

JNIOSH

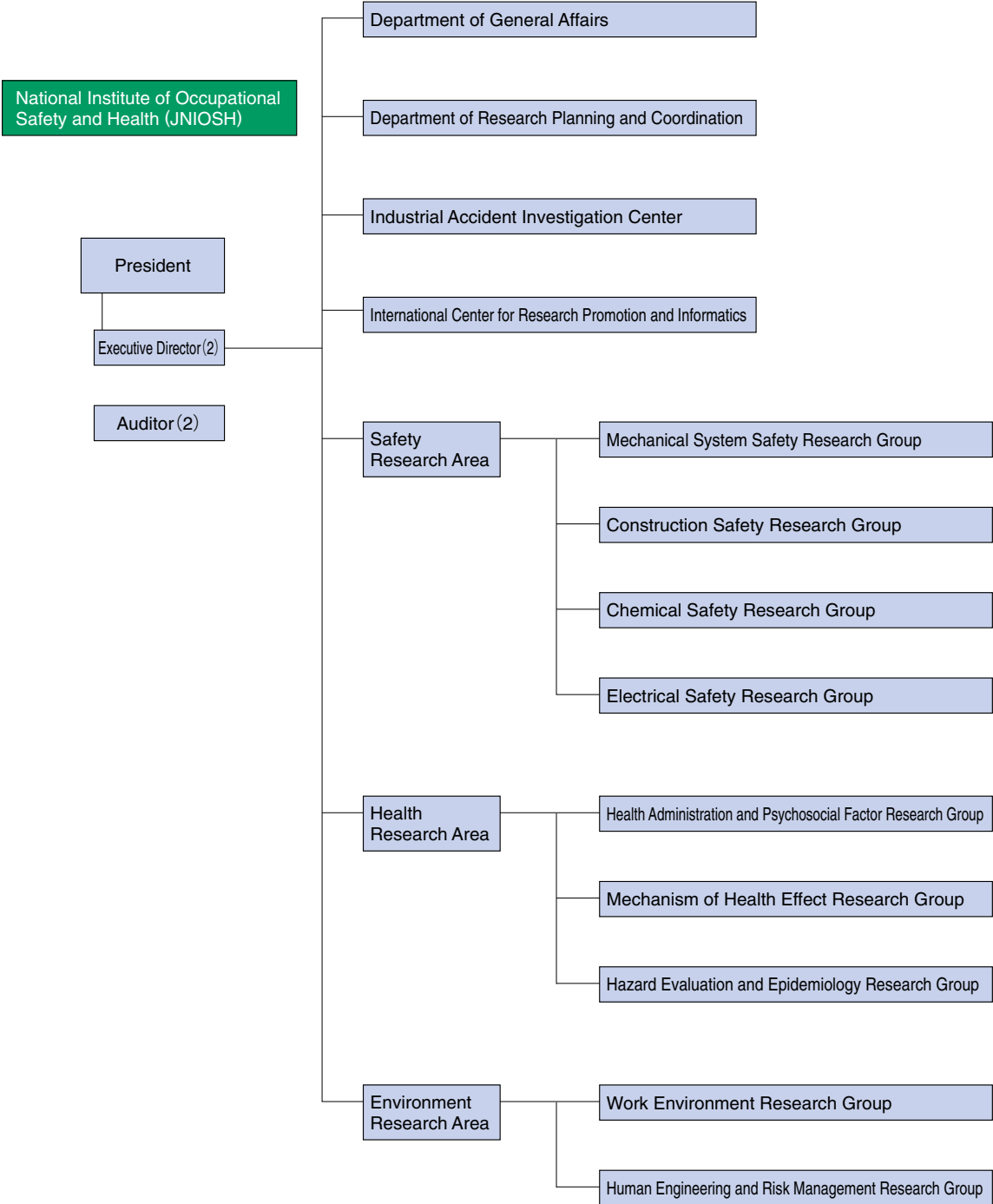
**National Institute of
Occupational Safety and Health**

An Independent Administrative Institution

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Organization



Mission of JNIOOSH

The National Institute of Occupational Safety and Health (JNIOOSH) was founded in 2006 as an independent administrative institution of the Japanese Ministry of Health, Labour and Welfare. It was created under the National Institute of Occupational Safety and Health Act (2006), by combining the National Institute of Industrial Safety (NIIS) and the National Institute of Industrial Health (NIIH). JNIOOSH is actively conducting comprehensive studies and research in order to contribute to the safety and health of workers in industry by eliminating industrial accidents and diseases, promoting workers' health, and creating safe and comfortable working environments.

Management Principles and Priority Research Areas

As the only comprehensive research institute for occupational safety and health in Japan, JNIOOSH develops priority research areas based on the following management principles.

Management Principles

- 1 To conduct comprehensive and interdisciplinary research on occupational safety and health based on the long history of the NIIS and the NIIH.
- 2 To contribute to government activities in their efforts to prepare laws, regulations, technical standards, guidelines, etc., and to investigate and prevent industrial accidents.
- 3 To promote collaborative studies with universities and public institutions, in order to perform effective and efficient research, to maintain an advanced research and technical level, and to foster innovation in research activities.
- 4 To actively collect research needs from workplaces, disseminate research findings to academic and professional societies, and provide developing countries and organizations with technical support.

Priority Research Areas

1. Research on occupational safety and health problems caused by changes in industry

To analyze the affects that workplace stress, long working hours, working in shifts and other matters caused by changes in how people work have on physical and mental health, and to conduct research on preventing problems. Also, to conduct research on preventive measures for industrial accidents that result from the handling of new materials and using new technologies introduced to workplaces because of technological innovation.

2. Research on hazards in workplaces

To focus on work and substances that are the frequent causes of industrial accidents in order to analyze the workplace hazards that result in falling, explosions, and chemical and physical accidents, and to conduct research on preventive measures.

3. Research on risk assessment and management in workplaces

To establish exposure assessment and risk assessment methodologies for hazards in workplaces, and to conduct research for the development of support tools to make risk management more effective.

Contribution to Industrial Safety and Health Administration

JNIOOSH is an administration-orientated institution, and thus, a mission of contributing to the formation and implementation of government policies has been entrusted by:

- 1 Disseminating research findings in the Priority Research Areas as specified above,
- 2 Investigating the cause of serious industrial accidents, e.g., fires and explosions in chemical plants, and proposing preventive measures, and
- 3 Participating in the preparation and amendment of laws and regulations, and the development of technical standards, guidelines, JIS(Japanese Industry Standards), etc.

Research Promotion & Collaboration, Contracted Research, Information Service, Use of Research Facilities by External Researchers, etc.

Research Promotion & Collaboration and Contracted Research

JNIOOSH actively undertakes contracted research, when requested by companies, public agencies and governments. Furthermore, we pursue collaborative research with both domestic and international research institutions.

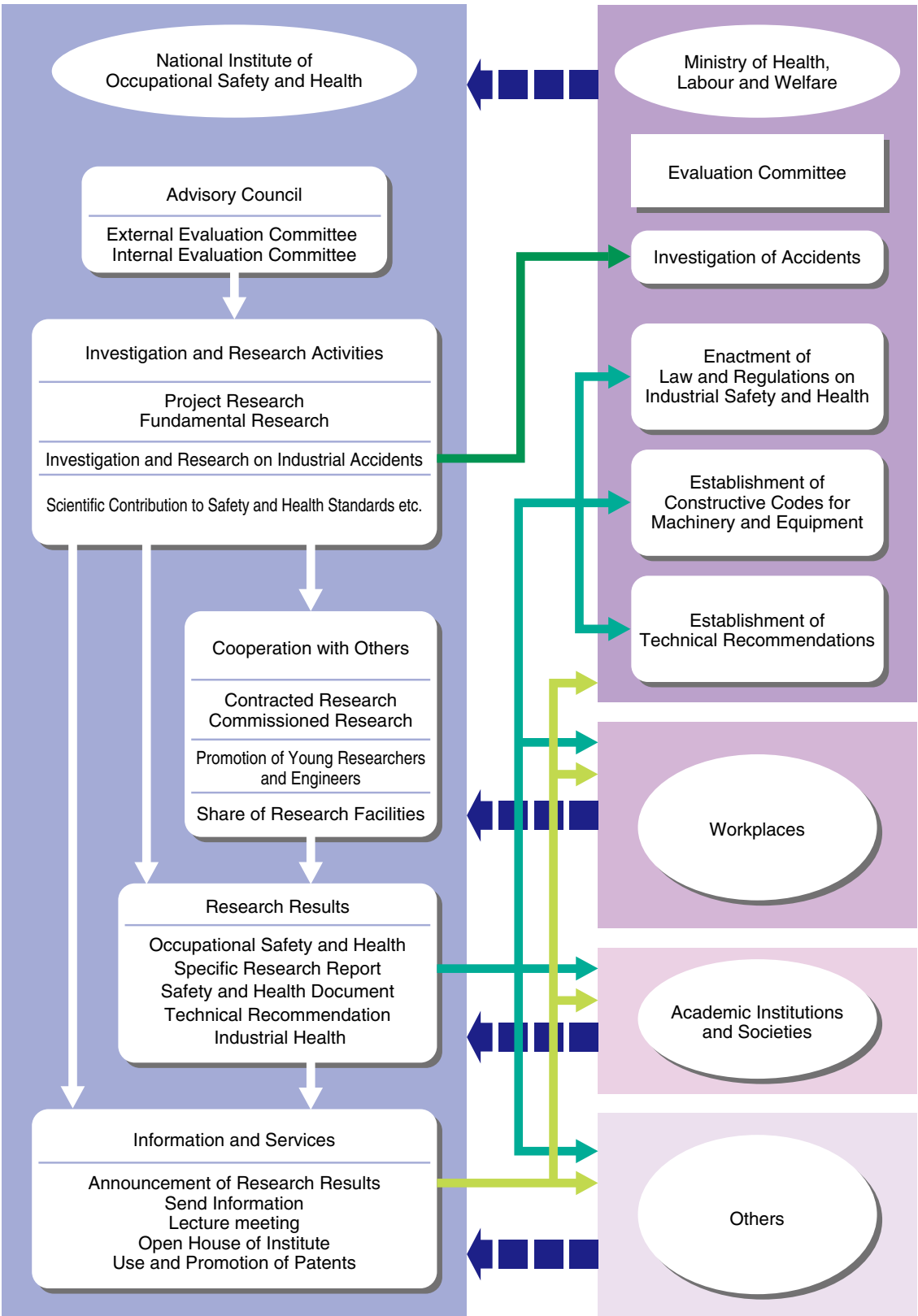
Information Service

Research information compiled by JNIOOSH is widely disseminated through web sites, newsletters, annual reports, outlines of the institute, technological and safety guides, research reports and presentations at academic societies. In addition, the international scientific journal, INDUSTRIAL HEALTH, has been published since 1963 by JNIOOSH. To further disseminate useful reference tools, JNIOOSH laboratories are open to the public every year, and various lectures are provided for professionals and citizens.

Use of Research Facilities by External Researchers

We allow a certain portion of our institutional facilities to be used by private enterprises and other institutions for a fee. Technical support when using these facilities can be provided by JNIOOSH staff.

Activities of JNIOOSH in Connection with Ministry of Health, Labour & Welfare and Other Institutions



Industrial Accident Investigation Center

The main role of this center is the investigation of industrial accidents which is one of our most important missions.

At the request of the Ministry of Health, Labour and Welfare, our center dispatches researchers from suitable research groups to accident sites to examine serious and/or complicated accident mechanisms.

These researchers carefully examine the sites, and bring back, if necessary, materials to the laboratory for further analyses or testing.

Finally, an industrial accident report is submitted to the Industrial Safety and Health Administration and the report is sometimes utilized to amendment and establishment of occupational safety and health regulations and standards.

In addition, we provide expert opinions and assessments from scientific and specialized viewpoints at the request of criminal investigation agencies, such as labour administration bureaus and the police.



International Center for Research Promotion and Informatics

The major mandates of the International Center are to :

- 1) Collect, analyze and deliver domestic and international information on occupational safety and health issues,
- 2) Publish international and domestic scientific journals,
- 3) Contribute to WHO and developing countries as a WHO Collaborating Center in Occupational Health,
- 4) Promote international collaborative studies on occupational safety and health,
- 5) Administer the National Conference on the Promotion of Occupational Health and Safety Priority Research, and
- 6) Manage the library, the computer network and other relevant information services.

International Research Collaboration

The institute currently holds mutual research collaboration agreements with institutions in the USA, the UK, South Korea, China, etc. The institute intends to strengthen its collaboration with ASEAN countries in the near future, as we believe that our long experience in occupational health practice and research can be an important reference for currently industrializing countries, as they tackle emerging occupational health issues.

Publication of the Journal

INDUSTRIAL HEALTH is an international scientific journal currently published by the National Institute of Occupational Safety and Health, Japan. First issued in 1963, it has been providing advanced scientific information for 45 years. The journal is now published bimonthly and covers a wide variety of occupational health and safety topics, including industrial hygiene, ergonomics, human engineering and policy sciences. OCCUPATIONAL SAFETY and HEALTH, a domestic journal, has been also published since 2008, for the promotion of domestic research on occupational safety and health.



Contribution to WHO

JNIOOSH was first designated in 1977 as a WHO Collaborating Center for Occupational Health in Japan and was redesignated in 2007. JNIOOSH participated in the first (2001-2005) and second (2006-2010) terms of the WHO Global Network Work Plan. JNIOOSH has also continued participating in the Global Plan of Action (GPA) which newly started from 2009, and has been collecting and disseminating the latest information on Occupational Safety and Health on a global scale through the research network organized by the WHO Collaborating Centers. The international center acts as an executive office of the WHO Collaborating Center in JNIOOSH.

Mechanical System Safety Research Group

To prevent machine and equipment related accidents, the Mechanical System Safety Research Group investigates the fatigue strength of machine components, uses numerical analysis for fractured surfaces, and conducts research on control methods for safe man-machine systems.



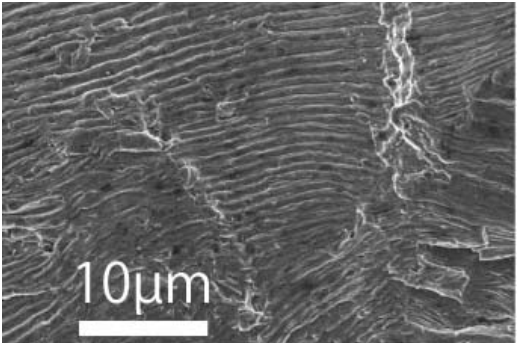
Clamping force measurement of wire grips.



Stress measurements of a wheel crane boom.



Measurement of human tolerance to mechanical stimulus.



Stripe pattern observed on fatigue fracture surface by scanning electron microscope.



Two dimensional blanking system for press work.

Construction Safety Research Group

The Construction Safety Research Group studies the requirements for the safe conduct of construction work and to improve methods for the working environment at construction sites. The main subjects of the research are safety in temporary work, safety in earthwork, prevention of accidents involving falls, and safety assessment of newly developed methods of construction work.



Wind tunnel tests for prevention of collapsing of temporary structures due to strong winds.



Performance test of temporary structures.



Geotechnical centrifuge testing apparatus (NHS-Mark II).



Study on potential risks of overturning of drill rigs being self-propelled over unstable ground at construction sites.



Experimental study for investigation of the mechanism of slope failures.

Chemical Safety Research Group

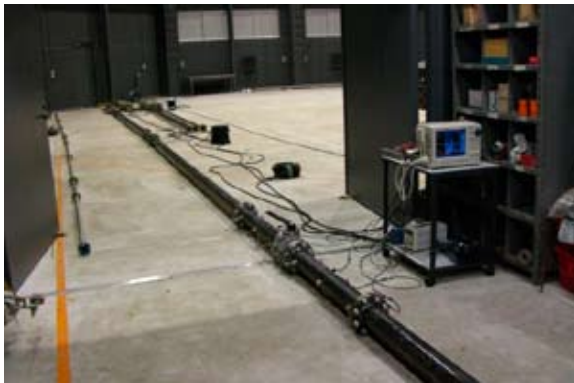
The Chemical Safety Research Group studies theoretical and experimental methods to prevent chemical accidents caused by explosion of flammable gases and dusts, decomposition of unstable materials, runaway reactions, and inadequate safety management systems. The group also strives to prevent accidents caused by newly-introduced materials or processes.



Laboratory for the study of the explosion properties of chemicals subjected to high temperatures and pressure.



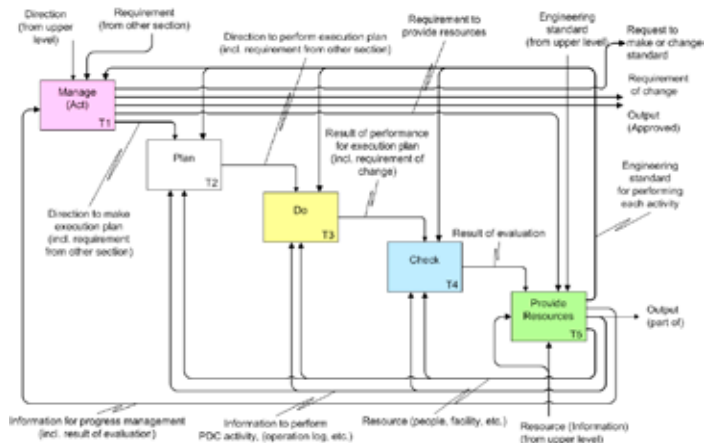
The study of mixing hazard evaluation using a small scale reaction calorimeter.



30m pipe for detonation propagation tests.



The study of hazardous reactions using Laboscale reactor.



An example of a template for performance in the form of a PDCA cycle and resource provision.

Electrical Safety Research Group

The Electrical Safety Research Group is dedicated to the prevention of industrial hazards caused by electrical energy and to the development of electric, electronic, and information technologies that can be applied for industrial safety purposes. The group is currently involved in ventures such as the investigation of the ignition mechanism caused by electrostatic discharges, development of antistatic applications, prevention of malfunctions of electronic equipment and systems caused by electromagnetic noises, prevention of electric shock hazards, and development of safety measures by utilizing image processing technology and ICT (information and communication technology).



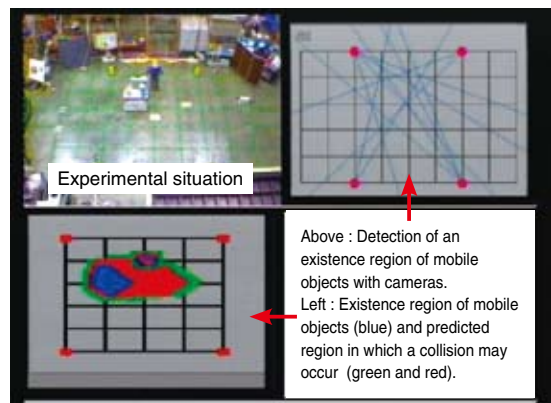
The study of static electricity in an experimental facility.



High-voltage facility for the prevention of electric shock hazards.



Modeling of electrostatic phenomena and application to electrostatic hazards.



Development of vision based protective devices (VBPD).

Health Administration and Psychosocial Factor Research Group

The main role of this research group is to investigate methods for assessing workers' health conditions and health management. Effects of working conditions such as working hours, rest periods, physical work environment and work stress are assessed mainly from psychosocial and physiological points of view. The group also investigates technical methods for occupational health management and work organization, to help make the workplace more comfortable. This includes the development of assessment technology, in conjunction with designing optimal working conditions which more carefully match the various physical requirements of the working populations.

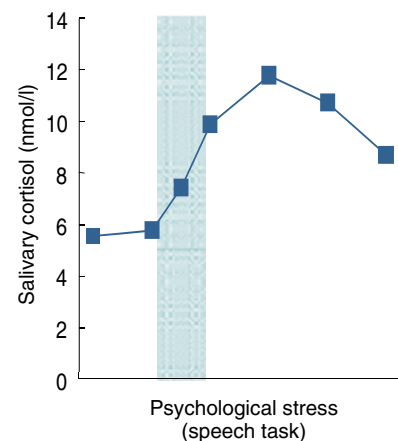


Experiments on water requirement during heat exposure using the climate chamber.

Saliva collection devices and an example of saliva collection

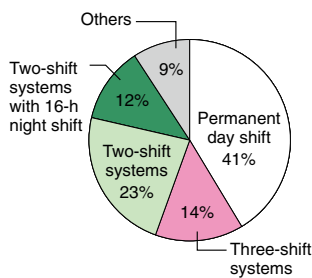


Salivary cortisol response to psychological stress



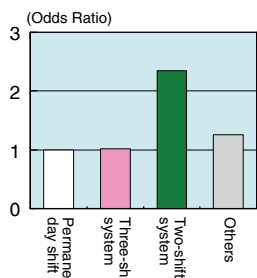
Assessment of stress by using salivary hormone.

Work schedules among nursing home care workers in Japan



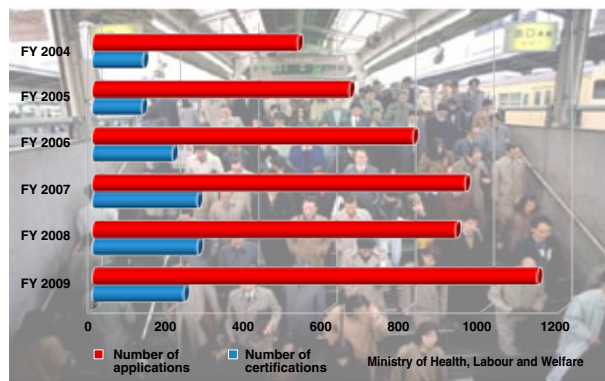
Ministry of Health, Labour and Welfare: Survey of Institutions and Establishments for Long-term Care (2004)

Odds ratio of sleep disturbance for nursing home care workers by work schedule



[Duration of night shift] Takahashi et al. *Appl Ergon* 2008

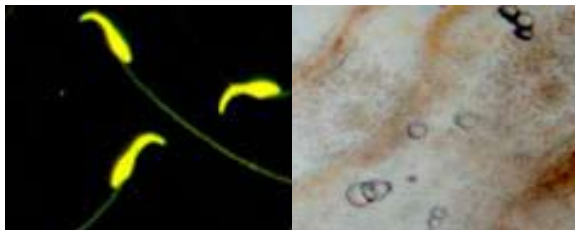
Work schedules and sleep disturbances.



Situation of workers' accident compensation for mental disorders.

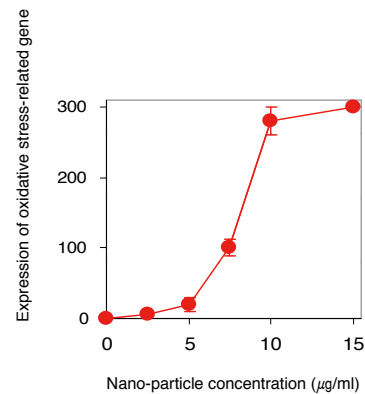
Mechanism of Health Effect Research Group

The overall objective of this research group is to provide the scientific basis and technological means to understand how occupational diseases are induced by exposure to chemical substances and other hazardous factors in the workplace. Research is conducted mainly based on laboratory experiments, focusing on the mechanisms of poisoning due to chemical substances including the interaction with individual traits of workers, e.g. sex, age and genetics. Another objective is the development of biomarkers, i.e. monitoring tools for the early detection of hazard exposure and adverse health effects.



Rat sperm

Ovulated ova in oviduct

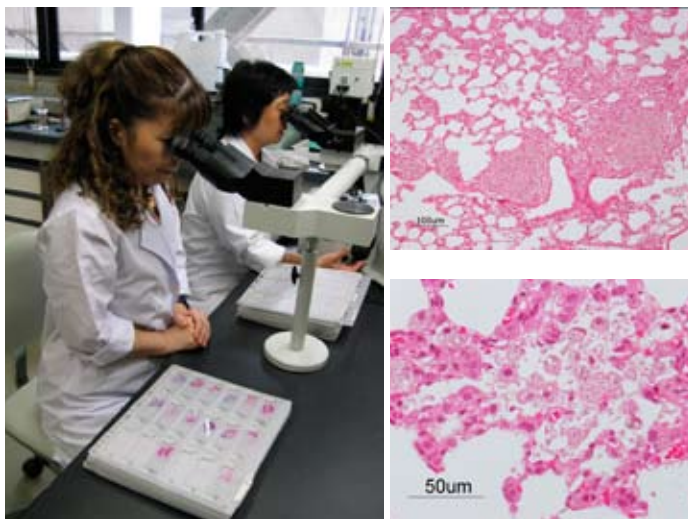


Genetic analysis for biological effects of metal nanoparticles.

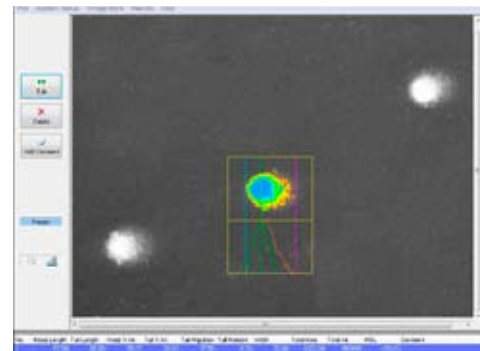
Effects of endocrine-disrupting chemicals on the reproductive system and offspring.



Assessment of the effects of chemicals on higher brain functions using operant conditioning in mice.



Histopathological assessment of health effects of chemicals in laboratory animals.



Comet assay for detecting early DNA damages caused by industrial chemicals.

Hazard Evaluation and Epidemiology Research Group

In this research group, the following is conducted: the assessment for chemical and physical agents and their potential hazards in workplaces, the evaluation of effective and practical measures for preventing health hazards induced by occupational exposures in workplaces, and the epidemiological analysis of health hazards and occupational exposures in workplaces. Research priority is given to urgent and important issues in occupational safety and health: practical intervention studies for preventing work-related diseases (musculoskeletal disorders, cardiovascular disorders and so on), surveillance studies for work-related diseases and occupational exposures, epidemiological studies of mortality among asbestos-exposed workers, epidemiological analyses of occupational diseases and injuries, and so on.



Assessment of occupational exposures to hazardous factors through walk-through surveys.



Proposals for improving work environments/conditions in the small groups.



Evaluation of reproductive hazards by computer-assisted sperm analysis (CASA).



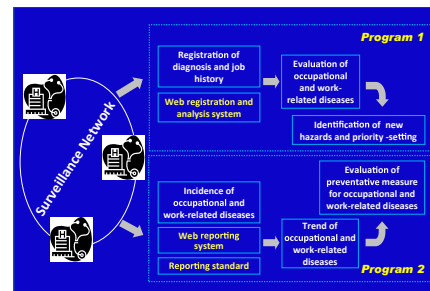
Risk assessment for occupational exposure to asbestos in handling construction materials.



Risk assessment for occupational exposures to formaldehyde in a pathological unit.



Evaluation of using nursing care equipment with musculoskeletal burdens.



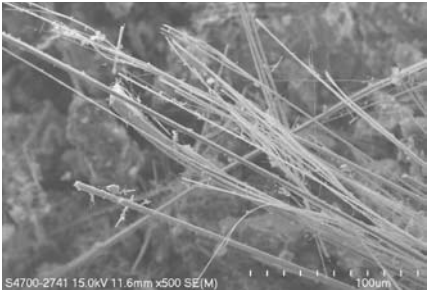
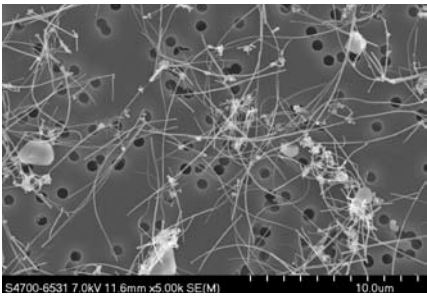
Surveillance scheme for occupational and work-related diseases/injuries.

Work Environment Research Group

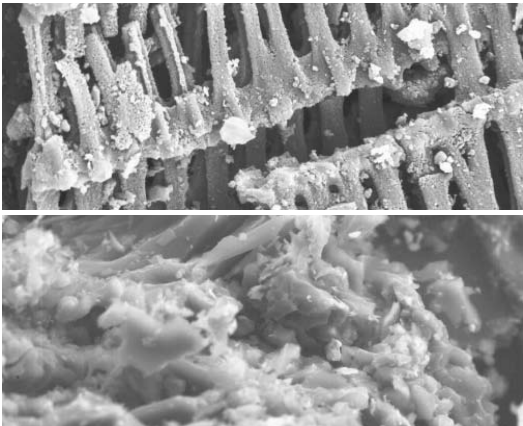
To prevent workers' acute and chronic illnesses from various kinds of chemical substances and physical hazards, work environments should be controlled through periodic measurements and evaluations. Development and improvement of these measuring and evaluation methods are undertaken at our research group in order to achieve the above objectives for existing and new chemical substances and physical factors. Development of characterization methods for various hazardous dusts and fumes in the workplace and also anticipated hazards of new materials such as nano-particles are intensively studied. Synthesis of new adsorbents applicable to respirators and treatment for ventilation exhaust, and performance evaluation of LEV has been continually studied.



Particle counters: Differential Mobility Analyzer.



SEM photographs of carbon nano tube (top) and asbestos fiber from asbestos cement tube (bottom).



SEM pictures of adsorption media.



Measurement and hazard evaluation of optical radiation.



Local Exhaust Ventilation.

Human Engineering and Risk Management Research Group

The research activities of this group combine two areas; health hazards in work environments and industrial accidents. We are conducting health studies relating to physical agents such as vibrations, heat, cold, hazardous light and ionizing radiation, and also safety studies related to human-errors or organizational-errors causing industrial accidents. In addition, we have been evaluating the safety and health performance of protective footwear, headgear, safety glasses, protective clothes, protective gloves for vibrations, etc. Other new techniques such as safety surveillance are also studied.



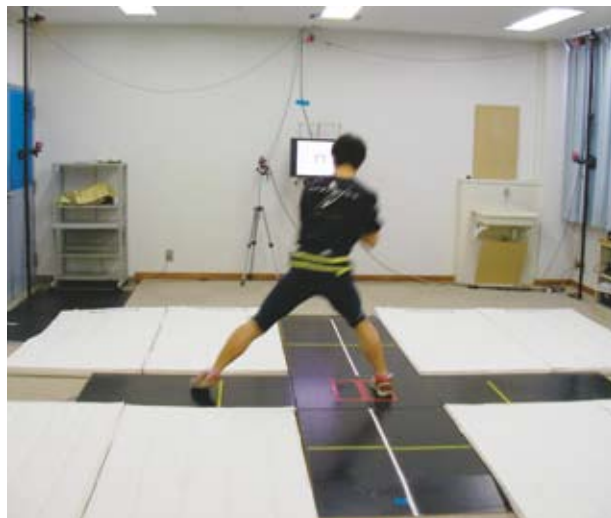
An experiment about the control safety of mobile robots using gestures.



6DOF vibration test rig.



Analysis of thermal resistance of protective clothing using the sweating-walking thermal mannequin.



Evaluation of falling risks caused by rapid stepping.

History of JNIOOSH

National Institute of Industrial Safety (NIIS)

- 1942 The Research Institute of Industrial Safety (RIIS) was founded in Tokyo by the Ministry of Welfare
- 1943 Opened the Industrial Safety Museum
- 1947 Transferred to the Japanese Ministry of Labour
- 1961 Opened the Industrial Safety Exhibition Center in Osaka
- 1966 Branch laboratory established in Kiyose, Tokyo
- 1971 Reconstruction of the headquarters building
- 1971 Opened the Industrial Safety Museum in the new headquarters building
- 1992 Completion of a new headquarters building with a material and new technology laboratory in Kiyose, and integration with the laboratory
- 1995 English name was changed from "Research Institute of Industrial Safety(RIIS)" to "National Institute of Industrial Safety(NIIS)"
- 2001 The institute was transferred to the Japanese Ministry of Health, Labour and Welfare
- 2001 The Institute became an independent administrative institution
- 2006 The NIIS and NIIH were combined to create the National Institute of Occupational Safety and Health

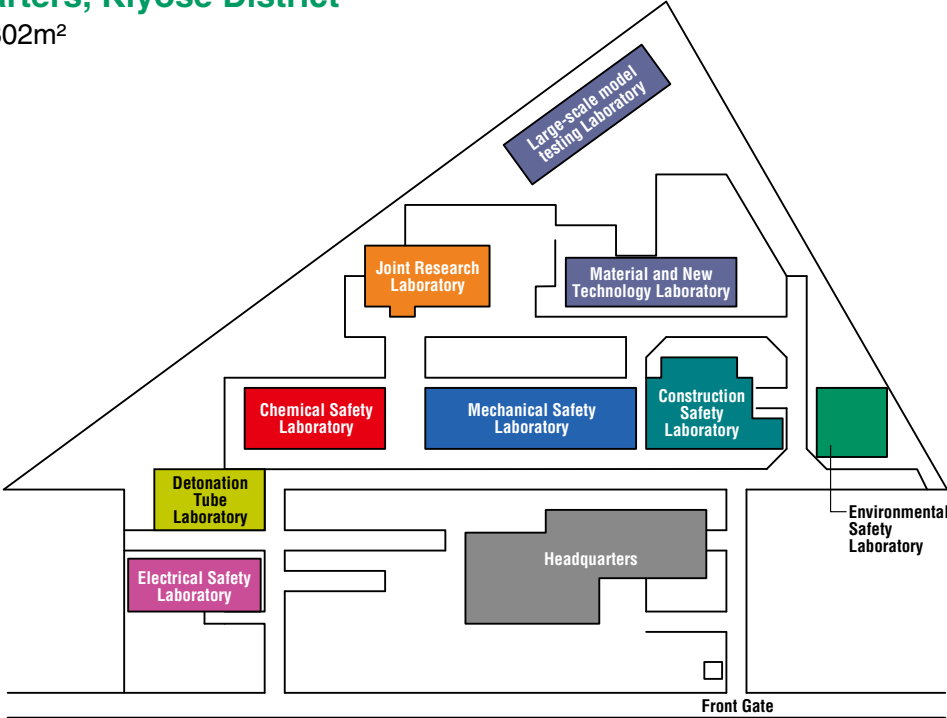
National Institute of Industrial Health (NIIH)

- 1949 The Silicosis Laboratory (KEIHAISHIKENSHITU) was founded in Kinugawa, Tochigi Prefecture, as an institution attached to the Industrial Health Division, Ministry of Labour, at the same location as the Kinugawa Silicosis Hospital
- 1957 In accordance with the Ministry of Labour Organization Act, the forerunner of the National Institute of Industrial Health (NIIH, the ROUDO EISEI KENKYUSHO), was established in Nakahara-ku, Kawasaki, Kanagawa Prefecture
- 1963 The international scientific journal entitled "INDUSTRIAL HEALTH" was first published
- 1976 The National Institute of Industrial Health (SANGYOU IGAKU SOUGOU KENKYUSHO) was opened in Tama-ku, Kawasaki City
- 1977 The WHO Collaborating Center for Occupational Health was introduced
- 1990 His Majesty the Emperor Akihito visited the NIIH
- 2000 The report entitled "Occupational Health Research Strategies in the 21st Century" was published by the Ministry of Labour
- 2001 The institute was transferred to the Japanese Ministry of Health, Labour and Welfare
- 2001 The Institute became an independent administrative institution, and the "National Conference on the Promotion of Occupational Health Priority Research" was organized
- 2003 The NIIH International Center was founded
- 2006 The NIIH and NIIS were combined to create the National Institute of Occupational Safety and Health

Outline of Building Facilities

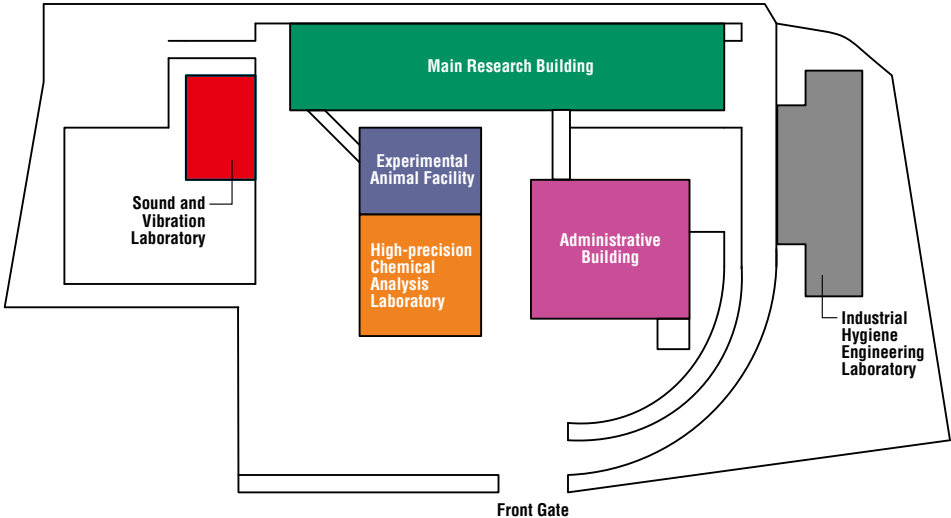
Headquarters, Kiyose District

Area : 35,302m²



Kawasaki District

Area : 22,942m²



GUIDE MAP

[Headquarters, Kiyose District]

Umezono 1-4-6, Kiyose,
Tokyo 204-0024, JAPAN
TEL: +81-42-491-4512
FAX: +81-42-491-7846

[By Public Transportation]

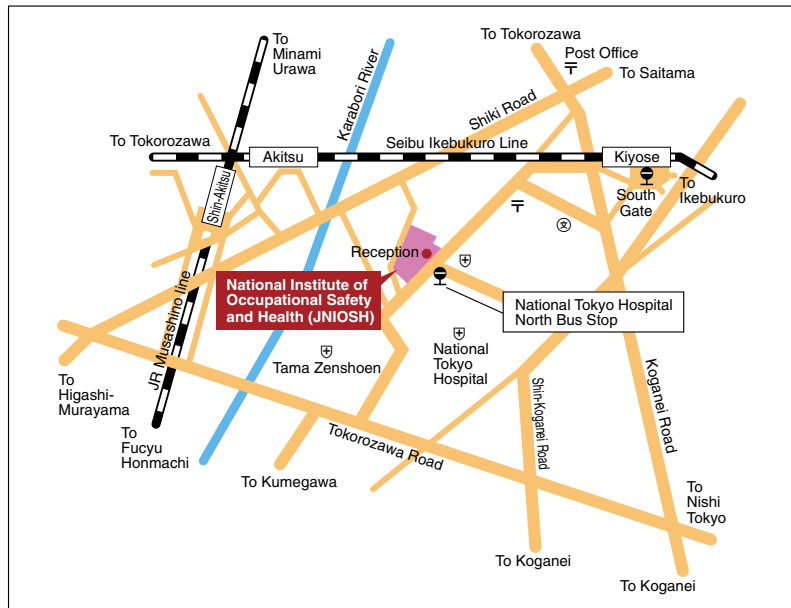
Take the Seibu Ikebukuro line to Kiyose station and use the south exit
From the south exit of the station take the Seibu bus from the No. 2 bus stop (5 minutes)
Get off the bus at the National Tokyo Hospital North bus stop (1 minute walk)

[By Taxi]

Take a taxi from the Seibu Ikebukuro line Kiyose station, the Seibu Ikebukuro line Akitsu station, or the JR Musashino line Shin-Akitsu station (5 minutes)

[On Foot]

You can walk from the Seibu Ikebukuro line Kiyose station (15 minutes), the Seibu Ikebukuro line Akitsu station (30 minutes), or the JR Musashino line Shin-Akitsu station (30 minutes)



[Noborito District]

Nagao 6-21-1, Tama-Ku,
Kawasaki 214-8585, Japan
TEL: +81-44-865-6111
FAX: +81-44-865-6124

[By Public Transportation]

Take the JR Nambu line to Noborito station and take the Kawasaki city bus (10 minutes)
Get off the bus at the Goshozuka bus stop and walk up the hill (8 minutes)

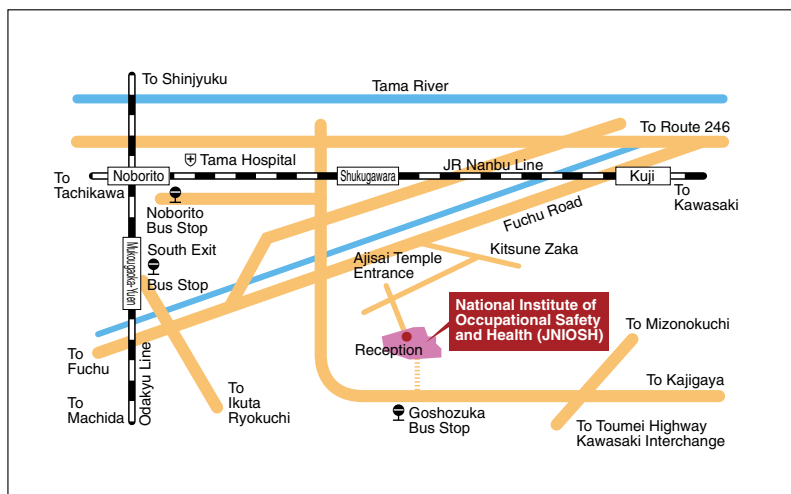
Take the Odakyu Line to Mukogaoka-yuen station and use the south exit
From the south exit take the Tokyu bus bound for Kajigaya station (10 minutes)
Get off the bus at the Goshozuka bus stop and walk up the hill (8 minutes)

[By Taxi]

Take a taxi from either Mukogaoka-Yuen station, or Noborito station directly to the institute (10 minutes)

[On Foot]

You can walk from the JR Nambu line Kuji station, or Shukugawara station (20 minutes)



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Web page : <http://www.jniosh.go.jp/>