Office Risk Solutions

The following are descriptions and solutions for completing the Office Risk Report [1]. You may find more information on equipment on the Ergonomic Product Catalog.

- Wrist Risk Descriptions & Solutions
- Elbow Risk Descriptions & Solutions
- Shoulder Risk Descriptions & Solutions
- Back Risk Descriptions & Solutions
- Neck Risk Descriptions & Solutions
- Leg Risk Descriptions & Solutions

Wrist Risk Descriptions & Solutions

<table>
<thead>
<tr>
<th>Task</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palms Down</td>
<td>The palm of the hand rotated downward at an angle greater than 55° from vertical for longer than 1 min.</td>
</tr>
<tr>
<td></td>
<td>Wrist issues occur when palms are rotated downwards twisting soft tissues in the forearm and placing strain on the wrist.</td>
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<td></td>
<td><strong>Examples</strong>: Typing on a flat keyboard, using a standard mouse input, writing documents.</td>
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<table>
<thead>
<tr>
<th>Administrative Solutions</th>
<th>Equipment Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Take micro-break</td>
<td>1.) Evoluent Vertical Mouse (1-2 min) every hour</td>
</tr>
<tr>
<td>2.) Reduce typing force</td>
<td>2.) Kinesis Freestyle Keyboard</td>
</tr>
<tr>
<td>3.) Conduct hand stretches</td>
<td>3.) Das Mechanical Keyboard</td>
</tr>
</tbody>
</table>

1.) Retract Keyboard
1.) Raise chair
Contact wrist stress with a non-plush surface for longer than 10 sec

**Contact Stress**

Contact stress places pressure on the soft tissues of the wrist; restricting blood flow and causing soft tissue damage to the upper extremities.

**Examples**: Resting palms while typing or using the mouse, planting the hand and using the wrist to move the mouse, leaning on the table when tired.

Any activity which results in the wrist angle being greater than 20° in any direction (upwards, downwards, inwards, outwards) or any combination of directions.

**Awkward Posture**

Wrist deviations places stress on the nerves in the wrist and prolonged awkward postures can reduce muscle strength and increase fatigue.

**Examples**: Wrist deviations while typing, planting wrists on table to use the keyboard or mouse, negative or positive tilt to working surface.

Working continuous on the computer for 3 hours without taking at least 15 min break (total time) will increase the onset of muscle fatigue.

**Duration**

Continuous means a time frame where a person is seated and performing computing or desk related task without major posture variations (standing, walking, and resting) or task variation throughout a normal workday.

**Examples**: Data Entry, Web Browsing, Word Processing, Administrative Tasks, Data Management, Email Communication etc.

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**Elbow Risk Descriptions & Solutions**

**Task** | **Summary** | **Administrative Solutions** | **Equipment Solutions**
---|---|---|---

Any grip or pinch hold that exceeds a weight of 2 lbs or is executed more than 3 times a min. In addition, any grip that larger or smaller than an individual’s palm size by 15% by surface area.

1.) Avoid high force pinch grip 1.) Find a proper size

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Over
Gripping

Gripping any object that is too large or small for an individual’s hand can force a person to grab on the object too tightly and thereby increase strain on the forearm and elbow.

Examples: Mouse size is too large or small, filing documents, lifting heavy objects or repeatedly, excessive writing or pen use.

Awkward Posture

Any activity which results in the wrist angle being greater than 20° in any direction (upwards, downwards, inwards, outwards) or any combination of directions.

Examples: Wrist deviations while typing, planting wrists on table to use the keyboard or mouse, negative or positive tilt to working surface.

Contact Stress

Contact stress places pressure on the soft tissues of the elbow; restricting blood flow and causing soft tissue damage to the upperand have input extremities.

Examples: Resting elbows on table while typing or using the mouse, resting head on hand when fatigued, arm rests are set too high or far back from neutral posture.

Repetition of poor ergonomic habits will increase in the development of repetitive motion injuries.

High Frequency

Frequency means any combination of the activities listed above more than three times per minute. Remember, that this is an average, so if a person conducts these activities for only a portion of the work day, it still counts towards the average of 3 times per minute.
**Examples:** Mouse to keyboard movement, Resting to working mode, Poor biomechanical posture when using computer equipment. Tasks, Data Management, Email Communication etc.

### Shoulder Risk Descriptions & Solutions

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</tr>
</thead>
<tbody>
<tr>
<td><strong>Over Reaching</strong></td>
<td><em>Reaching for often used materials (mouse, book, and phone) takes the body out of a healthy, supported posture and can lead to shoulder strain.</em>&lt;br&gt;&lt;br&gt;<strong>Examples:</strong> Reaching above your shoulder or below your elbow, placing mouse or phone far away from your dominant arm’s shoulder.</td>
<td>1.) Place input device beside keyboard 1.) Adesso Mini Keyboard 2.) Prioritize Items within Arm’s Reach 2.) Contour Re:D Mouse 3.) Increase Mouse Sensitivity 3.) 3M Document Holder 4.) Increase Mouse Space</td>
<td>1.) Raise or Lower Table to Resting Elbow Height 2.) Reorganize Work Space 2.) Adjustable Height Workstation 3.) Adjust armrests to support elbow 3.) Raise Chair and Obtain a Footrest 4.) Provide elbow support or armrest</td>
</tr>
</tbody>
</table>
An unsupported arm forces the shoulder muscles to support arm weight increasing fatigue and stress in the shoulder muscles.

**Examples:** Floating over work surface, table is too low or high, no armrest or relaxed posture is seen.

Repetition of poor ergonomic habits will increase in the development of repetitive motion injuries.

**High Frequency**

Frequency means any combination of the activities listed above more than three times per minute. Remember, that this is an average, so if a person conducts these activities for only a portion of the work day, it still counts towards the average of 3 times per minute.

**Examples:** Mouse to Keyboard Movement, Resting to Working Mode, Poor biomechanical posture when using computer equipment. Tasks, Data Management, Email Communication etc.

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**Back Risk Descriptions & Solutions**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>No Lumbar Support</td>
<td>Seated posture that either has no lumbar contact or more than 2 inches of space between the back of the knee and the edge of the seat pan for greater than 50% of total seated time.</td>
<td>1.) Sit back in the chair to have contact with the lumbar support</td>
<td>1.) Ergonomic Chair Fitting</td>
</tr>
<tr>
<td></td>
<td>Posture that loses contact with the lumbar spine causes the lower back muscles to fatigue and increases the pressure placed on the spine.</td>
<td>2.) Adjust seat pan for a two finger gap between the edge and the back of the knee</td>
<td>2.) Lumbar pillow placed at the gap of the lumbar area</td>
</tr>
<tr>
<td></td>
<td><strong>Examples:</strong> Seat pan too long, chair is too large, non-ergonomic chair, monitor is too far, seated too high.</td>
<td>3.) Position monitor within arm's reach</td>
<td></td>
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<td></td>
<td>Seated posture which results in the back angle being</td>
<td>4.) Increase font size to allow for relaxed seating</td>
<td></td>
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<tr>
<td></td>
<td><strong>Examples:</strong></td>
<td>1.) Ensure feet are in contact with the floor</td>
<td></td>
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</tbody>
</table>
Awkward Posture

Posture that changes the lumbar spine from neutral posture will result in an increase in strain on the spinal column.

Examples: Monitor is too far, close, high or low, multitasking tasks on different surfaces, poor chair comfort, fatigue.

Any posture where shoulders are not supported or relaxed from their rested position for more than 50% of the time. In addition, posture where there no lumbar or thoracic spine support is seen.

Slouched Seating or Unsupported Arms

An unsupported arm forces the lower back muscles to support arm weight increasing fatigue and stress in the lower back muscles. Slouching causes a change in the shape of spine, compromising its integrity and increasing muscle fatigue.

Examples: Floating over work surface, table is too low, no armrest or relaxed posture is seen, and monitor is too high or low, fatigue.

Working continuous on the computer for 3 hours without taking at least 15 min break (total time) will increase the onset of muscle fatigue.

Duration

Continuous means a time frame where a person is seated and performing computing or desk related task without major posture variations (standing, walking, and resting) or task variation throughout a normal workday.

Examples: Data Entry, Web Browsing, Word Processing, Administrative Tasks, Data Management, Email Communication etc.
# Neck Risk Descriptions & Solutions

<table>
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<th>Task</th>
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<th>Administrative Solutions</th>
<th>Equipment Solutions</th>
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</thead>
<tbody>
<tr>
<td><strong>Awkward Neck Posture</strong></td>
<td>Any activity which results in the neck angle being greater than 20° in any direction (upwards, downwards, sideways) or any combination of direction.</td>
<td>1.) If you are a hunt and peck typist, consider learning touch typing.</td>
<td>1.) 3M Document Holder</td>
</tr>
<tr>
<td></td>
<td>Awkward neck posture places stress on the muscles in the neck.</td>
<td>2.) Raise or lower monitor so eye line is aligned with the top of the monitor</td>
<td>2.) If monitor is too low: Obtain a monitor or laptop riser</td>
</tr>
<tr>
<td></td>
<td><strong>Examples:</strong> Monitor is too high, low, off-center, far or close to user, vision problems or glasses are need, multiple monitors used, non-touch typist, documents are viewed on the desk.</td>
<td>3.) Align monitors or documents directly in front of you</td>
<td>3.) If activities are dynamic: monitor arm</td>
</tr>
<tr>
<td></td>
<td>Any posture where shoulders are not support or relaxed from their rested position for more than 50% of the time. In addition, an activity that causes the neck to hold a static tilt posture for longer than 2 min.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unsupported Arms or Phone Cradling</strong></td>
<td>An unsupported arm forces the neck muscles to support arm weight increasing fatigue and stress in the neck muscles. Prolonged neck tilt causes strain the passive tissues in the neck.</td>
<td>1.) Position phone to eliminate reaching across the body</td>
<td>1.) Obtain a phone headset: Plantronics CS50</td>
</tr>
<tr>
<td></td>
<td><strong>Examples:</strong> Floating over work surface, table is too low, no armrest or relaxed posture is seen, phone usage without a headset.</td>
<td>2.) Ensure armrests are located directly under the elbow</td>
<td>2.) Raise or lower table to resting elbow height</td>
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<tr>
<td></td>
<td></td>
<td>3.) Relax shoulders and have input devices at elbow height</td>
<td>3.) Obtain armrests; if needed</td>
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<tr>
<td></td>
<td></td>
<td>4.) Sit back in the chair and have contact in the lower back</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>1.) Align monitors (main monitor) directly in front of you</td>
<td></td>
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<tr>
<td></td>
<td>Neck angle greater than 20° held for longer than 5 min.</td>
<td>2.) Raise or lower monitor so eye line is aligned with the top of the monitor</td>
<td></td>
</tr>
<tr>
<td><strong>Static Posture</strong></td>
<td>Prolonged awkward neck postures can reduce muscle strength and increase fatigue.</td>
<td>1.) If monitor is too low: Obtain monitor or laptop riser</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Examples:</strong> Monitor is too high, low, off-center, far or close to user, vision problems or glasses are need, multiple monitors used.</td>
<td>3.) 20-20-20 Rule (Take</td>
<td></td>
</tr>
</tbody>
</table>
Repetition of poor ergonomic habits will increase in the development of repetitive motion injuries.

**High Frequency**

Frequency means any combination of the activities listed above more than three times per minute. Remember, that this is an average, so if a person conducts these activities for only a portion of the workday, it still counts towards the average of 3 times per minute.

**Examples:** Mouse to Keyboard Movement, Resting to Working Mode, Poor biomechanical posture when using computer equipment. Tasks, Data Management, Email Communication etc

1.) Take Short Breaks Every Hour
2.) Job Rotation Every Two Hours
3.) 15 min Stretch Break Every Three Hours

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### Legs Risk Descriptions & Solutions

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</tr>
</thead>
<tbody>
<tr>
<td>Sitting Too High, Feet on Casters</td>
<td>Knee to foot angle less than 85° or a hip to knee angle greater than 110°.</td>
<td>1.) Lower or raise chair to allow your feet to rest on the floor 2.) Adjust seat pan for a two finger gap between the edge and the back of the knee 3.) Sit back in the chair and have contact in the lower back</td>
<td>1.) Raise or lower table to resting elbow height 2.) Obtain a Foot Rest</td>
</tr>
<tr>
<td></td>
<td>Having too open of a sitting posture or too close of a leg posture will place more pressure on the lower extremities and reduce blood flow.</td>
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<tr>
<td></td>
<td><strong>Examples:</strong> Sitting too high, No foot platform, Non-ergonomic chair, chair is not set up correctly. Working continuous on the computer for a 3hrs without taking at least 15 min break (total time) will increase the onset of muscle fatigue.</td>
<td></td>
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<td></td>
<td></td>
<td>1.) Take micro-break (1-2 min) every hour 2.) Change job task every two hours 3.) 15 min stretch every three hours</td>
<td>1.) CtrlWorks Break Software</td>
</tr>
<tr>
<td>Duration</td>
<td>Continuous means a time frame where a person is seated and performing computing or desk related task without major posture variations (standing, walking, and resting) or task variation throughout a normal workday.</td>
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</tr>
<tr>
<td></td>
<td><strong>Examples:</strong> Data Entry, Web Browsing, Word Processing, Administrative Tasks, Data</td>
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</tbody>
</table>
Management, Email Communication etc.
Any posture where legs are not supported by a solid surface or kneeling or crouching is observed in the work task.

**Static Posture**
Unsupported legs, kneeling and crouching forces the thigh muscles to support increased load which can increase fatigue and stress in the leg muscles.

**Examples:** Sitting too high or low, kneeling to pick up boxes or objects, kneeling chairs.

Contact leg stress with either the table/keyboard tray or seat pan edge for longer than 10 sec.

1.) Raise or lower table to resting elbow height
2.) Sit back in the chair and have contact in the lower back
2.) Obtain a Foot Rest

1.) Lower or raise chair to allow your feet to rest floor

1.) Ergonomic Chair Fitting

**Contact Stress**
Contact stress places pressure on the soft tissues of the leg; restricting blood flow and causing soft tissue damage to the lower extremities.

**Examples:** Seat pan is too long, chair is too high, table is too low

1.) Raise or lower table to resting elbow height
2.) Adjust seat pan to only allow two fingers gap between the edge and the back of the knee
3.) Sit back in the chair and have contact in the lower back
2.) Raise or lower table to resting elbow height

**Contact**

**Ergonomics Team**

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**More information**


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