The Problem...

- CTS affects almost 5 million U.S. workers
- 7.8% prevalence rate of CTS among US workers performing hand-intensive activities.
- Comprise 65% of WMSDs of hand & wrist

- Most hand intensive activities involve repetitive submaximal gripping
Hard to Fix What We Can’t Accurately Measure

Determine gripping requirements:
Ask worker to replicate the grip strength required to perform the task

VERY SUBJECTIVE
Tekscan Grip Sensors

Quantify forces applied by the human hand while grasping objects during work-related tasks.
Data Sample

- Grip Force
- Peak Pressure
- Example: Peak pressure areas:
  - Ulnar border of hand
  - Middle phalanx of 2nd finger.
Uses in Ergonomics

- Determine which job within a group of jobs has highest grip requirements
  - Target jobs for countermeasures
  - Develop job rotation
- Comparison of multiple ergonomic controls to determine which is most effective
- Other use: Design pre-hire/return-to-work employee testing
Sensor Application

Intermediate glove

Final glove
Modification of Hand Tool Used for Pressing & Pushing

Presentation will discuss:
• Challenges with field utilization of sensors
• Consistency of data collected
• Before and after changes in grip strength & hand position
• Compare data collected to other systems
Questions?

Deborah Lechner, PT, MS
President, ErgoScience, Inc.
(205) 879-6447, ext. 216
deborahlechner@ergoscience.com

www.ergoscience.com