ROSA – Rapid Office Strain Assessment

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Rapid Office Strain Assessment

• ROSA is a picture based posture checklist designed to quantify exposure to risk factors in an office work environment.
• ROSA is modelled after other picture based checklists and chart scoring systems such as RULA and REBA.
• The goal of the ROSA process is to serve as a screening tool to identify areas of priority in large office based organizations.
ROSA - Usage

• The end user will take a paper or electronic version of the ROSA score sheet with them during an assessment.
• The user selects postures that they observe, and records durations that are reported by the person they are assessing.
ROSA Results

- Research has shown a correlation between discomfort levels and increasing ROSA scores.
- Inter and intra-rater reliability has also been shown to be good to very good.
- **Scores of greater than 5 are deemed to be “high risk” and the workstation should be assessed further.**
ROSA Methods

- The following are instructions on how to select postures using the ROSA checklist.
- A full page example is at the back of this package, as well as a blank ROSA assessment sheet that can be used to conduct assessments.
Select the position of the seat height and chair pan. The first position in the left column indicates the neutral position. This corresponds with a score of “1”. The remaining positions are marked with increasing scores. Those sections with scores such as (+1) (i.e., Insufficient Space Under Desk) are additive scores. These can be added on to the other scores. For Example, if the chair height is too high (2), and it is non-adjustable (+1), this becomes a score of 3.

The score from the Chair Height is then added to the Pan Depth to receive the final score from this section. This score will correspond with the vertical axis along the Section A scoring chart.
### Scoring Examples – Chair Height

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Example</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too low</td>
<td>The height adjustment cylinder is set to its lowest height, and the worker is tall.</td>
<td><img src="image1.png" alt="Too low Example" /></td>
</tr>
<tr>
<td>Too high</td>
<td>The knee angle is greater than 90 degrees, and there is pressure under the thigh.</td>
<td><img src="image2.png" alt="Too high Example" /></td>
</tr>
<tr>
<td>Too high – no foot contact</td>
<td>The worker is using a stool or lab height chair, so the feet cannot physically touch the floor.</td>
<td><img src="image3.png" alt="Too high - No Foot Contact Example" /></td>
</tr>
<tr>
<td>Insufficient space under the desk</td>
<td>The keyboard tray or a computer tower blocks the legs from moving freely under the desk.</td>
<td><img src="image4.png" alt="Insufficient Space Example" /></td>
</tr>
</tbody>
</table>
# Scoring Examples – Chair Depth

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Example</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seat pan depth – too long</td>
<td>There is less than 2-3” of space behind the knee when the person sits back in the chair.</td>
<td></td>
</tr>
<tr>
<td>Seat pan depth – too short</td>
<td>There is more than 2-3” of space behind the knee when the person sits back in the chair. This may focus pressure on the underside of the thigh, and the thigh will not be supported.</td>
<td></td>
</tr>
</tbody>
</table>
Select the position of the arm rests. Once again, the scores that can be added on to postures are indicated by a (+) in front of the number. The scores from both the arm rest section and the backrest section combined will amount to the score across the top axis on the scoring chart.
## Scoring Examples - Armrest

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Example</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armrests too low</td>
<td>There armrests do not support the forearms with the elbows bent to 90 degrees</td>
<td><img src="image1" alt="Image" /></td>
</tr>
<tr>
<td>Armrests too high</td>
<td>The shoulders are shrugged when the forearm is on the armrest and the elbow is at 90 degrees</td>
<td><img src="image2" alt="Image" /></td>
</tr>
<tr>
<td>Hard or Damaged Surface</td>
<td>The armrest is made of a hard plastic/wood or metal, and this creates a pressure point on the forearm.</td>
<td><img src="image3" alt="Image" /></td>
</tr>
</tbody>
</table>
## Scoring Examples – Backrest

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Example</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>No lumbar support</td>
<td>The chair has a flat backrest, possibly a plastic or board room chair. This is usually seen in less expensive models.</td>
<td><img src="image1" alt="No lumbar support" /></td>
</tr>
<tr>
<td></td>
<td>The chair may have lumbar support and it is not positioned correctly in the lower back</td>
<td><img src="image2" alt="No lumbar support" /></td>
</tr>
<tr>
<td>Angled too far back</td>
<td>The backrest recline is too far back, causing the person to either sit forward, or reach to the keyboard.</td>
<td><img src="image3" alt="Angled too far back" /></td>
</tr>
<tr>
<td>No Back Support</td>
<td>The worker is using a stool or the backrest is not positioned against the back</td>
<td><img src="image4" alt="No Back Support" /></td>
</tr>
</tbody>
</table>
The combined score from the arm and back rest section will then be compared on the horizontal axis against the seat pan depth and height on the vertical axis. The square in which the scores land will then be the score for the chair.

To account for the duration that the worker spends in the chair per day, a score of -1 will be assigned if the worker spends less than 1 hour a day in the chair throughout the day, or for less than 30 minutes consecutively. If the worker spends 1-4 hours a day intermittently, or between 30 minutes to 1 hour continuously in the chair, the duration score is 0. If the worker spends more than 4 hours a day in the chair intermittently, or greater than 1 hour consecutively, the duration score will be +1. Add the duration score to the chair score to receive your final chair score.

This will represent your score for section A, which will be used later to achieve a final score for the office.
Section B - Monitor and Telephone

Select the scores as present related to the monitor position for the worker. With this score, add 1 for use of the monitor of greater than 4 hours per day intermittently, or 1 hour consecutively. Add a duration score of 0 if the work is between 1-4 hours intermittently, or 30 minutes to 1 hour consecutively. Subtract 1 if there is less than 1 hour of work done per day intermittently, or less than 30 minutes consecutively. This score is then to be used along the horizontal axis.

Select a score related to the position and usage of the telephone. Add in a duration factor of +1, 0 or -1 based on the amount of time the worker spends on the phone per day. This score is then to be used along the vertical axis.

Compare the score between the horizontal and vertical axis as done with the chair score. This score becomes the Section B ROSA score, which will be used again later to receive the grand score.
## Scoring examples - Monitor

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Example</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor too low</td>
<td>The top of the screen is 30 degrees below the sitting eye height causing neck flexion</td>
<td></td>
</tr>
<tr>
<td>Monitor too high</td>
<td>The top of the screen is above eye level, causing the neck to be extended while viewing the screen.</td>
<td></td>
</tr>
<tr>
<td>Neck twist</td>
<td>The monitor is positioned to the side of the worker, or dual screens may cause the worker to rotate the head back and forth.</td>
<td></td>
</tr>
<tr>
<td>Documents used – no document holder</td>
<td>The worker has to flex and twist the neck in order to view papers positioned on the desk</td>
<td></td>
</tr>
</tbody>
</table>
## Scoring Examples - Telephone

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Example</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too far – reach</td>
<td>The phone is positioned at the back of the desk, and when it rings, the worker has to extend and bend over the surface to grab the handset.</td>
<td><img src="image1.png" alt="Picture" /></td>
</tr>
<tr>
<td>Neck and Shoulder hold</td>
<td>The worker has to use the phone and computer at the same time, and in order to type, they will pinch the handset between the neck and the shoulder.</td>
<td><img src="image2.png" alt="Picture" /></td>
</tr>
</tbody>
</table>
Section C – Keyboard and Mouse
Select a score based on the position of the keyboard. If the keyboard is used for greater than 4 hours per day intermittently, or 1 hour consecutively, use a duration score of +1. For between 1-4 hours intermittently, or 30 minutes to 1 hour consecutively, use a score of 0. For 1 hour or less intermittently, or less than 30 minutes consecutively, use a score of -1.

Select a score based on the mouse position. If the mouse is used for greater than 4 hours per day intermittently, or 1 hour consecutively, use a duration score of +1. For between 1-4 hours intermittently, or 30 minutes to 1 hour consecutively, use a score of 0. For 1 hour or less intermittently, or less than 30 minutes consecutively, use a score of -1.

Select a score by finding the intersection between the keyboard and mouse scores. This score will now be used to retrieve a score for the peripherals, monitor and telephone.
## Scoring Examples - Mouse

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Example</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinch grip on mouse</td>
<td>The mouse is small (such as a notebook mouse) leading to a pinching of the mouse.</td>
<td></td>
</tr>
<tr>
<td>Reach to mouse</td>
<td>The mouse is out to the side of the keyboard, causing abduction of the arm. This may be because the person is small through the shoulders, and the numeric keypad causes further mouse position.</td>
<td></td>
</tr>
<tr>
<td>Different surfaces</td>
<td>Mouse reach may also be cause if the keyboard tray is too small, and the mouse is on a separate surface.</td>
<td></td>
</tr>
</tbody>
</table>
### Scoring Examples – Keyboard

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Example</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrist extended</td>
<td>The tray may be angled, or the legs on the back of the keyboard may be up causing the wrists to be extended while typing.</td>
<td><img src="image1" alt="Image" /></td>
</tr>
<tr>
<td>Deviation while typing</td>
<td>A small keyboard can cause wrist deviation while typing (ie, laptop keyboards)</td>
<td><img src="image2" alt="Image" /></td>
</tr>
<tr>
<td>Keyboard tray too high</td>
<td>When typing, the shoulders are shrugged in order to rest the arms or hands on the appropriate desk surface.</td>
<td><img src="image3" alt="Image" /></td>
</tr>
</tbody>
</table>
Peripherals and Monitor/Phone Score

Using the score retrieved from the Monitor and Phone score in Section B, highlight the correct number on the horizontal axis. Using the correct score retrieved from the monitor and telephone section, highlight the correct number on the vertical axis. Find the corresponding value within the scoring chart.

The value found from this scoring chart will now be used to find a final score by comparing it against the value retrieved from Section A – The Chair.
The score from Section A is seen along the vertical axis, and the score from section B and C is seen along the horizontal axis. These scores are then combined through this final scoring chart to receive the ROSA final score from the office.

The ROSA final score is broken into two areas: further assessment not immediately required, and further assessment required as soon as possible.
### Example 1

<table>
<thead>
<tr>
<th>Arms / Back rest</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</tbody>
</table>

Mouse:
- Score: 2 + 1 = 3

Keyboard:
- Score: 3 + 1 = 4

Monitor:
- Score: 2 + 1 = 3

Phone:
- Score: 2 - 1 = 1

Chair Score = 5 + 1 FOR DURATION = 6
Example 1

Chair Score = 5 + 1 FOR DURATION = 6

The Grand ROSA score for Example 1 is 6.
Reference