

**List of research priorities of
Kermanshah University of Medical Sciences
(2024-2028)**

Key research areas of the university

Priority code	Priority title
1	Lifestyle: Obesity (with emphasis on children and adolescents), blood pressure, cardiovascular diseases and diabetes: with emphasis on prevention, care and reduction of the disease burden
2	Malignancies, neurodegenerative and non-communicable diseases (education, screening, early diagnosis, prevention and treatment)
3	Protection of the youth of the population: fertility and infertility and promotion of childbearing culture
4	Social harms: substance use disorder and tobacco use and its various aspects
5	Development of stem cell transplantation, tissue engineering and regenerative medicine (cell-based therapies and genetic studies)
6	Development of natural and traditional products
7	Development and application of modern sciences and artificial intelligence in health and wellness research
8	Development of mental and spiritual health and wellness
9	Promotion of nutritional quality, health and safety of food and beverages (food industries)
10	Studies of pharmaceutical sciences
11	Development of health studies (management and economics of the system) Health, Safety and Hygiene of the Environment and Work)
12	Infectious Disease Studies
13	Oral and Dental Health (Prevention and Treatment)
14	Religion, Ethics, Spirituality and Culture in the Field of Health and Wellness
15	Research in Education
16	Research in the Field of Nursing, Midwifery and Paramedical Sciences with Emphasis on Health Promotion and Care
17	Medical Equipment (Improvement of Quality Control and Assurance Methods)

1- Research priorities in the field of infectious diseases

Priority code	Priority title
403.1.1	Epidemiological studies on common infectious diseases in the province (types of hepatitis, HPV, HIV, drug-resistant tuberculosis, influenza, etc.)
403.1.2	Prevention and treatment of emerging and re-emerging diseases
403.1.3	Investigation of long-term complications of COVID-19 infection and the effectiveness and complications of coronavirus vaccines
403.1.4	Hospital infections: identification, prevention and control
403.1.5	Common infectious diseases in children: epidemiology, etiology and their treatment methods
403.1.6	Implementation of health promotion interventions to reduce the incidence of infectious diseases
403.1.7	Common diseases of animals and humans (zoonoses)
403.1.8	Laboratory diagnosis of infections
403.1.9	Epidemiological study of infectious diseases
403.1.10	Study in the field of vaccination and vaccine production against infectious diseases through laboratory and silicone studies
403.1.11	Prevention of infection in patients with suppressed immune systems

2- Research priorities in the field of non-communicable diseases

Priority code	Priority title
403.2.1	Obesity and its influencing factors with emphasis on children and adolescents
403.2.2	Epidemiological studies on common diseases in the province with emphasis on diabetes, cardiovascular diseases and types of cancer
403.2.3	Drug and toxin poisonings: epidemiology, prevention and treatment
403.2.4	Epidemiology of genetic diseases at birth
403.2.5	Epidemiology of non-communicable diseases and assessment of the burden of these diseases
403.2.6	Investigation of prevalence and incidence indicators and factors affecting non-communicable diseases such as prevention, diagnosis, treatment and rehabilitation including: cardiovascular diseases, brain and nervous diseases, thromboembolic diseases, autoimmune diseases and allergies, chronic kidney diseases, poisonings, fatty liver, cancers, obesity, children's diseases, disorders resulting from trauma and injuries and accidents, sexual health, endocrine and metabolic, genitourinary system, dermatological disorders, ear, nose and throat diseases, digestion, eyes, and sleep disorders
403.2.7	Evaluation of economic impacts and social and health programs and public health policies on the control and prevention of non-communicable diseases
403.2.8	Environmental risk factors on the incidence of non-communicable diseases
403.2.9	Assessment of structural abnormalities in students and college students
403.2.10	Non-communicable diseases in children and infants: disease burden and contributing factors
403.2.11	Diagnosis and treatment of eye diseases
403.2.12	Musculoskeletal diseases and joint and movement problems
403.2.13	Launching or expanding a registration program for priority non-communicable diseases such as diabetes, cancer, cardiovascular diseases, strokes, metabolic diseases, etc.

3- Research priorities in the field of pharmaceutical sciences

Priority code	Priority title
403.3.1	Synthesis, molecular simulation and production of active pharmaceutical ingredients
403.3.2	Extraction, structure identification and evaluation of biological effects of active herbal and traditional medicine compounds and investigation of their phytopharmacological effects
403.3.3	Design and manufacture of new drug delivery formulations (nano, micro and macro) of active pharmaceutical ingredients in order to increase efficiency and reduce side effects
403.3.4	Preclinical and clinical evaluation of active pharmaceutical ingredients and their side effects
403.3.5	Investigation of safety, efficacy and mechanism of pharmacological effect of various compounds using animal models
403.3.6	Design and manufacture of bio-based products in the field of diagnosis and treatment
403.3.7	Control, determination of quantity and standardization of raw materials of pharmaceutical products
403.3.8	Preclinical studies and clinical trials on natural and traditional products
403.3.9	Investigation of the effectiveness and cost-effectiveness of drugs and treatment protocols introduced for quitting stimulants, drugs, cigarettes and alcohol
403.3.10	Design and Production of various recombinant proteins and cellular-molecular studies in the field of RNA molecules based on biotechnology
403.3.11	Ethnobotany, ethnopharmacology studies and documentation of traditional and folk medicine in the field of treatment
403.3.12	Extraction, identification and purification of active ingredients and natural compounds of plants, animals and microorganisms
403.3.13	Evaluation of the effectiveness of health interventions and vaccines
403.3.14	Studies on the technology of pharmaceutical industries and industrial manufacturing of pharmaceutical products

4- Research priorities in the field of clinical and basic sciences

(Including the priorities of "New technologies and medical equipment")

Priority code	Priority title
403.4.1	Basic and applied research in the field of new stem cell technologies, tissue engineering and regenerative medicine
403.4.2	Research in the field of stem cells (transplantation, hematology, etc.) and cell therapy
403.4.3	Monitoring drug resistance in hospitals and other health care centers
403.4.4	Basic and applied research in the field of molecular mechanisms involved in the pathogenesis of autoimmune diseases
403.4.5	Investigation of new anesthesia methods, including anesthesia equipment and drugs, in order to reduce anesthesia complications
403.4.6	Out-of-hospital cardiopulmonary resuscitation and the quality of pre-hospital emergency services
403.4.7	New treatment methods in pediatric diseases
403.4.8	Improving the quality of clinical diagnostic and laboratory tests
403.4.9	Basic and applied research in the field of genetics, epigenetics and gene therapy with the aim of diagnosing, treating and preventing priority diseases
403.4.10	Basic science studies in the field of digestive, hepatic and respiratory disorders and acute and chronic renal failure
403.4.11	Relevant and applied research in the field of new stem cell technologies, tissue engineering and regenerative medicine in the treatment of diseases, especially diabetic and pressure ulcers
403.4.12	Research related to the design and production of vaccines, monoclonal antibodies and recombinant proteins
403.4.13	Basic science research in the field of neurological diseases including: strokes, epilepsy, MS, migraine, headaches, brain trauma, Parkinson's
403.4.14	Construction of tissue engineering scaffolds: composite and electrospun
403.4.15	Providing treatment protocols for sleep disorders
403.4.16	Non-pharmacological treatments for sleep disorders
403.4.17	Investigating the effect of various substance use on the structure and function of the brain in humans and laboratory animals, as well as investigating possible mechanisms involved in the formation of addiction

5- Research priorities in the field of medical education

Priority code	Priority title
403.5.1	Developing standards of spiritual health and professional ethics for evaluation and monitoring of faculty members and students
403.5.2	Investigating the suitability of curricula with educational goals and job needs of learners
403.5.3	Investigating the impact of using modern educational methods (such as simulation and modeling) on student education
403.5.4	Revising the curriculum to produce health-oriented products using industrial and clinical capacity
403.5.5	Using various methods to evaluate students' academic progress (clinical, theoretical and practical) in face-to-face and virtual education
403.5.6	Factors related to empowering and improving the performance of professors in education (virtual education, clinical skills and educational needs)
403.5.7	Comparing curricula in Iran with international standards
403.5.8	Investigating the advantages and challenges of virtual education in different subjects
403.5.9	Investigating ways to move from a traditional approach to new intellectual and behavioral standards
403.5.10	Innovative and technological designs in the field of building simulators and new educational assistance programs
403.5.11	Investigating the effectiveness of multidisciplinary educational programs
403.5.12	Education and health promotion
403.5.13	Sleep disorders and academic performance

6- Research priorities in the field of health sciences

(Including the priorities of "occupational health" and "social factors affecting health")

Priority code	Priority title
403.6.1	Assessment of pollutants and their health and ecological risks in different sectors of the environment and food
403.6.2	New technologies in water and wastewater treatment and hospital, urban and industrial waste management
403.6.3	Assessment of ergonomic factors of the workplace and safety, physical and chemical hazards in different jobs
403.6.4	Investigation of the genetic, physiological and biochemical foundations of sleep disorders and molecular mechanisms involved in diseases and their consequences
403.6.5	Psychological, social and environmental factors affecting sleep disorders and their consequences
403.6.6	Addiction and abuse of drugs and tobacco: diagnosis, screening, treatment, effective factors, consequences and estimation of its burden on the health system
403.6.7	Planning, organizing and evaluating health, safety and environmental management systems of work environments
403.6.8	Social epidemiology and social determinants of health
403.6.9	Development, implementation and evaluation of programs to promote healthy lifestyles and prevent high-risk behaviors (consumption Smoking, drug use, unsafe driving, etc.)
403.6.10	Types of modeling in the field of biostatistics and its application in medical science data
403.6.11	Statistical modeling based on spatio-temporal data in the field of medical science and preparation of geographical maps of diseases
403.6.12	Surgeries and cosmetic procedures
403.6.13	Studying strategies for improving patient safety standards in hospitals
403.6.14	Studying the status of sexual health in society and specific groups: strategies for improving sexual health and studying their effectiveness
403.6.15	Studying the quality of life in different population groups and strategies for improving it

7- Research priorities in the field of nutritional sciences and food industries

Priority code	Priority title
403.7.1	Improving food quality and safety with the help of new technologies
403.7.2	Healthy and unhealthy food patterns
403.7.3	New methods of production, processes, quality improvement, quality control, food processing and packaging
403.7.4	Identifying food fraud through qualitative and quantitative analysis methods
403.7.5	Controlling and improving food hygiene and safety
403.7.6	Investigating metal and chemical contaminants, chemical, biological and pharmaceutical toxic residues in food and assessing their risk
403.7.7	Evaluating and producing functional foods and their role in preventing and treating common diseases
403.7.8	Studying the effect of nutritional factors on the incidence of common non-communicable diseases at the provincial level
403.7.9	Designing and implementing comprehensive nutritional intervention programs for vulnerable groups, school-age children, the elderly and hospitals
403.7.10	Investigating the consumption pattern of various food supplements at the provincial level
403.7.11	Investigating the dominant nutritional pattern in the province
403.7.12	Investigating the role of nutrition in the prevention and treatment of women's diseases and factors affecting them Fertility
403.7.13	Nutritional Epidemiology

8- Research priorities in the field of dentistry and oral health

Priority code	Priority title
403.8.1	Review of new treatment methods and their impact on success and failure in treatment
403.8.2	Evaluation and application of dental materials and nanomaterials in dentistry
403.8.3	Maxillofacial anomalies, trauma and aesthetics
403.8.4	Application of cell culture, tissue engineering and stem cells in dentistry
403.8.5	Review of diagnostic methods and treatment plans in dentistry
403.8.6	Scope of pain and sensory disorders in dentistry
403.8.7	Use and effects of drugs and traditional medicine in dentistry
403.8.8	New technology and equipment in dentistry
403.8.9	Review of epidemiology, etiology, pathogenesis and course of diseases of the head and neck region
403.8.10	Epidemiology and review of health status and diseases of the mouth, jaw and face

9- Research priorities in the field of neuroscience and rehabilitation

(Including the priorities of "Mental health and behavioral disorders")

Priority code	Priority title
403.9.1	The role and place of rehabilitation in primary prevention
403.9.2	New methods in the rehabilitation of neurological and psychiatric diseases
403.9.3	New methods in the rehabilitation of brain and neurological diseases
403.9.4	Rehabilitation of the elderly
403.9.5	Rehabilitation of burns
403.9.6	Rehabilitation in lifestyle modification
403.9.7	Suicide and its related factors
403.9.8	Development of new therapeutic approaches for monitoring and diagnosis for sleep disorders
403.9.9	Investigation of structural and functional changes in the brain in sleep disorders
403.9.10	Investigation of aspects of mental disorders (anxiety, depression, etc.), sexual dysfunction, sleep disorders, psychosomatic disorders and autism and providing prevention and treatment strategies
403.9.11	Investigation of self-harming behaviors, psychosocial adjustment and environmental-social determinants affecting mental health in students
403.9.12	Epidemiology of high-risk behaviors of youth and its complications
403.9.13	Investigation of epidemiology, prevention, early detection and rehabilitation in substance abuse, drugs and psychotropic drugs
403.9.14	Research in the field of learning and memory mechanisms
403.9.15	Neuro-immuno-endocrinology: with emphasis on the role of inflammation and the immune system in the occurrence of neurological disorders and psychopathies
403.9.16	Depressive and suicidal disorders (prevention and treatment)
403.9.17	Psychosomatic diseases and other psychological problems of people with physical diseases
403.9.18	Basic and clinical research in the field of sleep disorders
403.9.19	Investigation and application of psychotherapy methods (especially on a large scale), preparation of psychological assessment tools and treatment protocols
403.9.20	Sleep interventions with an occupational therapy and occupation-based approach

10- Research priorities in the field of environmental factors and crises, accidents and disasters

Priority code	Priority title
403.10.1	Research on the phenomenon of fine dust and its hazards
403.10.2	Study of the challenges facing the health sector affected by climate change and drought
403.10.3	Study of environmental pollutants (water, soil, air) and new methods of controlling and eliminating them
403.10.4	Trauma resulting from accidents and incidents and traffic accident information management
403.10.5	Study of unexpected events related to the health sector and methods of predicting and controlling them
403.10.6	Determining the share of drug, stimulant and alcohol use in road accidents and incidents, violence, suicide, divorce and the like and providing intervention strategies
403.10.7	Waste and related research issues
403.10.8	Study of water issues, resource development and treatment
403.10.9	Environmental risk management or emphasis on controlling air, soil and water pollution
403.10.10	Design and development of HSE programs for separate environmental health services
403.10.11	Study of methods of developing wastewater treatment and promoting a social approach in providing environmental health services
403.10.12	Occupational accidents, safety and risk assessment of exposure to harmful environmental factors Work
403.10.13	Hospital and pre-hospital emergency management
403.10.14	Passive defense and crisis management standards in provincial hospitals

11- Research priorities in the field of nursing, midwifery and paramedical services

Priority code	Priority title
403.11.1	Empowerment and promotion of education in nursing and midwifery
403.11.2	Nursing in intensive care and emergency departments
403.11.3	Nursing care in acute and chronic diseases from childhood to old age
403.11.4	New technologies in nursing and midwifery
403.11.5	Nursing in crises and disasters
403.11.6	Professional ethics in nursing and midwifery
403.11.7	Clinical research in the field of anesthesia (pain and safety in anesthesia) and the operating room
403.11.8	Studies in cellular, molecular and clinical radiobiology and simulation in radiotherapy
403.11.9	Optimization of techniques and image quality in medical imaging technology and the use of modern diagnostic methods in the field of radiology
403.11.10	Prehospital and hospital emergency nursing
403.11.11	Empowerment of women and promotion of reproductive health in all physical, mental, emotional and social areas
403.11.12	Promotion of women's health during pregnancy, childbirth and postpartum
403.11.13	Counseling and support approaches in nursing and midwifery that promote health from childhood to Elderly
403.11.14	Emergency management and repeated visits, reverse triage in hospital emergency rooms

12- Research priorities in the field of "Religion, ethics, spirituality and culture in the field of health"

Priority code	Priority title
403.12.1	Explaining the causes of migration from the perspective of students and professors
403.12.2	Ethical challenges of futile treatment in hospital wards
403.12.3	Investigating the extent of compliance with professional ethics in hospitals and diagnostic-treatment centers in Kermanshah and compliance with the rights of service recipients
403.12.4	The relationship between patient safety culture and the occurrence of unwanted incidents
403.12.5	Ethics in research
403.12.6	Investigating the extent of achievement of the goals of the document on the Islamization of universities in Kermanshah University of Medical Sciences
403.12.7	Islamic lifestyle, spiritual vitality, hopefulness and self-confidence among students
403.12.8	Ethics in the doctor-patient relationship

13- Research priorities in the area of youth population and family health

(Including the priorities of "Family Medicine and Referral System", "Prenatal Diseases" and "Aging")

Priority code	Priority title
403.13.1	Studies in the field of fertility and infertility and related factors
403.13.2	Childbirth, population youth and family health
403.13.3	Studies and interventions in the field of childbirth (reasons for the increase in cesarean sections, making natural childbirth pleasant, painless childbirth, etc.)
403.13.4	Surrogate uterus and ethical, legal and social aspects of embryo, egg and sperm donation
403.13.5	Maternal mortality and morbidity
403.13.6	Sexual disorders and disabilities
403.13.7	Strengthening the family foundation, marriage, divorce prevention, empowerment and social resilience (family therapy interventions, couple therapy, skills training)
403.13.8	Development, implementation and evaluation of programs to promote family health and population youth (encouraging childbearing, promoting natural childbirth, exclusive breastfeeding, etc.)
403.13.9	Development, implementation and evaluation of educational programs to promote the health of the elderly (preventing depression in the elderly, promoting behaviors related to sleep health in the elderly, etc.)
403.13.10	Geriatric issues (Mental health, rehabilitation, social connections, social and family support, empowerment)
403.13.11	Technologies needed in health in old age

14- Research priorities in the field of health system research and health economics

Priority code	Priority title
403.14.1	Improving the quality of health services at health service levels
403.14.2	Management and evaluation of the health system (policies, performance, economic evaluation of health interventions, etc.)
403.14.3	Studies of inequality and utilization of health services
403.14.4	Studies of cost-effectiveness of health services
403.14.5	Studies of policy-making and pharmaceutical economics
403.14.6	Future research and health foresight
403.14.7	Study of effectiveness, cost-effectiveness, implementation considerations (benefits, disadvantages, feasibility, ethical considerations, etc.) of interventions to reduce demand for substance abuse (prevention and treatment) and introduction of policy options
403.14.8	Design of statistical databases in health areas (registry)
403.14.9	Assessment of the effectiveness of clinical processes
403.14.10	Development of health tourism in the province
403.14.11	Study of ways to improve productivity in staff and treatment systems
403.14.12	Research on the health system, insurance and service delivery system
403.14.13	Effectiveness and efficiency of the referral system and coordination between different health centers and strategies for improving the referral system
403.14.14	Reform and upgrade of the disease and death registration system with emphasis on diseases Non-communicable
403.14.15	Learning hospitals on the path to internationalization
403.14.16	Physical and mental health and job satisfaction of hospital health personnel and individual and organizational consequences

15- Research priorities in the field of artificial intelligence

Priority code	Priority title
403.15.1	Application of artificial intelligence in medical science data processing
403.15.2	Use of artificial intelligence in pharmaceutical science research
403.15.3	Application of artificial intelligence in medical science technologies
403.15.4	Application of artificial intelligence in health and treatment services management
403.15.5	Application of artificial intelligence in epidemiology and biostatistics
403.15.6	Application of artificial intelligence in health, prevention and health promotion
403.15.7	Role of new technologies, artificial intelligence and information technology in the treatment of sleep disorders
403.15.8	Design and manufacture of sensors, kits and tools in the field of medical sciences using artificial intelligence
403.15.9	Application of information technology systems and artificial intelligence in infection surveillance
403.15.10	Application of artificial intelligence in predicting and controlling factors and sources of pollutants affecting human health and the environment
403.15.11	Artificial intelligence and modeling in evaluating harmful factors in work environments