Academia Sinica

Abnormal Workload-Induced Disease Prevention Plan

I、 Legal Basis

(I) Labor Standards Act: Article 30

A. The regular working time of workers may not exceed eight hours a day nor 40 hours a week.

B. With the consent of a labor union, or if there is no labor union in a business entity, with the approval of a labor-management conference, an employer may distribute the regular working hours, referred to in the preceding Paragraph, of any two workdays in every two weeks, to other workdays, provided that no more than two hours shall be distributed to each of the other workdays. However, the total number of working hours shall not exceed forty-eight hours every week.

C. With the prior consent of the labor union, or if there is no labor union, with the agreement of a labor-management conference, an employer may distribute the regular working hours, referred to in the Paragraph 1, in every eight weeks, provided that the regular working time shall not in excess of eight hours a day and the total number of working hours shall not exceed forty-eight hours every week.

D. The regulations set forth in the two preceding Paragraphs are only applicable to the business (or industries) designated by the Central Competent Authority.

E. Employers shall prepare and keep worker attendance records for five years.

F. The attendance records specified in the preceding Paragraph shall register the attendance of workers on a daily basis to the minute. Employers may not refuse when workers request for duplicates or photocopies of the attendance records.

G. Employers may not use the amendment to regular working hours of Paragraph 1 as reason for wage deduction.

H. Employers may, base on the needs of workers to tend to their family members, allow workers the flexibility to adjust their starting and finishing work time of up to one hour of the daily regular working hours specified in Paragraphs 1 to 3 and Article 30-1.

(II) Labor Standards Act: Article 30-1

A. For businesses (or industries) designated by the Central Competent Authority, upon the consent of its labor union, or if there is no labor union in a business entity, with the approval of a labor-management conference, an employer may change his/her working hours under the following principles:

(A). The distribution of regular working hours to other working days in four weeks shall not exceed two hours a day and is not subject to the restrictions referred to in Paragraphs 2 to 4 of the preceding article.

(B). When the regular workday is ten hours a day, the overtime work shall not exceed two hours for that particular day.

(C). Female workers on night shifts, except for those who are pregnant or are in breastfeeding periods, are not subject to the restrictions referred to in Paragraph 1 of Article 49. However, the employer must provide necessary safety and health facilities.

B. Businesses (or industries) that are governed by Article 3 (which was amended and took effect on December 27, 1996) are not governed by the preceding Paragraph, except for agriculture, forestry, fishery, and pasturage industries referred to in Subparagraph 1 of Paragraph 1.

(III) Labor Standards Act: Article 32

A. When an employer has a necessity to have his/her employee to perform the work besides regular working hours, he/ she, with the consent of a labor union, or if there is no labor union, with the approval of a labor-management conference, may extend the working hours.

B. The extension of working hours referred to in the preceding Paragraph, combined with the regular working hours shall not exceed twelve hours a day; the total number of overtime shall not exceed forty-six hours a month; however, the extension of working hours, with the consent of a labor union, or if there is no labor union, with the approval of a labor-management conference, shall not exceed fifty-four hours a month and one hundred and thirty-eight hours every three months.

C. When an employer having more than thirty employees needs to have his/her employee to perform work referred to in the preceding Paragraph, he/she shall report it to the local competent authority for record.

D. Due to the occurrence of an act of God, an accident, or an unexpected event and

when an employer has a necessity to have his/her employee to perform the work besides regular working hours, may extend the working hours. However, the employer shall notify the labor union within twenty-four hours after the beginning of the extension. If there is no labor union, shall report it to the local competent authority for record. Subsequent to the over time, the employer shall offer worker suitable time off.

E. Except for supervisory duties or in any of the situations referred to in the preceding Paragraph, the working hours of a worker in a pit or tunnel shall not be extended.

(IV) Occupational Safety and Health Act: Article 6, Paragraph 2(2)

A. To prevent ailments induced by exceptional workload, such as working shifts, working at night, and prolonged working hours.

(V) Occupational Safety and Health Facilities Regulation Article 324-2

A. When employers require workers to engage in shift work, night work, or prolonged working hours, in order to prevent diseases induced by abnormal workloads, the following disease prevention measures shall be adopted, execution records shall be prepared and retained for 3 years:

(A). Identify and assess high-risk groups.

(B). Arrange physician interviews and health guidance.

(C). Adjust or reduce working hours and change job content.

(D). Conduct health checks, management, and promotion.

(E). Evaluate and improve effectiveness.

(F). Other safety and health matters.

B. For enterprises with medical or nursing staff assigned according to regulations, employers shall, in accordance with the characteristics of the work environment, work patterns, and workers' physical conditions, refer to the relevant guidelines announced by the central competent authority to establish an abnormal workload-induced disease prevention program and implement it accordingly; for those exempt from assigning medical or nursing staff, execution records or documents may be used instead.

(VI) Ministry of Labor, Occupational Safety and Health Administration – Guidelines for the Prevention of Ergonomic Hazards (Second Edition), April 2019.

II、 Purpose

This plan amis to prevent diseases triggered by abnormal workloads (shift work, night work, prolonged working hours), thereby safeguarding the physical and mental health of Academia Sinica personnel and promoting overwork prevention and stress management.

III、 Definitions

(I) Shift Work: Rotating work schedules requiring employees to work at various times, possibly affecting sleep.

(II) Night Work: Work between 10:00 PM and 6:00 AM that may affect sleep.

(III) Prolonged Working Hours: Average monthly overtime exceeding 45 hours over the past six months.

(IV) Other Abnormal Workloads: Irregular work, frequent business trips, extreme work environments (temperature, noise, jet lag), and day-to-day work involving significant psychological stress or work-related incidents.

IV、 Target audience

(I) Applies to all Academia Sinica personnel.

(II) Risk targets (based on attendance records):

A. Overtime 32–46 hours/month (in the past three months).

B. Actual daily working hours >12 hours (in the past three months).

C. Overtime ≥46 hours/month (in the past three months).

(III) Voluntary applicants for assessment.

V、 Roles & Responsibilities

(I) **Primary Supervisors (directors)**: Responsible for program implementation.

(II) **Personnel affairs officers of each institute, research center, department, or office:** assist with working-hours recording and data collection, report the list of at-risk individuals by February and late August each year, and refer them to occupational health nurses for case management.

(III) **Department of General Affairs (Occupational Safety and Health Section):** Responsible for program revision, promotion, and implementation.

A. Occupational Safety and Health Personnel: Assist in workplace risk assessment; Participate in workplace site visits.

B. Occupational Health Nurses: Each February and August, survey personnel officers of each unit for the list of at-risk individuals; send the health questionnaire (Appendix 1 – Self-Administered Abnormal Workload Assessment

Questionnaire); then conduct case management, including arranging for an occupational health team physician to review the questionnaires, contacting the individual and scheduling a physician interview, and completing pre-visit administrative tasks; finally, complete Appendix 4 – Annual Implementation Record for Preventing Diseases Triggered by Abnormal Workload (shift work, night work, prolonged working hours).

(IV) **Occupational health service medical team:** review the health questionnaire (Appendix 1 – Self-Administered Abnormal Workload Assessment Questionnaire), use Appendix 2 – "Overwork Scale" Individual Assessment Scoring and Interpretation Table to identify high-risk cases, conduct interviews and provide health guidance, complete Appendix 3 – Case Interview Results and Recommended Actions Form after interviews, conduct workplace site visits when necessary, provide job suitability assessments and recommendations for physical and mental health protection measures, and issue a site visit report after the visit.

(V) **All Staff**: Cooperate with and participate in the prevention program.

VI、Implementation Procedures

(I) Each February and August, obtain from personnel affairs officers of each institute/research center/department/office the lists of at-risk individuals for the first and second half of the year; distribute the health questionnaire (Appendix 1 – Self-Administered Abnormal Workload Assessment Questionnaire); occupational health nurses then conduct case management.

(II) Different approaches are adopted according to the type of work:

A. **General employees:** The individual's health status is assessed via health examination reports, and the risk of 10-year cardiovascular disease is evaluated based on the results.

B. **Laboratory employees:** The individual's health status is assessed via health examination reports, and their work pattern and working environment are further evaluated through questionnaires completed during the health examination.

C. **Special employees:** For those engaged in shift work, night work, or prolonged working hours (e.g., security personnel, executive drivers), annual questionnaires and scales are administered, followed by detailed assessment, interviews, and consultations

(III) Academia Sinica Headquarters (Personnel Office) provides general employees'

health examination reports to occupational health nurses for compilation; the reports are then submitted to the occupational health service team for data analysis. Health examination reports of laboratory employees are further organized and analyzed by the occupational medicine on-site service team. All analyses utilize the Framingham Cardiac Risk Score or the WHO/ISH Cardiovascular Risk Prediction Chart to estimate the 10-year cardiovascular disease risk (reference: http://reference.medscape.com/calculator/framingham-cardiovascular-disease-risk).

(IV) The occupational health service medical team will use Table 1 – Ten-Year Cardiovascular Disease Risk Assessment and Table 2 – Risk Stratification and Interview Recommendations to provide a list of high-risk cardiovascular cases within the institution. Individuals with low risk but monthly overtime hours ≥45 will also be included. Occupational health nurses will contact these individuals and schedule physician interviews.

(V) After the interview, the occupational health service team completes Appendix 3 – Case Interview Results and Action Plan Form and prepares a physician consultation record, assessing whether a workplace site visit is necessary.

(VI) For cases determined through the above process to require job placement assistance, the Occupational Health Nurse will notify the unit supervisor. The visit report and recommendations shall be provided to both the individual and the unit supervisor (to protect personal privacy, health details will be removed from the report sent to the supervisor, with the focus on risk assessment). Upon receipt of the report, the individual or the supervisor should review and implement recommended improvement measures.

(VII) For employees identified as needing job placement assistance under the above process, notify the unit supervisor using Appendix 8 – Labor Health Service Implementation Record. Site visit reports and recommendations must be provided to both the individual and the unit supervisor. To protect personal privacy, the report and recommendations shared with the supervisor will exclude detailed personal health information and focus on hazard risk assessment. Upon receiving Appendix 8 and the site visit report, the individual or supervisor should review the recommendations and implement improvement measures.

(VIII) Occupational health nurses at the institution will continue case follow-up based on

physician interviews and job placement decisions, documenting all information in Appendix 8 – Labor Health Service Implementation Record.

(IX) All relevant records will be filed by the Occupational Health Nurse at the General Affairs Division and case status will be continuously tracked.

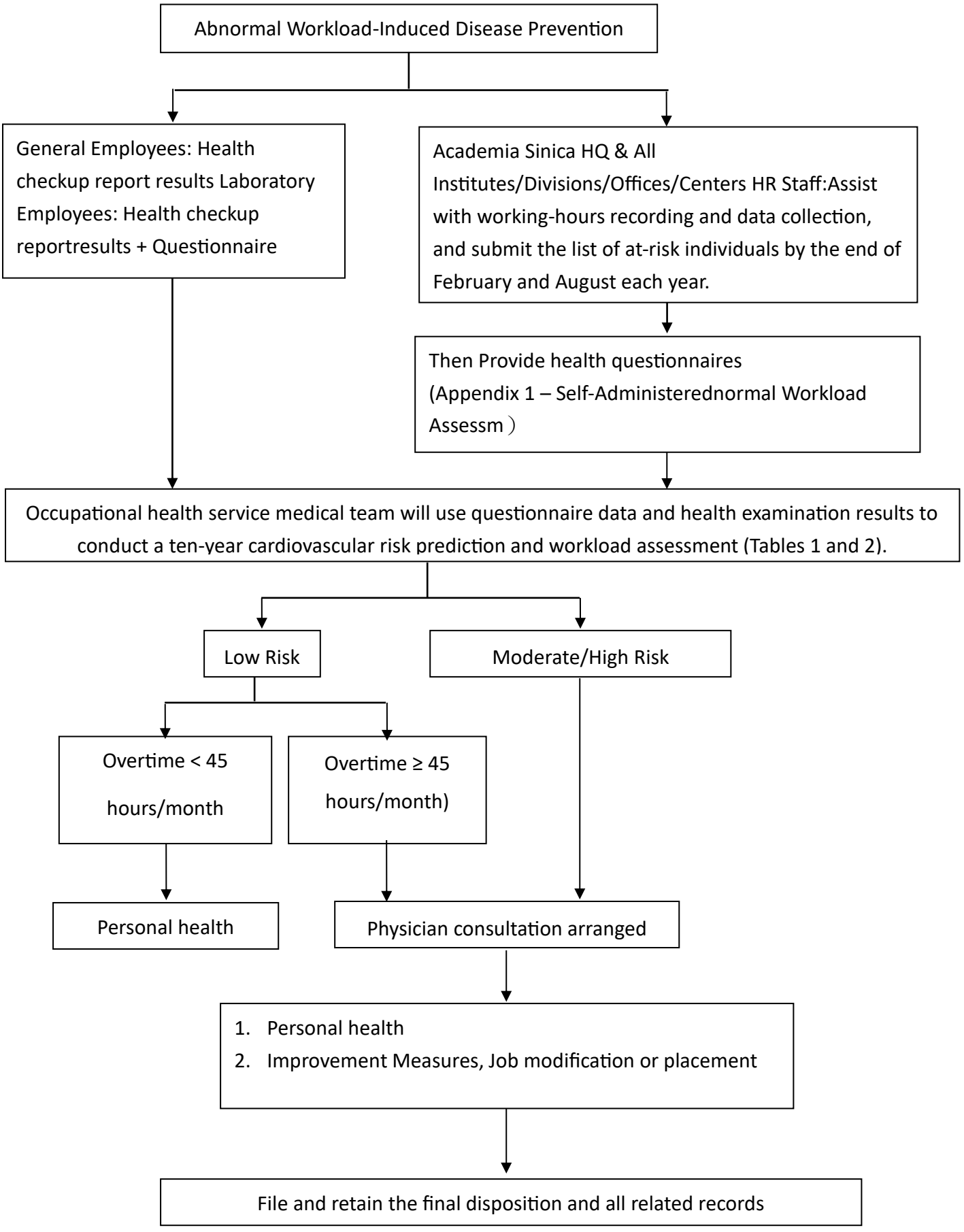


Figure 1 Abnormal Workload-Induced Disease Prevention Plan flow chart

Table 1. Ten-Year Cardiovascular Disease Risk Levels

Ten-Year Cardiovascular Disease Risk	Risk Classification
<10%	Low
10%-20%	Moderate
20%-30%	High
>30%	Very High

Table 2. Risk Stratification and Interview Recommendations to provide a list of high-risk cardiovascular cases within the institution

Risk Level & Recommendation	CVD Risk		
	Low	Moderate	High
Low Workload Risk	No interview needed	No interview needed	Recommended interview
Moderate Workload Risk	No interview needed	Recommended interview	Interview required
High Workload Risk	Recommended interview	Interview required	Interview required

Appendix 1

Self-Administered Abnormal Workload Assessment Questionnaire.

Date of Completion (YYYY/MM/DD):

1. Basic Information

Name	
Gender	□ Male □ Female
Marital Status	□ Single □ Married □ Divorced □ Widowed
Date of Birth(YYYY/MM/DD)	
Department (Institute/Research Center/Division/Office)	
Laboratory/Section/Group	
Years of Service	____Years _____Months
Position Title	

2. Personal Medical History

□ Cardiovascular Diseases:

(□ Angina □ Coronary Heart Disease □ Myocardial Infarction □ Underwent cardiac stent placement

□ Underwent coronary artery bypass surgery □ Treated for coronary artery disease with medication

□ Hypertension □ Arrhythmia □ Other: _____)

□ Stroke

□ Dyslipidemia

□ Sleep-related respiratory diseases (e.g., sleep apnea)

□ Central nervous system diseases (e.g., epilepsy, spinal disorders)

□ Peripheral nervous system diseases (e.g., carpal tunnel syndrome)

□ Emotional or psychological disorders

□ Eye diseases (excluding correctable myopia or hyperopia)

□ Hearing loss

□ Upper or lower limb diseases (e.g., joint stiffness or weakness)

□ Diabetes

□ Asthma

□ Long-term medication, name of medication: _____

□ Other: _____

□ None of the above

3. Family Medical History

□ None

□ Family members (parents, grandparents, children) diagnosed with coronary artery disease before age 55 (male) or 65 (female)

□ Family history of stroke

□ Other: _____

4. Lifestyle History

1. Smoking: □ No □ Yes (____ packs/day, ____ years) □ Quit smoking ____ years
2. Betel nut: □ No □ Yes (____ pieces/day, ____ years) □ Quit betel nut ____ years
3. Alcohol consumption: □ No □ Yes (Type: _____, Frequency: _____, Amount per occasion: _____ ml)
4. Irregular mealtimes: □ No □ Yes;
   Frequency of eating out: □ None □ Once □ Twice □ Three times per day
5. Perceived insufficient sleep: □ No □ Yes
   Average sleep on workdays: ____ hours/day; Average sleep on holidays: ____ hours/day
6. Exercise habit: □ No □ Yes (____ times/week, ____ minutes each)
7. Other: _____

5. Health Checkup Items

(If not available, leave blank)

Date of examination(YYYY/MM/DD):

Height: ____ cm Weight: ____ kg Waist circumference: ____ cm

Blood pressure: ____ / ____ mmHg

Total cholesterol: ____ mg/dL Triglycerides: ____ mg/dL

HDL cholesterol: ____ mg/dL LDL cholesterol: ____ mg/dL

Fasting blood glucose: ____ mg/dL

Framingham 10-year Cardiovascular Risk Score: _____ % (to be completed by medical staff)

6. Work-Related Factors

1. Working hours: Average per day: ____ hours; Average per week: ____ hours; Average monthly overtime: ____ hours

2. Shift pattern: □ Day shift □ Night shift □ Rotating shifts (□ Regular □ Irregular; rotation pattern: _____)

3. Working environment (multiple choices allowed):

□ Noise (____ dB)

□ Extreme temperatures (High: ____°C; Low: ____°C)

□ Poor ventilation

□ Poor ergonomic design (e.g., vibration, lifting, etc.)

□ None of the above

4. Daily work-related stress (multiple choices allowed):

□ Frequently responsible for work that may endanger one's own or others' lives or property

□ Work involving avoidance of dangerous responsibilities

□ Work involving life-and-death decisions or major judgments affecting others

□ Handling high-risk materials

□ Work involving significant potential societal loss

□ Excessive or strict time-limited work

□ Difficult tasks with specific deadlines

□ Handling major customer conflicts or complex labor disputes

□ Difficult work with lack of understanding or support from colleagues

□ Responsible for complex development projects or company restructuring

□ None of the above

5. Any recent work-related sudden events? (e.g., car accident, major vehicle failure, etc.)

□ No □ Yes (Please specify: _____)

6. Any organizational culture or workplace justice issues? (e.g., interpersonal conflict, poor communication)

□ No □ Yes (Please specify: _____)

7. Frequent changes or unpredictability in scheduled work tasks or content, usually with short notice?

□ No □ Yes (Please specify: _____)

8. Frequent business trips with jet lag, insufficient rest, or inadequate accommodation, long-distance driving or commuting with no chance to recover from fatigue?

□ No □ Yes (Please specify: _____)

7. Non-Work-Related Factors

Family issues: □ No □ Yes (Please specify: _____)

Financial issues: □ No □ Yes (Please specify: _____)

8. "Overwork Scale" Self-Assessment Tool

A. Personal Burnout Subscale

1. Do you often feel fatigued?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

2. Do you often feel physically exhausted?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

3. Do you often feel emotionally exhausted?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

4. Do you often feel like you are about to collapse?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

5. Do you often feel completely worn out?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

6. Do you often feel weak, as if you are about to fall ill?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

Total score: _____(Refer to Appendix 2 – Overwork Scale Personal Assessment Scoring and Interpretation Table)

B. Work-Related Burnout Subscale

1. Does your work leave you emotionally exhausted?

□ (1) Very severe □ (2) Severe □ (3) Moderate □ (4) Mild □ (5) Very mild

2. Does your work make you feel like you are about to collapse?

□ (1) Very severe □ (2) Severe □ (3) Moderate □ (4) Mild □ (5) Very mild

3. Does your work make you feel frustrated?

□ (1) Very severe □ (2) Severe □ (3) Moderate □ (4) Mild □ (5) Very mild

4. After a whole day at work, do you feel completely worn out?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

5. Before work, just thinking about a full day at work makes you feel drained?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

6. While at work, do you feel every moment is difficult to get through?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

7. When not working, do you have enough energy to spend time with friends or family?

□ (1) Always □ (2) Often □ (3) Sometimes □ (4) Rarely □ (5) Never or almost never

Total score: _____(Refer to Appendix 2 – Overwork Scale Personal Assessment Scoring and Interpretation Table)

Self-Administered Abnormal Workload Assessment Questionnaire – Preliminary Evaluation (To Be Completed by Medical Staff)	
1. Cardiovascular Disease Risk	☐ Low Risk ☐ Moderate Risk ☐High Risk ☐ Very High Risk ☐ Other:
2. Workload Risk	☐ Low Risk ☐ Moderate Risk ☐High Risk ☐ Very High Risk ☐ Other:
3. Comprehensive Overload Risk Assessment	☐ Low Risk ☐ Moderate Risk ☐High Risk ☐ Very High Risk ☐ Other:
4. Recommendation for Interview	☐ Yes，_____。 ☐ No, Personal Health Management.
Occupational Health Service Physician Signature/Seal & Date	_____ / _____ / _____
Scheduled Interview Date	The occupational health nurse will contact the individual to arrange the interview. ☐ The individual agrees to the interview, appointment scheduled for _____ / _____ / _____. ☐ The individual declines the interview. Reason: _____
Occupational Health Nurse Signature/Seal & Date:	_____ / _____ / _____

Health data collected in this form are used solely by the Academia Sinica Health Service Medical Team, Occupational Health Service Nurses, and Occupational Safety and Health Personnel for health service and management purposes, and will be retained for three years in accordance with the law.

Appendix 2

Overwork Scale Personal Assessment Scoring and Interpretation Table

Scoring Method:

A. Convert each response to the following scores: (1) 100 (2) 75 (3) 50 (4) 25 (5) 0.
B. Personal Burnout Score: Add up the scores for Questions 1–6, divide by 6 to get the personal burnout score.
C. Work-Related Burnout Score: Add up the scores for Questions 1–6 as above, but for Question 7, reverse the scoring: (1) 0 (2) 25 (3) 50 (4) 75 (5) 100. Add up the scores for Questions 1–7, divide by 7 to get the work-related burnout score.

Type of Overwork

Type	Score	Severity	Explanation
Personal Burnout	<50	Mild	Your level of personal burnout is mild. You do not often feel fatigued, physically exhausted, worn out, or weak as if you are about to fall ill.
	50–70	Moderate	Your level of personal burnout is moderate. You sometimes feel fatigued, physically exhausted, worn out, or weak as if you are about to fall ill. It is recommended to identify sources of stress and adjust your lifestyle to include more relaxation and rest.
	>70	Severe	Your level of personal burnout is severe. You often feel fatigued, physically exhausted, worn out, or weak as if you are about to fall ill. It is recommended to make appropriate lifestyle changes, increase physical activity and leisure time, and seek professional consultation if needed.
Work-Related Burnout	<45	Mild	Your level of work-related burnout is mild. Your work does not often make you feel powerless, exhausted, or frustrated.
	45–60	Moderate	Your level of work-related burnout is moderate. You sometimes feel powerless, less interested, or a bit frustrated with your work.
	>60	Severe	Your level of work-related burnout is severe. You are already close to being overwhelmed by work, often feel exhausted, frustrated, and have difficulty getting through work hours. You may also lack time for leisure and for accompanying family and friends. It is recommended to make appropriate lifestyle changes, increase physical activity and leisure time, and seek professional consultation if needed.

(Source: Ministry of Labor Overwork Self-Prevention Handbook)

Appendix 3

Case Interview Results and Recommended Actions Form

Name	
Department (including lab/research group)	
Gender	☐ Male ☐ Female
Age	
Physical and mental status of concern	☐ None ☐ Yes
Special notes	
Diagnostic classification	☐ No abnormality ☐ Needs observation ☐ Needs medical care
Job classification	☐ General work ☐ Work restriction ☐ Needs leave
Guidance classification	☐ No guidance needed ☐ Needs health guidance ☐ Needs medical guidance
Follow-up measures needed	☐ No ☐ Yes (please specify measures)
Recommended Measures	
Work-related measures	
Adjustment of working hours	☐ Overtime limited to _____ hours/month ☐ Overtime not permitted ☐ Work hours restricted from ___:___ to ___:___ ☐ Not fit for work (leave/rest indicated) ☐ Other: _____
Job reassignment	☐ Change of work location(_____) ☐ Job transfer (_____) ☐ Other (_____)
Duration of measures	_____ days/weeks/months Next interview scheduled on:____/___/___
Medical referral	
☐ Referral to _____ outpatient clinic for further evaluation and treatment.	
Notes	

Physician's Name:

Date:

Appendix 4

____Annual Implementation Record for Preventing Diseases Triggered by Abnormal Workload (shift work, night work, prolonged working hours)

Implementation Item	Key Indicators	Remarks
Hazard Identification and Risk Assessment	☐ Semiannual survey of abnormal workload cases per unit. Total surveyed annually: ___ persons	
	☐ Provide Self-Administered Abnormal Workload Assessment Questionnaire Total questionnaires annually: ___ persons	
	☐ Review questionnaires and identify high-risk cases. High-risk cases: ___ persons	
Prevention and Improvement Measures	☐ Arrange occupational physician consultations and health guidance. Consultations: ___ persons Medical advice: Health guidance: ___ persons Referrals: ___ persons	
	☐ Arrange workplace site visits Site visit reports: ___ copies	
	☐ Provide job suitability recommendations after visits Work hours adjustment: ___ persons Job change required: ___ persons	
	☐ Provide preventive health education materials Educational handouts distributed: ___ persons	
	☐ Workplace health promotion activities Health promotion lectures: ___ sessions	
End-of-Year Follow-up (Total: ___ persons)	Cases closed with self-management: ___ persons Ongoing follow-up pending reassessment: ___ persons	

Evaluator:

Supervisor: