

Ergonomics Case Study

Washington State Department of Agriculture Weights and Measures Program Metrology Laboratory

Background

Metrology laboratories calibrate weights and liquids. A metrologist (person who performs laboratory calibrations) from the State of Washington Metrology laboratory was concerned about the physical hazards of his job, mostly repetitive lifting of heavy objects, sometimes in an awkward posture. He asked a Labor and Industries Ergonomist and Therapist Consultant to find possible solutions to the risks from these lifting tasks.

Issues Found

The metrologist calibrates approximately 3000 weights per year. Many of the weights are 25 to 50 lbs. The intake and calibration process required handling these weights up to seven separate times. Parts of the process required lifting the weights from floor level to a table, or onto a balance.



Recommendations

Several solutions were proposed including:

- An adjustable height table could be purchased. With an adjustable height table, the incoming weights could be transferred from a truck bed to the table without bending or other awkward postures. If the adjustable table had wheels, it could be used to move the weights around the laboratory, instead of carrying them or stacking them on a hand truck.
- The calibration balance could be moved to a waist height table, instead of using a table at knee level.

Implementation

A mobile scissor-lift table was purchased, operated by a foot pedal. Now, the metrologist can raise or lower the table to the same height as the weights, reducing the amount of lifting and bending. The metrologist pushes the scissors table around the laboratory, instead of hand carrying the weights or using a hand truck.



Now, the weights are transferred to the balance table (also adjustable in height) at near waist height.



Follow-Up

The metrologist is very happy with the assistance the adjustable height tables have brought to the tasks. The new methods not only help the metrologist stay injury free, but also reduced the overall calibration time by 10%. This shows that making the work easier often makes the work go faster, saving steps and saving time.