EU-OSHA e-tools webinar
September 28\textsuperscript{th}, 2021

PainPoint App – Prevent Musculoskeletal Disorders (MSD) at Work

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Occupational Health Clinics for Ontario Workers
Ontario, Canada
What OHCOW Does

**Exposure**
- to what
- how much

**Health**
- symptoms
- diagnosis

**Work Relatedness**
- epidemiology
- scientific evidence

**Prevention**
PainPoint App Creation

Released in October of 2015
Collaboration between Occupational Health Clinics for Ontario Workers (OHCOW) and the Canadian Centre for Occupational Health and Safety (CCOHS).
Initial Goals for PainPoint App

• For individuals to use
• Desire to raise awareness about work-related pain and take action to prevent it
• Recommend steps a user can take to reduce their workplace exposures
PainPoint App Use

• Delivers very basic ergonomic assessment
• Results depicted on a body map
• Gives recommendations to address work-related MSD hazards
• Summary of results can be shared

A good first step for recognition, action and prevention
Basis of App - MSD Survey

**MSD survey**

- 2 parts:
  - **body map** to identify where aches/pains are & likelihood of seeking medical attention
  - **exposure questions** – leading to suggestions on how to reduce exposures

An improved musculoskeletal discomfort assessment tool

Robert J. Marley *, Nirmal Kumar

*Industrial and Management Engineering Department, 315 RH, Montana State University, Bozeman, MT 59717-0384, USA*

Received 15 June 1994; revised 15 September 1994

Discomfort Scales

0   no discomfort
1
2   fairly comfortable
3
4
5   moderate discomfort
6
7
8   very uncomfortable
9
10  extreme discomfort

A/0 = never
B/1 = rarely
     (few times/month)
C/2 = frequently
     (few times/week)
D/3 = constantly
     (nearly every day)

neck

severity

frequency/probability
<table>
<thead>
<tr>
<th>freq</th>
<th>Discmfrt</th>
<th>B = rarely</th>
<th>C = frequently</th>
<th>D = constantly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
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</tr>
<tr>
<td>9</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
USE IN WORKPLACES
Discomfort

Based on the scales below, please indicate the amount of discomfort you have felt at work in the last month and how often you experience it for each body region. An example is provided below.

<table>
<thead>
<tr>
<th>No Discomfort</th>
<th>Moderate Discomfort</th>
<th>Extreme Discomfort</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Frequency

Never | Rarely | Frequently | Constantly | (few/month) | (few/week) | (nearly daily) |
      | A      | B          | C          | D           |           |               |

EXAMPLE:
A worker is experiencing moderate discomfort in the hand or finger frequently (3 times a week)
Exposure Questions

• We also ask questions related to physical exposures in the workplace.
• This has varied based on the type of work environment.
Please answer the following questions based on your overall experience in the last week.

15. Where is your computer screen in relation to your eyes (choose one)?

- Looking level
- Looking down
- Looking up

16. Where is your computer screen located (choose one)?

- Directly in front
- Off to a side

17. How do you position your wrist most often when you are mousing?

- Straight and level
- Bent inwards
- Bent Outwards
- Bent Upwards
## Industrial

<table>
<thead>
<tr>
<th>Question</th>
<th>Comfortable</th>
<th>Neutral</th>
<th>A Bit Uncomfortable</th>
<th>Annoying</th>
<th>Very Uncomfortable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall, how would you rate the comfort of your workstation (circle one)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Do you have to <strong>bend your back</strong> in order to do your work (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
<tr>
<td>3. Do you have to <strong>stand in one place</strong> for an extended period of time (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
<tr>
<td>4. Do you have to <strong>stretch to reach</strong> in order to do your work (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
<tr>
<td>5. Do you have to <strong>twist your body</strong> in order to do your work (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
<tr>
<td>6a. Do you need to <strong>lift things</strong> in order to do your work (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
<tr>
<td>6b. How would you rate the effort of lifting (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
<tr>
<td>7a. Do you need to <strong>push or pull</strong> in order to do your work (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
<tr>
<td>7b. How would you rate the effort of pushing or pulling (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
<tr>
<td>8a. Do you have to <strong>grip anything</strong> in order to do your work (circle one)?</td>
<td>Never</td>
<td>Rarely</td>
<td>Once in a While</td>
<td>Regularly</td>
<td>All the Time</td>
</tr>
</tbody>
</table>
Department X

1. Not likely to seek treatment
2. Somewhat likely to seek treatment
3. Very likely to seek treatment
Department X Left Side

<table>
<thead>
<tr>
<th></th>
<th>Not likely to seek treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Somewhat likely to seek treatment</td>
</tr>
<tr>
<td>3</td>
<td>Very likely to seek treatment</td>
</tr>
</tbody>
</table>

The diagram shows the percentage of likelihood to seek treatment based on different body parts:

- L Shoulder: 30%
- L Upperarm: 20%
- L Elbow: 20%
- L Forearm: 10%
- L Wrist: 10%
- L Hand: 10%

1 Not likely to seek treatment
2 Somewhat likely to seek treatment
3 Very likely to seek treatment
1. Not likely to seek treatment
2. Somewhat likely to seek treatment
3. Very likely to seek treatment
Department X Neck and Back

1. Not likely to seek treatment
2. Somewhat likely to seek treatment
3. Very likely to seek treatment
OHCOW SURVEY TOOL
# Spreadsheet Entry

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Enter group name here (type over)</td>
</tr>
<tr>
<td>B</td>
<td>ID number</td>
</tr>
<tr>
<td>C</td>
<td>Department</td>
</tr>
<tr>
<td>D</td>
<td>Line</td>
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<td>E</td>
<td>Job</td>
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<td>F</td>
<td>Age category</td>
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<tr>
<td>G</td>
<td>Sex</td>
</tr>
<tr>
<td>H</td>
<td>Right or left handed</td>
</tr>
<tr>
<td>I</td>
<td>Neck</td>
</tr>
<tr>
<td>J</td>
<td>Left shoulder</td>
</tr>
<tr>
<td>K</td>
<td>Left upper arm</td>
</tr>
<tr>
<td>L</td>
<td>Left elbow</td>
</tr>
<tr>
<td>M</td>
<td>Left forearm</td>
</tr>
<tr>
<td>N</td>
<td>Left wrist</td>
</tr>
<tr>
<td>O</td>
<td>Left hand</td>
</tr>
<tr>
<td>P</td>
<td>Buttocks</td>
</tr>
</tbody>
</table>

---

**Note:** This spreadsheet is used to record data for occupational health clinics for Ontario workers and Centre de Santé des Travailleurs(ses) de l’Ontario.
<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Data Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>q1</td>
<td>workstation comfort rating</td>
<td></td>
</tr>
<tr>
<td>q2</td>
<td>bending</td>
<td></td>
</tr>
<tr>
<td>q3</td>
<td>standing in one place</td>
<td></td>
</tr>
<tr>
<td>q4</td>
<td>stretching to reach</td>
<td></td>
</tr>
<tr>
<td>q5</td>
<td>twisting</td>
<td></td>
</tr>
<tr>
<td>q6a</td>
<td>lifting frequency</td>
<td></td>
</tr>
<tr>
<td>q6b</td>
<td>lifting effort</td>
<td></td>
</tr>
<tr>
<td>q7a</td>
<td>push/pull frequency</td>
<td></td>
</tr>
<tr>
<td>q7b</td>
<td>push/pull effort</td>
<td></td>
</tr>
<tr>
<td>q8a</td>
<td>gripping frequency</td>
<td></td>
</tr>
<tr>
<td>q8b</td>
<td>gripping effort</td>
<td></td>
</tr>
<tr>
<td>q9b</td>
<td>shoulder work</td>
<td></td>
</tr>
<tr>
<td>q10</td>
<td>number of repetitions</td>
<td></td>
</tr>
<tr>
<td>q11</td>
<td>vibration exposure</td>
<td></td>
</tr>
</tbody>
</table>

Suggestions: keep typing even if you go beyond space
Department X

Rear Suspension - Shift 2 Results (N=39)

- Neck
- Left Shoulder
- Left Upper Arm
- Left Elbow
- Left Forearm
- Left Wrist
- Left Hand
- Buttocks
- Left Thigh
- Left Knee
- Left Lower Leg
- Left Foot/Ankle
- Upper Back
- Right Shoulder
- Right Upper Arm
- Right Elbow
- Right Forearm
- Right Wrist
- Right Hand
- Mid/Low Back
- Right Thigh
- Right Knee
- Right Lower Leg
- Right Foot/Ankle

Legend:
- no symptom
- not likely to seek medical treatment
- somewhat likely to seek medical treatment
- very likely to seek medical treatment

Occupational Health Clinics for Ontario Workers
Centre de Santé des Travailleurs(ses) de l’Ontario
% Somewhat or Very Likely to seek medical treatment

% Very Likely to seek medical treatment

Department X
Department X

**Average Score**

- **Workstation Comfort Rating**
  - Never: 2.4
  - Rarely: 1.4
  - Once in a while: 2.2
  - Regularly: 2.6
  - All the time: 2.7

- **Bending**
  - Never: 2.4
  - Rarely: 1.4
  - Once in a while: 2.2
  - Regularly: 2.6
  - All the time: 2.7

- **Standing in One Place**
  - Never: 2.2
  - Rarely: 2.2
  - Once in a while: 2.2
  - Regularly: 2.6
  - All the time: 2.6

- **Stretching to Reach**
  - Never: 2.6
  - Rarely: 2.6
  - Once in a while: 2.6
  - Regularly: 2.6
  - All the time: 2.6

- **Twisting**
  - Never: 2.8
  - Rarely: 2.8
  - Once in a while: 2.8
  - Regularly: 2.8
  - All the time: 2.8

- **Lifting Frequency**
  - Never: 2.8
  - Rarely: 2.8
  - Once in a while: 2.8
  - Regularly: 2.8
  - All the time: 2.8

- **Push/Pull Frequency**
  - Never: 2.8
  - Rarely: 2.8
  - Once in a while: 2.8
  - Regularly: 2.8
  - All the time: 2.8

- **Gripping Frequency**
  - Never: 2.6
  - Rarely: 2.6
  - Once in a while: 2.6
  - Regularly: 2.6
  - All the time: 2.6

- **Shoulder Work**
  - Never: 1.8
  - Rarely: 1.8
  - Once in a while: 1.8
  - Regularly: 1.8
  - All the time: 1.8

- **Vibration Exposure**
  - Don't: 2.1
  - Easy: 2.1
  - Moderate: 2.2
  - Difficult: 2.1
  - Very Difficult: 2.2
Department X

- **Workstation Comfort**: 0.0 - 4.7
- **Bending Your Back**: 0.0 - 4.0
- **Standing in One Place**: 0.0 - 4.0
- **Stretching to Reach**: 0.0 - 4.0
DESIGN OF THE APP
User Testing
PainPoint – Prevent Musculoskeletal Disorders at Work

Download this useful app that delivers a very basic ergonomic assessment by running through a series of diagrams and questions to pinpoint musculoskeletal pain, identify possible sources, and discover practical solutions—right from your smartphone! The results are depicted on a body map, with recommendations to address work-related MSD hazards that could be contributing to your discomfort. No personal data is collected, but summary results can be shared with others (at your discretion) in order to report hazards or foster solutions.

While a professional ergonomic assessment is considered the most effective way to address work-related discomfort, this app is a good first step to help you recognize the signs of MSDs and take action for prevention. For more information, visit the resources section of our website or to make an inquiry or disc visit, contact us at painpoint@ohcow.on.ca.

This app is the result of a valuable and productive professional collaboration: combining the clinical expertise ergonomic content of the Occupational Health Clinic for Ontario Workers (OHOW) with the technological communication skills of the Canadian Centre for Occupational Health and Safety (CCOHS).
Installing on Phones

PainPoint – Prevent Work Injury
OHCOW

Uninstall
Open

What's new
Last updated Oct. 6, 2015
change swipe behaviour.
fix a bug.

Rate this app
Tell others what you think

Write a review

Developer contact

About this app
Go through a basic workplace ergonomic assessment using diagrams and questions.

This app is adapted from a survey of musculoskeletal (MSD) body pain that was designed to be done collectively and analyzed on a group basis. This individually-scored version is meant for educational purposes only, to raise awareness of work-related MSD and possible solutions.

This survey-based app does not collect or disseminate any of your personal information. The only information that is tracked are grouped totals of app downloads, screens loaded and input entered.

For app-user privacy, both the Occupational Health Clinics for Ontario Workers (OHCOW) and the Canadian Centre for Occupational Health and Safety (CCOHS) adhere to the privacy acts published by the Office of the Privacy Commissioner of Canada and the Office of the Privacy Commissioner of Ontario respectively.

Questions? Please email: painpoint@ohcow.on.ca

OCCUPATIONAL HEALTH CLINICS FOR ONTARIO WORKERS
Centre de Santé des Travailleurs(ses) de l'Ontario
Using PainPoint

**HOW IT WORKS**

Step 1: Enter the intensity and frequency for each specific pain point.

Step 2: Answer a series of questions about the work that you do.

Step 3: Take action against your pain with the recommendations.
Choose by Body Region or Point on Body Map

STEP 1: Select a problem area below.

- **REGIONS**
  - Neck and Back
  - Left Arm
  - Right Arm
  - Left Leg
  - Right Leg

- **POINTS**

CLEAR I am done entering my pain points

PAIN LEGEND

Home Body Map Exposure Questions Results More

Occupational Health Clinics for Ontario Workers Centre de Santé des Travailleurs(ses) de l’Ontario
Choose Pain Intensity and Frequency

STEP 1: Select a problem area below.

Enter the intensity and frequency of your pain.

**Neck**

**Intensity**
- Very Uncomfortable

**Frequency**
- Never
- Rarely (few times/month)
- Frequently (few times/week)
- Constantly (nearly every day)

I am done here. Take me back to the Body Map

**Right Elbow**

**Intensity**
- Moderate Discomfort

**Frequency**
- Never
- Rarely (few times/month)
- Frequently (few times/week)
- Constantly (nearly every day)

I am done here. Take me back to the Body Map

Body Map

Intensity
- No Discomfort

Frequency
- Never
- Rarely (few times/month)
- Frequently (few times/week)
- Constantly (nearly every day)

Occupational Health Clinics for Ontario Workers
Centre de Santé des Travailleurs(ses) de l’Ontario
Answer Exposure Questions

**How often do you:**

**Exposure Questions**

- **Sit for prolonged periods of time?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Stand for prolonged periods of time with infrequent walking?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Bend forward or twist your back with few pauses?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Lift heavy loads (e.g. objects, tools or people)?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Carry heavy loads more than a few steps?**

- **Work with your neck in an awkward position?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Work with your hands above shoulder level?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Use a keyboard or mouse intensively?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Perform repetitive movements of the arm, wrist or hand?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Pinch grip objects between your finger and thumb?**
  - Never
  - Rarely
  - Sometimes
  - Often
  - Always

- **Grip objects with your whole hand continuously or repeatedly?**
Legend and Recommendations

**Step 3: Results 2021-09-21**

- **Your Pain Summary**
- **Workplace Recommendations**

**Pain Legend**
- **Low** - Unlikely to seek treatment
- **Moderate** - Somewhat likely to seek treatment
- **Severe** - Highly likely to seek treatment

**Recommendations**
- Seek medical attention for severe pain.
- Report any work-related discomfort, pain or injury to your supervisor and health and safety representative.
- Take note of patterns which might identify causes.
- Strength conditioning and stretching have been shown to prevent injury.
Pain and Hazard Solutions

**NECK STRAIN**  **OFTEN**
Redesign area to work at eye level.
Support the head and neck with seating or other devices.
Use assistive tools that eliminate awkward postures.

**ELEVATED ARMS**  **RARELY**

**KEYBOARDING / MOUSING**  **OFTEN**
Use voice-controlled technology.
Use keyboard shortcut keys.
Alternate with hand-free tasks or take breaks.

**REPETITIVE WORK**  **OFTEN**
Use power tools or devices that reduce repetition.
Redesign area to minimize reaching.
Alternate with hand-free tasks or take breaks.

**SITTING**  **OFTEN**
Stand or walk at least every hour.
Avoid lifting after prolonged sitting.
Use seat with appropriate fit and support.

**STANDING**  **RARELY**
Walk or sit at least every hour.
Alternate between sitting and standing.
Seek footwear and floor surfaces that reduce fatigue.

**BENDING / TWISTING**  **SOMETIMES**
Redesign area or task to work upright.

Save History and Share Results

PainPoint

HISTORY

TODAY
2021-09-21

Results
Reset

Previous sessions:

2021-09-20

Results
Delete

Clear All

Prevent Musculoskeletal Disorders (MSD) at work

Results: 2021-09-21

Pain Points

Pain point: Neck
Level: 3
Intensity: 7 (Very Uncomfortable)
Frequency: 2 - Frequently (few times / week)

Pain point: Mid-to-Lower Back
Level: 1
Intensity: 4 (Moderate Discomfort)
Frequency: 1 - Rarely (few times / month)

Pain point: Right Elbow
Level: 1
Intensity: 5 (Moderate Discomfort)
Frequency: 1 - Rarely (few times / month)
Create an Action Plan

ACTION PLAN

Take action to help prevent Musculoskeletal Disorders at Work. Follow these steps to help implement workplace changes. Leverage what you have learned through advice provided in both your pain summary and workplace recommendations.

CLOSE ALL

LEARN
- familiarize yourself with the basics
- deepen your understanding, share your awareness
- identify resources

ORGANIZE

ASSESS

CHANGE

EVALUATE

Additional content includes navigation options such as Home, Body Map, Exposure Questions, Results, and More.
For more information, visit http://www.ohcow.on.ca/painpoint.html or contact us at pinpoint@ohcow.on.ca.