California Institute of Technology

ERGONOMICS PROGRAM

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ERGONOMICS PROGRAM

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PURPOSE

The purpose of this program is to establish responsibilities and procedures in order to promote continuous improvement in workplace ergonomic protection and to reduce the number and severity of workplace musculoskeletal disorders caused by exposure to ergonomic risk factors.

Ergonomic evaluations are performed:

- As a preventative measure to avoid injury
- In response to the employee experiencing discomfort as a result of their workstation set-up
- As a request by Workers' Compensation
- As requested from employees personal physician

SCOPE

This program applies to all Caltech employees and students.

STATE AND FEDERAL REGULATIONS

CALIFORNIA – Cal/OSHA

- Title 8 – §5110. Repetitive Motion Injuries

UNITED STATES – FEDERAL OSHA

- General Duty Clause

ERGONOMIC RISK AT CALTECH

Caltech endeavors to reduce ergonomic risk exposure to as low as reasonably possible.

RESPONSIBILITIES

ENVIRONMENT, HEALTH, AND SAFETY OFFICE

The Environment, Health, and Safety Office (EH&S) has approved Ergonomic evaluators titled Ergonomic Team Members (ETM).

The ETMs are responsible for:

- Identifying areas of potential and actual ergonomic risk exposure (see below):
    - Ergonomic risk factors include:
        - Static postures
        - Awkward postures
        - Repetitive motion
        - High forces
        - Vibration
    - Tasks should be appraised to determine whether these risk factors are present. If risk factors are found, the task shall be subject to an evaluation to determine whether additional controls can be implemented to reduce the ergonomic risk associated with the task.

- Responding to the Ergonomic Evaluation request:
    - In the event that a task is implicated in a reported repetitive motion injury (RMI), the task shall be assessed in the same manner, to determine whether the ergonomic risk can be reduced.
- Performing the Ergonomic Evaluation
- Creating and developing an Ergonomic Evaluation Report to include:
    - Any findings
    - Immediate solutions performed during the evaluation
    - Any recommended stretches/exercises for the employee
    - Any recommended equipment to be ordered for the employee (to be ordered by the employee's supervisor/department)
        - Specific equipment recommendations are presented by ETM upon request of the employee's supervisor.
- Delivering the report to the employee and the employee's supervisor within 5-7 working days
- Delivering training about this program to employees upon request or as needed in response to reports of RMIs associated with an area or task
- Evaluating the effectiveness of this program via OSHA 300A Log

SUPERVISORS

The supervisors' responsibilities under the Ergonomics Program include:

- Responding to ergonomic evaluation requests or related complaints by employees
- Applying any recommendations made by the ETM
- Acquiring equipment for the employee as recommended in the report
    - Equipment acquisitions are the responsibility of the supervisor and should be made as described in the Ergonomic Evaluation report. If this is not possible, the Supervisor should work with the ETM to determine a suitable alternative.

EMPLOYEES

The employee's responsibilities under the Ergonomics Program include:

- Reading and understanding the Ergonomics Program Overview received during their onboarding
- Applying the appropriate components of the workstation-setup handout or evaluation report to their own workstation

REQUESTING AN ERGONOMIC EVALUATION

Requests for Ergonomic evaluations can be made by the:

- Employee directly – Employee should notify their supervisor once request is made
- Supervisor
- Workers' Compensation

When performing an ergonomic evaluation, consideration will be made to the Hierarchy of Controls in determining the most effective ways to manage ergonomic risk. Controls will be determined in the order of:

- Elimination
- Substitution
- Engineering controls
- Administrative/training controls
- Personal protective equipment (where applicable)

A report follows and is sent to the employee and supervisor in about 5-7 working days.

ERGONOMIC EVALUATION PROCESS

- An Ergonomics Team Member (ETM) will meet the employee at his/her workplace.
- ETM will review the Ergonomics Program with the employee and their supervisor.
- Employee will explain their job duties to the ETM.
- ETM will perform an initial evaluation of the employee's workplace to determine if any immediate adjustments are recommended.
    - ETM will discuss the recommended adjustments with the employee prior to making any changes.
- ETM will then observe the employee performing their normal job duties to look for additional opportunities to manage ergonomic risk.
    - ETM will make adjustments as appropriate.
- ETM will review their recommendations/adjustments with the employee and go over any recommended stretches/exercises.
- ETM will train employee/student on proper posture and proper use of their office equipment (chair, footrest, etc.).
- ETM will discuss ergonomics report with supervisor as appropriate.
- ETM will send report to both the employee and their supervisor.

TRAINING

- The employee will receive a workstation-setup handout as a part of their on-boarding process.
- Additional ergonomics training is on-demand (by request) or as determined by reports of injuries associated with a particular task.

Training consists of:

- Classroom presentation
- Hands-on training

Training content will include, at a minimum:

- The employer's program
- The exposures which have been associated with RMIs
- The symptoms and consequences of injuries caused by repetitive motion
- The importance of reporting symptoms and injuries to the employer
- Methods used by the employer to minimize RMIs

Training requests can be made via:

- Email: safety@caltech.edu
- Phone: Extension 6727

PROGRAM EVALUATION AND REVIEW

This program will be periodically reviewed for effectiveness using injury data, subjective reports of employee comfort and satisfaction, and other information as deemed suitable. Updates to the program will be made based on this evaluation.

APPENDIX A: Caltech Office Ergonomics Evaluation Report

Caltech OFFICE ERGONOMIC EVALUATION REPORT DATE: _____

TO	FROM
SUPERVISOR/MANAGER	EVALUATOR _____ PHONE: _____ MAIL CODE: _____
EMPLOYEE NAME:	PHONE:
JOB TITLE:	LOCATION (Bldg/Rm):

REASON FOR ERGONOMIC EVALUATION (Select One):
☐ EMPLOYEE REQUEST ☐ SUPERVISOR/MANAGER REQUEST ☐ FOLLOW-UP ☐ WORKERS' COMPENSATION

PRIMARY TASKS DESCRIPTION OF POTENTIALLY REPETITIVE OR STRESSFUL TASK(S) (e.g. use of computer/calculator/telephone, filing, lifting, etc.)	DURATION OF REPETITIVE MOTION (Average number of hours per workday)

MEDICAL CONDITION(S) TO ACCOMMODATE ☐ **NO** ☐ **YES** If yes, please specify body part affected and symptoms

BODY PART(S) AFFECTED	SYMPTOMS (e.g. ache, fatigue, numbness, pain, sore, tingle, etc.)

ERGONOMIC EQUIPMENT	Check if Recommended	ERGONOMIC EQUIPMENT	Check if Recommended	ERGONOMIC EQUIPMENT	Check if Recommended
Back support for chair	☐	Lamp for Desk	☐	Wrist Rest for Calculator	☐
Chair: Ergonomic	☐	Monitor Stand	☐	Wrist Rest for Keyboard	☐
Copy/Document Holder	☐	Mouse: Ergonomic	☐	Wrist Rest for Mouse	☐
Floor Mat: Plastic	☐	Pencil/Pen Foam Grips	☐	Keyboard: Microsoft Natural Elite	☐
Foot Rest	☐	Staple Remover: Ergonomic	☐		
Hole Punch: Electronic	☐	Telephone Headset	☐	Monitor Glare Reducer	☐
Hole Punch: Padded	☐	Touchpad, Multiple Vendors	☐	Trackball	☐
Keyboard/Mouse Tray	☐	Rollermouse	☐		

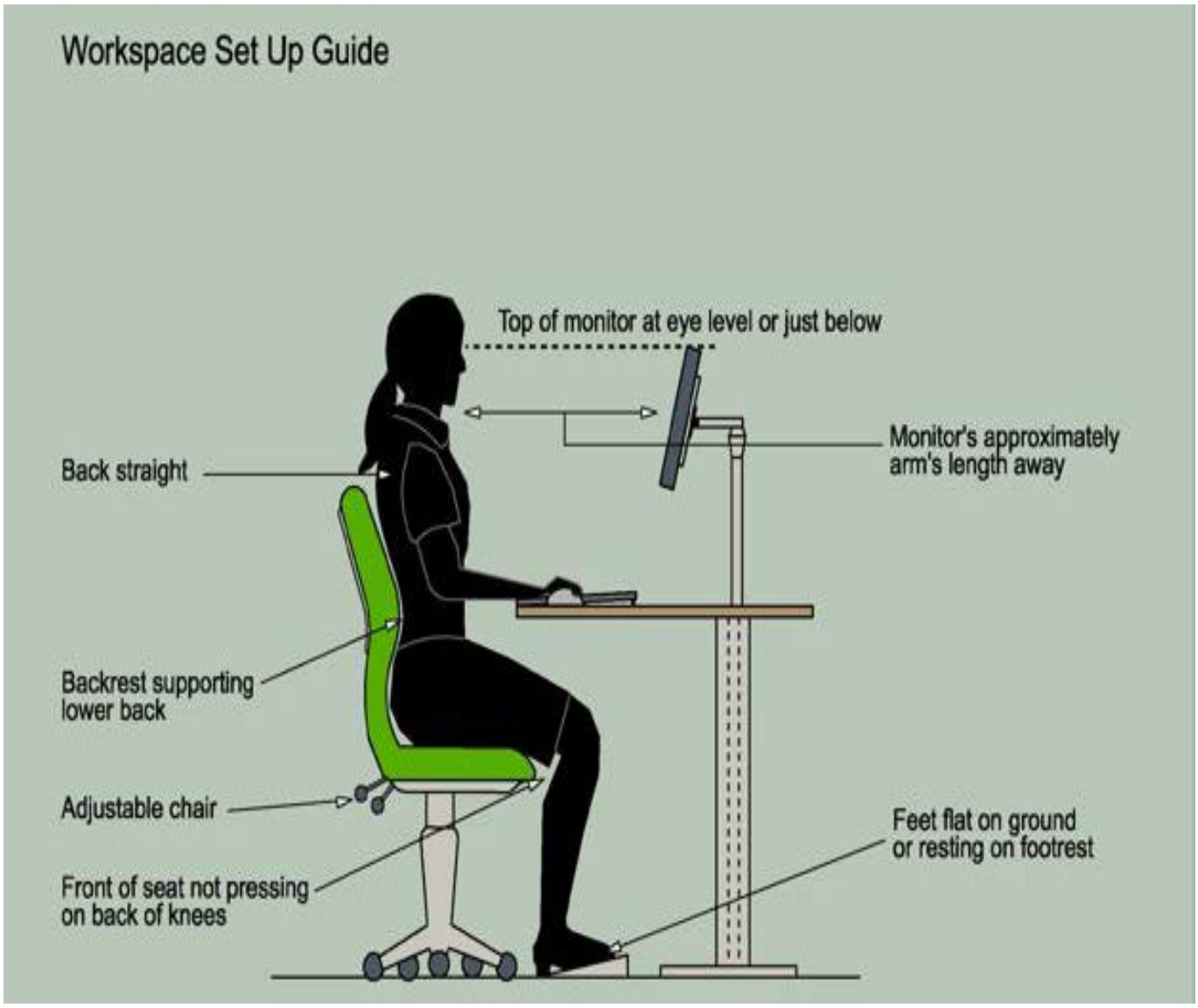
Other ☐ Describe in Detail:

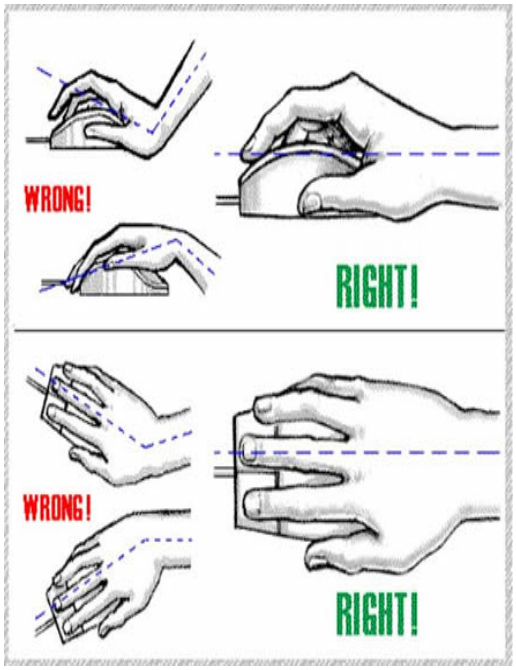
COMMENTS:
The following adjustments were completed at the time of evaluation:
1.
2.
3.

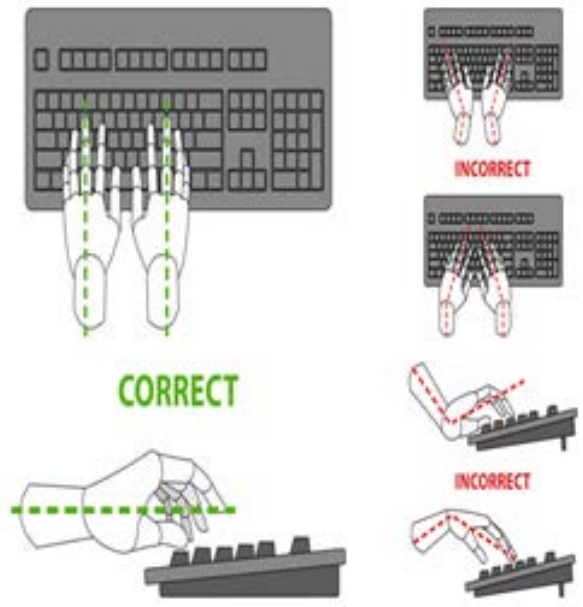
APPENDIX B: OFFICE ERGONOMICS

The word ergonomics is used to describe the science of "designing the job to fit the worker, not forcing the worker to fit the job." Ergonomics covers all aspects of a job, from the **physical stresses** it places on joints, muscles, nerves, tendons, bones and the like, to **environmental factors** which can affect hearing, vision, and general comfort and health.

Following are illustrative examples of proper ergonomics while sitting and typing:







IMPORTANT ERGONOMIC LINKS

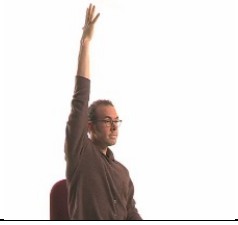
- Detailed information on ergonomics
  - (https://www.safety.caltech.edu/services/ergonomic)
- Webbased ergonomics training: Under development
  - (https://www.safety.caltech.edu/training)
- EHS training calendar
  - (https://www.safety.caltech.edu/training/TrainingCalendar)

APPENDIX C: Office Stretches

To reduce soreness and fatigue, take a stretch break every hour to two hours. Gentle stretching throughout the day helps improve circulation and relax the muscles that may help you complete your work faster and more accurately.

Stretch gently, to your level of comfort, never forcing the stretch. Hold the stretch 10 to 20 seconds and repeat 2 to 3 times. **Discontinue any stretch if it creates discomfort or pain.**

Rest the hands in your lap when not typing or using the mouse. Set your Outlook Calendar for hourly reminders to stretch, perform a couple of standing stretches or walk.

Reach for the Sky Sit with a straight back with both hands in lap. Lift one arm out to the side, reach up and over your head. Spread fingers. Lower arm and repeat on other side. 	**Wingspread** With hands clasped behind head, move elbows backward and hold for a few seconds. The hands should not push against the back of the head. 	**Shoulder Rolls** Relax the arms at your sides. Slowly roll the shoulders backwards 5 times. 
Backbend With hands on hips, feet shoulder width apart, slowly and gently lean backwards. 	**Mid Back Stretch** With both arms straight out in front, slightly "pull" one wrist forward and slightly arch the upper back and take a deep breath. 	**Neck Stretch** Tuck left hand behind your back. Lean your neck away from your left shoulder. Switch sides. 
Wrist Extensors With arm straight out in front of you and fingers pointing to the ground, apply mild pressure on the knuckles. 	**Elbow & Finger Extension** Start with elbows bent, arms parallel to the floor, and fingers clenched. Straighten arms out in front of you, while spreading fingers and extending wrists. Repeat 3 times. 	**Finger Stretch** With fingertips (but not palms) touching, lower your hands from chin level to chest level. Rotate fingers toward body. 

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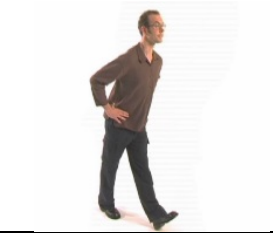
Hamstring Stretch Step forward on one foot. Raise the toe of the forward foot and bend forward at the waist. Return to starting position. Repeat with the other foot. 	**Leg & Ankle Extension** Straighten leg out in front of you. Flex and point foot. Repeat with other leg. 	**Chin Tuck** Sit up, exhale, and place finger on chin. Relax your neck and move head back so chin tucks in. 
Temple Massage Place fingers on the temples. Apply light pressure and massage in a circular motion. 	**Hands Over Eyes** Rub hands together to warm then cover eyes with palms. Hold for a count of 5, repeat. 	**Standing Arm Rotation** With arms out to your sides and palms facing down slowly rotate arms so palms face upwards. Arch your back slightly, and hold for a few seconds.