Summary for eLCOSH

Background of the Project:
Tool box talks (TBTs) have been described as "missed opportunities" for providing important safety messages. During a three year study of ergonomics in construction trades, Washington University (WU) researchers developed a guide (*Tool Box TIPS – Training Injury Prevention Strategies*) for safety representatives to lead meaningful, interactive ergonomics TBTs. The guide is designed for the safety representative to tailor TBTs to the work crew's current worksite and tasks, lead discussions to identify problems that may lead to injuries, and with worker input identify solutions to those problems.

Methods

Testing of the Tool Box Talk Guide:

We modified detailed ergonomics training from a study of ergonomic interventions with floor layers, sheet metal workers and carpenters into a TBT format. We tested the following six brief TBTs during construction of a mixed residential building with the help of the general contractor's safety representative, a union carpenter who was certified in safety.

TBT1 Ergonomics in Construction
TBT2 Keep Reach Close
TBT3 Positioning
TBT4 Move Materials With Assist
TBT5 Manual Tools
TBT6 Power Tools

Prior to each 15 minute, weekly safety meeting, the safety representative reviewed the TBT guide, walked the job site, and took notes on specific training points. For a few meetings, he took photos of workers performing a problem and solution to share with the group as examples. Carpenters and laborers, the site superintendent, and project manager from the general contractor, and a WU researcher attended the safety meetings. Laminated training cards were handed out to workers each week and were to be compiled together on a spring clip / keychain for future reference (Figure 2).

Content, Delivery and Usability Testing:

Our study protocol was reviewed and approved by the Institutional Review Board at WU and all subjects gave their consent to participate. Workers filled out a survey post-training to provide their feedback on the TBT content, delivery and usability. The safety representative provided weekly feedback on the content of the talks and usability. During the TBTs a researcher took notes on the site specific ergonomic actions presented by the safety representative. A list of ergonomic actions presented during the TBTs was compiled for the contractor representatives (i.e. safety director, safety representative, project engineer, site superintendent) to review and provide their feedback during a focus group style meeting at the conclusion of the series of TBTs.

Results
Over the six week series of TBTs, the average number of attendees was 36 workers and average duration of each TBT was 13 minutes. Seventy percent of the workers were carpenters who performed shoring and drywall tasks and the other 30% of workers were laborers. On average, workers had been in the trades for 14 years.

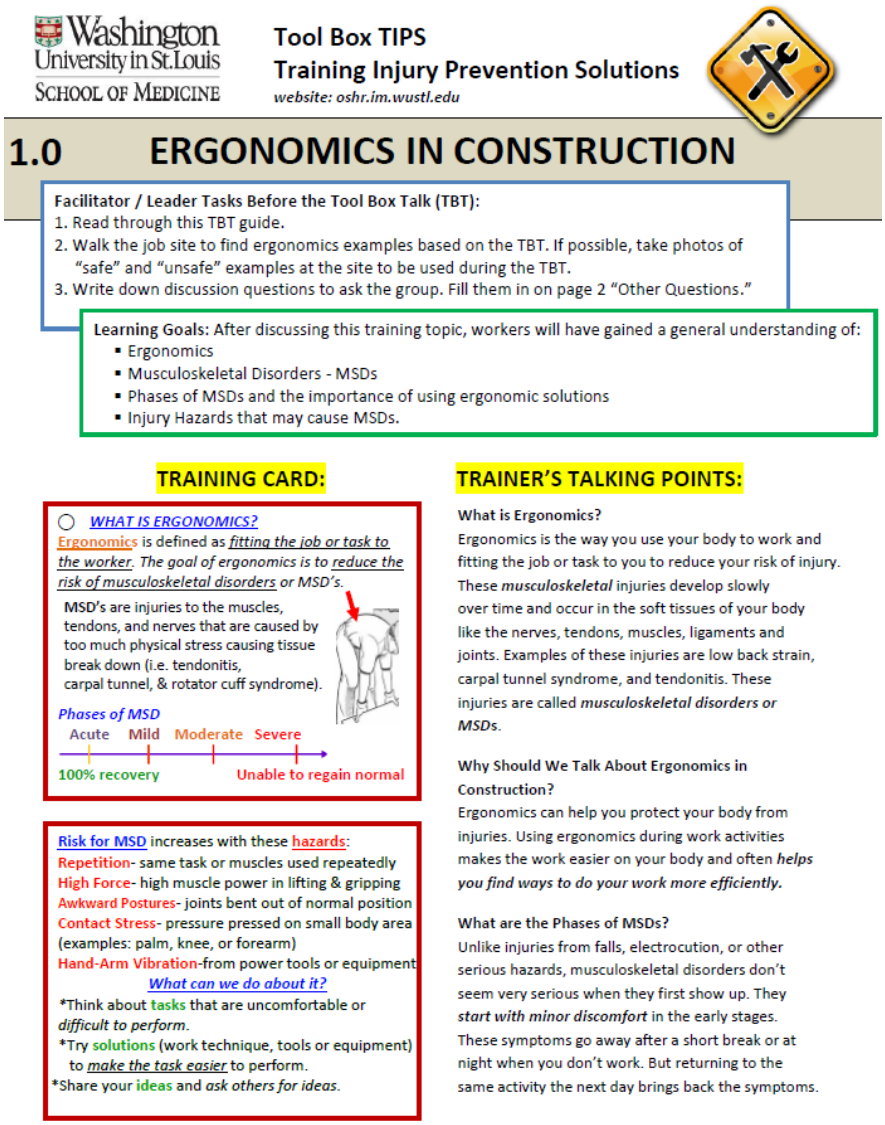
The safety representative felt the TBTs were easy to review and prepare 10 minutes prior to the meeting, liked the format of the guide, was able to personalize the talk based on the guide, and felt the information was the right amount and applied to the work. On follow-up surveys completed after the series of TBT, workers agreed the information applied to their job, felt comfortable participating, felt the TBT format was better than their regular safety talks, and would recommend the training to others.

Workers also felt they could make changes to their job due to the TBTs and planned to try new tools or change work technique to reduce their risk of injury. The contractor representatives verified that some of the ergonomic suggestions presented during the TBTs were used by workers following training . After learning the results of the study the general contractor shared the TBT guides company-wide with all of their safety representatives for future use.

Conclusion

The WU ergonomics TBT guide is valuable for improving the delivery of ergonomics training and interaction between the safety representative and workers. Preparing site specific information prior to the talk and interacting with workers to discuss problems and ergonomic solutions maximizes the opportunity for worker engagement during these important safety meetings.

Figure 1.



Washington University in St. Louis
School of Medicine

Tool Box TIPS
Training Injury Prevention Solutions
website: oshr.im.wustl.edu

1.0 ERGONOMICS IN CONSTRUCTION

Facilitator / Leader Tasks Before the Tool Box Talk (TBT):
1. Read through this TBT guide.
2. Walk the job site to find ergonomics examples based on the TBT. If possible, take photos of "safe" and "unsafe" examples at the site to be used during the TBT.
3. Write down discussion questions to ask the group. Fill them in on page 2 "Other Questions."

Learning Goals: After discussing this training topic, workers will have gained a general understanding of:
- Ergonomics
- Musculoskeletal Disorders - MSDs
- Phases of MSDs and the importance of using ergonomic solutions
- Injury Hazards that may cause MSDs.

TRAINING CARD:

WHAT IS ERGONOMICS?

Ergonomics is defined as *fitting the job or task to the worker. The goal of ergonomics is to reduce the risk of musculoskeletal disorders or MSD's.*

MSD's are injuries to the muscles, tendons, and nerves that are caused by too much physical stress causing tissue break down (i.e. tendonitis, carpal tunnel, & rotator cuff syndrome).

Phases of MSD

Acute Mild Moderate Severe

100% recovery Unable to regain normal

Risk for MSD increases with these hazards:
Repetition- same task or muscles used repeatedly
High Force- high muscle power in lifting & gripping
Awkward Postures- joints bent out of normal position
Contact Stress- pressure pressed on small body area (examples: palm, knee, or forearm)
Hand-Arm Vibration-from power tools or equipment

What can we do about it?

*Think about tasks that are uncomfortable or *difficult to perform.*
*Try solutions (work technique, tools or equipment) to *make the task easier* to perform.
*Share your ideas and *ask others for ideas.*

TRAINER'S TALKING POINTS:

What is Ergonomics?
Ergonomics is the way you use your body to work and fitting the job or task to you to reduce your risk of injury. These ***musculoskeletal*** injuries develop slowly over time and occur in the soft tissues of your body like the nerves, tendons, muscles, ligaments and joints. Examples of these injuries are low back strain, carpal tunnel syndrome, and tendonitis. These injuries are called ***musculoskeletal disorders or MSDs***.

Why Should We Talk About Ergonomics in Construction?
Ergonomics can help you protect your body from injuries. Using ergonomics during work activities makes the work easier on your body and often ***helps you find ways to do your work more efficiently.***

What are the Phases of MSDs?
Unlike injuries from falls, electrocution, or other serious hazards, musculoskeletal disorders don't seem very serious when they first show up. They ***start with minor discomfort*** in the early stages. These symptoms go away after a short break or at night when you don't work. But returning to the same activity the next day brings back the symptoms.

Figure 2.


POWER TOOLS:
Hand-Arm Vibration
HAND TOOLS: 6 Tips
POSITIONING
KEEP YOUR REACH CLOSE
WHAT IS ERGONOMICS?
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MSD's are injuries to the muscles, tendons, and nerves that are caused by too much physical stress causing tissue break down (i.e. tendonitis, carpal tunnel, rotator cuff syndrome, back strain).
Phases of MSD
Acute
Mild
Moderate
Severe
100% recovery
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