

# Case Study

## 0009

### Intervention key words

Anti-fatigue mats, lift-tables, welding helmets, sandblaster

### Industry

Manufacturing

### Risk factors

Repetitive motion, awkward posture – squatting/kneeling and lifting, neck, neck, and wrist deviations

### Situation

This employer operates a custom sheet metal fabrication and welding business. As with many companies of this type, there are numerous risk factors for cumulative trauma disorders (CTDs) found throughout the workplace. Employees and supervisors determined four areas to be of highest. The first area involved the use of standard welding helmets. These helmets require the worker to flip the visor up using a quick snap of the head to inspect his work. Neck disorders and injury related to repetitive motion often occur. Another area focused on the use of sandblasting equipment. Operation of the sandblaster is very labor-intensive task, often requiring frequent breaks and job rotation due to fatigue. Risks include upper extremity, wrist and lower back CTDs due to the motion and force needed to properly use the machine. Static work postures at various other stations can increase risks to the lower extremities and back. The constant bending and lifting required to load metal into some machines is an invitation for back injury in itself.

### Solution

To address a few of its CTD risk factors, the employer purchased a new automatic sandblasting machine. This machine virtually eliminates the difficult labor and injury risks previously involved with this task. The company also purchased self-darkening welding helmets that eliminate the need to remove the shield when the employee is not welding. Finally, the company installed lift tables and anti-fatigue floor mats to ease the effects of the workplace on the body. The interventions cost \$42,991, of which safety grants offset \$34,392.

### Results

- Productivity on the sandblasting equipment has risen 35 percent, and overall production has increased 5 percent during the 24 months following placement of the interventions.
- Restricted days rate, measured per 200,000 hours worked, fell from 7.4 to 5.4, a 27-percent improvement. CTD rate, lost days, and turnover have all increased in the 24 months following the intervention.
- Risk factor scores averaged over four tasks have decreased 34 percent.