, Neurons, Arcuate Nucleus, Medial Eminence Rats, Female Radiobiology, Carbon Ions, γ-Radiation
NEUROPHYSIOLOGY

P1254(28/90) Yegorov AYe, Prosvirnitsyn SA.
On the genesis of postradication edema of the brain.
Pages: 873-874.
Authors' affiliation: Scientific Research Institute of Military Medicine

Neurophysiology, Brain, Edema, Blood-Brain Barrier
Rats, Males
Radiobiology, γ-Irradiation; High Doses

P1255(28/90) Antipov VV, Fedorov VP, Ushakov IB.
Structural and metabolic aspects of modification of radiation effects on the central nervous system.
Pages: 861-862.
Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health; Voronezh Medical Institute

Neurophysiology, Central Nervous System, Metabolism
Rats, Dogs
Radiobiology, Radiation; Modifiers, Hypoxia, Hyperoxia, Alcohol, Acceleration, Vibration

P1256(28/90) Fedorenko BS, Kabintsyna RA, Smirnova OA, Krivitskaya GN, Verbetskaya LB, Derevyagin VM, Gitsov L, Burneva V, Popov VI, Portman AI.
Morphological changes in brain neurons in rats irradiated with accelerated charged particles.
Pages: 895-896.
Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health; Brain Institute, USSR Academy of Medicine; Institute for the Study of the Brain, Sofia, Bulgaria

Neurophysiology, Brain Neurons
Rats
Radiobiology, Accelerated Charged Particles

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Correlation between orthostatic tolerance and status of the vestibular function in humans after long-term space flights.
[9 references; 1 in English]

Neurophysiology, Vestibular Function, Orthostatic Tolerance
Humans, Cosmonauts
Space Flight, Long-Term, Salyut-6
The relationship between vertical optokinetic nystagmus and susceptibility to motion sickness in humans.

[12 references; 7 in English]

The role of glucocorticoids in postvibrational shifts of inhibitory mediation in brain structures.

[14 references; 3 in English]
NEUROPHYSIOLOGY

P1325(29/90)* Krotov VP, Simonov LG, Trombovetskiy YeV. 
Epidural and subdural recording of intracranial pressure in response to postural tests. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
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Neurophysiology, Body Fluids, Intracranial Pressure, Equipment and Instrumentation 
Rabbits 
Postural Tests

P1334(29/90) Bayevskiy RM, Bogomolov VV, Tazetdinov IG. 
Assessment of autonomic homeostasis in the operational medical system for monitoring the health of cosmonauts. 
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
Tezisy Dokladov IX Vsesoyuznoy Konferentsii. [Space Biology and Aerospace Medicine: IXth All-Union Conference] 
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; 
Institute of Biomedical Problems, USSR Ministry of Health 
Pages 16-17.

Neurophysiology, Autonomic Homeostasis, Psychology, Stress 
Humans, Cosmonauts 
Space Flight, Operational Medicine, Equipment and Instrumentation, Cosmonaut Monitoring System

P1336(29/90) Gorgiladze GI, Maveyev AD. 
The effect of weightlessness on eye movement responses. 
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
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Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; 
Institute of Biomedical Problems, USSR Ministry of Health 
Page 51-52.

Neurophysiology, Eye Movement Response 
Humans, Cosmonauts 
Space Flight, Salyut-6, -7

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NEUROPHYSIOLOGY


Neurophysiology, Space Motion Sickness Rats, Humans Pharmacological Countermeasures, Anticonvulsants


Neurophysiology, Motion Sickness, Susceptibility Humans, Males, Individual Differences Psychology, Psychophysiological Parameters
P1188(26/90) Arustamov OV, Khaydakov MS.
The effect of increased consumption of vegetable protein on calcium metabolism in rats undergoing hypokinesia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
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Metabolism, Calcium
Rats, Males
Nutrition, Vegetable Protein; Hypokinesia; Tail Suspension

P1197(26/90) Klimovich VV, Lukashik NK.
Thiamin metabolism in rats with a B1 deficiency exposed to hypokinesia.
Voprosy Pitaniya.
[18 references; 6 in English]
Authors' Affiliation: Grodensk Medical Institute.

Metabolism, Thiamine
Rats, Male
Nutrition, B1 Deficiency; Hypokinesia; Immobilization Cages

ISSUE 29:
PAPER:

P1300(29/90)*Novoselov VG.
Hygienic aspects of the use of calorie-deficient diets enriched with wild plants.
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[3 references; none in English]

Survival, Botany, Wild Plants, Biological Effects, Human Performance
Humans, Expedition Members, Males
Nutrition, Deficient Diets
PAPERS:

P1333(29/90) Akhapkina VI, Goncharov IB.
Prospects for improving pharmacological support of space flights.
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health
Pages 15-16.

Neurophysiology, Pharmacological Countermeasures, Nootropic Drugs, GABA, GHBA
Humans, Cosmonauts
Operational Medicine, Space Flight

P1340(29/90) Komarova LM.
Do we need a physician on the crew for the Mars mission?
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health
Pages 94-96.

Operational Medicine, Crew Composition, Physician
Humans, Cosmonauts
Space Flight, Long-Term, Mars Mission
PERCEPTION

ISSUE 26

MONOGRAPH:

M159(26/90) Kovalenko PA.
Prostranstvennaya oryentirovka pilotov: Psikhologicheskie osobennosti
Приостранственная ориентировка пилотов. Психологические особенности
[ Spatial orientation of pilots: Psychological Characteristics]
Moscow: Transport; 1989.
[231 pages: 65 tables; 28 figures; 132 references; 18 in English]

KEY WORDS: Perception; Spatial Orientation; Psychology; Aviation Medicine; Human Performance; Humans, Pilots; Pilot Training
PERSONNEL SELECTION

ISSUE 28:

PAPER:

P1287(28/90)** Medenkov A, Tret'yakov N.  
Can the psychologically “incompatible” work together?  
Aviatsiya i Kosmonavtika.  
Authors' Affiliation: USSR Medical Corps

Human Performance, Small Group Performance  
Humans, Aviation Personnel, Military Psychology, Personnel Selection, Compatibility

ISSUE 29:

PAPERS:

P1337(29/90) Grigor'yev LS, Smirnova AV, Voronkov Yul, Myasnikov VI.  
Some new approaches to the problem of medical occupational selection.  
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Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health  
Page 55-57.

Personnel Selection, Cosmonaut Selection, Human Performance, Equipment and Instrumentation  
Humans, Cosmonauts, Twin Studies  
Operational Medicine, Medical Factors, Neurophysiology, Genetics

P1352(29/90) Ioseliani KK, Narinskaya AL, Tereshkina SA.  
On psychological selection of cosmonauts for repeated flights.  
In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
Tezisy Dokladov IX Vsesoyuznoy Konferentsii. KOSMICHESKAYA BIOLGII I AVIAKOSMICHESKAYA MEDICINA. [Space Biology and Aerospace Medicine: IXth All-Union Conference]  
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health  
Pages 234-236.

Personnel Selection, Cosmonaut Selection, Space Flight, Repeated Flights, Psychology, Human Performance  
Humans, Patients, Age Differences  
Hypokinesia With Head-Down Tilt
PSYCHOLOGY

ISSUE 26

MONOGRAPH:

M154(26/90) Berezin FB.
Psikhicheskaya i Psikhofiziologicheskaya Adaptatsiya Cheloveka; Психическая и Психофизиологическая Адаптация Человека
[Psychological and Psychophysiological Adaptation in Humans]
[270 pages; 36 Tables; 34 Figures; 237 References; 110 in English]
Affiliation: Institute of Biological Problems of the North; USSR Academy of Sciences; Far Eastern Division

Psychology, Stress; Human Performance
Humans
Adaptation

ISSUE 27

PAPER:

P1228(27/90) Anishchenko TG, Burshina SN, Shorina LN.
An analysis of factors determining sex differences in the stress responses of white rats.
Byulleten' Eksperimental'noy Biologii i Meditsiny.
[15 references; 3 in English]
Authors' affiliation: N.G. Chernyshevskiy University, Saratov

Psychology, Stress Response
Rats, Males and Females
Gender Differences, Genetics

ISSUE 28

PAPERS:

P1268(28/90)** Kuznetsov ON, Yegorov BA, Frantsen BS.
Characteristics of color selection in the Luscher test as an indicator of typical emotional status of flight personnel.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[8 references; none in English]

Psychology, Emotional Status
Aviation Medicine, Flight Crews
Color Preferences

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PSYCHOLOGY

P1276(28/90)**Shlyk GG, Shirvinskaya MA, Rotenberg VS, Yefimova MYa, Eliava VM, Sheremet IP, Kolpakova NF.
The role of typological differences in behavior of animals during adaptation to an extreme stimulus.
[10 references; 2 in English].
Adaptation, Extreme Situations, Conditioned Responses, Recovery
Primates, Rhesus Monkeys
Psychology, Typology, Behavior

ISSUE 29:
PAPERS:

P1302(29/90)* Yevdokimov VI.
Risk factors for the occurrence of neuroses and psychosomatic illnesses in flight crews.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(3): 50-53; 1990
[9 reference; 2 in English]
Psychology, Neuroses, Psychosomatic Illness
Humans, Flight Crews
Aviation Medicine, Risk Factors

P1306(29/90)* Terelyak Ya, Kobos Z (Poland).
Psychological determinants of time to complete flight training.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 24(3): 59-60; 1990
[9 references; all in Polish]
Aviation Medicine, Flight Training, Human Performance
Humans, Flight Personnel
Psychology, Test Scores

P1341(29/9) Zaprisa NS.
Dynamics of parameters of communicative activity in the system for psychological analysis of cosmonaut functional status.
Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health
Page 232.

Human Performance, Functional State
Humans, Cosmonauts
Psychology, Psychodiagnosis, Speech Analysis
A multimethod evaluation of the psychophysiological state and behavior of humans undergoing a 370-day period of hypokinesia with head-down tilt.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]


Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health

Pages 250-251.

Psychology, Psychophysiological State, Human Performance
Humans, Males
Hypokinesia With Head-Down Tilt, Long-Term, 370-Day

The study of cosmonauts' sleep in flight on space station Mir.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. Tezisy Dokladov IX Vsesoyuznoy Konferentsii. Космическая Биология и Авиакосмическая Медицина. Тезисы Докладов IX Всесоюзной Конференции. [Space Biology and Aerospace Medicine: IXth All-Union Conference]


Affiliation: Scientific Council on Space Biology and Physiology, USSR Academy of Sciences; Institute of Biomedical Problems, USSR Ministry of Health

Pages 251-252.

Psychology, Neurophysiology, Sleep Patterns, Adaptation
Humans, Cosmonauts
Space Flight, Mir
ISSUE 26

PAPERS:

P1191(26/90)* Cherkasov GV.
*Acid tolerance of erythrocytes exposed to constant magnetic fields varying in rate of induction increase.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; none in English]

Hematology, Erythrocytes, Acid Tolerance
Rats, Male
Radiobiology, Magnetic Field, Induction Increase Rate

P1199(26/90) Tabukashvili RI, Ushakov IB.
*Certain biochemical mechanisms underlying the combined effects of extreme factors.*
Voprosy Meditsinskoy Khimii.
[15 references; 1 in English]
Authors’ Affiliation: Tblisi Medical Institute

Radiobiology, Ionizing Radiation, Liver
Rats, Males
Hypoxia, Microwave Radiation, Radioprotective Effects

P1201(26/90) Tabukashvili RI, Ushakov IB.
*Possible mechanisms of the radiomodifying effect of exogenous hypoxia on microwave radiation.*
[14 references; 1 in English]
Authors affiliation: Tblisi Medical Institute.

Radiobiology, Ionizing Radiation, Liver
Rats, Males
Hypoxia, Microwave Radiation, Radioprotective Effects

MONOGRAPH:

M153(26/90) Antipov VV (Editor)
Biofizicheskiye Osnovy Deystviya Kosmicheskoy Radiatsii i Izlucheniy Uskoriteley;
Биофизические Основы Действия Космической Радиации и Излучений Ускорителей
*[The Biophysical Bases for the Effects of Cosmic Radiation and Radiation from Accelerators.]*
[255 pages; 32 Tables; 70 Figures; 327 references; 114 in English]

KEY WORDS: Radiobiology; Cosmic Radiation, Accelerators; Biophysics; Biological Effects; Hadrons
ISSUE 27

PAPERS:

P1221(27/90) Zukhbaya TM.
Periodicity of hemopoiesis during continuous \( \gamma \)-irradiation with low dose rates.
Author’s Affiliation: Institute for Biomedical Problems, Moscow

Hematology, Hemopoiesis, Periodicity
Rats
Radiobiology, \( \gamma \)-Irradiation, Continuous

ISSUE 28

PAPERS:

P1266(28/90) Vorozhtsova SV, Gerasimenko VN.
Cytogenetic damage to mammalian cells after exposure to charged particles with relativistic energy.
Pages 562-563.
Authors’ Affiliation: Institute of Biomedical Problems, USSR Ministry of Health.

Genetics, Cytogenetic Damage, Corneal Epithelium, Lymphocytes
Mice, Humans
Radiobiology, Charged Particles, Relativistic Energy

P1261(28/90) Benevodenskiy VN, Kuznetsova IV.
Methodological approach to determining the biological effects of heavy ions of galactic cosmic radiation.
Pages: 994-995.
Authors’ Affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Radiobiology, Biological Effects
Microbiology, Yeast Cells
Heavy Ions, Galactic Cosmic Radiation; Space Flight, COSMOS
RADIOBIOLOGY

P1262(28/90) Kabachenko AN, Fedorenko BS, Portman AI.
Cataractogenic effectiveness of accelerated charged particles of high energy.
Pages: 1193.
Authors’ Affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Radiobiology, Cataractogenesis
Mice
Accelerated Charged Particles, High Energy

P1263(28/90) Fedorenko BS.
Carcinogenic effectiveness of accelerated charged high energy particles.
Pages: 1223-1224.
Authors’ Affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Radiobiology, Carcinogenesis
Rats, Females
Charged Particles, High Energy

P1264(28/9) Vladimirov VG, Krasil'nikov II.
Radioprotectors and the theory of the radioprotective effect.
Pages: 695-697.
Authors’ affiliation: S.M. Korov Academy of Military Medicine

Radiobiology, Radioprotective Effect
Theoretical Article
Radioprotectors

P1265(28/9) Morozova IN. Lukashin BP.
Prospects for using immunomodulators as a means in increase nonspecific resistance in radiation pathology.
Pages: 743-744.
Authors’ affiliation: S.M. Korov Academy of Military Medicine

Radiobiology, Nonspecific Resistance, γ-Irradiation
Mice, Rats
Immunology, Immunomodulators, Alanine
RADIOBIOLOGY

P1250(28/90)* Yablontsev NN.
Documents setting standards for radiation safety for space flight.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[8 references; none in English]

Radiobiology, Radiation Safety Standards
Humans, Cosmonauts
Space Flights, Long-Term

P1284(28/90)** Minkova M, Pantev B (Bulgaria)
The effects of combined physical and chemical radiation protection under conditions of simulated hypergravity.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
24(2): 60-61;1990.
[9 references; none in English]

Radiobiology, Radioprotectors, Physical/Chemical
Rats
Acceleration

ISSUE 29:

PAPERS:

P1309(29/90)* Zagorskaya YeA, Klimovitskiy VYa, Melnichenko VP, Rodina GP, Semenov SN.
The effects of low-frequency electromagnetic fields on physiological systems.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[116 references; 24 in English]

Neurophysiology, Endocrinology, Regulatory Systems, Hematology
Review Article
Radiobiology, Electromagnetic Fields, Low Frequency

P1319(29/90)** Katasonov SN, Shishkina SK, Maltseva IO, Ryabova TYa.
Study of changes in the electrical parameters of the skin of irradiated rats.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[5 references; 2 in English]

Skin, Electrical Parameters, Prognostic Indicator
Rats
Radiobiology, γ-Irradiation
P1320(29/90)** Lobacheva GV.  
*Research on audiogenic reactions of rats after ultraviolet-irradiation of their eyes.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
24(4): 36-38; 1990.  
[11 references; 1 in English]

Neurophysiology, Audiogenic Seizures  
Rats, Females  
Radiobiology, Ultraviolet-Irradiation, Eyes

P(29/90)** Malakhovskiy VN, Stemparzhetskiy OA, Bokk MI.  
*Physiological properties of posture (balance) maintenance in dogs during immediate response to radiation.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya.  
[10 references; 2 in English]

Musculoskeletal System, Neurophysiology, Balance  
Dogs  
Radiobiology, $\gamma$-Irradiation

P1327(29/90)** Bugrov SA, Davydov BI, Tikhonchuk VS, Soldatov SK, Osokina TF.  
*The protective action of mexamine in microwave irradiation of rats.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[10 references; 5 in English]

Biological Effects, Survival  
Rats, Female  
Radiobiology, Microwave Irradiation, Radioprotectors, Mexamine, Serotonin
REPRODUCTIVE SYSTEM

ISSUE 28

PAPER:

P1237(28/90)* Kokoreva LV, Chuvpilo TA, Pustynnikova AM.  
*The effect of a high intensity magnetic field on the reproductive function of male rats.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[8 references; 1 in English]

Reproductive System, Reproductive Function (Male), Developmental Biology  
Rats, Male  
Radiobiology, Magnetic Field, High Intensity

ISSUE 29:

PAPER:

P1326(29/90)** Serova LV, Apanasenko ZI, Ivanovna SYa, Chelnaya NA.  
**The effect of hypergravity on mammals during the period of delivery and birth of offspring.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
23(4): 54-55; 1990.  
[3 references; 2 in English]

Reproductive System, Delivery, Lactation, Developmental Biology, Psychology, Maternal Behavior  
Rats, Female, Pregnant, Neonates  
Hypergravity, Centrifugation
PAPERS:

**P1172(26/90)*** Alpatov AM, Il'in YeA, Antipov VV, Tairbekov MG.  
*Biological experiments on COSMOS-1887.*  
*Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.*  
[21 references; 11 in English]

Space Biology and Medicine, Biological Experiments; Metabolism, Cell; Genetics; Biological Rhythms; Developmental Biology; Cytology; Population Studies  
Microbiology, *E. coli, Tetrahymena pyriformis, Wolffia, Haplopus, Guppies, Tritons, Drosophila melanogaster,* Beetles, *Macaca mulatta,* Stick Insects  
Space Flight, COSMOS-1887; Radiobiology, Cosmic Radiation; Adaptation

**P1177(26/90)** Grigor'yev Al, Morukov BV.  
*370-Day antiorthostatic hypokinesia: Goals and research protocol*  
*Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.*  
[9 references; none in English]

Space Biology and Medicine; Cardiovascular and Respiratory Systems; Cardiovascular Deconditioning; Body Fluids; Musculoskeletal System; Metabolism; Gastrointestinal System; Hematology; Immunology  
Humans, Males  
Hypokinesia with Head-Down Tilt, Long-Term; Prophylactic Countermeasures, Physical Exercise; Drugs; LBNP; Karkas Suit; Adaptation

**P1194 (26/90)**Kovalenko YeA, Kasyan II  
*On the Pathogenesis of Weightlessness*  
*Patologicheskaya Fiziologiya i Eksperimental'nyaya Terapiya*  
89(3): 9-18. Received by journal 6/6/88

Space Biology and Medicine; Neurophysiology, Space Motion Sickness; Body Fluids; Cardiovascular and Respiratory Systems; Endocrinology; Musculoskeletal System; Enzymology; Metabolism, Bioenergetics  
Humans, Cosmonauts, Rats  
Weightlessness, Pathogenesis; Deconditioning; Adaptation; Space Flight, Long-Term; Salyut, Soyuz, Weightlessness Simulations, COSMOS; Prophylactic Countermeasures; Physical Exercise, LBNP


SPACE MEDICINE

CONFERENCE REVIEW

CR12(26/90)* Drozd YuV.
Report on: Twenty-first Symposium on Space Biology and Medicine (Baranov-Sandomerski, June 1988)
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

KEY WORDS: Space Biology and Medicine; Human Performance; Radiobiology; Equipment and Instrumentation; Operational Medicine; Musculoskeletal System; Weightlessness; Acceleration; Prophylactic Countermeasures; Hypodynamia; Hypokinesia; Psychology, Stress; Space Flight; COSMOS-1887; Nutrition; Metabolism; Life Support Systems, CELSS; Neurophysiology, Motion Sickness; Sleep; Immunology

ISSUE 27

CONFERENCE REVIEW:

CR13(27/90)* Gyurdzhian AA, Zorile VI.
The work of the section on Aviation and Space Medicine of the Moscow Physiological Society.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

KEY WORDS: Space Medicine; Aviation Medicine

SPECIAL FEATURE:

Essay by N. Gurovskiy; In the Interests of Public Health
In: Aviatsiya i Kosmonavtika; 11/89

KEY WORDS: Space Medicine, Operational Medicine, Public Health, Equipment and Instrumentation, Personnel Selection, Hematology, Biological Rhythms

ISSUE 28:

PAPER:

P1267(28/90)** Gazenko OG, Grigor'yev AI, Yegorov AD.
Medical investigations of long-term manned space flight on-board Salyut-7-Soyuz-T.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[11 references; 13 in English]

Space Biology and Medicine, Operational Medicine, Cardiovascular and Respiratory System, Body Fluids, Musculoskeletal System, Motor Coordination, Bones, Muscle Mass, Neurophysiology, Vestibular System, Sensory Systems, Endocrinology, Nutrition, Human Performance
Humans, Cosmonauts
Space Flight, Salyut-7, Long-Term, EVAs, Prophylactic Countermeasures, Exercise, LBNP
PAPER:

P1310(29/90)** Gazenko OG, Grigor'ev AI, Bugrov SA, Yegorov VV, Bogomolov VV, Kozlovskaya IB, Tarasov IK.

Review of the major results of medical research during the flight of the second prime crew of the Mir Space Station.

Kosmicheskiy Biologiya i Aviakosmicheskaya Meditsina.


[16 references; none in English]

Space Biology and Medicine, Operational Medicine, Habitability and Environmental Effects, Microclimate, Atmosphere, Microbiology, Cardiovascular and Respiratory Systems, Musculoskeletal System, Neurophysiology, Motor Effects, Nutrition, Metabolism, Endocrinology, Body Fluids, Adaptation, Radiobiology, Hematology, Immunology, Psychology

Humans, Cosmonauts

Space Flight, Long-Term, Mir, Second Prime Crew, Prophylactic Countermeasures

MONOGRAPH:

M164(29/90) Flom TV (editor)

Trudy XXIII Chteniy Posvyashchennykh Razrabotke Nauchnogo Naslediya i Razvitiyu Idey K.E. Tsiolkovskogo: Sekcija "Problemy Kosmicheskoy Meditsiny i Biologii" Mediko-Biologicheskiye Problemy Obespecheniya Kosmicheskikh Poleotov v Svetе Idey K.E. Tsiolkovskogo


Affiliation: Commission on Development of the Scientific Heritage of K.E. Tsiolkovskiy, USSR Academy of Sciences; K.E. Tsiolkovskiy State Museum on the History of Cosmonautics

KEY WORDS: Space Biology and Medicine, Biological Rhythms, Exobiology, Man-Machine Systems, Human Performance, Group Dynamics, Immunology, Aviation Medicine, Psychology, Biomechanics, Space Suits, Ground Simulations, Botany, Plant Gravity Response, Plant Development, Thermal Homeostasis, Perception, Time, Visual, Lunar Soil
SPACE MEDICINE

CONFERENCE REPORT:

CR15(29/90) Program of the: Ninth All-Union Conference on Space Biology and Medicine, Kaluga 18-21 July, 1990

KEY WORDS: Space Biology and Medicine, Space Flight, Long-Term, Mir, Aviation Medicine, COSMOS-1887,-2044, Operational Medicine, Pharmacological Countermeasures, Acceleration Tolerance, Gastrointestinal System, Immunity, Adaptation, Oxygen Homeostasis, LBNP, Hypokinesia With Head-Down Tilt, Thermal Regulation, Orthostatic Tolerance, Cardiovascular and Respiratory Systems, Hypoxia, Neurophysiology, Amino Acids, Biological Rhythms, Endocrinology, Metabolism, Musculoskeletal System, Bone, Muscle, Hematology, Lipid Peroxidation, Cosmonaut Training, Psychology Human Performance, Equipment and Instrumentation, Developmental Biology, Radiobiology, Habitability and Environmental Effects, Life Support Systems, Microbiology, Mathematical Modeling, Reproductive System
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