USSR Space Life Sciences Digest

Index to Issues 15–20

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Washington, D.C.

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1989
# USSR SPACE LIFE SCIENCES DIGEST

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HOW TO USE THIS DOCUMENT

The first section of this document provides bibliographic citations and key words for all abstracts published in issues 15-20 of the USSR Space Life Sciences Digest. Abstracts are grouped according to the topic area categories under which they were originally included and within categories by issue number. Issue numbers are provided as headings and, in addition, the first number in parentheses after abstract number refers to appropriate Digest issue. As always, topic area categories are presented in alphabetical order.

The second section of this document, starting on page 127, is a key word index. Numbers following each entry refer to page numbers in the first section of the present document. Number of listings on a single page in the first section has been limited deliberately to facilitate visual search for a particular reference. Within the key word list, topic area names are highlighted in bold, as are the pages for the primary topic area listing. Numbers not in bold following topic area names refer the reader to relevant abstracts originally included under other category names.
ADAPTATION

ISSUE 15

PAPER:

P683(15/88)* Polyakov BI.
Discrete adaptation to [conditions of] sensory conflict.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[50 references; 11 in English]

Adaptation; Neurophysiology, Space Motion Sickness, Electric Sleep
Humans, Cosmonauts, Theoretical Article
Perception, Sensory Conflict

ISSUE 16

PAPER:

P699(16/88)* Aydaraliyev AA, Maksimov AL, Chernook TB.
Capacity of polar personnel to adapt to high altitudes in the Antarctic.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[31 references; 3 in English]

Adaptation, High Altitudes, Antarctic, Polar Day and Night
Humans, Polar Personnel
Biological Rhythms, Functional State

ISSUE 18

PAPERS:

P822(18/88) Komolova GS, Yegorov IA.
Biosynthesis of nucleic acids in the lymphocytes of rat spleen during chronic
exposure to extreme conditions.
In: Gazenko OG (editor). Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina: Tezisy dokladov VIII Vsosoyuznoy
Moscow: Nauka; 1986.
Pages: 276.

Hematology, Lymphocytes; Metabolism, Nucleic Acids, Synthesis, Spleen
Rats, Reproductive Biology, Pregnant
Adaptation, Hypoxia, Hypokinesia, Space Flight Factors, COSMOS-1514
ADAPTATION

P824(18/88) Farber YuV. 
The effects of the adaptation process on tolerance of extreme factors. 
In: Gazenko OG (editor). 
Moscow: Nauka; 1986. 
Pages: 324

Radiobiology, Human Performance 
Rats 
Adaptation, Tolerance, Nonspecific, Extreme Factors, Hypoxia, High Altitude

P857(18/88)* Gazenko OG, Grigor’yev Al, Yegorov AD. 
Taxonomy and time course of adaptive responses in humans on long-term space flights. 
In: Furduy FI, Kaydarliu Skh, Shriby Yel, Nadvodnyuk Al, Mamalyga LM. 
Mekhanizmy razvitiya stressa: Stress, adaptatsiya i funktsional’nye narusheniya [Mechanisms underlying the development of stress: Stress, Adaptation and Functional Disorders.] 
[30 references; 13 in English] 
Authors’ Affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Adaptation, Time Course, Cardiovascular and Respiratory Systems, Endocrinology, Hematology, Immunology, Metabolism, Microbiology, Musculoskeletal System, Neurophysiology 
Humans, Cosmonauts 
Space Flight, Long-term, Salyut-6, -7, Soyuz, Soyuz-2

ISSUE 19

PAPER:

P901(19/88) Meyerson FZ, Tverdokhlib VP, Lobanova GT, Golubeva LYu, Nikonorov AA. 
Preventing stress-induced dyslipidemia by means of adaptation to short periods of stress. 
Fiziologicheskiy Zhurnal. 
[19 references; 8 in English] 
Authors’ Affiliation: Institute of General Pathology and Physiopathology, USSR Academy of Medicine, Moscow.

Psychology, Stress 
Rats 
Adaptation, Stress; Pharmacological Countermeasures

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ADAPTATION

MONOGRAPHS:

M133(19/88) Braun AD, Mozhenok TP.
Nespetsificheski Adaptatsionnyy Sindrom Kletchnoy Sistemy [Nonspecific adaptive syndrome of the cell system]
[232 pages; 16 tables; 49 figures; 983 references]
Affiliation: Institute of Cytology, USSR Academy of Sciences.
KEY WORDS: Adaptation, Cytology, Extreme Factors, Musculoskeletal System

M136(19/88) Aydaraliyev AA, Maksimov AL.
Adaptatsiya Cheloveka k Ekstremal'nym Usloviyam: Opyt Prognosirovaniya [Human Adaptation to Extreme Conditions: A Case Study in Prediction]
[120 pages; 31 Tables; 19 Figures 315 references]
Affiliation: Division of Physiology, USSR Academy of Sciences
KEY WORDS: Adaptation, Hypoxia, Tolerance, High Altitude, Antarctic, Human Performance, Work Capacity, Individual Differences, Personnel Selection

CONFERENCE REPORT:

CR10(19/88) Beloshitskiy PV, Lanovenko II.
Report on conference on Adaptation and Resistance at High Altitudes 5-8 August, 1986; Terskol, Kabardino-Balkarsk Autonomous SSR.
KEY WORDS: Adaptation, High Altitudes, Hypoxia; Neurophysiology, Cardiovascular and Respiratory System; Hematology, Hemopoiesis; Immunology, Resistance; Radiobiology; Enzymology; Physical Exercise; Operational Medicine; Endocrinology; Human Performance; Biological Rhythms

ISSUE 20

MONOGRAPH:

M141(20/88) Platonov VN.
Adaptsiya v sporte [Adaptation in Sports].
[216 pages; 25 tables; 116 figures; 279 references; 101 in English]
KEY WORDS: Adaptation, Musculoskeletal System, Athletes, Individual Differences, Exercise, Sports, Fatigue, Energy, Human Performance
PAPER:

P832(18/88)* Strongin GL, Skvortzov SA. *Individual differences and individual norms revealed in automated preflight medical monitoring.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(2): 10-16; 1987. (4 references; none in English)

BOOK REVIEW:


KEY WORDS: Aviation Medicine, Human Performance, Personnel Selection, Habitability and Environment Effects, Man-Machine Systems, Nutrition, Operational Medicine, Pharmacological Countermeasures, Perception
BIOLOGICAL RHYTHMS

ISSUE 15

PAPER:

P661(15/88)* Klimovitskiy VYa, Alpatov AM (USSR), Sulzman FM, Fuller CA, Moore-Ede M (USA).
Circadian rhythms and temperature hemostasis in monkeys inflight on Cosmos- 1514 biosatellite.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[22 references; 11 in English]

Biological Rhythms, Circadian Rhythms, Skin and Body Temperature
Primates, Macaca mulatta
Space Flight, Short-term, Cosmos-1514

MONOGRAPH:

M119(15/88) Emel'yanov IP.
Struktura Biologicheskikh Ritmov Cheloveka v Protsesse Adaptatsii Statisticheskiy Analiz i
[180 pages]
Affiliation: USSR Academy of Sciences (Siberian Division), Yakustsk Affiliate of the Division of Applied

KEY WORDS: Biological Rhythms, Adaptation, Far North, Mathematical Modeling

ISSUE 17

PAPERS:

P767(17/88)* Vaysburd [Weisburd] IF.
A technique for evaluating change in the biological rhythms of human physiological functions.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[7 references; 3 in English]

Biological Rhythms; Adaptation; Inverted Diurnal Schedule
Humans
Mathematical Modeling
BIOLOGICAL RHYTHMS

P803(17/88) Stepanova SI.
Biorhythmic aspects of occult motion sickness.
Pages: 128-130.

Biological Rhythms, Stress Resistance
Humans, Pilots, Theoretical Article
Neurophysiology, Motion Sickness, Occult

ISSUE 18

PAPERS:

P819(18/88) Shukin AI.
The phenomenon of group synchronization of biological rhythms in single and double shift work.
Pages: 212-213.

Biological Rhythms
Humans, Males, Workers
Human Performance, Shift Work, Group Coordination; Psychology, Stress

ISSUE 19

PAPERS:

P875(19/88)* Koreshkov AA, Makarov VI, Abramov IR, Kots AR.
The circadian rhythm of psychomotor response in humans exposed to the combined effects of 18-hour days and elevated concentration of carbon dioxide.
(1 reference; none in English)

Biological Rhythms, Circadian Rhythms, Work-Rest Schedules, Human Performance, Psychomotor Performance
Humans
Hermetically Sealed Environment, Desynchronosis, Elevated Carbon Dioxide
Stability of biological rhythms in excretion of salts under exposure to extreme conditions.
Izvestiya Akademii Nauk Kirgizskoy SSR.
[14 references; 2 in English]
Authors' Affiliations: Institute of Physiology and Experimental Pathology of High Altitudes of the Kirgiz Academy of Sciences; Institute of Industrial Hygiene and Occupational Disease, Bulgarian Academy of Medicine

Biological Rhythms, Body Fluids, Salt Excretion
Humans
Extreme Conditions, Isolation, Stress, Motion Sickness, Hypokinesia

ISSUE 20

MONOGRAPH:

M142(20/88) Gudkova SYa.
Mekhanizmy zimney spyachki [The mechanisms of hibernation.]
[206 pages]
Affiliation: Scientific Center for Biological Research; Institute of Biophysics

KEY WORDS: Biological Rhythms, Hibernation, Sleep, Metabolism, Cold, Neurophysiology, Body Fluids, Endocrinology, Enzymology, Hematology, Gastrointestinal System
BIONICS

ISSUE 16

MONOGRAPH:

M121(16/88) Seleznev VP, Selezneva NV.
Navigatsionnaya Bionika [Navigational Bionics].
Moscow: Mashinostroyeniye; 1987.
[255 pages; 100 figures; 54 references; none in English]


**ISSUE 18**

**MONOGRAPH:**

M129(18/88) Agadzhanyan NA. Chelovek i biosfera [*Man and the biosphere.*] Moscow: Znaniye; 1987. [96 pages]

**KEY WORDS:** Biospherics, Biological Rhythms

**ISSUE 19**

**PAPER:**

P894(19/88) Shilov IA. *Biological problems of biospheric homeostasis.* Zhurnal Obshchey Biologii. XLIX(2): 166-173; 1988. [10 references; none in English]

Author's Affiliation: Moscow State University; Department of Biology

**Biospherics**

Theoretical Article

Homeostasis
CONFERENCE REVIEW:

CR9(19/88)Buznikov AA, Vedeshin LA.
Review of: "Space and Ecology Round Table," at an international forum marking the 30th anniversary of the launch of the first manmade satellite.
Issledovaniye Zemli iz Kosmosa.

KEY WORDS: Biospherics, Biological Rhythms
**BODY FLUIDS**

**ISSUE 15**

**PAPERS:**


**Body Fluids, Extracellular, Intracellular, Interstitial Fluid, Blood**

**Primates, Monkeys**

**Space Flight, Short-term, COSMOS-1617**


**Body Fluids, Fluid Redistribution**

**Equipment and Instrumentation, Radiotracer System**

**Weightlessness Simulations, Hypokinesia with Head-Down Tilt, Immersion**

**ISSUE 16**

**PAPERS:**


**Cardiovascular and Respiratory Systems, Tolerance, Acceleration, Gz**

**Humans**

**Body Fluids, Hydration, Salt; Immersion**
BODY FLUIDS

Fluid-electrolyte metabolism and its hormonal regulation under conditions of long-term space flight.
Pages: 354-355.

Body Fluids, Metabolism, Fluid-Electrolyte; Endocrinology, Hormonal Regulation, Adrenal Gland, Corticosteroids
Humans, Cosmonauts
Space Flight, Salyut-7, 237-day Flight

ISSUE 17
PAPERS:

P789(17/88) Lavrova YeA, Shakhmatova Yel, Serova LV, Natochin YuV, Denisova LA.
The effect of weightlessness on fluid electrolyte homeostasis in pregnant rats and their offspring.
Pages: 282-283.

Body Fluids, Fluid-Electrolyte Homeostasis
Rats, Reproductive Biology, Female, Pregnant; Developmental Biology, Fetuses, Neonates
Space Flight, COSMOS-1514

P792(17/88) Voronin LI, Kravchenko VV, Zhemavkov AF, Bystrov VV.
Parameters of fluid-electrolyte metabolism in humans during LBNP,
Pages: 337-338.

Body Fluids, Fluid Electrolyte Metabolism
Humans, Males
LBNP
P793(17/88) Chaika AM, Dzhenzhera LYu, Panchenko VS. 
*Dynamics of blood volume, extracellular fluid and weight of serum proteins in humans undergoing hypokinesia and immersion.*


*Body Fluids, Blood Volume, Extracellular Fluid; Metabolism, Serum Proteins; Humans, Males; Hypokinesia With Head-Down Tilt, Immersion; Countermeasures, Antiacceleration Suit, Occlusion Cuffs, Physical Exercise*

P794(17/88) Baran'ski S, Voytkovyak M, Gembitska D (Warsaw), Kotovskaya AR, Vil'-Vil'yams IF, Kokova NI, Luk'yanyuk VYu. 
*Artificially increased hydration as a technique for improving human tolerance of +Gz acceleration.*


*Body Fluids, Artificially Increased Hydration; Humans; Tolerance, Acceleration*

**ISSUE 18**

**PAPERS:**

P836(18/88)* Denisova LA, Lavrova YeA, Natochin YuV, Serova LV. 
*Concentrations of fluid and electrolytes in organs and tissues of male rats after flight on the COSMOS-1667 biosatellite.*

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(2): 33-37; 1988. (17 references; 3 in English)

*Body Fluids, Fluid-Electrolyte Concentration; Rats, Males; Reproductive Biology, Female, Pregnant; Sex Differences; Space Flight, COSMOS-1667, COSMOS-1514*
BODY FLUIDS

P854(18/88)* Kondratyuk VA, Gnatyuk MS, Volkov KS.
Structural reorganization of the liver in response to exposure to reclaimed drinking water with varying concentrations of sodium and potassium ions.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(9 references; none in English)

Body Fluids, Liver Structure
Rats, Male
Life Support Systems, Reclaimed Water, Sodium, Potassium

ISSUE 20

PAPER:

P932(20/88)* Zhidkov VV, Lobachik VI, Borisov GI, Zaychik VYe, Fedorov YuV, Biryukov YeG.
A micromethod for measuring volume of extracellular fluid.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; 3 in English]

Body Fluids, Extracellular Fluid
Humans
Equipment and Instrumentation, Micromethod

CONFERENCE REPORT:

CR11(20/88) Ivanovna LN.
Fiziologicheskiy Zhurnal.
LXXIV(6): 903-905

Body Fluids, Renal Physiology, Fluid-Electrolyte Metabolism, Calcium, Nutrition,
Vitamin D, Vitamin K, Space Flight, Hypokinesia, Exercise
KEY WORDS:
PAPERS:

P643(15/88) Zhvalikovskaya VP.
**Use of higher plants for genetic monitoring of space flights.**

Genetics, Genetic Monitoring, Chromosome Aberrations
Botany, Higher Plants
Space Flight, Radiobiology, Galactic Radiation, Temperature

P651 (15/88) Kostina LN, Balayeva AV, Anikeyeva ID, Rusin SV.
**Study of mutability of plants exposed to the effects of HZE particles in experiments on board Salyut-6 and with an accelerator.**

Genetics, Mutations, Mitosis
Botany, Air-dried Seeds, Arabidopsis, Crepis capillaris
Space Flight, Salyut-6; Radiobiology, HZE

P649(15/88) Akatov YuA, Maksimova YeN, Marennyy AM, Nevsgodina LV.
**Study of the effects of radiation factors on biological subjects in flight experiments on Salyut-6 and Salyut-7 space stations.**

Radiobiology, HZE, Biological Effects, Genetics, Aberrant Cells
Botany, Lettuce
Space Flight, Long-term, Salyut-6, Salyut-7
Modification of cytogenetic, anatomical, and physiological changes in cells and organs of sprouts by biologically active compounds after long-term space flight.

Zhurnal Obshcheiy Biologii.

Botany, Cytogenetic, Anatomical, Physiological Changes; Germination Rate, Growth Rate, Mitotic Activity
Botany, Welsh Onion, Air-Dried Seeds
Space Flight, Long-Term, Salyut-7; Natural Aging; Biologically Active Compounds, Auxin, Alpha-Tocopherol

ISSUE 16

PAPERS:

P685(15/88) Aliyev AA, Nechitaylo GS, Novruzova ZA, Ragimova GKR, Aleksperov UK.

P728(16/88) Abilov ZK, Aliyev AA, Novruzova ZA, Mashinskiy AL, Ragimova GKR, Alekperov UK, Fadeyeva SN.

P737(16/88) Sychev VN, Galkina TB.
ISSUE 17

PAPERS:


Genetics, Chromosome Restructuring, Mutability; Developmental Biology, Plant Development; Life Support Systems Botany, Crepis capillaris, Arabidopsis thaliana Space Flight, Soyuz-16, Salyut-5, -6, -7; Radiobiology, Heavy Ions, Galactic Radiation


Genetics, Mutation; Developmental Biology, Growth and Fertility Botany, Arabidopsis, Seeds Space Flight, COSMOS-936, -1129, 1514; Radiobiology, Multicharged Ions

ISSUE 19

PAPER:


Developmental Biology, Development, Embryogenesis Botany, Lettuce Space Flight, Salyut-7
P623(15/88) At'kov OYu, Fomina GA. 
*Results of echocardiographic measurements during a graded exercise test on a 237-day space flight.*


Cardiovascular and Respiratory Systems, Echocardiographic Parameters
Humans, Cosmonauts
Space Flight, Long-Term, Salyut-7; Physical Exercise Tests

P624(15/88) At'kov OYu, Fomina GA. 
*Hemodynamic status of members of the third Salyut-7 prime crew in response to an LBNP test.*


Cardiovascular and Respiratory Systems, Hemodynamics, Echocardiography, Myocardium
Humans, Cosmonauts
Space Flight, Long-Term, Salyut-7, LBNP

P625(15/88) Bayevskiy RM, Barsukova ZhV, Semenova TD, Tazetdinov IG. 
*Use of mathematical analysis of cardiac rhythm to evaluate the functional state of cosmonauts performing EVAs.*


Cardiovascular and Respiratory Systems, Cardiac Rhythm, Mathematical Modeling, Adaptation
Humans, Cosmonauts
Space Flight, EVA, Salyut-7
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P627(15/88) Itsekhovskiy OG, Aiferova IV, Turchaninova VF, Polyakova AP, Golubchikova ZA, Domracheva MV, Volgin VA, Talavrinov VA, Kulev AP.

Study of circulatory system response to a provocative two-stage test using a bicycle ergometer in cosmonauts on a 237-day flight.

In: Gazenko OG (editor).


Moscow: Nauka; 1986.

Pages: 66-67.

Cardiovascular and Respiratory Systems, Circulation; Physical Work Capacity
Humans, Cosmonauts
Space Flight, Long-Term, Physical Exercise, Provocative Test

P628(15/88) Kotovskaya AR, Lyamin VR, Turbasov VD, Vl'i-Vl'yams IF, Andreyeva VG, Antonenko LV, Vlasova NF, Galle NN.

A study of cardiac bioelectric activity (EKG-DS) in members of Salyut-7 prime and visiting crews during launch and reentry.

In: Gazenko OG (editor).


Moscow: Nauka; 1986.

Pages: 78-79.

Cardiovascular and Respiratory Systems, Circulation; Physical Work Capacity
Humans, Cosmonauts
Space Flight, Long-Term, Physical Exercise, Provocative Test

P629(15/88) Nikulina GA, Bogomolov VA, Zhernakov AV, Shigoleva TV.

Principles for analyzing the results of dynamic electrocardiograms in the readaptation period following space flight.

In: Gazenko OG (editor).


Moscow: Nauka; 1986.

Pages: 101-102.

Cardiovascular and Respiratory Systems, Dynamic Electrocardiograms
Humans, Cosmonauts, Individual Differences
Space Flight, Short-Term, Long-Term; Adaptation, Postflight Readaptation
CARDIOVASCULAR AND RESPIRATORY SYSTEMS


Cardiovascular and Respiratory Systems, Electrocardiography
Humans, Cosmonauts
Space Flight, Long-Term, Salyut-7


Cardiovascular and Respiratory Systems, Central Circulation, External Respiration
Primates, Monkey
Space Flight


Cardiovascular and Respiratory Systems, Circulation
Primates, Rhesus Monkeys
Space Flight, COSMOS-1667


Cardiovascular and Respiratory Systems, Complications, Prognosis
Humans, Flight Crews
Operational Medicine, Diagnostic Prediction
P678(15/88)* Krasnov IB, Nosova YeA. 
*Activity of Ca2+, Mg2+-ATPase myosin in the myocardia of rats after 30-days of exposure to 1.1 and 2-g.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
21(5): 72-73; 1987. [17 references; 7 in English]

Cardiovascular and Respiratory Systems, Myocardia, Ca2+, Mg2+-ATPase myosin
Rats
Hypergravity, Centrifugation; Adaptation

P680(15/88)* Modin AYu. 
*Comparison of orthostatic intolerance after immersion in horizontal and vertical positions.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Cardiovascular and Respiratory Systems, Orthostatic Intolerance, Deconditioning
Humans, Males
Immersion, Horizontal and Vertical Positions, Tilt Test

ISSUE 16

PAPERS:

P686(16/88)* Romanov YeM, Artamonova NP, Golubchikova ZA, Zavadovskiy AF, Korotayev MM, Lyamin, VR, Turbasov VD. 
*Results of longitudinal electrocardiographic observation of cosmonauts.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
21(6): 10-14; 1987.[14 references; 3 in English]

Cardiovascular and Respiratory Systems, Electrocardiograms
Humans, Cosmonauts, Longitudinal Study
Spaceflight, Long- and Short-term Flights, Multiple Flights

P695(16/88)* Kayfadzhyan MA, Tikunov BA. 
*The effects of cardioactive compounds on myocardial actomyosin in rats undergoing acceleration.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[16 references; 8 in English]

Cardiovascular and Respiratory Systems, Myocardial Actomyosin
Rats
Acceleration, +Gx, Cardioactive Compounds
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P697(16/88)* Yarullin KhKh, Vasil'yeva TD, Neumyvakin IP. 
Effect of exogenous contrapulsation synchronized with heart rhythm on regional and central hemodynamics in humans. 
[16 references; 6 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, Central and Regional Humans, Males 
Exogenous Contrapulsation

P698(16/88)* Breslav IS, Isayev GG, Rymzhanov KS. 
The effect of oxygen inhalation on the respiratory function during exercise and additional resistance to respiration. 
[21 references; 9 in English]

Cardiovascular and Respiratory Systems, Respiratory Function Humans, Males 
Oxygen Inhalation, Physical Exercise, Resistance to Respiration

P703(16/88)* Nekhayev AS, Vlasov VD, Stepanov VK, Andriyenko Yul. 
The effect of a hypercapnic-hypoxic test on the cardiorespiratory parameters of individuals with neurocirculatory dystonia. 
[12 references; 1 in English]

Cardiovascular and Respiratory Systems, Cardiovascular Parameters Humans, Pilots, Patients, Neurocirculatory Dystonia 
Hypercapnic-Hypoxic Test

P705(16/88)* Belkaniya GS, Galustyan MV, Dartsmeliya VA, Demin AN. 
Hemodynamic effects of beta-adrenoblockade by obzidan in horizontal and upright positions. 
[15 references; 5 in English]

Cardiovascular and Respiratory Systems, Hemodynamics Humans, Males, Typology 
Beta-Adrenoblockade, Drugs, Obzidan, Horizontal and Vertical Positions
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P715(16/88)Lapayev EV, Bednenko VS, Vorob’ev OA, Artamonov IN, Zaritskiy VV.
The effect of vestibuloautonomic stimulation and hypokinesia on regional hemodynamics.
[31 references; 5 in English]

Cardiovascular and Respiratory Systems, Hemodynamics, Regional Humans
Neurophysiology, Vestibuloautonomic Stimulation, Coriolis Acceleration, Hypokinesia with Head-Down Tilt, Motion Sickness

ISSUE 17

PAPERS:

P749(17/88)* Yegorov AD, Anashkin OD, Itsekhovskiy OG, Alterova IV, Golubchikova ZA, Lyamin VR, Pokyakova AP, Turchaninova VF, Talavrinov VA, Turbasov VD.
Results of medical research performed in 1985 during long-term space flights.
(no references)

Cardiovascular and Respiratory Systems, Operational Medicine Humans, Cosmonauts
Space Flight, Salyut-7, Soyuz-T-13, Soyuz-T-14; Provocative Tests, LBNP, Physical Exercise

P750(17/88)* Genin AM, Modin AYu, Shashkov VS.
State of hemodynamics in humans under conditions of immersion in different positions.
(3 references; none in English)

Cardiovascular and Respiratory Systems, Hemodynamics Humans, Male
Immersion, Positions

23
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P774(17/88) Balldin U (Stockholm).
Positive pressure breathing and physical conditioning to decrease cardiovascular deconditioning in cosmonauts.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 15-16.

Cardiovascular and Respiratory Systems, Deconditioning
Humans, Cosmonauts, Pilots; Theoretical Article
Positive Pressure Breathing, Physical Exercise

P775(17/88) Glod GS, Migachev SD, Plakhotnyuk LS, Khomenko MN.
Reactions of the cardiovascular system in individuals with different levels of tolerance for gravitation.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 34-35.

Cardiovascular and Respiratory Systems, Hemodynamics
Humans, Individual Differences
Acceleration, Tolerance, Gravitation

P777(17/88) Domashuk Yu (Warsaw).
The use of excess pressure in increasing pilots’ tolerance of +Gz acceleration.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 53-54.

Acceleration Tolerance
Humans, Pilots
Cardiovascular and Respiratory Systems, Excess Pressure Breathing
Acceleration tolerance in older individuals with health problems before and after simulated weightlessness.


P788(17/88) Kotovskaya AR, Vil'-Vil'yams IF, Luk'yanyak VYu, Andreyeva VG, Gordov AM, Artamonova NP.

Cardiovascular and Respiratory Systems, Acceleration Tolerance
Human, Older Individuals, Patients
Hypokinesia

Changes in blood pressure and rate of blood flow in a monkey exposed to space flight.


P788(17/88) Krotov VP, Sandler N, Badakva AM, Hines J., Hazin AN, Halprin B (Moscow, Moffett Field)

Cardiovascular and Respiratory Systems, Blood Pressure, Blood Flow Rate
Monkey
Space Flight, COSMOS-1514

+Gz acceleration tolerance in rhesus macaque monkeys.


Cardiovascular and Respiratory System, EKG Parameters
Primates, Rhesus Macaques; Individual Differences, Selection
Tolerance, Acceleration, +Gz
P796(17/88) Starikov LI.  
*Cerebral hemodynamics in pilots during tilt tests.*  
Voyenno-Meditsincki Zhurnal.  
1987(12): 44-47.  
[12 references; none in English]  
Author's affiliation: Military Medical Corps  

Cardiovascular and Respiratory Systems, Hemodynamics, Cerebral  
Humans, Pilots; Individual Differences  
Tilt Tests, Orthostatic Tolerance  

P798(17/88) Tagiyeva SA, Azizov VA, Babayev AA.  
*Changes in hemodynamics in patients suffering from ischemic heart disease in response to isometric exercise combined with head-down tilt.*  
Kardiologiya.  
[15 references; 3 in English]  
Authors' affiliation: Azerbaijan Medical Institute, Baku  

Cardiovascular and Respiratory Systems, Hemodynamics  
Humans, Patients, Ischemic Heart Disease  
Physical Exercise, Isometric; Head-Down Tilt  

**ISSUE 18**  

**PAPERS:**  

P833(18/88)* Iseyev LR, Mednykh AYa, Vorob'yev VYe, Abdrakhmanov VR.  
*CO2 sensitivity of the respiration regulation system under conditions simulating space flight*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(13 references; 2 in English)  

Cardiovascular and Respiratory Systems, Respiration Regulation  
Humans, Males  
Space Flight Simulation, Isolation, Hypokinesia with Head-Down Tilt, Hypercapnia
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P839(18/88)* Stazhadze LL, Borob'yev VYe, Repenkova LG, Kovachevich IV, Ivchenko VF, Kal'yanova VN.
Clinical and physiological aspects of oxygen supply to tissues in the human body under conditions of hypokinesia with head-down tilt.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(20 references; 3 in English)

Cardiovascular and Respiratory Systems, Tissue Oxygenation
Humans, Male
Hypokinesia with Head-Down Tilt

P846(18/88)* Lobanok LM, Kiriyenko AYe.
Effects of hypoxia and reoxygenation on the contractility of the isolated heart of rats varying in age.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(10 references; 2 in English)

Cardiovascular and Respiratory Systems, Cardiac Contractility
Rats, Age Differences
Hypoxia, Reoxygenation

ISSUE 19

PAPERS:

P861(19/88)* Artamanova NP, Turbasov VD, Georgiyevskiy VS, Golubchikova ZA, Lyamin VR, Potapova MG, Tolmacheva MYa, Nechayeva El, Zakharova TS.
The effect of long-term hypokinesia on bioelectric cardiac activity in healthy men.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(38 references; 4 in English)

Cardiovascular and Respiratory Systems, Cardiac Bioelectric Activity
Humans, Men
Hypokinesia, Long-Term, Physical Exercise, Pharmacological Countermeasures, Metabolism, Mineral, Lipid; Nutrition, Vitamin D
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P864(19/88)* Fatenkov VN.  
**New information on cardiac biomechanics.**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(21 references; 10 in English)

*Cardiovascular and Respiratory Systems, Cardiac Biomechanics*  
Dogs  
Contraction, Myocardial Layers, Interactions

P866(19/88)* Barinyan SB, Oganesyan SS, Eloyan MA.  
The effect of neutral muscle proteases on contractile parameters of isolated strips of the myocardia of white rats during exposure to acceleration and a subsequent recovery period.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(19 references; 14 in English)

*Cardiovascular and Respiratory Systems, Contractile Parameters*  
Rats  
Acceleration, Enzymology, Musculoskeletal System, Muscle, Protease

P868(19/88)* Goncharov IB, Ivanov AP, Savina VP, Repenkova LG, Yakovleva, Mye, Nikitin Yel.  
Evaluation of the effects of enterosorption in humans exposed to an altered gas medium.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(10 references; 9 in English)

*Cardiovascular and Respiratory Systems, Central Circulation*  
Humans  
Habitability and Environment Effects, Hermetically Sealed Environment, CO₂, CO;  
Operational Medicine, Prophylactic Detoxification, Enterosorbent
Regional vascular effects of decreasing adrenergic activity in animals at rest and immobilized.
Fiziologicheskiy Zhurnal SSSR im I.M. Sechenova.
[8 references; 2 in English]
Authors' affiliations: Central Scientific Research Laboratory; S.M. Kirov State Institute for Physician Training, Leningrad

Evaluating physical work capacity under conditions of hypokinesia.
Voyenno-meditsinskiy Zhurnal.
[No references.]
Authors' Affiliations: Military Medical Corps

Characteristics of changes in circulation and adrenergic activation in rats confined in immobilization cages or restrained on a board
Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya.
[11 references; 1 in English]
The effects of therapeutic exercise on patients undergoing long periods of hypokinesia (bed rest).
Voprosy Kurortologii Fizioterapii i Lechebnoy Fizichesko Ku'turu.
[11 references; 1 in English]

Author's Affiliation: Institute of Physical Culture, Kiev

Cardiovascular and Respiratory Systems, Heart Rate, Blood Pressure
Humans, Patients, Heart Disease; Healthy
Hypokinesia, Bed Rest; Exercise

ISSUE 20:

PAPERS:

P912(20/88) Galichiy VA.
Characteristics of biological rhythms in parameters of human external respiration during tilt tests.
Fiziologiya Cheloveka.
[14 references; 3 in English]

Cardiovascular and Respiratory Systems; External Respiration; Biological Rhythms
Humans
Tilt Tests

P916(20/88)* Yegorov AD, Allerova IV, Polyakova AP.
State of cardiodynamics under conditions of long-term weightlessness.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[26 references; 10 in English]

Cardiovascular and Respiratory Systems, Cardiac Cycle
Humans, Cosmonauts
Space Flight, Salyut-6, Salyut-7, Long-Term. LBNP, Physical Exercise
CARDIOVASCULAR AND RESPIRATORY SYSTEMS

P917(20/88)* Suvorov PM, Ivanchikov AP, Kondakov AV, Sidorova KA. 
Investigation of hemodynamic response to a modified tilt test in individuals varying in their tolerance of +Gz acceleration. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[15 references; 4 in English]

Cardiovascular and Respiratory Systems, Hemodynamic Response 
Humans, Individual Differences, Acceleration Tolerance 
Tilt Test

P921(20/88)* Vilkov VG, Shamarin VM. Shal'nova SA, Dmitriyeva VS. 
The effect of exercise on changes in blood pressure, heart rate and electrocardiogram measured in upright position. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[23 references; 9 in English]

Cardiovascular and Respiratory Systems, Blood Pressure, Heart Rate, EKG 
Humans, Males and Females, Patients, Hypertension, Ischemic Heart Disease 
Exercise, Upright Position

P934(20/88)* Vorob'ev VYe, Goncharov IB, Abdakhmanov VR, Voronina SG. 
Characteristics of changes in cardiac output and blood gases in humans exposed to simulated weightlessness. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[6 references; 3 in English]

Cardiovascular and Respiratory Systems, Cardiac Output, Blood Gases 
Humans, Males 
Hypokinesia with Head-Down Tilt, Long-Term

MONOGRAPH:

M140(20/88) Yu. Vedru (editor). 
Klinicheskiye, matematicheskiye i inzhenernyye problemy sportivnoy meditsiny [Clinical, mathematical and engineering issues in sports medicine.] 
Affiliation: Tartu State University

KEY WORDS: Cardiovascular and Respiratory Systems, Cardiac Volume, External Respiration, 
Operational Medicine, Exercise, Sports, Mathematical Modeling, Equipment and Instrumentation
P823(18/88) Butey M. (Paris)

Preliminary results and prospects in the study of the effects of microgravity on cell biology.


Cytology, Cell Biology; Neurophysiology, Cerebellar Neurons
Rats, Developmental Biology, Embryos; Hybridoma
Space Flight, COSMOS-1514; Clinostatting
DEVELOPMENTAL BIOLOGY

ISSUE 15

PAPERS:


Developmental Biology, Mother-Fetus System, Metabolism, Nucleic Acids and Protein; Reproductive Biology
Rats, Female, Pregnant
Space Flight, COSMOS-1514

[10 references; 8 in English]

Developmental Biology, Embryonic Development; Reproductive Biology
Fish, Guppies, Female, Pregnant
Space Flight, COSMOS-1514

[13 references; 2 in English]
Authors' Affiliation: Leningrad Pediatric Medical Institute

Developmental Biology, Neurophysiology, Brain Development
Rats, Female
Space Flight, COSMOS-1514
DEVELOPMENTAL BIOLOGY

ISSUE 16

PAPERS:


Developmental Biology; Genetics; Reproductive Biology, Spermatocytes Rats, Female, Pregnant; .Male Space Flight, COSMOS-1514


Developmental Biology, Growth and Development Larva, Amphibians, Frogs, Rana temporaria Gravitational Biology, Increased Gravity, Centrifugation

ISSUE 17

PAPERS:


Developmental Biology, Cytology, Cell Growth and Differentiation; Neurophysiology, Cerebellum Rats, Embryos Space Flight, COSMOS-1514
P786(17/88) Denisova LA, Pustynnikova AM.
The effects of weightlessness and hypergravity on skeletal development in white rats during prenatal ontogenesis.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 269-270.

Developmental Biology; Musculoskeletal System, Skeletal Development
Rats, Prenatal Ontogenesis; Reproductive Biology, Females, Pregnant
Space Flight, COSMOS-1514; Hypergravity, Centrifugation

P766(17/88)* Kurochkin YuN, Belkaniya GS.
Developmental patterns during postnatal ontogenesis of lower primates.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(14 references; 2 in English)

Developmental Biology, Growth Patterns
Primates, Rhesus Macaques, Males
Postnatal Development

ISSUE 19

PAPERS:

P886(19/88)* Parfenov GP, Oygenblik EA.
The effects of hypergravity on embryonic development and survival in amphibians.
Izvestiya Akademii Nauk SSR: Seriya Biologicheskaya.
[20 references; 10 in English]
Authors' affiliation: Institute of Biomedical Problems; USSR Ministry of Health, Moscow.

Developmental Biology, Embryonic Development, Survival
Amphibian, Grass Frog
Gravitational Biology, Hypergravity, Centrifugation
The effects of weightlessness on the development of the endocrine system in mammals.


Author's Affiliation: Institute of Biomedical Problems (first author); Institute of Experimental Endocrinology, Czech Academy of Sciences, Bratislava, Czechoslovakia

Developmental Biology, Endocrinology
Rats, Female, Pregnant
Space Flight, COSMOS-1514

ISSUE 16

PAPERS:

[7 references; 7 in English]

Endocrinology, Hypothalamus-Pituitary System; Morphology; Body Fluids
Rats, Males
Space Flight, Short-term, COSMOS-1667, Gravitational Biology, Centrifugation, Hypokinesia

[10 references; 2 in English]

Endocrinology, Adrenal Glands, Catecholamines
Rats
Electric Field, External
ENDOCRINOLOGY

*Study of the levels of catecholamines and adrenergic receptors in rats after flights on COSMOS biosatellites.*  
In: Gazenko OG (editor).  
Moscow: Nauka; 1986.  
Pages: 275-276.

**Enzymology**  
Rats, Males  
Reproductive Biology, Females  
Space Flight, Short-term, COSMOS-1129, -1667, Psychology, Immobilization Stress

ISSUE 18

**PAPERS:**

P834(18/88)* Shubnikova YeA, Dobryakova AV.  
*Ultrastructure of the submandibular glands of rats in weightlessness.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(9 references; 2 in English)

**Endocrinology, Salivary, Submandibular Glands**  
Rats  
Space Flight, COSMOS-1667

P835(18/88)* Plakhuta-Plakutina GI, Dmitriyeva NP, Amirkhanyan YeA.  
*The thyroid C-cell system in rats after space flight on the COSMOS-1667 biosatellite.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(15 references; 5 in English)

**Endocrinology, Thyroid, C-Cell Systems**  
Rats, Male  
Space Flight, COSMOS-1667
P867(19/88)* Mamalyga LM. Neurochemical and morphological studies of hypothalamic structures in stress. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(3): 61-64 ; 1988. (20 references; 3 in English)

Endocrinology, Hypothalamus; Neurophysiology, Neurochemicals
Rats, Male
Psychology, Stress

Affiliation (book): USSR Academy of Sciences, Scientific Council on Visceral Systems, I.P. Pavlov Institute of Physiology, I.M. Sechenov Institute of Evolutionary Physiology and Biochemistry, Leningrad Research Institute on Industrial Hygiene and Occupational Diseases, Samarkand Medical Institute Author's Affiliation: Institute of Biomedical Problems

Endocrinology, Adrenal Cortex
Rats, Male
Hypokinesia, Immobilization Cages, Psychology, Immobilization Stress, Restraint

Affiliation (book): USSR Academy of Sciences, Scientific Council on Visceral Systems, I.P. Pavlov Institute of Physiology, I.M. Sechenov Institute of Evolutionary Physiology and Biochemistry, Leningrad Research Institute on Industrial Hygiene and Occupational Diseases, Samarkand Medical Institute Author's Affiliation: Institute of Biomedical Problems

Endocrinology, Adrenal Glands, Medullary Substance
Rats
Space Flight, COSMOS-1667
Papers:

P928(20/88)* Kirillov OI, Kurilenko LA.
*The effect of long-term hypokinesia on the androgen system of rats.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[20 references; 11 in English]
ISSUE 16

PAPERS:

P704(16/88)* Vetrova YeG, Popova IA.
*Activity of oxidative enzymes in response to graded physical exercise in healthy individuals and patients with neurocirculatory dystonia.*
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[9 references; 4 in English]

Enzymology, Oxidative Enzymes; Metabolism
Humans, Patients, Neurocirculatory Dystonia
Physical Exercise

ISSUE 18

PAPERS:

P809(18/88) Kukhta VK, Morozkina TS, Listsyna LP, Zakharenko IV, Mal'kovets IG, Karpova IN.
The enzymatic system for initiating and providing protection from [i.e., inhibiting] lipid peroxidation in liver tissue and blood of rats undergoing hypokinesia.
Voprosy Meditsinskoy Khimii.
[13 references; 4 in English]
Authors' Affiliation: Minsk Medical School

Enzymology, Metabolism, Lipid Peroxidation, Liver, Blood
Rats
Hypokinesia

ISSUE 20

PAPERS:

P927(20/88)* Vetrova YeG, Drozdova TYe, Popova IA.
The effect of horizontal hypokinesia and hypokinesia with head-down tilt on activity of serum enzymes.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[16 references; 2 in English]

Enzymology, Hematology, Serum Enzymes
Humans, Males
Hypokinesia, Bed Rest, Horizontal, Head-Down Tilt
EXOBIOLOGY

ISSUE 15

PAPER:

P652(15/88) Yurov SS, Akoyev IG.

*The possible role of the local radiation factor in space in the creation of the prerequisites for prebiological evolution.*


Exobiology, Prebiotic Evolution; Biospherics

Theoretical Article

Space, Radiobiology, Local Radiation

ISSUE 17

PAPER:

P795(17/88)* Strigunkova TF, Lavrent'ev GA, Yegorov IA.

*Polycondensation of adenosine cyclic phosphate on the surface of clay minerals under exposure to humidity and temperature fluctuation.*


[8 references; 8 in English]

Authors’ Affiliation: Institute of Biochemistry, USSR Academy of Sciences.

Exobiology, Abiogenic Synthesis

Nucleotides

Cyclic AMP, Clay, Temperature and Humidity Fluctuations

ISSUE 18

PAPERS:

P857(18/88)* Telegina TA, Pavlovskaya Ne.

*Melanin-melanoidin catalysts in the abiotic synthesis of peptides.*


[25 references; 15 in English]

Authors’ affiliation: A.N. Bakh Institute of Biochemistry, USSR Academy of Sciences, Moscow.

Exobiology, Abiogenic Synthesis

Peptides, Protein Precursors

Melanin-Melanoidin Catalysts, Ultraviolet Radiation
EXOBIOLOGY

ISSUE 19

PAPER:

P883(19/88) Kuzicheva YeA, Tsupkina NV, Potapova NG.
*The effects of individual flight factors on the abiogenic synthesis of nucleotides.*
Zhurnal Evolutsionnoy Biokhimii i Fiziologii.
[15 references; 5 in English]
Authors’ affiliation: Institute of Cytology, USSR Academy of Sciences, Leningrad

Exobiology, Abiogenic Synthesis
Nucleotides
Space Flight. Salyut-7; Thermal Energy

ISSUE 20

PAPER:

P941(20/88) Chetkauskayte AV, Grinyus LL, Mukhin LM.
*The stimulating effects of polyphosphates on the formation of peptides from glycine and phenylalanine amine under abiogenic conditions.*
Zhurnal Evolyutsionnoy Biokhimii i Fiziologii.
[17 references; 14 in English]

Exobiology, Abiogenic Synthesis
Nucleotides
Space Flight. Salyut-7; Thermal Energy
GASTROINTESTINAL SYSTEM

ISSUE 17

PAPERS:

P776(17/88) Groza P, Bordeyanu A (Bucharest).  
The effectiveness of hypokinesia as a model for simulating space flight.  
In: Gazenko OG (editor).  
Moscow: Nauka; 1986.  
Pages: 48-49.

Gastrointestinal System, Digestive Function  
Rats  
Space Flight, COSMOS-936, -1129, 1514, 1667; Immobilization Stress

P784(17/88) Lentsner AA, Lentsner KhP, Mikel'saar ME, Tyuri ME, Toom MA, (Tartu), Liz'ko NN, Kegen'kov VI.  
Quantitative characteristics of digestive lactoflora of "Salyut-7" crews preflight.  
In: Gazenko OG (editor).  
Moscow: Nauka; 1986.  
Pages: 237-238.

Gastrointestinal System; Microbiology, Digestive Lactoflora  
Humans, Cosmonauts  
Space Flight, Salyut-7, Preflight; Psychology, Stress

ISSUE 18

PAPERS:

P830(18/88) Smirnov KV, Goland-Ruvinova LG, Medkova IL, Goncharova NP, Zhiznevskaya OV, Pechenkina RA, Dobrokvashina Yel.  
Analysis of secretory processes in the gastrointestinal tract during long- term hypokinesia.  
In: Gazenko OG (editor).  
Moscow: Nauka; 1986.  
Pages: 363-364.

Gastrointestinal System, Hypersecretion; Metabolism; Enzymology  
Humans  
Hypokinesia, Head-Down Tilt, Long-Term
PAPER:

P878(19/88)* Bernkhardt Kh, Knopke M (GDR).
* The effect of stress on gastrointestinal microflora.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(No references)

Gastrointestinal System, Dysbacteriosis
Microbiology, Intestinal Microflora: Humans
Endocrinology, Endocrine Stress
GENETICS

ISSUE 15

PAPERS:


Genetics, Chromosome Nondisjunction, Reproductive Biology, Gametes Insects, Drosophila, Male, Female Space Flight, Salyut-6

[8 references; none in English]

Genetics, DNA, Replication, Hepatocytes Rats Space Flight, COSMOS-782, -1129, -1667; Immobilization, Stress

[9 references; 2 in English]

Genetics, RNA-Synthesis, Enzymology, Liver Rats, Male Space Flight, COSMOS-1667
Genetics, Nondisjunction of Sex Chromosomes
Insects, Drosophila, Female
Gravitational Biology, Altered Gravity, Clinostatting, Acceleration; Radiobiology, Gamma-Irradiation

ISSUE 18

PAPER:

P850(18/88)* Mishurova Ye, Kropachova K (Czechoslovakia).

Changes in chromatin and nucleic acids in rat tissues after short-term space flight.
(16 references; 4 in English)

Genetics, Chromatin, Nucleic Acids, Lymphatic Organs
Rats, Males, Females, Sex Differences; Reproductive Biology, Pregnancy
Space Flight, COSMOS-1514, COSMOS-1667

ISSUE 19

PAPERS:

P873(19/88)* Delone NL, Antipov VV.

Genetic amplification as a model for the study of the biological effects of weightlessness.
(6 references; 1 in English)

Genetics, Amplification, RNA, rDNA
Tortoises
Space Flight, COSMOS-690
P879(19/88)* Delone NL, Antipov VV.

Problems of variability in weightlessness.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(58 references; 15 in English)

Genetics, Variability, Mutation
Theoretical Articles, Research Program
Space Flight
GRAVITATIONAL BIOLOGY

ISSUE 16

PAPERS:

P718(16/88) Yegorov AD.
Mechanisms underlying changes in major physiological functions in humans exposed to weightlessness for long periods of time.

Gravitational Biology; Musculoskeletal System; Neurophysiology; Body Fluids Humans, Theoretical Article Weightlessness, Long-term

P735(16/88) Parfenov GP.
The effect of the force of gravity on animal cells and organisms.

Gravitational Biology, Animal Cells and Organisms Theoretical Article, Microbiology, Eukaryotes, Prokaryotes; Multicellular Animals Force of Gravity

ISSUE 18

PAPER:

P856(18/88)* Bryanov Ii, Yeremin AV, Stepantsov VI.
On the significance of the gravitational factor in the final stage of space flight.
(17 references; none in English)

KEY WORDS: Gravitational Biology, Space Flight, Reentry, Operational Medicine, Adaptation, Neurophysiology, Motion Sickness, Orthostatic Intolerance, Body Fluids, Fluid Redistribution, Cardiovascular and Respiratory Systems, Endocrinology, Musculoskeletal System, Provocative Tests, Deceleration, Impact, Psychology, Stress

NOTE: This article is located at the back of Issue 18 as a special feature.
GRAVITATIONAL BIOLOGY

MONOGRAPH:

M130(18/88) Gershuni GV. (editor)
Systemy organov chuvstv: Morfolofounksional'nyye aspekty evolyutsii [Systems of sensory organs: Morphofunctional aspects of their evolution.]
[189 pages]

KEY WORD: Gravitational Biology, Evolution, Sensory Physiology, Vision, Olfaction, Hearing, Chemoreception, Information Processing
Cooperative activity and dynamics of intergroup interactions of an isolated small group.


Group Dynamics, Small Group, Isolated, Group Performance, Humans, Intergroup Interactions, Interaction Style
HABITABILITY AND ENVIRONMENT EFFECTS

ISSUE 15

PAPERS:

P636(15/88) Bizin YuP, Bogatova RI.
Hygienic approaches to evaluating safety during the performance of technological experiments in space.

Habitability and Environment Effects, Safety Humans, Cosmonauts Equipment and Instrumentation, Technological Flight Experiments

P672(15/88)* Berlin AA, Chekanova SL.
Investigation of the composition of wash water of men and women.
[4 references; none in English]

Habitability and Environment Effects, Water Reclamation Systems Humans, Men and Women Wash Water, Composition

P679(15/88)* Pashin SS, Ushakov VF, Gorshunova Al, Ostashova NYe, Stadukhin YeB, Chukhno El.
Toxicokinetic aspects of use of sulphur hexafluoride in a hermetically sealed environment.
[15 references; 4 in English]

Habitability and Environment Effects, Toxicology, Hermetically Sealed Environment Rats, Male Sulphur Hexafluoride
HABITABILITY AND ENVIRONMENT EFFECTS

ISSUE 17

PAPERS:

P763(17/88)* Savina VP, Anisimov BV.
The effect of prolonged inhalation of acetic acid vapor on certain physiological functions in humans.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(17 references; 2 in English)

Habitability and Environment Effects, Physiological Effects
Humans
Hermetically Sealed Living Quarters, Acetic Acid, Polymers, Heat

P764(17/88)* Kondratyuk VA, Gnatyuk MS.
Cardiac rhythm in animals consuming reclaimed water varying in concentration of sodium and potassium ions.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(9 references; 1 in English)

Cardiovascular and Respiratory Systems, Cardiac Rhythm; Neurophysiology, Autonomic Nervous System
Rats
Habitability and Environment Effects, Life Support Systems, Reclaimed Water, Potassium, Sodium

P765(17/88)* Mironets NV, Savina RV, Kucherov IS, Sointseva VV, Matyshchenko NV.
Determining maximum acceptable level of urea in reclaimed drinking water and its biological effects.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(10 references; none in English)

Habitability and Environment Effects, Biological Effects, Standard Setting
Rats, Guinea Pigs, Mice, Rabbits, Humans
Reclaimed Drinking Water, Urea
HABITABILITY AND ENVIRONMENT EFFECTS

P773(17/88)* Zvershkanovskiy FA, Simoyan MA, Pilipenko YuA. 
*Experimental Investigation of the protective effects of the enzymatic antioxidants, superoxide dismutase and catalase, in intermittent toxic exposure to hyperbaric oxygenation. 
(15 references; 3 in English) 

Habitability and Environment Effects, Toxic Effects 
Rats 
Hyperbaric Oxygen, Countermeasures, Enzymology, Enzymatic Antioxidants

ISSUE 18

PAPERS:

P813(18/88) Markevich L (Warsaw). 
Physiological changes evoked by long-term occupational exposure to vibration under industrial conditions. 

Habitability and Environment Effects, Physiological Effects 
Humans, Pilots 
Vibration, Occupational Exposure

P820(18/88) Drobyshev VI, Stepanova TP. 
Response of neurocytes of the cerebral cortex to vibration. 

Neurophysiology, Cerebral Cortex, Neurocytes 
Rats 
Habitability and Environment Effects, Vibration
ISSUE 19

PAPERS:

P869(19/88)* Nefedov YuG, Novikova ND, Surovezhin IN.
Products of biodegradation of polymers as a factor in the possible pollution of the air of hermetically sealed environments with toxic substances.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(10 references; 3 in English)

Habitability and Environment Effects, Air Pollution, Toxic Effects
Microbiology
Hermetically Sealed Environments, Polymers, Biodegradation

P870(19/88)* Mikos KN, Polovnikin AA, Savina VP.
Interaction of chemicals polluting the air of hermetically sealed environments.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(17 references; 6 in English)

Habitability and Environment Effects, Chemical Interactions, Air Pollution
Ammonia, Carbon Dioxide
Hermetically Sealed Environments
HEMATOLOGY

ISSUE 16

PAPERS:

P694(16/88)* Pak GD, Sverchkova VS.
The role of carbon dioxide in correction of coagulation hemostasis under exposure to hypoxia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[13 references; 2 in English]

Hematology, Coagulation Hemostasis, Fibrinolysis
Dogs
Hypoxia, Hypercapnia

P741(16/88) Kalandarova MP, Ushakov AS, Kravchenko VV.
Reactions of the blood system during adaptation to space flight conditions.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 344-345.

Hematology, Hemopoiesis, Erythrocytes
Theoretical Article
Adaptation, Space Flight; Iron

ISSUE 17

PAPERS:

P751(17/88)* Kirichenko LL, Masenko VP, Raskurazhev AB, Yevdokimova AG.
Hemostatic parameters in individuals with neurocirculatory dystonia under conditions of "dry" immersion.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(9 references; 5 in English)

Hematology, Hemostasis Parameters
Humans, Males, Patients, Neurocirculatory Dystonia
Immersion
HEMATOLOGY

P761(17/88)* Pak GD, Sverchkov VS, Danilevskaya TN, Trandafilova TP. Blood coagulation and fibrinolysis when adrenalin is administered under conditions of hypoxia and hypercapnia. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(1): 49-53; 1988. (14 references; none in English)

Hematology, Coagulation, Fibrinolysis
Dogs
Endocrinology, Adrenalin; Hypoxia, Hypercapnia

P771(17/88)* Vorobyev VYe, Ivchenko VF, Stazhadze LL. Erythrocyte metabolism in humans exposed to hyperoxygenation under conditions of hypokinesia with head-down tilt. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(1): 81-82; 1988. (4 references; 1 in English)

Hematology; Erythrocytes; Metabolism
Humans
Hypokinesia With Head-Down Tilt; Hyperoxygenation

ISSUE 18

PAPERS:


Hematology, Erythrocytes, Fatty Acids
Rats
Hypokinesia, Psychology, Immobilization Stress, Exercise
HEMATOLOGY

P845(18/88)* Sominskiy VN, Okun' KV, Anshelevich YuV.
Quantitative analysis of the interaction of propanol and erythrocyte membrane by measuring propanol's antihemolytic effect.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(21 references; 7 in English)

Hematology, Erythrocyte Membrane
Humans, Personnel Selection
Propanol, Antihemolytic Effect

P852(18/88)* lvchenko VF, Stazhadze LL, Romanov AN, Omanidze DO.
Changes in bioenergetic parameters of erythrocytes in response to regional hypothermia under conditions of hypokinesia with head-down tilt(-80).
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(14 references; none in English)

Hematology, Erythrocytes, Bioenergetic Parameters; Metabolism
Humans, Males
Hypokinesia With Head-Down Tilt, Regional Hypothermia

ISSUE 19

PAPERS:

P862(19/88)* Vorob'yev VYe, lvchenko VF, Stazhadze LL.
Catabolic metabolism in human erythrocytes under conditions of hypokinesia with head-down tilt.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(11 references; 3 in English)

Hematology, Erythrocytes; Metabolism, Catabolic
Humans, Males
Hypokinesia With Head-Down Tilt; Oxygen Breathing
P874(19/88)* Sominskiy VN, Sokovnik VM, Okun' KV.
Kinetic parameters of the interaction of propranolol with the erythrocyte membrane in individuals varying in their antihemolytic response to this drug.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(3): 86-88; 1988. (6 references; 1 in English)

Hematology, Erythrocyte Membrane, Antihemolytic Response
Humans, Individual Differences
Propranolol

P880(19/88)* Fedulova GA.
Characteristics of the hemostasis system in aviation personnel.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(3): 15-21; 1988. (62 references; 13 in English)

Hematology, Hemostasis
Humans, Pilots
Light Conditions, Psychology, Stress

ISSUE 20

PAPER:

P943(20/88) Gol'dberg YeD, Zakharova OYu, Dygay AM.
Modulating effect of opioid peptides on hemopoiesis in stress.
Byulleten' Eksperimental'noy Biologii i Meditsiny. CVI(7): 23-26; 1988

Hematology, Hemopoiesis
Mice, Males
Immobilization Stress, Opioid Peptides, Leu-Enkephalin
HUMAN PERFORMANCE

ISSUE 15

PAPERS:

P632(15/88) Nechayev AP, Ponomareva IP, Khideg Ya, Bognar L, Remesh P. (last three are Hungarian).
On the additional capacities of the methodology for studying human psychological work capacity (based on Salyut-7 results).
Moscow: Nauka; 1986.
Pages: 191-193.

Human Performance, Psychological Work Capacity
Humans, Cosmonauts
Space Flight, Salyut-7

P634(15/88) Khachatutyants LS, Ivanov YeA, Yepishkin, AK.
The effect of space flight on the characteristics of pursuit tracking.
Moscow: Nauka; 1986.
Pages: 208-209.

Human Performance, Tracking, Pursuit
Humans, Cosmonauts
Space Flight, Voskhod, Soyuz-5, Soyuz-7

P669(15/88)* Yastrebov VYe, Kustov VV, Razinkin SM.
Investigation of short-term effects of high concentrations of carbon monoxide on certain psychophysiological functions of a human operator.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

Human Performance, Compensatory Tracking
Humans, Males
Habitability and Environment Effects, Carbon Monoxide
HUMAN PERFORMANCE

ISSUE 16

PAPERS:

P708(16/88) Kamenskiy YuN. The significance of critical flicker fusion frequency for assessing the state of an individual undergoing whole-body vibration. Gigiyena Truda i Professional'nyye Zabolevaniya. 1987(7): 54-56. [6 references; none in English]


ISSUE 17

PAPERS:


Human Performance, Functional State, Orthostatic Tolerance; Cardiovascular and Respiratory Systems; Operational Medicine Humans, Operators Psychology, Psychotropic Drugs; Tilt Test, Isolation, Hypokinesia With Head-Down Tilt, Short-Term
P780(17/88) Tardov VM, Chernikov AYe, Yashin YuP.

Study of the effects of high +Gz acceleration on operator performance.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages:133-134.

Human Performance, Operator Performance; Man-Machine System, Tracking
Humans
Acceleration, High +Gz; Antiacceleration Suit

P781(17/88) Zhukova OP, Ponomareva IP.

The effect of a 36-hour period of continuous performance on human sleep under conditions of isolation.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 168-169.

Neurophysiology, Sleep Parameters
Humans, Males
Human Performance, Work-Rest Schedule, Sleep Deprivation, Isolation

P782(17/88)* Kalosha VI.

The effect of nootropic drugs on functional state during adaptation to stressful operator performance.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 173-174.

Human Performance, Operator Performance, Adaptation, Stress, Biological Rhythms
Humans, Operators
Psychology, Nootropic Drugs
Papers:

P837(18/88)* Asyamolov BF, Voronin LI, Panchenko VS, Ulyatovsiy NV, Bondarenko RA, Kaliberdin AV, Elizarov SYu, Plokhova VG, Yarov AS. 
Effectiveness of antigravity devices of the chamberless type after 7 days of hypokinesia with head-down tilt. 
(11 references; 1 in English)

Human Performance, Operator Task, Acceleration Tolerance 
Humans 
Hypokinesia With Head-Down Tilt, Acceleration, Countermeasures, Antigravity Clothing

Papers:

P863(19/88)* Pavlov AS, Moloshtan VS. 
The role of increased body temperature in increasing work capacity. 
(9 references; 3 in English)

Human Performance, Work Capacity, Physical and Mental; Cardiovascular and Respiratory Systems 
Humans, Athletes, Pilot Trainees 
Physical Exercise, Hyperthermia

P881(19/88) Tsibulevskiy IYe. 
Engineering psychological problems related to the effectiveness of displays depicting the spatial position of an aircraft. (Review of research) 
[21 references; 18 in English]

Human Performance, Display Effectiveness 
Pilots 
Aircraft Position
HUMAN PERFORMANCE


Human Performance, Alertness
Humans, Operators, Drivers
Monotony, Chilling, Local


Human Performance, Work Capacity, Well-Being
Humans, Women, Workers
Psychology, Fatigue, Self-Regulation, Autogenic Training, Relaxation

MONOGRAPH:


KEY WORDS: Human Performance, Functional State, Work Capacity, Human Operators, Extreme Conditions, Group Dynamics, Sleep Deprivation, Tracking, Signal Detection
IMMUNOLOGY

ISSUE 15

PAPERS:

P640(15/88) Teplinskaya GP.
The effects of space flight factors on the functional activity of T-lymphocytes responsible for delayed hypersensitivity.

Immunology, T-lymphocytes, Allergy, Delayed Hypersensitivity Humans, Cosmonauts
Space Flight, Long-term, Short-term, Salyut-7; Hypokinesia with Head-Down Tilt

ISSUE 16

PAPERS:

Neuroimmune regulating properties of short protein fragments under exposure to immobilization stress.
[11 references; 8 in English]
Authors' affiliation: Institute of Organic Synthesis, Latvian Academy of Sciences

Immunology, Humoral Immunity, Endocrinology, Adrenal Gland, Hypothalamus, Striatum Rats, Male
Short Protein Fragments; Psychology, Immobilization Stress

P707(16/88) Pershin BB, Yemel'yanov BA, Sokolov YaA, Kuz'min SN.
Study of the mechanism underlying the phenomenon of disappearance of immunoglobulins under exposure to experimentally induced stress.
Patologicheskaya Fiziologiya i Eksperimental'nyaya Terapiya. 1987(5): 41-44. [9 references; 2 in English]

Immunology, Immunoglobulins, Excretion Mice
Psychology, Stress, Forced Exercise
P742(16/88) Konstantinova IV.  
*Problems of space immunology.*  
In: Gazenko OG (editor).  

**Immunology**  
Humans, Theoretical Article  
Space Flight Factors, Countermeasures

**ISSUE 17**

**PAPERS:**

P807(17/88) Bozhikov NV, Rykova MP, Antropova YeN, Lesnyak AT.  
*Quantitative and functional parameters of T-lymphocytes and activity of normal killer cells in patients suffering from systemic osteoporosis and subjects undergoing 120 days of hypokinesia with head-down tilt.*  
In: Gazenko OG (editor).  

**Immunology, T-Lymphocytes, Normal Killer Cells**  
Humans, Patients  
Musculoskeletal System, Osteoporosis, Hypokinesia With Head-Down Tilt, Long-Term

**ISSUE 18**

**PAPERS:**

P843(18/88)* Kirillova YeN, Muksinova KN, Skykovskaya TL.  
*The effect of long term continuous irradiation on humoral immunity parameters in mice.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(14 references: 8 in English)

**Immunology, Humoral Immunity**  
Mice  
Radiobiology, Gamma-Radiation, Long-Term Irradiation
P849(18/88)* Durnova GN, Borotnikova YeV.
**Histological study of lymphoid organs of rats after a 7-day space flight on the COSMOS-1667 biosatellite.**
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(11 references; 3 in English)

**Immunology, Thymus, Spleen**
**Rat**
**Space Flight, COSMOS-1667**

**ISSUE 20:**

**PAPERS:**

P908(20/88) Kuznets Yel, Kuts'kova ON, Yakovleva EV, Shal'nova GA, Malkiman II, Yastrebov PT.
**Selection of parameters indicative of human immune status under conditions simulating space flight factors.**
In: Malinin VB, Kosmolinskiy FP, Kuznets Yel (editors).
Section on Problems of Space Medicine and Biology.
Pages 101-105.
[7 references; none in English]

**Immunology, Immune Status**
**Humans**
**Heat, Hypokinesia With Head-Down Tilt, Hermetically Sealed Living Quarters**

P913(20/88) Priyatkin SA, Morozov VI, Rogozkin VA.
**The effect of physical exercise on nonspecific resistance factors and concentration of steroid hormones in human blood.**
Fiziologiya Cheloveka.
[35 references; 10 in English]
Authors' Affiliation: Scientific Research Institute of Physical Culture, Leningrad

**Immunology, Nonspecific Resistance; Endocrinology, Steroids**
**Humans, Males, Athletes**
**Exercise**
MONOGRAPH:


Affiliation (book): Siberian Division USSR Academy of Sciences; Institute of Clinical Immunology, Siberian Division, USSR Academy of Medicine.

KEY WORDS: Immunology, Neurophysiology, Endocrinology, Aging, Immune Surveillance, Genetics
PAPER:


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PAPERS:


PAPERS:

P785(17/88) Shaydarov Yul, Simonov VM, Alekhina TA, Sidorova LM, Geodakin RO, Kryuchkova IV.
Utilization by plants of liquid products of processing of wastes from human biological life support systems.
Pages:260-261.
Life Support Systems, Human, CELSS
Plants, Lettuce
Waste Utilization; Microbiology, Microbial Processing

P804(17/88) Berkovich YuA, Ivanovna IYe, Alekhina TP, Derendyayeva TA.
Experimental demonstration of the potential increase in the closure of material recycling in the higher plant components of artificial ecological systems.
Pages: 217-218.
Life Support Systems, Closure, Human CELSS
Botany, Higher Plants, Wheat, Beets, Lettuce
Transpiration Water, Carbon Dioxide

P895(17/88) Berlin AA, Popov IG, Chizhov SV.
Sanitary and hygienic skin care of cosmonauts using reclaimed water.
Pages: 218-219.
Life Support Systems, Spacecraft, Personal Hygiene, Operational Medicine
Humans, Cosmonauts
Water Reclamation
LIFE SUPPORT SYSTEMS

ISSUE 18

PAPERS:

P841(18/88)* Shikina MI, Vinogradova LA, Kolesina NB. Microflora in drinking water reclaimed from condensate of atmospheric moisture of a hermetically sealed living space. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(2): 53-55 ; 1988. (6 references; none in English)

Life Support Systems, Reclaimed Drinking Water Microbiology, Microflora Hermetically Sealed Environment

ISSUE 20

PAPER:


Life Support Systems, Nutrition Man -- Higher Plant System Closure, Regeneration
ISSUE 16

MONOGRAPH:

Affiliation: USSR Academy of Sciences, Siberian Division, Institute of Biophysics; Institute for Problems of Control

KEY WORDS: Man-Machine Systems, Engineering Physiology, Operational Medicine, Mathematical Modeling, Cardiovascular and Respiratory Systems, Metabolism, Habitability and Environmental Effects

ISSUE 17

MONOGRAPH:

Moscow: Mashinostroyeniye; 1987.
[264 pages; 37 figures; 40 tables; 217 references]

KEY WORDS: Man-Machine Systems, Human Performance, Human Engineering, Spacecraft Design, Biospherics

ISSUE 19

MONOGRAPH:

[130 pages]
Affiliation: Scientific Council of the USSR Academy of Sciences on the Multidisciplinary Problem of Cybernetics

KEY WORDS: Man-Machine Systems, Human Performance, Human Engineering, Spacecraft Design, Biospherics
PAPERS:

P701(16/88)* Kondrachuk AV, Sirenko SP.
A two-dimensional statistical model of the otolith.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[14 references; 9 in English]
See: Abstract P668 (Neurophysiology) in Digest Issue 15.

Mathematical Modeling, Statistical
Humans
Neurophysiology, Otolith Membrane, Centripetal Force, Gravity

P739(16/88) Sakovich VA.
Mathematical modeling in developing standards for the radiation safety of space flights.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 322.

Mathematical Modeling, Probability; Hematology, Hemopoiesis
Humans, Cosmonauts
Radiobiology, Radiation Safety Standards, Space Flight, Long-Term

ISSUE 17

MONOGRAPH:

Modeling semiautomatic spacecraft control systems.
Moscow: Mashinostroyeniye; 1986.
[280 pages; 90 figures; 22 tables; 92 references; none in English]

KEY WORDS: Mathematical Modeling, Spacecraft Control Systems, Man-Machine Systems, Human Performance, Cosmonaut Performance, Cosmonaut Training, Adaptation, Environmental Factors
**PAPERS:**


Metabolism, Amino Acids, Cystine, Methionine
Humans, Cosmonauts
Space Flight, Long-term; Nutrition, Cosmonaut Rations

P670(15/88)* Savina VP, Vlasova TF, Miroshnikova YeB. *Glutaminic acid in blood of humans exposed to an atmosphere with elevated ammonia content.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 21(5): 50-52; 1987. [20 references; 5 in English]

Metabolism, Glutaminic Acid
Humans
Habitability and Environment Effects, Ammonia, Hermetically Sealed Environment

**ISSUE 16**

**PAPERS:**

P693(16/88)* Zezerov AYe, Ivanovna SM, Ushakov AS. *Lipid peroxidation in tissues of rats exposed to hypokinesia with head-down tilt, physical exercise, and immobilization stress.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 21(6):39-43; 1987. [33 references; 8 in English]

Metabolism, Lipid Peroxidation, Musculoskeletal System
Rats
Hypokinesia with Head-Down Tilt, Physical Exercise, Psychology, Immobilization Stress
BOOK REVIEW:

BR12(16/88)* Demin NN.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

KEY WORDS: Metabolism, Psychology, Stress, Immobilization, Biochemical Processes, Space Flight, COSMOS-1129, Adaptation, Neurophysiology, Rats, Hypokinesia, Endocrinology, Sympathetic-Adrenal System, Pharmacological Countermeasures, Radiobiology, Artificial Gravity, Centrifugation

ISSUE 17

PAPER:

P801(17/88) Grigor’ev AI, Kovalenko YeA.
The problem of homeostasis in space anthropoecology.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 42-43.

Biospherics, Adaptation, Homeostasis
Theoretical Article
Metabolism, Extreme Factors

P808(17/88) Popova IA, Nosova YeA, Vetrova YeG, Delenyan NV, Drozdova TYe, Zaytseva LB.
Protein and products of protein metabolism in blood under conditions of long term hypokinesia.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 356-357.

Metabolism, Protein, Hematology, Blood
Humans, Males
Hypokinesia With Head-Down Tilt, Long-Term, Adaptation
METABOLISM

ISSUE 18

PAPERS:


Metabolism, Body Fluids, Electrolyte Metabolism, Cardiovascular and Respiratory Systems, EKG Parameters
Humans, Males
Hypokinesia, Head-Down Tilt, Long-Term

P829(18/88) Prilipko LV. *Adaptation and normalization of calcium metabolism under conditions simulating weightlessness.*

Metabolism, Calcium; Adaptation; Musculoskeletal System; Endocrinology, Pituitary-Adrenal System
Humans
Hypokinesia, Horizontal, Head-Down Tilt; Nutrition, Vitamin D

P831(18/88)* Potapov PP, Fedorov IV. *Metabolic aspects of readaptation after hypokinesia (results of animal experimentation).* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(2): 4-10; 1988. (47 references; 8 in English)

Metabolism, Protein, Collagen Synthesis; Adaptation, Readaptation
Animals
Hypokinesia
Characteristics of metabolism in response to 120 days of hypokinesia with head-down tilt.

Tissue metabolism in humans in response to hyperoxygenation during hypokinesia with head-down tilt.

Blood lipoprotein spectra in pilots in civil aviation.
METABOLISM

ISSUE 20:

PAPERS:

P922(20/88)* Savina VP, Mikos KN, Ryzhkova VYe.  
*The effect of space flights on the concentration of volatile metabolites in the expired gas of cosmonauts.*  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsyna.  
[7 references; 2 in English]

*Metabolism, Volatile Metabolites, Expired Air  
Humans, Cosmonauts  
Space Flights*

Operational Medicine, Human Automicroflora Microbiology Life Support Systems, Ecological Systems, Hermetically Sealed Environment, Spacecraft Cabins


Microbiology, Drug Sensitivity Human Automicroflora, Conditionally Pathogenic Microorganisms Space Flight
P821(18/88) Deshevaya YeA, Novikova A. 
**Characteristics of the formation of microflora in hermetically sealed living quarters with altered composition of the atmosphere.**

*Life Support Systems, Hermetically Sealed Environments*  
Microbiology, Microflora, Mold, Pathogenic  
Atmosphere, Acetic Acid
P626(15/88) Grigor'yeva LS, Chekirda IF, Stepanstov VI, Kozlovskaya IB. *(Evaluating the) effects of weightlessness on the work capacity of the muscles of the arms.*

*Musculoskeletal System, Work Capacity, Arms*  
*Humans, Cosmonauts*  
*Space Flight, Salyut-7*

P642(15/88) Bakulin AV, Il'in YeA, Rezayeva LT, Khodskevich YuN, Artamasova YeM. *The state of bone tissue in pregnant rats after a 5-day space flight on the COSMOS-1514 biosatellite.*

*Musculoskeletal System, Bone Tissue, Mineral Component Rats, Female; Reproductive Biology, Pregnancy*  
*Space Flight, COSMOS-1514*

P645(15/88) Oganov VS, Skuratova SA, Rakhmanov AS, Magedov VS, Shirvinskaya MA, Shlyk GG. *(Evaluation of the state of the skeletal muscles in monkeys under conditions of real and simulated weightlessness.)*

*Musculoskeletal System, Skeletal Muscles, Electromagnetic Efficiency Monkeys, Macaque-Rhesus*  
*Space Flight, COSMOS-1514; Hypokinesia, Head-Down Tilt, Immobilization*
MUSCULOSKELETAL SYSTEM

P646(15/88) Pospishilova I, Pospishil M. (Czechoslovakia).
*The effect of space flight on organic components of connective tissue.*
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 290-291.

Musculoskeletal System, Connective Tissue, Collagen
Rats, Female; Reproductive Biology, Pregnancy; Developmental Biology
Space Flight, COSMOS-1514, -1667

*Morphological manifestations of adaptive responses in rats exposed to tail suspension as a simulation of weightlessness.*
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 292-293.

Musculoskeletal System, Bone, Muscle; Endocrinology: Neurophysiology; Morphology
Rats, Male
Head-Down Tilt, Tail-Suspension; Immobilization; Adaptation; Psychology, Stress

P650(15/88) Skuratov SA, Oganov VS, Shirvinskaya MA, Murashko LM, Silatsi T, Ser A, Pachok M.
The effect of short-term weightlessness on skeletal muscle functions in pregnant rats and their offspring.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 294-295.

Musculoskeletal System, Skeletal Muscle Functions
Rats, Female, Reproductive Biology, Pregnancy; Developmental Biology, Neonate
Space Flight, Short-term, COSMOS-1514

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MUSCULOSKELETAL SYSTEM

P656(15/88) Stupakov GP, Kazeykin VS, Morozova NP.
Predicting the occurrence of osteodystrophy in response to long-term weightlessness.

Musculoskeletal System, Osteodystrophy, Prediction, Personnel Selection; Mineral Saturation; Metabolism, Rate
Rats; Dogs; Humans, Cosmonauts
Space Flight, Long-Term, COSMOS-610, -782, -936, -1129, Salyut-6, -7, Weightlessness Simulations

P664(15/88)* Kaplanskiy AS, Durnova GN, Sakharova ZF, I'llina-Kakuyeva Yel.
Histomorphological analysis of the bones of rats flown on the COSMOS-1667 biosatellite.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[23 references; 11 in English]

Musculoskeletal System, Bone, Tibia, Iliac, Lumbar Vertebrae; Morphology, Histomorphological Analysis
Rats
Space Flight, Short-Term, COSMOS-1667

P676(15/88)* Mailyan ES, Burakova LB.
Preservation of muscles in the study of bioenergetic effects of hypokinesia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[9 references; 2 in English]

Musculoskeletal System, Muscle Tissue, Preservation
Rats
Hypokinesia, Laboratory Technique, Low Temperature
MUSCULOSKELETAL SYSTEM

ISSUE 16

PAPERS:

P691(16/88)* Il’ina-Kakuyeva Yel.
[Study of] skeletal muscles of rats after a short-term space flight on the COSMOS-1667 biosatellite.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[13 references; 8 in English]

Musculoskeletal System, Skeletal Muscles, Soleus, Biceps, Quadriceps, Gastrocnemius
Rats, Males
Space Flight, COSMOS-1667

P692(16/88)* Kaplanskiy AS, Sakharova ZF, Il’ina-Kakuyeva Yel, Durnova GN.
Morphological study of early changes in the bones of rats exposed to simulations of weightlessness.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[13 references; 5 in English]
Note: See abstract P647 (Musculoskeletal System) in Digest issue 15.

Musculoskeletal System, Bones, Tibia, Lumbar Vertebrae
Rats, Male
Weightlessness Simulation, Immobilization; Psychology, Stress; Tail Suspension

P696(16/88)* Belkaniya GS, Kurochkin YuN, Rakhmanov AS, Simavonyan KV, Dartsmeliya VA, Demin AN, Filenko VYe.
Morphological concomitants of adaptation to an upright posture and walking erect in monkeys.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; 4 in English]

Musculoskeletal System, Morphological Changes, Bone Minerals; Adaptation, Postural
Monkeys, Rhesus Macaques
Gravitational Biology, Upright Posture, Walking Erect

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MUSCULOSKELETAL SYSTEM

P714(16/88) Glushko TA, Gusakova VA, Malova NG.
Changes in intervertebral disk tissue in response to hypokinesia in rats varying in age
Arkhiv Anatomii, Gistologii, i Embriologii.
[7 references; 2 in English]
Authors' affiliation: Central Scientific Research Laboratory, Ukrainian Institute of Physician Training

Musculoskeletal System, Intervertebral Disc
Rats, Developmental Biology, Age Differences
Hypokinesia, Immobilization, Short- and Long-Term

ISSUE 17

P756(17/88)* Oganov VS, Rakhmanov AS, Morukov BV, Yanson KhA, Tatarinov AM, Zaychik VYe,
Ternovoy SK, Cann C. (USSR, USA).
Use of noninvasive methods to study the state of bone tissue under conditions of
long-term hypokinesia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(24 references; 12 in English)

Musculoskeletal System, Bone Tissue, Computer Tomography, Minerals
Humans
Hypokinesia With Head-Down Tilt, Physical Exercise, Pharmacological Countermeasures

P757(17/88)* Shvets VN.
The effects of varying doses of alpha-hydroxymethyl-gamma-aminopropylidene biphosphonate on bone tissue of rats.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(11 references; 9 in English)

Musculoskeletal System, Bone Tissue, Osteotrophic Effects
Rats
Alpha-Hydroxymethyl-Gamma-Aminopropylidene Biphosphonate, Osteoclasts
MUSCULOSKELETAL SYSTEM

P802(17/88) Lesnyak AT, Morukov BV, Bozhikov NV, Konstantinova IV.
Function of immunocompetent cells which produce the osteoclast activating factor in subjects exposed to long-term hypokinesia and patients with local osteoporosis.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 87-88.

Musculoskeletal System, Bone Tissues, Osteoclast Activating Factor; Immunology, Immunocompetent Cells, Hematology
Humans, Patients, Osteoporosis
Hypokinesia

P806(17/88) Pankova AS, Zhvets VN, Kabitskaya OYe.
The role of in preventing osteoporosis in rats exposed to hypokinesia.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 355.

Musculoskeletal System, Osteoporosis
Rats
Hypokinesia, Immobilization, Countermeasures, Diphosphonate, Ethane-1-Hydroxy-1,1 Diphosphonic Acid

ISSUE 18

PAPERS:

P810(18/88) Volozhin AI, Stupakov GP, Druzhinina RA, Rogacheva IV, Polyakov AN.
Pharmacological prevention of bone changes in hypokinesia and hypodynamia.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 31-32.

Musculoskeletal System, Osteoporosis; Metabolism, Phosphorus, Calcium, Protein
Rats, Rabbits
Hypokinesia, Hypodynamia, Immobilization, Amputation, Pharmacological Countermeasures, Calcitonin, Retabolil
MUSCULOSKELETAL SYSTEM

P1815(18/88) Triftanidi LA.
The effect of hypokinesia on bone tissue.
In: Gazenko OG (editor).
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina: Tezisy dokladov VIII Vsesoyuznoy
delivered at the Eighth All-Union Conference, Kaluga, 25-27 June 1986].
Moscow: Nauka; 1986.
Pages: 141-142.
Musculoskeletal System, Histology, Bone Tissue, Restructuring, Osteoporosis
Rats
Hypokinesia, Immobilization

P1826(18/88) Gol'dovskaya MD, Shvets VN.
Study of the association between changes in bone mass and number of hemopoietic stem cells.
In: Gazenko OG (editor).
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina: Tezisy dokladov VIII Vsesoyuznoy
delivered at the Eighth All-Union Conference, Kaluga, 25-27 June 1986].
Moscow: Nauka; 1986.
Pages: 338-339.
Musculoskeletal System, Bone Mass; i.Hematology, Stem Cells
Mice
Osteoporosis, Disuse, Amputation; i.Osteopetrosis, EHDA

P1855(18/88)* Gol'dovskaya MD, Shvets VN.
Relationships between changes in bone mass and number of hemopoietic stem cells.:
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(14 references; 8 in English)
[Note: Essentially same as preceding experiment]
Musculoskeletal System, Spongiosa
Mice
Disuse Osteoporosis, Amputation; Osteosclerosis, EHDA

86
MUSCULOSKELETAL SYSTEM

P640 (18/88)* Shvets VN, Pankova AS, Kabitskaya OYe.
Osteotrophic effect of xydifon administered subcutaneously to rats during immobilization.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(14 references; 6 in English)

Musculoskeletal System, Osteotrophic Effects; Metabolism, Calcium
Rats
Immobilization, Pharmacological Countermeasures, Xydiphon (Ksidifon)

MONOGRAPH:

M126(18/88) Stupakov GP, Kozlovskiy AP, Kazeykin VS.
Biomekhanika pozvonochnika pri udarnykh peregruzka v praktike aviatsionnykh i kozmicheskikh poletov.
Moscow: Nauka; 1987.
[240 pages; 70 tables; 92 figures; 236 references]

KEY WORDS: Musculoskeletal System, Spine, Impact G-Load, Space Flight, Biomechanics, Weightlessness, Osteoporosis, Mathematical Modeling

ISSUE 19

PAPERS:

P865(19/88)* Maylyan ES, Chabdarova RN, Korzun Yel.
Energy reactions in the skeletal muscles of rats after a short-term space flight on the COSMOS-1514 biosatellite.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(6 references; 1 in English)

Musculoskeletal System, Muscle Bioenergetics; Enzymology; Metabolism
Rats, Female, Pregnant
Space Flight, COSMOS-1514, Short-term; Psychology, Stress
PAPERS:

P915(20/88) Buravkova LB, Mailyan ES. 
Dehydrogenase activity in skeletal muscles of rats after long-term exposure to weightlessness. 
Byulleten' Eksperimental'noy Biologii i Meditsiny. 
[11 references; 5 in English] 
Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Musculoskeletal System, Skeletal Muscles, Dehydrogenases 
Rats 
Space Flight, Long-Term, COSMOS-1129, Hypokinesia

P919(20/88)* Khristova LG, Gidikov AA, Aslanova IF, Belyayeva MG, Kirenskaya AB, Kozlova VG, Kozlovskaya IB. (Bulgaria, USSR) 
The effect of water immersion on motor unit potentials in human muscles. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[25 references; 19 in English]

Musculoskeletal System, Motor Unit Potentials 
Humans 
Water Immersion

The effect of short-term space flights on physiological properties and composition of myofibrillar proteins of the skeletal muscles of rats. 
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[17 references; 4 in English]

Musculoskeletal System, Physiological Properties, Myofibrillar Proteins 
Rats, Males, Females, Pregnant 
Space Flight, Short-Term, COSMOS-1514, -1667
The effect of hypokinesia on the osteogenic and hemopoietic function of bone marrow in mice: Studied in ectopic bone.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[15 references; 2 in English]

Prevention of osteoporosis by injecting rats with xydifon before or during hypokinesia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[13 references; 9 in English]

Microgravity induced changes in bones.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[79 references; 45 in English]
MUSCULOSKELETAL SYSTEM

P944(20/88) Oganov VS. Neurotrophic Influences in the adaptation of skeletal muscles and motor functions to weightlessness.
In Nasledov GA (editor). Mekhanizmy neyronal’noy regulyatsii myshechnoy funktsii [Mechanisms of neuronal regulation of muscle function.]
Leningrad: Nauka; 107-137; 1988
Author’s Affiliation: Institute of Biomedical Problems; USSR Ministry of Health

Musculoskeletal System, Skeletal Muscles, Fast- and Slow-Twitch, Motor Function, Neurophysiology, Neurological Control, Adaptation, Protein Turnover
Rats, Dogs, Humans
Space Flight, Short-Term, Soyuz-9, COSMOS-605, -690, -936, -1129, Immobilization, Hypokinesia, Hypodynamia, Tail-Suspension, Amputation, Motor Patterns

MONOGRAPH

[137 pages; 1 table; 21 figures; 501 references; 52 in English]
Affiliation [book]: Scientific Council on Problems of Biological Physics; I.M. Sechenov Institute of Evolutionary Physics, USSR Academy of Sciences

KEY WORDS: Musculoskeletal System, Skeletal Muscles, Fast- and Slow-Twitch, Motor Function, Neurophysiology, Neurological Control, Adaptation, Protein Turnover, Rats, Dogs, Humans, Space Flight, Short-Term, Soyuz-9, COSMOS-605, -690, -936, -1129, Immobilization, Hypokinesia, Hypodynamia, Tail-Suspension, Amputation, Motor Patterns
PAPERS:


Neurophysiology, Space Motion Sickness, Prediction Humans, Cosmonauts, Individual Differences Space Flight, Parabolic Flight


Neurophysiology, Brain, L-Cystathionine, GABA Rats Space Flight, COSMOS-1129


Neurophysiology, Vestibulospinal Reflexes Humans Optokinetic Stimulation, Step Test
P668(15/88)* Kondrachuk AV, Shipov AA, Sirenko SP.  
**Membrane model of the cupula of the semicircular canals of the vestibular system.**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
21(5): 41-47.  
[24 references; 20 in English]

Neurophysiology, Cupula  
Mathematical Modeling  
Membrane Model

P674(15/88)* Simonov LG, Tsaturyan AK, Saribekyan AS, Shmidt LG.  
**Assessing "reserve spaces" in the cerebrospinal system using noninvasive measures.**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[10 references; 3 in English]

Neurophysiology, Cerebrospinal System  
Humans, Patients  
Reserve Spaces, Noninvasive Measures, Ultrasound

ISSUE 16

PAPERS:

P702(16/88)* Davydov BI, Ushakov IB, Fedorov VP.  
**The combined effects of ionizing radiation and altered gas medium on the central nervous system.**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[14 references; 9 in English]

Neurophysiology, Central Nervous System  
Dogs  
Radiobiology, Gamma Irradiation, Hypoxia, Oxygen Breathing
P720(16/88) Kornilova LN, Kasparanskiy RR, Bodo G, Antal P (Last two are Hungarian.)
The effects of weightlessness on vestibular and vestibulo-eye movement responses.

Neurophysiology, Vestibular and Eye Movement Responses, Saccadic Movement, Nystagmus, Perception, Visual Humans, Cosmonauts
Space Flight, Adaptation

P721(16/88) Lapayev EV, Vorob'yev OA.
The problem of vestibular physiology in aerospace medicine and prospects for its solution.

Neurophysiology, Vestibular Physiology, Motion Sickness; Perception, Spatial Disorientation, Sensory Conflicts; Personnel Selection; Body Fluids Humans, Cosmonauts, Pilots, Theoretical Article Operational Medicine, Aerospace Medicine, Acceleration, Countermeasures

ISSUE 17

P744(17/88) Krikun IS.
The role of the visual system in vestibular reactions.

Neurophysiology, Vestibular Reactions, Experimental Motion Sickness, Tolerance Humans Acceleration, Perception, Optokinetic Stimulation, Visual System
P745 (17/88) Matsnev El, Kuz'min MP, Zakharova LN. 
Evaluating the efficacy of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness.
Moscow: Nauka; 1986.
Pages: 95-96.

Neurophysiology, Experimental Motion Sickness
Humans, Males, Individual Differences, Vestibular Tolerance, Personnel Selection, Vestibular, Optovestibular and Optokinetic Stimulation, Perception

P746(17/88) Repin AA. 
Characteristics of vestibulo-eye movement interactions under conditions of unilateral monopolar stimulation of the labyrinths with galvanic current.
Moscow: Nauka; 1986.
Pages: 112-113.

Neurophysiology, Head and Eye Movement Coordination, Perception, Gaze Fixation
Humans, Labyrinths, Galvanic Current

P747(17/88) Krasnov IB, D'yachkova LN, Babichenko II, Anders VN. 
The ultrastructure of the cerebellar cortex in rats exposed to altered gravitational force.
Moscow: Nauka; 1986.
Pages: 279-280.

Neurophysiology, Brain, Cerebellar Cortex, Ultrastructure
Rats, Space Flight, COSMOS-1514, COSMOS-936; Artificial Gravity, Centrifugation, Hypergravity
NEUROPHYSIOLOGY

P754(17/88)* Petrenko YeT.
Changes in electroencephalograms during balance tests and exposure to rhythmic light flashes.
Kosmicheskaia Biologiya i Aviakosmicheskaya Meditsina.
(9 references; none in English)

Neurophysiology, Electroencephalograms, Motor System
Humans, Individual Differences
Balance Tests, Perception, Visual Interference, Light Flashes

P758(17/88)* Shashkov VS, Drozd YuV, Yasnetsov VV, Galkina YeYu.
On the role of opioid peptides in the pathogenesis of vestibulo-autonomic disorders.
Kosmicheskaia Biologiya i Aviakosmicheskaya Meditsina.
(17 references; 9 in English)

Neurophysiology, Opioid Peptides
Cats, Rats
Vestibular Stimulation, Motion Sickness Induction, Pharmacological Countermeasures

P760(17/88)* Dmitriyev AS, Tropnikova GK.
The effects of low frequency whole-body vertical vibration on the serotinergic system of the brain and spinal cord.
Kosmicheskaia Biologiya i Aviakosmicheskaya Meditsina.
(27 references; 13 in English)

Neurophysiology, Brain, Spinal Cord, Serotoninergic System
Rats, Female
Habitability and Environment Effects, Vibration, Whole-Body; Psychology, Immobilization Stress

P773(17/88)* Gora YeP.
The effect of various schedules of voluntary control of respiration on electroencephalograms of humans exposed to acute hypoxic hypoxia.
Kosmicheskaia Biologiya i Aviakosmicheskaya Meditsina.
22(1): 82-84; 1988.
(7 references; 3 in English)

Neurophysiology, Electroencephalograms
Humans
Hypoxia, Acute; Cardiovascular and Respiratory System, Respiration, Voluntary Control
ISSUE 18

PAPERS:

P814(18/88) Tkachev VV, Relushkina GD.
Study of parameters of ultraslow activity of the human brain during emotional stress from the point of view of space medicine.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 138.

Neurophysiology, Ultraslow Activity, Brain
Humans, Reaction Types
Psychology, Stress

P817(18/88) Yasnetsov VV, Shashkov VS.
Participation of the endogenous opioid system in the genesis of vestibular and autonomic disturbances in motion sickness.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 159-160.

Neurophysiology, Motion Sickness, Vestibular System, Endogenous Opioid Peptides
Humans, Individual Differences, Endurance; Cats
Acceleration, Pharmacological Countermeasures, Naloxon, Scopolamine

P842(18/88)* Davydov BI, Drobyshev VI, Ushakov IB, Fedorov VP.
Morphological analysis of the reactions of the brains of animals to short term hyperoxia.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(19 references; 2 in English)

Neurophysiology, Brain Morphology
Rats, Dogs
Hyperoxia, Short-Term
P844(18/88)* Vasil'yev AA, Diyev AV, Grigorenko AB.  
An automated vestibulometric device.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(5 references; none in English)

Neurophysiology, Vestibular System  
Equipment and Instrumentation, Vestibulometric Device  
Acceleration

P847(18/88)* Yasnetsov VV, Drozd YuV, Shashkov VS, Bragin YeO, Popkova YeV, Vabishchevich AV.  
Protective effects of certain peptides with respect to motion sickness in animals.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(1 reference; none in English)

Neurophysiology, Motion Sickness  
Cats  
Protective Effects, Peptides

ISSUE 19

PAPERS:

P876(19/88)* Bodo G, Elkan K, Bentse G. (Hungary)  
The effect of sound on certain vestibular/autonomic reactions during motion sickness.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
(4 references; 2 in English)

Neurophysiology, Motion Sickness, Vestibular, Autonomic Responses  
Humans, Males; Individual Differences, Tolerance  
Sound
NEUROPHYSIOLOGY

P887(19/88)* Orlova EKh, Pshennikova MG, Dmitriyev AD, Meyerson FZ. 
*Increased concentration of immunoreactive opioid peptides in the brain and adrenals of rats adapted to physical exercise.*
Byulleten' Eksperimental'nyy Biologii i Meditsiny.
[16 references; 7 in English]
Authors' affiliation: Scientific Research Institute for Pathological Physiology, Moscow All-Union Research Center for Mental Health, USSR Academy of Medicine

Neurophysiology, Brain; Endocrinology, Adrenal; Opioid Peptides
Rats
Adaptation, Physical Exercise

P892(19/88) Vavakin YuN, Zhekov IP, Zavadovskiy AF.
The effects of various schedules of special tolerance-building exercises on increasing tolerance of head-down tilt.
Teoriya i Praktika Fizicheskoy Kultury.
[13 references; none in English]
Authors Affiliation: Institute of Biomedical Problems

Neurophysiology, Tolerance, Head-Down Tilt
Humans, Males
Physical Exercise, Special

P897(19/88) Mantsev El, Gavrilin VK, Yakovleva IYa.
Use of parallel swings to evaluate paired activity of the otolith system in healthy humans.
Vestnik Otolaringologii.
[17 references; 5 in English]
Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Neurophysiology, Otolith, Paired Activity, Asymmetry
Humans, Males
Parallel Swings
P898(19/88) Bronshteyn YuL, Raytes VS. 
Dynamics of vestibular nystagmus in neurogenic stress.
Fiziologicheskij Zhurnal. 
[15 references; 1 in English] 
Authors' Affiliation: Ivano-Frankovsk Medical Institute, Ukrainian Ministry of Health

Neurophysiology, Nystagmus 
Rabbits 
Psychology, Stress

ISSUE 20

PAPERS:

P914(20/88) Trinus KF. 
Individual differences in variability of vestibular sensitivity as measured by subjective sensations and long-latency vestibular evoked potentials.
Fiziologiya Cheloveka. 
[21 references; 9 in English] 
Author's Affiliation: Kiev Scientific Research Institute of Industrial Hygiene and Occupational Disease

Neurophysiology, Vestibular Sensitivity, Evoked Potentials 
Humans, Individual Differences 
Acceleration, Threshold

P919(20/88)* Smirnov SA, Ayzikov GS, Kozlovskaya IB. 
The effect of adaptive biofeedback control on the severity of vestibular and autonomic symptoms in experimentally induced motion sickness.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 
[14 references; 12 in English]

Neurophysiology, Motion Sickness, Induced 
Humans 
Psychology, Biofeedback

99
NEUROPHYSIOLOGY

P924(20/88)* Antipov VV, Tikhonchuk IB, Ushakov IB, Fedorov VP.  
State of synapses of rat telencephalons under exposure to space flight factors.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[33 references; 3 in English]

Neurophysiology, Telencephalon, Synapses  
Rats  
Space Flight Factors, Radiobiology, Irradiation, Head, Acceleration, Vibration, Microwaves, Hypoxia, Hyperoxia

P933(20/88)* Gale RR, Gusakova GA, Sabayev VV, Galle NN.  
Evaluation of the effectiveness of pharmacological countermeasures in preventing motion sickness.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[16 references; 9 in English]

Neurophysiology, Motion Sickness  
Humans, Males  
Pharmacological Countermeasures, Evaluation

P936(20/88)* Lychakov DV.  
Structural tolerance of vestibular receptors to exposure to space flight factors.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[40 references; 15 in English]

Neurophysiology, Vestibular Receptors, Damage Resistance  
Fish, Amphibians, Larvae, Developmental Biology, Rats  
Space Flight, COSMOS-782, -936, -1514, -1667

P939(20/88) Belichenko PV.  
Quantitative analysis of dendritic thorns of pyramidal neurons in layer V of the sensorimotor cortex of rats flown on COSMOS-1667.  
Byulleten' Eksperimental'noy Biologii i Meditsiny.  
[11 references; 5 in English]  
Author's affiliation: Brain Research Institute, USSR Academy of Medicine.

Neurophysiology, Sensorimotor Cortex, Neurons, Dendritic Thorns  
Rats  
Space Flight, COSMOS-1667
NEUROPHYSIOLOGY

P940(20/88) Pozdnyakov OM, Babakova LL, Demorzhi MS, Il'ina-Kakuyeva Yel.
Changes in the ultrastructure of motoneuron synapses in rats exposed to space flight factors.
Byulleten' Eksperimental'naya Biologii i Meditsiny.
[5 references; 2 in English]
Authors' affiliation: Institute of General Pathology and Pathological Physiology, USSR Academy of Medicine; Institute of Biomedical Problems, USSR Ministry of Health.

Neurophysiology, Musculoskeletal System, Motoneuron Synapses, Ultrastructure
Rats
Space Flight, COSMOS-1667

P942(20/88) Drozd YuV, Yasnetsov VV, Shashkov VS.
On the vestibuprotective characteristics of certain regulatory peptides.
Byulleten' Eksperimental'naya Biologii i Meditsiny.
CVI(7): 50-52.
[15 references; 7 in English]
Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of Health

Neurophysiology, Vestibular System, Motion Sickness
Cats
Pharmacological Countermeasures, Enzymology, Regulatory Peptides
ISSUE 15

PAPER:

P637(15/88) Bychkov VP, Kalandarov S, Kochetkova AN, Sedova YeA, Ushakov AS, Frumkin ML. *Diet of cosmonauts of the three Salyut-7 prime crews.*


Nutrition, Cosmonaut Rations
Humans, Cosmonauts
Space Flight, Salyut-7, Life Support Systems

ISSUE 16

PAPER:

P740(16/88) Balakovskiy MS, Ushakov AS, Pastushkova LKh, Spitsina NYe, Yuzhanskaya MG, Bogdanov NG, Gvozdova LG, Smirnova AN, Pyatnitskaya IN. *Vitamin status of humans undergoing a 120-day period of hypokinesia with head-down tilt.*


Nutrition, Vitamin Status; Metabolism, Adaptation; Enzymology
Humans
Hypokinesia with Head-Down Tilt; Countermeasures, Exercise
P752(17/88)* Bychkov VP, Mosyakina LI, Khokhlova OS.
The significance of nutrition in changes in carbohydrate and lipid metabolism in humans under nervous/emotional stress.
Kosmicheskaia Biologiya i Aviakosmicheskaya Meditsina.
(3 references; none in English)

Metabolism, Carbohydrate, Lipid
Humans
Nutrition, Balanced Diet, Psychology, Stress, Hermetically Sealed Environment, Neurophysiology, Motion Sickness Induction; Hypokinesia With Head-Down Tilt, Physical Exercise, Pharmacological Countermeasures

P797(17/88) Pletsityy KD, Davydova TV, Fomina VG, Sukhikh GT, Askerov MA, Gyu Cha Khak.
Correction of immunological effects of stress by Vitamin A.
Byulleten' Eksperimental'noy Biologii i Meditsiny.
[20 references; 9 in English]
Authors' affiliation: Scientific Research Institute of Pathology and Pathological Physiology, USSR Academy of Medicine

Immunology
Mice
Nutrition, Vitamin A; Psychology, Immobilization Stress

ISSUE 18

PAPERS:

P848(18/88)* D'yakonov MM, Kudrin ID, Stolyarova NA.
Work capacity and bioenergetics in older individuals on reduced flight rations.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(14 references; 2 in English)

Immunology
Mice
Nutrition, Vitamin A; Psychology, Immobilization Stress
PAPERS:


PAPERS:


Local hypothermia in treatment of acute diseases of the organs in the abdominal cavity in the practice of space medicine.

Pages: 116-117.

Operational Medicine, Local Hypothermia; Gastrointestinal System, Diseases of Abdominal Cavity Organs
Humans, Cosmonauts
Space Flight, Hypokinesia with Head-Down Tilt

ISSUE 17

PAPERS:

(6 references; 3 in English)

Operational Medicine, Decompression, High Altitude, Symptomatology
Humans, Individual Differences
Barochamber Studies

Pages: 22-23.

Operational Medicine, Rehabilitation
Humans, Cosmonauts
Post-Flight Recovery, Physical Exercise, Massage, Hydrotherapy, Heat, Nutrition
OPERATIONAL MEDICINE

ISSUE 18

PAPERS:


Operational Medicine, Peridural Anaesthesia, Long-Lasting Humans, Cosmonauts, Theoretical Article Space Flight


Operational Medicine, Decompression Humans Weightlessness Simulation, Head-Down Tilt, Oxygen Breathing

ISSUE 19

PAPERS:

P871(19/88)* Iseyev LR, Polyakov VN, Chadov VI. Comparative study of decompression-induced gas bubble formation and occurrence of high altitude decompression sickness. Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(3): 75-82; 1988. (18 references; 11 in English)

Operational Medicine, Decompression Sickness, Gas BubblesHumans, Males Barochamber Decompression, Head-Down Tilt, Exercise
Acute cerebrovascular diseases in pilots.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
22(3): 82-84; 1988.
(6 references; 4 in English)

Operational Medicine, Cerebrovascular Disease
Humans, Pilots
Disease Incidence

The effect of Diphenin on tolerance of animals to acute hypoxic hypoxia.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(4 references; 4 in English)

Operational Medicine, Tolerance
Rats, Male
Hypoxia, Countermeasures, Dilantin

Methods and criteria for assessing exhaustion in flight personnel.

Voenno-Meditsinskiy Zhurnal.
1988(2): 61-64.
[No references]
Authors' affiliation: USSR Medical Corps

Operational Medicine, Exhaustion, Chronic Fatigue
Humans, Pilots
Assessment Techniques
**OPERATIONAL MEDICINE**

P904(19/88)* Morozova LV, Nikiforov VI, Titova LA.  
*The effect of space-flight factors on the tissues and organs of the oral cavity in cosmonauts.*  
[11 references; 3 in English]

Operational Medicine, Oral Cavity, Stomatological Parameters  
Humans, Cosmonauts  
Space Flight Factors

**ISSUE 20:**

**PAPERS:**

P910(20/88) Chadov VI, Iseyev LR, Polyakov VN.  
*The hypobaric normoxic cabin atmosphere and minimum acceptable level of working pressures in an EVA space suit.*  

Operational Medicine, Human Performance, EVAs  
Humans, Cosmonauts  
Habitability and Environment Effects, Cabin Atmosphere, Space Suit Pressure

P911(20/88) Malkin VB, Landukhova NF, Shishov AA.  
*A rapid method for training hypoxia [tolerance].*  
[7 references; none in English]

Operational Medicine, Hypoxia Tolerance  
Humans  
Adaptation, Training Method

108
Reactions of rat dermal connective tissue to exposure to an electrostatic field.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
22(4): 81-84; 1988.
[15 references; 1 in English]

Tolerance of +Gz acceleration by pilots with health problems.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[9 references; 4 in English]
ISSUE 17

PAPER:

P783(17/88) Ponomarenko VA, Vorona AA, Aleshin SV.
On certain psychological mechanisms of spatial disorientation in the cabin of a flight vehicle.
In: Gazenko OG (editor).

Perception, Spatial Disorientation; Human Performance
Humans, Pilots
Psychology, Flight Vehicle Cabin

ISSUE 19

PAPER:

P905(19/88) Moseyeva II.
On the perception of time under extreme conditions.
In: Malinin VB, Kosmolinskiy FP, Kuznets Ye1 (editors).
Moscow: USSR Academy of Sciences; 1987.
Pages 72-76.
[9 references; 0 in English]

Perception, Time Perception, Human Performance
Humans, Athletes, Hang Glider Pilots
Extreme Conditions, Psychology, Stress; Biological Rhythms, Rhythm Types

ISSUE 20:

PAPER:

P918(20/88) Ivanov VV, Vorobyev OA, Shipkov YuYu.
The development of spatial orientation in the process of flight training.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
[21 references; 4 in English]

Perception, Spatial Orientation
Humans, Pilots
Pilot Training

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PERSONNEL SELECTION

ISSUE 18

MONOGRAPH:


KEY WORDS: Personnel Selection, Psychology, Human Performance, Neurophysiology, Group Dynamics, Perception

ISSUE 20:

PAPER:


Personnel Selection
Humans, Cosmonauts
Orthostatic Tolerance
P633(15/88) Polevoy LG.  
**GABA derivatives: Types of effects and methods of evaluation with respect to the goals and requirements of space psychopharmacology.**  
In: Gazenko OG (editor).  
Moscow: Nauka; 1986.  
Pages: 195-196.

P648(15/88) Shlyk GG, Korol'kov VI, Kozlovskaya IB, Shirvinskaya MA, Efimova MYa, Peshekhoonov OF, Abramov ON, Polyakov VV.  
**Use of parameters of instrumental reflexes to assess the adaptive capacities of the higher nervous system in monkeys on COSMOS biosatellites.**  
In: Gazenko OG (editor).  
Moscow: Nauka; 1986.  
Pages:303-304.

P677(15/88)* Savchenko NYa.  
**The immediate and remote effects of nonlethal irradiation with accelerated high energy helium ions on maintenance of existing [learned] behavioral patterns [responses] and formation of new ones.**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
[9 references; 1 in English]

Papers:

**Psychology, Space Psychopharmacology, GABA Derivatives**  
Humans, Cosmonauts  
Adaptation, Space Flight Factors

**Adaptation, Space Flight, COSMOS; Neurophysiology, Higher Nervous System**  
Primates, Monkeys  
Psychology, Learned Instrumental Reflexes; Stress

**Psychology, Learned Behavior Patterns, Maze, Stress**  
Rat,  
Radiobiology, Accelerated High Energy Helium
Comparisons of stress reaction in rats exposed to different simulations of certain effects of weightlessness.

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
21(5): 79-81.
[7 references; 6 in English]

Psychology, Stress Response; Endocrinology, Adrenal, Thymus
Rats, Male
Weightlessness Simulations, Immobilization, Tail Suspension

ISSUE 16

PAPERS:

P726(16/88) Chatterjee RS (India), Kozlovskaya IB, Grigor’yeva LS, Suvorov AS, Singatulin YeG, Vadkhavan JM (India), Dikshit MB (India).
Performance of Yoga on manned space flights.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 155-156.

Psychology, Stress Response; Endocrinology, Adrenal, Thymus
Rats, Male
Weightlessness Simulations, Immobilization, Tail Suspension

P727(16/88) Medvedeva YeYu.
Psychological work capacity as a function of individual differences in emotional traits under conditions of hypokinesia with head-down tilt.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 188-189.

Human Performance, Psychological Work Capacity
Humans, Males, Individual Differences, Personnel Selection
Psychology, Emotional Traits; Hypokinesia with Head-Down Tilt
P799(17/88) Kolinichenko TB, Koreshkov AA, Kots AR, Makarov VI, Rudometkin NM. 
Diurnal periodicity of psychomotor reactions and speech parameters in individuals working on non-24 hour schedules.

P818(18/88) Zhdanov OI, Shpatenko YuA. 
Intentional self-regulation as one of the factors in on-the-job adaptation to extreme performance conditions.

M130(18/88) Furduy FI, Kaydarliu SKh, Shrirby Yel, Nadvodnyuk Al, Mamalyga LM. 
Mekhanizmy razvitiya stressa: Stress, adaptsiya i funktsional'nyye narusheniya [Mechanisms underlying the development of stress: Stress, Adaptation and Functional Disorders.]

KEY WORDS: Psychology, Stress, Adaptation, Neuropsychology, Immunology, Endocrinology, Space Flight, Biological Rhythms, Pharmacological Countermeasures, Developmental Biology, Gastrointestinal System
M131(18/88) Platonov KK, Gol'dshteuin BM.
Osnovy avlationsnoy psikhologii [Principles of aviation psychology.]
Moscow: Transport; 1987.
[222 pages; 9 tables; 19 figures; 32 references; none in English]

KEY WORDS: Psychology, Aviation Psychology, Stress, Pilots, Human Performance, Small Groups, Training, Perception, Personnel Selection, Man-Machine Systems
PAPERS:

P682(15/88)* Zubkova IV, Gutorova LV, Panferova NYe. *The effects of hypokinesia with head-down tilt and illumination conditions on sensitivity of skin of the upper body to UV-radiation.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 21(5): 81-82; 1987. [4 references; 3 in English]

Radiobiology, UV Radiation, Skin Sensitivity
Humans, Males
Hypokinesia with Head-Down Tilt, Illumination

ISSUE 16

PAPERS:


Radiobiology, Biological Effects, Cosmic Radiation
Botany, Rice, Tobacco; Brine Shrimp
Space Flight, COSMOS-1514

P710(16/88) Fedorova NL, Shafirkin AV, Osipova YeYu. *Quantitative description of radiation damage to the spermatogenic epithelium and rate of recovery after exposure to fast neutrons and gamma-irradiation.* Radiobiologiya. XXVII(4): 492-496; 1987. [8 references; 3 in English]

Authors’ affiliation: Institute of Biomedical Problems, USSR Ministry of Health, Moscow.

Reproductive Biology, Spermatogenic Epithelium
Mice, Male
Radiobiology, Radiation Damage, Fast Neutrons, Gamma Radiation
RADIOBIOLOGY

P711(16/88) Ul'yanova VA, Shafirkin AV, Farber YuV, Markelov BA.
Characteristics of development of radiation damage and recovery processes in the hemopoietic tissue of mice after repeated exposure to fast neutrons and gamma-irradiation.
Radiobiologia.
[9 references; 2 in English]
Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health, Moscow

Hematology, Hemopoietic Tissue
Mice
Radiobiology, Fast Neutrons, Gamma Irradiation, Repeated Exposure

P712(16/88) Antipov VV, Fedorov VP, Ushakov IB, Davydov BI.
Changes in synapses after irradiation of the heads of rats.
Radiobiologia.
[14 references; none in English]
Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health, Moscow

Neurophysiology, Synapses
Rats
Radiobiology, Gamma-Irradiation, Head

P713(16/88) Gerasimenko VN, Portman AI, Bulanova MI, Ivanov B, Mileva M.
The effect of charged particles of relativistic energy on the frequency of chromosome aberrations in human blood lymphocytes. Dose--response and RBE of protons, deuterons and helium ions.
Radiobiologia.
[16 references; 1 in English]
Authors' affiliation: Institute of Biomedical Problems, USSR Ministry of Health, Moscow.

Genetics, Chromosome Aberrations; Hematology, Lymphocytes
Humans
Radiobiology, Gamma Radiation, Protons, Deuterons, Helium Ions; Dose-Effect, RBE

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RADIObIOLOGY

P738(16/88) Kovalev YeYe, Sakovich VA.
The concept of radiation risk in setting radiation safety standards for space flights.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 314-315.

Radiobiology, Radiation Safety, Radiation Risk
Humans, Theoretical Article
Space Flight, Standard Setting

ISSUE 17

PAPERS:

P791(17/88) Fedorenko BS.
Remote consequences of the biological effects of accelerated high energy charged particles.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 326-327.

Biological Effects, Remote Effects, Cataracts, Tumors
Rats
Accelerated HZE, Protons, Helium Ions, Gamma-Radiation

P763 (17/88)* Tartakovskiy VN, Daniyarov SB.
Hemorrhaging and hemostasis in guinea pigs irradiated at high altitude.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(24 references; 10 in English)

Hematology, Hemorrhaging, Hemostasis
Guinea Pigs
Radiobiology, Irradiation, High Altitude
P769(17/88)* Petrov VM, Logachev Yul, Karachevskiy SN, Bengin VV, Gvozdev IK, Kolesov GYa, Kudryavtsev MI, Martynov AI, Podorolskiy AN, Sud SA, Devicheva YeA.

An automated spectrometric system for studying radiation characteristics of cosmic radiation on Prognoz-9 satellites.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(11 references; 4 in English)

Radiobiology, Solar Proton Events
Equipment and Instrumentation, Spectrometric System, Sosna
Space Flight, Prognoz-9 Satellites

ISSUE 18

PAPERS:

P812(18/88) Il'in VA, Neumyvakin IP, Kondrat'yev II.

The potential use of ultraviolet irradiation of the blood in the practice of space medicine.
In: Gazenko OG (editor).
Moscow: Nauka; 1986.
Pages: 64-65.

Operational Medicine, Space Flight, Immunology, Non-Specific Resistance
Humans, Cosmonauts, Theoretical Article
Radiobiology, Ultraviolet Radiation, Hematology, Blood

P853(18/88)* Gerasimenko VN, Zukhbaya TM.

Properties of radiation damage and repairation in bone marrow of mice irradiated with 4GeV/nuclon helium ions and 9GeV protons.
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.
(9 references; 1 in English)

Musculoskeletal System, Bone Marrow
Mice
Radiobiology, Helium Ions, Protons
RADIobiology

ISSUE 19

PAPER:

P900(19/88) Akopova AB, Dudkin VYe, Karpov ON, Melkumyan LV, Potapov YuV, Rshtuni ShB. *Determination of the characteristics of cosmic radiation on Salyut-7 space station.* Kosmicheskiye Issledovaniye. XXVI(1): 162-165; 1988. [14 references; 4 in English]

Radiobiology, Cosmic Radiation
Dosimetry
Space Flight, Salyut-7


Psychology, Radiobiology, Radiation Psychophysiology, Human Performance
Theoretical Paper, Paradigm Evaluation
Space Flight

ISSUE 20

PAPER:

P929(20/88)* Malakhovskiy VN, Bobyr' BA, Bokk MM, Mikhaylichenko PP, Sergeyev AA. *Some physiological characteristics of the initial reaction to radiation and Its apomorphine model.* Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 22(4): 77-81; 1988. [25 references; 8 in English]

Human Performance; Psychology, Animal Learning
Dogs, Humans
Radiobiology, Early Response, Apomorphine

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RADIOBIOLOGY

MONOGRAPH:

M138(20/88) Moldotashev B.
Deystviye vysokogo'ya i ioniziruyushchey radiatsii na organizm zhivotnykh i fiziologicheskiye mehanizmy povyshennoy radiostoychivosti [The effects of high altitudes and ionizing radiation on animals and physiological mechanisms underlying heightened radioresistance.]
[155 pages; 239 references]
Affiliation [book]: Institute of Biochemistry and Physiology, Kirghiz Academy of Sciences

KEY WORDS: Radiobiology, Ionizing Radiation, Radioresistance; Adaptation, High Altitudes, Hematology, Hemopoiesis, Immunology
REPRODUCTIVE BIOLOGY

ISSUE 16

PAPER:

P724(16/88) Tikhomirov YeP, Prilepskaya VN, Aleksashkina NI, Samokhin VG.  
**Tolerance of lower body decompression in women.**  
Pages: 136-137.

Reproductive Biology, Reproductive Organs and Functions; Cardiovascular and Respiratory Systems, Functional State 
Humans, Women 
LBNP, Tolerance

ISSUE 20

PAPERS:

P937(20/88) Serova LV, Tikhonova GP, Denisova LA, Pustynnikova AM, Ivanov YuV, Baykova OV.  
**The state of spermatogenesis and reproductive function in rats after space flight on the COSMOS-1667 biosatellite.**  
Paper delivered at the XIXth conference of the Permanent Working Group of Socialist Nations on Space Biology and Medicine within the Intercosmos Program, Havana, 5-12 April 1986.  
Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of Health, Moscow.

Reproductive Biology, Spermatogenesis, Reproductive Function 
Rats, Male 
Space Flight, COSMOS-1667

P938(20/88) Denisova LA, SNetkova YeV.  
**The effects of short-term space flights on the reproductive function in animals.**  
Abstract of paper delivered to the XXIth Conferences of the Permanent working Group of Socialist Countries on Space Biology and Medicine, Intercosmos, 6-10 June. Baranov Sandomersky, Poland. 
Authors' Affiliation: Institute of Biomedical Problems, USSR Ministry of Health, Moscow.

Reproductive Biology; Reproductive Function 
Rats; Male 
Space Flight, COSMOS-1887
SPACE BIOLOGY AND MEDICINE

ISSUE 15

MONOGRAPH:


KEYWORDS: Space Biology and Medicine, Human Performance, Psychology, Space Flight Research, Biospherics

CONFERENCE REVIEW:


KEY WORDS: Space Biology, Space Medicine, Adaptation, Extreme Conditions, High Altitude, Decompression Sickness, Acceleration, Psychology, Stress, Human Performance, Individual Differences, Biofeedback, Pharmacological Countermeasures, Physical Exercise, Weightlessness Simulations, Hypokinesia, Immersion, Toxic Factors, Cosmonaut Training, Equipment and Instrumentation, Operational Medicine, Immunology, Endocrinology, Metabolism

ISSUE 16

PAPERS:


Space Biology, Regeneration
Amphibians, Tritons
Space Flight, Weightlessness, Theoretical Article

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未来空间生物学的发展前景。

P732(16/88)* Il'in YeA, Anitpow VV.

**Future prospects for the development of space biology.**

In: Gazenko OG (editor).


Moscow: Nauka; 1986.

Pages: 273-274

**Space Biology, Ecological Physiology; Life Support Systems, CELSS; Exobiology, Theoretical Article**

**Future Prospects, Biosatellites, Mir**

**ISSUE 18**

**MONOGRAPH:**

M125(18/88) Verigo VV.


Moscow: Nauka; 1987.

[216 pages; 12 tables; 75 figures; 17 pages of references]

**KEY WORDS:** Space Biology and Medicine, Simulation Modeling, Systems Theory, Mathematical Modeling, Homeostasis, Operational Medicine, Cardiovascular and Respiratory Systems, Body Fluids, Cytology, Immunology, Hematology, Life Support Systems, Metabolism, Calcium, Exobiology, Planetary Quarantine, Microbiology

**ISSUE 19**

**PAPER:**

P859(19/88)* Talavrinov VA, Anashkin OD, Bagramov KhG, Volgin VA, Luk'yanchikov VI, Lyamin VR, Sergeyev AV, Turbasov VD, Chirkov AA.

**Anthropometric studies of the prime crews on Salyut-6 and -7 space stations.**

Kosmicheskaya Bioligiya i Aviakosmicheskaya Meditsina.


(17 references; 3 in English)

**Space Medicine, Anthropometric Parameters**

Humans, Cosmonauts

Space Flight, Salyut-6 and -7
SPACE BIOLOGY AND MEDICINE

MONOGRAPH:


KEY WORDS: Space Biology and Medicine, Human Performance, Psychology, Radiobiology, Botany, Life Support Systems, Operational Medicine, Perception, Metabolism, Cardiovascular and Respiratory Systems, Immunology.

BOOK REVIEW:


KEY WORDS: Space Biology and Medicine, Adaptation, High Altitudes, Operational Medicine, Personnel Selection, Cardiovascular and Respiratory Systems.
SPACE INDUSTRIALIZATION

ISSUE 18

MONOGRAPH:

M128(18/88) Grishin SD, Leskov LV. Industrializatsiya kosmosa: Problemy i perspektivy [Industrialization of space: Problems and prospects.]
Moscow: Nauka; 1987
[353 pages; 26 tables; 111 figures; 356 references]

KEY WORDS: Space Industrialization, Materials Processing, Exobiology, Weightlessness
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