TOTAL WORKER HEALTH®
INTEGRATED APPROACH TO SAFETY AND OVERALL WELL-BEING

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NIOSH

Have you heard of NIOSH before? Yes or no?

Do you know what it stands for? Yes or no?
NIOSH is dedicated to the preserving and enhancing the Total Health of Workers

**OSHA Act of 1970. SEC. (2) (b) . . .** to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources . . .
Federal Government & Worker Health

Occupational Safety and Health Standards-Setting & Enforcement
- Department of Labor (DOL)
  - MSHA
  - OSHA

Research and Authoritative Recommendations
- Department of Health and Human Services (HHS)
  - Centers for Disease Control and Prevention (CDC)
- NIOSH
What’s Impacting Worker Health Today?
US Burden of Occupational Disease, Injury and Death

Annually, employers reports....

Nearly 4 million nonfatal workplace injuries and illnesses

Over 4,500 deaths from work-related injuries and illnesses


$250,000,000,000
Annual cost of work-related illness, injury, and fatality
Civilian Occupations with High Fatal Work Injury Rates, 2014*

*Data for 2014 are preliminary.
Note: Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. The number of fatal work injuries represents total published fatal injuries before the exclusions. For additional information on the fatal work injury rate methodology, please see [http://www.bls.gov/iif/oshnotice10.htm](http://www.bls.gov/iif/oshnotice10.htm).

Deadly Threats
Nearly 50% of Americans have one chronic health condition. And, of this group almost half have multiple conditions.\(^5\)
Increasing Chronic Health Conditions

- **Cancer**
  - 553,000 deaths, 1.3M new cases/yr
  - $89B in medical costs, $130B in lost work days & productivity

- **Diabetes**
  - >23.6M cases, >200,000 deaths/yr
  - $116B for medical issues, $58B for lost work & productivity

- **Cardiovascular Disease**
  - 80M cases, >870,000 deaths/yr
  - $448B a year

- **Tobacco-Related**
  - 438,000 deaths
  - $96B in medical costs, $97B in direct costs

- **Obesity**
  - Over 68% of Americans ages 20 and over are overweight or obese
  - Annual US health cost of obesity: $147 Billion

- **Aging**
  - Workers ages 55-64 will increase by 36.5% between 2006 and 2016

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1. Source: National Center for Chronic Disease Prevention and Control [2008].
Obesity

1 in 4 Adult Americans

http://www.cdc.gov/obesity/data/adult.html
Does Work Make Employees Fat?
How Can **Work** Be Improved to Reduce Obesity?

Change in waist circumference by job strain group [Ishizaki et al. 2008]

[Bar chart showing the change in waist circumference by job strain group for men and women]

www.uml.edu/centers/CPH-NEW

# Obesity by Occupation

A sampling of U.S. jobs and the prevalence of obesity in that occupational group

<table>
<thead>
<tr>
<th>Sample Jobs</th>
<th>Obesity Rate for Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGHEST</strong></td>
<td></td>
</tr>
<tr>
<td>Police officers, firefighters, security guards</td>
<td>40.7%</td>
</tr>
<tr>
<td>Social workers, clergy, counselors</td>
<td>35.6%</td>
</tr>
<tr>
<td>Home health aides, massage therapists</td>
<td>34.8%</td>
</tr>
<tr>
<td>Architects, engineers</td>
<td>34.1%</td>
</tr>
<tr>
<td>Bus drivers, truckers, crane operators, garbage collectors</td>
<td>32.8%</td>
</tr>
<tr>
<td><strong>LOWEST</strong></td>
<td></td>
</tr>
<tr>
<td>Janitors, maids, landscapers</td>
<td>23.5%</td>
</tr>
<tr>
<td>Cooks, bartenders, food servers</td>
<td>23.1%</td>
</tr>
<tr>
<td>Physicians, dentists, EMTs, nurses</td>
<td>22.0%</td>
</tr>
<tr>
<td>Artists, actors, athletes, reporters</td>
<td>20.1%</td>
</tr>
<tr>
<td>Economists, scientists, psychologists</td>
<td>14.2%</td>
</tr>
</tbody>
</table>

Note: Obesity defined as body mass index of 30 or above

Source: American Journal of Preventive Medicine’s 2014 report based on 2010 data
CONTRIBUTION OF HEALTH STATUS AND PREVALENT CHRONIC DISEASE TO INDIVIDUAL RISK FOR WORKPLACE INJURY IN THE MANUFACTURING ENVIRONMENT

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ABSTRACT
Objectives An ‘information gap’ has been identified regarding the effects of chronic disease on occupational injury risk. We investigated the association of ischaemic heart disease, hypertension, diabetes, depression and asthma with acute occupational injury in a cohort of manufacturing workers from 1 January 1997 through 31 December 2007.

Methods We used administrative data on real-time injury, medical claims, workplace characteristics and demographics to examine this association. We employed a piecewise exponential model within an Andersen–Gill framework with a frailty term at the employee level to account for inclusion of multiple injuries for each employee, random effects at the employee level due to correlation among jobs held by an employee, and experience on the job as a covariate.

Results One-third of employees had at least one of the diseases during the study period. After adjusting for potential confounders, presence of these diseases was associated with increased hazard of injury: heart disease (HR 1.23, 95% CI 1.11 to 1.36), diabetes (HR 1.17, 95% CI 1.08 to 1.27), depression (HR 1.25, 95% CI 1.18 to 1.33), asthma (HR 1.19, 95% CI 1.08 to 1.31). We then compared the relative risk of injury among those with and without these conditions. The presence of at least one of these diseases was associated with a 23% increase in the risk of injury among workers who had the disease compared to those who did not. The increase in risk was greatest for those with diabetes (HR 1.30, 95% CI 1.18 to 1.44). These results remained robust after adjusting for potential confounders.

What this paper adds
► Despite an aging population, there is scant literature on the effects of chronic disease on occupational injury risk.
► Some studies have shown higher risk of injury for those with depression, obesity, diabetes and asthma.
► We investigated the association of ischaemic heart disease, hypertension, diabetes, depression, asthma and acute occupational injury in a cohort of manufacturing workers for a 10-year period between 1997 and 2007.
► After adjusting for potential confounders, presence of these diseases was significantly associated with increased hazard of injury: heart disease (HR 1.23), diabetes (HR 1.17), depression (HR 1.25) and asthma (HR 1.14).
► Our results suggest that chronic heart disease, diabetes and depression confer an increased risk for acute occupational injury. Employees may benefit from strategies to reduce chronic health conditions.

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Kubo J et al., Occup Envir Med 2014; 71:159-166.
Workforce Unwellness

Unwellness at work is incredibly costly!

- $1,100b Costs of chronic disease
- $250b Costs of work-related injuries & illnesses
- $300b Costs of work-related stress
- $550b Costs of disengagement at work

$2.2 trillion annual loss in the United States (12% of GDP)

Source: Milken Institute, UC-Davis, EU-OSHA, Gallup
Workers’ risk of disease may be increased by exposure to both occupational hazards and individual risk-related behaviors.¹⁴
The Total Worker Health® Solution
What is Total Worker Health®?

Policies, programs, & practices that integrate protection from work-related safety & health hazards with promotion of injury & illness prevention efforts to advance worker well-being.
Total Worker Health

Keep Workers Safe

Invest More in Worker Health

Create Worker Wellbeing
New Employment Patterns

Policy Issues

Changing Workforce Demographics

Control of Hazards and Exposures

Organization of Work

Built Environment Supports

Compensation and Benefits

Leadership

Community Supports
New Employment Patterns

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Community Supports
Total Worker Health® - What It Is and Is Not

• TWH is not a “typical workplace wellness program”
• TWH is not an intervention that merely uses the workplace as a venue for health promotion
• TWH is not about healthcare/health insurance cost-shifting based on underlying health conditions or health habits
• TWH examines how the work itself can influence health outcomes
• TWH embraces voluntary, participatory health interventions
• TWH programs protect workers’ rights and privacy and do not discriminate based upon health conditions
Individually-Focused Behavior Change Interventions Not Enough

“It is unreasonable to expect people to change their behavior when the social, cultural and physical environments around them fully conspire against them....”

Adapted from M. Marmot/Institute of Medicine Report
Policies, programs, & practices that integrate protection from work-related safety & health hazards with promotion of injury & illness prevention efforts to advance worker well-being
Policies, programs, & practices that integrate protection from work-related safety & health hazards with *promotion* of injury & illness prevention efforts to advance worker *well-being*
Keeping Workers Safe is Fundamental to Total Worker Health

Hierarchy of Controls, tailored to a Total Worker Health Perspective

- **Eliminate Working Conditions that Threaten Safety, Deplete Health & Hinder Well-Being**
- **Substitute Health-Enhancing Conditions for Those that Hinder Well-Being**
- **Build Environmental Supports for Safety, Health & Well-Being**
- **Provide Options for Flexibility for Work-Life Management**
- **Rely on Behavior Change**

Hierarchy of Controls:

1. **Elimination** - Physically remove the hazard
2. **Substitution** - Replace the hazard
3. **Engineering Controls** - Isolate people from the hazard
4. **Administrative Controls** - Change the way people work
5. **PPE** - Protect the worker with Personal Protective Equipment

Most effective to Least effective
Protecting Workers Is the Cornerstone of Total Worker Health®
What do you *mean* by an Integrated Approach?
COLLABORATIVE EFFORT

• Goal: align all initiatives focused on worker health to reduce duplicated efforts,
  – Optimize budgets
  – Utilize Limited Resources
  – Amplify the impact of all programs involved

• Bringing all of these groups together is the best way to systematically;
  – Gain insight from all interested factions and
  – Assure that the program is relevant
An Integrated Approach

- Well-Being
- Safety and health
- Employee benefits
- Human resources

Link across systems
Designing an integrated approach

Address objectives on multiple levels

Organizational policies, programs, management system

Physical & Psychosocial environment

Individual supports
Benefits of an integrated approach

- Reduce redundancies
- Streamline costs
- Share budgets
- Share programming
THE COMMITTEE

Director of Occupational Health and Safety (OHS)

OHS Manager

OHS Committee Leader

Workman's Compensation Representative

Human Resource Representative

Organizational Development Representative

Director of Benefits & Wellness

Health & Wellness Manager

Employee Assistance Program

Risk Management
Why Implement an Integrated Approach?

Interdependent Effects

• Workers may perceive changes in health behaviors as futile in the face of significant occupational exposures.

• Management efforts to create a healthy work environment may
  – Increase workers’ motivations to modify personal health behaviors
  – Foster trust that may support workers’ receptivity to messages.

Sorensen et al, AJPH 2010; IOM, Integrating Employee Health 2005
Why Implement an Integrated Approach?

Increase effectiveness of existing programs

Worksite smoking cessation interventions are more than twice as effective when integrated with occupational safety and health.

Among blue-collar hourly workers who received an integrated OSH/health promotion program, smoking quit rates more than doubled (11.8% vs 5.9%), compared to those who only received health promotion.

(Source: Sorensen, Barbeau, 2006. Integrating Occupational Health, safety and worksite health promotion: opportunities for research and practice)
Potential Impact

• Reduction in workplace injuries
• Safer, Healthier, and productive employees
• Improved Worker Job Satisfaction
• Enhanced Organizational Culture (Trust, Safety, Health)
• Happier, less stressful, and more prosperous business environment
• Reduction in Work-related Stress
• Improved Health Decisions
• Reduction in health care costs
• Community gains
## Issues Relevant to Advancing Worker Well-being Through Total Worker Health®

### Control of Hazards and Exposures
- Chemicals
- Physical Agents
- Biological Agents
- Psychosocial Factors
- Human Factors
- Risk Assessment and Risk Management

### Organization of Work
- Fatigue and Stress Prevention
- Work Intensification Prevention
- Safe Staffing
- Overtime Management
- Healthier Shift Work
- Reduction of Risks from Long Work Hours
- Flexible Work Arrangements
- Adequate Meal and Rest Breaks

### Built Environment Supports
- Healthy Air Quality
- Access to Healthy, Affordable Food Options
- Safe and Clean Restroom Facilities
- Safe, Clean and Equipped Eating Facilities
- Safe Access to the Workplace
- Environments Designed to Accommodate Worker Diversity

### Leadership
- Shared Commitment to Safety, Health, and Well-Being
- Supportive Managers, Supervisors, and Executives
- Responsible Business Decision-Making
- Meaningful Work and Engagement
- Worker Recognition and Respect

### Compensation and Benefits
- Adequate Wages and Prevention of Wage Theft
- Equitable Performance Appraisals and Promotion
- Work-Life Programs
- Paid Time Off (Sick, Vacation, Caregiving)
- Disability Insurance (Short- & Long-Term)
- Workers’ Compensation Benefits
- Affordable, Comprehensive Healthcare and Life Insurance
- Prevention of Cost Shifting between Payers (Workers’ Compensation, Health Insurance)
- Retirement Planning and Benefits
- Chronic Disease Prevention and Disease Management
- Access to Confidential, Quality Healthcare Services
- Career and Skills Development

### Community Supports
- Healthy Community Design
- Safe, Healthy and Affordable Housing Options
- Safe and Clean Environment (Air and Water Quality, Noise Levels, Tobacco-Free Policies)
- Access to Safe Green Spaces and Non-Motorized Pathways
- Access to Affordable, Quality Healthcare and Well-Being Resources

### Changing Workforce Demographics
- Multigenerational and Diverse Workforce
- Aging Workforce and Older Workers
- Vulnerable Worker Populations
- Workers with Disabilities
- Occupational Health Disparities
- Increasing Number of Small Employers
- Global and Multinational Workforce

### Policy Issues
- Health Information Privacy
- Reasonable Accommodations
- Return-to-Work
- Equal Employment Opportunity
- Family and Medical Leave
- Elimination of Bullying, Violence, Harassment, and Discrimination
- Prevention of Stressful Job Monitoring Practices
- Worker-Centered Organizational Policies
- Promoting Productive Aging

### New Employment Patterns
- Contracting and Subcontracting
- Precarious and Contingent Employment
- Multi-Employer Worksites
- Organizational Restructuring, Downsizing and Mergers
- Financial and Job Security

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November 2015: Total Worker Health® is a registered trademark of the US Department of Health and Human Services
EXAMPLES OF INTEGRATED APPROACHES
Example of Integrated Approach
Musculoskeletal Disease

Reorganizing work + Ergonomic consultations + Arthritis self-management strategies
BENEFITS OF INTEGRATION

Increased Program Participation and Effectiveness

Smoking quit rates:

- Integrated interventions: 11.8%
- Health promotion only: 5.9%

GUIDELINES AND RESOURCES FOR DEVELOPING A TWH APPROACH
What is Total Worker Health®?

Total Worker Health® is defined as policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being.
Simple Steps to Get Started

http://www.cdc.gov/niosh/twh/steps.html

1. NIOSH Essential Elements of Effective Workplace Programs and Policies for Improving Worker Health and Wellbeing

2. Ideas You Can Implement Right Now to Integrate Health Protection and Promotion of Worker Well-being

Assessment Tools

http://www.cdc.gov/niosh/twh/tools.html

1. Integration of Health Protection and Health Promotion: Rationale, Indicators, and Metrics (Sorensen et al, 2013)
2. CDC Worksite Health ScoreCard (HSC)
3. NIOSH Organization of Work Measurement Tools for Research and Practice
4. NIOSH Quality of Worklife Questionnaire
5. Occupational Safety and Health Administration (OSHA) Form 33
6. American College of Occupational and Environmental Medicine’s Corporate Health Achievement Award
7. CDC Workplace Health Assessment
1. The Whole Worker: Guidelines for Integrating Occupational health and Safety with Workplace Wellness Programs, State of California Commission on Health and Safety and Workers’ Compensation (CHSWC); 2010

2. Healthy Workplace Participatory Program by Center for Promotion and Health in the New England Workplace (CPH-NEW); 2013

Ways to Connect with Total Worker Health®

Twitter (@NIOSH_TWH)

LinkedIn Group (Search “NIOSH Total Worker Health”)

TWH in Action! e-Newsletter

http://www.cdc.gov/niosh/TWH/newsletter/
Topic-specific resources of interest

NIOSH Healthy Aging Topic Page:
http://www.cdc.gov/niosh/topics/healthyagingatwork/

CDC Healthy Hospital Toolkit:

NIOSH Work Schedule Topic Page:
www.cdc.gov/niosh/topics/workschedules/
Free continuing education credits

http://www.cdc.gov/niosh/twh/webinar.html

Next webinar: September 2016

Slated topic: Productive Aging: Strategies for Developing Age-Friendly Workplaces

NIOSH TOTAL WORKER HEALTH®
Webinar Series

Recognizing the complex, often interlinked hazards affecting the health, safety, and well-being of today’s workforce, the NIOSH Total Worker Health® program is excited to present a free webinar series aimed at providing the latest research and case studies for protecting the safety and health of workers everywhere. All 90-minute webinars are recorded and are available for on-demand viewing.

Webinar Series Learning Objectives

- Describe recent trends in demographics, employment conditions, worker safety, injury, and illness as they relate to the health and well-being of workers.
- Describe the relationship between at least one health condition and at least one condition of work.
- Discuss the latest findings supporting rationale for implementing a Total Worker Health® approach.
- List one potential opportunity for integration between health protection and policies, programs, and practices that promote health and advance worker safety, health and well-being.
- Develop workplace programs and interventions that integrate elements of occupational safety and health protection with policies, programs, and practices that promote health and advance worker safety, health and well-being.
- Identify sources of information on prevention of adverse worker health and safety outcomes and the promotion of Total Worker Health®.

To evaluate this educational activity, receive a certificate, or to print out an on-going transcript of all of your TCEOnline CE activities, please visit: www.cdc.gov/TCEOnline.
Contact

Email: TWH@cdc.gov

NIOSH Total Worker Health® website:
http://www.cdc.gov/niosh/twh