Master Brewers Safety Toolbox Talk

Practical Applications of Ergonomics in the Brewery

Overview

Ergonomics is an applied science concerned with designing and arranging the working environment so that people and objects interact most efficiently and safely. — Also called biotechnology, human engineering, or human factors. When applied and assessed correctly we can work together to protect our most vital resources, our bodies. In this toolbox talk we will look at ways to break down operations around the brewery into jobs and tasks to make assessing and grading them easier. We will look at examples of ways to grade these tasks/jobs and ways to effectively change at risk tasks.

Injuries that Can Be Avoided Using Proper Ergonomics

- Back Injuries
- Headaches & Migraines
- Stiff Neck
- Trigger Finger

Symptoms of Ergonomic Injuries

- Decreased range of motion
- Numbness, Tingling and stiffness
- Muscle tightness, clumsiness
- Dull achy pain or sharp stabbing or burning sensations

Standard Operating Procedures

All SOP's have multiple jobs or tasks built in to them to accomplish specific goal. Breaking down SOP's to help find weak points in the SOP that can be changed for more ergonomic movements. Tool purchases, operational optimization, working heights and the appropriate amount of people to accomplish a task can help make an SOP more ergonomic.

- Creating SOP's can help ensure the tasks are being performed in the safest way.
- Once the SOP's are written and all employees agree that it's accurate, break down the SOP's to smaller tasks to make assessing them easier.
- There are many ways to grade tasks. Some examples are the NIOSH lifting equation, BREIF and BEST risk identification forms. (Figure 1)

Risk Assessment and Grading Examples

Once you've decided which risk assessment forms you will be using start grading each task inside of each SOP.

- Form a small committee to dedicate time to evaluating each task using the selected risk identification forms.
- Determine high risk tasks that need attention first by interviewing employees that perform the tasks on a daily basis.
- Create a checklist with the tasks that you will be grading. Assign these assessments to members of the team to be graded in a reasonable time.
- Once the assessments have been discussed by the committee log the score in a spreadsheet to determine what task have higher risk factors than others. (Figure 2)

Job Information		BRIEF®										BEST®
Job Name	Time (Hrs/week)	Hands/Wrists Left	Hands/Wrists Right	Elbows Left	Elbows Right	Shoulders Left	Shoulders Right	Neck	Back	Legs	Physical Stressors	Job Hazard
Mixer	40	2	2	3	4	3	4	3	3	1	4	51.0
Material Handler	42	3	3	2	2	2	2	2	3	2	2	43.8
Central Palletizing	40	2	2	3	3	3	3	2	3	0	2	36.0
Hand Packing	40	3	3	2	2	2	2	2	3	1	2	33.0
Packing	40	3	3	2	2	2	2	2	2	0	2	30.0
Offline Palletizing	40	2	2	2	2	2	2	2	2	2	2	29.0
Stamping	40	3	3	2	2	2	2	2	0	0	2	27.0
Helper	10	2	2	2	2	2	2	2	2	0	0	19.2
Stacker	10	2	2	1	1	1	1	1	1	0	0	9.6
Forming	2	2	2	2	2	2	2	0	2	1	0	8.8

Figure 2

Dissecting the Grades

By breaking each SOP down to individual tasks you can now take the graded tasks and determine if systematic changes or more ergonomic equipment is needed to make the task less of a risk for musculoskeletal disorders. (Figure 3)

- Making a heat map can help find areas that need immediate attention and make it possible to create the most impactful changes more quickly
- Take the highest risk tasks and find time during the committee meeting to brainstorm on ways to bring down the risk assessment.

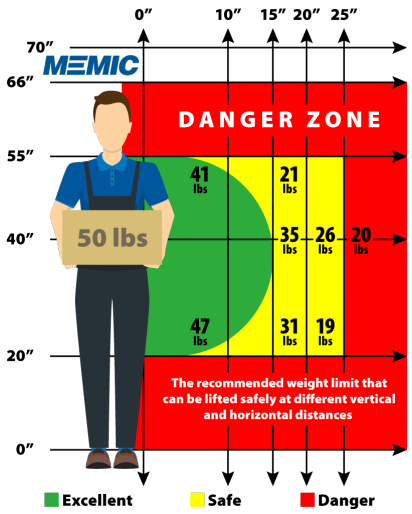

Figure 3

Reasons for Ergonomic Risks

- Repetitiveness
- Weight/Force
- Twisting/Posture
- Wrong Tool for the Job
- Duration of Task
- Frequency of Task
- Vibrations
- Dexterity
- Soft Tissue Compression
- Impact Stress
- Low Temperatures

Conclusion

Some ergonomic changes can be fixed with proper engineering and some will be fixed with education and validation of SOP and training with employees. In order to determine the corrective actions you will need to asses each SOP by the tasks it takes to perform them. Small changes can make large impacts in employee's longevity and morale.

FOR MORE INFORMATION ON BREWERY SAFETY, PLEASE VISIT THE MBAA BREWERY SAFETY WEBSITE AT:
http://www.mbaa.com/brewresources/brewsaet

If you have any questions regarding this Toolbox Talk, please see your supervisor / manager or a member of the Safety Committee.

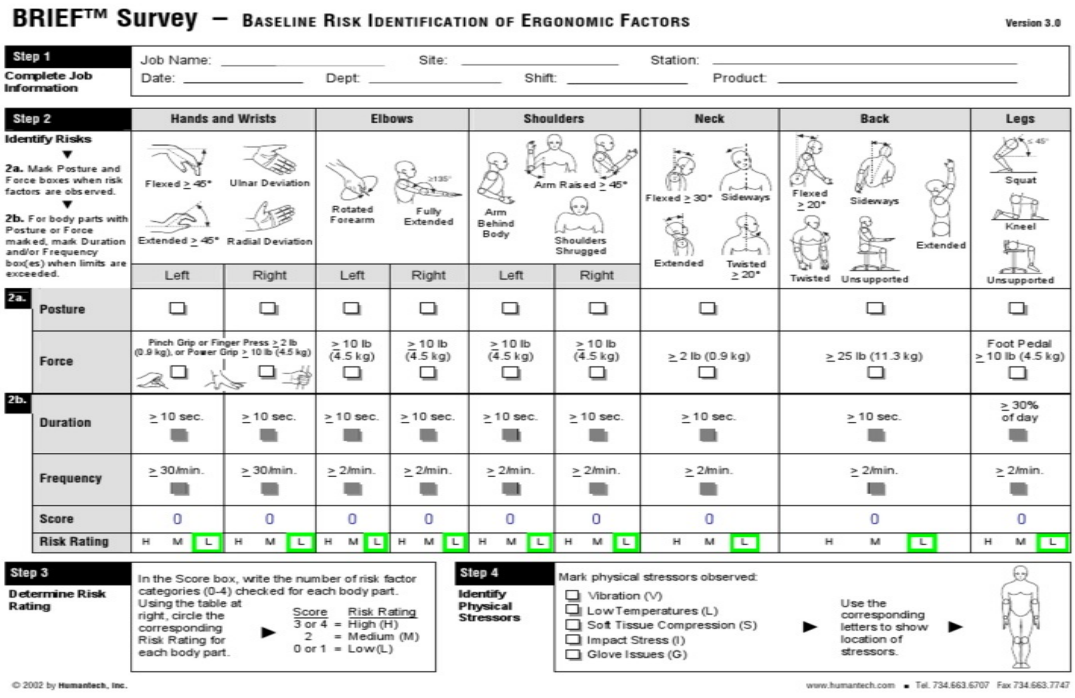

Figure 1