

**May 8-11, 2018**  
**Bethesda, MD**

# **Safety and Health among Older Construction Workers in the United States**

**Xiuwen Sue Dong, DrPH**  
**Xuanwen Wang, PhD**  
**Rebecca Katz, MPH**

**CPWR-The Center for Construction  
Research and Training**  
**Silver Spring, Maryland**



**THE CENTER FOR CONSTRUCTION  
RESEARCH AND TRAINING**



# Disclosures

- ❖ **This study was funded by the U.S. National Institute for Occupational Safety and Health (NIOSH) grant U600H009762**
- ❖ **The contents of this presentation are solely the responsibility of the authors and do not necessarily represent the official views of NIOSH**

# Section 1

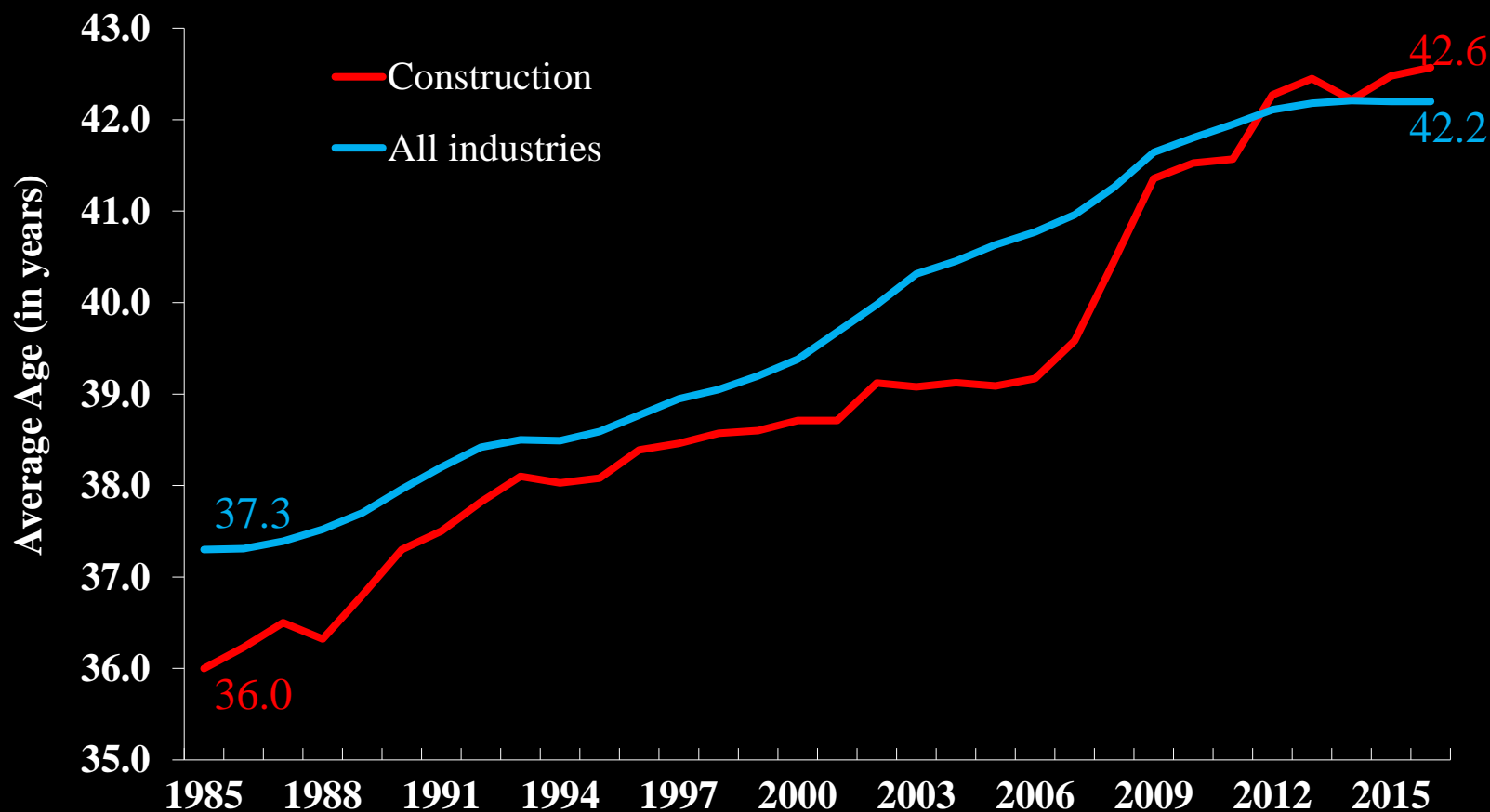
**1. Trends of  
Aging Workforce**

**2**

**3**

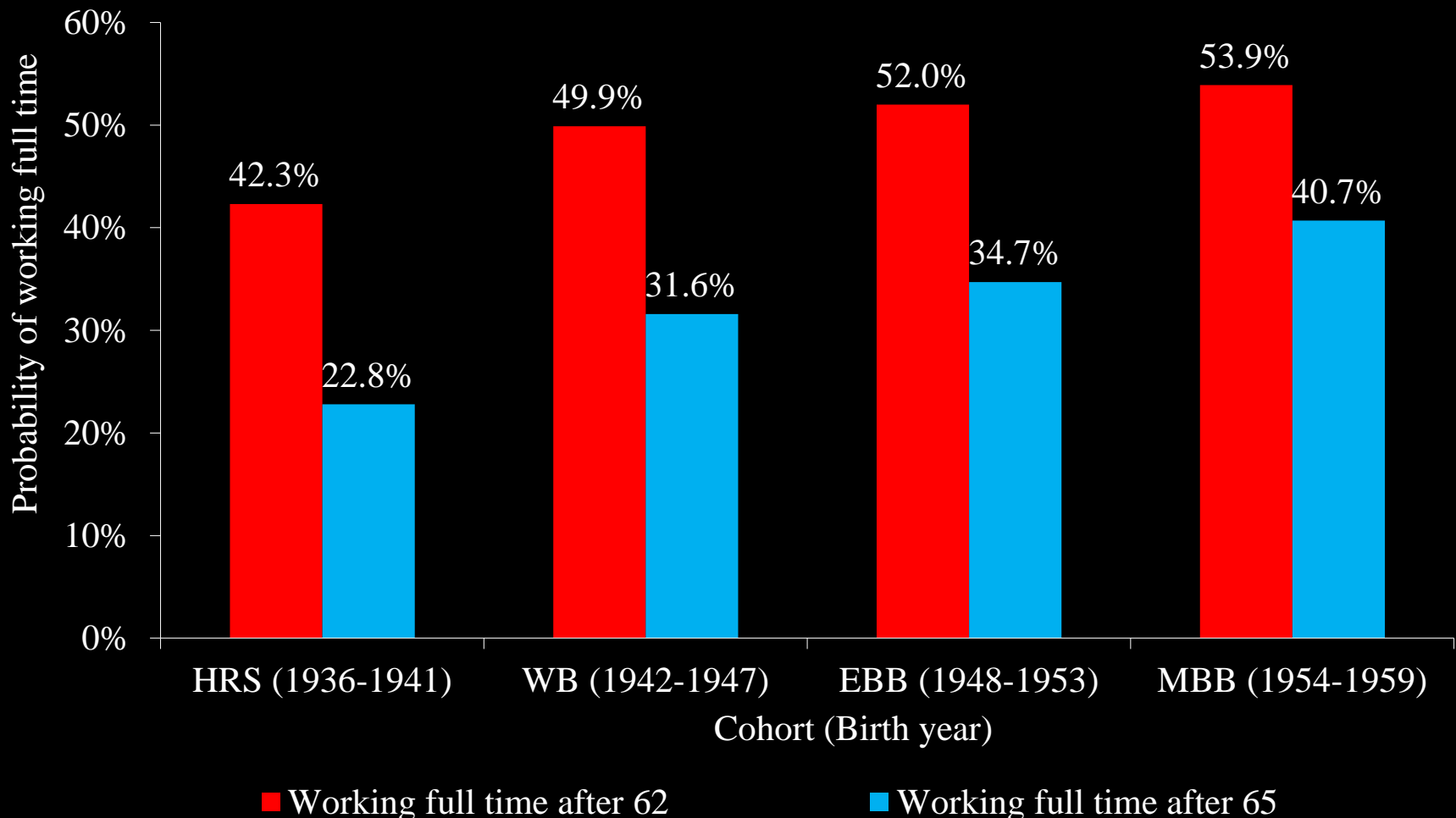
**4**

Between 1985 and 2016, the average age jumped **6.6** years in construction, and **4.9** years for all U.S. workers



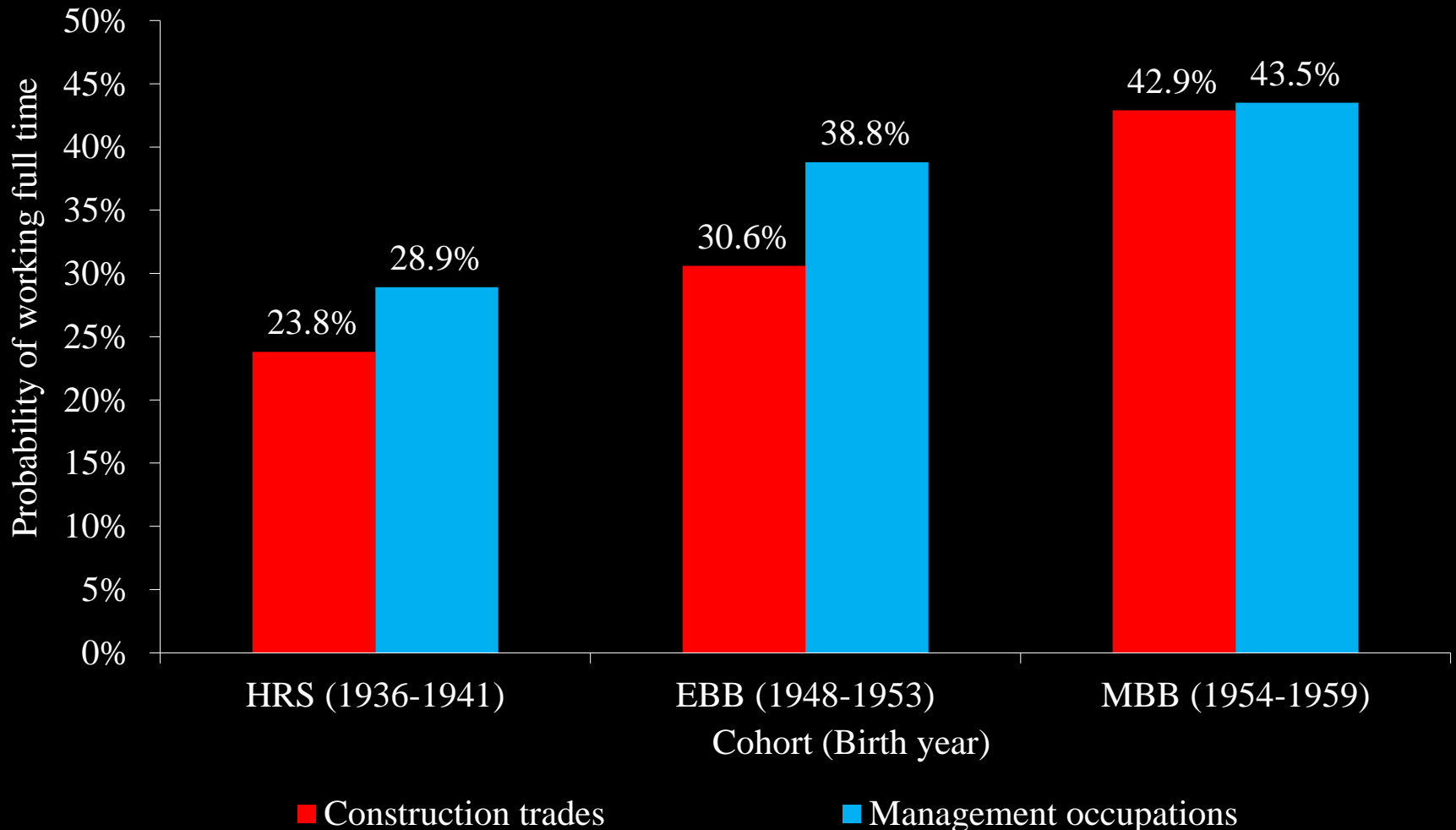
Source: CPWR, The Construction Chart Book, sixth edition, Chart 13a.

# Probability of working full time after age 62 and 65 among older workers, by cohort



Source: Dong XS, Wang X, Ringen K, Sokas R. Baby boomers in the United States: Factors associated with working longer and delaying retirement. *American Journal of Industrial Medicine* Apr; 60(4):315-328.

# Probability of working full time after 65 among older workers, by cohort and occupation



Source: Dong XS, Wang X, Ringen K, Sokas R. Baby boomers in the United States: Factors associated with working longer and delaying retirement. *American Journal of Industrial Medicine* Apr; 60(4):315-328.

# Section 2

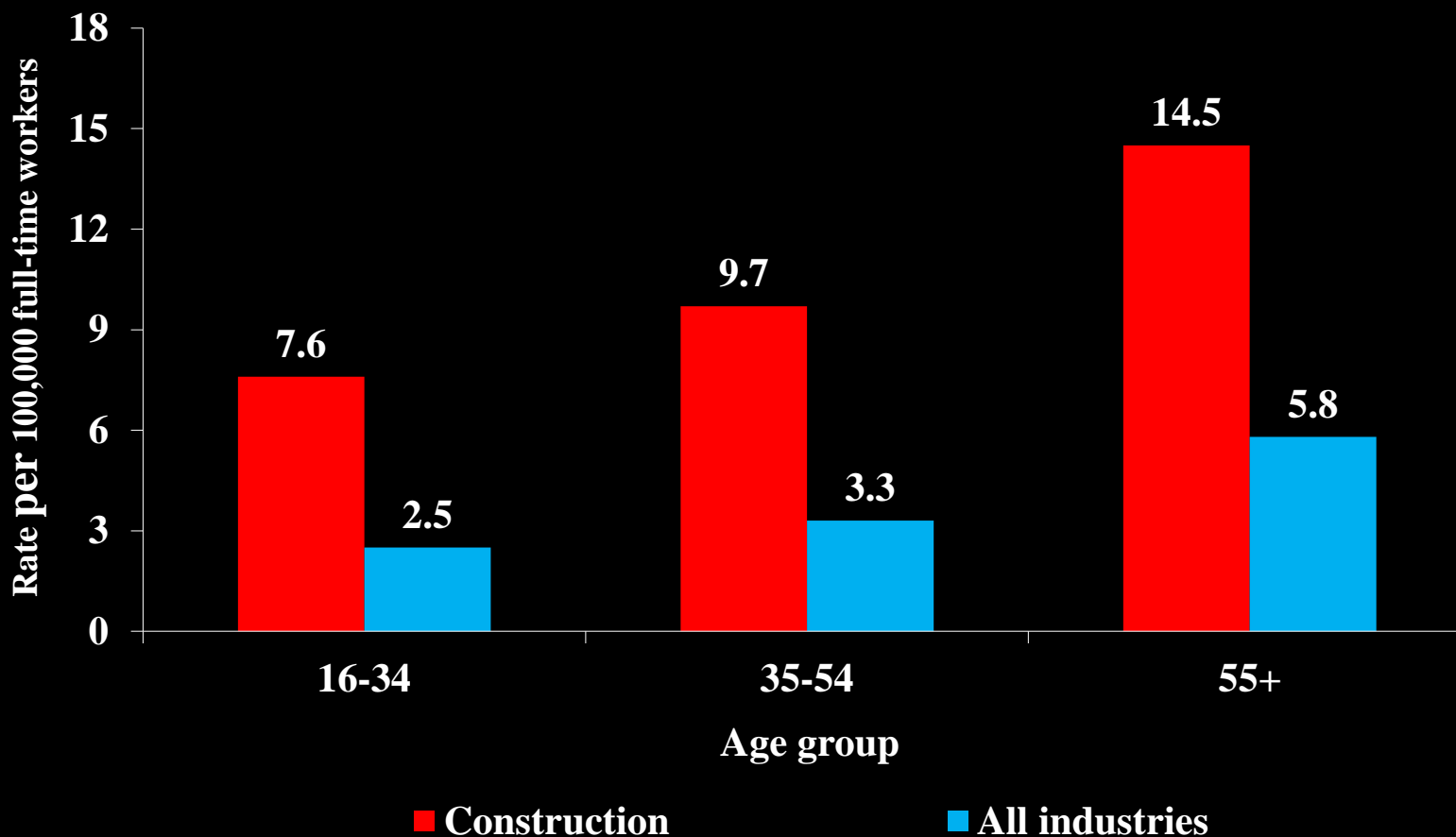
1

2. Patterns of Fatal &  
Nonfatal Injuries

3

4

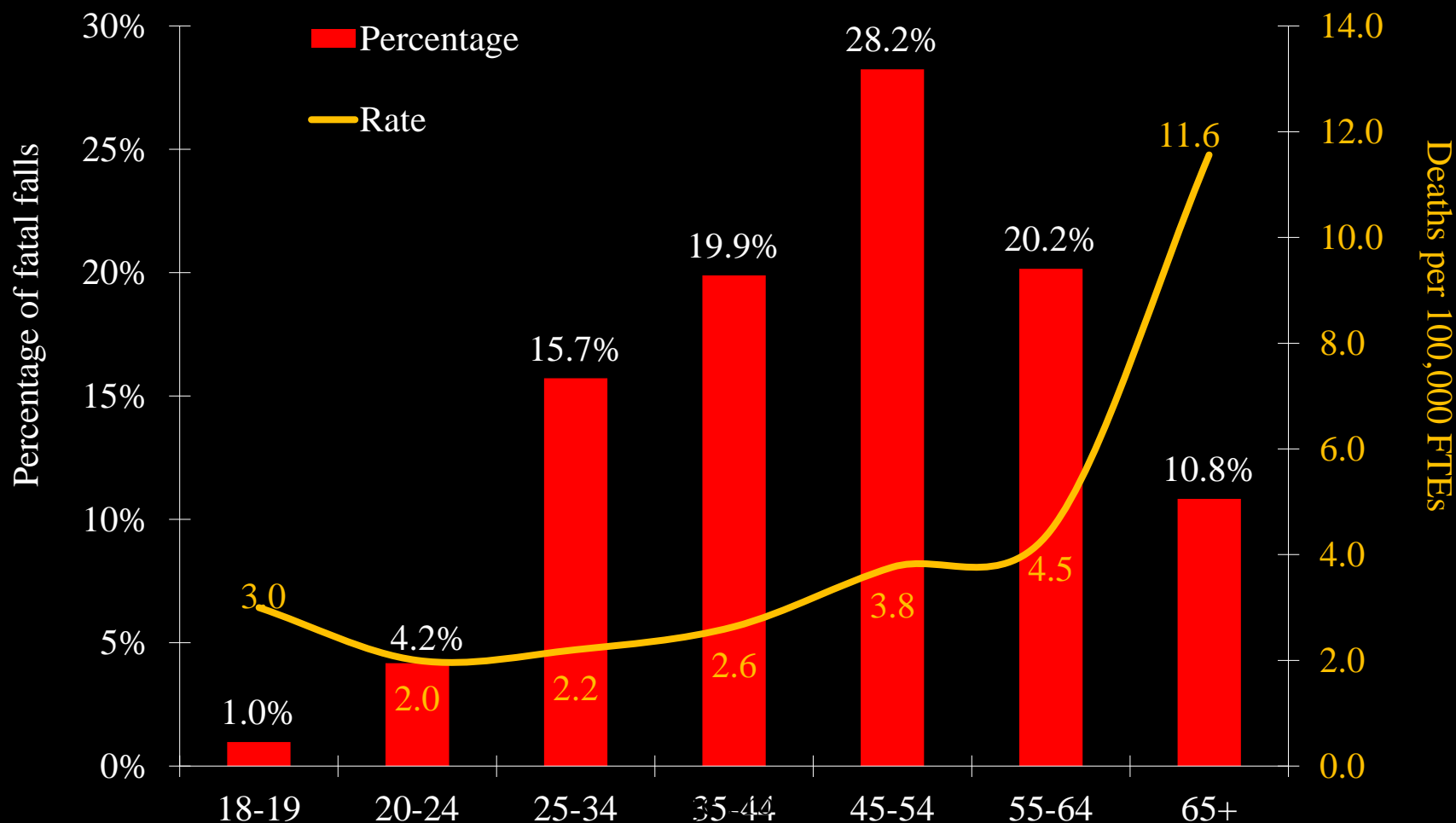
# The rate of fatal injuries for workers aged 55+ years doubled that for workers under age 35



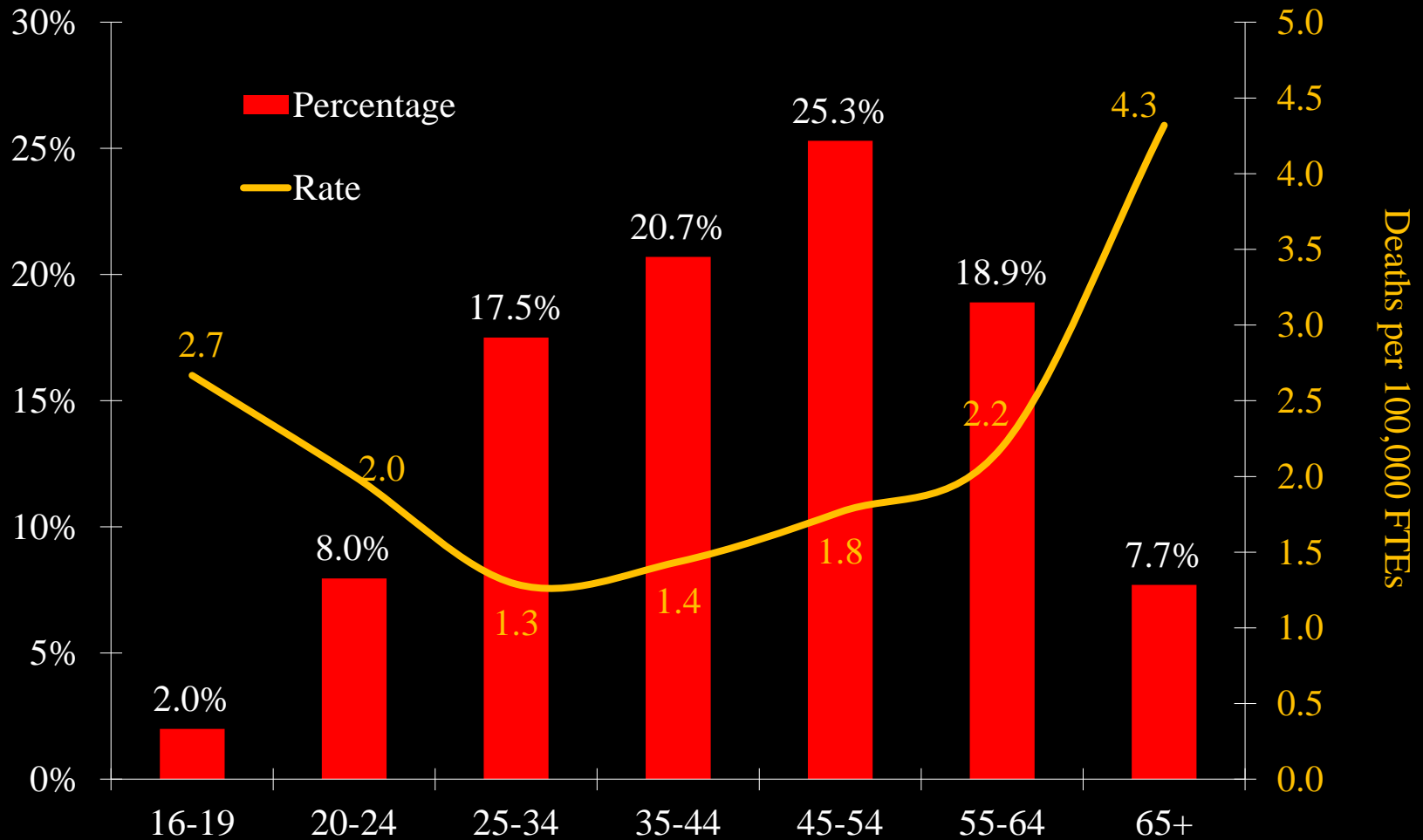
Source: 2016 Census of Fatal Occupational Injuries (CFOI) and the Current Population Survey. Fatality numbers are from the CFOI online database. Calculations by The CPWR Data Center.



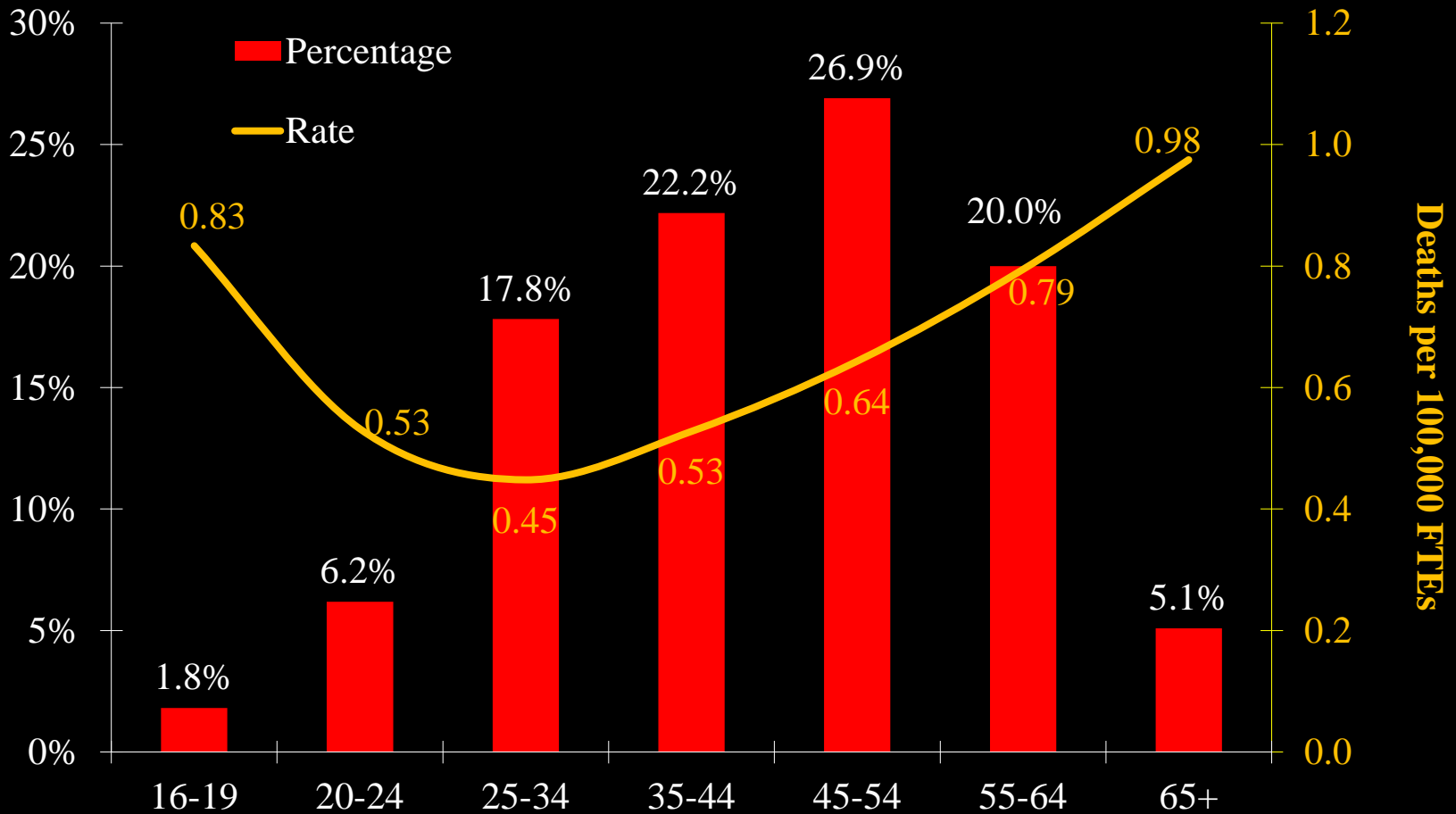
# Risks of fatal falls increase with age



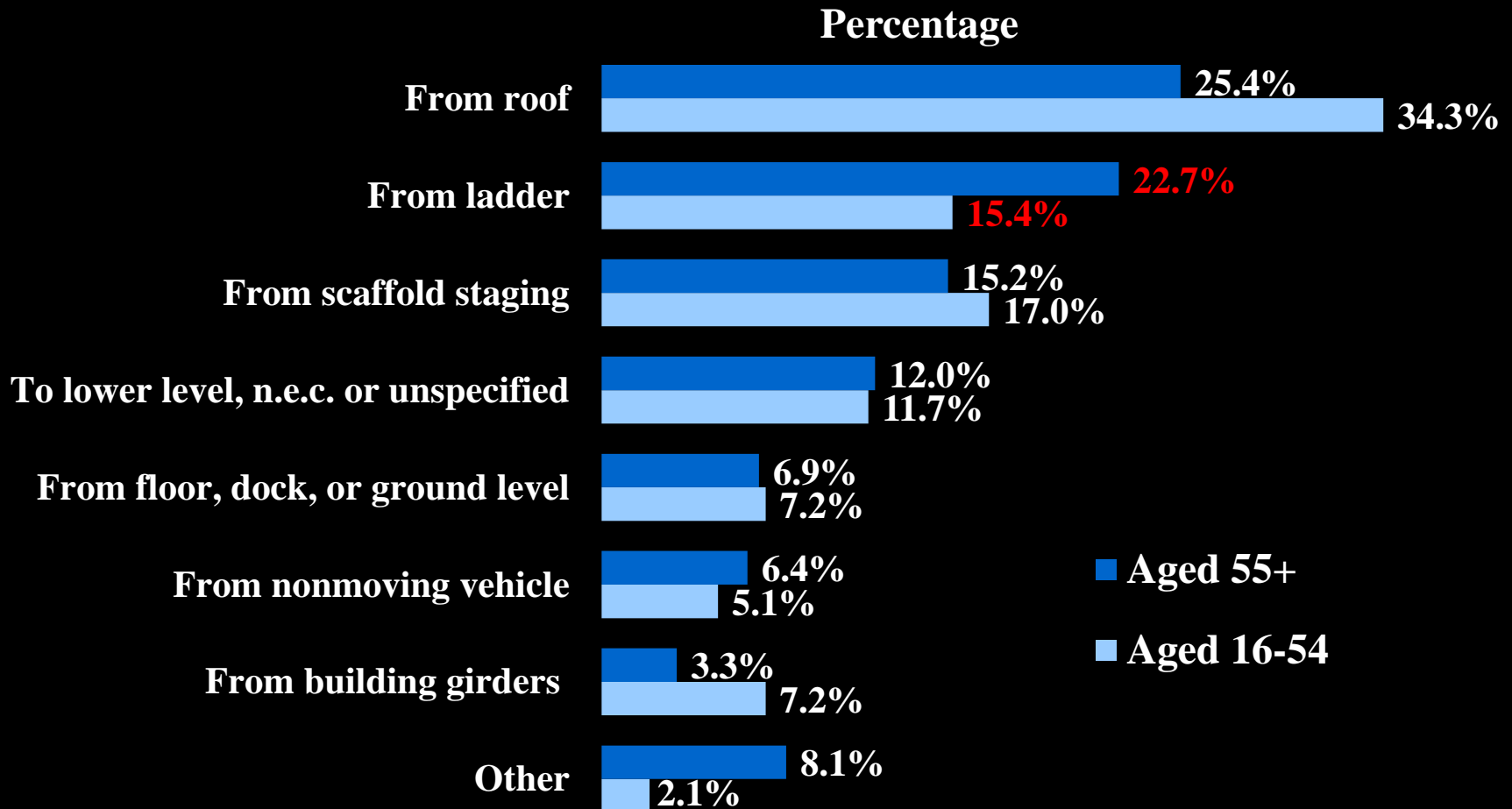
# Risks of fatal struck by injuries increase with age



# Risk of fatal caught-in/between injuries increased with age

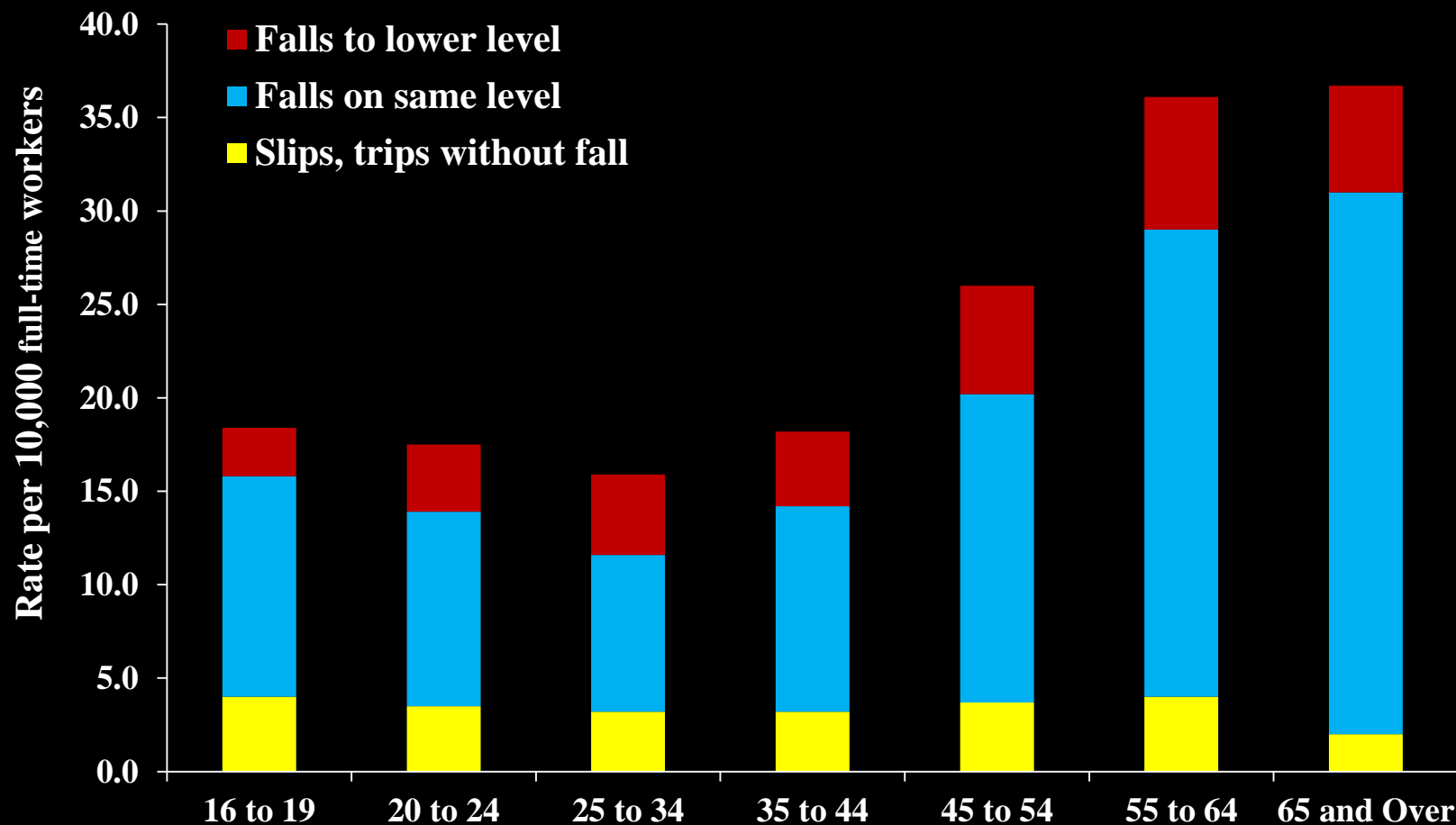


# Risks of fatal falls from ladders increase among older construction workers



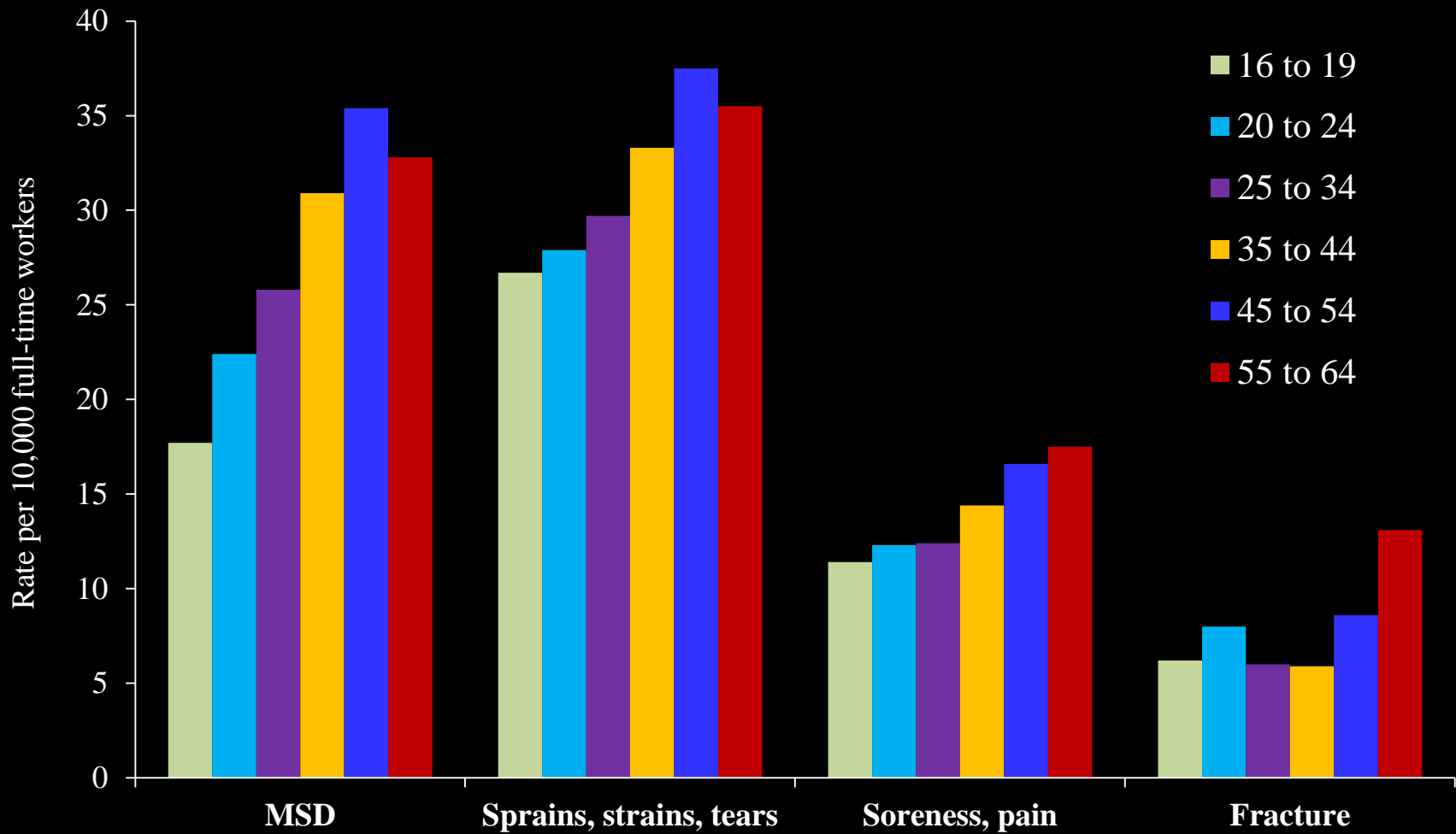
Source: Dong et al. 2012. Fatal falls among older construction workers. *Hum Factors*, 54(3):303-315.

# Rates of nonfatal falls, slips, trips increase with age



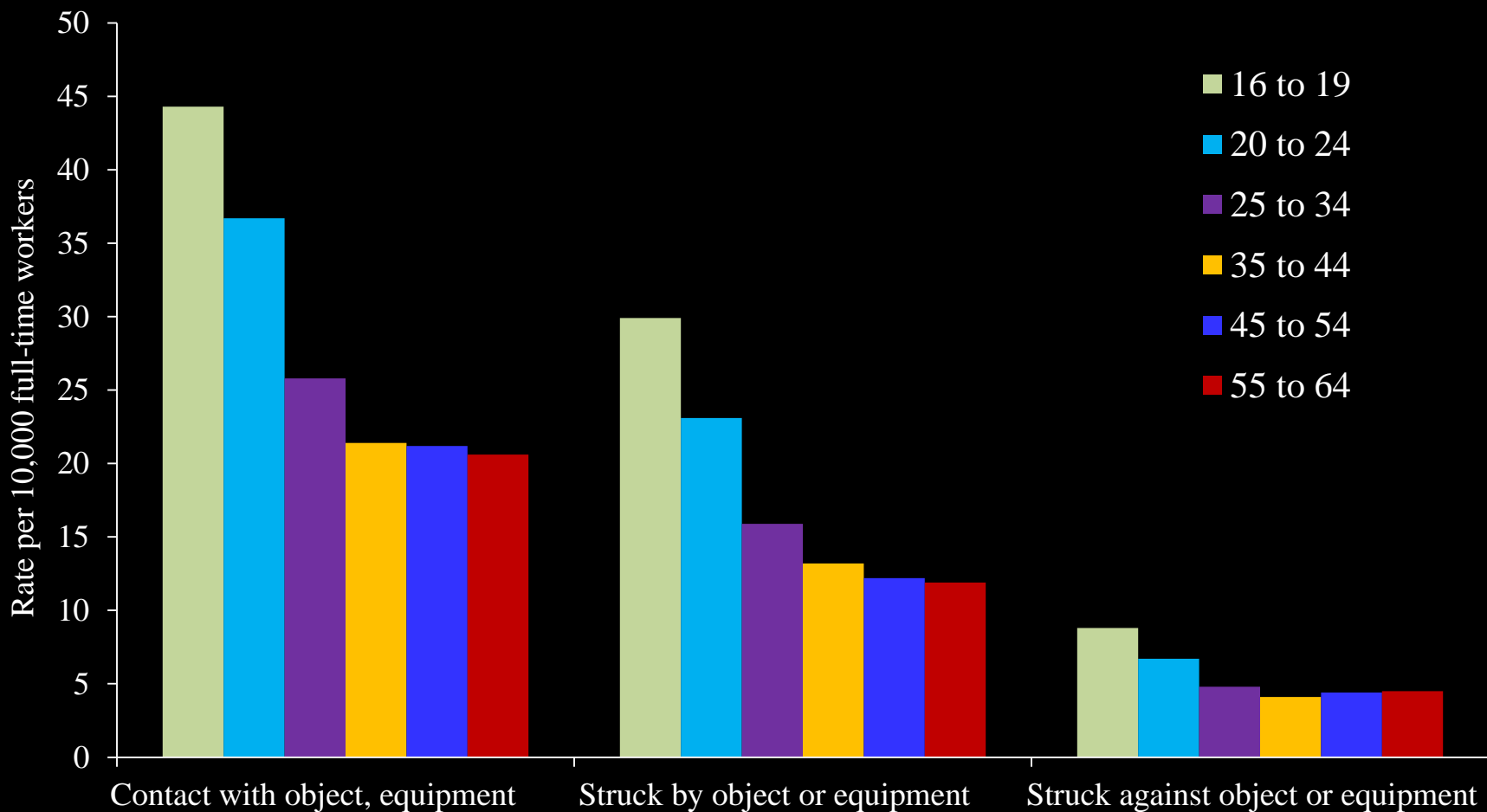
Source: 2016 Survey of Occupational Injuries and Illnesses.

# Rates of MSDs, sprains / strains / tears, soreness / pain, and fractures increase with age



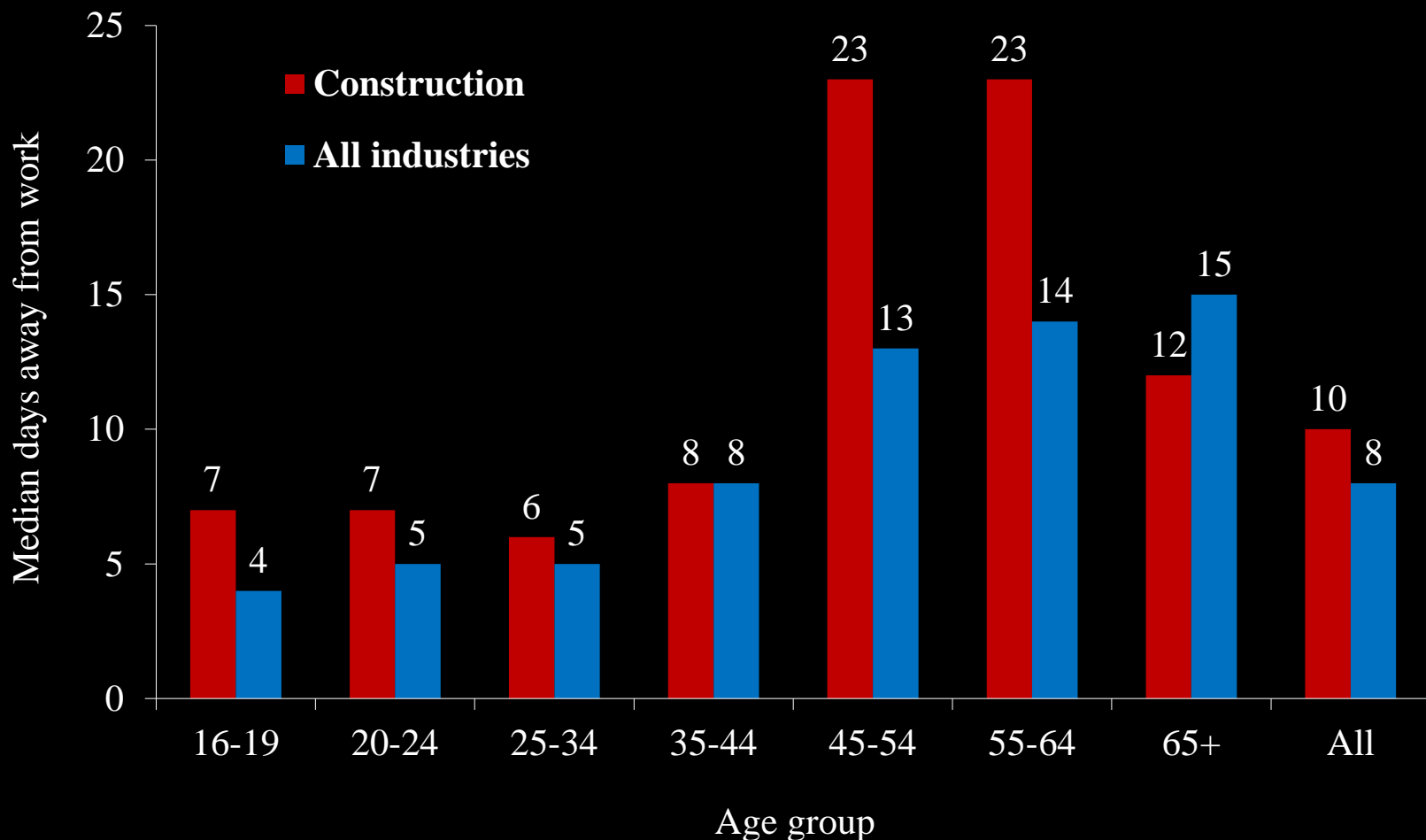
Source: 2016 Survey of Occupational Injuries and Illnesses.

# Rates of injuries due to contact with / struck by / against object / equipment **decrease** with age



Source: 2016 Survey of Occupational Injuries and Illnesses.

# Older workers need longer recovery periods if injured



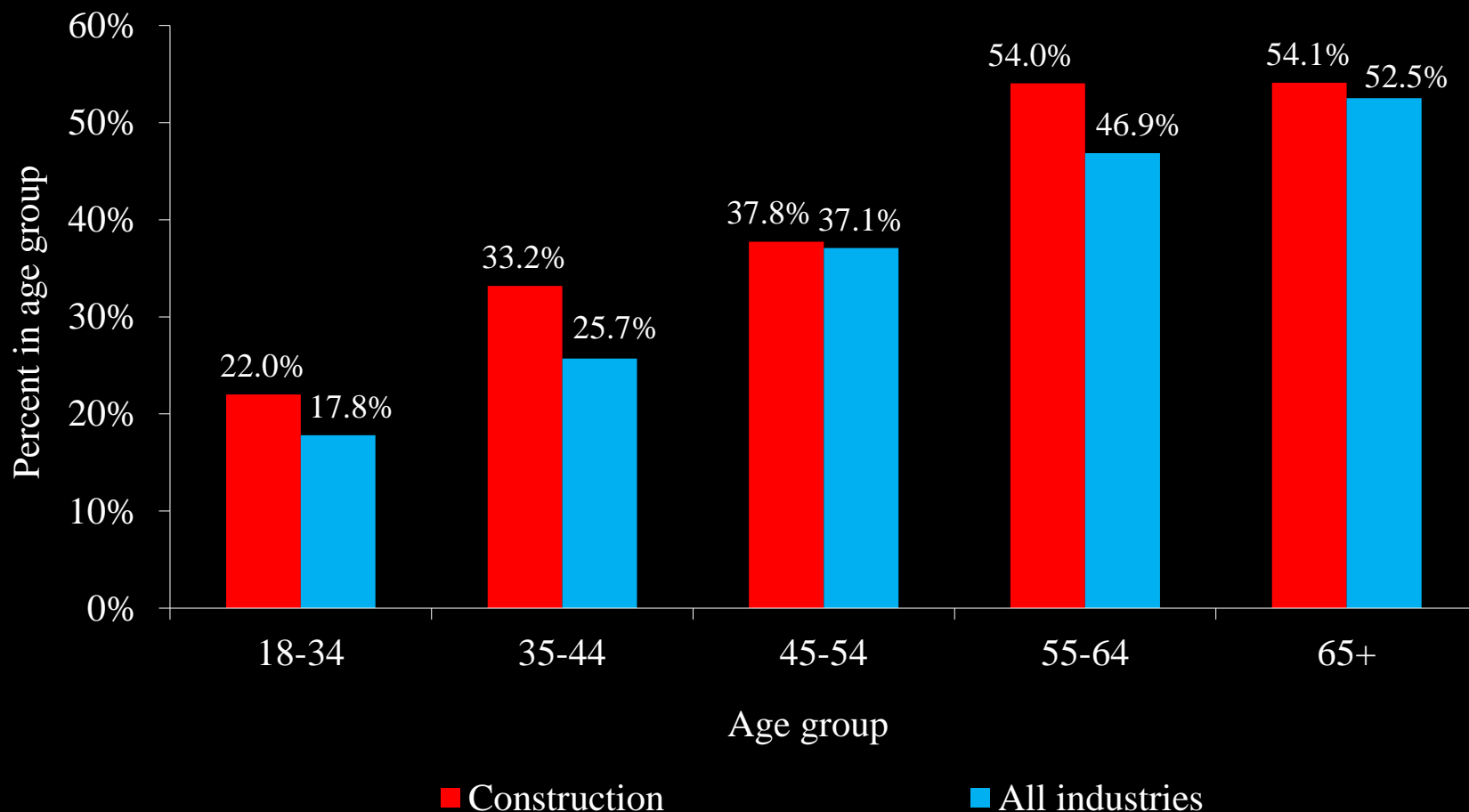
Source: 2016 Survey of Occupational Injuries and Illnesses.



# Section 3

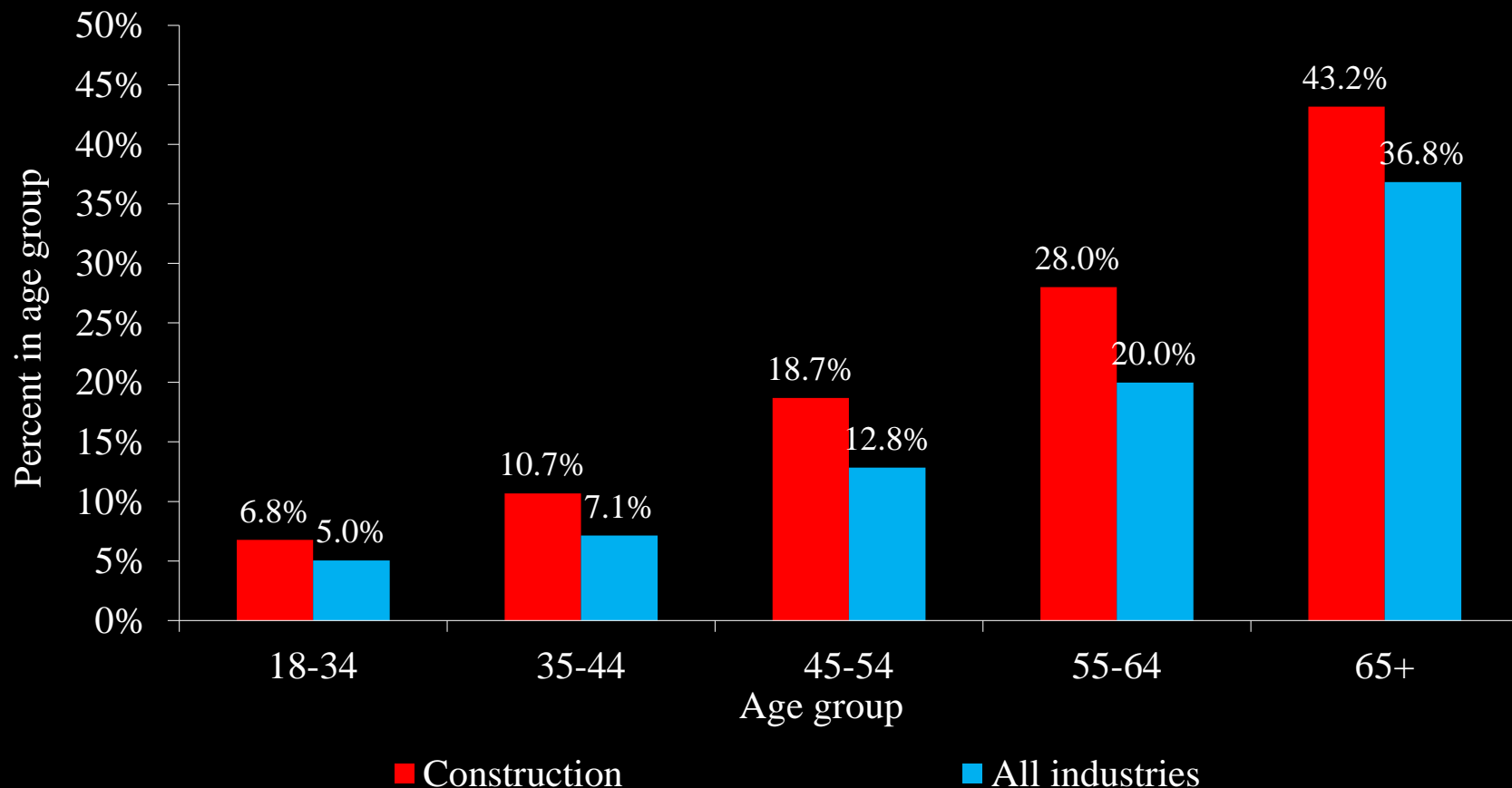


# During the past 30 days, have you had any symptoms of **pain, aching, or stiffness** in or around a joint?



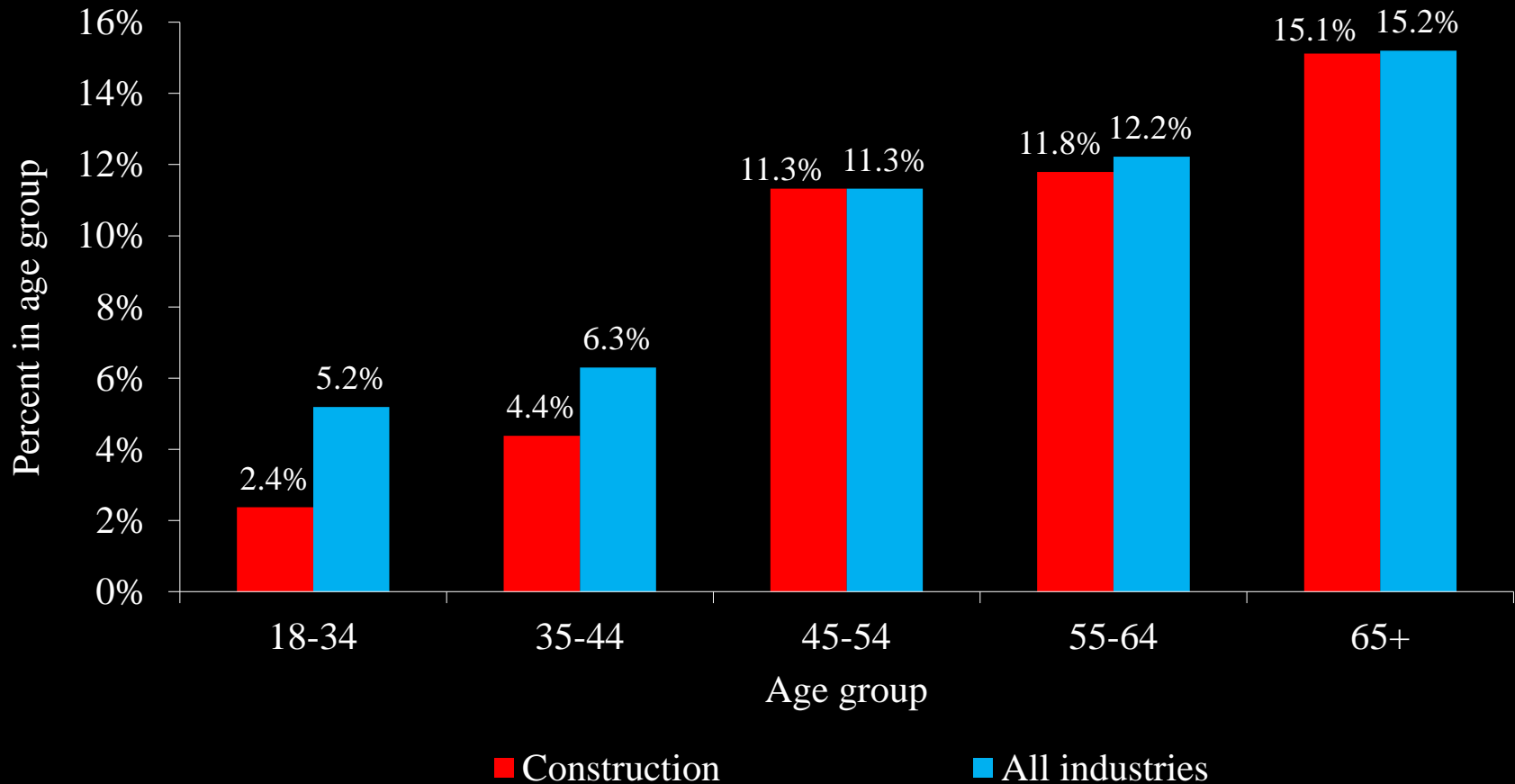
Source: 2015 National Health Interview Survey. Calculations by The CPWR Data Center.

# WITHOUT the use of hearing aids or other listening devices, is your **hearing** a little trouble, moderate trouble, a lot of trouble, or are you deaf?



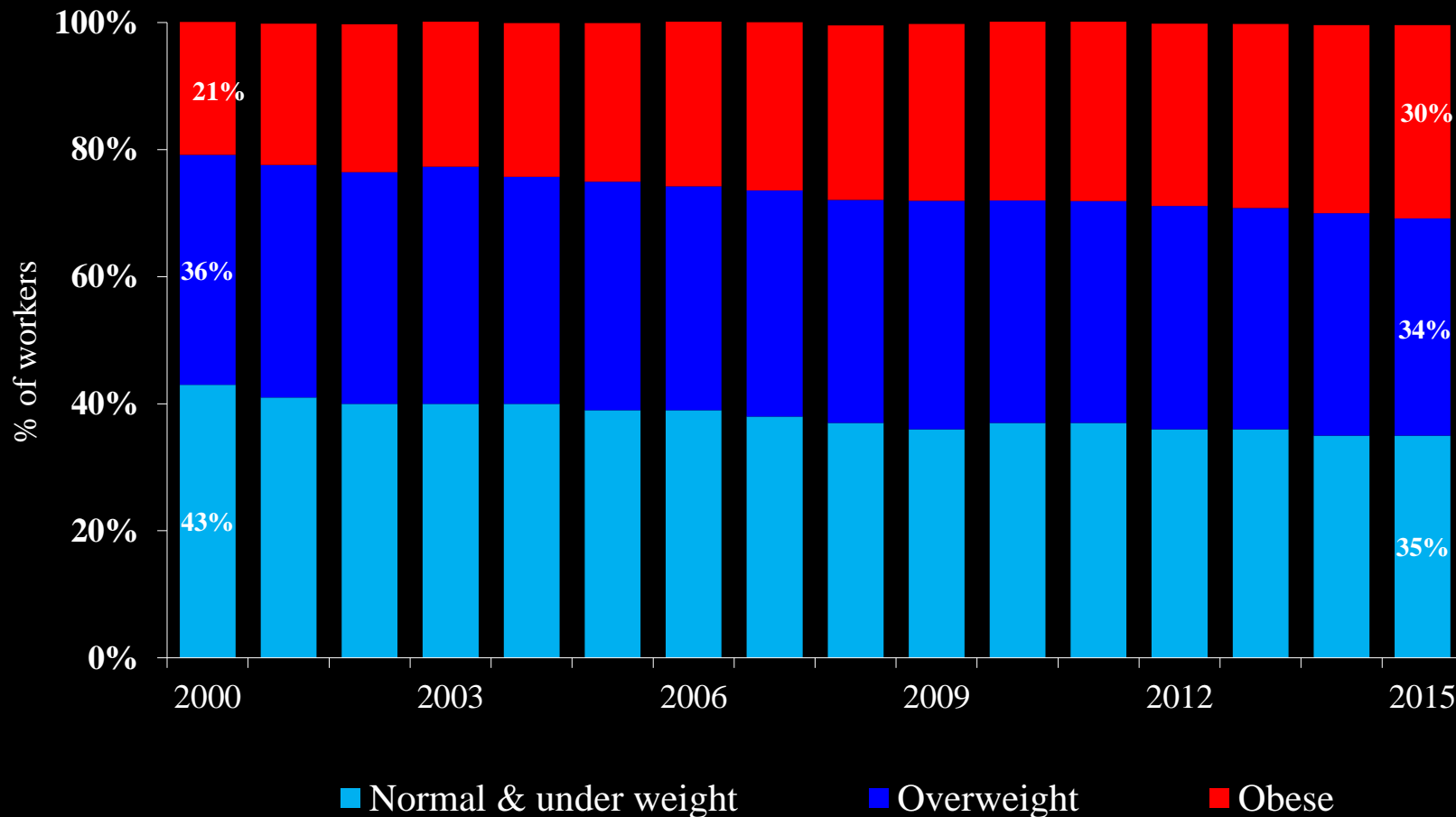
Source: 2015 National Health Interview Survey. Calculations by The CPWR Data Center.

# Do you have **trouble seeing**, even when wearing glasses or contact lenses?



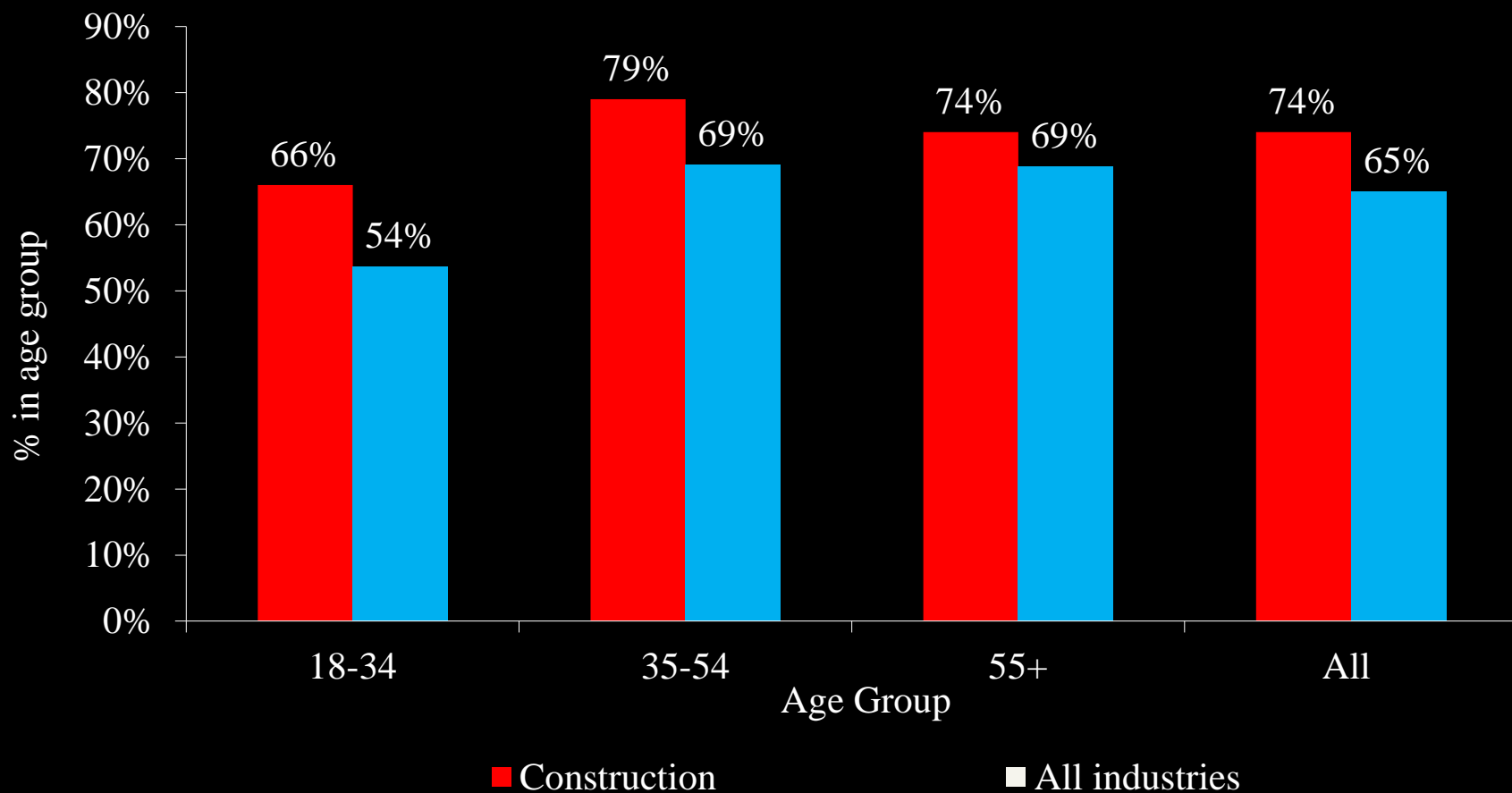
Source: 2015 National Health Interview Survey. Calculations by The CPWR Data Center.

# Prevalence of obesity increased by **43%** among U.S. workers from 2000 to 2015



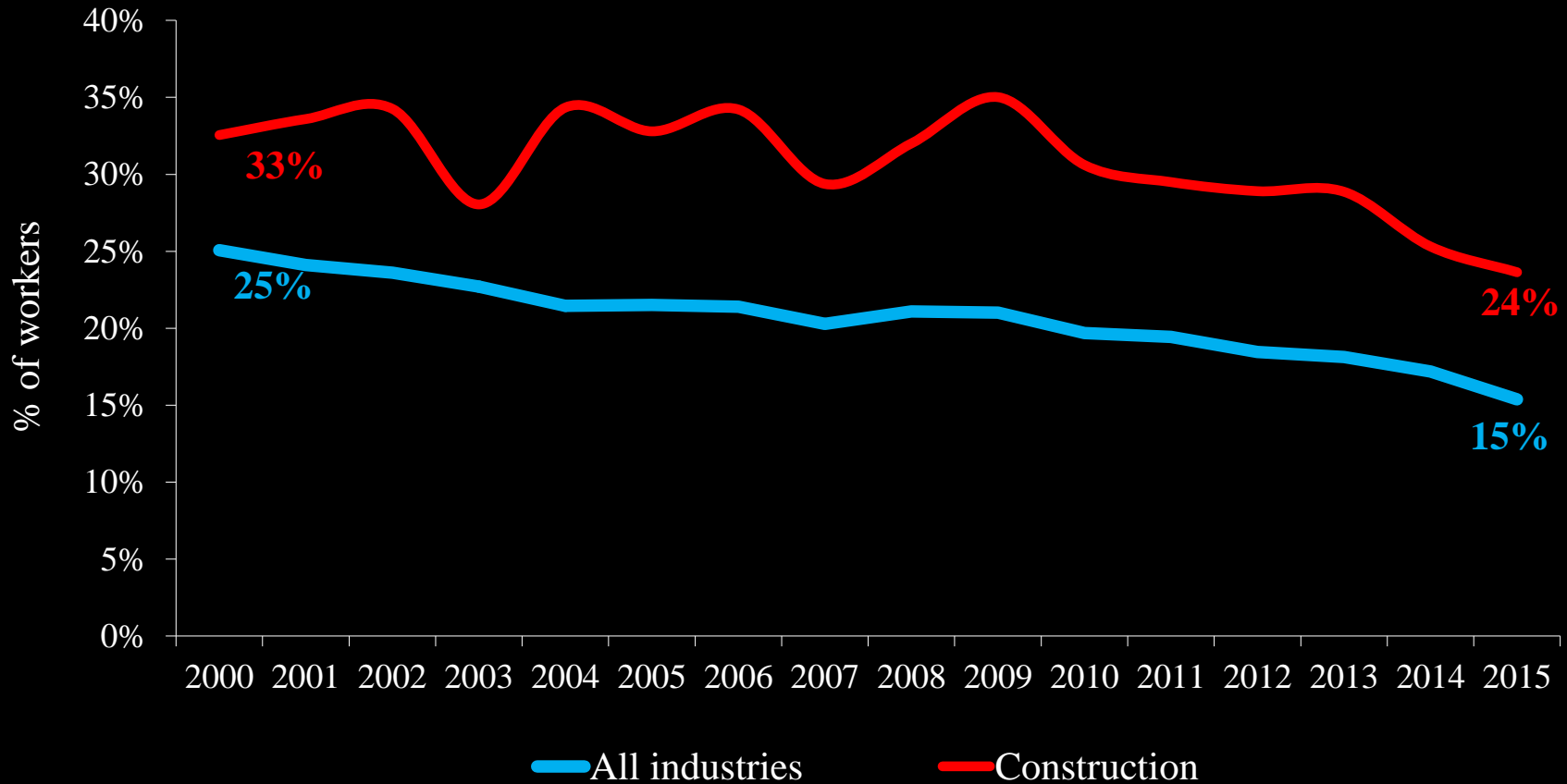
Source: 2000-2015 National Health Interview Survey. Calculations by The CPWR Data Center.

# Percentage of workers who were **overweight/obese**, 2015



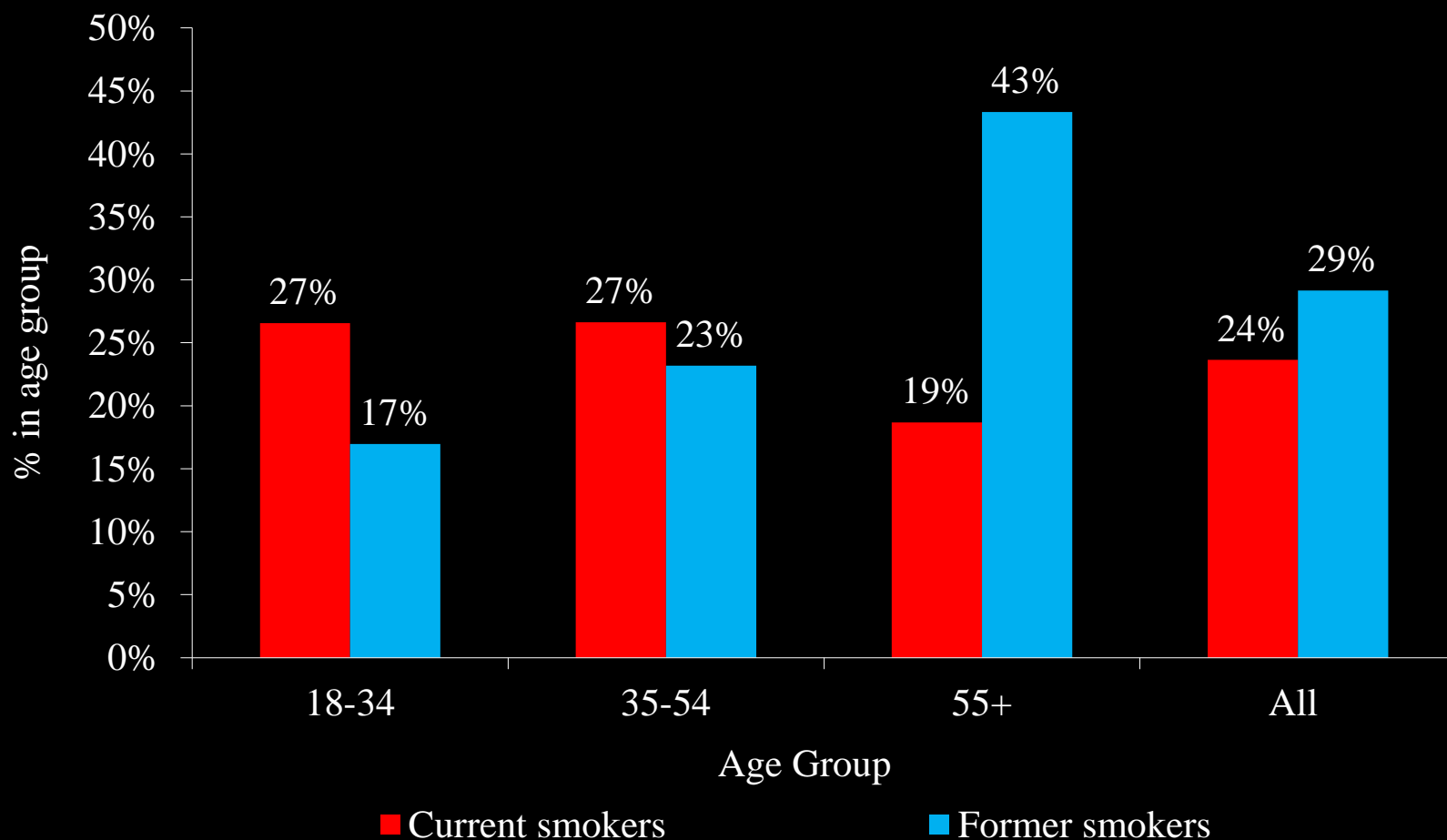
Source: 2015 National Health Interview Survey. Calculations by The CPWR Data Center.

# Current cigarette smokers declined by **40%** among U.S. workers from 2000 to 2015



Source: 2000-2015 National Health Interview Survey. Calculations by The CPWR Data Center.

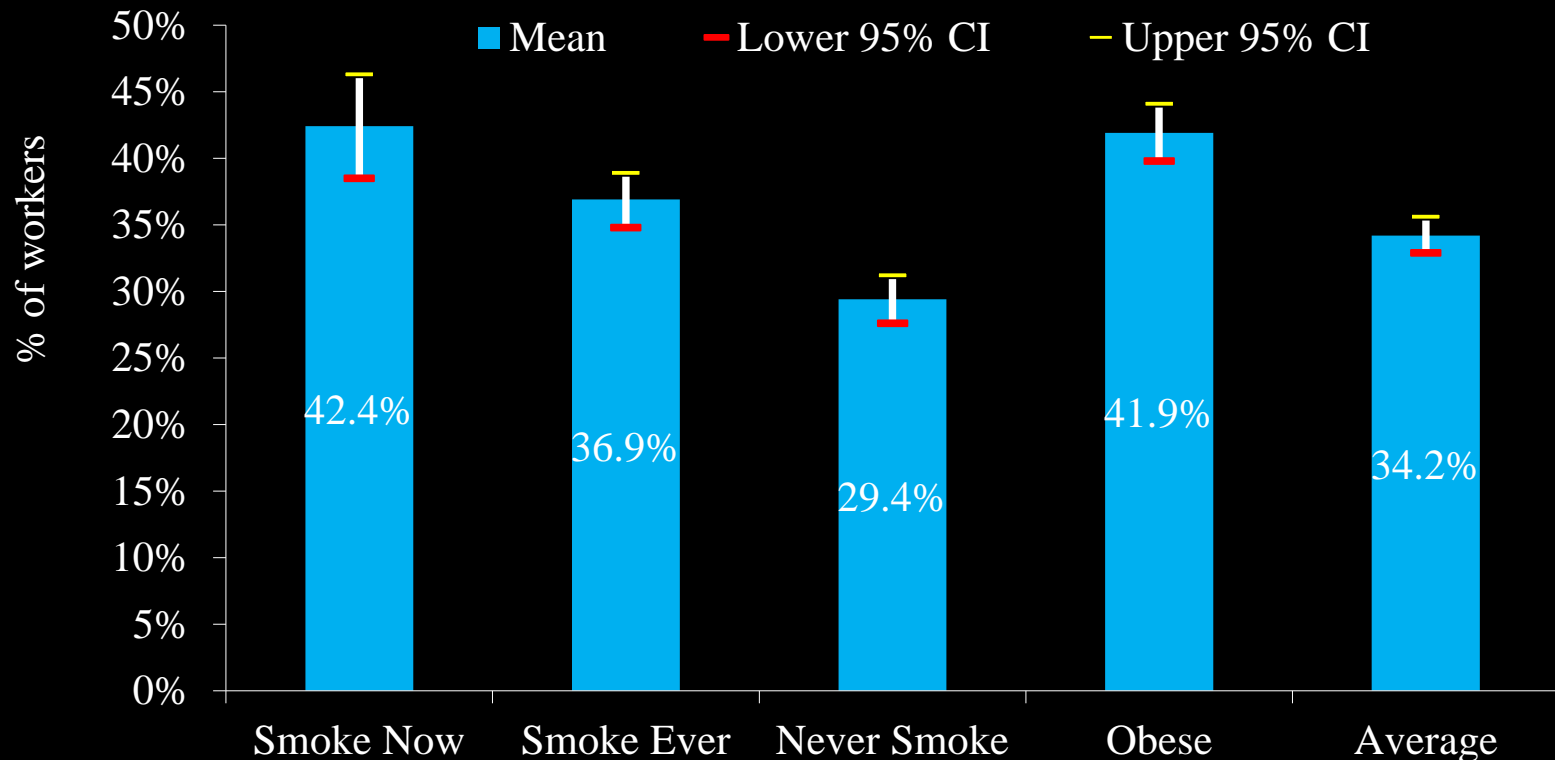
# Older workers are more likely to be former cigarette smokers, but less likely to be current smokers



Source: 2015 National Health Interview Survey. Calculations by The CPWR Data Center.

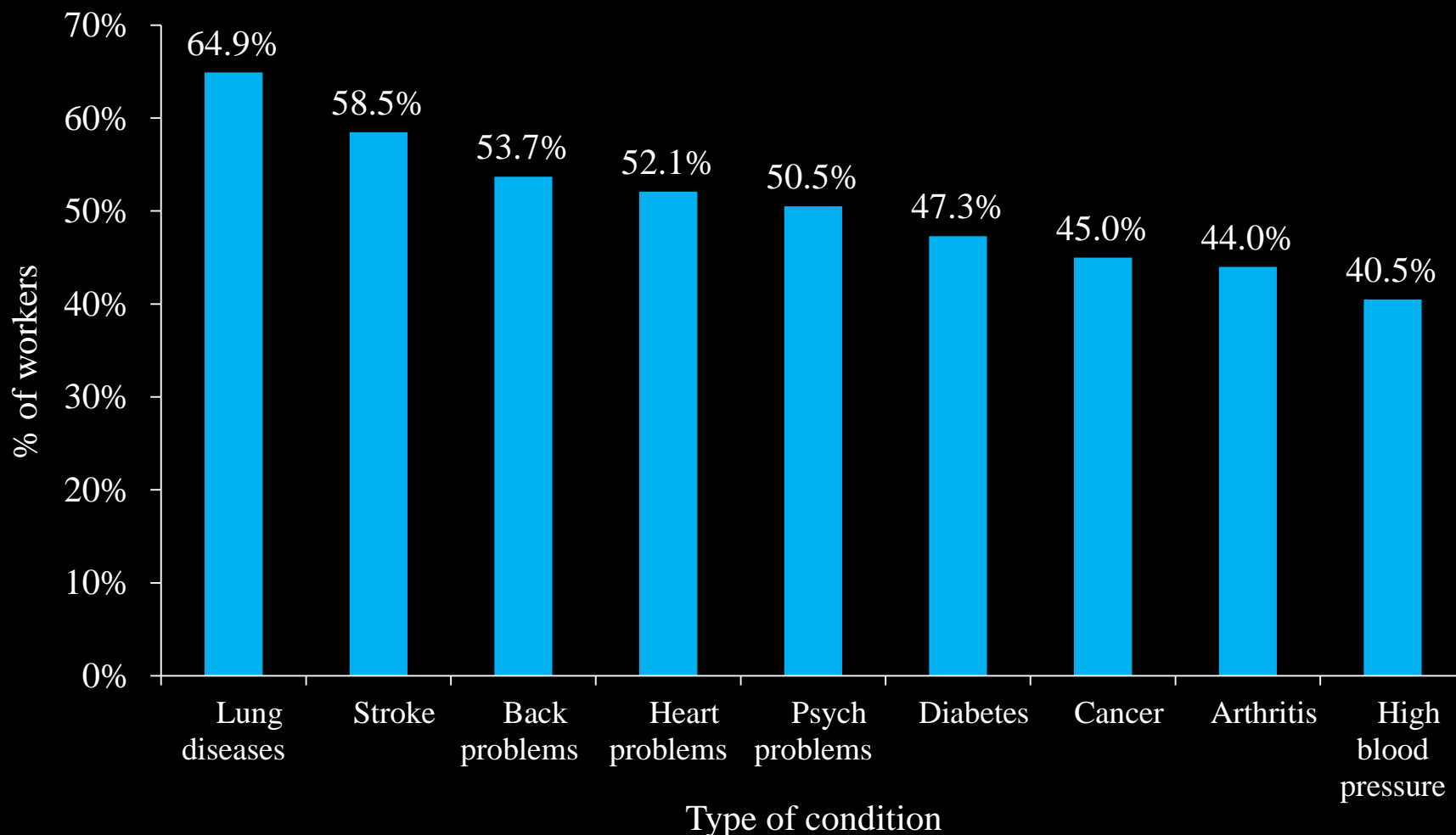


# Work limitations among construction workers aged 50+ years, by cigarette smoking status, BMI



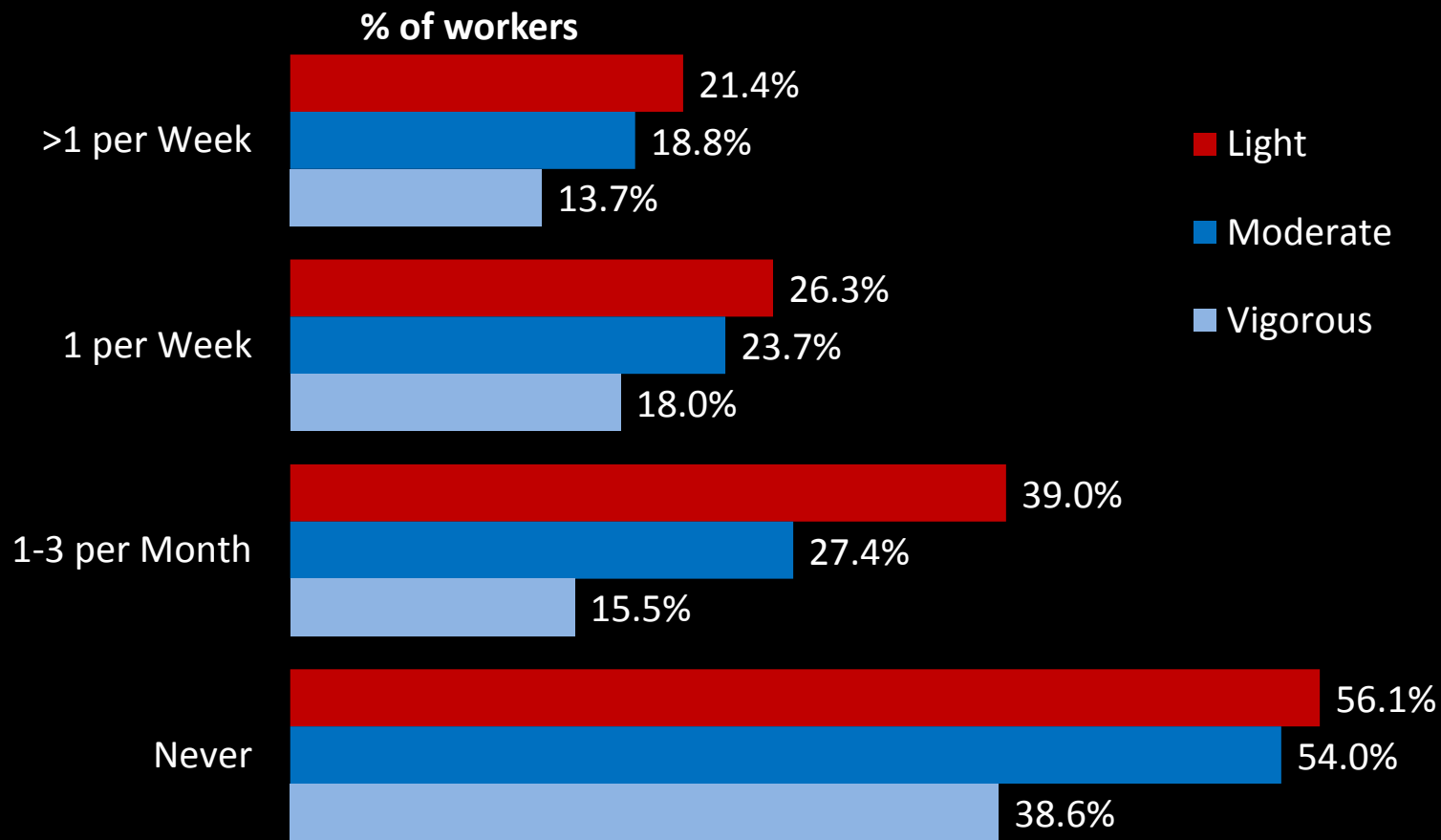
Source: 2004-2014 Health and Retirement Study. Calculations by The CPWR Data Center.

## Work limitations among construction workers aged 50+ years, by type of condition



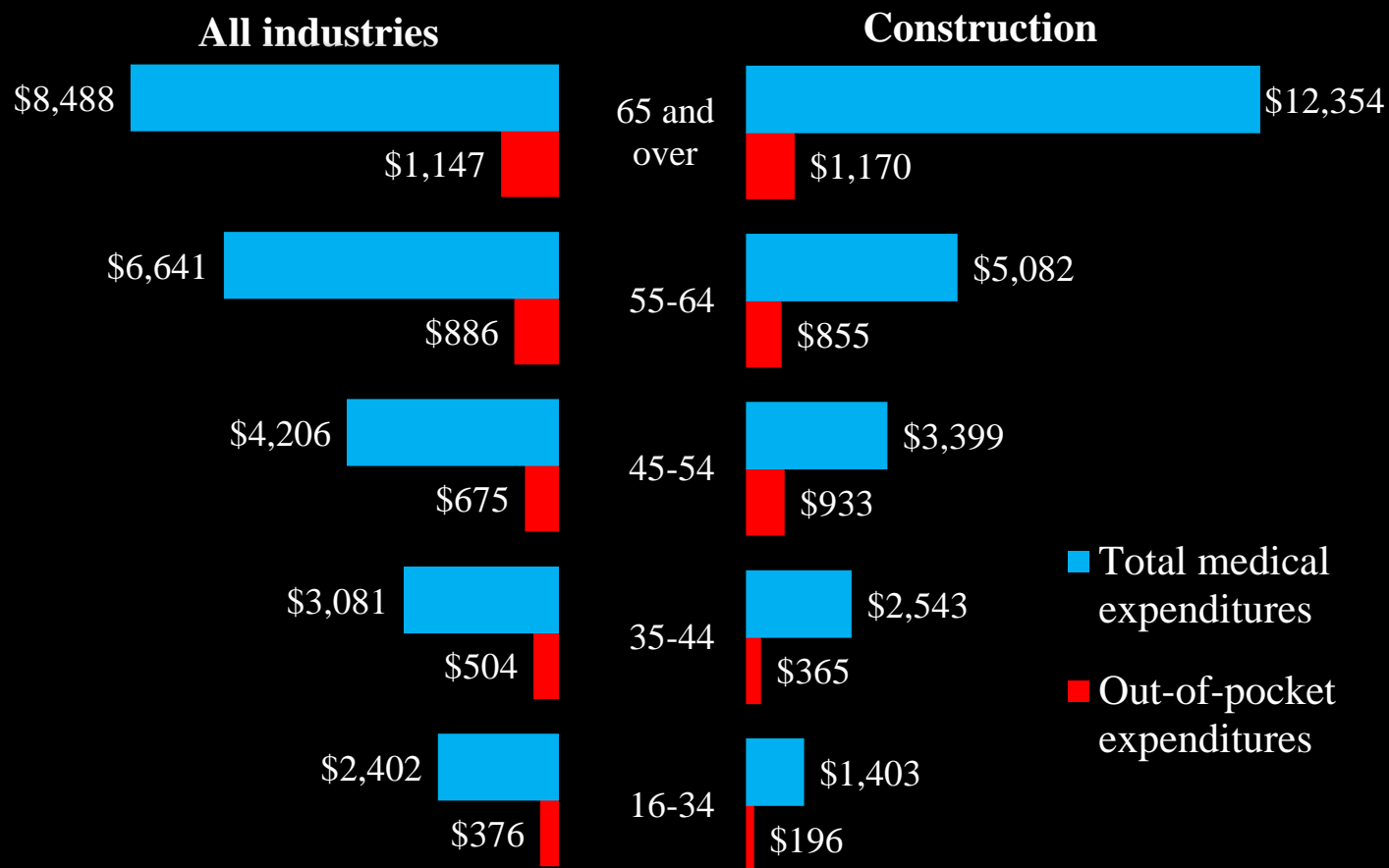
Source: 2004-2014 Health and Retirement Study. Calculations by The CPWR Data Center.

# Work limitations among construction workers aged 50+ years, by physical exercise



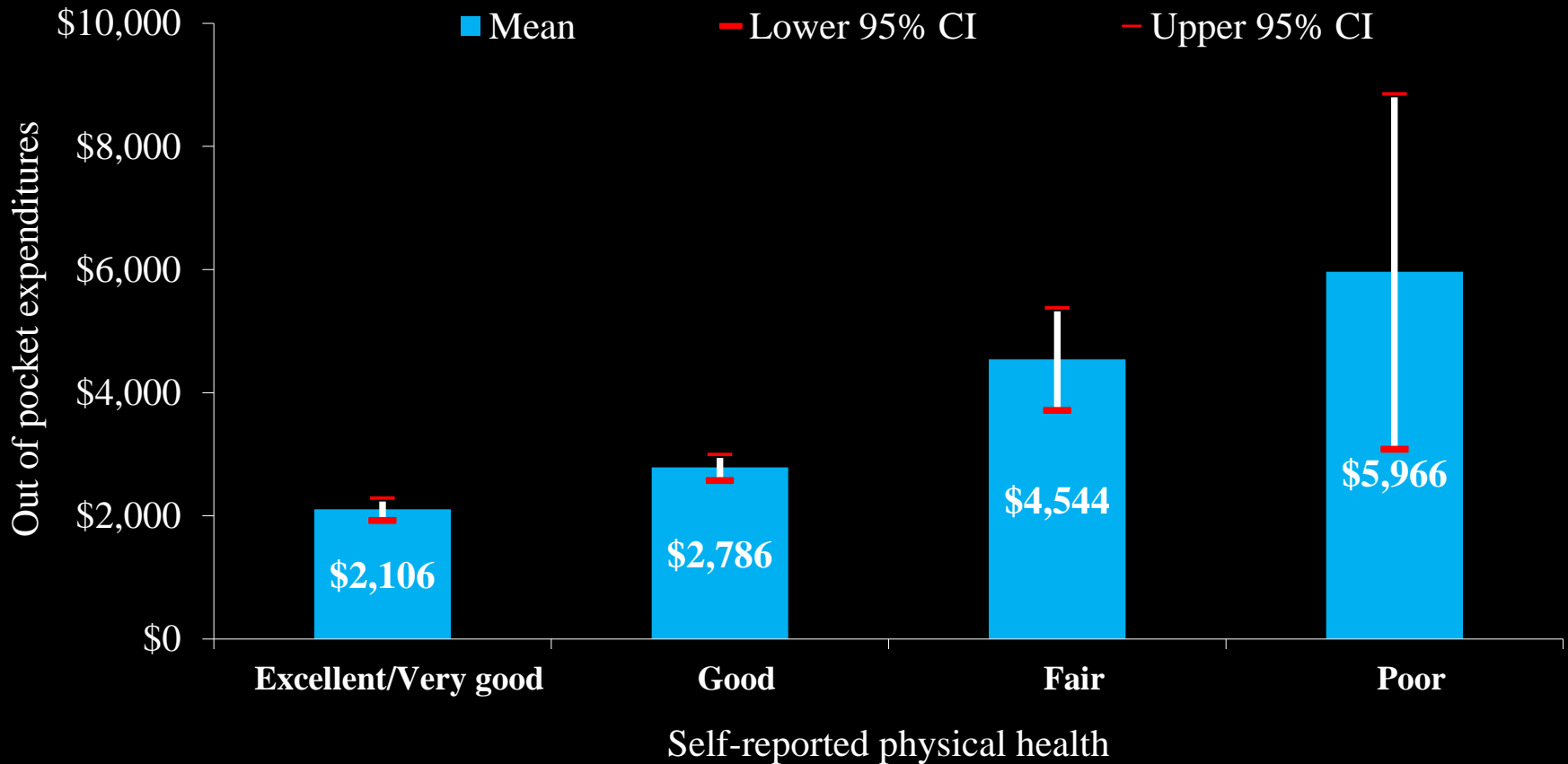
Source: 2004-2014 Health and Retirement Study. Calculations by The CPWR Data Center.

# Health expenditures increase with age



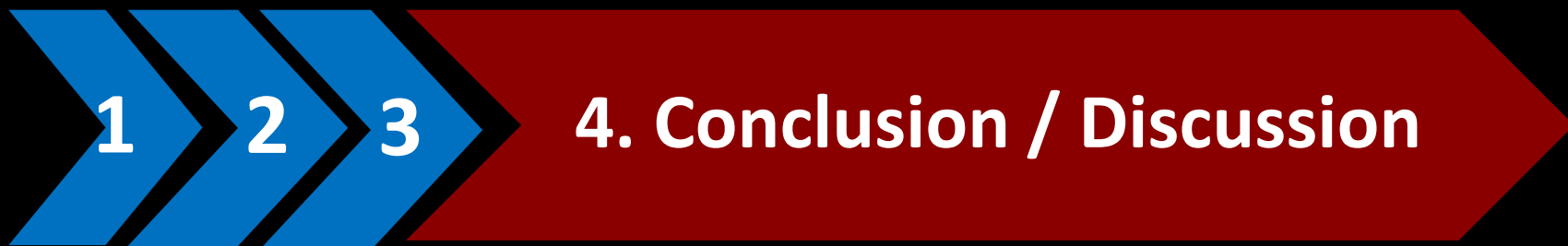
Source: 2015 Medical Expenditure Panel Survey. Calculations by The CPWR Data Center.

# Out-of-pocket expenditures for baby boomers in poor health nearly tripled that for those in excellent/very good health



Source: 2014 Health and Retirement Study. Calculations by The CPWR Data Center.

# Section 4



# Conclusion / Discussion

- **Older workers have:**
  - Declined work ability
  - Higher prevalence of chronic conditions
  - Higher fatality rates
  - Longer recovery periods (if injured)
  - Higher medical costs (however, age is less of a factor in health care costs than the presence of health conditions)
- **Healthy aging**
  - Promote Total Worker Health<sup>®</sup> (even light physical exercise can make difference)
  - The value of older workers will overcome the negative effects of aging with appropriate management

# Data Sources

- Census of Fatal Occupational Injuries (CFOI)
- Survey of Occupational Injuries and Illnesses (SOII)
- Current Population Survey (CPS)
- National Health Interview Survey (NHIS)
- Medical Expenditure Panel Survey (MEPS)
- Health and Retirement Study (HRS)





# Thanks!

**Contact: [SDong@cpwr.com](mailto:SDong@cpwr.com)**  
**<http://www.cpwr.com>**