

# Evaluating Ergonomic Risk Factors With the Job Screen Assessment

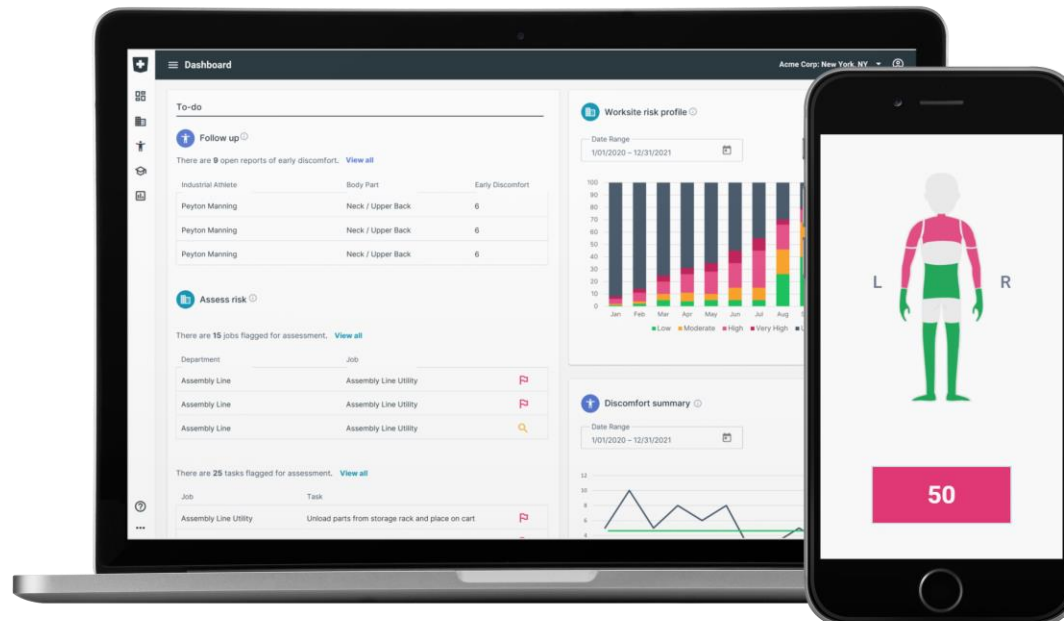
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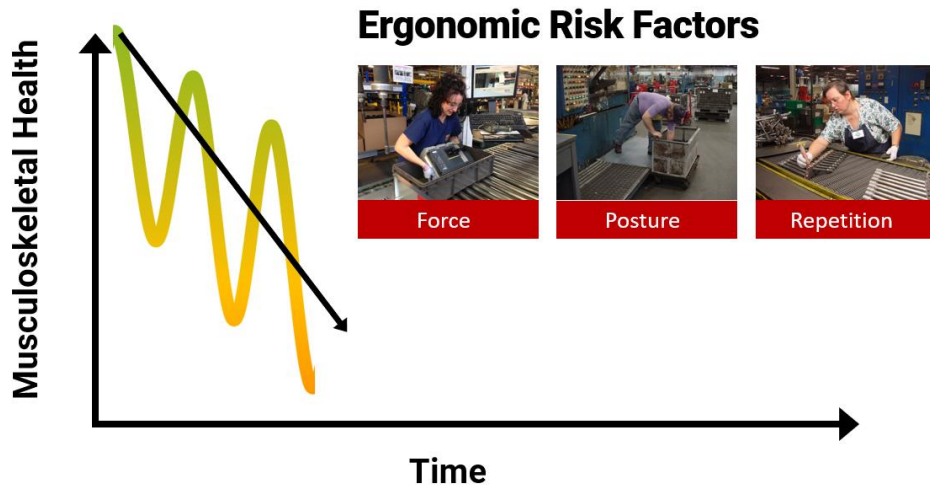
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# The Ergonomics Behind the Job Screen

## Ergonomic risk factors increase risk for musculoskeletal disorders

Research tells us there are three primary ergonomic risk factors leading to the development of musculoskeletal disorders: high force loads, awkward postures, and repetitive movements. Risk increases when there is a combination of these risk factors present in a job, especially when high force loads are required.

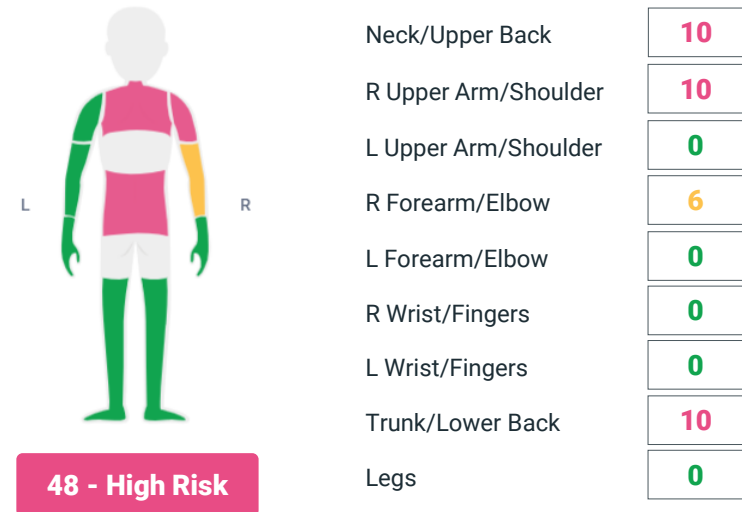


Research also tells us the human body's capacity to withstand these risk factors so that we can determine acceptable risk thresholds. This research has led to the development of many ergonomic assessment tools that allow us to quantify ergonomic risk factors.

## The Job Screen Assessment

Drawing on this research, the Job Screen measures all the primary ergonomic risk factors for all the primary body segments.

Contact stress, impact stress, hand-arm vibration, and exposure duration are also considered in the tool. The result is a risk score for each body segment that culminates in an overall risk score for the job. This final score is then translated into Low, Moderate, High, and Very High category bands.



● Low    ● Moderate    ● High    ● Very High

In addition to the risk scoring, specific tasks can be flagged for further assessment using tools like the NIOSH Lifting Equation, REBA, and RULA.

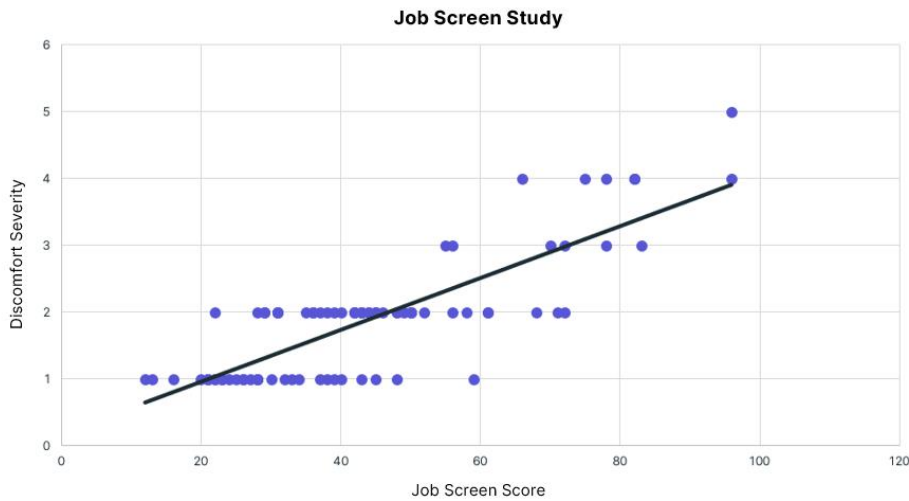
🚩 Unload parts from storage rack and place on cart



# The Benefits of Using the Job Screen

## Practical enough to use, accurate enough to trust

There is a tension in ergonomics between pinpoint accuracy and having a tool that is practical enough for everyday use. The Job Screen strikes that balance perfectly in our view. It is easy to use, assessments only take about 30 minutes, and our data has shown that higher Job Screen scores correlate with higher musculoskeletal discomfort and injury rates. The tool is practical enough to use *and* accurate enough to trust.



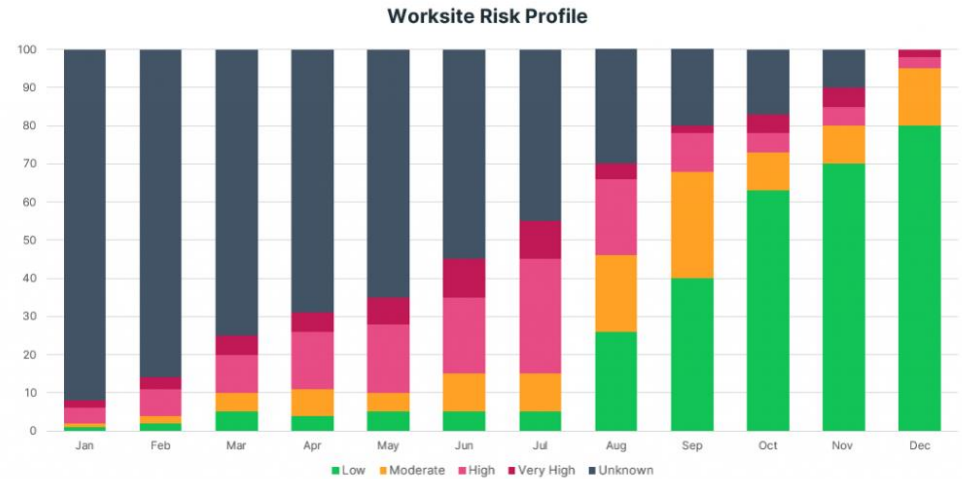
## Get exactly the information you need to quantify and control ergonomic risk factors

Remember, research has shown that the primary ergonomic risk factors are force, posture, and repetition and that the more ergonomic risk factors present the more risk there is. The objective of your ergonomics process is to identify and control these risks. The Job Screen helps you do exactly that. The tool specifically measures each ergonomic risk factor for each major body segment.

This is precisely the information you need in order to have an effective ergonomics process. Without this information, there are major gaps in the ergonomics knowledge of your worksite.

## Put your ergonomics data in a usable form

Using a job-level assessment tool with risk categories of Low, Moderate, High, and Very High puts your data into a usable form because you can create a risk profile of your worksite that is measurable over time.



As you can see from the example above, this worksite went from over 90% of jobs at Unknown risk to 0% Unknown with 80% of jobs at Low risk.

The ideal state is to have 0% of jobs at Unknown risk with 100% of jobs in the Low risk category. While this is very difficult to accomplish, the risk profile created from the Job Screen gives you the tool you need to make progress toward that goal.

Given that lower Job Screen scores correlate with lower musculoskeletal discomfort and injuries, any improvement in your risk profile means you are making progress toward the objective of your ergonomics process.



Department: \_\_\_\_\_ Job: \_\_\_\_\_

Key Tasks: \_\_\_\_\_

## Neck/Upper Back

Force  Posture  Repetition

- 1. **Very Light** Relaxed effort, no load, neutral posture
- 2. **Light** Noticeable effort, < 1 lb.
- 3. **Moderate** Obvious effort, 1-2 lb. load on head/neck
- 4. **Hard** Substantial effort, 3-5 lb. load on head/neck
- 5. **Very Hard** Maximal effort, > 5 lb. load on head/neck

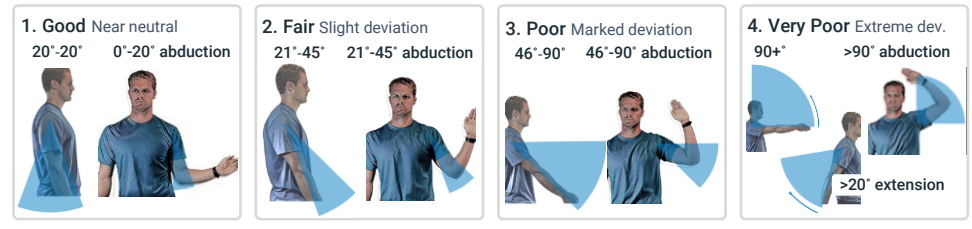


- 1. **Very Low** < 1 rep / 5 minutes
- 2. **Low** < 1 rep / minute
- 3. **Moderate** 2-3 rep / minute
- 4. **High** 4-5 reps / minute or sustained 5-10 secs
- 5. **Very High** > 5 reps / minute or sustained > 10 secs

## Upper Arm/Shoulder

Force L  R  Posture L  R  Repetition L  R

- 1. **Very Light** Relaxed effort, no load, neutral posture
- 2. **Light** Noticeable effort, < 5 lb. unilateral load
- 3. **Moderate** Obvious effort, > 5 lb. unilateral load
- 4. **Hard** Substantial effort, > 10 lb. unilateral load
- 5. **Very Hard** Maximal effort, > 15 lb. unilateral load



- 1. **Very Low** < 1 rep / 5 minutes
- 2. **Low** < 1 rep / minute
- 3. **Moderate** 2-3 reps / minute
- 4. **High** 4-5 reps / minute or sustained 5-10 secs
- 5. **Very High** > 5 reps / minute or sustained > 10 secs

## Forearm/Elbow

Force L  R  Posture L  R  Repetition L  R

- 1. **Very Light** Relaxed effort, no load, neutral posture
- 2. **Light** Noticeable effort, < 5 lb. unilateral load
- 3. **Moderate** Obvious effort, > 5 lb. unilateral load
- 4. **Hard** Substantial effort, > 10 lb. unilateral load
- 5. **Very Hard** Maximal effort, > 15 lb. unilateral load

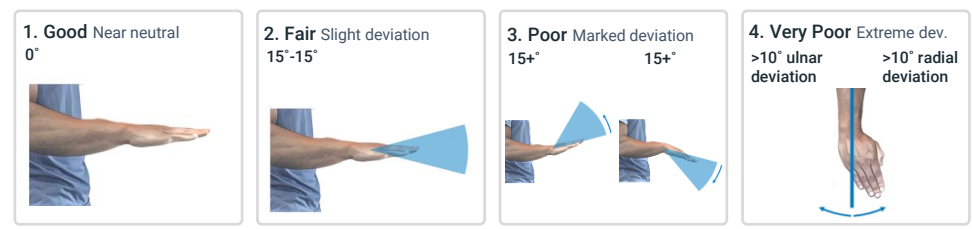


- 1. **Very Low** < 1 rep / 5 minutes
- 2. **Low** < 1 rep / minute
- 3. **Moderate** 2-3 reps / minute
- 4. **High** 4-5 reps / minute or sustained 5-10 secs
- 5. **Very High** > 5 reps / minute or sustained > 10 secs

## Wrist/Fingers

Force L  R  Posture L  R  Repetition L  R

- 1. **Very Light** Relaxed effort, no sign. force, neutral posture
- 2. **Light** Noticeable effort, <1 lb. pinch or <5 lb. power grip
- 3. **Moderate** Obvious effort, 2-3 lb. pinch or 5-10 lb. power grip
- 4. **Hard** Substantial effort, 4-5 lb. pinch or 10-15 lb. power grip
- 5. **Very Hard** Maximal effort, >5 lb. pinch or >15 lbs. power grip



- 1. **Very Low** <4 reps/minute
- 2. **Low** < 4-8 reps/minute, no sustained pinch or grip
- 3. **Moderate** 9-14 reps/minute or sustained < 5 secs
- 4. **High** 15-19 reps/minute or sustained 6-10 secs
- 5. **Very High** > 20 reps/minute or sustained > 10 secs

## Trunk/Lower Back

<p><b>Force</b> <input type="checkbox"/></p> <ol style="list-style-type: none"> <li>1. <b>Very Light</b> Relaxed effort, no load, neutral posture</li> <li>2. <b>Light</b> Noticeable effort, &lt; 10 lb. load</li> <li>3. <b>Moderate</b> Obvious effort, 10-25 lb. load</li> <li>4. <b>Hard</b> Substantial effort, 26-40 lb. load</li> <li>5. <b>Very Hard</b> Maximal effort, &gt; 41 lb. load</li> </ol>	<p><b>Posture</b> <input type="checkbox"/></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%; vertical-align: top;"> <p>1. <b>Good</b> Near neutral 0°</p>  </td> <td style="width: 25%; vertical-align: top;"> <p>2. <b>Fair</b> Slight deviation 0°-20°</p>  </td> <td style="width: 25%; vertical-align: top;"> <p>3. <b>Poor</b> Marked deviation 20°-60° 0°-20° in extension</p>  </td> <td style="width: 25%; vertical-align: top;"> <p>4. <b>Very Poor</b> Extreme dev. &gt;20° ext &gt;60°</p>  </td> </tr> </table>	<p>1. <b>Good</b> Near neutral 0°</p> 	<p>2. <b>Fair</b> Slight deviation 0°-20°</p> 	<p>3. <b>Poor</b> Marked deviation 20°-60° 0°-20° in extension</p> 	<p>4. <b>Very Poor</b> Extreme dev. &gt;20° ext &gt;60°</p> 	<p><b>Repetition</b> <input type="checkbox"/></p> <ol style="list-style-type: none"> <li>1. <b>Very Low</b> &lt; 1 rep / 5 minutes</li> <li>2. <b>Low</b> &lt; 1 rep / minute</li> <li>3. <b>Moderate</b> 2-3 rep / minute</li> <li>4. <b>High</b> 4-5 reps / minute or sustained 5-10 secs</li> <li>5. <b>Very High</b> &gt; 5 reps / minute or sustained &gt; 10 secs</li> </ol>
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## Legs

<p><b>Force</b> <input type="checkbox"/></p> <ol style="list-style-type: none"> <li>1. <b>Very Light</b> Relaxed effort, no load</li> <li>2. <b>Light</b> Noticeable effort, &lt; 5 lb. foot pedal activation load</li> <li>3. <b>Moderate</b> Obvious effort, 6-10 lb. foot pedal activation load</li> <li>4. <b>Hard</b> Substantial effort, 11-15 lb. foot pedal activation load</li> <li>5. <b>Very Hard</b> Maximal effort, &gt; 15 lb. foot pedal activation load</li> </ol>	<p><b>Posture</b> <input type="checkbox"/></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%; vertical-align: top;"> <p>1. <b>Good</b> Near neutral both legs down</p>  </td> <td style="width: 25%; vertical-align: top;"> <p>2. <b>Fair</b> Slight deviation 30°-60°</p>  </td> <td style="width: 25%; vertical-align: top;"> <p>3. <b>Poor</b> Marked deviation one leg raised</p>  </td> <td style="width: 25%; vertical-align: top;"> <p>4. <b>Very Poor</b> Extreme dev. 60+°</p> <p>deep squatting, kneeling, or crawling</p>  </td> </tr> </table>	<p>1. <b>Good</b> Near neutral both legs down</p> 	<p>2. <b>Fair</b> Slight deviation 30°-60°</p> 	<p>3. <b>Poor</b> Marked deviation one leg raised</p> 	<p>4. <b>Very Poor</b> Extreme dev. 60+°</p> <p>deep squatting, kneeling, or crawling</p> 	<p><b>Repetition</b> <input type="checkbox"/></p> <ol style="list-style-type: none"> <li>1. <b>Very Low</b> &lt; 1 rep / 5 minutes</li> <li>2. <b>Low</b> &lt; 1 rep / minute</li> <li>3. <b>Moderate</b> 2-3 rep / minute</li> <li>4. <b>High</b> 4-5 reps / minute or sustained 5-10 secs</li> <li>5. <b>Very High</b> &gt; 5 reps / minute or sustained &gt; 10 secs</li> </ol>
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## Hand-Arm Vibration

- Nominal
- Moderate
- High

## Contact Stress

- Nominal
- Moderate
- High

## Impact Stress

- Nominal
- Moderate
- High

(Nominal: minimal, < 30 minutes / day)  
 (Moderate: 30-90 minutes / day)  
 (High: > 90 minutes / day)

## Exposure Duration

- < 2 hours per day
- 2-4 hours per day
- 4-8 hours per day
- > 8 hours per day

## Difficult Tasks:



# Instructions

## Step 1: Select key tasks to evaluate

Select the most difficult tasks in the job. These are the tasks with the highest force loads, most awkward postures, and highly repetitive motions. You'll also want to identify any tasks with hand-arm-vibration, contact stress, and impact stress. You can find these by observing the job and asking workers which tasks they find the most difficult.

## Step 2: Evaluate the body segments

You'll evaluate each major body segment for force, posture, and repetition. We recommend starting at the top of the body with the neck/upper back and systematically working your way down.

**Force:** When performing the key tasks of this job, what is the highest level of exertion effort required for the body segment being evaluated?

**Posture:** When performing the key tasks of this job, what is the most deviated (awkward) posture required for the body segment being evaluated?

**Repetition:** When performing the key tasks of this job, what is the repetition level required to perform all awkward postures or forceful exertions for the body segment being evaluated?

Remember, the Job Screen should be conducted quickly and efficiently, so don't get analysis paralysis! Simply use your best judgement and keep moving through the assessment.

## Step 3: Evaluate additional risk factors

The next step is to evaluate additional risk factors: Hand-Arm Vibration, Contact Stress, and Impact Stress.

You'll mark each additional risk factor as Nominal, Moderate, or High.

## Step 4: Select exposure duration

Select the number of hours per day the worker performs the job you are evaluating.

## Entering data into ErgoPlus Industrial

We recommend entering data directly into ErgoPlus Industrial via a mobile device (preferably a tablet) or laptop. Alternatively, you can use the data collection sheet provided and enter the data into the system afterward.

