

OSHRI* Posts the Results of 80 Research Projects in 2021



Research reports provided on decreasing fatal accidents and protecting the most vulnerable from industrial accidents.

- The Occupational Safety & Health Research Institute(Director Kim Eun-a), which is part of the Korea Occupational Safety & Health Agency, is posting online the results from 80 research projects conducted in 2021 on industrial/ occupational health and safety(issues) to support the government’s establishment of policy on industrial accident prevention as well as to protect the lives of working people and promote workers’ health.
- The Institute presents research findings every year. The results made public this time around were produced last year, and come from eighty projects in five different areas*

* The 5 areas:

policy regulations, industrial safety, occupational health, work environment, industrial chemistry

- One major study, entitled “Research on Industrial Accident Incidence Trends and Cyclical Influence Factors by Industry in Korea,” empirically analyzes the kinds of influence that cyclical factors such as labor market conditions and changes in production have on industrial accidents.

› The study concluded that the number of accident fatalities drops when either the growth rate of total wages or the unemployment rate rises in industry overall. Notably, the researcher hypothesized that a positive correlation exists between the percentage of workers putting in less than 17 hours a week and the number of manufacturing accident fatalities.

- Another study, entitled “Research on Measures to Reduce Fatal Conveyor Belt Accidents and Improve Safety,” found that 86 percent of all the accident fatalities between 2017 and 2020 at manufacturing sites using conveyors occurred while the conveyors were in operation.

› The author proposed that inspecting the conveyor system alone was not enough to improve safety. Rather, a comprehensive examination is also necessary on the danger posed by the interaction of the robots, packing machines, and other equipment connected to the conveyor.

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- At the same time, the researchers focused their attention on the seriously long hours that workers in the home delivery business have been putting in since the onset of the COVID-19 pandemic. They studied ways to upgrade the workplace response system when contagious diseases break out.

OSHRI also researched such areas as the health & safety standards of smart factories and the level of exposure to harmful factors from 3D printers to help prevent new occupational health problems with the coming of the 4th Industrial Revolution.

- In addition the original research reports for 80 projects, including “A Study on Measures to Make(the Protection of) Worker Safety and Health Obligatory under Serious Accidents Punishment Act” as well as summaries of those reports(Collection of Summaries of Occupational Safety & Health Studies in 2021) are available on the OSHRI homepage.
- Occupational Safety & Health Research Institute Director Kim Eun-a said: “It is impossible to initiate, establish, evaluate, and supplement industrial safety and health without research on safety and health. Going forward, our researchers will focus on designing projects that are both timely and long-range, producing scientific evaluations and logical suggestions.”

Appendix : List of Research Project Conducted in 2021(80 Projects)

NO.	Project title
1	The maxium acceptable working time for delivery workers
2	Scope of occupational diseases under the Act on the Punishment, etc. of Critical Disasters
3	Study on Measures to Introduce Effective Sanctions against Corporate Crimes Related to Industrial Accidents
4	Study on Development of National Occupational Safety and Health Indicators
5	A Study on Occupational Accident and Economic Fluctuations by industry in Korea
6	Study on Legal Status of and Protective Measure for Subcontractor in In-House Subcontracting
7	A Study on the Protection of Workers about Disaster Occurrence under the 「Occupational Safety and Health Act」
8	A Study on the Appropriateness of the Determination Standards and Protection of Special Formal Workers under the Industrial Safety and Health Act
9	A Comparative Study on Occupational Safety and Health Supervision Organizations
10	Problems and Improvements in the application of the law on offenses against the Occupational Safety and Health Act
11	Mesures to improve the usability of patrol cars to prevent industrial accident
12	A Study on the Industrial Field Settlement of the Responsibility of the Contractee Enhanced by the Revision of the Occupational Safety and Health Act.
13	A Study on Developing Policy Measures for the Preventing Severe Injuries

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NO.	Project title
14	Development of Managers' Safety Activity Model and Field Application Study for Creating Workplace Safety Culture
15	Research for innovation in the development and distribution of non-face-to-face and online contents
16	A Study on Visualizing Law for Universal Understanding of Occupational Safety and Health Act
17	A Study on how to Concretize the Safety and Health Duty Imposed by 'the Serious Accidents Punishment Act'
18	Establishment of subordinate statutes in accordance with the establishment of obligations for business owners to install rest facilities
19	Review of indium analysis in serum and development of biological reference material
20	Development of biological reference material for proficiency test program - Urinary 1-hydroxypyrene as bio-marker of coal tar pitch
21	Development of guidelines for health examination of workers during the pandemic of airborne infectious diseases
22	Assessing the validity of the questionnaires for screening depressive disorders using the National Health Examination on the employees
23	Reference equation of spirometry for migrant workers in Korea
24	Development of Korean version of causal inference guideline and statistical method for complex longitudinal data from workers (1)
25	A Study on Preventive Measures of Health Disorder Caused by Long-hour Labor and Overwork : Online shopping delivery drivers, apartment guards, and designated drivers
26	Improving the Response System for Workplaces with Emerging Infectious Diseases - Focusing on Cases of COVID-19
27	Prepare a plan to introduce health examinations by Occupation - delivery, construction industry
28	Measures to improve special health checkup for night work in vulnerable areas.
29	Improvement measures to overcome problems due to enforcement of hiring a health manager at workplace
30	Measures to reflect the contents of occupational safety and health education in vocational training
31	Utilization of Korean Computerized Neurobehavioral Test in Workers' Health Check(III)
32	Development and application of a system for standardization of worker health care data
33	Development of Guidelines to Understand the Scope of Health Protection Against Offensive Language Use of Third Parties Including Customers
34	Development of Passive Samplers to Economically and Technically Be Feasible for Use in Korea (III)
35	A study on the characteristics of nanoparticle exposures in metal 3D printing workplace
36	Establishment of face dimensions database for Korean labor population and improvement of RPD selection guidelines(II)
37	A study on the establishment of the asbestos repository for quality control program of asbestos investigation institutions
38	A study on the improvement of the work environment measurement system and process standardization in the construction industry
39	A Study on Developmental Direction of Asbestos Management Policy in Occupational Safety and Health Act
40	A Study on the Improvement of the Working Environment Measurement Reporting Policy
41	"Integrated Assessment and Monitoring for Better Workplace Environment Management, lamWEM " -a preliminary study and stakeholders' perception
42	Evaluation of asbestos exposure level and work environment management of asbestos demolition and removal workers
43	A Survey on the Ventilation System of School kitchen and Establishment of standard Ventilation Plan

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44	A study on the current status of manpower supply in industrial hygiene field & measures to improve the expertise of designated personnel
45	A study for the improvement on use and transparency of the occupational safety and health expenses in construction
46	A comparative analysis study on the level of fatal occupational injuries according to differences in occupational environments of countries
47	A study on mitigation method of industrial accidents according to the life cycle of the construction industry - Focus on law, system, and prevention program
48	A study on how to secure the safety of performance (art) industry workers (artists)
49	A study of the improvement of the hanging-scaffolding working safety
50	A Study on Enhancing Requirements for Designating the Safety Officers
51	A study on the characteristics of each industry/type of occupation and the risk of accidental death by occupational accidents(I
52	A study on Enhancing Field Operability of Hazard and Risk Prevention Plans for Manufacturing Industries
53	A Study on the Amount of Ventilation Required According to the Shape of Confined Space and Species in a Confined Space
54	Study on Improvement Plans for to Prevent Industrial Accident in Small and Medium-sized Enterprises
55	A study on the prevention of underwater explosion caused by flammable gases produced during wet welding and burning
56	Classification of the industrial accidents due to the multiple processes in a workplace and suggestion of institutional preventives
57	The study on the safety and health level of smart factory
58	A study on improving safety to reduce fatalities from conveyors
59	A Study on the Improvement of Safety and Applicability of Moving Scaffoldings in Construction Fields
60	A Study on the Improvement for the Classification of Hazardous Area considering the Release Characteristics of Chemical Materials
61	A System Theoretical Analysis Study on the Structure and Accidents of Subcontractors in Chemical Plants
62	Risk assesment on safety improvement of liquefied petroleum gas (LPG) for fuel
63	A study on reasonable adjustments of the regulatory levels of the fire and explosion safety standards
64	Safety Climate Assessment and Promotion for the Prevention of Major Accidents at Work through After Action Review Approach
65	A study on preparation of the obligative supply regulations and the certification standards for fire smoke and gas masks
66	Study on quantitative hazard determination of chemical risk assessment in the workplace
67	Process or activities as determinants of inhalation exposure of chemicals in workplaces; lead and its compound
68	Analysis of hazardous substances in petroleum-based substances to improvement of the MSDS
69	A study on the development plan of the current system for submission and partial non-disclosure of MSDS
70	A study to improve chemical management capabilities in small businesses
71	A Diagnosis on Business and Organization for the Roadmap of International Exchange and Cooperation in the field of Safety and Health
72	A Study on an Alternative Method of Assessing Health Benefits for Regulatory Impact Analysis following the Occupational Safety & Health Act

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73	A study on the domestic workplace survey and socioeconomic impact analysis for the revision of occupational exposure limits for aluminum
74	Study on the toxic mechanism of mixtures using bioinformatics
75	A study on the suitability of alternative methods for repeated-dose toxicity studies
76	The improvement study of vapor generator in inhalation toxicity study
77	Allergic respiratory diseases linked with AOP caused by chemicals in the workplace
78	The development of tissue trimming guide for the nasal cavity and larynx
79	Improvement measures to improve the survival rate of experimental animal(rat) in carcinogenicity tests
80	Comet assay in 3D cultured cells to replace animal testing in carcinogen pre-screening

