

1 ☐ **The Ergonomics Bridge: People & Business Optimization**

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2 ☐ **Learning Objectives**

1. What is Ergonomics, REALLY?
2. Learn the connections between ergonomics and: Lean/optimization/operations, physical and mental health (suicide), safety, DEIB, & sustainability
3. How to calculate *true* costs of injuries
4. Identify nontraditional metrics: turnover, absenteeism, healthcare spend, labor, productivity
5. Identify stakeholders (and gaps) of ergonomics
6. Learn examples of best to worst ergonomics strategies and tactics
7. Understand the full business case for ergonomics & begin to build a plan

3 ☐ **Lean & Ergo**

4 ☐ **"Lean" & "Ergo" Common Ground**

- 1 • "A systematic approach to identify and eliminate waste through continuous improvement by flowing product around the pull of the customer in pursuit of perfection [for on time delivery]".
- 2 • "Multidisciplinary science (WW II) that examines and continuously optimizes the human-work interaction using a systematic approach to identify and eliminate injury risk and inefficiency."

5 ☐ **People at the CENTER!**

6 ☐

7 ☐ **Shared MACRO Goals**

8 ☐ **Physical & Mental Health + Safety**

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Silent Suffering

60-80% of employees are working with discomfort!

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- Exacerbated for minorities within a larger work group, e.g.
 - Large, small, weak worker
 - “Older” worker
 - Previously injured worker
 - Neurodiverse worker
 - Worker with disability
 - Worker with health condition
 - Racial, ethnic, religious, or gender identity

12 ☐13 ☐ **Top 10 Disabling Work Injuries**14 ☐15 ☐ **Sample True Total Costs Calculation**16 ☐ **WC or Healthcare Spend?**17 ☐ **Physical Health ↔ Mental Health**

- “...high prevalence of chronic musculoskeletal pain in the United States, with an average of 36.8 million initial visits ...per year, or approximately 11.8% of the population.”

- Silent Suffering or Diagnosed Injury

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18 ☐ **Physical Health ↔ Mental Health**

- In that 1st physician visit, “patients experiencing newly diagnosed chronic musculoskeletal pain are prescribed opioids more often than... other nonpharmacologic approaches...”
 - nonopioid medication 40.2% of the time
 - opioids 21.5%
 - counseling 15.2%
 - other nonpharmacologic treatments 14.3%
 - physical therapy (PT) [OT] least often, at 10%.
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19 ☐ **Injuries or Chronic pain/conditions**20 ☐ **Non-Traditional Benefits**

What most don't understand

21 ☐ **When Ergo is Done Well (PDCA & C.I.)**

- 1 ▶ Average Cost: Benefit ratio of \$1 : \$45.50
- ▶ Average payback period is 3 months

- ▶ 68% lower Workers comp costs
- ▶ 65% reduced MSD incident rate
- ▶ 75% fewer lost workdays
- ▶ 53% fewer restricted workdays
- ▶ 39% lower Cost / claim

- 2 ▶ Absenteeism reduced 58%
- ▶ Turnover reduced 48%
- ▶ Labor costs reduced 43%
- ▶ Productivity increased 25%

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22 ☐ **Ergonomic Design for Diverse Abilities!**

- The small can reach
- The large can fit
- The weak can MMH without discomfort or injury
- Everyone can manipulate
- Everyone clearly understands
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24 ☐

25 ☐ **Example Savings Calculation from Ergo**

26 ☐ **Package Handlings Problem**

27 ☐ **Results**

- Saves ~ 78.66 hrs. / yr
- Productivity Savings 1st year: \$9,630
- Receiving staff from 5 down to 3
- 13% reduction in near misses 1 yr later
- 583 days without a recordable incident > 1.5 yrs.

3rd Party determined Payback Period: ~2 months!

28 ☐

29 ☐ **Wrap-Up**30 ☐ **Pay Now.....or Pay More Later?**31 ☐32 ☐33 ☐ **PROACTIVE (PtD) Ergonomics is a Business Strategy:
Systems, Process, Equipment, Culture**34 ☐ **Stock Market Performance**

- Method: Stock market portfolio performance of CHAA winners examined using simulation and past market performance.
- Results: CHAA portfolios out-performed the S&P average on all tests.
- Companies > 350 score in safety category outperformed the S&P with a return of 314%, versus the S&P's 105% (Figure 3).

35 ☐ **3-mo / 6-mo / 12-mo**36 ☐ **Go Execute!**37 ☐38 ☐ **Shared Outcomes**39 ☐ **Lagging vs. Leading
Ergonomic Practices**40 ☐ **Ergo Opportunities**

- Pending move or remodel or re-design of facility (best practice)
- High growth (best practice)
- Low morale (best practice)
- System problem symptoms
 - Poor productivity
 - High errors or quality issues
 - Fatigue
 - Upstream – Downstream
 - High turnover or high absenteeism
- Workplace soft tissue injuries (worst practice)

41 ☐ **2021 Emerging From the Pandemic Survey**

Highlights of key findings, United States

- "27% [of employers] are offering tools or programs to improve the physical wellbeing

of employees, more than double the 12% that were providing these tools in April 2020."

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Willis towers Watson Jan 2021

survey of organizations with over 6 m employees