Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
- The extent at which legislation has helped or failed the situation.

Conclusion: Inadequate legislation compromised the health of teachers OH services was provided by unskilled personnel.

**335**

**Effects of face masks on physical performance, physiological response and subjective respiratory effort during a submaximal bicycle ergometer test**

Benjamin Steinhilber 1, Robert Seibt 1, Julia Gabriel 1, Joalbia Brountsou 1, Markus Muljono 1, Tomasz Downar 1, Mona Bär 1, Rosina Bonsch 1, Adrian Brandt 1, Peter Martus 1, Monika A. Rieger 1

1 University Hospital Tübingen, Institute of Occupational and Social Medicine and Health Services Research, Tübingen, Germany, 2 University Hospital Tübingen, Institute for Clinical Epidemiology and Applied Biometry, Tübingen, Germany

Introduction: Evidence on undesirable side effects of face masks worn during the COVID-19 pandemic is controversial.

Materials and Methods: The present study, explores whether wearing a medical face mask (MedMask) affects physical working capacity (PWC) at the heart rate of 130 and 150 beats per minute in comparison to no mask, a filtering face piece mask with exhalation valve class 2 (FFP2exhal), and a cotton fabric mask (community mask). Secondary, physiological and subjective responses were analyzed such as a potential moderating role of subjects’ individual physical fitness level and gender on face mask effects. A submaximal bicycle ergometer protocol was applied in an intra-individual cross-over design using either no mask, a MedMask, FFP2exhal, or a community mask on four days in randomized order. PWC130 and PWC150 were measured as well as transcutaneous carbon dioxide partial pressure, oxygen saturation, breathing rate, blood pressure, perceived respiratory effort and perceived physical exhaustion.

Results: Using the MedMask did not lead to a reduction in PWC and a systematic or relevant change in physiological response, neither was the case when the FFP2exhal or community mask were worn. Perceived respiratory effort was up to a point higher on a zero to ten scale when using face masks p<0.05 compared to the no mask condition. No differences occured in general perceived exertion.

Conclusion: These results provide reason to believe that physical performance and physiological responses when wearing face masks are similar to not wearing a face mask, although some more respiratory effort is required.

**336**

**A model proposal to ensure the health maintenance in a Colombian University during the Pandemic Covid-19**

Juan Ignacio Rincón Sarmiento

UNIVERSIDAD NACIONAL DE COLOMBIA, Cundinamarca, Bogotá, Colombia

Introduction: The Covid -19 Pandemic had caused a worldwide crisis leading to many negative consequences on healthy habits, biomechanical system, and mental health to students and workers. The National University is the main University in Colombia; it has around 30.000 students and 10.000 workers. Due to the Pandemic, many workers had to work from home, which generated consequences that had to be interrupted.

Material and Methods: Through the application of many virtual surveys, we could choose the main topics to be included in this strategy. Finally we selected the next ones and worked on them from our office:

- biomechanical, due to the new physical ergonomics conditions.
- psychosocial, related to many factors as epidemic Pandemic behavior, new family issues at home, addictions, etc.
- nutrition facts, because of inadequate eating habits.
- cardiovascular, due to the aspects listed above, and sedentary lifestyle.
- occupational health facts, remembering the importance of preventing work-related injuries.

Results and Conclusions: Many employees and students at our university had been highly motivated to go back on having healthy habits, which, in some cases have had a positive impact on their families; who have been sharing the same home space with the workers during the Pandemic. According to the intervention developed by our Occupational Health Office, in alliance with the University’s Faculty of Medicine, we are improving our workers lifestyle, which will have positive impacts on them and their families. It represents such an important aspect that will ameliorate our community public health results.

**337**

**Conception of ergonomic interventions and challenges during Covid-19 pandemic**

Maria - Elena Boaitca, Anca Draghici, Diana Robescu

Politehnica University of Timisoara, Faculty of Management in Production and Transportation, Timisoara, Romania

Introduction: The Covid-19 pandemic shifted ergonomists’ focus from work optimization to health-related interventions. For over a year, safety measures were primarily linked to limitation of infection with the new coronavirus. The paper aims to propose a framework for conception and evaluation of ergonomic interventions and to present major challenges faced in implementation of the framework during the pandemic.

Material and Methods: The proposed framework comprises comprehensive methodology for assessment of physical environment parameters and ergonomic risks, and proposal of solutions. Methods used are RNUR, software solution based on REBA and OWAS and proposed methodology for physical environment assessment based on ISO standards and Romanian standards for determination of noise, dust, lighting and microclimate. Analysis of key challenges faced during implementation and potential causes are also presented in a dedicated section.

Results: The framework was applied for development of ergonomic interventions in two companies. The most prominent risks identified were noise, uncomfortable postures, standing, manual load handling (lifting, pushing, dragging, carrying), torso twisting/bending.

Conclusions: The Covid-19 pandemic negatively impacted the success of implementing participatory ergonomics principles, imposing the need to re-adjust strategy and find creative solutions.
338

**Ergo@Home Guideline – a Tool for Working from Home Using Information Technology, in Pandemic**

Florina Popescu 1, Elena-Ana Păunuc 1, Iulia I. Drăgoi 2, Mirela C. Tomescu 1, Patricia Cristodor 2, Adrian Teodoru 3, Pompilia C. Lazorean 2, Adrian Lazorean 2, Sebastian Capotescu 2, Irina Mohora 3, Anca Draghić 4

1 “Victor Babeș” University of Medicine and Pharmacy, Timișoara, Romania, Occupational Health, Timișoara, Romania, 2 Fast Fizio Clinic, Physiotheraphy, Timișoara, Romania, 3 “Victor Babeș” University of Medicine and Pharmacy, Medical Semiology, Timișoara, Romania, 4 “Victor Babeș” University of Medicine and Pharmacy, Timișoara, Romania, Dermatology, Timișoara, Romania, 5 “Lucian Blaga” University, Sibiu, Ophthalmology, Sibiu, Romania, 6 University of Paris, Internal Medicine, Paris, France, 7 University of Paris, Cardiology, Paris, France, 8 GreenForest SRL, Ergonomics, Timișoara, Romania, 9 Politehnica University, Ergonomics, Timișoara, Romania

**Introduction:** For most people, Covid-19 pandemic was a challenge regarding work. It “accelerated” the transition to online activities in many fields, where teleworking and telestudy concepts were applied, based on nowadays information technology. The aim of this work is to elaborate a guideline for teleworking and telestudy in Romania.

Material and methods: A multidisciplinary team of ergonomists, architects, different health care specialists was involved. They studied and systematized the legal framework of working from home, the common and emerging risk factors identified in computing activities, their effects on health and prophylactic recommendations.

Results: The guideline is structured in three parts: the first is dedicated to ergonomics principles in office work, the second describes solutions for organizing home space for work using the green concept and the third approaches occupational risks, their effects on health and prophylactic recommendations.

Conclusions: The elaboration of a teleworking and telestudy ergonomic guideline will be useful to employees and employers, students and organizations, in order to maintain one’s health.

339

**Sars-cov-2 risk management in the italian education sector: the Inail’s contribution**

Marta Petyx 1, Grazia Fortuna 1, Sandra Manca 1, Sergio Iavicoli 2

1 Inail, Department of Occupational and Environmental Medicine, Epidemiology and Hygiene, Monte Porzio catone, Italy, 2 Ministry of Health, Directorate-General for Communication and European and International Relations, Rome, Italy

**INTRODUCTION:** The handling of the pandemic in Italy has implied, by Decree of 4 March 2020, the interruption of all school activities; one of the most complex and hurtful measures by virtue of its impact on such a vitally important milestone.

**MATERIAL AND METHODS:** As regards to the reopening of schools, for the year 2020-2021, a risk classification model for sector of economic activity, elaborated by INAIL, has been applied, in accordance with criteria of probability of exposure, proximity, mass gathering. The above approach has been adopted by the Technical Scientific Committee established by the Government as support to coordination activities to overcome the emergency. The integrated risk level of the education sector has been rated as medium-low, but its mass gathering risk level is considered to be medium-high.

**RESULTS:** The measures for the reopening of schools have regarded different aspects: Systemic measures (territorial support system, new recruitment of school workers, contact with the NHS, mobility plans); Organisational measures (ex. classroom layout, timetable, consumption of meals); Preventive and protective measures (distancing, disinfection and hand hygiene, use of mask, information and training), Territorial control measures (monitoring of suspected cases, contact tracing, follow-up of absences).

**CONCLUSIONS:** The resumption of school activities has required a complex balance of safety, students’ and school workers’ wellbeing, quality of learning contexts and processes, in respect of the Constitutional Rights to Education and Health. It has also represented an opportunity to regenerate the Italian school.

340

**The support of healthcare workers suffering from COVID 19**

Asma Chouchane 1, Imene Kacem 1, Maher Maoua 1, Mohamed Kahloul 2, Mohamed Ajmi 2, Anouar Youssef Ben Slama 2, Asma Koubaa 1, Walid Naija 1, Nejib Mrizak 1

1 Farhat Hached Academic Hospital, Department of Occupational Medicine, Sousse, Tunisia, 2 Sahlioul Academic Hospital, Department of anesthesis and intensive care, Sousse, Tunisia

**Introduction :** The COVID-19 pandemic has focused attention on the challenges and risks faced by frontline healthcare workers (HCW). This study aimed to describe the quality of management of HCW affected by the COVID-19.

**Methods :** This is a cross-sectional study enrolling all HCW of Farhat Hached Academic hospital who had been affected by COVID-19 during the period from September to December 2020. Results : During the study period, 27 HCW were affected with a mean age of 42.3 ±10 years and a ratio-sex of 0.25. The most represented category was nurses (33.3%) followed by technicians (26.1%). Gynecology department had the highest number of affected HCW (14.4%) followed by pediatric department and administration in 7.2% and 5.7% respectively. The mean of seniority was 14.5±11 years. The majority of participants (97.4%) reported a medical care. Twelve HCW (4.5%) were hospitalized with an average length of hospital stay of 7.55 ± 6.12 days. The average length of sick leave was 18.68 ± 10.99 days. During the lockdown, 38.6% of HCW took care of their children without any external help. All of the HCW were supported by phone calls from colleagues in 88.4% of cases, the hierarchy in 67.4% of cases, occupational medicine in 60.3% of cases.

**Conclusion :** The impact of COVID 19 is greater in HCW than in the general population. The affected staff should have a