Evidence-Based Ergonomic Risk Analysis Tools

EVIDENCE-BASED RISK ANALYSIS TOOLS

There are many different Ergonomic Risk Analysis Tools. We have carefully chosen the analysis tools based on their reliability and validity and ability to provide meaningful data, not popularity.

Our epidemiology and Evidence-Based Risk Analysis tools include:

- **Z-EBRA™ (Proprietary Epidemiology Based Risk Analysis)**
  - Z-EBRA is a proprietary epidemiology-based analysis that quantifies ergonomic risk using odd ratios.
  - Z-EBRA quantifies the risk at the task and allows tasks to be grouped into a job where the risk of multiple tasks can be quantified.
- **ACGIH Hand TLV**
  - The ACGIH Hand TLV is used to quantify distal upper extremity which includes the hand and wrist.
  - The ACGIH Hand TLV is a recommended tool from the ISO 11228-3 guidelines.
  - There are odd ratios associated with the ACGIH Hand TLV.
- **Revised NIOSH Lifting Equation**
  - The Revised NIOSH Lifting Equation is used to quantify the risk of low back injury associated with lifting tasks.
  - The Revised NIOSH Lifting Equation is the primary analysis tool in the ISO 11228-1 guidelines.
  - There are odd ratios associated with the Revised NIOSH Lifting Equation.
- **Cumulative Lifting Threshold**
  - The Cumulative Lifting Threshold is used to quantify the maximum load that an individual can be exposed to in one day.
  - The Cumulative Lifting Threshold is an analysis tool in the ISO 11228-1 guidelines.
- **Liberty Mutual Manual Handling Guidelines - Push / Pull**
  - The Liberty Mutual Manual Handling Guidelines are used to quantify acceptable limits of pushing and pulling tasks.
- **EPDA™ (Proprietary Employee Perceived Exertion Analysis)**
  - The EPDA is a simple tool used to quantify whole body ergonomic risks by body part.
  - The EPDA engages employees in the analysis process and has been one of my “Go To” analysis tools for over 20 years.
- **Novel Ergonomic Postural Assessment (NERPA)**
  - The NERPA is a simple analysis tool that can be used to quickly quantify and rank ergonomic risk for the whole body.
  - The NERPA has been validated against OCRA, the primary ISO 11228-3 tool.
  - In validation studies, NERPA was more sensitive to the detection of an ergonomic risk than RULA, a similar tool.
- **Fatigue Failure Analysis Tools (DUET, LiFFT, and Shoulder)**
  - Fatigue Failure theory is an ergonomic analysis that predicts the risk of injury for single task jobs as well as the cumulative risk for multi-task jobs.
  - Validation of the Fatigue Failure Tools shows a dose-response relationship between the prevalence of certain musculoskeletal injuries and the cumulative damage calculation from each tool.