

**CRAFT
BREWERS
CONFERENCE**
& BrewExpo America®



#CraftBrewersCon

Brewery Ergonomics and Safety

How to stay safe in your brewery



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Est. 2009



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Learning Objectives

- Describe the current literature regarding musculoskeletal injuries within breweries
- Discuss work related stress in breweries
- Recommendations to:
 - Improve health and wellness of brewers and employees
 - How to lift correctly
 - Promote range of motion and core stability to prevent back injury
- Provide creative ideas on how to implement exercise programs in your brewery
- Provide basic guidelines for ergonomic setup and design



Background Literature

Injury Rates: Manufacturing

Bureau of Labor and Statistics (BLS) reports (2019)

- 32, 470 days away from work due to sprains, strains and tears
- 16, 790 cases of pain
- Manufacturing accounts of 15% of injury and illness

Common injuries

Leads to risk of musculoskeletal disorders

- Improper lifting
- Repetitive work patterns
- Awkward body postures

Breweries

Since 2006 injury and illness rates ranged from 3.6/100 cases (full time) to high of 5.8/100 cases in 2014 (Delainy and Hanes, 2014)

- 2019 BLS reports 3.5/100 = steady rates of injury

Why Safety Matters:



Will you risk it ?

Things to consider

We work HARD! How do stress, fatigue and inactivity affect your brewery

We are getting OLDER, not younger....yes you....

Some of you work multiple jobs in and out of your brewery...this leads to fatigue, lack of sleep, reduced attention and reduced productivity

We are not as healthy as we think we are or want to be....yes... beer has calories...

Impact

- Average cost per lost time due to injury in a manufacturing industry is
\$32, 527
- AFTER WORKERS COMP



What are work related Musculoskeletal Disorders?

Occur when workers are exposed to repeated and prolonged work-related activities such as:

Tasks that require increased force

- Moving/pushing/pulling/mashing

Abnormal movements and postures;

- Bottling/canning/kegging

Twisting/rotating

- Keg washers

Repetitive lifting (+35lbs)

- Grain 55lbs; hops 44lbs

Contact stress

- Standing too long in 1 place

Overexposure to vibration

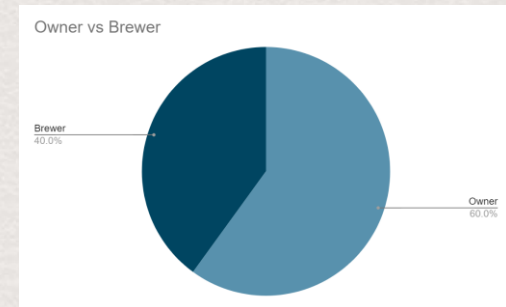
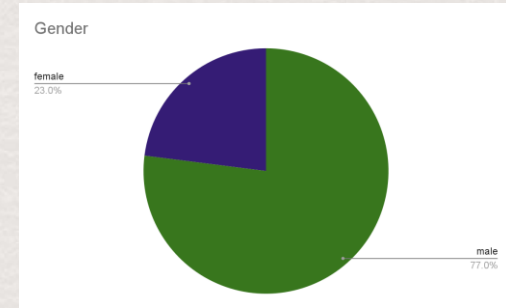
- Loud sounds

Musculoskeletal disorders (MSDs) are injuries and disorders from muscles, nerves, tendons, ligaments, joints, cartilage, and spinal discs

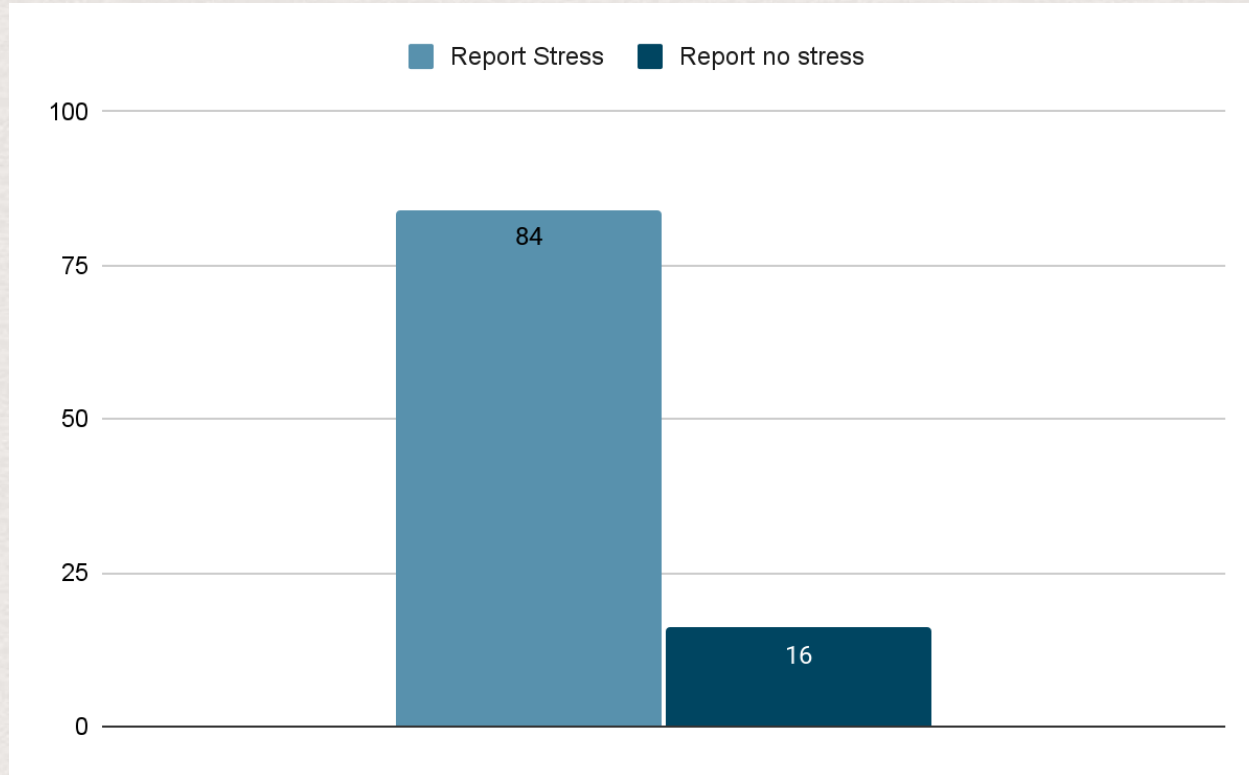
MSDs cause significant damage to the body resulting in pain and discomfort which can impact participation in the workforce.

Brewery Safety and Ergonomic Study Demographics

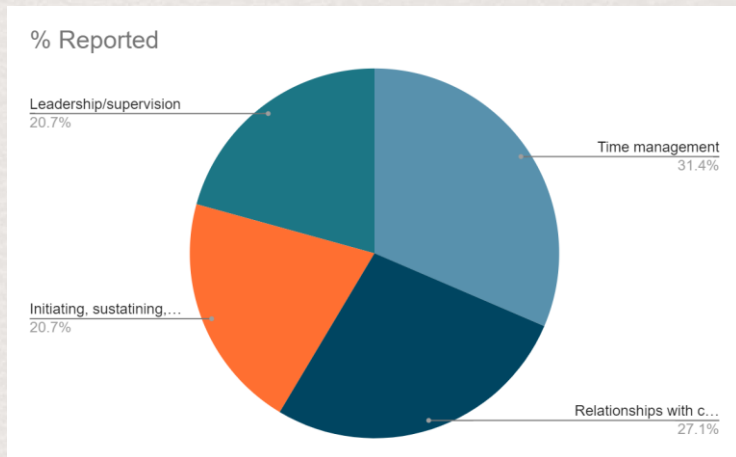
- Over 3,887 surveys sent out
 - 670 surveys opened
 - 207 surveys completed
 - 191 surveys included in study (20%)
- 43 states represented
- Average age is 40.67 years old
- 77% identified as male
- 60% are the owners



Stress in the workplace

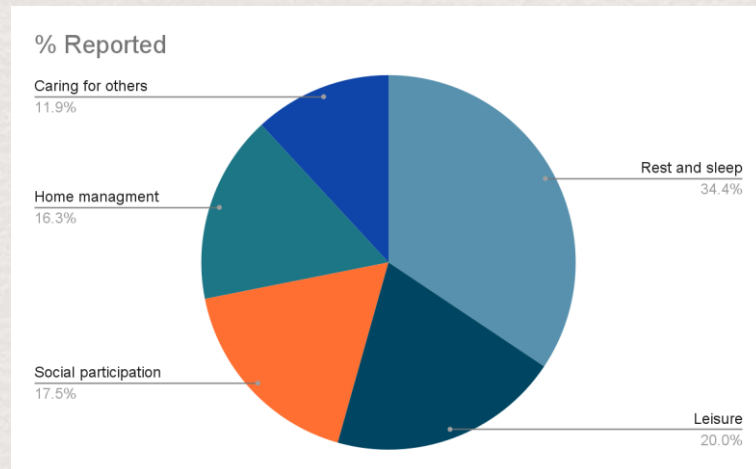


Work Affected



66% reported
that work related stress
has
affected their work life

Home Affected



82% reported that
work related stress
has affected their home life

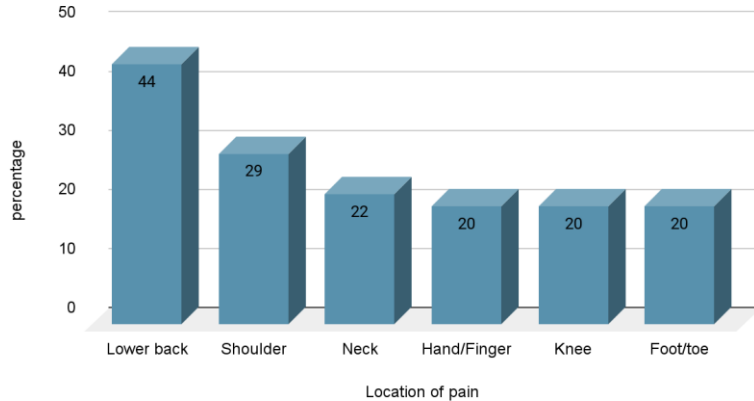
Pain Vs Injury Rates

69% Report pain since employment

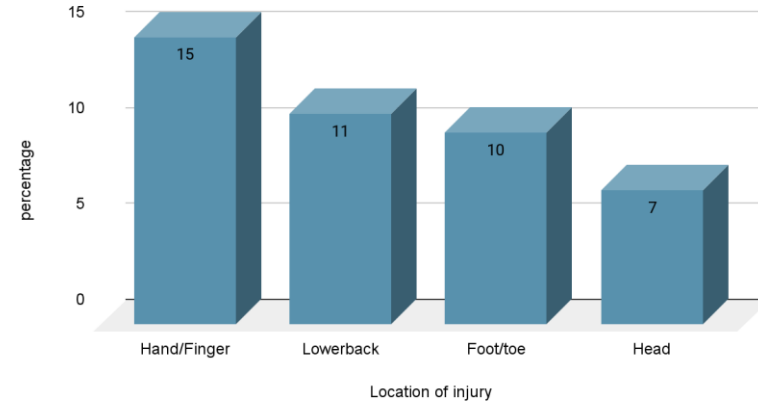
Pain Rates

Injury Rates

Pain rates in US

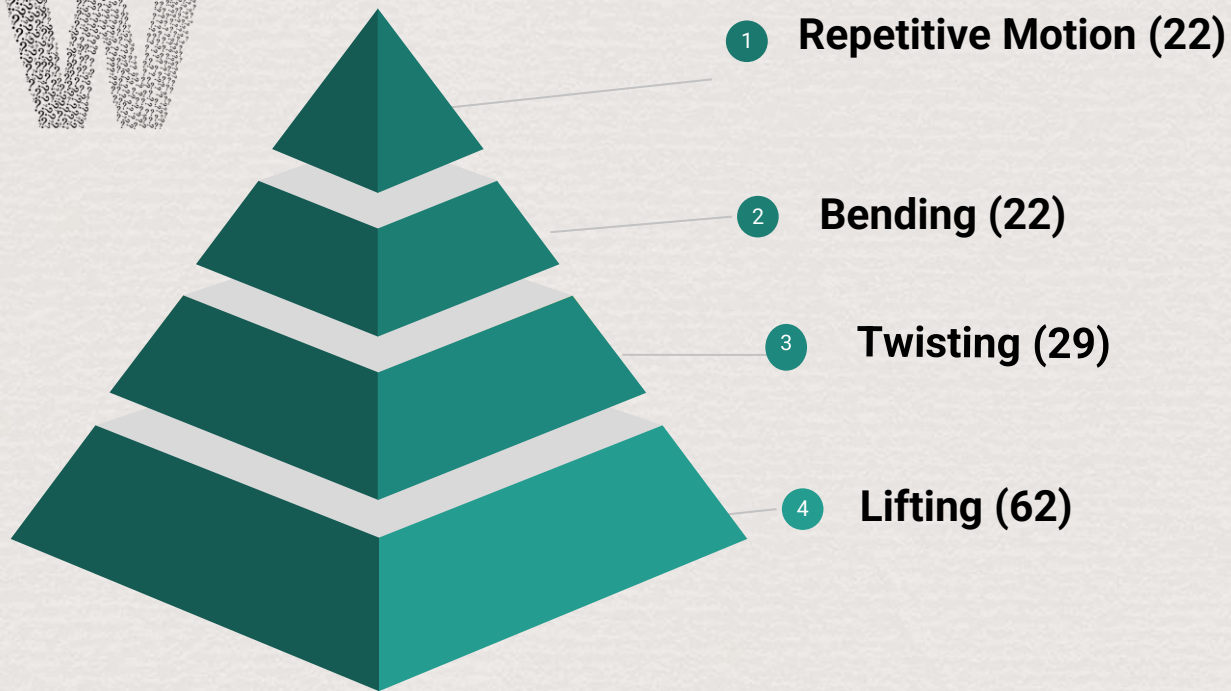


Injury Rates in US



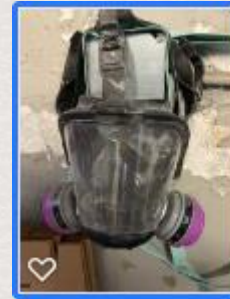
37% Report injury since employment

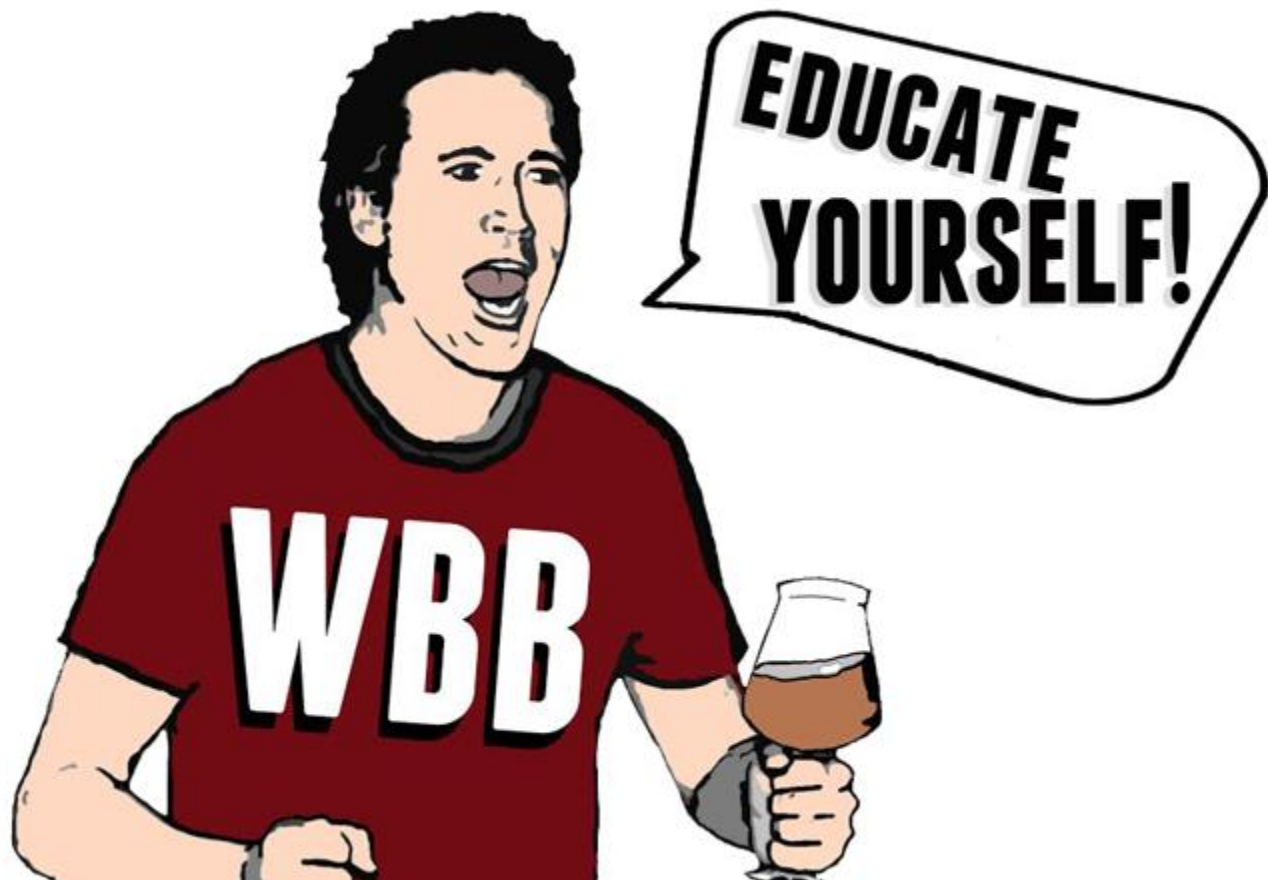
HOW



PPE and Safety Training

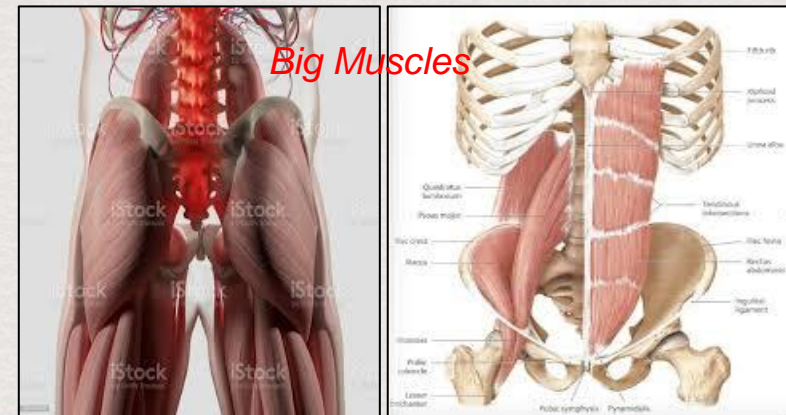
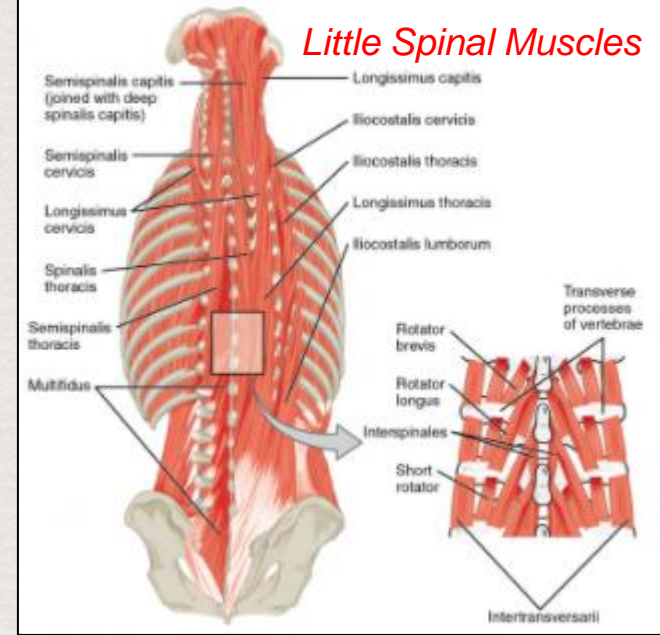
- **69%** reported having some type of workplace safety training
- **76%** reported having received training on how to properly manually lift equipment/ materials;
- **38%** reported having concerns for their long-term physical and/or mental condition as they age in their brewery
- **53%** reported feeling that they should be using/wearing certain PPEs that they are not currently using/wearing





Safe Lifting & Back Injury

- Highly prevalent in brewing industry
- Anatomy is key!
- Humans can be lazy, like to cheat!
- Awkward Positions and Weights
- Don't do it yourself, ask for help
- Train for specific muscles & movements





TECHNIQUE



Keg lifter



Nope



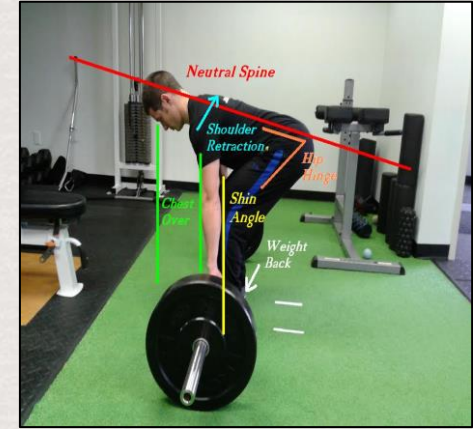
Buddy up



Self Stacking kegs

Key Lifting Concepts

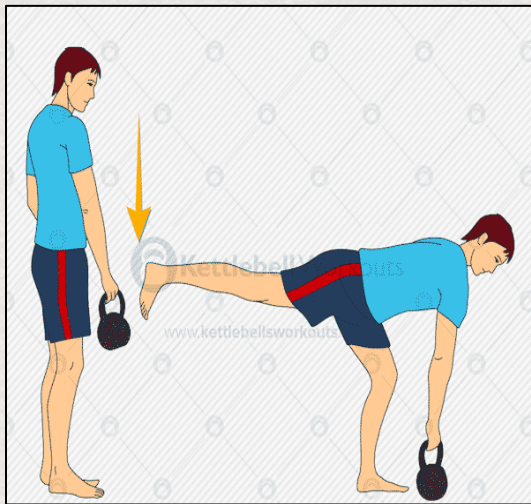
- Loading hips, hamstrings and glutes
- Keep back straight (Neutral Spine)
- Posterior weight shift
- Bend at hips
- Engage Core - “*Butt and Gutt*”



Other good lifting options

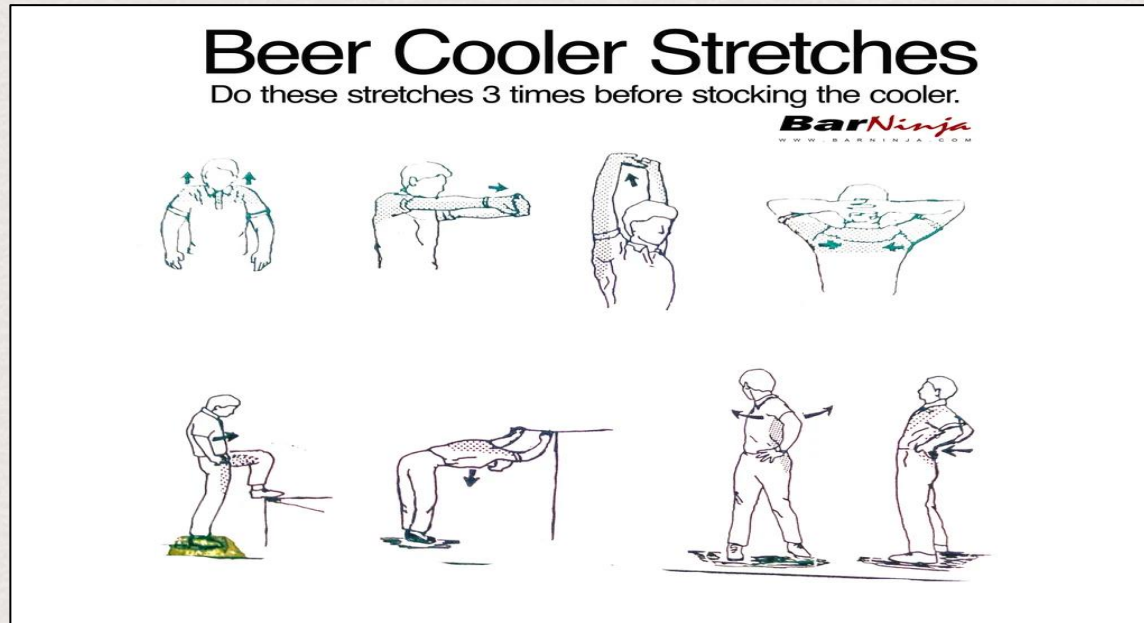
Beer pick up

- Spine stays neutral
- Easy
- Low weight objects



MOBILITY

Range of motion & Stretching



DEVELOPING MOBILITY

Stretching

Key areas for low back

1. Hamstrings
2. Quads
3. Gluteals
4. Spine - flex, ext, rotation
5. Shoulders



Other

1. Wrist
2. Elbow

15-20 secs each = 5 mins

Stretching - Hamstrings and Gluteals

Standing Hamstring Stretch

Connected to pelvis/lower spine
Can affect mobility



Glutes are the Power House for
Lifting



Stretching – Quads and Hip Flexors

Standing Quad Stretch/Additional Pec Stretch

Half kneeling stretch
Push hip forward



Spine Mobility

Sidebending



Flexion



Extension



Spine Mobility

Extension



Side flexion



Rotation



Wrist & Shoulders



STABILITY

Strength & Endurance



Planks



Rows



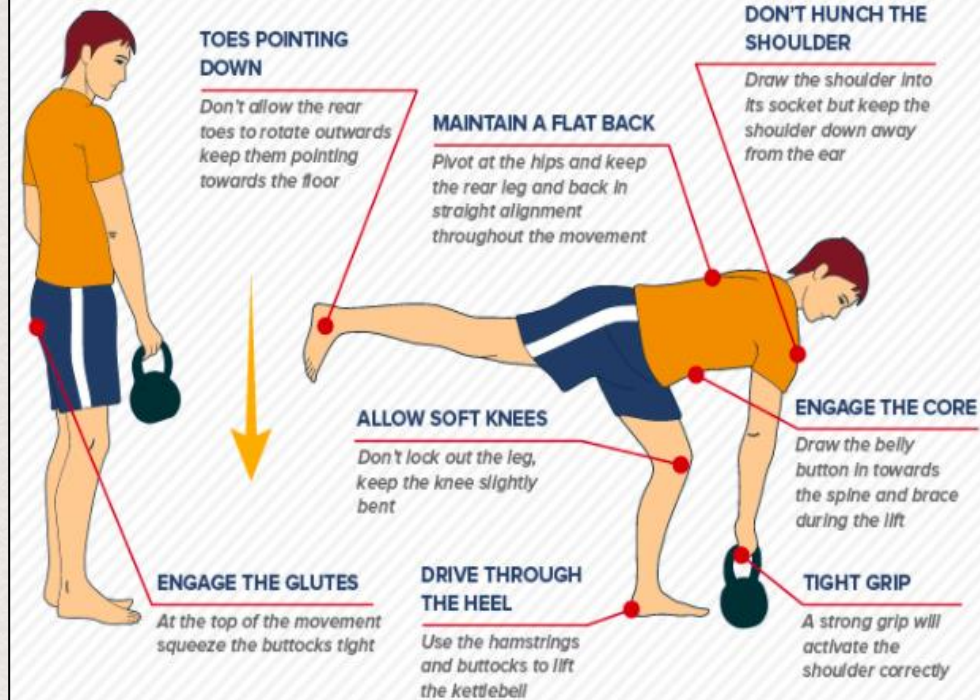
Hip Abductors and Squats



Back Extensions



Single leg Deadlifts



Some useful tools for your tool belt



When do we
actually have
time for this??

Small changes to your routine!

- Show up 10 minutes early to stretch
- Stretch or strengthen after mash in
- Create stations around the brewery
(like circuit training)
- When you hear your favorite song,
stretch/do push ups etc!
- 5 mins before and after packaging
- During keg cleaning

Try these!

Lavery Fitness Club



Yoga/Pilates (At your brewery)

Daily morning stretches/core exercises

Signs around brewery - eg team help to lift kegs

Fitness clubs

Adequate Hydration!!! (Beer not included)

Breathing and Relaxation for stress management

Meditation

Yoga at Little Thistle



Brewery Ergonomics: Set up and design

Brewery Ideas:

- Good lighting matters!
- Use hazard warning tape or bright paint to highlight tripping hazards

Brewing and Milling:

- Place materials at appropriate levels
- Pool noodles can block hot piping
- Place Mill in the basement/or create a stable pallet platform to prevent overhead lifting

Packaging:

- Tables/conveyors should be waist height
- Place bottles and cans to the sides not behind
- Use extra pallets or a pallet jack to bring bottles/cans to waist height



Finally!

- Micro breaks every 30 minutes OR rotate positions every 2 hours
- Train your crew!
<https://www.brewersassociation.org/edu/trainings-workshops/#tab-safety>
- Create a safety program in your brewery (Bootcamp)
- Join State Guilds
- Go to conferences
- Talk to your insurance companies
 - Incentives for safety!!



THANK YOU!

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QUESTIONS

