

Wearables at Work: Preventing Musculoskeletal Disorders

Types of Wearables



Electronic Devices

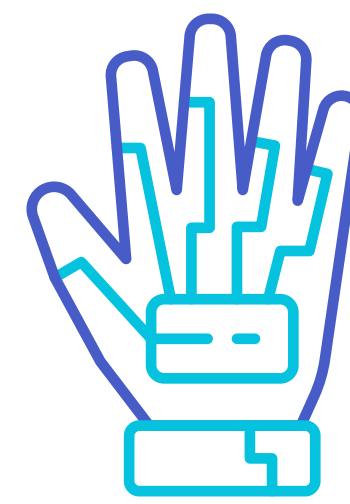
These devices track movement and biometric data, provide feedback to users, and inform a dashboard for managers.

EXAMPLES

- ◆ Smartwatches
- ◆ Heart Rate Monitors
- ◆ Step Counters

BENEFITS

- ◆ Improve productivity
- ◆ Motivate employees to maintain their health



Hand Devices

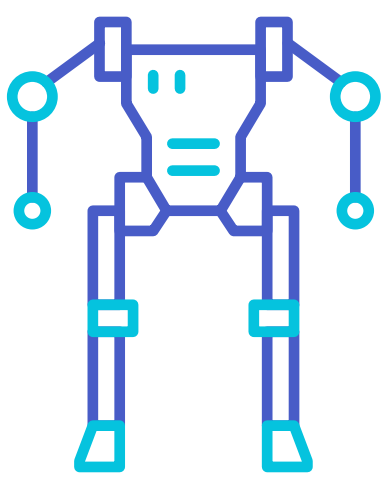
Hand devices aid in grip and hand forces and are helpful for those with hand disorders or impairments who perform repetitive tasks throughout the day.

EXAMPLES

- ◆ Wearable Scanners
- ◆ Smart Gloves

BENEFITS

- ◆ Stronger grip with less fatigue
- ◆ Reduces risk for injury from repetition



Exoskeletons & Exosuits

Exoskeletons augment, enable, assist and/or enhance motion, posture, or physical activity through mechanical interaction with the body. **Rigid** forms have a metal or plastic structure that can counteract a hinge motion, while **soft** forms use straps or bands to correct reach or extension.

EXAMPLES

- ◆ Active: Use battery or power source
- ◆ Passive: Use only springs, bungee cords, air compression, etc.

BENEFITS

- ◆ Active: Offer great versatility and strong assistance for dynamic tasks
- ◆ Passive: Less complex, less costly, and lightweight

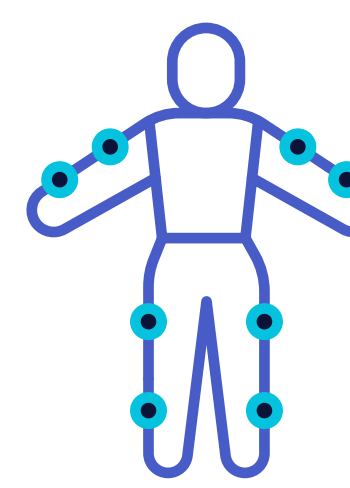


Legless Chairs

This wearable technology straps to the legs, ankles, and knees, allowing the user to create a chair via a squatting motion.

BENEFITS

- ◆ Allows individuals to sit at a job station without cluttering the space with furniture
- ◆ Decreases fatigue when crouching or standing for an extended period



Movement Sensors

Movement sensors detect and record motion where they are placed to help analyze body position, joints, and posture in real time.

BENEFITS

- ◆ Detect at-risk postures and movements
- ◆ Provide risk analysis for proposed changes to work processes