

Construction Solutions at a Glance - *Tying Rebar*

Description of Issue:

Tying rebar requires handling heavy materials and repetitive motion. Tasks like these can strain the body causing injury. Factors include:

- Tying rebar requires repetitive and forceful hand motions,
- Tying rebar *in place* can require climbing rebar, awkward postures, carrying heavy materials and tools.
- Walking on uneven surfaces.



Related Injuries

- Low back strain
- Low back disc injury
- Carpal Tunnel Syndrome
- Shoulder strain

Possible Solutions:

1 – Preparing to Tie Rebar

Minimize a person's risk of injury by doing the following:

- Reduce material handling by positioning rebar close to where it will be installed. If tying off-site or in a jig, position the rebar to avoid repetitive bending and twisting.
- Encourage “team” lifting to reduce the weight that a person lifts or the awkwardness of long pieces. When lifting, try to center the load. Use a hoist, forklift or crane when possible.
- Purchase and use automatic rebar tying machines



2 – Tying Rebar

Where to Tie Rebar:

- Set-up a jig to assemble the rebar upon.
- Tie rebar off-site, then truck it to the job.
- When tying rebar in place, position the work at chest height.

How to Tie Rebar:

- Use an Automatic Tying machine if possible.

When to Tie Rebar:

- Break up the task of rebar tying to spread-out the repetitive motion exposure.



• **Guideline for developing *your* solution:**

Keep the worker in an upright posture. Use proper tools to improve efficiency and reduce the risk of injury.

Construction Solutions at a Glance

BACK and SHOULDER injuries are two common cumulative injuries occurring in the Construction Industry. Due to the changing nature of a construction job site and the varied tasks performed by workers, it can be difficult to identify changes to reduce the risk of injury.

Solutions at a Glance is targeted at common causes of back and shoulder injuries. If your operations involve "The Issue", then the Solutions at a Glance will help prevent worker injury.

Don't Become A Statistic

Studies¹ have shown:

- Over 90% of construction workers surveyed reported experiencing symptoms of musculoskeletal pain or discomfort in the prior 12 months.
- Most prevalent symptoms are in the back, knees, neck and right shoulder.
- 25% of injuries in Construction are back injuries.
- Average cost of a back injury \$14-\$18,000. Average cost with surgery \$60,000.

¹ Holstrom (1993), Schneider and Susi (1994), Institute of Occupational Safety and Health (1997)

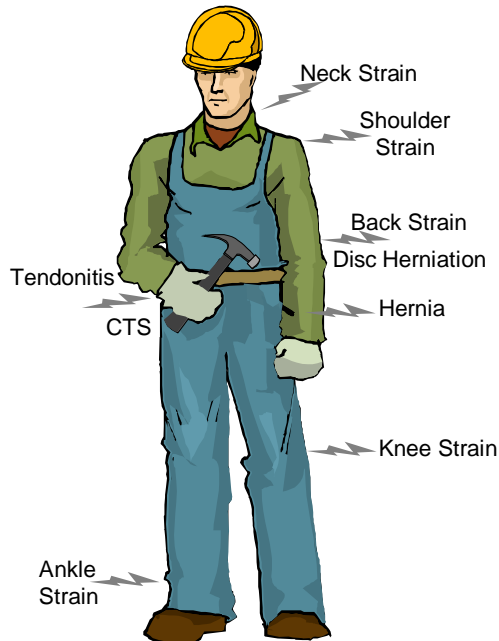
Risk Factors that contribute to Cumulative Injury

Posture – bending over at the waist, twisting, raised elbows, reaching overhead, prolonged kneeling or stooping.

Force – lifting more than 50lbs, holding an object or tool in a stationary position, kneeling on a hard surface.

Repetitive Motion – hammering, drilling, turning a ratchet or driver.

Environment – Heat, cold, vibration.



Ways to Prevent Injury

Engineering Controls – Eliminate the task causing the risk of injury such as:

- Minimize manual lifting. Use a lift.
- Minimize hand tools. Use power tools.
- Avoid hand shoveling. Hire experienced equipment operators.

Administrative Controls – Manage the exposure.

- Rotate employees through difficult tasks.
- Follow Safe Work Practices.
- Reward safe behaviors.
- Provide training

Behavioral Controls

- Life style choices
- Stretching / warm-up
- Personal fitness and overall wellness
- Diet
- Not smoking

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