INFORMATION
about publication activity
FACULTY OF MEDICINE AND HEALTHCARE

№	Наименование публикации	Выходные данные *(doi статьи)*	Аннотация статьи	Ссылка для цитирования *(Ф.И.О., название статьи, название, номер и/или выпуск, том журнала, страницы, doi статьи)*	Квартиль журнала
1	Premature mortality attributable to COVID-19: potential years of life lost in 17 countries around the world, January–August 2020	DOI 10.1186/s12889-021-12377-1	Background: Understanding the impact of the burden of COVID-19 is key to successfully navigating the COVID-19 pandemic. As part of a larger investigation on COVID-19 mortality impact, this study aims to estimate the Potential Years of Life Lost (PYLL) in 17 countries and territories across the world (Australia, Brazil, Cape Verde, Colombia, Cyprus, France, Georgia, Israel, Kazakhstan, Peru, Norway, England & Wales, Scotland, Slovenia, Sweden, Ukraine, and the United States [USA]). Methods: Age- and sex-specific COVID-19 death numbers from primary national sources were collected by	Ugarte, M.P., Achilleos, S., Quattrocchi, A., Gabel, J., Kolokotroni, O., Constantinou, C., Nicolaou, N., Rodriguez-Llanes, J.M., Huang, Q., Verstiuk, O., Pidmurniak, N., Tao, J.W., Burström, B., Klepac, P., Erzen, I., Chong, M., Barron, M., Hagen, T.P.,	**Q1**

| | | | an international research consortium. The study period was established based on the availability of data from the inception of the pandemic to the end of August 2020. The PYLL for each country were computed using 80 years as the maximum life expectancy. Results: As of August 2020, 442,677 (range: 18–185,083) deaths attributed to COVID-19 were recorded in 17 countries which translated to 4,210,654 (range: 112–1,554,225) PYLL. The average PYLL per death was 8.7 years, with substantial variation ranging from 2.7 years in Australia to 19.3 PYLL in Ukraine. North and South American countries as well as England & Wales, Scotland and Sweden experienced the highest PYLL per 100,000 population; whereas Australia, Slovenia and Georgia experienced the lowest. Overall, males experienced higher PYLL rate and higher PYLL per death than females. In most countries, most of the PYLL were observed for people aged over 60 or 65 years, irrespective of sex. Yet, Brazil, Cape Verde, Colombia, Israel, Peru, Scotland, Ukraine, and the USA concentrated most PYLL in younger age groups. Conclusions: Our results highlight the role of PYLL as a tool to understand the impact of COVID-19 on demographic groups within and across countries, guiding preventive measures to protect these groups under the ongoing pandemic. Continuous monitoring of PYLL is therefore needed to better understand the burden of COVID-19 in terms of premature mortality. | **Kalmatayeva, Z., Davletov, K.,** Zucker, I., Kaufman, Z., Kereselidze, M., Kandelaki, L., Le Meur, N., Goldsmith, L., Critchley, J.A., Pinilla, M.A., Jaramillo, G.I., Teixeira, D., Goméz, L.F., Lobato, J., Araújo, C., Cuthbertson, J., Bennett, C.M., Polemitis, A., Charalambous, A., Demetriou, C.A., On behalf of the C-MOR consortium Premature mortality attributable to COVID-19: potential years of life lost in 17 countries around the world, January–August 2020 (2022) BMC Public Health, 22 (1), статья № 54 https://www.scopus.com/record/display.uri?eid=2-s2.0-85122690897&origin=resultslist&sort=plf-f | |
| 2 | Population-level risks of alcohol consumption by amount, geography, age, sex, and year: a | DOI 10.1016/S0140-6736(22)00847-9 | Background: The health risks associated with moderate alcohol consumption continue to be debated. Small amounts of alcohol might lower the risk of some health outcomes but increase the risk of others, suggesting that the overall risk depends, in part, on background disease rates, which vary by region, age, sex, and year. Methods: For this analysis, we constructed burden-weighted dose–response relative risk curves across 22 health outcomes | Bryazka, D., Reitsma, M.B., Griswold………. **Davletov, K**…………….. GBD 2020 Alcohol Collaborators Population-level risks of alcohol consumption by | **Q1** |

		to estimate the theoretical minimum risk exposure level (TMREL) and non-drinker equivalence (NDE), the consumption level at which the health risk is equivalent to that of a non-drinker, using disease rates from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2020 for 21 regions, including 204 countries and territories, by 5-year age group, sex, and year for individuals aged 15–95 years and older from 1990 to 2020. Based on the NDE, we quantified the population consuming harmful amounts of alcohol. Findings: The burden-weighted relative risk curves for alcohol use varied by region and age. Among individuals aged 15–39 years in 2020, the TMREL varied between 0 (95% uncertainty interval 0–0) and 0·603 (0·400–1·00) standard drinks per day, and the NDE varied between 0·002 (0–0) and 1·75 (0·698–4·30) standard drinks per day. Among individuals aged 40 years and older, the burden-weighted relative risk curve was J-shaped for all regions, with a 2020 TMREL that ranged from 0·114 (0–0·403) to 1·87 (0·500–3·30) standard drinks per day and an NDE that ranged between 0·193 (0–0·900) and 6·94 (3·40–8·30) standard drinks per day. Among individuals consuming harmful amounts of alcohol in 2020, 59·1% (54·3–65·4) were aged 15–39 years and 76·9% (73·0–81·3) were male. Interpretation: There is strong evidence to support recommendations on alcohol consumption varying by age and location. Stronger interventions, particularly those tailored towards younger individuals, are needed to reduce the substantial global health loss attributable to alcohol. Funding: Bill & Melinda Gates Foundation.	amount, geography, age, sex, and year: a systematic analysis for the Global Burden of Disease Study 2020 (2022) The Lancet, 400 (10347), pp. 185-235. https://www.scopus.com/record/display.uri?eid=2-s2.0-85134328270&origin=resultslist&sort=plf-f	
	systematic analysis for the Global Burden of Disease Study 2020			
3	Estimates, trends, and drivers of the global burden of type 2	DOI 10.1016/S2542-5196(22)00122-X	Background: Experimental and epidemiological studies indicate an association between exposure to particulate matter (PM) air pollution and increased risk of type 2 diabetes. In view of the high and increasing prevalence of diabetes, we aimed to quantify the burden of type 2	Burkart, K., Causey, K., Cohen, A.J., Wozniak…… **Davletov, K**…………….. GBD 2019 Diabetes and Air Pollution Collaborators	**Q1**

| | diabetes attributable to PM2·5 air pollution, 1990–2019: an analysis of data from the Global Burden of Disease Study 2019 | | diabetes attributable to PM2·5 originating from ambient and household air pollution. Methods: We systematically compiled all relevant cohort and case-control studies assessing the effect of exposure to household and ambient fine particulate matter (PM2·5) air pollution on type 2 diabetes incidence and mortality. We derived an exposure–response curve from the extracted relative risk estimates using the MR-BRT (meta-regression—Bayesian, regularised, trimmed) tool. The estimated curve was linked to ambient and household PM2·5 exposures from the Global Burden of Diseases, Injuries, and Risk Factors Study 2019, and estimates of the attributable burden (population attributable fractions and rates per 100 000 population of deaths and disability-adjusted life-years) for 204 countries from 1990 to 2019 were calculated. We also assessed the role of changes in exposure, population size, age, and type 2 diabetes incidence in the observed trend in PM2·5-attributable type 2 diabetes burden. All estimates are presented with 95% uncertainty intervals. Findings: In 2019, approximately a fifth of the global burden of type 2 diabetes was attributable to PM2·5 exposure, with an estimated 3·78 (95% uncertainty interval 2·68–4·83) deaths per 100 000 population and 167 (117–223) disability-adjusted life-years (DALYs) per 100 000 population. Approximately 13·4% (9·49–17·5) of deaths and 13·6% (9·73–17·9) of DALYs due to type 2 diabetes were contributed by ambient PM2·5, and 6·50% (4·22–9·53) of deaths and 5·92% (3·81–8·64) of DALYs by household air pollution. High burdens, in terms of numbers as well as rates, were estimated in Asia, sub-Saharan Africa, and South America. Since 1990, the attributable burden has increased by 50%, driven largely by population growth and ageing. Globally, the impact of reductions in household air pollution was largely offset by increased ambient PM2·5. Interpretation: Air pollution is | Estimates, trends, and drivers of the global burden of type 2 diabetes attributable to PM2·5 air pollution, 1990–2019: an analysis of data from the Global Burden of Disease Study 2019 (2022) The Lancet Planetary Health, 6 (7), pp. e586-e600.

https://www.scopus.com/record/display.uri?eid=2-s2.0-85134425745&origin=resultslist&sort=plf-f | |

			a major risk factor for diabetes. We estimated that about a fifth of the global burden of type 2 diabetes is attributable PM2·5 pollution. Air pollution mitigation therefore might have an essential role in reducing the global disease burden resulting from type 2 diabetes. Funding: Bill & Melinda Gates Foundation.		
4	Self-reported changes in alcohol and tobacco use during COVID-19: Findings from the eastern part of WHO European Region	DOI 10.1093/eurpub/ckac011	Background: The COVID-19 pandemic might impact substance use behaviours around the globe. In this study, we investigate changes in alcohol and tobacco use in the second half of 2020 in countries of the eastern part of the WHO European Region. Methods: Self-reported changes in alcohol and tobacco use among 11 295 adults from 18 countries in the eastern part of the WHO European Region were collected between August 2020 and January 2021. The non-probabilistic sample was weighted for age, gender and education. For each country, proportions of respondents reporting a decrease, no change or increase in substance use over the past 3 months were examined, and multinomial regression models were used to test associations with age, gender and past-year alcohol use. Results: In most countries, about half of the respondents indicating past-year alcohol or tobacco use reported no change in their substance use. Of those alcohol users who reported changes in their alcohol use, a larger proportion reported a decrease than an increase in most countries. The opposite was true for tobacco use. Women, young adults and past-year harmful alcohol users were identified as being more likely to change their substance use behaviour. Conclusion: We found diverging overall trends for alcohol and tobacco use in the second half of 2020. The patterns of change vary according to age, gender and past-year substance use. Individuals at risk to increase their substance use during the COVID-19 pandemic require most policy considerations.	Kilian, C., Neufeld, M., Manthey, J., Alavidze, S., Bobrova, A., Baron-Epel, O., Berisha, M., Bilici, R., **Davletov, K.,** Isajeva, L., Kantaş Yılmaz, F., Karatkevich, T., **Mereke, A.**, Milanović, S.M., Galstyan, K., Muslić, L., Okoliyski, M., Shabani, Z., Štelemėkas, M., Sturua, L., Sznitman, S.R., Ünübol, B., Ferreira-Borges, C., Rehm, J. Self-reported changes in alcohol and tobacco use during COVID-19: Findings from the eastern part of WHO European Region (2022) European Journal of Public Health, 32 (3), pp. 474-480. https://www.scopus.com/record/display.uri?eid=2-s2.0-85131267989&origin=resultslist&sort=plf-f	**Q1**

5	Healthy worker survival effect at a high-altitude mine: prospective cohort observation	DOI 10.1038/s41598-022-18331-4	Very little is known about the factors of healthy worker survival effect at high-altitude mines. We conducted this cohort observation of the new hires for a high-altitude gold mine in Kyrgyzstan with the aim to ascertain predictors of survival at work. All new hires in 2009 through 2012 for a high-altitude gold mine (3600–4500 m above sea level) were followed up to January 2022. We tested the association of demographic, physiological predictors and diagnoses at the pre-employment screening with non-survival at work in Cox proportional hazards yielding hazard ratios (HR) with their 95% confidence intervals (CI). The cumulative observation time was 5190 person-years. Blood pressure at pre-employment, lung function, the diagnoses of essential hypertension, chronic obstructive pulmonary disease (COPD) or any other analyzed physiological variables were not associated with non-survival at work. However, smoking (HR 1.55; 95% CI 1.10; 2.17) increased the likelihood of non-survival at work, independent of any diagnosis or lowland residence (HR 1.95; 95% CI 1.31; 2.90). Adjusted for covariates and all diagnoses, having chronic rheumatic fever (HR 10.95; 95% CI 2.92; 33.92), hemorrhoids (HR 1.32; 95% CI 1.01; 3.75), adhesive otitis (HR 1.74; 95% CI 1.05; 2.89) or obesity (HR 1.71; 95% CI 1.01; 2.88) were associated with non-survival at work with time. This prospective observation of new hires for a high-altitude mining operation demonstrated that selected diagnoses, smoking and lowland residence elevated the risk of early exit in prospective workers.	**Vinnikov, D.,** Krasotski, V. Healthy worker survival effect at a high-altitude mine: prospective cohort observation (2022) Scientific Reports, 12 (1), статья № 13903 https://www.scopus.com/record/display.uri?eid=2-s2.0-85136012429&origin=resultslist&sort=plf-f	**Q1**
6	Occupational disease claims and non-occupational morbidity in a prospective cohort	DOI 10.1038/s41598-022-11241-5	Exposure to nickel aerosol in the nickel production is associated with greater occupational risk, yet little is known how many workers will develop an occupational disease and claim compensation. The aim of this analysis was to prospectively observe a cohort of nickel electrolysis workers and quantitatively assess confirmed occupational disease claims. We observed a cohort of	Syurin, S., **Vinnikov, D.** Occupational disease claims and non-occupational morbidity in a prospective cohort observation of nickel electrolysis workers	**Q1**

| | observation of nickel electrolysis workers | | nickel electrolysis workers (N = 1397, median age 39, 68% males) from 2008 till 2020 in one of the largest nickel producers in the Russian High North. Cumulative incidence of confirmed occupational disease claims in seven occupational groups, including electrolysis operators, hydrometallurgists, crane operators, final product cleaners, metalworkers, electricians and 'other' was analyzed and supplemented with Cox proportional hazards regression, yielding hazard ratios (HR) with their 95% confidence intervals (CI) of occupational disease claims for each group. N patients with occupational disease claims varied from 1 in 2016 to 22 in 2009, and in total 87 patients developed one or more occupational diseases (cumulative incidence 6.2%, p < 0.001 between seven groups). Accounting for 35,527 person-years of observation in total, cleaners exhibited the greatest risk (HR 2.58 (95% CI 1.43–4.64)), also adjusted for smoking, number of non-occupational diseases and group 2 (hydrometallurgists). Smoking was independently associated with having an occupational disease claim in all groups (p < 0.001), as was the number of non-work-related diseases in six groups of seven. Despite consistent improvement in the exposure control measures in nickel production, occupational morbidity persists. More effort is needed to reduce exposure in final product cleaners. | (2022) Scientific Reports, 12 (1), статья № 7092

 https://www.scopus.com/record/display.uri?eid=2-s2.0-85129164729&origin=resultslist&sort=plf-f | |
| 7 | Knowledge and experience of Kazakhstan athletes in anti-doping and the impact of past educational intervention | DOI

 10.1186/s13011-022-00461-7 | Background: Although Kazakhstan National Anti-Doping Organization (KazNADO) exists since 2013, but little is yet known about anti-doping (AD) knowledge of Kazakhstan athletes. The aim of this study was to assess the AD education knowledge level and experience among Kazakhstan athletes, as well as the impact of any past AD educational program on them. Methods: Altogether, 590 athletes (the median was age 17 years (interquartile range 8)), representing various sports, participated in the web-based study and completed the | **Zhumabayeva, G., Kapanova, G., Vinnikov, D.**, Bakasheva, M., Abdulla, V., **Grjibovski, A.** Knowledge and experience of Kazakhstan athletes in anti-doping and the impact of past educational intervention | **Q2** |

			questionnaire, which consisted of socio-demographic part and ALPHA test. We assessed the association of any past AD education and experience with anti-doping knowledge using adjusted regression models. Results: A total of 54.6% participants underwent doping control and 82,7% of athletes received AD education at least once. More than 300 participants (50.8%) provided correct answers for 10 questions. Age and years in sports (competition duration) were significantly associated with the ALPHA scores of athletes. Athletes who received AD education more than once in the past had significantly higher ALPHA scores than non-AD educated athletes in most questions. Conclusion: AD education was associated with AD knowledge. Further research is needed to identify the adherence to anti-doping knowledge.	(2022) Substance Abuse: Treatment, Prevention, and Policy, 17 (1), статья № 32 https://www.scopus.com/record/display.uri?eid=2-s2.0-85128968440&origin=resultslist&sort=plf-f	
8	Occupational burn-out, fatigue and stress in professional rescuers: A cross-sectional study in Kazakhstan	DOI 10.1136/bmjopen-2021-057935	Objectives To find predictors of burn-out in a cohort of rescuers. Design Cross-sectional study. Setting Republican Rescue Squad (N=105) and Republican Mudslide Rescue Service under the Ministry of Emergency Situations (N=480) in Almaty, Kazakhstan. Participants In total, we included 268 (80% men, median age 38 (IQR 22) years) rescuers from both organisations. Primary and secondary outcome measures We offered a questionnaire to rescuers, which included Maslach Burnout Inventory, quantifying emotional exhaustion (EX), cynicism (CY) and professional efficacy (PE) along with fatigue, stress and health-related quality of life (HRQL) tools. Results Lower scores of HRQL (Physical Component Score (PCS) beta-0.04 (95% CI-0.06 to-0.02); Mental Component Score beta-0.03 (95% CI-0.05 to-0.01)), higher fatigue (Fatigue Severity Scale (FSS) score beta 0.03 (95% CI 0.03 to 0.04)) and stress (Perceived Stress Score-10 beta 0.04 (95% CI 0.02 to 0.06)) independently predicted greater EX. Lower PCS (beta-0.03 (95% CI-0.06 to-0.01)) and FSS (beta 0.02	**Vinnikov, D., Kapanova, G., Romanova, Z., Krugovykh, I., Kalmakhanov, S., Ualiyeva, A., Baigonova, K., Tulekov, Z., Ongarbaeva, D.** Occupational burn-out, fatigue and stress in professional rescuers: A cross-sectional study in Kazakhstan (2022) BMJ Open, 12 (6), статья № e057935 https://www.scopus.com/record/display.uri?eid=2-s2.0-85133147590&origin=resultslist&sort=plf-f	**Q1**

9	Prevalence of refractive errors and risk factors for myopia among schoolchildren of Almaty, Kazakhstan: A cross-sectional study	DOI 10.1371/journal.pone.0269474	Introduction Very little is known about the prevalence of refractive errors among children in Kazakhstan. The aim of this study was to investigate the prevalence of refractive errors and risk factors of myopia among schoolchildren in Almaty, Kazakhstan. Methods In the cross-sectional study of 2293 secondary school students (age 6–16), we examined cycloplegic autorefraction and offered a questionnaire in three age groups: 1st grade (N = 769), 5th grade (N = 768) and 9th grade (N = 756). The questionnaire covered main risk factors such as parental myopia, screen time, time outdoors, sports activities, near work, gender, grade, and school shift. Adjusted logistic regression analysis was applied to test the association of risk factors with myopia. Results The mean spherical equivalent (SER) was -0.54 ± 1.51 diopters (D). The overall prevalence of refractive errors was 31.6% (95% confidence interval (CI) 29.7; 33.5); myopia 28.3% (95% CI 26.5; 30.1); hyperopia 3.4% (95% CI 2.7–4.1) and astigmatism 2.8% (95% CI 2.1; 3.5). In the multivariate adjusted regression analysis, higher class level (5th grade (odds ratio (OR) 1.78; 95% CI 1.26; 2.52) and 9th grade (OR 3.34; 95% CI 2.31; 4.82)) were associated with myopia, whereas outdoors activity more than 2 hours a day (OR 0.64; 95% CI 0.46; 0.89) and sports (OR 0.70; 95% CI 0.52; 0.93) were associated with a lower incidence of myopia. Conclusions Myopia is a leading refractive error in schoolchildren in Almaty, Kazakhstan. Myopia prevention measures, including	**Mukazhanova, A.,** Aldasheva, N., Iskakbayeva, J., Bakhytbek, R., **Ualiyeva, A., Baigonova, K., Ongarbaeva, D., Vinnikov, D.** Prevalence of refractive errors and risk factors for myopia among schoolchildren of Almaty, Kazakhstan: A cross-sectional study (2022) PLoS ONE, 17 (6 June), статья № e0269474 https://www.scopus.com/record/display.uri?eid=2-s2.0-85131701956&origin=resultslist&sort=plf-f	**Q1**

(Row above row 9, partial text continued:)

(95% CI 0.01 to 0.03)) could predict more CY burn-out. In addition to stress, higher education (beta 0.86 (95% CI 0.40 to 1.32)) was positively associated with lower burn-out severity in PE domain. Conclusions Fatigue, stress and HRQL were associated with burn-out in rescuers. Addressing these predictors may help guide further interventions to reduce occupational burn-out.

			more time outdoors, should guide public health interventions in this population.		
10	COVID-19 Pandemic: New Prevention and Protection Measures	DOI 10.3390/su14084766	As of the end of February 2021, more than 420,000,000 confirmed cases of COVID-19 have been reported worldwide, with 5,856,224 deaths. Transmission of the different genetically engineered variants of SARS-CoV-2, which have been isolated since the beginning of the pandemic, occurs from one infected person to another by the same means: the airborne route, indirect contact, and occasionally the fecal–oral route. Infection is asymptomatic or may present with flulike symptoms such as fever, cough, and mild to moderate and severe respiratory distress, requiring hospitalization and assisted ventilation support. To control the spread of COVID-19, the World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC) have indicated that the appropriate use of personal protective equipment (PPE), as well as the adoption of effective hygiene systems, is one of the primary prevention measures for the entire population. Companies and institutions around the world are therefore trying to find the best ways to reorganize their operations, minimizing the risk of infection among their employees, in order to protect their health and prevent internal outbreaks of SARS-CoV-2, including through the development of new technologies that could also be an innovative and driving factor for the relaunch of companies in a more sustainable, ethically correct, and safe for the health of employees perspective. On the basis of the above premises, in view of the coexistence with SARS-CoV-2 that will most likely accompany us in the coming years, and in view of the vaccination campaign adopted worldwide, the purpose of our narrative review is to update the previous operational protocols with the latest scientific knowledge to be adopted in the workplace even when the emergency crisis is over.	Cirrincione, L., Plescia, F., Ledda, C., Rapisarda, V., Martorana, D., Lacca, G., Argo, A., Zerbo, S., Vitale, E., **Vinnikov, D.,** Cannizzaro, E. COVID-19 Pandemic: New Prevention and Protection Measures (2022) Sustainability (Switzerland), 14 (8), статья № 4766 https://www.scopus.com/record/display.uri?eid=2-s2.0-85129204269&origin=resultslist&sort=plf-f	**Q1**

| 11 | Fractional exhaled NO in a metalworking occupational cohort | DOI 10.1007/s00420-021-01801-z | Purpose: Secondary metalworking carries exposure to relatively heavy levels of respirable particulate. We investigated the extent to which metalworking is associated with increased exhaled nitric oxide (FeNO), an established inflammatory biomarker. Methods: We studied 80 metalworking factory employees in Kazakhstan. Informed by industrial hygiene data, we categorized them into three groups: (1) machine operators (41%); (2) welders or assemblers (33%); and (3) all others, including administrative and ancillary staff (26%). Participants completed questionnaires covering occupational history, smoking, home particulate sources, respiratory symptoms, and comorbidities. We measured exhaled carbon monoxide (CO), exhaled fractional nitric oxide (FeNO), and spirometric function. We used mixed-effects modeling to test the associations of occupational group with FeNO, adjusted for covariates. Results: The median age was 51.5 (interquartile range 20.5) years; 7% were women. Occupational group ($p < 0.01$), daily current cigarette smoking intensity ($p < 0.05$), and age ($p < 0.05$), each was statistically associated with FeNO. Welders, or assemblers (Group 2), who had intermediate particulate exposure, manifested significantly higher exhaled FeNO compared to machinists (Group 1, with the highest particulate exposure) and all others (Groups 3, the lowest particulate): adjusted Group 2 mean 44.8 ppb (95% confidence interval (CI) 33.8–55.9) vs. Group 1 24.6 ppb (95% 20.5–28.7) and Group 3, 24.3 ppb (95% CI 17.7–30.9). Secondhand smoking and height were not associated with FeNO. Conclusion: In a metalworking industrial cohort, welders/assemblers manifested significantly higher levels of FeNO. This may reflect respiratory tract inflammation associated with airborne exposures specific to this group | **Vinnikov, D., Tulekov, Z.,** Blanc, P.D. Fractional exhaled NO in a metalworking occupational cohort (2022) International Archives of Occupational and Environmental Health, 95 (3), pp. 701-708. https://www.scopus.com/record/display.uri?eid=2-s2.0-85116544903&origin=resultslist&sort=plf-f | **Q2** |
| 12 | Contribution of Inspection | DOI | In agricultural activities, the tractor driver is subjected to many stresses from physical and attentional points of | Romano, E., Bisaglia, C., Calcante, A., Oberti, R., | **Q4** |

		10.1007/978-3-030-98092-4_13	view. Driving tractors requires the operator to pay great awareness both during the agricultural operation and when handling the vehicle. The seat and the driving place play an important role by representing the interface between the man and the machine. In recent years, various investigation techniques have been used with the aim of studying the operator's comfort during the mechanized operations. The techniques most aimed at observing posture and postural commitment examine the positions of specific body parts and their variation over time, the pressure measured between the body and the seat and the muscle electromyographs of the limbs and back. In this study, three driving modes have been considered: i) manual driving, ii) assisted driving and iii) semi-automatic driving in the execution of an agricultural practice of harrowing soil following plowing. Ten operators were hired to carry out the task on the same field alternating the three different driving methods. The procedure of investigation of the postures assumed by the body consisted in the application of a low-cost 3D camera (Microsoft Kinect), a continuous reading tool of the posture and of the crucial nodes of the body. For the evaluation of the pressures of the operator's body on the seat, a sensitized carpet consisting of a matrix of sensors was used. Finally, portable electromyographs were placed in the shoulders, left arm and back of the operator for the assessment of muscle engagement. The values collected by the three methodologies were processed with multivariate analysis, to verify the contribution of each methodology in the characterization of the driving methods and in the measure of the physical correlated effort.	Zani, A., **Vinnikov, D.,** Marconi, A., Vitale, E., Bracci, M., Rapisarda, V. Contribution of Inspection Methods to Monitoring Operator Comfort During Agricultural Operations (2022) Lecture Notes in Civil Engineering, 252 LNCE, pp. 117-126 https://www.scopus.com/record/display.uri?eid=2-s2.0-85127626621&origin=resultslist&sort=plf-f	
13	Sarcoidosis and occupational hazards: a	DOI	The purpose of the review. To summarize the results of studies on the role of harmful factors of the working environment in the development of sarcoidosis, published in Russian and English in the Russian	Strizhakov, L.A., **Vinnikov, D.V.,** Rybina, T.M., Babanov, S.A., Mukatova, I.Y.U.	**Q4**

| | systematic review of research in the countries of the former Soviet Union | 10.17116/profmed20222502191 | Federation, Belarus, Ukraine, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Georgia, Azerbaijan, Armenia, Moldova, Latvia, Lithuania and Estonia. Material and methods. Following the PRISMA protocol, we searched the databases www.elibrary.ru, IBIS, PubMed and the paper catalog of the Belarusian State Library for descriptions of all available studies performed in 15 countries from the time of the first publication in 1936 until January 2021, in which studied the relationship of harmful factors of the working environment with the development of sarcoidosis. The quality of individual studies was assessed using the ARHQ methodology checklist. Results. Only four studies published between 1996 and 2018 in Russia and Belarus, all in Russian, met the inclusion criteria and were included in the analysis. These studies, with a cross-sectional (75%) and cohort design, found a prevalence of occupational hazards in patients with sarcoidosis ranging from 8 to 61%. The quality of the included studies is very low, with a high risk of selection bias, exposure classification and disease verification errors, and confounding factors. Conclusions. In the countries of the former Soviet Union, research on the role of exposure to harmful factors of the working environment in the development of sarcoidosis has either not been carried out, or very little attention has been paid to them. Evidence for the role of these factors in the development of sarcoidosis collected so far is of low quality, which serves as a basis for planning more high-quality studies. | Sarcoidosis and occupational hazards: a systematic review of research in the countries of the former Soviet Union (2022) Profilakticheskaya Meditsina, 25 (2), pp. 91-99 https://www.scopus.com/record/display.uri?eid=2-s2.0-85126509064&origin=resultslist&sort=plf-f | |
| 14 | Quality of life in children with cochlear implants in Kazakhstan | DOI 10.1186/s12887-022-03254-w | Background: Although cochlear implantation (CI) has been performed in Kazakhstan since 2007 little is known about quality of life of patients after CI. The aim of this study was to assess the health-related quality of life (HRQoL) of Kazakhstani children after CI. Methods: Altogether, 53 families with a child using a cochlear | **Zhumabayev, R., Zhumabayeva, G., Kapanova, G.,** Tulepbekova, N., Akhmetzhan, A., **Grjibovski, A.** | **Q2** |

			implant for at least 1 year participated in the study between July 20, 2019 and February 20, 2020 at the Audiological Center of Almaty, Kazakhstan. The parents/caregivers completed the "Children with Cochlear Implants: Parental Perspectives (CCIPP)" questionnaire. Results: 'Well-being and happiness' subdomain of the HRQoL yielded the highest ratings. 'Communication', 'general functioning', 'self-reliance', and 'supporting the child' subdomains each achieved significant (p < 0.01) associations with all HRQoL subdomains. There were positive correlations between language used by the parent who completed the questionnaire (Kazakh or Russian) and three HRQoL subdomains, including 'well-being and happiness', 'supporting the child' and 'social relations'. Conclusion: Parents/caregivers reported high quality of life in all HRQoL subdomains. Further research in this area with more detailed socio-demographic and medical history data is required to identify quality of life predictors in children after cochlear implantation	Quality of life in children with cochlear implants in Kazakhstan (2022) BMC Pediatrics, 22 (1), статья № 194 https://www.scopus.com/record/display.uri?eid=2-s2.0-85128102846&origin=resultslist&sort=plf-f	
15	Prevalence assessment adjusted for laboratory test performance using an example of the COVID-19 serological tests	DOI 10.17816/humeco108116	Assessment of the prevalence of the disease or condition should consider the accuracy of the diagnostic tests. In the context of the new coronavirus infection (COVID-19) pandemic, laboratory testing has been one of the most important components of the overall strategy for the control and prevention of this infection. Seroprevalence studies have been used to assess and monitor the level of population immunity to the virus. In this paper we provide detailed description of the methods to calculate and interpret the accuracy of laboratory tests as well as their sensitivity, specificity, positive-and negative prognostic values of laboratory tests using seroprevalence of COVID-19 studies as an example for better understanding of the methodological issues. The use of the laboratory tests accuracy in prevalence studies has been demonstrated. A sample syntax to	Krieger, E.A., **Grjibovski, A.M.,** Postoev, V.A. Prevalence assessment adjusted for laboratory test performance using an example of the COVID-19 serological tests (2022) Ekologiya Cheloveka (Human Ecology), 29 (5), pp. 301-309 https://www.scopus.com/record/display.uri?eid=2-s2.0-85138327523&origin=resultslist&sort=plf-f	**Q3**

			calculate confidence intervals for the prevalence estimates using the bootstrap procedure with known absolute values of true positive and true negative results, false positive and false negative results for R software is also provided. Presentation of the prevalence estimates adjusted for test performance indicators with confidence intervals improves comparability of the findings obtained using different serological tests. The article is intended for undergraduate-, postgraduate-, and doctoral students in health sciences working with the assessment of the prevalence (seroprevalence) of diseases or conditions through population-based serological surveys.		
16	Lead concentration in human hair in Russia: a systematic review	DOI 10.17816/humeco105480	BACKGROUND: Extensive measures to reduce lead concentrations in the biosphere are implemented in many countries, therefore, the world community predicts a decrease in the quantitative content of lead in the environment. The concentration of lead in human hair is considered as an indicator of environmental pollution, therefore, systematized information on this indicator in the subjects of the Russian Federation is necessary to assess the effectiveness of environmental measures. MATERIAL AND METHODS: This is a systematic review following PRISMA guidelines. We performed a systematic search and qualitative synthesis of scientific literature on hair concentrations of lead across Russia between 2011 and 2021. PubMed and eLIBRARY.RU were the main sources of scientific information in English and Russian, respectively. Initial search returned 1748 matches. Thirty-seven papers remained for qualitative synthesis after screening and eligibility analysis. RESULTS: During the study period, the results of studies on 27 subjects of the Russian Federation were published, which is one third of all subjects of the federation. No heterogeneity was observed in sample preparation while methods of laboratory analysis varied between the settings and included inductively coupled	Chanchaeva, E.A., **Grjibovski, A.M.,** Sukhova, M.G. Lead concentration in human hair in Russia: a systematic review (2022) Ekologiya Cheloveka (Human Ecology), 29 (6), pp. 371-389

https://www.scopus.com/record/display.uri?eid=2-s2.0-85137525785&origin=resultslist&sort=plf-f | **Q3** |

			plasma mass spectrometry, atomic absorption spectrometry and inversion voltammetry. The sample sizes ranged from 5 to 5908 individuals. The average lead concentrations varied between 0.01 and 6.54 mg/kg. The greatest concentrations of lead were reported in the Orenburg (6.54 mg/kg) and Chita Regions (4.35 mg/kg). CONCLUSION: Two-thirds of all subjects of the Russian Federation for the period 2011–2021 are not covered by the study, so there are no data on the concentration of lead in the hair of the population of these regions. Further data collection should be performed using representative and sufficient sample samples while presentation of the results should contain detailed information on methods of data collection and analysis to ensure reproducibility and comparability of the findings		
17	Study profile: oral health assessment among participants of "Epidemiology of cardiovascular diseases in Russian regions. Third study" in the Arkhangelsk region	DOI 10.17816/humeco109191	RATIONALE AND AIMS: The population of North Russia has a high prevalence of both cardiovascular and dental diseases. The Arkhangelsk region was included in the third phase of the multicenter study entitled "Epidemiology of cardiovascular diseases in Russian regions. Third study" ("ESSE-RF3"). The ESSE-RF3 study studied the prevalence of cardiovascular diseases, their biological and behavioral risk factors, and the associations with regional economic, climatic, and geographical characteristics. The Arkhangelsk part of the study is unique as it involved an assessment of the oral health of the ESSE-RF3 study participants. The oral health study protocol is presented in this paper. METHODS: A population-based study was performed from February 24 through June 30 in the year 2021 at the outpatient facility of the Northern State Medical University in Arkhangelsk. A representative sample of 1816 permanent residents of the Arkhangelsk region aged 35–74 years participated in the ESSE-RF3 study. Most of them (84.9–87.5%) agreed to take part in the oral phase of the study, which included the use of a questionnaire,	Drachev, S.N., Popov, V.A., Simakova, A.A., Gorbatova, M.A., Kudryavtsev, A.V., Shagrov, L.L., Popova, D.A., **Grjibovski, A.M.,** Kontsevaya, A.V., Yushmanova, T.N., Gorbatova, L.N. Study profile: oral health assessment among participants of "Epidemiology of cardiovascular diseases in Russian regions. Third study" in the Arkhangelsk region (2022) Ekologiya Cheloveka (Human Ecology), 29 (7), pp. 513-526	**Q3**

| | | | the collection of oral and gingival crevicular fluid, assessment of dental and periodontal health status using a WHO (2013) methodology; oral hygiene and dental aesthetic index; an orthodontic assessment with periotestometry and a photo protocol. In addition, an in-depth orthodontic study was performed on a sub-sample of the participants aged 35–51 years (n=236) using teleroentgenography, cone-beam computed tomography, and biometrics of the plaster models. EXPECTED RESULTS AND CONCLUSIONS: The study will assess the prevalence of a wide range of states and conditions related to oral health in a representative sample of the adult population of the Arkhangelsk region in the target age-group using validated international instruments to ensure comparability and reproducibility of the findings. More importantly, the study will assess the associations between various aspects of oral health and cardiovascular diseases, their risk factors as well as regional and behavioral characteristics studied by the main ESSE-RF3 study protocol | https://www.scopus.com/record/display.uri?eid=2-s2.0-85137445875&origin=resultslist&sort=plf-f | |
| 18 | Self-perceived dental health and its association with caries experience and socio-demographic factors among 15-years old adolescents in the Arkhangelsk region | DOI 10.20333/2500013 6-2022-3-64-70 | The aim of the research. To study self-perceived dental health of adolescents and to determine its association with socio-demographic factors and objective data on the condition of teeth. Moreover, we assessed the prognostic value of models based on the studied indicators as tools for caries prognosis in 15-years old teenagers. Material and methods. A total of 1143 15-years old adolescents from 7 urban and 5 rural settings took part in a cross-sectional study. Questionnaire surveying and objective assessment of dental health was performed using the standardised and validated WHO methodology. The decayed (D), missing (M) and filled (F) teeth (T) counts were combined in the DMFT index and presented with 95% confidence intervals (CI). Bivariate analysis of categorical variables was performed using the chi-squared test. Numeric variables were compared using | Gorbatova, M.A., Akulova, I.S., Gorbatova, L.N., Simakova, A.A., **Grjibovski, A.M.** Self-perceived dental health and its association with caries experience and socio-demographic factors among 15-years old adolescents in the Arkhangelsk region (2022) Siberian Medical Review, 2022 (3), pp. 64-70 https://www.scopus.com/record/display.uri?eid=2-s2.0- | **Q4** |

| | | | the Kruskal-Wallis test. The association between socio-demographic factors and self-perceived dental health independently from caries experience was evaluated using multivariate ordinal regression. The prediction of caries based on the studied factors was performed using logistic regression models. Results. Only 14.4% of the adolescents characterised their dental health as excellent or very good while 10.7% reported having bad or very bad teeth. The mean DMFT index in the abovementioned groups varied between 2.9 (95% CI: 2.5-3.3) and 6.5 (95% CI: 5.8-7.3). Significant linear trends between self-perceived health and objectively measured caries experience was observed ($p < 0.001$) and explained by the difference in the number of decayed teeth ($p < 0.001$). The place of residence and parents' education were significantly associated with self-perceived health both in bivariate analysis and after adjustment for caries experience. In the multivariate logistic model, self-perceived dental health was the most significant factor in prognostic models contributing with 7.8% out of 8.5% of the total variance. Conclusion. Self-perceived dental health in adolescents is significantly associated with objectively assessed caries experience. Social factors are significantly associated with self-perception of dental health even after adjustment for objective data. However, the coefficients of determination of the prognostic models are too small, which precludes their application for prognosis of caries development based on self-reported data in the studied population. | 85135707700&origin=result slist&sort=plf-f | |
| 19 | Interpretation of and alternatives to p-values in biomedical sciences | DOI

10.17816/humeco9 7249 | Existing difficulties in interpretation of the results of statistical analysis have been repeatedly mentioned as one of the factors behind poor reproducibility of research findings in biomedical sciences followed by a series of publications presenting alternatives to improve the situation including a abandonment of p-values and significance testing. In this paper we briefly present the | **Grjibovski, A.M.,** Gvozdeckii, A.N. Interpretation of and alternatives to p-values in biomedical sciences | **Q3** |

			scope of the problem as well as Fischer and Neyman–Pearson approaches to hypothesis testing. Moreover, we present confidence intervals and effect size calculation as alternatives to dichotomization of the results as significant or not significant using a certain cut-off level. In addition, we summarize the pros and cons of suggestion to change the cut-off value from traditional 0.05 to 0.005. We also present a list of the most common misunderstandings of p-values discussed in international statistical literature. We conclude the paper with brief recommendations on careful interpretation of the results of statistical analysis to prevent misinterpretation and misuse of p-values in biomedical studies.	(2022) Ekologiya Cheloveka (Human Ecology), 29 (3), pp. 67-76 https://www.scopus.com/record/display.uri?eid=2-s2.0-85133870952&origin=resultslist&sort=plf-f	
20	Dimensions of the upper airways and its impact on the dentoalveolar system development	DOI 10.17116/stomat2022210102193	Due to the high mobility and variability of bone structures and soft tissues surrounding the upper respiratory tract, the exact boundaries for measuring and normalizing the size of the respiratory tract have not yet been determined. Studies have determined the relationship between the narrowing of the upper jaw and a decrease in the transverse dimensions of the airways, as well as a positive effect in changing the size of the airways after orthodontic treatment and/or orthognathic surgery. Nevertheless, the results of research in this area may differ greatly from different specialists, which indicates that the topic is poorly studied and it is necessary to continue and expand the range of scientific works to assess the state of the upper respiratory tract and their relationship with the orthodontic status.	Simakova, A.A., Gorbatova, L.N., **Grjibovski, A.M.,** Arutyunyan, K.S., Ryzhkov, I.A. Dimensions of the upper airways and its impact on the dentoalveolar system development [Article@Sostoyanie verkhnikh dykhatel'nykh putei i ego vliyanie na razvitie zubochelyustnoi sistemy] (2022) Stomatologiia, 101 (2), pp. 93-99 https://www.scopus.com/record/display.uri?eid=2-s2.0-85127418491&origin=resultslist&sort=plf-f	**Q4**
21	Social distance and stigma	DOI	The study investigated behavioral measures of social distance (i.e., desired proximity between self and others	Munir, K., Oner, O., Kerala, C., Rustamov, I., Boztas,	**Q1**

		in social contexts) as an index of stigma against those with mental illness among medical students in Republic of North Macedonia, Turkey, Azerbaijan, Kazakhstan, and Poland, using the Reported and Intended Behavior Scale (RIBS), a standardized, self-administered behavioral measure based on the Star Social Distance Scale. The students' responses to standardized clinical vignettes on schizophrenia, and depression with suicidal ideation, were also assessed. A total of 257 North Macedonian (females, 31.5%; 1–4 grades, 189; 5–6 grades, 68); 268 Turkish (females, 43.3%; 1–4 grades, 90; 5–6 grades, 178); 450 Kazakh (females, 28.4%, 71.6%; 1–4 grades, 312; 5–6 grades, 138); 512 Azerbaijani (females, 24%; 1–4 grades, 468; 5–6 grades, 44; females, 24%), and 317 Polish (females, 59.0%; 1–4 grades, 208; 5–6 grades, 109) students were surveyed. The responses on the RIBS social distance behavior measures did not improve with advancing medical school grade, but students across all sites viewed schizophrenia and depression as real medical illnesses. The results support the development of enhanced range of integrated training opportunities for medical student to socially interact with persons with mental illness sharing their experiences with them.	H., Juszkiewicz, K., Wloszczak-Szubzda, A., **Kalmatayeva, Z.,** Iskandarova, A., Zeynalli, S., Cibrev, D., **Kosherbayeva, L.,** Miriyeva, N., Jarosz, M.J., Kurakbayev, K., Soroka, E., Mancevska, S., Novruzova, N., Emin, M., Olajossy, M., Bajraktarov, S., Raleva, M., Roy, A., Waqar Azeem, M., Bertelli, M., Salvador-Carulla, L., Javed, A. Social distance and stigma towards persons with serious mental illness among medical students in five European Central Asia countries (2022) Psychiatry Research, 309, статья № 114409 https://www.scopus.com/record/display.uri?eid=2-s2.0-85123824062&origin=resultslist&sort=plf-f	
towards persons with serious mental illness among medical students in five European Central Asia countries	10.1016/j.psychres.2022.114409			
22	Seropositivity of SARS-CoV-2 in the Population of Kazakhstan: A Nationwide	DOI 10.3390/ijerph19042263	The data on seroprevalence of anti-SARS-CoV-2 antibodies in Kazakhstani population are non-existent, but are needed for planning of public health interventions targeted to COVID-19 containment. The aim of the study was to estimate the seropositivity of SARS-CoV-2 infection in the Kazakhstani population from 2020 to	Semenova, Y., **Kalmatayeva, Z.,** Oshibayeva, A., **Mamyrbekova, S.,** Kudirbekova, A., Nurbakyt, A.,	**Q1**

	Laboratory-Based Surveillance		2021. We relied on the data obtained from the results from "IN VITRO" laboratories of enzyme-linked immunosorbent assays for class G immunoglobulins (IgG) and class M (IgM) to SARS-CoV-2. The association of COVID-19 seropositivity was assessed in relation to age, gender, and region of residence. Additionally, we related the monitoring of longitudinal seropositivity with COVID-19 statistics obtained from Our World in Data. The total numbers of tests were 68,732 for SARS-CoV-2 IgM and 85,346 for IgG, of which 22% and 63% were positive, respectively. The highest rates of positive anti-SARS-CoV-2 IgM results were seen during July/August 2020. The rate of IgM seropositivity was the lowest on 25 October 2020 (2%). The lowest daily rate of anti-SARS-CoV-2 IgG was 17% (13 December 2020), while the peak of IgG seropositivity was seen on 6 June 2021 (84%). A longitudinal serological study should be envisaged to facilitate understanding of the dynamics of the epidemiological situation and to forecast future scenarios.	Baizhaxynova, A., Colet, P., **Glushkova, N.,** Ivankov, A., Sarria-Santamera, A. Seropositivity of SARS-CoV-2 in the Population of Kazakhstan: A Nationwide Laboratory-Based Surveillance (2022) International Journal of Environmental Research and Public Health, 19 (4), статья № 2263 https://www.scopus.com/record/display.uri?eid=2-s2.0-85124605321&origin=resultslist&sort=plf-f	
23	Hypertension: A National Cross-Sectional Study in India	DOI 10.5543/tkda.2022.21207	OBJECTIVE: Hypertension is a global public health problem. This article aimed to estimate the national prevalence of hypertension in India for both women and men. The study had also examined the demographic and socioeconomic status of hypertensive women and men. METHODS: The study used the National Family Health Survey 4 from all over India. Hypertension of 661 771 women (15-49 years) and 104 357 men (15-54 years) and their demographic and socioeconomic variables were assessed. Crosstabulation, chi-square tests, and multivariate logistic regression were used. RESULTS: The prevalence of hypertension in women and men were 11.40% and 18.10%, respec- tively. State-wise, Sikkim had shown the maximum prevalence. Older women (45-49 years) and men (50-54 years) had the highest hypertension prevalence among all age groups. Urban	Chakraborty, S., **Ussatayeva, G.,** Lee, M.-S., Dalal, K. Hypertension: A National Cross-Sectional Study in India (2022) Turk Kardiyoloji Dernegi arsivi : Turk Kardiyoloji Derneginin yayin organidir, 50 (4), pp. 276-283. https://www.scopus.com/record/display.uri?eid=2-s2.0-85131849128&origin=resultslist&sort=plf-f	**Q3**

			people had shown proportionately more hypertension than rural people. Education, working status, and richer economic status emerged as significant risk factors. Women with lower edu- cational status and men with higher educational status were more likely to be hypertensive. Working people were more hypertensive than their non-working peers. Economically, sound men were more hypertensive than poor people. Hypertensive people accessed medical care more. CONCLUSION: There are various modifiable risk socioeconomic factors associated with hyperten- sion. Policymakers can consider the current findings for better preventive planning. The risk factors identified in the study should be considered with appropriate weightage		
24	Non-utilization of public healthcare facilities during sickness: a national study in India	DOI 10.1007/s10389-020-01363-3	Aims: Healthcare utilization is a major challenge for low- and middle-income countries, especially for the publicly funded facilities. The study has tried to explore the women's opinion behind the non-utilization of public healthcare facilities in India. Subjects and methods: This was a cross-sectional study using nationally representative samples of 351,625 women of reproductive age (15–49 years) from the 29 States and seven Union Territories. Indian National Family Health Surveys NFHS-4 (2015–2016) was the data source. The respondents were asked why the members of their households do not utilize public healthcare facilities when members of their households are sick. They have options to respond either 'yes' or 'no'. Five reasons for non-utilization of public healthcare were asked: (i) 'there is no nearby facility'; (ii) 'facility timing is not convenient'; (iii) 'health personnel are often absent'; (iv) 'waiting time is too long'; and (v) 'poor quality of care'. Results: The majority of the women in India (88%) said that their family members did not use public healthcare facilities. The reasons behind this were 'no nearby facilities' (42.4%), 'inconvenient facility timing' (29.6%), 'poor quality of care'	Bagchi, T., Das, A., Dawad, S., **Dalal, K.** Non-utilization of public healthcare facilities during sickness: a national study in India (2022) Journal of Public Health (Germany), 30 (4), pp. 943-951. https://www.scopus.com/record/display.uri?eid=2-s2.0-85088871065&origin=resultslist&sort=plf-f	**Q3**

			(52.3%), 'health personnel often absent' (16.8%) and 'long waiting time' (39.9%). Conclusions: importantly, during the last 10 years, the utilization of public health care facilities has dropped significantly, which should be taken seriously as the Indian Parliament has been placing emphasis on equity.		
25	Key Indicators Affecting Hospital Efficiency: A Systematic Review	DOI 10.3389/fpubh.2022.830102	Background: Measuring hospital efficiency is a systematic process to optimizing performance and resource allocation. The current review study has investigated the key input, process, and output indicators that are commonly used in measuring the technical efficiency of the hospital to promote the accuracy of the results. Methods: To conduct this systematic review, the electronic resources and databases MEDLINE (via PubMed), Scopus, Ovid, Proquest, Google Scholar, and reference lists of the selected articles were used for searching articles between 2010 and 2019. After in-depth reviews based on the inclusion and exclusion criteria, among 1,537 studies, 144 articles were selected for the final assessment. Critical Appraisal Skills Programme (CASP) Checklist was used for evaluating the quality of the articles. The main findings of studies have been extracted using content analysis. Results: After the final analysis, the Context/Input indicators that were commonly considered by studies in analyzing hospital technical efficiency include different variables related to Hospital Capacity, Structure, Characteristics, Market concentration, and Costs. The Process/Throughput indicators include different variables related to Hospital Activity or services-oriented process Indicators, Hospital Quality-oriented process indicators, and Hospital Educational processes. Finally, the Output/Outcome indicators include different variables related to Hospital Activity-related output variables and Quality-related output/outcomes variables. Conclusion: This study has identified that it is necessary to mix and assess a set of	Imani, A., Alibabayee, R., Golestani, M., **Dalal, K.** Key Indicators Affecting Hospital Efficiency: A Systematic Review (2022) Frontiers in Public Health, 10, статья № 830102 https://www.scopus.com/record/display.uri?eid=2-s2.0-85127813955&origin=resultslist&sort=plf-f	**Q2**

			input, process, and output indicators of the hospital with both quantitative and qualitative indicators for measuring the technical efficiency of hospitals comprehensively		
26	Emergency management for severe burn (EMSB) course for the nurses in Bangladesh: opportunity and way forward	DOI 10.1016/j.heliyon.2022.e09156	Background: The emergency management of severe burn (EMSB) course is one of the widely taken courses in over 15 courses worldwide. In Bangladesh, the course has been running since 2008. Over 600 doctors and only 72 nurses participated in the EMSB courses in Bangladesh. The study explored the experiences of the EMSB course for the nurse, including opportunity and way forward. Methodology: A multi-method study was conducted. Quantitative data were collected from 54 nurses using the telephone interviews. In addition, one focus group discussion was performed with the EMSB faculty members to obtain qualitative information. Results: Out of 54 participant nurses, 47(87.04%) were female, and 7 (12.96%) were male. Almost two-thirds of nurses (62.96%) were working at medical colleges and hospitals. About 52% of the respondents stated that they had the opportunity to use the knowledge and skill acquired from EMSB training in managing burn patients. Those who had a chance to use the EMSB course knowledge, among them a vast majority (92.8%) mentioned that it helped manage severe burn patients. However, every nurse struggled with the course language. As a result, they were not able to qualify for the written course examination. They were also not able to interact well during the lecture sessions. However, nurses did well in the moulage practical simulation session. Conclusions: Immediate management of burn at the facility level could reduce disease burden, including hospital stay and quality of life. Nurses EMSB course, therefore, is essential for burn management in Bangladesh. Furthermore, course content updating, including bilingual option, could improve the nurse's	Biswas, A., **Dalal, K.,** Sawon, R.A., Mayaboti, C.A., Mashreky, S.R. Emergency management for severe burn (EMSB) course for the nurses in Bangladesh: opportunity and way forward (2022) Heliyon, 8 (3), статья № e09156 https://www.scopus.com/record/display.uri?eid=2-s2.0-85126981122&origin=resultslist&sort=plf-f	**Q1**

			course completion rate and confidence to contribute to their job areas.		
27	Cost-utility analysis of total knee arthroplasty alone and in comparison with post-surgical rehabilitation and conservative treatment in the Republic of Kazakhstan	DOI 10.1186/s12962-022-00379-8	Background: Despite ample international knowledge on cost-effectiveness of total knee arthroplasty (TKA), it has never been a subject of investigation in Kazakhstan or other post-Soviet economies. Our study aimed to carry-out the cost-utility analysis of TKA alone and in comparison with post-surgical rehabilitation and conservative treatment at health care facilities of Kazakhstan. Methods: Two hundred and forty four patients with knee osteoarthritis (KOA) who underwent TKA in orthopedic departments of Almaty, Nur-Sultan and Semey hospitals between January 1, 2019 and September 30, 2019 were followed-up for 12 months. The health-related quality of life was measured by the EQ-5D utility and Western Ontario and McMaster Universities Osteoarthritis Index was used to measure the patients' health status. The costs were estimated from the view of health care provider. We calculated the cost per QALY, the Cost-Utility Ratio and the Incremental Cost-Effectiveness Ratio. Results: At the time of 12-month follow-up patients who received TKA alone or with the course of rehabilitation showed benefit over patients from the group of conservative treatment in terms of overall health status. Mean QALY gained at 12 months constituted 1.66 for the group that received TKA with rehabilitation, 1.48 for the group that received TKA alone and 0.24 for the group that received conservative treatment. Mean cost per QALY gained was USD 30 795.75 for KOA patients under conservative treatment, USD 6 323.69 for KOA patients subjected to TKA and USD 2 670.32 for KOA patients with rehabilitation course after TKA. Conclusion: Both TKA and TKA with rehabilitation could be considered as highly cost-effective interventions. The data obtained could be of interest for policy makers, medical professionals and KOA patients	Serikova-Esengeldina, D., **Glushkova, N.,** Abdushukurova, G., Mussakhanova, A., Mukhamejanova, A., Khismetova, Z., Bokov, D., Ivankov, A., Goremykina, M., Semenova, Y. Cost-utility analysis of total knee arthroplasty alone and in comparison with post-surgical rehabilitation and conservative treatment in the Republic of Kazakhstan (2022) Cost Effectiveness and Resource Allocation, 20 (1), статья № 47 https://www.scopus.com/record/display.uri?eid=2-s2.0-85137425937&origin=resultslist&sort=plf-f	**Q2**

28	Associations between serum levels of brain-derived neurotrophic factor, corticotropin releasing hormone and mental distress in vitiligo patients	DOI 10.1038/s41598-022-11028-8	Vitiligo is clinically characterized by the appearance of non-symptomatic depigmented macules, but the disorder is highly correlated with a wide range of psychiatric disorders and psychological problems. The aim of our study was to investigate serum brain-derived neurotrophic factor (BDNF) and corticotropin releasing hormone (CRH) levels in vitiligo patients and healthy controls in relation to the observed symptoms of depression and anxiety disorders. This study comprised 96 vitiligo patients and 96 healthy controls who filled out the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) scales. Serum levels of BDNF and CRH were measured using enzyme-linked immunosorbent assay (ELISA) technique. There was a significant increase of depression and anxiety scores in vitiligo patients as compared with healthy controls (P < 0.05). The serum levels of BDNF were significantly lower in vitiligo patients than in healthy individuals (Z = 4.002; P < 0.001), while the serum levels of CRH were markedly higher in cases than those in controls (Z = 3.764; P < 0.001). The significant positive correlations between serum CRH levels and GAD-7, PHQ-9 scores were observed. However, the aforementioned psychometric scales did not correlate significantly with serum BDNF level. Vitiligo is associated with the depression and is closely linked with lower BDNF levels	Kussainova, A., Kassym, L., Akhmetova, A., Dvoryankova, E., **Glushkova, N.,** Khismetova, Z., Adilgozhina, S., Tuleutayeva, R., Kaskabayeva, A., Massabayeva, M., Pak, L., Semenova, Y. Associations between serum levels of brain-derived neurotrophic factor, corticotropin releasing hormone and mental distress in vitiligo patients (2022) Scientific Reports, 12 (1), статья № 7260, https://www.scopus.com/record/display.uri?eid=2-s2.0-85129398951&origin=resultslist&sort=plf-f	**Q1**
29	The diagnostic accuracy of spirometry versus peak expiratory flow test for follow-up of adult asthma patients at	DOI 10.2500/aap.2022.43.220049	Background: The asthma burden is growing worldwide, and this is predisposed by environmental and occupational exposures as well as individual risk factors. This study was aimed at a comparison of diagnostic accuracy of spirometry and peak expiratory flow rate (PEFR) in asthma screening of adult patients with lung function abnormalities that present at the level of primary care. Methods: This study was conducted in Shymkent city, South Kazakhstan, the third most populous city of	**Mamyrbekova, S.,** Iskakova, G., Faizullina, K., Kuziyeva, G., **Abilkaiyr, N., Daniyarova, A., Arynova, G.,** Brimzhanova, M., Abdushukurova, G., Gazaliyeva, M., **Glushkova, N.,** Semenova, Y., Izmailovich,	**Q2**

			the country with developed industries and high rates of pulmonary diseases. Four hundred and ninety-five adult patients with lung function abnormalities were enrolled in the study and underwent two screening tests (spirometry and PEFR). The diagnosis of asthma was verified by a qualified pulmonologist after performance of screening tests and was based on symptoms, medical history, and laboratory and lung function tests. Results: The sensitivity of spirometry was 0.97 and that of PEFR was 0.95 (p = 0.721), whereas the specificity of spirometry was 0.37 and that of PEFR was 0.28 (p = 0.227). Both tests yielded the same results for the positive predictive value (0.98). The negative predictive value was significantly higher for spirometry versus PEFR (0.23 versus 0.08; p = 0.006). The positive and negative likelihood ratios of the two tests also differed significantly (p = 0.001 and p = 0.006, respectively), whereas the overall accuracy was comparable between the two tests (0.96 for spirometry and 0.94 for PEFR; p = 0.748). Conclusion: Ambulatory PEFR monitoring is non-inferior to the monitoring of the forced expiratory volume in 1 second and could be used for screening purposes on equal grounds with spirometry	M. The diagnostic accuracy of spirometry versus peak expiratory flow test for follow-up of adult asthma patients at primary care level (2022) Allergy and Asthma Proceedings, 45 (5), pp. E58-E64 https://www.scopus.com/record/display.uri?eid=2-s2.0-85137208178&origin=resultslist&sort=plf-f	
30	Early integration of palliative care into oncological care: a focus on patient-important outcomes	DOI 10.12968/ijpn.2022.28.8.366	Background: Globally, cancer remains one of the leading causes of mortality. Palliative care is designed to meet a range of cancer patients' priority issues, including the management of pain and other cancer-associated symptoms. Routine palliative care envisages the provision of not just medical therapy, but also psychological support, social support and spiritual assistance. What constitutes the best model for palliative care remains a matter of debate. Aim: This review was undertaken with the aim to discuss different aspects of early integration of palliative care into oncological care, with a focus on patient-important outcomes. Methods: A comprehensive search of publications was conducted	Ansatbayeva, T., Kaidarova, D., Kunirova, G., Khussainova, I., Rakhmetova, V., Smailova, D., Semenova, Y., **Glushkova, N.,** Izmailovich, M. Early integration of palliative care into oncological care: a focus on patient-important outcomes	**Q2**

			with a focus on integrative palliative care for incurable cancer patients. For this purpose, the following databases and search engines were used: Scopus, PubMed, Cochrane Library, Research Gate, Google Scholar, eLIBRARY and Cyberleninka. Results: A comprehensive approach with early integration of different medical services appears to be the most promising. Integrative palliative care is best provided via specialised interdisciplinary teams, given that all members maintain systemic communications and regularly exchange information. This model ensures that timely and adequate interventions are provided to address the needs of patients. Conclusion: Further research is needed to pinpoint the most optimal strategies to deliver palliative care and make it as tailored to the patient's demands as possible. © 2022 MA Healthcare Ltd. All rights reserved.	(2022) International Journal of Palliative Nursing, 28 (8), pp. 366-375. https://www.scopus.com/record/display.uri?eid=2-s2.0-85137125869&origin=resultslist&sort=plf-f	
31	Gene polymorphisms and serum levels of BDNF and CRH in vitiligo patients	DOI 10.1371/journal.pone.0271719	Background Vitiligo is one of the most common hypomelanoses, in which the destruction of functioning melanocytes causes depigmentation of the skin, hair and mucous membranes. The genes encrypting brain-derived neurotrophic factor (BDNF) and corticotropin releasing hormone (CRH) might be the conceivable contributors to the development of vitiligo. This study was aimed at investigation of the serum levels of BDNF and CRH as well as their selected single nucleotide polymorphisms (SNPs) in vitiligo patients in comparison with the healthy controls. Methods The cross-sectional study was carried out between October 2020 and June 2021 in 93 vitiligo patients (age range from 23 to 48 years) and 132 healthy controls (age range from 24 to 52 years). The psychological status of study participants was evaluated using the Generalized Anxiety Disorder-7 (GAD-7) scale. Serum levels of BDNF and CRH were measured with the help of a commercially available sandwich enzyme-linked immunosorbent assay (ELISA) kit. Genotyping for the	Kussainova, A., Kassym, L., Bekenova, N., Akhmetova, A., **Glushkova, N.,** Kussainov, A., Urazalina, Z., Yurkovskaya, O., Smail, Y., Pak, L., Semenova, Y. Gene polymorphisms and serum levels of BDNF and CRH in vitiligo patients (2022) PLoS ONE, 17 (7 July), статья № e0271719 https://www.scopus.com/record/display.uri?eid=2-s2.0-85135228673&origin=resultslist&sort=plf-f	**Q1**

			rs11030094 polymorphism of the BDNF gene and for the rs242924 polymorphism of the corticotropin releasing hormone receptor 1 (CRH-R1) gene was performed by a real-time polymerase chain reaction (PCR). Results There was a significant relationship between the CRH-R1 rs242924 and BDNF rs11030094 polymorphisms and vitiligo. Moreover, serum levels of neurotransmitters differed significantly between vitiligo and control groups and were associated with the CRH-R1 rs242924 and BDNF rs11030094 SNPs. Conclusions Our findings demonstrated the association between CRH-R1 rs242924 and BDNF rs11030094 polymorphisms and vitiligo. Further studies need to be carried out in vitiligo patients to confirm the results observed		
32	Epitopes specificity of antibodies to thyroid peroxidase in patients with Graves' disease, Hashimoto's thyroiditis and overlap-syndrome	DOI 10.1016/j.jcte.2022 .100293	Background: Antibodies against thyroid peroxidase (anti-TPO) serve as clinical markers of thyroid autoimmune diseases (TAIDs). By trying to elucidate the causes of heterogeneity in autoantibody levels among patients with different TAIDs it becomes possible to clarify the pathophysiology of GD and HT. Objective: To investigate the heterogeneity of epitopes recognized by anti-TPO in patients with Hashimoto's thyroiditis (HT), Graves' disease (GD) and overlap-syndrome. Methods: We carried out a cross-sectional study on 398 patients with GD, HT and overlap syndrome and analyzed the specificity of epitopes and binding constants of TPO with monoclonal antibodies (MAbs). Ten MAbs to TPO were used, of which five were reactive with native TPO and the rest were reactive with denatured TPO. Results: The autoantibodies in blood serum of HT patients inhibited the binding of MAb63 more significantly than those in serum of GD patients: 59.62 % versus 54.02 %, respectively (p = 0.001). The anti-TPOs in serum of GD patients inhibited the binding of MAb77 more significantly than those in serum of HT patients: 54.36 % versus 51.13 %, respectively (p = 0.047). The binding of MAb45	Espenbetova, M., Kuzmina, N., Zubkov, A., Akhmetova, V., Zamanbekova, Z., Krykpaeva, A., Zhumanbayeva, Z., Amrenova, K., Smailova, Z., **Glushkova, N.** Epitopes specificity of antibodies to thyroid peroxidase in patients with Graves' disease, Hashimoto's thyroiditis and overlap-syndrome (2022) Journal of Clinical and Translational Endocrinology, 27, статья № 100293 https://www.scopus.com/rec ord/display.uri?eid=2-s2.0-	**Q3**

			was more inhibited in serum of patients with anti-TPO concentration over 1000 IU/ml (58.36 %). The blood serum of patients with overlap-syndrome showed less significant inhibition of MAb63 binding than that of patients with no overlap-syndrome: 52.47 % versus 58.81 %, respectively (p = 0.043). Conclusion: Mapping the epitopes to TPO with the help of MAbs may improve the differential diagnosis between different thyroid autoimmunities.	85124231232&origin=result slist&sort=plf-f	
33	Epidemiology of stroke and transient ischemic attacks in the population of the territories adjacent to the former Semipalatinsk Nuclear Test Site, Kazakhstan	DOI 10.1007/s00411-021-00955-1	The issue of radiation exposure as a potential cause of cerebrovascular disease raises many concerns. The aim of the present study was to investigate the epidemiology of stroke and transient ischemic attacks (TIA) along with the associated risk factors among the population of East Kazakhstan exposed to ionising radiation from the former Semipalatinsk Nuclear Test Site (SNTS) in comparison with the unexposed population of the same region. This 5-year retrospective cross-sectional study included the data on 10,970 patients, of whom the majority (62.3%) suffered from ischemic stroke, 11.7% had hemorrhagic stroke and the remaining 26.0% had TIA. At the moment when stroke/TIA happened, exposed patients were younger than the unexposed (mean age 63 years versus 64 years, p < 0.001) and showed higher rates of nearly all associated comorbidities, which commonly were more severe. Besides, exposed patients showed a higher risk of stroke lethality in contrast with the unexposed. The observed features might indicate that people residing in the vicinity of the SNTS are vulnerable to cerebrovascular disease and thus, this study contributes to timely recognition of this public health problem. In addition, a longitudinal study has to be envisaged to clarify whether there is any cause-effect relationship between exposure to radiation from the SNTS and the development of stroke or transient ischemic attacks.	Semenova, Y., Rakhimova, I., Nurpeissov, T., Alikeyeva, G., Khaibullin, T., Kovalchuk, V., Ainabekova, Y., Yurkovskaya, O., **Glushkova, N.,** Pivina, L., Sarria-Santamera, A., Abdrakhmanova, Z., Abdrakhmanov, A. Epidemiology of stroke and transient ischemic attacks in the population of the territories adjacent to the former Semipalatinsk Nuclear Test Site, Kazakhstan (2022) Radiation and Environmental Biophysics, 61 (1), pp. 17-28. https://www.scopus.com/record/display.uri?eid=2-s2.0-85119848604&origin=result slist&sort=plf-f	**Q2**

34	Towards an Accurate Estimation of COVID-19 Cases in Kazakhstan: Back-Casting and Capture–Recapture Approaches	DOI 10.3390/medicina58020253	Background and Objectives: Coronavirus disease 19 (COVID-19) has emerged as the most devastating syndemic of the 21st century, with worrisome and sustained consequences for the entire society. Despite the relative success of vaccination programs, the global threat of the novel coronavirus SARS-CoV-2 is still present and further efforts are needed for its containment and control. Essential for its control and containment is getting closer to understanding the actual extent of SARS-CoV-2 infections. Material and Methods: We present a model based on the mortality data of Kazakhstan for the estimation of the underlying epidemic dynamic—with both the lag time from infection to death and the infection fatality rate. For the estimation of the actual number of infected individuals in Kazakhstan, we used both back-casting and capture–recapture methods. Results: Our results suggest that despite the increased testing capabilities in Kazakhstan, official case reporting undercounts the number of infections by at least 60%. Even though our count of deaths may be either over or underestimated, our methodology could be a more accurate approach for the following: the estimation of the actual magnitude of the pandemic; aiding the identification of different epidemiological values; and reducing data bias. Conclusions: For optimal epidemiological surveillance and control efforts, our study may lead to an increased awareness of the effect of COVID-19 in this region and globally, and aid in the implementation of more effective screening and diagnostic measures	Sarría-Santamera, A., Abdukadyrov, N., **Glushkova, N.,** Peck, D.R., Colet, P., Yeskendir, A., Asúnsolo, A., Ortega, M.A. Towards an Accurate Estimation of COVID-19 Cases in Kazakhstan: Back-Casting and Capture–Recapture Approaches (2022) Medicina (Lithuania), 58 (2), статья № 253, https://www.scopus.com/record/display.uri?eid=2-s2.0-85124649373&origin=resultslist&sort=plf-f	**Q2**
35	The public's views on responsibility for medical errors in Kazakhstan	DOI 10.1080/20479700.2022.2104191	Introduction: Patients' attitudes toward medical errors (MEs) have been studied relatively extensively in developed countries around the world, but little is known about Central Asian countries, especially post-Soviet states. The growing importance of patient safety has raised concerns about who should be held accountable	Tsigengagel, O., Alchimbayeva, M., Khismetova, Z., **Glushkova, N.**	**Q1**

			for MEs. Due to a lack of research, this issue is poorly understood in Kazakhstan. Materials and Methods: This study examines respondents' attitudes toward MEs based on whether they had this experience in Kazakhstan between 2019 and 2021. The statistical analysis of data on MEs was carried out for the whole country. Respondents were asked about the causes of and solutions to the problem of preventable medical errors, as well as what the consequences of MEs should be. Results: In total, 40.8% of the respondents confirmed that they had experienced problems with MEs. Nearly one-third of Kazakhstani adults agree that the lack of professional qualifications of health professionals is the root cause of MEs. Conclusions: Differences existed among the regions in the opinion of the public and indicators of the degree of responsibility for and response to MEs. Further study of the causes and attitudes of the public is warranted, which will help better understand the problem of MEs in Kazakhstan	The public's views on responsibility for medical errors in Kazakhstan (2022) International Journal of Healthcare Management https://www.scopus.com/record/display.uri?eid=2-s2.0-85135188382&origin=resultslist&sort=plf-f	
36	The lessons of COVID-19, SARS, and MERS: Implications for preventive strategies	DOI 10.1080/20479700.2022.2051126	There was a dramatic spread of three novel coronaviruses (CoVs)–severe acute respiratory syndrome coronavirus (SARS-CoV), Middle East respiratory syndrome coronavirus (MERS-CoV), and SARS-CoV-2–from the beginning of the twenty-first century. All three infections share similar pathogenesis and clinical presentation, and human-to-human transmission is the most frequent transmission mode for all three CoVs, which spread through respiratory droplets, by direct contact with contaminated surfaces or by inhaling aerosols. Nosocomial transmission plays a major role for SARS-CoV and MERS-CoV but appears to be less critical for SARS-CoV-2. Coronaviruses will very likely continue to be a source of new acute respiratory infections in the future. This is why it is needed to better understand the whole spectrum of factors that underlie CoV disease outbreaks. Although a search for specific	Semenova, Y., Trenina, V., Pivina, L., **Glushkova, N.,** Zhunussov, Y., Ospanov, E., Bjørklund, G. The lessons of COVID-19, SARS, and MERS: Implications for preventive strategies (2022) International Journal of Healthcare Management https://www.scopus.com/record/display.uri?eid=2-s2.0-85129237386&origin=resultslist&sort=plf-f	**Q1**

			treatment and vaccine development has to be continued, a strategic preparedness and plan of action should be envisaged in advance. This review discusses the current knowledge of SARS-CoV, MERS-CoV, SARS-CoV-2 epidemiological determinants and emphasizes public health interventions that could help in the fight against them		
37	Regulation of Cell Signaling Pathways and Non-Coding RNAs by Baicalein in Different Cancers	DOI 10.3390/ijms23158377	Landmark discoveries in molecular oncology have provided a wide-angle overview of the heterogenous and therapeutically challenging nature of cancer. The power of modern 'omics' technologies has enabled researchers to deeply and comprehensively characterize molecular mechanisms underlying cellular functions. Interestingly, high-throughput technologies have opened new horizons for the design and scientific fool-proof evaluation of the pharmacological properties of targeted chemical compounds to tactfully control the activities of the oncogenic protein networks. Groundbreaking discoveries have galvanized the expansion of the repertoire of available pharmacopoeia to therapeutically target a myriad of deregulated oncogenic pathways. Natural product research has undergone substantial broadening, and many of the drugs which constitute the backbone of modern pharmaceuticals have been derived from the natural cornucopia. Baicalein has gradually gained attention because of its unique ability to target different oncogenic signal transduction cascades in various cancers. We have partitioned this review into different sub-sections to provide a broader snapshot of the oncogenic pathways regulated by baicalein. In this review, we summarize baicalein-mediated targeting of WNT/β-catenin, AKT/mTOR, JAK/STAT, MAPK, and NOTCH pathways. We also critically analyze how baicalein regulates non-coding RNAs (microRNAs and long non-coding RNAs) in different cancers. Finally, we	Farooqi, A.A., **Kapanova, G., Kalmakhanov, S., Tanbayeva, G.,** Zhakipbekov, K.S., Rakhmetova, V.S., Syzdykbayev, M.K. Regulation of Cell Signaling Pathways and Non-Coding RNAs by Baicalein in Different Cancers (2022) International Journal of Molecular Sciences, 23 (15), статья № 8377 https://www.scopus.com/record/display.uri?eid=2-s2.0-85136342311&origin=resultslist&sort=plf-f	**Q1**

			conceptually interpret baicalein-mediated inhibition of primary and secondary growths in xenografted mice			
38	Assessment of Satisfaction with Drug Provision of Antihypertensive Drugs at the Outpatient Level of Privileged Categories of Residens	DOI 10.4103/ijpvm.IJPVM_689_20	Background: The existing system of outpatient drug provision of citizens allows providing certain categories of citizens and patients with certain types of diseases on a free basis. The purpose of the study is to analysis and evaluate the system of providing preferential categories of citizens with antihypertensive drugs at the level of primary health care. Materials and Methods: To determine the level of satisfaction of citizens with drug provision at the outpatient level, 3118 respondents were interviewed using a questionnaire for persons who received free medicines for the treatment of hypertension. The questionnaire consisted of 20 questions. They were distributed by sex and age criterion. The ratio of male and female respondents was 51.7% and 48.7%, respectively. Results: Thus, the results of a sociological study to study the opinions of the population about the existing system of free outpatient care revealed some organizational and managerial problems. Although that patients with hypertension since 2012 receive drugs for free, 37% noted that they bought at full cost in pharmacies, which should be released free of charge for privileged categories of citizens. Also, 77% of respondents claimed that they were not invited to outpatient organizations to receive drugs. Conclusions: In solving the problems of improving the organization and management, it is necessary to take into account regional peculiarities, which allow, based on the use of a set of methods of analysis and forecasting, to assess the state and trends of development, to identify its strengths and weaknesses, to assess the factors of the external and internal environment.	Jamil, A., **Sundetgali, K.,** Laura, S., Ainur, T., Daniyar, T., Sabit, P., Kanatzhan, K. Assessment of Satisfaction with Drug Provision of Antihypertensive Drugs at the Outpatient Level of Privileged Categories of Residens (2022) International Journal of Preventive Medicine, 13 (1), p. 69 https://www.scopus.com/record/display.uri?eid=2-s2.0-85129268467&origin=resultslist&sort=plf-f		**Q2**
39	Regulation of RASSF by non-coding	DOI	Ras-association domain family (RASSF) proteins are tumor suppressors and have gained phenomenal limelight because of their mechanistic role in the	Farooqi, A.A**., Kapanova, G.,** Kussainov, A.Z.,		**Q1**

	RNAs in different cancers: RASSFs as masterminds of their own destiny as tumor suppressors and oncogenes	10.1016/j.ncrna.2022.04.001	prevention/inhibition of carcinogenesis and metastasis. Decades of research have demystified wide ranging activities of RASSF molecules in multiple stages of cancers. Although major fraction of RASSF molecules has tumor suppressive roles, yet there is parallel existence of proof-of-concept about moonlighting activities of RASSF proteins as oncogenes. RASSF proteins tactfully rewire signaling cascades for prevention of cancer and metastasis but circumstantial evidence also illuminates oncogenic role of different RASSF proteins in different cancers. In this review we have attempted to provide readers an overview of the complex interplay between non-coding RNAs and RASSF proteins and how these versatile regulators shape the landscape of carcinogenesis and metastasis.	Datkhayeva, Z., Raganina, K., Sadykov, B.N. Regulation of RASSF by non-coding RNAs in different cancers: RASSFs as masterminds of their own destiny as tumor suppressors and oncogenes (2022) Non-coding RNA Research, 7 (2), pp. 123-131. https://www.scopus.com/record/display.uri?eid=2-s2.0-85131604097&origin=resultslist&sort=plf-f	
40	Efficacy and Safety Results of Different Ablation Technologies for Persistent Atrial Fibrillation Treatment	DOI 10.1532/hsf.4853	INTRODUCTION: Pulmonary vein isolation is the primary goal in treating patients with paroxysmal atrial fibrillation using catheter ablation. This study's purpose is a comparative assessment of the efficacy and safety of two strategies for catheter treatment in patients with persistent atrial fibrillation. PATIENTS AND METHODS: The study included 127 patients with persistent atrial fibrillation during the last six months before inclusion in the study. The average follow-up period was 24 months. RESULTS: The primary efficacy endpoint (death, cerebrovascular event, or serious complications associated with treatment) occurred in 15 patients in the cryoballoon ablation group and 14 patients in the radiofrequency ablation group. The Kaplan-Meier survival estimates were 30% and 28%, and the risk ratio 0.96 and 95% of the confidence interval. CONCLUSIONS: The treatment in patients with persistent atria fibrillation, using catheter ablation with contact force control catheter	Baimbetov, A., Bizhanov, K., Yakupova, I., Jukenova, A., **Ualiyeva, A.,** Tursunkhanov, Z., Bigeldiyev, N. Efficacy and Safety Results of Different Ablation Technologies for Persistent Atrial Fibrillation Treatment (2022) The heart surgery forum, 25 (4), pp. E594-E600. https://www.scopus.com/record/display.uri?eid=2-s2.0-	**Q3**

			treatment with the pulmonary vein isolation, was more efficient.	85137119806&origin=result slist&sort=plf-f	
41	Comparative Effectiveness and Safety of Cryoablation Versus Radiofrequency Ablation Treatments for Persistent Atrial Fibrillation	DOI 10.1016/j.amjcard.2022.08.031	The purpose of this study was to compare the effectiveness and safety of 2 strategies for catheter treatment of patients with persistent atrial fibrillation in the long-term period, using cardiac implantable loop recorders. The research is a prospective, randomized, controlled study designed to compare the results of modern catheter technologies in patients with persistent atrial fibrillation. The study included 127 patients with persistent atrial fibrillation in the last 6 months before inclusion in the study, for whom at least 2 antiarrhythmic drugs of class I to III were not effective. By random distribution, 50 patients were included in group 1; they underwent cryoballoon ablation, using a cryoballoon of the second generation. Group 2 also included 50 patients who underwent radiofrequency ablation, where a catheter was used to control the contact force. Cardiac implantable loop electrocardiogram recorders were implanted in all patients after surgery. The average duration of follow-up was 36 months. The primary end point of efficacy occurred in 15 patients in the group with cryoballoon ablation and 14 patients in the group with radiofrequency ablation. In conclusion, the primary effectiveness was relatively the same in the groups; yet, in the long-term period, the superiority of radiofrequency ablation using catheters with pressure control was noted, but the difference in results was statistically insignificant (p <0.672) and there was no significant difference between the 2 methods in terms of overall safety.	Baimbetov, A.K., **Bizhanov, K.A.,** Jukenova, A.M., Aubakirova, A.T., **Ualiyeva, A.Y.,** Sagatov, I.Y. Comparative Effectiveness and Safety of Cryoablation Versus Radiofrequency Ablation Treatments for Persistent Atrial Fibrillation (2022) American Journal of Cardiology https://www.scopus.com/record/display.uri?eid=2-s2.0-85139038656&origin=result slist&sort=plf-f	**Q2**
42	SARS-CoV-2 infection and venous thromboembolism after	DOI 10.1111/anae.15563	SARS-CoV-2 has been associated with an increased rate of venous thromboembolism in critically ill patients. Since surgical patients are already at higher risk of venous thromboembolism than general populations, this study aimed to determine if patients with peri-operative or prior	Nepogodiev, D., Simoes, J.F.F., Li, E…….. **Kulimbet, Mukhtar**……COVIDSurg Collaborative, GlobalSurg Collaborative	**Q1**

	surgery: an international prospective cohort study		SARS-CoV-2 were at further increased risk of venous thromboembolism. We conducted a planned sub-study and analysis from an international, multicentre, prospective cohort study of elective and emergency patients undergoing surgery during October 2020. Patients from all surgical specialties were included. The primary outcome measure was venous thromboembolism (pulmonary embolism or deep vein thrombosis) within 30 days of surgery. SARS-CoV-2 diagnosis was defined as peri-operative (7 days before to 30 days after surgery); recent (1–6 weeks before surgery); previous (≥7 weeks before surgery); or none. Information on prophylaxis regimens or pre-operative anti-coagulation for baseline comorbidities was not available. Postoperative venous thromboembolism rate was 0.5% (666/123,591) in patients without SARS-CoV-2; 2.2% (50/2317) in patients with peri-operative SARS-CoV-2; 1.6% (15/953) in patients with recent SARS-CoV-2; and 1.0% (11/1148) in patients with previous SARS-CoV-2. After adjustment for confounding factors, patients with peri-operative (adjusted odds ratio 1.5 (95%CI 1.1–2.0)) and recent SARS-CoV-2 (1.9 (95%CI 1.2–3.3)) remained at higher risk of venous thromboembolism, with a borderline finding in previous SARS-CoV-2 (1.7 (95%CI 0.9–3.0)). Overall, venous thromboembolism was independently associated with 30-day mortality (5.4 (95%CI 4.3–6.7)). In patients with SARS-CoV-2, mortality without venous thromboembolism was 7.4% (319/4342) and with venous thromboembolism was 40.8% (31/76). Patients undergoing surgery with peri-operative or recent SARS-CoV-2 appear to be at increased risk of postoperative venous thromboembolism compared with patients with no history of SARS-CoV-2 infection. Optimal venous thromboembolism prophylaxis and treatment are unknown in this cohort of patients, and these data should be interpreted accordingly	SARS-CoV-2 infection and venous thromboembolism after surgery: an international prospective cohort study (2022) Anaesthesia, 77 (1), pp. 28-39. https://www.scopus.com/record/display.uri?eid=2-s2.0-85122545923&origin=resultslist&sort=plf-f	

| 43 | Methodological considerations in injury burden of disease studies across Europe: a systematic literature review | DOI 10.1186/s12889-022-13925-z | Background: Calculating the disease burden due to injury is complex, as it requires many methodological choices. Until now, an overview of the methodological design choices that have been made in burden of disease (BoD) studies in injury populations is not available. The aim of this systematic literature review was to identify existing injury BoD studies undertaken across Europe and to comprehensively review the methodological design choices and assumption parameters that have been made to calculate years of life lost (YLL) and years lived with disability (YLD) in these studies. Methods: We searched EMBASE, MEDLINE, Cochrane Central, Google Scholar, and Web of Science, and the grey literature supplemented by handsearching, for BoD studies. We included injury BoD studies that quantified the BoD expressed in YLL, YLD, and disability-adjusted life years (DALY) in countries within the European Region between early-1990 and mid-2021. Results: We retrieved 2,914 results of which 48 performed an injury-specific BoD assessment. Single-country independent and Global Burden of Disease (GBD)-linked injury BoD studies were performed in 11 European countries. Approximately 79% of injury BoD studies reported the BoD by external cause-of-injury. Most independent studies used the incidence-based approach to calculate YLDs. About half of the injury disease burden studies applied disability weights (DWs) developed by the GBD study. Almost all independent injury studies have determined YLL using national life tables. Conclusions: Considerable methodological variation across independent injury BoD assessments was observed; differences were mainly apparent in the design choices and assumption parameters towards injury YLD calculations, implementation of DWs, and the choice of life table for YLL calculations. Development and use of guidelines for performing and reporting of injury BoD | Charalampous, P., Pallari, E., Gorasso, V., von der Lippe, E., Devleesschauwer, B., Pires, S.M., Plass, D., Idavain, J., Ngwa, C.H., Noguer, I., Padron-Monedero, A., Sarmiento, R., Majdan, M., Ádám, B., AlKerwi, A., Cilovic-Lagarija, S., Clarsen, B., Corso, B., Cuschieri, S., Dopelt, K., Economou, M., Fischer, F., Freitas, A., García-González, J.M., Gazzelloni, F., Gkitakou, A., Gulmez, H., Hynds, P., Isola, G., Jakobsen, L.S., Kabir, Z., Kissimova-Skarbek, K., Knudsen, A.K., Konar, N.M., Ladeira, C., Lassen, B., Liew, A., Majer, M., Mechili, E.A., **Mereke, A.,** Monasta, L., Mondello, S., Morgado, J.N., Nena, E., Ng, E.S.W., Niranjan, V., Nola, I.A., O'Caoimh, R., Petrou, P., Pinheiro, V., Ortiz, M.R., Riva, S., Samouda, H., Santos, J.V., Santoso, C.M.A., Milicevic, M.S., Skempes, D., Sousa, A.C., Speybroeck, N., Tozija, F., Unim, B., | Q1 |

			studies is crucial to enhance transparency and comparability of injury BoD estimates across Europe and beyond	Uysal, H.B., Vaccaro, F.G., Varga, O., Vasic, M., Violante, F.S., Wyper, G.M.A., Polinder, S., Haagsma, J.A. Methodological considerations in injury burden of disease studies across Europe: a systematic literature review (2022) BMC Public Health, 22 (1), статья № 1564 https://www.scopus.com/record/display.uri?eid=2-s2.0-85136057023&origin=resultslist&sort=plf-f	
44	Burden of non-communicable disease studies in Europe: a systematic review of data sources and methodological choices	DOI 10.1093/eurpub/ckab218	Background: Assessment of disability-adjusted life years (DALYs) resulting from non-communicable diseases (NCDs) requires specific calculation methods and input data. The aims of this study were to (i) identify existing NCD burden of disease (BoD) activities in Europe; (ii) collate information on data sources for mortality and morbidity; and (iii) provide an overview of NCD-specific methods for calculating NCD DALYs. Methods: NCD BoD studies were systematically searched in international electronic literature databases and in grey literature. We included all BoD studies that used the DALY metric to quantify the health impact of one or more NCDs in countries belonging to the European Region. Results: A total of 163 BoD studies were retained: 96 (59%) were single-country or sub-national studies and 67 (41%) considered more than one country. Of the single-country studies, 29 (30%) consisted of secondary	Charalampous, P., Gorasso, V., Plass, D., Pires, S.M., Von Der Lippe, E., **Mereke, A.,** Idavain, J., Kissimova-Skarbek, K., Morgado, J.N., Ngwa, C.H., Noguer, I., Padron-Monedero, A., Santi-Cano, M.J., Sarmiento, R., Devleesschauwer, B., Haagsma, J.A., Ádám, B., Alkerwi, A., Bikbov, B., Bølling, A.K., Breitner, S., Cuschieri, S., Dahm, C.C., Eikemo, T.A., Fischer, F., Freitas, A., García-González,	**Q1**

| | | | | analyses using existing Global Burden of Disease (GBD) results. Mortality data were mainly derived (49%) from vital statistics. Morbidity data were frequently (40%) drawn from routine administrative and survey datasets, including disease registries and hospital discharge databases. The majority (60%) of national BoD studies reported mortality corrections. Multimorbidity adjustments were performed in 18% of national BoD studies. Conclusion: The number of national NCD BoD assessments across Europe increased over time, driven by an increase in BoD studies that consisted of secondary data analysis of GBD study findings. Ambiguity in reporting the use of NCD-specific BoD methods underlines the need for reporting guidelines of BoD studies to enhance the transparency of NCD BoD estimates across Europe. © 2022 The Author(s) | J.M., Gazzelloni, F., Gissler, M., Hengl, B., Hynds, P., Isola, G., Jakobsen, L.S., Kabir, Z., Knudsen, A.K., Konar, N.M., Ladeira, C., Liew, A., Majer, M., Mechili, E.A., Mevsim, V., Milicevic, M.S., Mitchell, L., Monasta, L., Mondello, S., Nena, E., Ng, E.S.W., Niranjan, V., O'Caoimh, R., O'Donovan, M.R., Ortiz, A., Pallari, E., Petrou, P., Ortiz, M.R., Riva, S., Samouda, H., Santos, J.V., Adi Santoso, C.M., Schmitt, T., Skempes, D., Sousa, A.C., Stevanovic, A., Terzic, G.S.N., Terzic-Supic, Z., Todorovic, J., Tozija, F., Unim, B., Van Wilder, L., Varga, O., Violante, F.S., Wyper, G.M.A. Burden of non-communicable disease studies in Europe: a systematic review of data sources and methodological choices (2022) European Journal of Public Health, 32 (2), pp. 289-296.

https://www.scopus.com/record/display.uri?eid=2-s2.0- | |

				85128161284&origin=result slist&sort=plf-f	
45	APPLICATION OF IT TECHNOLOG Y IN THE MANAGEMEN T OF VOICE-SPEECH DISORDERS AND PHONIATRIC REHABILITATI ON	DOI 10.31688/ABMU.2 022.57.1.09	Introduction. Up to date, various mobile medical apps were proposed, including digital platforms for diagnoses of speech impairment. The review aims to assess the effectiveness of mobile health (m-Health) platforms for patients with speech and voice disorders. Material and methods. We conducted a systematic review of studies published between 2008 and 2021. 234 articles from PubMed, Web of Science, and Cochrane Library databases were pre-selected for the review. Only articles related to the use of medical applications for smartphones, tablets, or computer devices studies were included in the analysis. Results. A total of 111 full-text articles were assessed for eligibility, and 37 were included in this study. The selected reports cover research on the use of mobile applications for therapy, rehabilitation assistance, and diagnoses. In terms of application, mobile apps have been developed for patients (children and adults) with speech disorders caused by autism, neuro-developmental speech impairment, Parkinson's disease, aphasia, voice disorders, etc. Conclusions. The analysis showed that the m-Health market offers various mobile applications for persons with speech impairments (as an adjuvant tool for therapy and rehabilitation). Despite the existence of a range of m-Health applications for patients with speech disorders, there is a need for further large-scale studies aimed at studying their effectiveness, safety, and reliability.	**Abisheva, Y.,** Rusetsky, Y., **Daniyarova, A.,** Azhenov, T., Imasheva, B., Almabayev, Y., Turysbekova, D., Utegenov, A. APPLICATION OF IT TECHNOLOGY IN THE MANAGEMENT OF VOICE-SPEECH DISORDERS AND PHONIATRIC REHABILITATION (2022) Archives of the Balkan Medical Union, 57 (1), pp. 71-83. https://www.scopus.com/rec ord/display.uri?eid=2-s2.0-85131066757&origin=result slist&sort=plf-f	**Q3**
46	Qualitative Interview Study of Gynecologic Oncologist Utilization of	DOI 10.3390/jpm12071 082	ecent investigations have supported the safety and benefits of discharging women on the same day following a minimally invasive hysterectomy (MIH) for both benign and malignant indications. Not all eligible candidates for same-day discharge (SDD) are discharged the same	Bunde, S., **Adambekov, S.,** Glikson, E., Linkov, F. Qualitative Interview Study of Gynecologic Oncologist	**Q3**

			day, and patients undergoing an MIH for malignant indications have decreased the odds of receiving SDD despite established safety. The objective of this study was to use qualitative interviews to explore physician decision making regarding SDD after an MIH for malignant indications. Six qualitative interviews of gynecologic oncologists were analyzed using recurrent theme analysis for distinct themes in physician decision making regarding SDD. Results suggest that physician-perceived barriers to SDD include patient health characteristics, patient social characteristics, and hospital-system factors. Cited factors influencing SDD include patient travel, social support, practice setting (urban vs. rural) and staff comfort with the recommendation. Obstructive sleep apnea and post-surgical oxygenation appear to be a recurring reason for unplanned admission. The utilization of SDD after an MIH in the gynecologic oncology patient population is influenced by patient, physician, and system factors. Addressing the physician's perceived barriers to SDD and catering recommendations to the gynecologic oncology population may increase utilization.	Utilization of Recommended Same-Day Discharge Following Minimally Invasive Hysterectomy (2022) Journal of Personalized Medicine, 12 (7), статья № 1082, https://www.scopus.com/record/display.uri?eid=2-s2.0-85133511703&origin=resultslist&sort=plf-f	
Recommended Same-Day Discharge Following Minimally Invasive Hysterectomy					
47	Endometrial cancer risk factors in Singapore Chinese: a prospective cohort study	DOI 10.1016/j.annepidem.2022.04.002	Purpose: The incidence of Endometrial cancer (EC) has grown substantially in Asia over the past decade. However, few studies have addressed risk factors associated with EC incidence in Asian populations. We explored the association between reproductive and dietary risk factors and EC in the Singapore Chinese Health Study (SCHS), one of the largest prospective cohort studies in Asia. Methods: Data were collected from 34,028 ethnically Chinese women aged 45–74 residing in Singapore, enrolled between 1993 and 1998. Baseline demographic, dietary, and reproductive factors were collected via structured questionnaires. EC cases were identified from the Singapore Cancer Registry (n = 126) up to 2010. Cox proportional hazard models were	Lei, M., **Adambekov, S.,** Edwards, R.P., Wang, R., Yuan, J.-M., Kalix, E., Lopa, S., Linkov, F. Endometrial cancer risk factors in Singapore Chinese: a prospective cohort study (2022) Annals of Epidemiology, 71, pp. 9-14. https://www.scopus.com/record/display.uri?eid=2-s2.0-85130104520&origin=resultslist&sort=plf-f	**Q2**

			used to analyze association between EC and personal, reproductive, and dietary factors. Results: The incidence of EC in this population was 28.8 per 100,000 person-years. Regardless of menopausal status, obesity (BMI ≥ 27) was associated with increased EC risk (HR = 2.22, 95% CI 1.26–3.92), while later age at menarche was associated with decreased EC risk (HR = 0.14, 95% CI 0.04–0.46). In postmenopausal women, later age at menopause was associated with increased EC risk (HR = 2.82, 95% CI 1.24–6.43). Lifestyle and nutritional factors were not associated with risk of EC in this cohort. Conclusions: This study is one of the largest cohort studies exploring EC risk factors in Asian populations. Our study identified similarities in EC risk factors for European and Asian populations, which potentially suggests that strategies developed for EC prevention in Western populations can be potentially appropriate for the Singapore Chinese population due to risk factor similarities.		
48	Epidemiological Characteristics of Chronic Viral Hepatitis in Kazakhstan: Data from Unified Nationwide Electronic Healthcare System 2014–2019	DOI 10.2147/IDR.S363609	Background: Viral hepatitis is the leading cause of hepatic cirrhosis and liver-related mortality, yet there are no countrywide epidemiological studies available to date in Kazakhstan. The aim of the study was to perform an estimation of mortality, prevalence and incidence of Hepatitis B and C infections and liver-related complications. Methods: Using centralized healthcare data from the Unified National Electronic Health System (UNEHS) for the period 2014–2019, a total of 82,700 registered patients with chronic viral hepatitis B (HBV), C (HCV) and D (HDV) have been extracted based on ICD−10 codes. Crude rates of incidence, prevalence and mortality, as well as age-, sex-and year-specific rates of incidence and mortality per 100,000 population were estimated. Unadjusted and adjusted hazard ratios were estimated using Cox proportional hazards regression modeling. Results: For the total number of 82,700	Ashimkhanova, A., Syssoyev, D., Gusmanov, A., Yesmembetov, K., **Yespotayeva, A.,** Abbay, A., Nurpeissova, A., Sarria-Santamera, A., Gaipov, A. Epidemiological Characteristics of Chronic Viral Hepatitis in Kazakhstan: Data from Unified Nationwide Electronic Healthcare System 2014–2019	**Q2**

| | | | patients, 56.6% were represented by chronic HCV infection and 43.4% by HBV infection. The prevalence of coinfection was 10% for HBV+HDV and 3.5% for HBV+HCV. Both HBV and HCV were more prevalent among female patients (56%) and among Kazakh ethnic group (64.8%). Males with HBV had a higher probability of death than females; this trend was stronger among male patients with HCV. Russian ethnic groups infected with HBV had a higher risk of death compared to Kazakh and other ethnic groups. Whereas in HCV-infected patients, Russian ethnic group and other ethnic group had similar risk for death, but higher compared to Kazakhs. Conclusion: During the 2014–2019 period, prevalence, incidence and mortality from chronic HBV and HCV infections increased. Despite the disproportionately higher infection rate among females with chronic viral hepatitis, all-cause mortality was more than two-fold higher among males. Higher death rates in Russian ethnic group compared to other ethnicities need to be evaluated in further studies for other confounding factors and associated comorbidities in this group | (2022) Infection and Drug Resistance, 15, pp. 3333-3346

 https://www.scopus.com/record/display.uri?eid=2-s2.0-85133317867&origin=AuthorNamesList&txGid=4133f1708a0f4169bb56be252ad7a2c3&isValidNewDocSearchRedirection=false | |
| 49 | A scoping review of mHealth monitoring of pediatric bronchial asthma before and during COVID-19 pandemic | DOI

10.1016/j.prrv.2022.01.002 | Mobile (m) Health technology is well-suited for Remote Patient Monitoring (RPM) in a patient's habitual environment. In recent years there have been fast-paced developments in mHealth-enabled pediatric RPM, especially during the COVID-19 pandemic, necessitating evidence synthesis. To this end, we conducted a scoping review of clinical trials that had utilized mHealth-enabled RPM of pediatric asthma. MEDLINE, Embase and Web of Science were searched from September 1, 2016 through August 31, 2021. Our scoping review identified 25 publications that utilized synchronous and asynchronous mHealth-enabled RPM in pediatric asthma, either involving mobile applications or via individual devices. The last three years has seen the development of evidence-based, multidisciplinary, and | **Dauletbaev, N.,** Oftring, Z.S., Akik, W., Michaelis-Braun, L., Korel, J., Lands, L.C., Waldmann, S., Müller, B.S., Dreher, M., Rohde, G., Vogelmeier, C.F., Kuhn, S.
A scoping review of mHealth monitoring of pediatric bronchial asthma before and during COVID-19 pandemic
(2022) Paediatric Respiratory Reviews | **Q1** |

			participatory mHealth interventions. The quality of the studies has been improving, such that 40% of included study reports were randomized controlled trials. In conclusion, there exists high-quality evidence on mHealth-enabled RPM in pediatric asthma, warranting future systematic reviews and/or meta-analyses of the benefits of such RPM.		
50	Prevalence of Impaired Fasting Glucose and Type 2 Diabetes in Kazakhstan: Findings From Large Study	doi: 10.3389/fpubh.2022.810153.	Type 2 diabetes mellitus (T2DM) is a serious public health problem. A large proportion of patients with T2DM are unaware of their condition. People with undiagnosed T2DM are at a greater risk of developing complications, whereas prediabetes has an elevated risk of becoming T2DM. The aim of this study is to estimate the prevalence of impaired fasting glucose (IFG), undiagnosed and prior-diagnosed T2DM in Kazakhstan. A cross-sectional study was conducted in four geographically remote regions using the WHO STEP survey instrument. The status of T2DM of 4,753 participants was determined using the WHO diagnostic criteria based on fasting plasma glucose (FPG) level. As a result, the survey-weighted prevalence of IFG was 1.9% (95% CI 1.1%; 3.5%) and of T2DM was 8.0% (95% CI 3.8; 15.9). A total of 54% of T2DM have been newly diagnosed with T2DM. Being 55–64 years old (OR = 2.71, 95% CI 1.12; 6.60) and having lowered HDL-C level (OR = 3.72, 95% CI 1.68; 8.23) were found to be independent predictors for IFG. Being older than 45 years, a female (OR = 0.57, 95% CI 0.39; 0.83), having high waist circumference, was associated with newly diagnosed T2DM. Whereas, the age older than 45 years, high waist circumference, and family history of diabetes (OR = 2.42, 95% CI 1.64; 3.54) were associated with preexisting T2DM. This study shows a high prevalence of IFG and a high proportion of newly diagnosed T2DM in Kazakhstan. A series of risk factors identified in the study may be used to strengthen appropriate identification of	Orazumbekova B, Issanov A, Atageldiyeva K, Berkinbayev S, Junusbekova G, Danyarova L, Shyman Z, **Tashmanova A**, Sarria-Santamera A.. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8907545/	**Q1**

			IFG or undiagnosed patients in healthcare settings to deliver either preventive or therapeutic interventions aimed to reduce the incidence of T2DM or the delay of their complications. Further longitudinal studies are needed to confirm these associations in our population.		
51	Neurovaskuläre Interposition-Femur-Periost-Lappenplastik bei akzidenteller Bolzenschussverletzung der Hand [Neurovascular interpositional femoral periosteal flap for accidental bolt gun injury of the hand].	doi: 10.1007/s00113-022-01209-5.	Ein 53-jähriger Patient zog sich beim Reinigen eines Bolzenschussgerätes zur unterirdischen Kleintierjagd eine Verletzung an der linken Hand zu, als sich plötzlich ein Schuss löste. Es fand sich am Zeigefinger eine 3 × 4 cm messende Risswunde mit einem ausgedehnten Haut-Weichteil-Defekt radial über dem Mittelgelenk und -glied. Nativradiologisch bestand eine schräg verlaufende Basisfraktur des Mittelgliedes des Zeigefingers, radialseitig, mit Abgrenzung eines keilförmigen Ausrissfragmentes ohne relevante Stufenbildung der Gelenkfläche. Die potenziell mit Erdkeimen und Tierresten verschmutzte Schusswunde wurde im Rahmen des notfallmäßigen explorativen Débridements gereinigt. Für die einzeitige Rekonstruktion des Defektes am Zeigefingers wurde ein freier Femur-Periost-Lappen vom ipsilateralen Oberschenkel verwendet. Die mikrovaskuläre Anastomosierung des von der A. und V. genicularis descendens versorgten Transplantats erfolgte arteriell End-zu-End an den zurückgekürzten proximalen Stumpf der verletzten A. digitalis. Für die venöse Anastomose wurde eine dorsale Subkutanvene verwendet. Die Rekonstruktion des verletzten N. digitalis erfolgte mit dem in den Lappen integrierten Nerveninterponat eines ventralen Astes des N. saphenus. Der Femur-Periost-Lappen wurde anschließend mit einem Vollhauttransplantat, welches vom Wundrand des Hebedefektes am Oberschenkel entnommen wurde, abgedeckt	Ring A, Udrescu GA, Bushart SU, Dellmann NC, Sadykov T, Witt M. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9411097/	Q4
52	The efficacy and safety of cryoballoon	DOI	Background: Electrical isolation of pulmonary vein ostia is an established therapy for paroxysmal atrial fibrillation. Aims: The purpose of this study is to evaluate the long-	Baimbetov A.K.;**Abzaliev, Kuat B.**b;Jukenova, Aiman M.c;Bizhanov, Kenzhebek	Q2

		term efficacy and safety of cryoballoon catheter ablation in paroxysmal atrial fibrillation with normal anatomy of the left atrium. Methods: Two hundred fifteen consecutive patients were included in the study (from November 2014 to November 2016). All the patients had symptoms of paroxysmal atrial fibrillation resistant to antiarrhythmic drugs and underwent pulmonary vein cryoisolation using second-generation cryoballoons. Standard "single-shot" cryoballoon exposures were used alternately for each of the four pulmonary veins. The endpoint of the ablation procedure was the electrical isolation of each pulmonary vein. Results: Sixty-nine patients had stable atrial fibrillation recurrences and left atrial flutter with 30 of 69 patients having atrial fibrillation paroxysms during the first year after primary ablation. Repeated ablation was performed within 6–12 months after the first ablation. In 39 of 69 cases, arrhythmia recurrences were registered during the second and third year after the first ablation. These patients underwent repeated ablation within 12–36 months after the first ablation. In 98% of the patients, no disease progression with a transition to a persistent form of atrial fibrillation was observed. During the mean 5-year follow-up period, no disease progression with the transition to persistent forms of atrial fibrillation was observed. Conclusions: It was concluded that in patients with paroxysmal atrial fibrillation, with normal left atrium anatomy and no risk factors, it can be controlled with single pulmonary vein isolation without additional atrial substrate modification. © 2021, Royal Academy of Medicine in Ireland.	A.b;Bairamov, Binali A.a;Ualiyeva, Aliya Ye.d https://www.scopus.com/record/display.uri?eid=2-s2.0-85101805854&origin=resultslist&sort=plf-f	
catheter ablation in patients with paroxysmal atrial fibrillation	10.1007/s11845-021-02560-z			
53	The use of the alvarado scale in the diagnosis of acute appendicitis	DOI 10.1186/s41232-022-00228-4	Background: Highly regulated gene expression program underlies osteogenesis of mesenchymal stem cells (MSCs), but the regulators in the program are not entirely identified. As enhancer RNAs (eRNAs) have recently emerged as a key regulator in gene expression, we assume a commitment of an eRNA in osteogenesis.	Nguyen, Anh Phuonga, b;Yamagata, Kaorua;Iwata, Shigerua;**Trimova, Gulzhan**c;Zhang, Tonga;Shan, Yua;Nguyen, Mai-Phuonga;Sonomoto,	Q1

| | | | Methods: We performed in silico analysis to identify potential osteogenic microRNA (miRNA) gene predicted to be regulated by super-enhancers (SEs). SE inhibitor treatment and eRNA knocking-down were used to confirm the regulational mechanism of eRNA. miRNA function in osteogenesis was elucidated by miR mimic and inhibitor transfection experiments. Results: miR-3129 was found to be located adjacent in a SE (osteoblast-specific SE_46171) specifically activated in osteoblasts by in silico analysis. A RT-quantitative PCR analysis of human bone marrow-derived MSC (hBMSC) cells showed that eRNA_2S was transcribed from the SE with the expression of miR-3129. Knockdown of eRNA_2S by locked nucleic acid as well as treatment of SE inhibitors JQ1 or THZ1 resulted in low miR-3129 levels. Overexpression of miR-3129 promoted hBMSC osteogenesis, while knockdown of miR-3129 inhibited hBMSC osteogenesis. Solute carrier family 7 member 11 (SLC7A11), encoding a bone formation suppressor, was upregulated following miR-3129-5p inhibition and identified as a target gene for miR-3129 during differentiation of hBMSCs into osteoblasts. Conclusions: miR-3129 expression is regulated by SEs via eRNA_2S and this miRNA promotes hBMSC differentiation into osteoblasts through downregulating the target gene SLC7A11. Thus, the present study uncovers a commitment of an eRNA via a miR-3129/SLC7A11 regulatory pathway during osteogenesis of hBMSCs. © 2022, The Author(s). | Koshiroa;Nakayamada, Shingoa;Kato, Shigeakid, e; https://www.scopus.com/record/display.uri?eid=2-s2.0-85138164779&origin=resultslist&sort=plf-f | |
| 54 | Molecular Pathological Characteristics of Thyroid Follicular-Patterned Tumors | DOI 10.3390/cancers14153577 | Thyroid follicular-patterned tumors (TFTs) showing nodule-in-nodule (NN) appearance with poorly differentiated component (PDc) but neither invasion nor metastasis are diagnosed as benign nodules. Although PDc exhibits histologically aggressive features relative to the outer nodule (Out-N), its pathological significance remains unclear. TP53 binding protein-1 (53BP1) is a | Ueda, Mayua, b Send mail to Ueda M.;Matsuda, Katsuyaa Send mail to Matsuda K.;Kurohama, Hirokazua, c | Q2 |

	Showing Nodule-in-Nodule Appearance with Poorly Differentiated Component		DNA damage response (DDR) molecule that rapidly localizes at DNA double-strand breaks. Using dual-color immunofluorescence with Ki-67, the profile of 53BP1 expression is shown to be significantly altered during diverse tumorigenesis. In this study, we aimed to elucidate the malignant potential of PDc at the molecular level. We analyzed the profile of 53BP1 expression and NRAS codon 61 and TERT-promoter (TERT-p) mutations in 16 cases of TFTs showing NN with PDc compared to 30 adenomatous goiters, 31 follicular adenomas, 15 minimally invasive follicular carcinomas (FCs), and 11 widely invasive FC cases. Our results revealed that the expression level of abnormal type 53BP1 and incidence of NRAS and TERT-p mutations in PDc were comparable to FCs, suggesting a malignant potential. Because co-expression of 53BP1 and Ki-67 can be an indicator of altered DDR, the development of PDc in NN may be associated with DDR impairments after harboring NRAS and TERT-p mutations. © 2022 by the authors.	Send mail to Kurohama H.;**Mussazhanova, Zhannaa**, d Send mail to Mussazhanova Z.;Sailaubekova, Yerkezhana Send mail to Sailaubekova Y.;Kondo, Hisayoshie Send mail to Kondo H.;Shimizu, Tomokif Send mail to Shimizu T.;Takada, Namig Send mail to Takada N.;Matsuoka, Yukia Send mail to Matsuoka Y.;Otsubo, Chiekoa Send mail to Otsubo C.;Sato, Shinyah Send mail to Sato S.;Yamashita, Hiroyukih Send mail to Yamashita H. https://www.scopus.com/record/display.uri?eid=2-s2.0-85136778285&origin=resultslist&sort=plf-f	
55	mTOR activation in CD8+ cells contributes to disease activity of rheumatoid arthritis and increases therapeutic response to TNF inhibitors	DOI 10.1093/rheumatology/keab834	Objective: This study aimed to understand the role of mammalian target of rapamycin (mTOR) in CD8+ cells in the pathogenicity of RA and the changes after treatment with biologic drugs. Methods: Peripheral blood mononuclear cells (PBMCs) were isolated from 17 healthy controls and 86 patients with RA. Phosphorylation of mTOR (p-mTOR) and its clinical relevance were evaluated. The role of mTOR in CD8+ cells was also examined in vitro. Results: Patients with RA who had a moderate or high disease activity, were biologic-naïve, and were refractory to MTX were enrolled	Zhang, Mingzenga, b;Iwata, Shigerua;Sonomoto, Koshiroa;Ueno, Masanobua;Fujita, Yuyaa;Anan, Junpeia, c;Miyazaki, Yusukea;Ohkubo, Naoakia;Sumikawa, Maiko Hajimea;Todoroki, Yasuyukia;Miyata,	**Q4**

			in this study. The p-mTOR levels in CD8+ cells were higher in patients with RA than in healthy controls, and they positively correlated with the disease activity in such patients. However, after one year of treatment with TNF inhibitors, the p-mTOR levels in CD8+ cells were suppressed and showed a positive correlation with the treatment response, which was not observed in the abatacept-treatment group. In vitro stimulation of CD8+ cells with anti-CD3 and anti-CD28 antibodies induced mTOR phosphorylation and increased the production of granzyme B, granulysin, TNF-α and IFN-γbut decreased the production of granzyme K. However, on treatment with TNF inhibitors, p-mTOR levels in CD8+ cells and granzyme B production decreased, while granzyme K production increased. The production of granulysin and IFN-γwas not affected by the TNF inhibitors. Conclusion: These results suggested that mTOR activation in CD8+ cells may be a novel evaluation marker for RA disease activity and a predictive marker of therapeutic response to TNF inhibitors. © 2021 The Author(s). Published by Oxford University Press on behalf of the British Society for Rheumatology. All rights reserved	Hirokoa;Nagayasu, Atsushia Kanda, Ryuichiroa;Hao, Hea, d; **Trimova, Gulzhana,** e;Lee, Seunghyuna;Nakayamada, Shingoa;Sakata, Keia, c;Tanaka, Yoshiyaa Send mail to Tanaka Y. https://www.scopus.com/record/display.uri?eid=2-s2.0-85134361468&origin=resultslist&sort=plf-f	
56	Retraction Note: The randomized clinical trial results of the anxiety treatment in patients with somatoform dysfunction and neurotic disorders (Sci Rep, (2021), 11, (24282),	DOI 10.1038/s41598-022-19938-	The Editors have retracted this Article. After publication of this Article concerns were raised regarding the design of the study and the robustness of its central conclusions. Post-publication peer review has confirmed that: • there is insufficient justification for the grouping of the patients who belong to clinically heterogeneous cohorts with multiple different psychiatric disease presentations; • the study lacks objective outcome measures; and • there are concerns about the validity of the therapeutic intervention tested—specifically that Tenoten contains antibodies diluted beyond the point at which any active molecules are expected to be present and there is no molecular analysis to support the presence of molecules at these dilutions The Editors therefore no longer have confidence	Parfenov, Vladimir Anatolevicha;Kamchatnov, Pavel Rudolfovichb;Khasanova, Dina Rustemovnac;Bogdanov, Enver Ibragimovichc;Lokshtanova, Tatiana Markovnad;Amelin, Aleksandr Vitaleviche;Maslova, Natalya Nikolaevnaf;Pizova, Nataliia Vyacheslavovnag;Belskaya,	**Q1**

			in the conclusions presented. Vladimir Anatolevich Parfenov, Dina Rustemovna Khasanova, Pavel Rudolfovich Kamchatnov and Alexey Borisovich Glazunov disagree with this retraction. Enver Ibragimovich Bogdanov, Tatiana Markovna Lokshtanova, Aleksandr Vitalevich Amelin, Natalya Nikolaevna Maslova, Nataliia Vyacheslavovna Pizova, Galina Nikolaevna Belskaya, Evgeny Robertovich Barantsevich, Gulsum Abdurahmanovna Duchshanova, Saltanat Ualihanovna Kamenova and Oleg Vladimirovich Kolokolov did not respond to correspondence from the Editors about this retraction. © The Publisher 2022.	Galina Nikolaevnah;Barantsevich, Evgeny Robertoviche;**Duchshanova,** Gulsum Abdurahmanovnai;Kamenova, Saltanat Ualihanovnaj Retraction Note: The randomized clinical trial results of the anxiety treatment in patients with somatoform dysfunction and neurotic disorders (Sci Rep, (2021), 11, (24282), 10.1038/s41598-021-03727-	
57	Primary stroke prevention worldwide: translating evidence into action	DOI:https://doi.org/10.1016/S2468-2667(21)00230-9	Stroke is the second leading cause of death and the third leading cause of disability worldwide and its burden is increasing rapidly in low-income and middle-income countries, many of which are unable to face the challenges it imposes. In this Health Policy paper on primary stroke prevention, we provide an overview of the current situation regarding primary prevention services, estimate the cost of stroke and stroke prevention, and identify deficiencies in existing guidelines and gaps in primary prevention. We also offer a set of pragmatic solutions for implementation of primary stroke prevention, with an emphasis on the role of governments and population-wide strategies, including task-shifting and sharing and health system re-engineering. Implementation of primary stroke prevention involves patients, health professionals, funders, policy makers,	M. O. Owolabi, A. G Thrift, A. Mahal, et al. on behalf of the Stroke Experts Collaboration Group: **Kamenova S., Kondybayeva A.,** et al. https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(21)00230-9/fulltext	**Q1**

			implementation partners, and the entire population along the life course.		
58	Morphological parameters of ovarian masses and accuracy of the risk of malignancy index in diagnosing ovarian malignancy	DOI 10.5114/pm.2022.116402	Introduction: To detect the morphological parameters of ovarian masses and the accuracy of the risk of malignancy index (RMI) in diagnosing ovarian malignancy. Material and methods: 264 women in 3 groups (reproductive, premenopausal, and postmenopausal) presented with ovarian masses and scheduled for surgery were included in this study. The participants' preoperative RMI was compared to the postoperative histology (gold standard) to detect the accuracy of RMI in diagnosing ovarian malignancy. Results: The incidence of malignant and benign ovarian tumours in the reproductive group was 9.1% and 90.9%, respectively, while it was 35.2% and 64.8%, respectively, in the premenopausal group, and 35.2%, and 64.8%, respectively, in the postmenopausal group. The incidence of malignant ovarian tumours was significantly higher in the premenopausal (35.2%) and postmenopausal (35.2%) groups compared to the reproductive group (9.1%), ($p = 0.0008$, and $p = 0.0008$, respectively). The receiver operating characteristic curve showed that RMI at cut-off value >247.5 had 82.9% sensitivity, 100% specificity, 100% positive predictive value (PPV), and 98.1% negative predictive value (NPV) in diagnosing ovarian malignancy in the 3 studied groups (AUC 0.955, $p < 0.001$). There was significant positive correlation between the participants' age, and RMI ($p = 0.001$), and between participants' cancer antigen-125 (CA-125) and RMI ($p < 0.0001$) in the ovarian malignancy group. Conclusions: The multimodal RMI is an effective tool for primary evaluation of suspected ovarian masses. Risk malignancy index at cut-off value >247.5 had the best performance (82.9% sensitivity, 100% specificity, 100% PPV, and 98.1% NPV) in diagnosing ovarian malignancy in the 3 studied groups. There was significant	Adilgereyeva, Akmaral S.a;Abdelazim, Ibrahim A.b, c Send mail to Abdelazim I.A.;**Zhurabekova, Gulmira** A.d;El-Ghazaly, Tamer E.b https://www.scopus.com/record/display.uri?eid=2-s2.0-85133490735&origin=resultslist&sort=plf-f	**Q3**

			positive correlation between participants' age, and RMI, and between participants' CA-125 and RMI, in the studied malignant ovarian tumours. © 2022 Termedia Publishing House Ltd.. All rights reserved.		
59	Study of Component Composition and Antimicrobial Activity of the Ophthalmic Emulsion Based on the Safflower Flowers (Carthamus tinctorius L.)	DOI 10.1155/2022/3181270	The use of medicinal plants has increased significantly in recent years. More than 80% of the world's population uses medicinal plants to treat themselves. Many antibacterial and anti-inflammatory synthetic drugs are available in medical practice. However, recent tendency of increasing capability of resistance of bacteria to usage of antibacterial drugs of different groups is taking place. Considering the wide range of pharmacological and antimicrobial activity of safflower flower extracts and available vitamins in their composition, it was decided to create a preparation based on the CO2 extract of safflower (Carthamus tinctorius L.) in the form of an ophthalmic emulsion. The aim of this research is to study the composition and antimicrobial activity of the extract and ophthalmic emulsion drops against test strains of microorganisms. The subject of this study is the ophthalmic emulsions from flowers of Kazakhstan species of "Akmai"safflower, collected in the flowering stage in southern Kazakhstan in August 2021. The component composition was determined using gas chromatography with the Agilent 7890A/5975C mass spectrometry technique. A study of the antimicrobial activity of the ophthalmic emulsion drop extracts was performed with two strains of Gram-positive bacteria, one strain of Gram-negative bacteria, and one culture of fungi. The following biologically active substances were determined from the GC-MS results: tridecane 94%, tricosane 93%, hexacosane 93%, dodecanoic acid 92%, pentacosane 91%, and linoleic acid 63.7%. The investigated emulsion-type eye drop shows bactericidal activity against S. aureus ATCC 6538-P, where the zone of growth suppression under the ophthalmic emulsion	Abuova, Zhanara Send mail to Abuova Z.;**Turgumbayeva, Aknurb** Send mail to Turgumbayeva A.;Jumagaziyeva, Ardakc Send mail to Jumagaziyeva A.;Rakhimov, Kairollaa Send mail to Rakhimov K.;Jussupkaliyeva, Aigulb Send mail to Jussupkaliyeva A. https://www.scopus.com/record/display.uri?eid=2-s2.0-85131406411&origin=resultslist&sort=plf-f	**Q2**

			action corresponded to 9.0 ± 0.0 mm. The tested ophthalmic emulsion drops show the presumed biological activity against conditionally pathogenic bacteria. The results of chromatographic analysis and antimicrobial activity of the tested samples indicate the prospects for their further study for use as anti-infectious (anti-inflammatory) agents in medicine. © 2022 Zhanar		
60	Santalum Genus: Phytochemical constituents, biological activities and health promoting-effects	DOI 10.1515/znc-2022-0076	Santalum genus belongs to the family of Santalaceae, widespread in India, Australia, Hawaii, Sri Lanka, and Indonesia, and valued as traditional medicine, rituals and modern bioactivities. Sandalwood is reported to possess a plethora of bioactive compounds such as essential oil and its components (α-santalol and β-santalol), phenolic compounds and fatty acids. These bioactives play important role in contributing towards biological activities and health-promoting effects in humans. Pre-clinical and clinical studies have shown the role of sandalwood extract as antioxidant, anti-inflammatory, antibacterial, antifungal, antiviral, neuroleptic, antihyperglycemic, antihyperlipidemic, and anticancer activities. Safety studies on sandalwood essential oil (EO) and its extracts have proven them as a safe ingredient to be utilized in health promotion. Phytoconstituents, bioactivities and traditional uses established sandalwood as one of the innovative materials for application in the pharma, food, and biomedical industry. © 2022 the author(s), published by De Gruyter, Berlin/Boston 2022.	Sharifi-Rad, Javada Send mail to Sharifi-Rad J.;Quispe, Cristinab Send mail to Quispe C.;**Turgumbayeva, Aknurc**, d https://www.scopus.com/record/display.uri?eid=2-s2.0-85137656532&origin=resultslist&sort=plf-f	**Q2**
61	Pharmacological Properties of Bergapten: Mechanistic and Therapeutic Aspects	DOI 10.1155/2022/8615242	Bergapten (BP) or 5-methoxypsoralen (5-MOP) is a furocoumarin compound mainly found in bergamot essential oil but also in other citrus essential oils and grapefruit juice. This compound presents antibacterial, anti-inflammatory, hypolipemic, and anticancer effects and is successfully used as a photosensitizing agent. The present review focuses on the research evidence related to the therapeutic properties of bergapten	Quetglas-Llabrés, Maria Magdalenaa Send mail to Quetglas-Llabrés M.M.;Quispe, Cristinab Send mail to Quispe C.;Herrera-Bravo, Jesúsc, d	**Q1**

| | | | collected in recent years. Many preclinical and in vitro studies have been evidenced the therapeutic action of BP; however, few clinical trials have been carried out to evaluate its efficacy. These clinical trials with BP are mainly focused on patients suffering from skin disorders such as psoriasis or vitiligo. In these trials, the administration of BP (oral or topical) combined with UV irradiation induces relevant lesion clearance rates. In addition, beneficial effects of bergamot extract were also observed in patients with altered serum lipid profiles and in people with nonalcoholic fatty liver. On the contrary, there are no clinical trials that investigate the possible effects on cancer. Although the bioavailability of BP is lower than that of its 8-methoxypsoralen (8-MOP) isomer, it has fewer side effects allowing higher concentrations to be administered. In conclusion, although the use of BP has therapeutic applications on skin disorders as a sensitizing agent and as components of bergamot extract as hypolipemic therapy, more trials are necessary to define the doses and treatment guidelines and its usefulness against other pathologies such as cancer or bacterial infections. © 2022 Maria Magdalena Quetglas-Llabrés et al. | Send mail to Herrera-Bravo J.;Catarino, Marcelo D.e Send mail to Catarino M.D.;Pereira, Olívia R.f Send mail to Pereira O.R.;Cardoso, Susana M.e Send mail to Cardoso S.M.;Dua, Kamalg Send mail to Dua K.;Chellappan, Dinesh Kumarh Send mail to Chellappan D.K.;Pabreja, Kavitai Send mail to Pabreja K.;Satija, Saurabhi Send mail to Satija S.;Mehta, Meenui Send mail to Mehta M.;Sureda, Antonia, j Send mail to Sureda A. Martorell, Miquelk Send mail to Martorell M.;Satmbekova, Dinaral Send mail to **Satmbekova D.;**Yeskaliyeva, Balakyzm Send mail to Yeskaliyeva B.;Sharifi-Rad, Javadn Send mail to Sharifi-Rad J.;Rasool, Naeemo Send mail to Rasool N.;Butnariu, Monicap Send mail to Butnariu M.;Bagiu, Iulia Cristinaq, r Send mail to Bagiu I.C.;Bagiu, Radu Vasileq, s | |

				Send mail to Bagiu R.V.;Calina, Danielat Send mail to Calina D.;Cho, William C.u Send mail to Cho W.C. https://www.scopus.com/record/display.uri?eid=2-s2.0-85129383993&origin=resultslist&sort=plf-f	
62	Correction: Genistein as a regulator of signaling pathways and microRNAs in different types of cancers (Cancer Cell International, (2021), 21, 1, (388), 10.1186/s12935-021-02091-8)	DOI 10.1186/s12935-022-02667-		Cancers are complex diseases orchestrated by a plethora of extrinsic and intrinsic factors. Research spanning over several decades has provided better understanding of complex molecular interactions responsible for the multifaceted nature of cancer. Recent advances in the field of next generation sequencing and functional genomics have brought us closer towards unravelling the complexities of tumor microenvironment (tumor heterogeneity) and deregulated signaling cascades responsible for proliferation and survival of tumor cells. Phytochemicals have begun to emerge as potent beneficial substances aimed to target deregulated signaling pathways. Isoflavonoid genistein is an essential phytochemical involved in regulation of key biological processes including those in different types of cancer. Emerging preclinical evidence have shown its anti-cancer, anti-inflammatory and anti-oxidant properties. Testing of this substance is in various phases of clinical trials. Comprehensive preclinical and clinical trials data is providing insight on genistein as a modulator of various signaling pathways both at transcription and translation levels. In this review we have explained the mechanistic regulation of several key cellular pathways by genistein. We have also addressed in detail various microRNAs regulated by genistein in different types of cancer.	Javed, Zeeshana Send mail to Javed Z.;Khan, Khushbukhatb;Herrera-Bravo, Jesúsc, d;Naeem, Sajide;Iqbal, Muhammad Javedf Send mail to Iqbal M.J.;Sadia, Haleemag;Qadri, Qamar Razah;Raza, Shahida;Irshad, Asmai;Akbar, Alij;Reiner, Željkok;Al-Harrasi, Ahmedl Al-Rawahi, Ahmedl;**Satmbekova, Dinaram**;Butnariu, Monican Send mail to Butnariu M.;Bagiu, Iulia Cristinao, p;Bagiu, Radu Vasileo, q;Sharifi-Rad, Javadr Send mail to Sharifi-Rad J. https://www.scopus.com/record/display.uri?eid=2-s2.0-	**Q1**

			Moreover, application of nano-formulations to increase the efficiency of genistein is also discussed. Understanding the pleiotropic potential of genistein to regulate key cellular pathways and development of efficient drug delivery system will bring us a step towards designing better chemotherapeutics. © 2021, The Author(s).		
63	APPLICATION OF IT TECHNOLOG Y IN THE MANAGEMEN T OF VOICE-SPEECH DISORDERS AND PHONIATRIC REHABILITATI ON	DOI 10.31688/ABMU.2 022.57.1.0	Introduction. Up to date, various mobile medical apps were proposed, including digital platforms for diagnoses of speech impairment. The review aims to assess the effectiveness of mobile health (m-Health) platforms for patients with speech and voice disorders. Material and methods. We conducted a systematic review of studies published between 2008 and 2021. 234 articles from PubMed, Web of Science, and Cochrane Library databases were pre-selected for the review. Only articles related to the use of medical applications for smartphones, tablets, or computer devices studies were included in the analysis. Results. A total of 111 full-text articles were assessed for eligibility, and 37 were included in this study. The selected reports cover research on the use of mobile applications for therapy, rehabilitation assistance, and diagnoses. In terms of application, mobile apps have been developed for patients (children and adults) with speech disorders caused by autism, neuro-developmental speech impairment, Parkinson's disease, aphasia, voice disorders, etc. Conclusions. The analysis showed that the m-Health market offers various mobile applications for persons with speech impairments (as an adjuvant tool for therapy and rehabilitation). Despite the existence of a range of m-Health applications for patients with speech disorders, there is a need for further large-scale studies aimed at studying their effectiveness, safety, and reliability. © 2022 Balkan Medical Union. All rights reserved.	Abisheva, Yelika, b;Rusetsky, Yuryc;Daniyarova, Anaraa;Azhenov, Talapbekd;Imasheva, Bagdate;**Almabayev, Ydyrysa** Send mail to Almabayev Y.;Turysbekova, Danaa;Utegenov, Asetf https://www.scopus.com/rec ord/display.uri?eid=2-s2.0-85131066757&origin=result slist&sort=plf-f	**Q3**

| 64 | Study of Morphological Changes in Rat Liver Caused by Occlusion of Inferior Vena Cava | DOI

10.1016/j.jceh.2022.06.001 | Background/objectives: Up to date, there are no reports on animal survival rate and morphological changes in the liver caused by the impairment of blood outflow from the liver and its time dependence. Moreover, the impact of duration and degree of occlusion of inferior vena cava on pathological changes was not investigated yet. This study aimed at the assessment of the survival rate and morphological changes in the liver with varying degrees of occlusion of inferior vena cava. The exact timing of the reversibility of pathological processes was determined. Methods: Rats (n = 160) were randomly divided into five groups: I – control group (CG) (n = 20); II – sham group (SG) (n = 20); III – intervention group (IG-1) (narrowing of the lumen of the inferior vena cava by 25%) (n = 40); IV intervention group (IG-2) (narrowing by 50%) (n = 40); and intervention group V (IG-3) (narrowing by 75%) (n = 40). The level of postoperative pain, the body and liver weight of the animals, histological examination, morphometry, and macroscopic evaluation of abdominal organs were carried out on the 1, 3, 7, 14, and 30 days following the surgical intervention. The survival rate of animals was assessed using the Kaplan–Meier method. Results: On the 30th day, the rat grimace scale indices in the IG-1 (P ≤ 0.05), IG-2, and IG-3 (P ≤ 0.001) groups were higher. By body weight, this indicator on the 30th day was lower in the IG-1 (P ≤ 0.05), IG-2, and IG-3 (P ≤ 0.001) groups compared to the CG and SG groups. In the IG1 and IG2 groups, the survival rates were 72.5% and 65.0%, respectively. The lowest survival rate was observed in the IG3 group (22.5%). Conclusions: Compression of the inferior vena cava by 75% led to an increase in animal mortality and the development of persistent morphological changes in the liver. At the same time, the survival rate of animals and the extent of changes in the liver with narrowing of the inferior vena cava by 25% and 50% had similar results. The results | Tanabayeva, Shynara Send mail to Tanabayeva S.;**Almabayev, Ydyrysb**;Kamyspaev, Maratc;Kulmanbetov, Ruslana;Kopbayeva, Mairaa;Akhmad, Nurgulima;Altynbekova, Gulnarad;Fakhradiyev, Ildara

https://www.scopus.com/record/display.uri?eid=2-s2.0-85133720458&origin=resultslist&sort=plf-f | **Q3** |

			acquired possess scientific and practical importance. © 2022 Indian National Association for Study of the Liver		
65	Time Trends of Epidemiology of Hemorrhagic Stroke among Urban Population in Kazakhstan	DOI 10.3889/oamjms.2022.8688	AIM: BACKGROUND: Central Asia has been known among the highest hemorrhagic stroke (HS) and subarachnoid hemorrhage (SAH) burden regions globally. Despite the decline in cardiovascular disease mortality, HS and SAH have been remaining a public health concern in Kazakhstan. AIM: This study aimed to evaluate the trends of HS and SAH among the urban population in Kazakhstan. METHODS: We studied HS and SAH cases aged 18 years and older between 2013 and 2017 hospitalized to stroke centers in Almaty (Kazakhstan). HS and SAH were confirmed by neuroimaging. We calculated age-standardized event, mortality and in-hospital case-fatality rates (per 100,000 populations) with 95% confidence intervals for each individual year and over the 5 years using SAS University Edition and Joinpoint Regression Program. RESULTS: Out of 2759 HS and 413 SAH cases admitted into the stroke centers of Almaty (Kazakhstan), 27.4% cases died in a hospital. The age-standardized HS event rates decreased in both sexes over the 5 years while age-standardized SAH event rates increased for the same period of time. The age-standardized mortality and case-fatality rates decreased in women among HS and SAH cases and men with HS. However, the age-standardized mortality and case-fatality SAH rates increased in men over same period. CONCLUSIONS: Despite the overall decline in HS and slight increase in SAH over the 5 years, the burden remains high. We need to further monitor HS and SAH trends to develop targeted interventions and ensure that the preventive strategies are reducing the burden. © 2022 Yevgeniy Zhukov, Yermek Kavtaevich Dyussembekov, Altyn Aringazina, Rauan Kastey, Kuanysh Nikatov, Arimantas	Zhukov, Yevgeniya, b;Dyussembekov, Yermek Kavtaevich Kavtaevichb;Aringazina, Altyna;Kastey, Rauanb;Nikatov, Kuanyshb;Tamasauskas, Arimantasc;Kulmanbetov, Rusland;Tursynbekova, Anare;**Almabayev, Ydyrysf** Send mail to Almabayev Y https://www.scopus.com/record/display.uri?eid=2-s2.0-85126777195&origin=resultslist&sort=plf-f	**Q3**

			Tamasauskas, Ruslan Kulmanbetov, Anar Tursynbekova, Ydyrys Almabayev		
66	SARS-CoV-2 infection and venous thromboembolism after surgery: an international prospective cohort study	DOI 10.1111/anae.15563	SARS-CoV-2 has been associated with an increased rate of venous thromboembolism in critically ill patients. Since surgical patients are already at higher risk of venous thromboembolism than general populations, this study aimed to determine if patients with peri-operative or prior SARS-CoV-2 were at further increased risk of venous thromboembolism. We conducted a planned sub-study and analysis from an international, multicentre, prospective cohort study of elective and emergency patients undergoing surgery during October 2020. Patients from all surgical specialties were included. The primary outcome measure was venous thromboembolism (pulmonary embolism or deep vein thrombosis) within 30 days of surgery. SARS-CoV-2 diagnosis was defined as peri-operative (7 days before to 30 days after surgery); recent (1–6 weeks before surgery); previous (≥7 weeks before surgery); or none. Information on prophylaxis regimens or pre-operative anti-coagulation for baseline comorbidities was not available. Postoperative venous thromboembolism rate was 0.5% (666/123,591) in patients without SARS-CoV-2; 2.2% (50/2317) in patients with peri-operative SARS-CoV-2; 1.6% (15/953) in patients with recent SARS-CoV-2; and 1.0% (11/1148) in patients with previous SARS-CoV-2. After adjustment for confounding factors, patients with peri-operative (adjusted odds ratio 1.5 (95%CI 1.1–2.0)) and recent SARS-CoV-2 (1.9 (95%CI 1.2–3.3)) remained at higher risk of venous thromboembolism, with a borderline finding in previous SARS-CoV-2 (1.7 (95%CI 0.9–3.0)). Overall, venous thromboembolism was independently associated with 30-day mortality (5.4 (95%CI 4.3–6.7)). In patients with SARS-CoV-2, mortality without venous thromboembolism was 7.4% (319/4342) and with venous thromboembolism was 40.8% (31/76). Patients	Nepogodiev, Dmitri;Simoes, Joana FF Send mail to Simoes J.F.F.;Li, Elizabeth Send mail to Li E.;Picciochi, Maria;Glasbey, James C;Baiocchi, Glauco;Blanco-Colino, Ruth;Chaudhry, Daoud;AlAmeer, Ehab;El-Boghdadly, Kariem;Wuraola, Funmilola;Ghosh, Dhruva…….. **Almabayev Y.** https://www.scopus.com/record/display.uri?eid=2-s2.0-85122545923&origin=resultslist&sort=plf-f	**Q1**

			undergoing surgery with peri-operative or recent SARS-CoV-2 appear to be at increased risk of postoperative venous thromboembolism compared with patients with no history of SARS-CoV-2 infection. Optimal venous thromboembolism prophylaxis and treatment are unknown in this cohort of patients, and these data should be interpreted accordingly. © 2021 The Authors. Anaesthesia published by John Wiley & Sons Ltd on behalf of Association of Anaesthetists.		
67	Population features of alleles and genotypes frequency distribution of polymorphic genetic markers of antipsychotic medications pharmacokinetics in the Kazakh population	DOI: 10.1002/ajmg.b.32893	The presented article is relevant, as the main goals of schizophrenia treatment are to achieve a response to psychopharmacotherapy, reduction and stabilization of psychopathological symptoms, qualitative remission, which in general implies the creation of a stable quality of life for the patient. The purpose of the study was to evaluate the population features of the frequency distribution of alleles and genotypes of polymorphic genetic variants of according to genome-wide association studies analysis of pharmacokinetics-associated antipsychotic medications, in an ethnically homogeneous Kazakh population. The research material was deoxyribonucleic acid (DNA) isolated from the peripheral blood of 1,800 conditionally healthy persons of Kazakh nationality. DNA isolation was carried out by the magnetic polyvinyl alcohol magnetic particle separation method. The analysis of the frequency distribution of the studied genotypes in the Kazakh population showed their compliance with the Hardy–Weinberg equilibrium for all studied polymorphisms ($p > .05$). The obtained results showed that CYP2C19 (rs4244285, rs4986893) polymorphisms occurs in Kazakhs significantly more often than European and a number of Asian populations, which significantly affects the decrease in effectiveness and increases the risk of side complications during therapy with antipsychotic medications in the Kazakh population.	**Saduakassova, K.Z., Svyatova, G.S.** https://www.researchgate.net/publication/360622878_Population_features_of_alleles_and_genotypes_frequency_distribution_of_polymorphic_genetic_markers_of_antipsychotic_medications_pharmacokinetics_in_the_Kazakh_population	**Q2**

68	Enhancer RNA commits osteogenesis via microRNA-3129 expression in human bone marrow-derived mesenchymal stem cells	DOI 10.1186/s41232-022-00228-4	Background: Highly regulated gene expression program underlies osteogenesis of mesenchymal stem cells (MSCs), but the regulators in the program are not entirely identified. As enhancer RNAs (eRNAs) have recently emerged as a key regulator in gene expression, we assume a commitment of an eRNA in osteogenesis. Methods: We performed in silico analysis to identify potential osteogenic microRNA (miRNA) gene predicted to be regulated by super-enhancers (SEs). SE inhibitor treatment and eRNA knocking-down were used to confirm the regulational mechanism of eRNA. miRNA function in osteogenesis was elucidated by miR mimic and inhibitor transfection experiments. Results: miR-3129 was found to be located adjacent in a SE (osteoblast-specific SE_46171) specifically activated in osteoblasts by in silico analysis. A RT-quantitative PCR analysis of human bone marrow-derived MSC (hBMSC) cells showed that eRNA_2S was transcribed from the SE with the expression of miR-3129. Knockdown of eRNA_2S by locked nucleic acid as well as treatment of SE inhibitors JQ1 or THZ1 resulted in low miR-3129 levels. Overexpression of miR-3129 promoted hBMSC osteogenesis, while knockdown of miR-3129 inhibited hBMSC osteogenesis. Solute carrier family 7 member 11 (SLC7A11), encoding a bone formation suppressor, was upregulated following miR-3129-5p inhibition and identified as a target gene for miR-3129 during differentiation of hBMSCs into osteoblasts. Conclusions: miR-3129 expression is regulated by SEs via eRNA_2S and this miRNA promotes hBMSC differentiation into osteoblasts through downregulating the target gene SLC7A11. Thus, the present study uncovers a commitment of an eRNA via a miR-3129/SLC7A11 regulatory pathway during osteogenesis of hBMSCs. © 2022, The Author(s).	Nguyen, Anh Phuonga, b;Yamagata, Kaorua;Iwata, Shigerua;**Trimova, Gulzhanc**;Zhang, Tonga;Shan, Yua;Nguyen, Mai-Phuonga;Sonomoto, Koshiroa;Nakayamada, Shingoa;Kato, Shigeakid, e; https://www.scopus.com/record/display.uri?eid=2-s2.0-85138164779&origin=resultslist&sort=plf-f	**Q1**

| 69 | Identification of Bovine miRNAs with the Potential to Affect Human Gene Expression | DOI

10.3389/fgene.2021.705350 | Milk and other products from large mammals have emerged during human evolution as an important source of nutrition. Recently, it has been recognized that exogenous miRNAs (mRNA inhibited RNA) contained in milk and other tissues of the mammalian body can enter the human body, which in turn have the ability to potentially regulate human metabolism by affecting gene expression. We studied for exogenous miRNAs from Bos taurus that are potentially contain miRNAs from milk and that could act postprandially as regulators of human gene expression. The interaction of 17,508 human genes with 1025 bta-miRNAs, including 245 raw milk miRNAs was studied. The milk bta-miR-151-5p, bta-miR-151-3p, bta-miRNA-320 each have 11 BSs (binding sites), and bta-miRNA-345-5p, bta-miRNA-614, bta-miRNA-1296b and bta-miRNA-149 has 12, 14, 15 and 26 BSs, respectively. The bta-miR-574-5p from cow's milk had 209 human genes in mRNAs from one to 25 repeating BSs. We found 15 bta-miRNAs that have 100% complementarity to the mRNA of 13 human target genes. Another 12 miRNAs have BSs in the mRNA of 19 human genes with 98% complementarity. The bta-miR-11975, bta-miR-11976, and bta-miR-2885 BSs are located with the overlap of nucleotide sequences in the mRNA of human genes. Nucleotide sequences of BSs of these miRNAs in 5′UTR mRNA of human genes consisted of GCC repeats with a total length of 18 nucleotides (nt) in 18 genes, 21 nt in 11 genes, 24 nt in 14 genes, and 27–48 nt in nine genes. Nucleotide sequences of BSs of bta-miR-11975, bta-miR-11976, and bta-miR-2885 in CDS mRNA of human genes consisted of GCC repeats with a total length of 18 nt in 33 genes, 21 nt in 13 genes, 24 nt in nine genes, and 27–36 nt in 11 genes. These BSs encoded polyA or polyP peptides. In only one case, the polyR (SLC24A3 gene) was encoded. The possibility of regulating the expression of human genes by exogenous | Myrzabekova, Moldira;Labeit, Siegfriedb,c;Niyazova, Raigula;**Akimniyazova, Aigula**;Ivashchenko, Anatoliya
Send mail to Ivashchenko A.

https://www.scopus.com/record/display.uri?eid=2-s2.0-85123405122&origin=resultslist&sort=plf-f | **Q2** |

			bovine miRNAs is discussed. Copyright © 2022 Myrzabekova, Labeit, Niyazova, Akimniyazova and Ivashchenko.		
70	Bioinformatics Analysis of the Interaction of miRNAs and piRNAs with Human mRNA Genes Having di-and Trinucleotide Repeats	DOI 10.3390/genes130 50800	The variability of nucleotide repeats is considered one of the causes of diseases, but their biological function is not understood. In recent years, the interaction of miRNAs and piRNAs with the mRNAs of genes responsible for developing neurodegenerative and oncological diseases and diabetes have been actively studied. We explored candidate genes with nucleotide repeats to predict associations with miRNAs and piRNAs. The parameters of miRNAs and piRNA binding sites with mRNAs of human genes having nucleotide repeats were determined using the MirTarget program. This program defines the start of the initiation of miRNA and piRNA binding to mRNAs, the localization of miRNA and piRNA binding sites in the 5′-untranslated region (5′UTR), coding sequence (CDS) and 3′-untranslated region (3′UTR); the free energy of binding; and the schemes of nucleotide interactions of miRNAs and piRNAs with mRNAs. The characteristics of miRNAs and piRNA binding sites with mRNAs of 73 human genes were determined. The 5′UTR, 3′UTR and CDS of the mRNAs of genes are involved in the development of neurodegenerative, oncological and diabetes diseases with GU, AC dinucleotide and CCG, CAG, GCC, CGG, CGC trinucleotide repeats. The associations of miRNAs, piRNAs and candidate target genes could be recommended for developing methods for diagnosing diseases, including neurodegenerative diseases, oncological diseases and diabetes. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.	Belkozhayev, Ayaza, b Send mail to Belkozhayev A.;Niyazova, Raigula Send mail to Niyazova R.;Wilson, Corneliac, d Send mail to Wilson C.;Jainakbayev, Nurlane Send mail to Jainakbayev N.;Pyrkova, Annaf Send mail to Pyrkova A.;Ashirbekov, Yeldarb Send mail to Ashirbekov Y.;**Akimniyazova, Aigulg** Send mail to Akimniyazova A.;Sharipov, Kamalidinb, h Send mail to Sharipov K.;Ivashchenko, Anatoliyf Send mail to Ivashchenko A. https://www.scopus.com/rec ord/display.uri?eid=2-s2.0-85129866931&origin=result slist&sort=plf-f	**Q2**
71	Vitamin D and Phosphate Interactions in	DOI	Vitamin D plays an essential role in calcium and inorganic phosphate (Pi) homeostasis, maintaining their optimal levels to assure adequate bone mineralization. Vitamin D, as calcitriol (1,25(OH)2D), not only increases	Akimbekov, Nuraly S.a Send mail to Akimbekov N.S.;Digel, Ilyab	**Q2**

	Health and Disease	10.1007/978-3-030-91623-7_5	intestinal calcium and phosphate absorption but also facilitates their renal reabsorption, leading to elevated serum calcium and phosphate levels. The interaction of 1,25(OH)2D with its receptor (VDR) increases the efficiency of intestinal absorption of calcium to 30–40% and phosphate to nearly 80%. Serum phosphate levels can also influence 1,25(OH)2D and fibroblast growth factor 23 (FGF23) levels, i.e., higher phosphate concentrations suppress vitamin D activation and stimulate parathyroid hormone (PTH) release, while a high FGF23 serum level leads to reduced vitamin D synthesis. In the vitamin D-deficient state, the intestinal calcium absorption decreases and the secretion of PTH increases, which in turn causes the stimulation of 1,25(OH)2D production, resulting in excessive urinary phosphate loss. Maintenance of phosphate homeostasis is essential as hyperphosphatemia is a risk factor of cardiovascular calcification, chronic kidney diseases (CKD), and premature aging, while hypophosphatemia is usually associated with rickets and osteomalacia. This chapter elaborates on the possible interactions between vitamin D and phosphate in health and disease. © 2022, Springer Nature Switzerland AG.	Send mail to Digel I.;Sherelkhan, Dinara K.a Send mail to Sherelkhan D.K.;Razzaque, Mohammed S.c Send mail to Razzaque M.S. https://www.scopus.com/record/display.uri?eid=2-s2.0-85126607996&origin=resultslist&sort=plf-f	
72	Gravitational field of slightly deformed naked singularities	DOI 10.1140/epjc/s10052-022-10230-2	We derive a particular approximate solution of Einstein equations, describing the gravitational field of a mass distribution that slightly deviates from spherical symmetry. The deviation is described by means of a quadrupole parameter that is responsible for the appearance of a curvature singularity, which is not covered by a horizon. We investigate the motion of test particles in the gravitational field of this naked singularity and show that the quadrupole parameter affects the properties of Schwarzschild trajectories. By investigating radial geodesics, we find that no effects of repulsive gravity are present. We interpreted this result as	Toktarbay, Sakena, b, e Send mail to Toktarbay S.;Quevedo, Hernandoa, c, d Send mail to Quevedo H.;Abishev, Medeua, b Send mail to Abishev M**.;Muratkhan, Araya,** b Send mail to Muratkhan A. https://www.scopus.com/record/display.uri?eid=2-s2.0-	**Q1**

			indicating that repulsive gravity is non-linear effect. © 2022, The Author(s).	85129152419&origin=result slist&sort=plf-f	
73	PNEUMONIA AMONG CHILDREN UNDER 1 YEAR OF AGE: ANALYSIS OF INCIDENCE AND HOSPITAL MORTALITY FROM 2010 TO 2020 IN THE REPUBLIC OF KAZAKHSTAN	ISSN 15120112	Aim - to analyze the dynamics of morbidity and mortality from pneumonia in children under 1 year of age in the Republic of Kazakhstan for 10 years since the introduction of vaccination against pneumococcal infection in the National Immunization Schedule of the Republic of Kazakhstan in 2010. A retrospective cross-sectional study was carried out using the statistical collection of the National Scientific Center for Health Development named after S. Kairbekova from 2010 to 2020. The criterion for the study of epidemiology was the incidence of pneumonia in children under 1 year of age per 1000 children. The indicator compared with 2010 in the year, the incidence decreased by 34.0 cases, and amounted to 20.1 cases. In 2010, it was 54.1 cases. Analyzing the lethality of children from pneumonia by region, we also decided to show the top 5 regions with a high rate. This list in 2010 included Akmola (n=149.7), Turkestan (n=79.7), West Kazakhstan (n=76.9), Kostanay regions (n=66.1) and the city of Nur-Sultan (until 2019, the city of Astana) (n=69.5). The indicator for the republic in 2010 was 54.1 cases per 1,000 children. The incidence per 1000 children in 6 regions and 1 city is higher than the republican indicator. In 2020, in Kazakhstan, the incidence of pneumonia in children under 1-year-old per 1000 children was 20.1 cases. In such regions as Akmola, Turkestan, North Kazakhstan, Kostanay and Zhambyl regions, the indicators are the highest in the country. From 2010 to 2020, the incidence of pneumonia in children under 1 year of age tends to decrease in Kazakhstan, however, the city of Almaty shows a relatively high proportion of the total mortality for all diseases under 1 year of age. This work is analytical, and further work with a study of immunization of children	Yeraliyeva, L., Issayeva, A., Tanbayeva, G., Katarbayev, A., Tanirbergenova, A., Ksetaeva, G., Khadzhiyeva, A. PNEUMONIA AMONG CHILDREN UNDER 1 YEAR OF AGE: ANALYSIS OF INCIDENCE AND HOSPITAL MORTALITY FROM 2010 TO 2020 IN THE REPUBLIC OF KAZAKHSTAN (2022) Georgian medical news, (328-329), pp. 138-140. https://www.scopus.com/record/display.uri?eid=2-s2.0-85141183354&origin=result slist&sort=plf-f	Q4

			against pneumococcal infection is required for a full study. A curve should be plotted on parental refusals to vaccinate over a given period of time.		
74	Quality-of-Life Assessment of Women Undergoing In Vitro Fertilization in Kazakhstan	DOI 10.3390/ijerph192013568	Infertility is a problem that affects millions of couples worldwide and has a significant impact on their quality of life. The recently introduced "Fertility Quality of Life Questionnaire (FertiQoL)" quickly became a gold standard for evaluation of the quality of life of patients suffering from infertility. The aim of this study was to determine the quality of life of Kazakhstani women coping with infertility problems by FertiQoL and assess the validity of the questionnaire. This cross-sectional study involved women of reproductive age undergoing an in vitro fertilization (IVF) cycle at a large IVF center in Kazakhstan in the period from 1 September 2020 to 31 September 2021. A total of 453 women out of 500 agreed to participate in the study, and the response rate was 90.6%. The overall Core FertiQoL was 56.95 ± 14.05, and the Treatment FertiQoL was 66.18 ± 11.13 points. Respondents with secondary infertility had statistically significantly higher Emotional ($p < 0.001$), Mind–body ($p = 0.03$), Social ($p < 0.001$), Environment ($p = 0.02$), and Treatment ($p < 0.001$) domains of FertiQoL than women with primary infertility. Respondents with a low income had the lowest levels of Total FertiQoL (56.72 ± 11.65). The longer duration of infertility of women undergoing IVF treatment presented the worse scale of Treatment and Total FertiQoL. Cronbach's alpha revealed good internal reliability for all FertiQoL subscales on the Kazakhstan women's questionnaire and averaged 0.8, which is an indicator of a high degree of reliability. The Total FertiQoL of Kazakhstan women undergoing IVF treatment was 59.6 ± 11.5, which is considerably lower than European countries. We identified statistically significant differences across medical and demographic groups. As this questionnaire	Suleimenova, M., Lokshin, V., **Glushkova, N.,** Karibayeva, S., Terzic, M. Quality-of-Life Assessment of Women Undergoing In Vitro Fertilization in Kazakhstan (2022) International Journal of Environmental Research and Public Health, 19 (20), статья № 13568, https://www.scopus.com/record/display.uri?eid=2-s2.0-85140762080&origin=resultslist&sort=plf-f	**Q1**

			had validity in Kazakhstan survey it possibly be used for both medical counseling and future investigation in our country.		
75	Specifics of the Mental Component of the Quality of Life of Almaty Doctors in the Context of the COVID-19 Pandemic	DOI 10.5334/paah.200	Today, in the context of COVID-19 pandemic, as a result of their professional activities, Kazakhstani medical workers experience a significant burden, which can lead to a rapid depletion of their psychoemotional resources. The purpose of this paper was to study the characteristics of the psychological component of the quality of life of Almaty doctors of practical healthcare. Methods: The assessment of the psychological component of the quality of life was carried out using the standardised questionnaire SF-36 (Mental Component Summary). Data collection was carried out in September 2020 in Almaty, Republic of Kazakhstan, using the Google-Forms. The study involved 108 medical workers (65 women and 43 men) providing inpatient and outpatient care. To measure the reliability of factors that determine psychological health, the authors used the Spearman rank correlation analysis. Results: The Role-Emotional indicator correlates with the nationality of doctors ($p = 0.005$), and the presence of children in the family ($p = 0.044$). A statistically significant relationship between the Mental Health indicator and the living conditions of doctors was determined ($p = 0.014$). The relationship between Social Functioning and the nationality factor was revealed ($p = 0.027$). Vitality has a statistically significant relationship with the age of doctors ($p = 0.043$). Conclusion: The indicators of the psychological component of the quality of life of Almaty doctors depend (statistically) on such personal factors as: age, nationality, the presence of children in the family, and housing conditions. In the future, it is planned to conduct further assessment of the dynamics of the level of psychological health of medical workers and the factors determining it.	**Kamkhen, V.B., Mamyrbekova, S.A., Daniyarova, A.B.,** Nurakhmetova, L.Z.H., Mukhambetova, A.A., Nurmanova, S.A. Specifics of the Mental Component of the Quality of Life of Almaty Doctors in the Context of the COVID-19 Pandemic (2022) Physical Activity and Health, 6 (1), pp. 201-207 https://www.scopus.com/record/display.uri?eid=2-s2.0-85141785887&origin=resultslist&sort=plf-f	**Q2**

| 76 | SARS-CoV-2 Transmission Prevention Model Application in a Large Retail Company Before the Vaccine Introduction | DOI 10.3389/fpubh.2022.908690 | On 11 March 2020, following the spread of SARS-CoV-2, WHO declared a pandemic status. The impact on national health and economic systems has been huge. Therefore, many countries took measures to restrict the spread of the virus. Many work activities have been subjected to lockdown measures. However, some production activities, continued to remain open, i.e., large-scale food distribution, food industry, pharmacies, hospitals, etc. In order to contain the spread of the pandemic, public health measures have been implemented by the States to reduce the contagion of the virus in the workplace. Therefore, it was important to implement measures to contrast and contain the spread of SARS-CoV-2/COVID-19 in workplaces. The aim of this study was to adopt and implement a safety protocol useful to restrict the spread of SARS-CoV-2 in a large-scale retail trade company located in the south of Italy, before vaccination, during the first and second pandemic phases also exploiting telemedicine services. Antibody serological test cards were also used during the first pandemic wave and rapid antigenic swabs during the second to detect workers positive for SARS-CoV-2. A population of subjects who worked for another company similar for production activity and distribution on the territory was selected as the control group. During work activities, this group followed the minimum activity protocol provided by the Italian legislation (24 April 2020, Ministry Protocol), which provided the daily monitoring of the body temperature and in the case of SARS- CoV-2 positive subjects the extraordinary sanitation of the workplace. The measures implemented identified the positive subject for SARS-CoV-2 at an early stage. The protocol made it possible to significantly reduce the spread of the virus within large-scale retail distribution, and therefore, to avoid the temporary closure of the | Vitale, E., Vella, F., Indelicato, G., Canalella, A., Briguglio, S., Pittari, V., Senia, P., **Vinnikov, D.,** Floresta, D., Rapisarda, V., Filetti, V. SARS-CoV-2 Transmission Prevention Model Application in a Large Retail Company Before the Vaccine Introduction (2022) Frontiers in Public Health, 10, статья № 908690 https://www.scopus.com/record/display.uri?eid=2-s2.0-85140839103&origin=resultslist&sort=plf-f | **Q2** |

			stores with a consequent reduction of economic losses compared with the control group.		
77	Occupational disease predictors in the nickel pyrometallurgical production: a prospective cohort observation	DOI 10.1186/s12995-022-00362-2	Pyrometallurgical nickel production exposes workers to a wide range of occupational risk factors, including nickel aerosol, occupational noise and heat, but occupational (compensation) claims do not get enough attention in the literature. We, therefore, aimed to identify and analyze new occupational disease predictors in order to tailor prevention measures in the nickel pyrometallurgical production workers. Methods: In a prospective observational study, a cohort of workers grouped in 16 occupations (N = 1424, 88% males, median age 39 (interquartile range (IQR) 31–47 years)), was fixed in 2007 at a large nickel production plant in the Russian High North. We then followed the cohort until 2021 and analyzed the association of selected predictors, including exposure to nickel and occupational group, with the risk of an occupational (compensation) claim in a Cox regression analysis. Results: With 18,843 person-years of observation, occupational disease claims were confirmed in 129 workers (9% of the initial cohort, N = 108 men (84%)). Top three diagnoses were chronic bronchitis (3.81 cases/1000 workers/year), sensorineural deafness (2.36 cases/1000 workers /year) and musculoskeletal disorders (1.90 cases/1000 workers/year). Smoking was significantly associated with each diagnosis (adjusted hazard ratio (HR) ranged from 2.56 (95% confidence interval (CI) 1.17–5.57) for bronchitis to 6.69 (95% CI 1.46–30.64) for chronic obstructive pulmonary disease (COPD)). High nickel exposure was associated with occupational bronchitis and occupational asthma, whereas associations of occupational groups were also identified for COPD, asthma and musculoskeletal disorders. Conclusion: Smoking, high exposure to nickel and specific exposure in the occupational groups increase the risk of	Syurin, S., **Vinnikov, D.** Occupational disease predictors in the nickel pyrometallurgical production: a prospective cohort observation (2022) Journal of Occupational Medicine and Toxicology, 17 (1), статья № 21 https://www.scopus.com/record/display.uri?eid=2-s2.0-85141380661&origin=resultslist&sort=plf-f&src=s&sid=90583ea13082e79365a2831a7105f7ed&sot=aff&sdt=aff&sl=34&s=AF-ID%2860071847%29+AND+SUBJAREA%28MEDI%29&relpos=13&citeCnt=0&searchTerm=	**Q1**

			occupational disease claims and should be prioritized directions for targeted intervention.		
78	Neuropsychological Assessment of Community-Dwelling Older Adults in Almaty, Kazakhstan	DOI 10.3390/ijerph192316189	Cognitive impairment in older adults is a major public concern for Kazakhstan's aging population. We aimed to (1) administer a neuropsychological test battery (NTB) in domains relevant to aging-associated cognitive impairment in a sample of adults aged 60+ without dementia in Almaty, Kazakhstan; (2) investigate the associations between demographic factors and test performance; and (3) provide information on the distribution of NTB scores as preliminary local normative data relevant for this population. A cross-sectional evaluation of 276 participants aged 60+ in Almaty, Kazakhstan, was conducted using cognitive instruments including tests of memory, attention, language, executive functions, visuospatial abilities, and processing speed. Multiple linear regression analyses were used to examine the association of demographic factors with neuropsychological test performance. The results from the regression analysis showed that those who are younger, have more years of education, are women, and are of Russian ethnicity had significantly better performance. The current study illustrated (1) the feasibility of administering the NTB to older adults in the general population in Kazakhstan; (2) the preliminary local normative neuropsychological measures; and (3) their independent associations with age, education, gender, and ethnicity. The findings are a platform for future research on dementia and cognitive impairment in older adults in Kazakhstan.	**Kulimbet, M., Glushkova, N.,** Snitz, B., Tsoy, R., **Adambekov, S.,** Talbott, E., **Mereke, A.,** Wu, M., Zhumagaliuly, A., Karaca, F., Chang, Y., Turuspekova, S., Sekikawa, A., Davletov, K. Neuropsychological Assessment of Community-Dwelling Older Adults in Almaty, Kazakhstan (2022) International Journal of Environmental Research and Public Health, 19 (23), статья № 16189 https://www.scopus.com/record/display.uri?eid=2-s2.0-85143684255&origin=resultslist&sort=plf-f&src=s&sid=90583ea13082e79365a2831a7105f7ed&sot=aff&sdt=aff&sl=34&s=AF-ID%2860071847%29+AND+SUBJAREA%28MEDI%29&relpos=12&citeCnt=0&searchTerm=	**Q1**
79	Circulating adiponectin levels, expression of adiponectin receptors, and	DOI 10.1186/s12920-022-01420-8	The role of adiponectin (ADIPOQ) in Alzheimer's disease (AD) has been documented, however, demonstrating controversial results. In this study, we investigated blood serum ADIPOQ levels, methylation of the adiponectin gene promoter, and adiponectin receptors (AdipoR1 and AdipoR2) expression in blood samples isolated from AD	**Kaiyrlykyzy, A.,** Umbayev, B., Masoud, A.-R., Baibulatova, A., Tsoy, A., Olzhayev, F., Alzhanova, D.,	**Q3**

	methylation of adiponectin gene promoter in relation to Alzheimer's disease		patients and healthy controls. Methods: We performed a case–control study including 248 subjects (98 AD patients and 150 healthy controls); ADIPOQ serum levels, AdipoR1, and AdipoR2 levels in PBMC were measured by ELISA Kits, and ADIPOQ gene methylation was analyzed using methyl-specific PCR. Results: Serum adiponectin levels were threefold higher in the AD group compared to the controls. We have also found a positive correlation between adiponectin and MMSE scores and high-density lipoprotein cholesterol (HDL-C) in AD patients. A significant difference in the proportion of methylation of the CpG sites at − 74 nt of the ADIPOQ gene promoter was detected in AD cases, and the levels of adiponectin in blood serum were significantly higher in methylated samples in the AD group compared to controls. The amount of AdipoR1 was significantly higher among AD subjects, while the expression of AdipoR2 did not vary between AD patients and controls. Conclusion: These findings may contribute to a deeper understanding of the etiological factors leading to the development of dementia and may serve as a basis for the development of predictive biomarkers of AD	Zholdasbekova, G., Davletov, K., Akilzhanova, A., Askarova, S. Circulating adiponectin levels, expression of adiponectin receptors, and methylation of adiponectin gene promoter in relation to Alzheimer's disease (2022) BMC Medical Genomics, 15 (1), статья № 262 https://www.scopus.com/record/display.uri?eid=2-s2.0-85144157661&origin=resultslist&sort=plf-f&src=s&sid=90583ea13082e79365a2831a7105f7ed&sot=aff&sdt=aff&sl=34&s=AF-ID%2860071847%29+AND+SUBJAREA%28MEDI%29&relpos=9&citeCnt=0&searchTerm=	
80	Sport-Specific Rehabilitation, but Not PRP Injections, Might Reduce the Re-Injury Rate of Muscle Injuries in Professional Soccer	DOI 10.3390/jfmk7040072	Platelet-rich plasma (PRP) injections are extremely popular in the management of sports injuries in elite athletes. However, data on the use of various administration protocols of PRP are contradictory. The efficacy of platelet-rich plasma in the treatment of muscle injuries in professional soccer players has to be contextualized within the sport-specific rehabilitation program. Despite the questionable role of PRP, a well-structured rehabilitation program is still regarded as the gold standard. We examined the efficacy of various PRP	Bezuglov, E., Khaitin, V., Shoshorina, M., Butovskiy, M., Karlitskiy, N., Mashkovskiy, E., Goncharov, E., **Pirmakhanov, B.,** Morgans, R., Lazarev, A. Sport-Specific Rehabilitation, but Not PRP Injections, Might Reduce	**Q2**

| | Players: A Retrospective Cohort Study | | protocols in the management of muscle injuries in professional soccer players in respect to treatment duration and injury recurrence. A retrospective cohort study. Muscle injuries in professional soccer players (n = 79, height 182.1 ± 5.9 cm, weight 76.8 ± 5.8 kg, BMI 23.1 ± 1.4 kg/m2) from three elite soccer clubs from the Russian Premier League were recorded during the 2018–2019 season. The injuries were graded based on MRI, using the British Athletic Muscle Injury Classification. Treatment protocols included the POLICE regimen, short courses of NSAID administration, and the specific rehabilitation program. The sample group of players were administered PRP injections. The average treatment duration with PRP injection was significantly longer than conventional treatment without PRP, 21.5 ± 15.7 days and 15.3 ± 11.1 days, respectively (p = 0.003). Soccer-specific rehabilitation and obtaining MRI/US before the treatment was associated with significantly reduced injury recurrence rate (p < 0.001). There was no significant difference between the PRP injection protocol applied to any muscle and the treatment duration in respect of grade 2A–2B muscle injuries. The total duration of treatment of type 2A–2B injuries was 15 days among all players. In the group receiving local injections of PRP, the total duration of treatment was 18 days; in the group without PRP injections, the treatment duration was 14 days. In our study, PRP treatment was associated with longer treatment duration, regardless of which muscle was injured. This may reflect the tendency to use PRP in higher-degree injuries. Soccer-specific rehabilitation significantly reduced the injury recurrence rate when compared to the administration of PRP injections. MRI/US imaging before returning to play was also associated with a lower injury recurrence rate. There was no significant difference between the PRP injection | the Re-Injury Rate of Muscle Injuries in Professional Soccer Players: A Retrospective Cohort Study (2022) Journal of Functional Morphology and Kinesiology, 7 (4), статья № 72 https://www.scopus.com/record/display.uri?eid=2-s2.0-85144534703&origin=resultslist&sort=plf-f&src=s&sid=90583ea13082e79365a2831a7105f7ed&sot=aff&sdt=aff&sl=34&s=AF-ID%2860071847%29+AND+SUBJAREA%28MEDI%29&relpos=7&citeCnt=0&searchTerm= | |

			protocol applied to any muscle and the treatment duration in treatment of type 2A–2B muscle injuries		
81	Evaluation of Cardiovascular Activity and Emotional Experience in Healthcare Workers (HCWs) Operating in COVID-19 Wards	DOI 10.3390/jcm11247372	The new 2019 coronavirus or SARS-CoV-2 has been the first biological agent to generate, in this millennium, such a global health emergency as to determine the adoption of public health measures. During this sanitary emergency, the emotional experience of healthcare workers (HCWs) has been hugely tested by several factors. In fact, HCWs have been exposed to greatly tiring physical, psychological and social conditions. The authors investigated the cardiocirculatory activity of a group of HCWs as well as how they perceived stress while working in COVID-19 wards. In particular, every HCW underwent a medical check, an electrocardiographic base exam, systolic and diastolic pressure measurement, and cardio frequency measurement. Furthermore, each HCW was provided with a cardiac Holter device (HoC) and a pressure Holter (Hop). Some psychological factors were considered in order to quantify the stress perceived by each HCW while at work through the administration of two questionnaires: the "Social Stigma towards Patients due to COVID Scale (SSPCS)" and the "Professional Quality of Life Scale (ProQOL)". The HoC and HoP analysis results for HCWs working in COVID-19 OU wards showed significant variations in cardiocirculatory activity. From the analysis of the SSPCS questionnaire answers, it is clear that all of them showed a sense of duty towards their patients. The analysis of the ProQOL questionnaire answers showed that the prevailing attitude is fear; however, HCWs did not absolutely discriminate against those who had COVID-19 nor did they refuse to help those in need. Continuous monitoring of these employees, also carried out through occupational medicine surveillance, allows for the detection of critical	Vitale, E., Filetti, V., Vella, F., Senia, P., Rapisarda, L., Matera, S., Lombardo, C., **Vinnikov, D.,** Rapisarda, V., Ledda, C. Evaluation of Cardiovascular Activity and Emotional Experience in Healthcare Workers (HCWs) Operating in COVID-19 Wards (2022) Journal of Clinical Medicine, 11 (24), статья № 7372, . https://www.scopus.com/record/display.uri?eid=2-s2.0-85144688962&origin=resultslist&sort=plf-f&src=s&sid=90583ea13082e79365a2831a7105f7ed&sot=aff&sdt=aff&sl=34&s=AF-ID%2860071847%29+AND+SUBJAREA%28MEDI%29&relpos=6&citeCnt=0&searchTerm=	**Q1**

			conditions and the implementation of actions aimed at preventing chronic processes.		
82	Elective surgery system strengthening: development, measurement, and validation of the surgical preparedness index across 1632 hospitals in 119 countries	DOI

10.1016/S0140-6736(22)01846-3 | The 2015 Lancet Commission on global surgery identified surgery and anaesthesia as indispensable parts of holistic health-care systems. However, COVID-19 exposed the fragility of planned surgical services around the world, which have also been neglected in pandemic recovery planning. This study aimed to develop and validate a novel index to support local elective surgical system strengthening and address growing backlogs. Methods: First, we performed an international consultation through a four-stage consensus process to develop a multidomain index for hospital-level assessment (surgical preparedness index; SPI). Second, we measured surgical preparedness across a global network of hospitals in high-income countries (HICs), middle-income countries (MICs), and low-income countries (LICs) to explore the distribution of the SPI at national, subnational, and hospital levels. Finally, using COVID-19 as an example of an external system shock, we compared hospitals' SPI to their planned surgical volume ratio (SVR; ie, operations for which the decision for surgery was made before hospital admission), calculated as the ratio of the observed surgical volume over a 1-month assessment period between June 6 and Aug 5, 2021, against the expected surgical volume based on hospital administrative data from the same period in 2019 (ie, a pre-pandemic baseline). A linear mixed-effects regression model was used to determine the effect of increasing SPI score. Findings: In the first phase, from a longlist of 103 candidate indicators, 23 were prioritised as core indicators of elective surgical system preparedness by 69 clinicians (23 [33%] women; 46 [67%] men; 41 from HICs, 22 from MICs, and six from LICs) from 32 countries. The multidomain SPI included 11 indicators on facilities and consumables, two on | **…………Ospanova, D…………….**
Elective surgery system strengthening: development, measurement, and validation of the surgical preparedness index across 1632 hospitals in 119 countries
(2022) The Lancet, 400 (10363), pp. 1607-1617.
https://www.scopus.com/record/display.uri?eid=2-s2.0-85141287010&origin=resultslist&sort=plf-f | **Q1** |

| | | | staffing, two on prioritisation, and eight on systems. Hospitals were scored from 23 (least prepared) to 115 points (most prepared). In the second phase, surgical preparedness was measured in 1632 hospitals by 4714 clinicians from 119 countries. 745 (45·6%) of 1632 hospitals were in MICs or LICs. The mean SPI score was 84·5 (95% CI 84·1–84·9), which varied between HIC (88·5 [89·0–88·0]), MIC (81·8 [82·5–81·1]), and LIC (66·8 [64·9–68·7]) settings. In the third phase, 1217 (74·6%) hospitals did not maintain their expected SVR during the COVID-19 pandemic, of which 625 (51·4%) were from HIC, 538 (44·2%) from MIC, and 54 (4·4%) from LIC settings. In the mixed-effects model, a 10-point increase in SPI corresponded to a 3·6% (95% CI 3·0–4·1; p<0·0001) increase in SVR. This was consistent in HIC (4·8% [4·1–5·5]; p<0·0001), MIC (2·8 [2·0–3·7]; p<0·0001), and LIC (3·8 [1·3–6·7%]; p<0·0001) settings. Interpretation: The SPI contains 23 indicators that are globally applicable, relevant across different system stressors, vary at a subnational level, and are collectable by front-line teams. In the case study of COVID-19, a higher SPI was associated with an increased planned surgical volume ratio independent of country income status, COVID-19 burden, and hospital type. Hospitals should perform annual self-assessment of their surgical preparedness to identify areas that can be improved, create resilience in local surgical systems, and upscale capacity to address elective surgery backlogs. Funding: National Institute for Health Research (NIHR) Global Health Research Unit on Global Surgery, NIHR Academy, Association of Coloproctology of Great Britain and Ireland, Bowel Research UK, British Association of Surgical Oncology, British Gynaecological Cancer Society, and Medtronic. | | |

| 83 | The Reasons Behind the Salubrious of Colostrum on the Cognitive Functions: A Systematic Review | DOI: 10.26538/tjnpr/v6i7.4 | Bovine colostrum (BC) is rich in many vitamins, minerals and antioxidants. Its supplements provide health benefits, especially for athletes. This systematic review was conducted to update information on the benefit of BC or its formulations (eg, colostrinin) on cognition or related biomarkers in experimental and human studies. Full texts or abstracts of 219 articles as reports of narrative or systematic reviews, randomized controlled clinical trials, observational studies and experimental studies (in vitro, ex vivo and in vivo) were included after searching the PubMed, Europe PMC, Google scholar databases. The full texts of eligible articles (25 articles) were evaluated and their results were summarized in various categories according to the study design. Bovine colostrum or related formulations have been shown to be beneficial as they improve cognition and its biomarkers. Consistent results have been observed in experimental and human studies. Further research is required to elucidate the rationale for the use of (BC) in healthy subjects and patients with cognitive impairment. | **Satrmbekova D,** Al-Nimer MSM, Al-Basri AK, Datkhayev UM. Tropical Journal of Natural Product Researcht https://www.researchgate.net/publication/362668386_The_Reasons_Behind_the_Salubrious_of_Colostrum_on_the_Cognitive_Functions_A_Systematic_Review | **Q4** |
| 84 | Fermented camel milk as a probiotics source for poultry farming | DOI: https://doi.org/10.1590/fst.53122 | Currently, antibiotics are increasingly becoming the object of close attention due to the potential development of antibioticresistant pathogens after prolonged use, the use of antimicrobials also seriously pollutes the environment and destroys the ecological balance of nature. Feed antibiotics have been banned in the EU since 2006, and there is an active discussion of draft laws in this area in Russia. The poultry industry ranks second in the world in terms of output, so it is important to ensure the health of livestock and product safety. Since the purpose of this study is to investigate the effectiveness of the use of lactic acid | **Nazerke Zh. BEGDILDAYEVA, Aliya K. KUDAIBERGENOVA Alina S. NURGAZINA Food Science https://www.scielo.br/j/cta/a/W8hJ3kGz7mdj3LN9npYj4bR/?format=pdf&lang=en** | Q3 |

			bacteria (LAB) strains isolated from shubat (fermented camel milk) for the tasks and problems of the poultry industry, the theoretical basis of the study includes the analysis of research papers and statistical reports on the problems of the industry, the use of antibiotics in animal husbandry, and lactic acid bacteria as possible alternatives. The final part is devoted to the analysis of the practical studies results comparing different types of milk, their microbiological composition, and the advantages of shubat for the probiotics production for poultry. Due to the peculiarities of camel milk and the "ethnicity" of shubat, quantitative and qualitative data of isolated microorganisms from these products have advantages over other species		
85	In Silico Study of piRNA Interactions with the SARS-CoV-2 Genome	DOI: 10.3390/ijms23179919	A protracted pandemic with numerous human casualties requires a rapid search for means to combat various strains of SARS-CoV-2. Since only a subset of the human population is affected by coronaviruses, there are probably endogenous compounds preventing the spread of these viral pathogens. It has been shown that piRNAs (PIWI-interacting RNAs) interact with mRNA of human genes and can block protein synthesis at the translation stage. The effect of piRNA on the genomic RNA (gRNA) of SARS-CoV-2 in silico was evaluated. A cluster of 13 piRNA binding sites (BS) was identified in the SARS-CoV-2 gRNA region encoding the oligopeptide. The second cluster of BSs 39 piRNAs also encodes the oligopeptide. The third cluster of 24 piRNAs BS encodes an oligopeptide. Twelve piRNAs have been identified that interact strongly with gRNA. Based on the identified functionally significant endogenous piRNAs, synthetic piRNAs (spiRNAs) have been proposed that will further suppress the reproduction of the coronavirus. These	**Акимниязова А.Н.** Yurikova, O., Pyrkova, A., Rakhmetullina, A., Niyazova, T., Ryskulova, A. G., Ivashchenko, A. International journal of molecular sciences https://www.scopus.com/record/display.uri?eid=2-s2.0-85137565329&origin=resultslist&sort=plf-f	**Q2**

			spiRNAs and individual endogenous piRNAs have little effect on human 17494 protein-coding genes, indicating a low potential for side effects. The piRNA and spiRNA selection methodology developed for the control of SARS-CoV-2 (NC_045512.2) can be used to control all strains of SARS-CoV-2.		
86	Biotechnology of Microorganisms from Coal Environments: From Environmental Remediation to Energy Production	DOI: 10.3390/biology11091306	for microorganisms due to their recalcitrant chemical nature and negligible degradation. However, accumulated data have revealed the presence of various microbial groups in the coal environment and their significant metabolic role in the biogeochemical dynamics of coal and the functioning of ecosystems. The high oxygen content, organic fractions, and lignin-like structures of lower grade coals can provide effective means for microbial attack, while still representing a vastly unexplored frontier in microbiology. The technology of coal degradation/conversion by native bacterial and fungal species has great potential in the development of agriculture, chemical industry production and environmental restoration. In addition, native microalgae species can serve as a sustainable source of energy and an excellent bioremediation strategy applicable to coal spill/seam waters. In addition, indicators of the fate of the microbial community will serve as an indicator of the progress of recovery at sites after coal mining. This review proposes a comprehensive vision of the biodegradation and biorecycling of coal by microorganisms growing in the coal environment in order to determine their biotechnological potential and possible applications.	**Tastambek, Kuanysh T.;** Akimbekov, Nuraly S.Digel, Ilya; Marat, Adel K.;Turaliyeva, Moldir A.; Kaiyrmanova, Gulzhan K. **Biology** **https://www.scopus.com/record/display.uri?eid=2-s2.0-85138691948&origin=resultslist&sort=plf-f&src=s&st1=Tastambek&st2=&nlo=1&nlr=20&nls=afprfnm-t&sid=0cce0dd3**	**Q1**
87	The Ca2+/CaM, Src kinase and/or PI3K-dependent EGFR	DOI: 10.1016/j.bcp.2022.115317	G protein-coupled receptors (GPCR) and receptor tyrosine kinases (RTK) modulate vascular tone and contraction via rapid and long-term processes. Sustained activation of these receptor types can change vascular structure, and the ability of vasculature to adapt to high pressure. In this study, the interaction between serotonin	**Ахаева Тамила Абдикаликовна** Guner, Sahika; Nichols, Charles D;Gurdal, Hakan Biochemical Pharmacology	Q1

| | transactivation via 5-HT2A and 5-HT1B receptor subtypes mediates 5-HT-induced vasoconstriction | | (5-HT) receptors and epidermal growth factor receptors (EGFR) on vasoconstriction and the mechanisms of EGFR transactivation and its downstream mediators were investigated. We measured 5-HT-induced vasoconstriction in the aorta and the mesenteric artery; and the effects of EGFR, Src and PI3K, and their downstream mediators Erk1/2 and Akt phosphorylation on 5-HT-mediated vasoconstriction in the presence or absence of pharmacological inhibitors of Ca^{2+}/CaM, EGFR, Src, and PI3K. Furthermore, we determined the contribution of 5-HT receptor subtypes to 5-HT-induced vasoconstriction and EGFR transactivation using selective 5-HT2A and 5-HT1B receptors ligands. Our results show that EGFR, Src, and PI3K are involved in 5-HT-induced vasoconstriction both in the aorta and the mesenteric artery, and that these kinases have a more prominent role in the mesenteric artery than the aorta. With regard to EGFR transactivation by 5-HT, Ca^{2+}/CaM, Src and PI3K are upstream mediators, and transactivation is partly mediated by Erk1/2 and Akt activation. Furthermore, Ca^{2+}/CaM, Src, and PI3K are the main regulators for Akt activation, however Src only has a prominent role for Erk1/2 activation. 5-HT2A and 5-HT1B receptors have different EGFR transactivation profiles through Src a | https://www.scopus.com/record/display.uri?eid=2-s2.0-85141530191&origin=resultslist&sort=plf-f | |
| 88 | Investigation of CO2Extract of Portulaca oleracea for Antioxidant Activity from Raw Material Cultivated in Kazakhstan | DOI: 10.1155/2022/6478977 | Medicinal plants remain as an important resource in the fight against many diseases, especially in developing countries. Antioxidants are substances capable of delaying, retarding, and preventing the oxidation of lipids or substances that delay or prevent free radical reactions during lipid oxidation. Natural antioxidants such as ascorbic acid, tocopherol, phenolic compounds, and flavonoids are a safe alternative to chemical antioxidants. In present work, results of antioxidant activity of raw materials from the cultivated plant Portulaca oleracea are presented. The extraction time was optimized to 780 | **Seitalieva Aida, Tleubayeva, Meruyert I.; Abdullabekova, Raisa M; Datkhayev, Ubaidilla M.;Ishmuratova, Margarita Yu.; Kozhanova, Kaldanay K; Zhakipbekov, Kairat S International Journal of Biomaterials** | **Q2** |

			minutes; the yield of extractive substances was 1.25% in the production of CO2 extract under subcritical conditions. For the first time, the antioxidant activity of Portulaca oleracea CO2 extract was determined by the amperometric method. Gas chromatography-mass spectrometry (GC-MS) chemical analysis of Portulaca oleracea CO2 extract dissolved in hexane revealed 37 components, including a complex mixture of aldehydes, alkanes, alkenes, esters, diterpenes, steroids, vitamin E, and carbohydrates. The investigation results showed that the Portulaca oleracea CO2 extract was promising for pharmaceutical, cosmetic, and food industries and had great potential for the prevention and treatment of diseases caused by oxidative stress.	https://www.hindawi.com/journals/ijbm/2022/6478977/	
89	Chemical and biological properties of bioactive compounds from garlic (Allium sativum)	DOI: 10.3897/pharmacia.93.e93604	Garlic (Allium sativum) is one of the oldest cultivated plants. It has been used as a spice, food, and folk medicine for many years. Garlic contains about 2000 biologically active components. For centuries, scientists have obtained a variety of compositions and physiological activities of garlic, depending on the methods of processing and extraction. Many review articles were published, where the object of the study was garlic. But there are very few broad literature reviews where garlic has been fully disclosed as a medicinal raw material. The study found that some garlic products and processing procedures were not standardized or tested for safety. A broad overview of this object can direct the attention of the scientific community in the right direction. This review contains various processing methods and yields from these extracts. In addition, most of the key physiological properties of the active substances of the raw materials are prescribed.	Bazaraliyeva, A., Moldashov, D., Turgumbayeva, A., Kalykova A., Sarsenova, L., Issayeva, R. Kartbayeva, E Pharmacia https://www.scopus.com/record/display.uri?eid=2-s2.0-85141814954&origin=AuthorNamesList&txGid=314ea9b97f061801434a2039c3df814b&isValidNewDocSearchRedirection=false	Q2

| 90 | HIPPOPHAE RHAMNOIDES L. LEAF AND TWIG EXTRACTS AS RICH SOURCES OF NUTRIENTS AND BIOACTIVE COMPOUNDS WITH ANTIOXIDANT ACTIVIT | DOI: 10.1038/s41598-022-05104-2 | Plants have served for centuries as sources of compounds useful for human health such as antioxidant, anti-diabetic and antitumor agents. They are also rich in nutrients that improve the human diet. Growing demands for these compounds make it important to seek new sources for them. Hippophae rhamnoides L. is known as a plant with health-promoting properties. In this study we investigated the chemical composition and biological properties of bioactive components of ethanol extracts from leaves and twigs of H. rhamnoides L. Chemical components such as the total content of phenolic compounds, vitamins and amino acids and the antioxidant activities of these compounds in cellular and cell-free systems were assessed. The results suggest that the studied extracts are rich in bioactive compounds with potent antioxidant properties. Cytotoxicity and hemotoxicity assays showed that the extracts had low toxicity on human cells over the range of concentrations tested. Interaction with human serum albumin was investigated and conformational changes were observed. Our results indicate that leaf and twig extracts of H. rhamnoides L. should be considered as a non-toxic source of bioactive compounds which may be of interest to the food, pharmaceutical and cosmetic industries. | Kubczak, Malgorzata **Khassenova, Ainur B.;** Skalski, Bartosz; Michlewska, Sylwia; Wielanek, Marzena; Sklodowska, Maria; **Aralbayeva, Araylim N.** Nabiyeva, Zhanar S.; Murzakhmetova, Maira K.; Zamaraeva, Maria; Bryszewska, Maria; Ionov, Maksim **SCIENTIFIC REPORTS** **https://www.scopus.com/record/display.uri?eid=2-s2.0-85123170077&origin=resultslist&sort=plf-f** | **Q 1** |
| 91 | Extraction, Isolation of Bioactive Compounds and Therapeutic Potential of Rapeseed (Brassica napus L.) | DOI: 10.3390/molecules 27248824 | Rapeseed (Brassica napus L.) is a herbaceous annual plant of the Cruciferous family, the Cabbage genus. This oilseed crop is widely used in many areas of industry and agriculture. High-quality oil obtained from rapeseed can be found in many industrial food products. To date, extracts with a high content of biologically active substances are obtained from rapeseed using modern extraction methods. Brassica napus L. seeds contain polyunsaturated and monounsaturated fatty acids, carotenoids, phytosterols, flavonoids, vitamins, glucosinolates and microelements. The data in this review show that rapeseed biocompounds have | **Nazym Tileuberdi, Aknur Turgumbayeva, Balakyz Yeskaliyeva, Lazzat Sarsenova, Raushan Issayeva Molecules 2022, 27(24), 8824; https://www.mdpi.com/1420-3049/27/24/8824** | **Q2** |

			therapeutic effects in the treatment of various types of diseases. Some studies indicate that rapeseed can be used as an anti-inflammatory, antioxidant, antiviral, hypoglycemic and anticancer agent. In the pharmaceutical industry, using rapeseed as an active ingredient may help to develop new forms drugs with wide range of therapeutic effects. This review focuses on aspects of the extraction of biocompounds from rapeseed and the study of its pharmacological properties.		
92	Atrial fibrillation: Epidemiology, pathophysiology, and clinical complications (literature review)	DOI: 10.1111/jce.15759	The last 3 decades have been characterised by an exponential increase in knowledge and advances in the clinical management of atrial fibrillation. The purpose of the study is to provide an overview of the pathogenesis of nonvalvular atrial fibrillation and a comprehensive investigation of the epidemiological data associated with various risk factors for atrial fibrillation. The leading research methods are analysis and synthesis, comparison, observation, induction and deduction and grouping method. Research has shown that old age, male gender, and European descent are important risk factors for developing atrial fibrillation. Other modifiable risk factors include a sedentary lifestyle, smoking, obesity, diabetes mellitus, obstructive sleep apnea, and high blood pressure predisposing to atrial fibrillation, and each has been shown to induce structural and electrical atrial remodelling. Both heart failure and myocardial infarction increase the risk of developing atrial fibrillation and vice versa creating feedback that increases mortality. The review is a comprehensive study of the epidemiological data linking nonmodifiable and modifiable risk factors for atrial fibrillation, and the pathophysiological data supporting the relationship between each risk factor and the occurrence of atrial fibrillation. This may be necessary in the practice of treatment of the cardiac system. This article is protected by copyright. All rights reserved.	K. Bizhanov **Kuat B. Abzaliyev Adil BaimbetovAdil Baimbetov** Evgeny Lyan Show all 5 authors November 2022Journal of Cardiovascular Electrophysiology **https://www.researchgate. net/publication/365773662 _Atrial_fibrillation_Epide miology_pathophysiology _and_clinical_complicatio ns_literature_review**	**Q2**

93	An Advanced Device For Determining Pain Sensitivity Of The Oral Mucosa	DOI: 10.47750/jptcp.2022.939	An improved device for determining the pain sensitivity of the oral mucosa (OM). It includes a rod with a probe, a cylinder, a pressure sensor, a vinyl tube, wires, a battery, a microcontroller and an LCD display for converting and processing the signal from the sensor and displaying information to them. A device for measurement was made in the clinic of orthopedic dentistry. 10 patients with complete absence of teeth were studied. The advantages of the device have been established, such as low material consumption and portability of the device, which makes it possible to use it at any dental chair and the possibility of measuring at any point of the oral mucosa.	**N.S. Ruzuddinov[1] , A.R. Fazylova[2] , S.A. Gaffarov[3] , S. Ruzuddinov4 , K.N. Ruzuddinova5** **Journal of Positive School Psychology 2022, Vol. 6, No. 8, 4683-4687** https://www.scopus.com/record/display.uri?eid=2-s2.0-85140960327&origin=resultslist&sort=plf-f http://journalppw.com **Indexing:** *Scopus , EBSCO*	**Q2**
94	Algorithm for Designing a Removable Complete Denture (RCD) Based on the FEM Analysis of Its Service Life	DOI: 10.47750/jptcp.2022.939	Aim: To study and systematize the complaints of patients with removable prostheses, paying attention to the clinical manifestation of the torus and its sensitivity, and to determine the effectiveness of the use of two-layer bases in removable prosthetics. Methods: In the clinic of orthopedic dentistry, 104 people were examined and received orthopedic treat-ment, including 37 patients in the comparison group. The main number of patients up to 55.3, complained of poor fixation and violation of the chewing process. In order to improve the functional efficiency of the removable prosthesis, two-layer bases using soft linings, Gossil (Russia), Furji (Japan), and Mucopren (Germany), are proposed. Clinical and laboratory studies were conducted (Estesmary, gattingeri, physico-mechanical studies of soft linings). The effectiveness of using soft pads in removable prosthetics is shown. The conducted research allowed creating a clinical classification of the torus depending on the pain sensitivity of the oral mucosa—type I-painless torus, type II-moderately painful, and type III-painful	**Dmitry I. Grachev , Nurmukhamet S. Ruzuddinov, Anatoliy S. Arutyunov , Gadzhi D. Akhmedov , Lubov V. Dubova , Yaser N. Kharakh 1 , Sergey V. Panin , and Sergey D. Arutyunov ,** **Journal of Physical Education and Sport** **https://www.scopus.com/record/display.uri?eid=2-s2.0-85136293031&origin=resultslist&sort=plf-f**	**Q2**

			when touched. The features of the technology for manufacturing two-layer bases for type II and type III of torus are recommended. Results: It was found that 47.9% of patients in the comparison group and 55.3% of those examined in the main group complained about impaired chewing and poor fixation of dentures on the upper and lower jaws, depending on the condition of oral tissues. The patients did not always objectively assess the condition of their dentures. Patients complained about lack of stabilization, poor-quality dentures, and the need to replace the old denture with a new one in 13.8% of cases in the control group and 31.9% in the main group of patients examined. Conclusion: In the case of removable denture wearers with a total lack of teeth, there were 55.3% complaints of chewing disorders and poor fixation of dentures, and in the case of partially removable denture wearers, the greatest number of complaints of clasp fixation disorders were found in 42.1% of cases. Physico-mechanical study of soft linings from different countries, Gossil (Russia), Fuji (Japan), Mukopren (Germany), showed their effectiveness and the possibility of their use orthopedic dentistry. © 2022 Ruzuddinov NS, et al.		
95	Clinical classification of torus and effectiveness of two-layer bases in removable dentures	DOI: 10.47750/jptcp.2022.939	Aim: To study and systematize the complaints of patients with removable prostheses, paying attention to the clinical manifestation of the torus and its sensitivity, and to determine the effectiveness of the use of two-layer bases in removable prosthetics. Methods: In the clinic of orthopedic dentistry, 104 people were examined and received orthopedic treatment, including 37 patients in the comparison group. The main number of patients up to 55.3, complained of poor fixation and violation of the chewing process. In order to improve the functional efficiency of the removable prosthesis, two-layer bases using soft linings, Gossil (Russia), Furji (Japan), and Mucopren (Germany), are	**Nurmukhamet Ruzuddinov*1 , Saurbek Ruzuddinov2 , Igor Voronov3 , Kubeisin Altynbekov2 , Kalamkas Ruzuddinova4** Journal of Population Therapeutics & Clinical Pharmacology https://www.scopus.com/record/display.uri?eid=2-s2.0-85136271333&origin=resultslist&sort=plf-f	**Q2**

			proposed. Clinical and laboratory studies were conducted (Estesmary, gattingeri, physico-mechanical studies of soft linings). The effectiveness of using soft pads in removable prosthetics is shown. The conducted research allowed creating a clinical classification of the torus depending on the pain sensitivity of the oral mucosa-type I-painless torus, type II-moderately painful, and type III-painful when touched. The features of the technology for manufacturing two-layer bases for type II and type III of torus are recommended. Results: It was found that 47.9% of patients in the comparison group and 55.3% of those examined in the main group complained about impaired chewing and poor fixation of dentures on the upper and lower jaws, depending on the condition of oral tissues. The patients did not always objectively assess the condition of their dentures. Patients complained about lack of stabilization, poor-quality dentures, and the need to replace the old denture with a new one in 13.8% of cases in the control group and 31.9% in the main group of patients examined. Conclusion: In the case of removable denture wearers with a total lack of teeth, there were 55.3% complaints of chewing disorders and poor fixation of dentures, and in the case of partially removable denture wearers, the greatest number of complaints of clasp fixation disorders were found in 42.1% of cases. Physico-mechanical study of soft linings from different countries, Gossil (Russia), Fuji (Japan), Mukopren (Germany), showed their effectiveness and the possibility of their use orthopedic dentistry.		
96	Study of gut microbiota alterations in Alzheimer's	DOI	We have investigated the diversity and composition of gut microbiotas isolated from AD (Alzheimer's disease) patients (n = 41) and healthy seniors (n = 43) from Nur-Sultan city (Kazakhstan). The composition of the gut	**Kaiyrlykyzy, A.,** Kozhakhmetov, S., Babenko, D., Zholdasbekova, G.,	**Q1**

| dementia patients from Kazakhstan | 10.1038/s41598-022-19393-0 | microbiota was characterized by 16S ribosomal RNA sequencing. Our results demonstrated significant differences in bacterial abundance at phylum, class, order, and genus levels in AD patients compared to healthy aged individuals. Relative abundance analysis has revealed increased amount of taxa belonging to Acidobacteriota, Verrucomicrobiota, Planctomycetota and Synergistota phyla in AD patients. Among bacterial genera, microbiotas of AD participants were characterized by a decreased amount of Bifidobacterium, Clostridia bacterium, Castellaniella, Erysipelotrichaceae UCG-003, Roseburia, Tuzzerella, Lactobacillaceae and Monoglobus. Differential abundance analysis determined enriched genera of Christensenellaceae R-7 group, Prevotella, Alloprevotella, Eubacterium coprostanoligenes group, Ruminococcus, Flavobacterium, Ohtaekwangia, Akkermansia, Bacteroides sp. Marseille-P3166 in AD patients, whereas Levilactobacillus, Lactiplantibacillus, Tyzzerella, Eubacterium siraeum group, Monoglobus, Bacteroides, Erysipelotrichaceae UCG-003, Veillonella, Faecalibacterium, Roseburia, Haemophilus were depleted. We have also found correlations between some bacteria taxa and blood serum biochemical parameters. Adiponectin was correlated with Acidimicrobiia, Faecalibacterium, Actinobacteria, Oscillospiraceae, Prevotella and Christensenellaceae R-7. The Christensenellaceae R-7 group and Acidobacteriota were correlated with total bilirubin, while Firmicutes, Acidobacteriales bacterium, Castellaniella alcaligenes, Lachnospiraceae, Christensenellaceae and Klebsiella pneumoniae were correlated with the level of CRP in the blood of AD patients. In addition, we report the correlations found between disease severity and certain fecal bacteria. This is the first reported study | Alzhanova, D., Olzhayev, F., Baibulatova, A., Kushugulova, A.R., Askarova, S. Study of gut microbiota alterations in Alzheimer's dementia patients from Kazakhstan (2022) Scientific Reports, 12 (1), статья № 15115, https://www.scopus.com/record/display.uri?eid=2-s2.0-85137310263&origin=resultslist&sort=plf-f | |

			demonstrating gut microbiota alterations in AD in the Central Asian region.		

***Примечание**

Для удобства добавили столбец «квартиль журнала»

Таким образом, по Факультету медицины и здравоохранения за 2022 год, 96 публикаций, из них:

Q1 - 40

Q2 - 32

Q3 - 16

Q4 - 8