



*A NIOSH Center for Excellence to Promote a Healthier Workforce*

# The Scientific Rationale for Combining Workplace Health Promotion with Occupational Ergonomics

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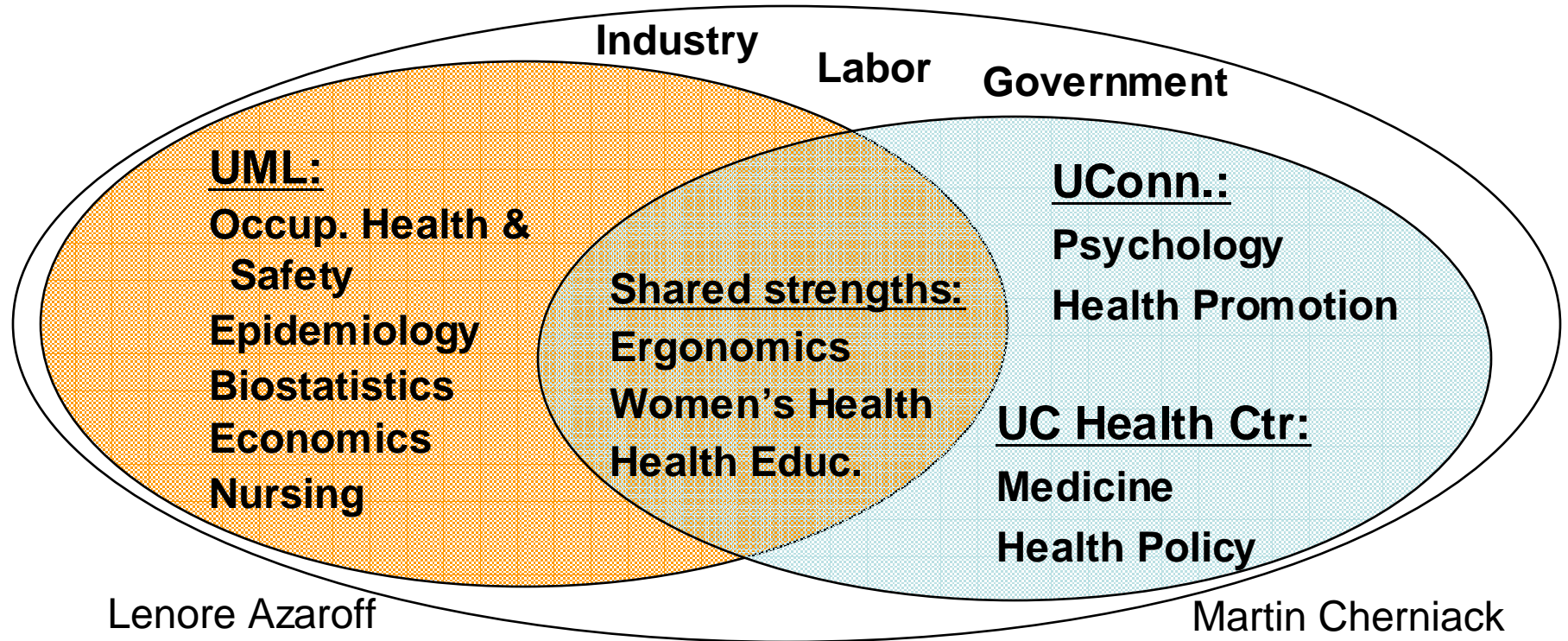
**The Center for the Promotion of Health in the New  
England Workplace (CPH-NEW)**



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# The Center for the Promotion of Health in the New England Workplace (CPH-NEW)



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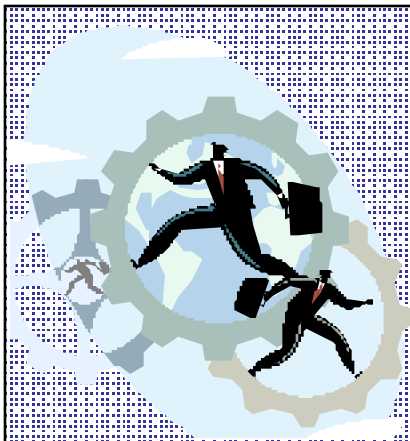


# Center for the Promotion of Health in the New England Workplace (CPH-NEW): Objectives

- ❁ Implement and compare multiple models or strategies for integrating two core public health areas, occupational health/ safety (OHS) and health promotion (HP)
- ❁ Evaluate opportunities for, and obstacles to, these integration efforts
- ❁ Evaluate whether this strategy provides enhanced health benefits and/or greater cost-effectiveness

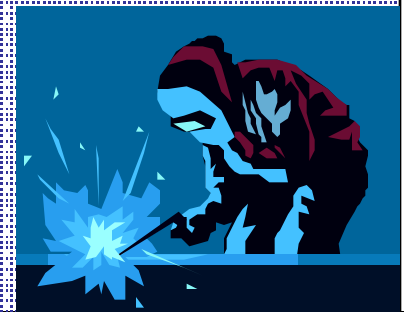


# CPH-NEW: Strategic Considerations



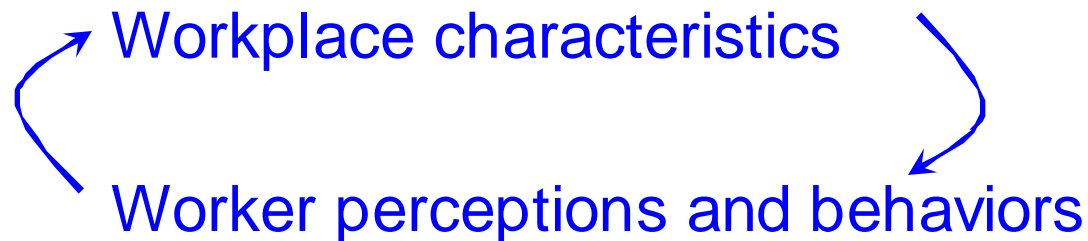
**Work Environment =  
potential source of:**

- Health and safety hazards
- Health and safety information
- Social support, decision-making & empowerment
- Constraints on health behaviors



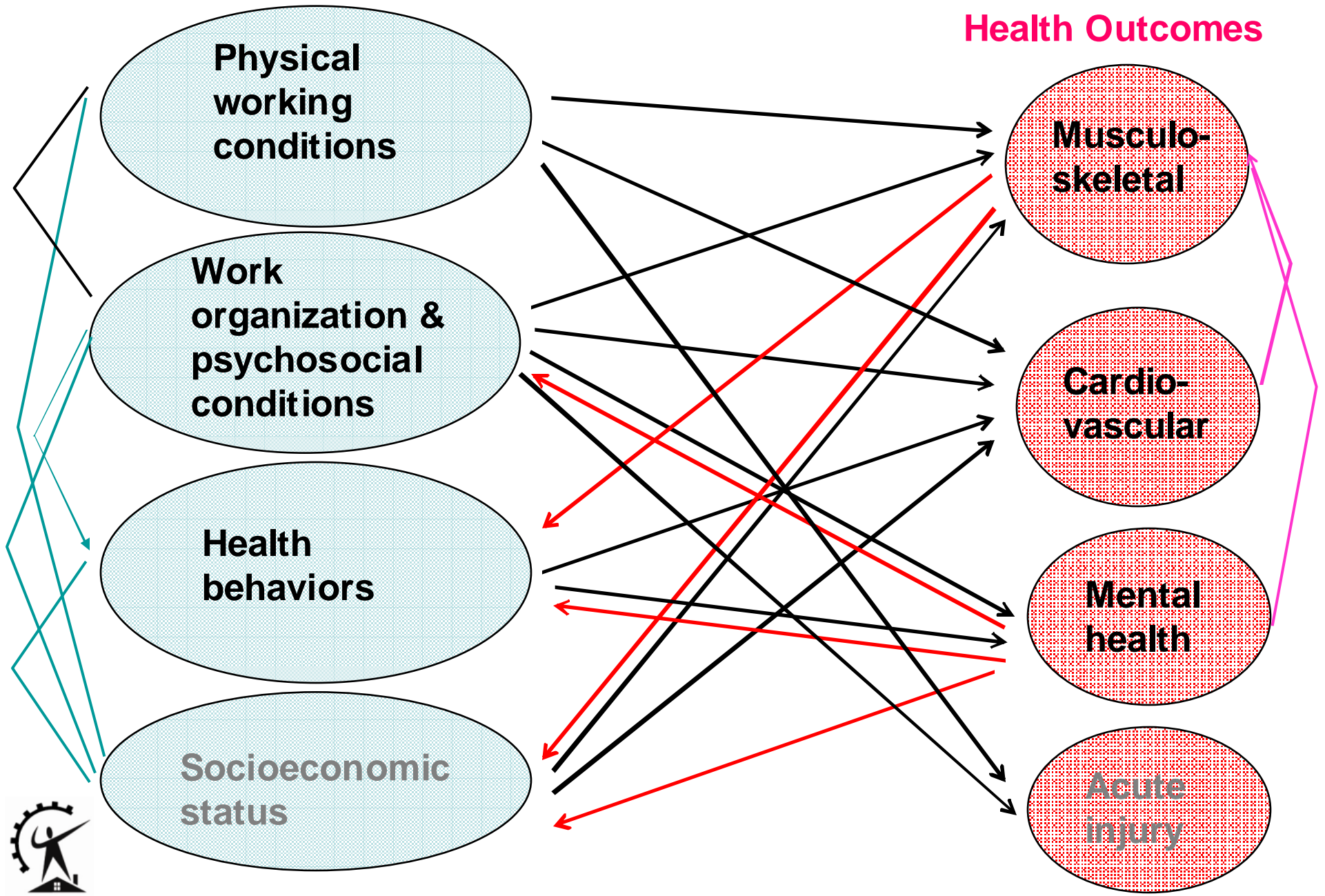
# CPH-NEW: Unifying Principles

- ⚙️ Systems-level, environmental approach to health promotion, through work organization
- ⚙️ Organizational climate:



- ⚙️ Workplace improvements to reduce hazards and empower decision-making
- ⚙️ Promotion and evaluation of participatory processes





# Why combine workplace ergonomics and health promotion programs? (1)

- ⚙️ Most traditional HP behavioral targets are risk factors for cardiovascular disease and also for musculoskeletal disorders (MSDs)
  - E.g., exercise, diet, smoking, obesity\*
- ⚙️ In the etiology of MSDs, they may add to - or interact with - physical work load
- ⚙️ Musculoskeletal health might be enhanced by ergonomic improvements at work plus effective intervention on “personal” risk factors



**\* These “personal” risk factors are also partly explained by work environment factors, e.g., decision latitude**

# Why combine workplace ergonomics and health promotion programs? (2)

- ⚙️ HP promotes positive decision-making by individuals about their health
  - Traditional focus primarily on the individual, e.g., how to cope with stress
  - “Social health promotion” - activities at the community or societal level [WHO], e.g., **how to reduce workplace causes of stress**
    - Environmental conditions that foster healthy behaviors
    - Positive human relations at work that foster decision-making and self-efficacy





# Why combine workplace ergonomics and health promotion programs? (3)

- ⚙ Occupational ergonomics: optimize fit between job and worker
  - Physical loading: posture, lifting, etc.
  - Work organization: time pressure, shift work, individual and group decision-making, fair interpersonal treatment, work-family balance
- ⚙ Increased decision latitude, supervisor and co-worker support linked directly to mental, cardiovascular, and musculoskeletal health



# Why combine workplace ergonomics and health promotion programs? (4)

- 🔧 An effective ergonomics program may address some of these problems
  - increase employee autonomy and decision-making (“job control,” health self-efficacy)
  - allow for greater creativity in problem-solving
  - provide consistent and constructive feedback
  - promote fair recognition and rewards for good work
  - enhance interpersonal relationships at work
  - structure healthier schedules



# A. “Promoting Physical and Mental Health of Caregivers through Trans-disciplinary Intervention” (Pro-Care)

Chain of 217 nursing home facilities  
(owned, managed, or affiliated with single company)

Compare worker health outcomes in sites w:

1. Workplace no-lift program only
2. Both no-lift & health promotion programs
3. No-lift & participatory HP programs



# Safe Patient Handling: Manual or Assisted?



Photo credits: WA State Dept Labor & Industries; <http://www.invacare.com>

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# Baseline Survey Results

## (First 8 centers, 2006)

- 🕒 Collected 658 questionnaires (3-7 days per center):
  - 92% of those distributed to employees on site (range 86-100%)
  - 70% of those on workforce rosters (range 56-83%)
- 🕒 Respondent demographics:
  - 90% women
  - 66% Black; 3% Latino
  - 61% nursing aides; 20% LPNs; 11% RNs
  - 53% day shift; 26% evening; 16% night
- 🕒 PATH observations in 6 facilities:
  - 68 observation periods on 55 workers (13 repeat measures)
  - 12,301 observation moments



# Categorical Analysis of Open-ended Responses from ProCare Baseline Survey

- ⚙️ *“How does your job or the workplace affect your health?”* (Response: 63%, n = 412)
  - Insufficient staffing (30%)
  - “Stress,” long hours, overwork, exhaustion (22%)
  - Heavy lifting, back pain, inadequate lifting equipment (12%)
  
- ⚙️ *“What changes in personal health would you most like to see ....?”* (Response: 77%, n = 505)
  - “Weight loss” (41%)
  - Better nutrition; more exercise; quit smoking (12% each)



# Pro-Care: Associations in Baseline Questionnaire Data

 Higher schedule control: Exercise  $\geq 1$  x per week

 Higher levels of job strain: Current smoker

 Recent physical assault at work: Current smoker

 Low job strain

 Good supervisor support

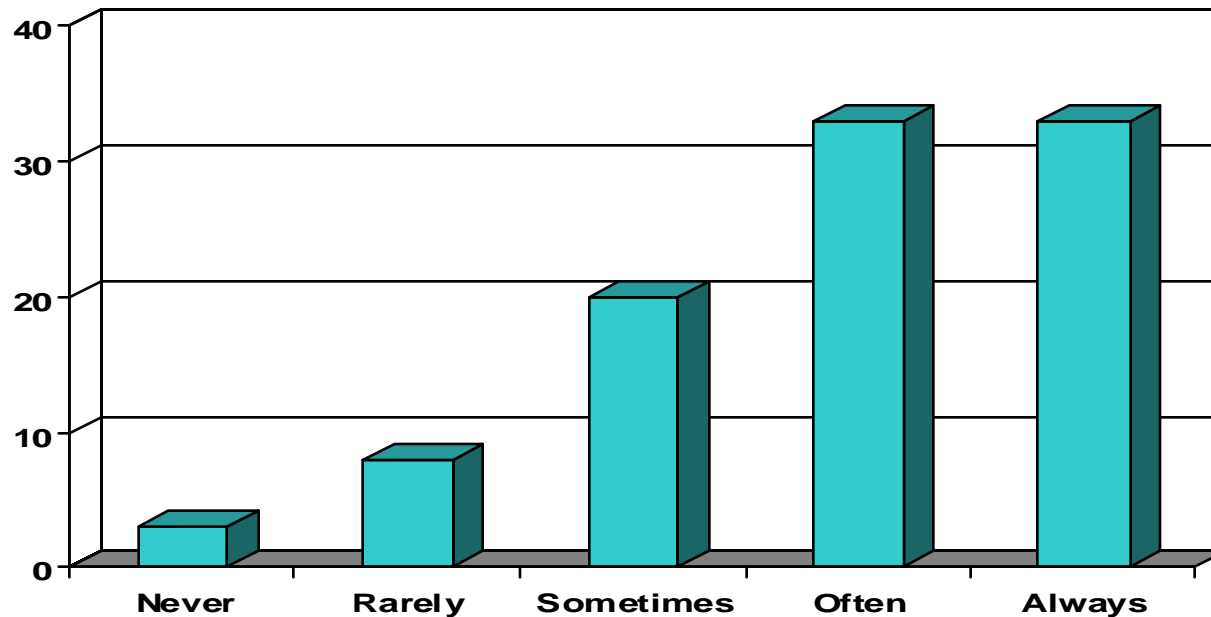
 Good work-family balance

 No recent physical assault at work

} Excellent (vs poor)  
self-rated health



## Questionnaire responses at 3 months post-implementation



**If you don't use a patient lifting device every time, why not? (n=301/658)**

<b>"I feel I don't need them"</b>	<b>21%</b>
<b>"Not enough time"</b>	<b>13%</b>
<b>"Too much extra effort"</b>	<b>11%</b>
<b>"My co-workers don't use them"</b>	<b>5%</b>
<b>"Too difficult"</b>	<b>2%</b>
<b>"Other"</b>	<b>49%</b>








## B. “Health Improvement through Training and Employee Control” (HITEC)

- ⚙️ Comparison of traditional “best practices” workplace HP/ergonomics interventions to an experimental program featuring employee participatory design & control.
- ⚙️ All sites to be policy holders from one workers’ compensation insurance carrier, matched on economic sector & paired on the basis of intervention type.



## C. Education & Dissemination Project

-  Bring expertise on job stress to the “Partnership for Heart-Healthy Stroke-Free Massachusetts” (Mass. Dept. of Public Health)
-  Provide occupational health knowledge to public health and clinical professionals
  - Develop curriculum, offer & evaluate training on the relationship between occupational stress and heart disease, stroke, obesity, other chronic diseases
-  Expand program on pilot basis with Connecticut Dept. of Public Health, other Northeastern states



# CPHNEW collaboration with MDPH

- ⚙️ CPH-NEW draft checklist for workplace assessment of OSH and HP needs
  - Obtain pilot data on utility and validity
  - Incorporate selected items into statewide employer survey
- ⚙️ Obtain MDPH feedback on CPHNEW materials, approach and process
  - *How could this information be made more relevant to employers' needs and perspectives?*
  - *Successes and failures of trying to influence what happens within a specific workplace?*



# Sharing methods and findings within CPH-NEW

- Quantitative and qualitative research methodologies
- Common questionnaire instruments (health, work environment, behaviors)
- Economic analyses of intervention cost-effectiveness
- Process evaluation: Research & dissemination projects inform each other





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