Recognition and Management of Work-related Psychiatric Diseases in Japan

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recognition of stress-related occupational disease

compensated occupational disease in Japan

occupational health policy for preventing stress-related occupational disease
Should we regard cardiovascular diseases as occupational diseases?

Should we regard psychiatric diseases as occupational diseases?
Work-related diseases

1976, WHO general assembly
1982, WHO expert committee
1985, WHO expert committee report
behavioral responses and psychosomatic illness, hypertension, ischaemic heart disease, chronic non-specific respiratory disease, locomotor disorders
1989, ILO/WHO joint committee
Occupational health in ILO convention

comprehensive
No.155 Occupational Safety and Health Convention, 1981
No.161 Occupational Health Services Convention, 1985

by industry
No.120 Hygiene (Commerce and Offices) Convention, 1964
No.152 Occupational Safety and Health (Dock Work) Convention, 1979
No.167 Safety and Health in Construction Convention, 1988
No.176 Safety and Health in Mines Convention, 1995
No.184 Safety and Health in Agriculture Convention, 2001

by hazard
No.115 Radiation Protection Convention, 1960
No.139 Occupational Cancer Convention, 1974
No.148 Working Environment (Air Pollution, Noise and Vibration) Convention, 1977
No.162 Asbestos Convention, 1986
No.170 Chemicals Convention, 1990
Textbooks for occupational medicine
International Commission on Occupational Health,
ICOH

The oldest scientific association in the field founded in 1906, with more than 2000 members in 93 countries. ICOH is an NGO recognized by the United Nations and has a close working relationship with the International Labour Organization and World Health Organization.

32nd International Congress on Occupational Health
ICOH 2018 (April 29 – May 4) – First Announcement released
We are glad to announce that the First Announcement for the ICOH Congress 2018
International Commission on Occupational Health

scientific committees

Accident Prevention
Aging and Work
Allergy and Immunotoxicology
Cardiology in OH
Education and Training in OH
Emergency Preparedness and Response in Occupational Health
Epidemiology in OH
Health Services Research and Evaluation in OH
History of Prevention of Occupational and Environmental Diseases
Indoor Air Quality and Health
Industrial Hygiene
Mining Occupational Safety and Health
Musculoskeletal Disorders
Nanomaterial Workers’ Health
Neurotoxicology and Psychophysiology
Occupational and Environmental Dermatoses
Occupational Health Nursing
Occupational Medicine

Occupational Toxicology
OH and Development
OH for Health Care Workers
OH in the Chemical Industry (MEDICHEM)
OH in the Construction Industry
Radiation and Work
Reproductive Hazards in the Workplace
Respiratory Disorders
Rural Health: Agriculture, Pesticides and Organic Dusts
Shiftwork and Working Time
Small-Scale Enterprises and the Informal Sector
Thermal Factors
Toxicology of Metals
Unemployment, Job Insecurity and Health
Vibration and Noise
Women Health and Work
Work and Vision
Work Disability Prevention and Integration
Work Organisation and Psychosocial Factors
## Occupational medicine

### classification of specialty

<table>
<thead>
<tr>
<th>clinical medicine</th>
<th>occupational medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>heart</td>
<td>heat</td>
</tr>
<tr>
<td>lung</td>
<td>noise/vibration</td>
</tr>
<tr>
<td>brain/nerve</td>
<td>abnormal pressure</td>
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<tr>
<td>bone/muscle</td>
<td>ionizing radiation</td>
</tr>
<tr>
<td>kidney/bladder</td>
<td>electromagnetic field</td>
</tr>
<tr>
<td>liver/pancreas</td>
<td>organic solvent</td>
</tr>
<tr>
<td>digestive tract</td>
<td>heavy metal</td>
</tr>
<tr>
<td>endocrine gland</td>
<td>dust/fiber</td>
</tr>
<tr>
<td>immune system</td>
<td>allergen</td>
</tr>
<tr>
<td>skin</td>
<td>acid/alkaline</td>
</tr>
<tr>
<td>nose</td>
<td>pathogen</td>
</tr>
<tr>
<td>ear</td>
<td>overwork</td>
</tr>
<tr>
<td>reproductive organ…...</td>
<td>psychological stress…...</td>
</tr>
</tbody>
</table>
We might better call them “occupational stress-related diseases” instead of cardiovascular diseases or psychiatric diseases of workers?
Physiology of stress

HPA axis

- hypothalamus
- pituitary gland
- adrenal cortex

Feedback loop:
- amygdala
  - emotion (+)
- hippocampus
  - memory (-)

Hypothalamus:
- CRF corticotropin-releasing factor
- ACTH adrenocorticotrophic hormone

Adrenal Cortex:
- Cortisol
- Anti-inflammatory reaction, elevated blood glucose

Brain regions:
- Amygdala
- Hippocampus

Changes:
- Suppressed brain-derived neurotrophic factor (BDNF)
- Inhibited neurogenesis

Effects:
- Depressive mood
- Inhibited neurogenesis
- Emotion (+)
- Memory (-)

- Emotion (+) to Hypothalamus
- Hypothalamus to Pituitary Gland
- Pituitary Gland to Adrenal Cortex
- Adrenal Cortex to Cortisol

- Stressors to Hypothalamus
- Hypothalamus to CRF
- CRF to Pituitary Gland
- Pituitary Gland to ACTH
- ACTH to Adrenal Cortex

References:
- Physiological response to stressors
- Depression and stress
- Neurogenesis and stress

Additional notes:
- New Dimensions of OEM in a Globalizing World
- The International Conference on Occupational and Environmental Diseases
- Miracle Grand Convention Hotel, Bangkok, Thailand
Physiology of stress

SAM axis

mediad prefrontal cortex

hypothalamus

locus coeruleus

spinal cord

adrenal medulla

acetylcholine

noradrenaline

sympathetic nerve

adrenaline

vessel contraction, heart rate elevation, blood glucose elevation

noradrenaline

cardiovascular risk

stressors

nucleus accumbens

HPA axis

median prefrontal cortex

hypothalamus

locus coeruleus

spinal cord

adrenal medulla

noradrenaline

acetylcholine

sympathetic nerve

adrenaline

vessel contraction, heart rate elevation, blood glucose elevation

noradrenaline

cardiovascular risk

stressors

nucleus accumbens

HPA axis
Stress model
Demand-Control-Support model, Karasek and Johnson
Effort-Reward Imbalance model, Siegrist
Stress model

NIOSH, USA

- Individual factors
  - Character/carer/experience
- Job stressors
  - Job requirement/organizational factor (human relationship, job stability)/physical environment (noise, temperature)
- Non-work factors
  - Economic status/familial relationship
- Buffer factors
  - Social support/coping
- Acute reactions
  - Psychological (emotional, satisfaction)/physiological (heart rate, blood pressure)/behavioral (sleep, dependency)
- Illness
  - HBP/cardiovascular diseases/alcohol dependency/psychiatric diseases
Stress model

stressors
work, human relationship, daily life

personal character
age, character, past medical history

stress reaction
fatigue, uneasiness, insomnia

problem behavior
drinking, eating, accident

social support
family, co-workers, friends

coping behavior
stress coping, counselling, medication

stress-related diseases
cardiovascular diseases, psychiatric diseases

Center for Stress-related Disease Prevention and Control, UOEH
Case series of 17 cardiovascular death by Dr. Tetsunojo Uehata in 1978
Epidemiology of stress
Stress and myocardial infarction
morning peak of myocardial infarction

Epidemiology of stress

Stress and myocardial infarction

continued blood pressure elevation after the earthquake

Saito K et al  Am J Hypertens, 1997
Epidemiology of stress
Sleeping time and diseases

- high blood pressure
  - Gottlieb, *Sleep* 2006
  - Gangwisch, *Hypertension* 2006
  - Cappuccio, *Hypertension* 2007

- diabetes
  - Yaggi, *Diabetes Care* 2006
  - Ayas, *Diabetes Care*, 2003
  - Gottlieb, *Arch Intern Med* 2005
  - Gangwisch, *SLEEP* 2007

- obesity
  - Gangwisch, *SLEEP* 2005
  - Watanabe, *SLEEP* 2010

- death
  - Kripke, *Arch Gen Psychiatry* 2002
  - Tamakoshil, *SLEEP* 2004
  - Patel, *SLEEP* 2004
  - Ferrie, *SLEEP* 2007
## Epidemiology of stress

### Long working hours and diseases

<table>
<thead>
<tr>
<th>article</th>
<th>nation</th>
<th>design</th>
<th>n</th>
<th>cases</th>
<th>OR/RR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russeki, 1958</td>
<td>USA</td>
<td>case-control</td>
<td>200</td>
<td>100</td>
<td>3.55 (2.35～5.36)</td>
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<td>Thorell, 1972</td>
<td>Sweden</td>
<td>case-control</td>
<td>171</td>
<td>62</td>
<td>2.57 (1.37～4.84)</td>
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<td>Thiel, 1973</td>
<td>USA</td>
<td>case-control</td>
<td>100</td>
<td>50</td>
<td>1.79 (0.80～4.01)</td>
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<td>Falger, 1992</td>
<td>Netherlands</td>
<td>case-control</td>
<td>266</td>
<td>133</td>
<td>1.66 (1.01～2.72)</td>
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<td>Sokejima, 1998</td>
<td>Japan</td>
<td>case-control</td>
<td>536</td>
<td>195</td>
<td>2.44 (1.26～4.73)</td>
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<tr>
<td>Liu, 2002</td>
<td>Japan</td>
<td>case-control</td>
<td>705</td>
<td>260</td>
<td>2.10 (1.30～3.60)</td>
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<tr>
<td>Tarumi, 2003</td>
<td>Japan</td>
<td>cohort</td>
<td>824</td>
<td>42</td>
<td>1.10 (0.53～2.26)</td>
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<td>Uchiyama, 2005</td>
<td>Japan</td>
<td>cohort</td>
<td>1615</td>
<td>38</td>
<td>1.24 (0.60～2.55)</td>
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<tr>
<td>Fukuoka, 2005</td>
<td>Japan</td>
<td>case-control</td>
<td>94</td>
<td>47</td>
<td>14.00 (1.92～102.10)</td>
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<tr>
<td>Lallukka, 2006</td>
<td>Finland</td>
<td>cross-sectional</td>
<td>7060</td>
<td>426</td>
<td>1.29 (0.98～1.70)</td>
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<tr>
<td>Holtermann, 2010</td>
<td>Denmark</td>
<td>cohort</td>
<td>4943</td>
<td>591</td>
<td>1.28 (0.91～1.78)</td>
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<tr>
<td>Virtanen, 2010</td>
<td>UK</td>
<td>cohort</td>
<td>6014</td>
<td>369</td>
<td>1.61 (1.16～2.23)</td>
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<tr>
<td>Virtanen, 2012</td>
<td>total</td>
<td></td>
<td>1.80</td>
<td>1.42～2.29</td>
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</table>
Based on epidemiological studies and physiological mechanism, cardiovascular diseases may have the base to be regarded as work-related diseases.

Overtime work and incident coronary heart disease: the Whitehall II prospective cohort study

Marianna Virtanen, Jane E. Ferrie, Archana Singh-Manoux, Martin J. Shipley, Jussi Vahtera, Michael G. Marmot, and Mika Kivimäki

doi:10.1093/eurheartj/ehq116

Overtime is bad for the heart

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recognition of stress-related occupational disease
compensated occupational disease in Japan
occupational health policy for preventing stress-related occupational disease
Are cardiovascular/ psychiatric diseases arising from long working hours/ excessive psychological stress formally regarded as occupational diseases?
Diagnosis of occupational diseases

List of occupational diseases

Most diseases listed in ILO Recommendation 194 are covered including psychiatric diseases.
1. Occupational diseases caused by exposure to agents arising from work activities
   1.1 Diseases caused by chemical agents
   1.2 Diseases caused by physical agents
   1.3 Biological agents and infectious or parasitic diseases
2. Occupational diseases by target organ systems
   2.4 Mental and behavioural disorders
3. Occupational cancer
4. Other diseases

ILO Recommendation 194, 2002 revised on 25 March 2010
Compensation of occupational diseases

Employer’s liability for compensation in Japan

The Article 75 of Labour Standards Act of Japan stipulates that an employer shall bear the expenses for medical treatments and various compensations for an employee who suffers an injury or illness caused by hazardous exposure at work.

When the payments are made by the workers-compensation insurance (WCI), the employer shall be exempt from the responsibility of making compensation. All costs for the regular treatments are paid as well as 80% of the daily salary for those suspended from work for 4 days or longer by WCI.
All employees in Japan are covered by a nationally-owned workers-compensation insurance. All employers, excluding self-owned, shall pay premium to the nationally-owned workers-compensation insurance (WCI). The Labour Standards Office (LSO), branch organization of the central governmental government, handles WCI.
Compensable occupational diseases are listed in the Ordinance for Enforcement of the Labour Standards Act. The list includes diseases due to:

1) precedent injuries
2) physical factors
3) physical tensions
4) chemical substances
5) dusts
6) pathogens
7) carcinogens
8) cardiovascular diseases caused by long working hours
9) psychiatric diseases caused by psychological stress at work
10) other causes designated by the Minister of Health, Labour and Welfare
Diagnosis of occupational diseases

Judgement of compensable occupational diseases

Most of the clinics in Japan, regardless of their medical specialty, may initially diagnose their patients’ injury or disease as work-related. Then, the patient may claim their medical cost to the workers-compensation insurance (WCI). The local Labour Standards Office (LSO) is the contact office for WCI.

The work-relatedness of the diseases is essentially judged by Labour Standard Officer. The central government publicly notifies criteria for the judgement of some diseases. The case may be further investigated, if necessary. Regarding the work-relatedness, designated occupational health specialists in each prefecture are often asked for their professional opinions.
Compensation of occupational diseases
Compensated cases with 4+ days suspension from work

- Infections, 125
- Pneumoconiosis, 210
- Chemical substances, 213
- Anoxia and hypoxia, 12
- Work forms, 312
- Physical factors, 704
- Cancers, 3
- Cardiovascular, 65
- Psychiatric, 41
- Miscellaneous, 78

Diseases due to injuries, 5,598
If cardiovascular/psychiatric diseases formally regarded as occupational diseases, how can we diagnose the causality to long working hours/ excessive psychological stress?
Three conditions essentially required for the work-relatedness

1. Occupational hazard* shall be identified at the work
   * relatively specific at work; known cause of the disease

2. The work shall be the principal cause of the elevated risk**
   ** significantly exposed (concentration x term) to the victim-worker

3. The work shall be the principal cause*** of the disease
   *** toxicologically and epidemiologically evaluated as potent compared to other causes and the clinical course is pathologically reasonable

Diagnosis of occupational diseases
Judgement of compensable occupational diseases
Diagnosis of occupational diseases

policy making based on scientific evidence

epidemiology \[\rightarrow\] toxicology

causality

exposure limit

technology resource \[\rightarrow\] social impact

standard, guideline, legislation
Diagnosis of occupational diseases

causal relationship  biological gradient

health effect (%)

100

Dose response curve

Difficult to decide the causal relationship in stress-related cardiovascular/psychiatric diseases

Adverse-Effect Level (LOAEL)

concentration of exposure

0

exposure limit (threshold)
Diagnosis of occupational diseases

causal relationship  temporality, consistency, specificity

case investigation (incl. co-workers, environment)
  possible cause  existence of risk at work
  time course  started/worsened at work
  areal expansion  epidemic among co-workers
  exclusion  little to no exposure at home

scientific documents
  standards  IARC, ACGIH, JSOH, etc.
  articles  PubMed, NITE, JISHA, etc.

regulations
  law, regulation, governmental notice, corporate standards
Diagnosis of occupational diseases

Problems on compensation of occupational diseases

The judgement of the work-relatedness is sometimes difficult because of the following reasons.

1) insufficient records of the exposure data, the work condition, the work history of the worker
2) insufficient personal medical history and daily habit
3) disagreement of the doctors’ opinions
Reporting of occupational diseases

Under-reporting of occupational diseases

often occurs from the following reasons

1) the company dislikes the claim as it may impair the image, it may initiate official investigation, and it may increase the insurance premium rate

2) the procedure to receive payment from the insurance needs careful and steady efforts of the patient-worker as well as cooperation of the company

3) the patient-worker may not stick to workers-compensation, because the general health insurance system in Japan covers 70% of medical fee and reimburses 60% of the standard daily income when the worker cannot work

Overreporting may also occur for the diseases judged based on subjective symptoms and for those also caused from non-work-related events or habits.
If cardiovascular/psychiatric diseases are under-reported or less-supported by the solid data, how can we diagnose the causality to long working hours/excessive psychological stress?
If the worker dissatisfies with the denial of work-relatedness by the local LSO, he/she can appeal to the prefectural LSO and finally to the national investigation board for the re-examination.
If the worker dissatisfies with the final judgement, he/she can appeal to the judicial reexamination starting from local court to supreme court. The decision from the supreme court overrides the administrative criteria.
Compensation of cardiovascular disease (CVD)

#1 Postwar food delivery Case:
54 y.o. male, a dispatched physical labourer, stroke, 1948 collecting wreckage on the seashore almost overnight the 1st case of CVD approved as caused by work in 1948
(1) the duty was extremely heavy and long
(2) no medical history of cardiovascular diseases found
(3) no other abnormal life event was recovered
(4) medical doctor judged as stroke caused by overwork
Compensation of cardiovascular disease (CVD)

#2 Yokohama-minami Labour Standard Office Case:
54 y.o. male, a driver of Tokyo Marine Insurance, stroke, 1984
the 1st case of CVD judged as work-related by Supreme Court
the work-relatedness was initially denied by Yokohama-minami
Labour Standard Office in 1985, repeatedly denied by upper
Labour Standard offices; however, those decisions were
converted by Yokohama District Court, 1993; Tokyo High Court, 1995; Supreme Court, 2000
Compensation of cardiovascular disease (CVD)

#3 System consultant Case:
33 y.o. male, brain stem hemorrhage, 1990
the 1st case of CVD judged by Supreme Court, 2000 as caused
by the negligence to implement appropriate measures, such as
prohibiting overwork, based on high blood pressure recorded at
health exam; following the same decisions by High Court, 1999
and by District Court, 1998; reconciliation fee of 32,000,000
yen; triggered the policy to prohibit long working hours.
Compensation of cardiovascular disease (CVD)

Guideline for judging work-relatedness on cardiovascular diseases and brain stroke due to abnormal event at work, 1961

- overnight work just before the attack

amended, 1987

- long working hours continued for a week before the attack

amended, 1995

- long working hours more than a week before also considered

amended, 1996

- arrhythmia was included in the list

amended, 2001

- long working hours during 6 months period before the attack

Court decision
Compensation of cardiovascular disease (CVD)

governmental criteria for judging causality of CVD

overnight work

one week of overwork

working overtime without 24 hours of continuous duty off time during the week

six months of overwork

> 100 hours/month beyond 40 hours/week

> 80 hours/month in average beyond 40 hours/week

factors other than working hours

work-relatedness
Psychiatric disease

social needs to prevent suicides

Unemployment (%)

14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0


Suicides (n)

35,000
30,000
25,000
20,000
15,000
10,000
5,000
0

unemployment 15-24 y.o.
unemployment 25-34 y.o.
unemployment 35-44 y.o.
unemployment 45-54 y.o.
unemployment 55-64 y.o.
suicides
Compensation of psychiatric disease

Work-related depression and suicide cases in 1980’s-90’s

#1 Super-express train Ueno-Tokyo Station Case:
   31 y.o. male, suicide attempted, 1979
   the 1st case of psychiatric disease approved as cause primarily by work in 1984
(1) the duty was extremely difficult and not well supported
(2) no abnormal weakness found with his personal character
(3) no abnormal life event was recovered
(4) his treating doctor clearly judged as work-related
Compensation of psychiatric disease

Work-related depression and suicide cases in 1980’s-90’s

#2 Kakogawa Labour Standard Office Case:
25 y.o. male, suicide, 1984
the 1st case of psychiatric disease judged as work-related by District Court in 1996
the work-relatedness of the case was initially denied by the local Labour Standard Office in 1985, repeatedly denied by prefectural Office in 1988 and by Labour Standard Bureau, Ministry of Labour in 1991
Compensation of psychiatric disease

Work-related depression and suicide cases in 1980’s-90’s

#3 Dentsu Case:
- 24 y.o. male, suicide, 1991
- the 1st case of psychiatric disease judged as caused by illegal order at work in 2000 by Supreme Court; reconciliation fee of 168,000,000 yen; widely broadcasted and drew public attention and triggered the establishment of the regulation to prevent psychiatric diseases at workplace.
Compensation of psychiatric disease

criteria for judging causality of psychiatric disorder

- **work-related stressors**
  - strong/moderate/mild
  - failure, disaster, major change, heavy load...

- **non-work-related stressors**
  - strong/moderate/mild
  - familial matter, financial debt, human relationship...

- **psychiatric disease**

- **personal character**
  - alcohol dependency, past history...

If “strong” factor exist here

If “strong” factor NOT exist here
Compensation of psychiatric disease

criteria for judging causality of psychiatric disorder

Guideline for judging work-relatedness on psychiatric disorders due to psychological stressor, 1999, 2008

used as a manual by Workers’ Compensation Review Board; thereafter, the number of claims have markedly increased

encountering major accident at work, causing major mistake at work, dismissal, long working hours, harassment, etc. are regarded as episodes causing strong stress

Episode list table:
Compensation of occupational diseases
cardiovascular/psychiatric diseases from overwork

Cases
- Cardiovascular: claimed, compensated
- Psychiatric: claimed, compensated

Criteria revised
- 1987
- 2000
- 2013

Year: 1987-2016
- 1987: 0
- 1988: 143
- 1989: 70
- 1990: 260
- 1991: 305
- 1992: 325
- 1993: 498
- 1994: 612
- 1995: 819
- 1996: 938
- 1997: 1272
- 1998: 1438
- 1999: 1586
- 2000: 1586
- 2001: 1586
- 2002: 1586
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- 2008: 1586
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- 2010: 1586
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- 2012: 1586
- 2013: 1586
- 2014: 1586
- 2015: 1586
- 2016: 1586

The International Conference on Occupational and Environmental Diseases
12 – 14 December 2016,
Miracle Grand Convention Hotel, Bangkok, Thailand

*New Dimensions of OEM in a Globalizing World*
(มิติใหม่การจัดการทรัพยากรมนุษย์และสภาพแวดล้อมในยุคโลกล์วิว)
recognition of stress-related occupational disease
compensated occupational disease in Japan
occupational health policy for preventing stress-related occupational disease
What are the base for occupational health service?
Occupational health policy

International Labour Organization (ILO)

Declaration of Philadelphia, May 10, 1944

key principles

Article 1

(a) labour is not a commodity

(b) freedom of expression and of association are essential to sustained progress

(c) poverty anywhere constitutes a danger to prosperity everywhere
Aim of occupational health

Joint committee of ILO/WHO

Report of the 1st Committee, 1950

It was agreed that “occupational health” should aim at:
the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment and, to summarize: the adaptation of work to man and of each man to his job.
Functions of occupational health service

Functions of occupational health service in ILO C161

(a) identification and assessment of the risks from health hazards in the workplace;
(b) surveillance of the factors in the working environment and working practices which may affect workers' health, including sanitary installations, canteens and housing where these facilities are provided by the employer;
(c) advice on planning and organisation of work, including the design of workplaces, on the choice, maintenance and condition of machinery and other equipment and on substances used in work;
(d) participation in the development of programmes for the improvement of working practices as well as testing and evaluation of health aspects of new equipment;
(e) advice on occupational health, safety and hygiene and on ergonomics and individual and collective protective equipment;
(f) surveillance of workers' health in relation to work;
(g) promoting the adaptation of work to the worker;
(h) contribution to measures of vocational rehabilitation;
(i) collaboration in providing information, training and education in the fields of occupational health and hygiene and ergonomics;
(j) organising of first aid and emergency treatment;
(k) participation in analysis of occupational accidents and occupational diseases.
Legislations on occupational health in Japan

1833 UK, Factory Law
1905 Japan, Mining Law
1911 Japan, Factory Law (enforced in 1916)
1913 USA, American College of Occupational Medicine
1929 Japan, Japan Society for Occupational Health (JSOH)
1938 Japan, factory physician by regulation
1947 Japan, Labour Standard Law
1955 USA, Certified Occupational Physician
1972 Japan, Industrial Safety and Health Law
1978 Japan, establishment of UOEH
1992 Japan Medical Association, certification for occupational physician
1993 Japan, JSOH, certification for occupational physician
1996 Japan, legal system on qualification of occupational physician
Legislations on occupational health in Japan

Mining Law, 1905; the 1st law referred to occupational health

March, 1905

protection of life and hygiene

mining police
Legislations on occupational health in Japan
Factory Law, 1911; covered all factories

The factory owner shall compensate damage from occupational accidents and diseases.

A labour inspector may prohibit using facilities of the factory.
Factory owner with 500+ employee shall appoint a factory physician.

Factory owner with 50+ employee shall appoint a safety supervisor.

Factory physician shall perform health examination every year.

Factory physician shall perform walk-through survey every month.
Legislations on occupational health in Japan
Factory Danger Prevention and Hygiene Regulation, 1938

- safety supervisor
  - factory owner
  - factory ≥ 50 workers
    - factory ≥ 500 workers → 100 workers (1940)
      - walk-through survey, health examination, hygienic management
Legislations on occupational health in Japan
New Constitution of Japan, publicized in 1946, enforced in 1947

Article 27, paragraph 2
Standards for wages, hours, rest and other working conditions shall be fixed by legislation.
→ Labor Standards Law (1947)
  Workers’ Accident Compensation Insurance Law (1947)
  Minimum Wage Law (1959)
  Pneumoconiosis Law (1960)
  Organic Solvent Poisoning Prevention Regulation (1960)
  Lead Poisoning Prevention Regulation (1967)
  Specific Chemical Poisoning Prevention Regulation (1971)
Legislations on occupational health in Japan
Labour Safety and Health Law, 1972

Article 1
The purpose of this Law is to secure, … the safety and health of workers in workplaces as well as to facilitate the establishment of comfortable working environment, by promoting the comprehensive and systematic countermeasures, …, the clarification of responsibility and the promotion of voluntary activities...
Enforcement of occupational health legislation in Japan

Official request for corrective action by labour inspector

Law Violation will lead to...
criminal penalties
  → artificial person (=company) will be punished
administrative penalty
  → disadvantage at business competition
judiciary decision of compensation for damage by Civil Law
  → disappointment from investors
social sanction
  → damage their public reliance
  → anti-buying tendency by consumers

Labour inspector’s file is sent to prosecutors office
Statistics of occupational diseases in Japan
Labour Safety and Health Law, 1972

- Occupational diseases >= 4d loss
- Accident frequency rate/10^6hrs
- Accident severity rate/1000hrs

New Law, 1972

Year

Occupational diseases >= 4d loss
Accident frequency rate/10^6hrs
Accident severity rate/1000hrs
In-house occupational health service in Japan

manufacturer
≥ 300 workers

company

request

guidance, comment

general safety and health manager

technical matters

safety supervisor

health supervisor

occupational physician

safety management
walk-through survey, hygienic management
health examination, walk-through survey

factory ≥ 50 workers

all workplace ≥ 50 workers

The International Conference on Occupational and Environmental Diseases
12 – 14 December 2018,
Miracle Grand Convention Hotel, Bangkok, Thailand
Occupational health surveillance in Japan

items of health exam stipulated in ordinance

1938  health exam enforced (tuberculosis)
1942  body height, body weight, vision, etc.
1947  vision, hearing acuity, chest x-ray
1972  blood pressure, urinalysis
1989  liver function test, total-cholesterol, TG, RBC, Hb, ECG
1996  job accommodation based on results of health exam
1998  HDL-cholesterol, blood sugar or HbA1c
2008  visceral circumference, LDL-cholesterol
2008  medical interview for workers with long working hours
2015  stress check
Occupational health surveillance in Japan

- **Health examination**
- **Classification of health management**
- **Treatment**
- **Follow-up**
- **Decision on personnel management**
- **Report to manager**
- **Report to employee**
- **Health guidance**
- **Report to occupational physician**
- **Report to labour office**
- **Report to health committee**

**Classification on personnel management**
- Normal work
- Limited work
- Suspension from work

**Opinion by occupational physician**

**Improvement of environment**

**Listening to worker’s opinion**

**Health guidance**

**Re-/close examination**

**No abnormality**

**Alert indicator**

- Health examination
- Re-/close examination
- Classification of health management
- Report to labour office
- Decision on personnel management
- Report to health committee
- Report to manager
- Report to employee
- Health guidance

**Health committee**

**Health guidance**

**Improvement of environment**

**Listening to worker’s opinion**

**Opinion by occupational physician**

**Classification on personnel management**
- Normal work
- Limited work
- Suspension from work

**Alert indicator**

- Health examination
- Re-/close examination
- Classification of health management
- Report to labour office
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- Report to health committee
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- Health guidance
Psychological stress among workers
Proportion of workers in Japan who feel psychological stress

<table>
<thead>
<tr>
<th>Hours of Overwork/ Month</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>39.2</td>
</tr>
<tr>
<td>&lt;1 hr</td>
<td>56.3</td>
</tr>
<tr>
<td>1 hr+</td>
<td>64.3</td>
</tr>
<tr>
<td>2 hrs+</td>
<td>71.2</td>
</tr>
<tr>
<td>3 hrs+</td>
<td>70.0</td>
</tr>
<tr>
<td>5 hrs+</td>
<td>72.9</td>
</tr>
</tbody>
</table>
What have been incorporated in Japanese legislation for the prevention of stress-related cardiovascular/psychiatric diseases?
Prevention of work-related diseases

governmental guidelines for preventing psychiatric diseases

Total Health-promotion Plan (THP), 1988

Guidelines for Promoting Mental Healthcare at workplaces, 2000

Employer should establish the plan... by proposing the exact countermeasures to solve the problems. The plan should include following activities: (a) education, training, etc.; (b) effective promotion of self-care, line-care, professional care and outsourced care, so-called “four layer care”; (c) improvement of working environment; (d) response to workers with mental health problems; (e) support for return-to-work.

Guideline for return-to-work of workers after sick leave from psychiatric diseases, 2004
Prevention of work-related diseases

governmental guideline and law for prevention of CVD

Guideline in 2002 and Law in 2006 to establish a framework for medical interview of worker with long working hours

workers with high risk (obligatory)
- overworking hours > 100 hrs/m
- accumulated fatigue
- requests medical consultation

workers with moderate risk (recommended)
- overworking hours > 80 hrs/m
- accumulated fatigue or worried health
- who qualifies other criteria of the workplace
Connection between long working hours and psychiatric diseases

Disorders discovered at medical interview for longtime workers

- Depression: 71.8%
- Psychosomatic disorder: 23.2%
- Arrhythmia: 21.8%
- Other heart disorder: 21.1%
- Other psychiatric disorder: 12.7%
- Panic disorder: 12.0%
- Angina pectoris: 11.3%
- Strokes: 6.3%
- Suspect of AMI: 2.8%
Prevention of stress-related cardiovascular/psychiatric disease

- Long working hours
- Sense of excessive work-load
- Deprived sleeping time
- Sacrificed daily life schedule
- Effort to be awake
- Psychological stress
- Sympathetic nerve dominance and cortisol secretion
- Progression of atherosclerosis
- Stroke
- Heart attack
- Brain damage
- Depression
Prevention of work-related psychiatric diseases

Recent amendment of law to prevent psychiatric disorders

Article 66-10 newly stipulated the framework for checking psychological burden from job stress: “stress check” announced on June 26, 2014 enforced on December 1, 2015

relevant ordinances, guidelines, manuals are publicized

Brief Job Stress Questionnaire is recommended to use
Prevention of work-related psychiatric diseases

The Brief Job Stress Questionnaire English version

Please answer the following questions concerning your job by circling the number that best fits your situation.

1. I have an extremely large amount of work to do  
   1 2 3 4
2. I can't complete work in the required time  
   1 2 3 4
3. I have to work as hard as I can  
   1 2 3 4
4. I have to pay very careful attention  
   1 2 3 4
5. My job is difficult in that it requires a high level of knowledge and technical skill  
   1 2 3 4
6. I need to constantly thinking about work throughout the working day  
   1 2 3 4
7. My job requires a lot of physical work  
   1 2 3 4
8. I can work at my own pace  
   1 2 3 4
9. I can choose how and in what order to do my work  
   1 2 3 4
10. I can reflect my opinions on workplace policy  
    1 2 3 4
11. My knowledge and skills are scarcely used at work  
    1 2 3 4
12. There are differences of opinion within my department  
    1 2 3 4
13. My department does not get along well with other departments  
    1 2 3 4
14. The atmosphere in my workplace is friendly  
    1 2 3 4
15. My working environment is poor (e.g., noise, lighting, temperature, ventilation)  
    1 2 3 4
16. This job suits me well  
    1 2 3 4
17. My job is worth doing  
    1 2 3 4

Please answer the following questions concerning your health during the past month by circling the number that best fits your situation.

18. I have been very active  
    1 2 3 4
19. I have been full of energy  
    1 2 3 4
20. I have been lively  
    1 2 3 4
21. I have felt angry  
    1 2 3 4
22. I have been severely anxious or agitated  
    1 2 3 4
23. I have felt anxious  
    1 2 3 4
24. I have felt extremely tired  
    1 2 3 4
25. I have felt exhausted  
    1 2 3 4
26. I have felt weary or listless  
    1 2 3 4
27. I have felt tense  
    1 2 3 4
28. I have felt worried or insecure  
    1 2 3 4
29. I have felt restless  
    1 2 3 4
30. I have been depressed  
    1 2 3 4
31. I have thought that doing anything was a hassle  
    1 2 3 4
32. I have been unable to concentrate  
    1 2 3 4
33. I have felt gloomy  
    1 2 3 4
34. I have been unable to handle work  
    1 2 3 4
35. I have felt sad  
    1 2 3 4
36. I have felt dizzy  
    1 2 3 4
37. I have experienced joint pains  
    1 2 3 4
38. I have experienced headaches  
    1 2 3 4
39. I have had a stiff neck or shoulders  
    1 2 3 4
40. I have had lower back pain  
    1 2 3 4
41. I have had eyestrain  
    1 2 3 4
42. I have experienced palpitations or shortness of breath  
    1 2 3 4
43. I have experienced stomach or intestinal problems  
    1 2 3 4
44. I have lost my appetite  
    1 2 3 4
45. I have experienced diarrhea or constipation  
    1 2 3 4
46. I haven't been able to sleep well  
    1 2 3 4

Please answer the following questions concerning satisfaction by circling the number that best fits your situation.

How freely can you talk with the following people?
47. Superiors  
    1 2 3 4
48. Co-workers  
    1 2 3 4
49. Spouse, family, friends, etc.  
    1 2 3 4

How reliable are the following people when you are troubled?
50. Superiors  
    1 2 3 4
51. Co-workers  
    1 2 3 4
52. Spouse, family, friends, etc.  
    1 2 3 4

How well will the following people listen to you when you ask for advice on personal matters?
53. Superiors  
    1 2 3 4
54. Co-workers  
    1 2 3 4
55. Spouse, family, friends, etc.  
    1 2 3 4

Please answer the following questions concerning satisfaction by circling the number that best fits your situation.

56. I am satisfied with my job  
    1 2 3 4
57. I am satisfied with my family life  
    1 2 3 4

Prevention of work-related psychiatric diseases
amendment of OSH law to prevent psychiatric disorders

- Stress check: 1) stressors, 2) symptoms (fatigue, uneasiness, depressive mood), 3) supports at work
We have to accommodate ethical issues to promote the prevention of stress-related cardiovascular/psychological diseases.
Handling of personal health information

Guideline on consideration when handling health information of workers, 2005

Occupational health staffs should be aware of the purpose to handle workers’ health information, consider concealing personal identification data, transforming health information into non-sensitive information, and try to obtain informed consent of the workers concerned.

Employer or other non-medical personnel should not directly handle the workers’ health information but ask occupational health professionals to keep and translate the information when it is necessary to use for the health protection of workers.
Handling of personal health information

Occupational physician must transform the information
Ethical dilemma in occupational health service

Health or Work

unhappy adaptation

health

ideal adaptation

happiness

unhealthy adaptation
Ethical dilemma in occupational health service
Conflict of interest between company and worker

happiness
decision
total
company worker
Thank you for your attention