Ergonomics for Supervisors

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The County of Santa Clara’s Ergonomics Program

- Who are the responsible parties?
- The Process
- The Vendors

- What is your responsibility as a Supervisor?
- Set the example
- What’s in it for you?
- Creating a “nice-nice” work environment
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- Ergonomic Risk Factors
- Common RSI’s observed the Field
- Simple Tips for Mitigation
- What’s in your Ergonomics Report?
- Ergonomic Tools – an overview
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Responsible Agents

- Occupational Safety & Environmental Compliance Department (OSEC) are the “go to folks” for the Ergonomics Program

- Thom Steinmetz (Provides in house and liaison for outside ergonomic consulting services)
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Responsible Agents

- You – the wonderful supervisor
- The Injury and Illness Prevention Program
  “Provide a safe and healthy Workplace”
- ‘Knowing vs. not knowing’
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The Process

- Identify the Need for Ergonomics
- Identify your specific ergonomic needs
  (Proactive- Comprehensive – Workers Compensation Training – Ergonomic Equipment consultation)
- Request a Proposal for Services (RFP)
- Generate a PO for these Services
- Ergonomic Services are provided
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What You Should Expect as a Supervisor

- Ergonomic Risk Factors have been identified and easy fixes have been mitigated at the time of the evaluation
- Ergonomic Education Provided
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What You Should Expect as a Supervisor

- Ergonomic Products have been recommended and an Ergonomics Product List has been left with the responsible parties to facilitate the ordering process

- A follow-up is provided after ergonomic products and or equipment has been received and installed
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The Vendors

Side Mark – Technion Dealer

- Cubicle furniture,
- Ergonomic Chairs,
- Worksurface adjustments
- Keyboard Trays and installations (corner sleeves, etc.)
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The Vendors

**Office Depot** – Mice, Keyboards, Document stands, Monitor Stands, Footrests, Telephone Headsets etc.

**Office Relief** – Same as above plus extra’s (demos”)

**SHI** – Mice and keyboards

**Greybar** – Telephone Headsets
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The Vendors

- Return Policy - 30 days from date of purchase

- Guarantees
  - (Plantronics headsets, Ergonomic Chairs, keyboard tray mountings etc.)

- If it does not work send it back!
The Cost of Not Practicing Sound Ergonomics

- Carpal Tunnel Surgery  - $8-10,000
- DeQuervains Surgery   - $8-12,000
- Lateral tendonitis     - $3-20,000!!!
- Ulnar Entrapment Surgery - $9-20,000!!!

Lost Work Time
Decrease in Productivity
Decrease in Morale
Why Should Ergonomics Be Applied?

Decrease risk of developing RSI’s

RSI’s affect 3/5 employees in the American workplace

MSDS can be avoided.

Improve productivity, comfort, and job satisfaction.
Let’s Talk Ergonomics
Musculoskeletal disorders (MSD) also known as cumulative trauma disorders are caused by the wear and tear on the human body due to exposure to ergonomic risk factors.
Symptoms of MSD’s

- Discomfort & Pain
- Limited Range of Motion
- Numbness or Tingling
- Weakness & Clumsiness
- Redness or Swelling
Ergonomic Risk Factors & Causes of Injuries

- Awkward Postures
- Static postures
- Contact Stress
- Repetitive motions (Work pace)
- Duration of exposure
- Forceful exertions and motions
- Environment (hot or cold)
- Vibrations
Awkward Postures

An awkward posture is one that is held away from the midline of the body; deviations from neutral posture.

Awkward postures can result in muscle, nerve, and vessel impingements.
Awkward Postures
Awkward Postures
Musculoskeletal Injury Results

- Carpal tunnel Syndrome
- Lateral Epicondylitis
- DeQuervains Tenosynovitis
Musculoskeletal Disorders

De Quervains stenosing tenosynovitis - is a painful inflammation of the tendons in the first dorsal compartment of the wrist.
Musculoskeletal Disorders

**Epicondylitis** – inflammation of the flexor and/or extensor tendons of the arms.

- Caused by excessive extension and/or flexion of the wrist muscles due to a combination of repetition, static and awkward postures.

- **Lateral epicondylitis** – tennis elbow (very common).

- **Medial epicondylitis** – golfers elbow (not as common).
Musculoskeletal Disorders

**Carpal tunnel syndrome** – due to the compression of the medial nerve as it passes under the fascial band.

Carpal Tunnel

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Awkward Postures
Musculoskeletal Injury Results

Thoracic Outlet Syndrome – compression of the nerves at the brachial plexus causing numbness and tingling throughout the arms that may radiate downwards to the finger tips.
Awkward Postures

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Figure: Pressures on the lumbar discs as a percentage of pressures in standing.
Musculoskeletal Injury Results
Herniated disc
Static Postures

A static posture is one that is held for prolonged periods of time.

Static postures result in decreased blood flow (oxygen) to the muscles and therefore can cause muscle pain and fatigue.

Neutral posture can be static......
Static Postures
Static Postures
Static Postures
Static Postures

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Static Postures
Bifocal Wearers
Contact Stress

A contact stress is a prolonged pressure applied to a region of the body specifically against a nerve or muscle.
Ergonomic Risk Factors
Ergonomic Risk Factors
Anatomy

Neurological system

Carpal Tunnel

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Why do we experience pain?

- Continual muscle contraction
  - Muscles have memory - they forget to relax!

- Nerve compression
  - Direct and indirect

- When do we use heat vs. ice to relieve inflammation, tightness, or pain?
Stretching for Good Health

- Stretching reduces joint pressure.
- Stretching reduces muscle pain.
- Stretching increases body agility.
- Stretching feels good!
Stretch Break!!!

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Standing & Sitting Lower Back
Shoulders & Neck

**Shoulder Shrugs**
- Move shoulders in a semicircle: up, back, down

**Levator Scapula**
- Place one hand on shoulder blade
- Place other hand on top of head
- Tilt head down
Upper Trapezius

Reach one hand behind back
Hold top of head with other hand
Tilt head to the side
Wrist Extensor & Flexor

Keep elbow straight
Pull fingers with opposite hand
Hamstring

Keep head up
Reach out, above toes
Quadriceps

Pull heel toward buttock
Keep knees together
Press hip forward
Adjusting Your Workstation

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Risk Factor Trends

Chairs - Non adjustable seat pan depths and archaic chair designs

Risk Factor - low and mid back discomfort, neck and bilateral shoulder discomfort

Solution – Provide the most adjustability
Incorrect Chair Fit

Before

After

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Risk Factor Trends

Keyboard trays - Incorrect positive tilt adjustments

Risk Factor – tennis elbow and tendonitis of the anterior wrist
Keyboard Tray – Incorrect Adjustment

Before After

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Risk Factor Trends

Monitor’s – incorrect heights, distances, & locations

Risk Factor – posterior and lateral neck, bilateral shoulder and mid and low back regions
Incorrect Monitor Set-up

Before

After
Risk Factor Trends

Lighting – overhead fluorescent bulbs promote screen glare & non-compatible screen contrast & background colors promote eye fatigue due to pupil dialation and contraction

Risk Factor – Eye Fatigue, headaches, posterior neck discomfort
Lighting and Glare

Before

After

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Risk Factor Trends

Printer’s = incorrect work surface locations

Risk Factors - promote shoulder and elbow discomfort - ulnar entrapment and cubital tunnel disorders
Printer Positioning

Before

After

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Risk Factor Trends

Inline document holders - inappropriate design

Risk Factor – sustained neck and trunk flexion in addition to inadequate work surface space due to papers all over work surface. (decreases real estate)
Document Holders

Before

After

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Be the Model Supervisor

- May not be possible to eliminate exposure completely.

- Goal is to identify and minimize exposure through:
  - Proper equipment/tools and adjustments
  - Proper keying & mousing technique
  - Awareness and self-assessment
  - Taking breaks
  - Stretching
Be the Model Supervisor

- **Lower back**
  - Check monitor placement
  - Forward sitting?

- **Neck**
  - Check monitor placement
  - Hard copy documents?
  - Need a headset?

- **Neck/shoulders**
  - Check desktop/keyboard tray height
  - Sitting close enough?
Be the Model Supervisor

- **Wrist/forearms**
  - Check desktop/keyboard tray height
  - Positive tilt?
  - Planting wrists?
  - Contact stress?

- **Hands/fingers/wrists**
  - Gripping mouse?
  - Overuse of scroll wheel?
  - Planting wrists?
Be the Model Supervisor

- **Chair:**
  - Seat pan height - natural sitting height
  - Seat pan depth – space between chair and legs
  - Backrest height – lumbar support just above tailbone
  - Armrest height – relaxed shoulders

- **Keyboard and mouse:**
  - Natural keying height – keyboard tray?
  - Parallel with floor

- **Monitor:**
  - Height – ears aligned with shoulders
  - Distance – no forward sitting
Rules to Work By

- Move
- Relax
- Take Breaks
- Don’t reach
- Stretch
Questions?

Concerns?

Comments?