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### Workforce Fitness: Description, Contextual Issues, and Implications for Public Health

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## Workforce Fitness: Description, Contextual Issues, and Implications for Public Health

### Abstract

Workforce fitness matters for the prevention of premature death, chronic diseases, productivity loss, excess medical care costs, loss of income or family earnings, and other social and economic concerns. Yet fitness levels appear to be relatively low and declining. Over the past half century obesity has doubled, physical activity levels are below par, and cardiorespiratory fitness often does not meet minimally acceptable job standards. During this time, daily occupational energy expenditure has decreased by more than 100 calories. It is recommended for employers to consider best practices and design workplace wellness programs accordingly. Regulations that protect and promote worker health, and the introduction of incentives for employers to optimize the fitness of their workforce represent important public health strategies.

### Keywords

Fitness, cardiorespiratory fitness, physical activity, obesity, workforce, employee health, worksite health promotion, workplace, prevention, productivity, absenteeism, health care costs, best practices

### Cover Page Footnote

This Frontiers article is a shorter version of the following article: Pronk, NP. Fitness of the U.S. workforce. *Annu Rev Public Health* 2015;36:131–49. Please enjoy complimentary access, courtesy of the Annual Review of Public Health. Click here to access the review: <http://arevie.ws/eprintUSworkf>. No competing financial or editorial interests were reported by the author of this paper.

## INTRODUCTION

A healthy, productive, ready, and resilient workforce may be considered an important and strategic corporate asset. Such workforce characteristics provide measurable benefits to the company in terms of productivity and lower health care costs, but also allow individual workers to participate more fully in family and community life. Important health and fitness factors that relate to performance in work and in life include obesity, habitual physical activity (PA), and cardiorespiratory fitness (CRF). Healthy weight, meeting health-related guidelines for PA, and a moderate-to-high degree of CRF have all been associated with lower risk for diagnosed chronic conditions, functional outcomes, and preventable mortality.

Higher levels of fitness, operationally defined as not being obese, being active, and being at or above the norm for CRF, are associated with a host of positive outcomes. From a health outcomes perspective, reduced risk for preventable deaths, cardiovascular disease, diabetes, certain cancers, back pain, and high cholesterol, but also improved mood states and job satisfaction have been associated with employee fitness level.<sup>1</sup> Fitness has also been correlated with wealth-related outcomes such as a 5%-to-10% worker wage increase,<sup>2</sup> increased overall family earnings,<sup>3</sup> lower debt, and lower long-term unemployment.<sup>1</sup> Business-related outcomes include relationships between fitness and reduced absenteeism, productivity loss, healthcare costs, turnover, short-term disability, and improved employee job satisfaction and work performance.<sup>1</sup>

Service-providing, low-energy-demanding jobs have steadily increased in prevalence over the past 50 years. A concomitant decline in more physically demanding occupations has produced a fundamental shift in energy expenditure associated with work such that the daily occupational energy expenditure impact is an estimated reduction of approximately 100 kcal.<sup>4</sup> Prolonged sitting time has become a significant public health threat due to its association with various noncommunicable diseases.

This article briefly describes: (1) the fitness level of the U.S. workforce, (2) design issues for workplace wellness programs, and (3) policy considerations that affect workplace health programs. This *Frontiers in Public Health Services and Systems Research* article is based on a paper entitled “Fitness of the U.S. Workforce,” which was published in the *Annual Review of Public Health*, Volume 36 (2015).<sup>1</sup>

## FITNESS PROFILE OF THE U.S. WORKFORCE

A review of nationally representative studies on obesity prevalence among workers indicates that over the past 30 years, obesity rates have approximately doubled from 15% in 1985 to 30% in 2012. When type of occupation was considered, significant variation of obesity prevalence was noted. However, a general increase in prevalence over time is a common observation across all jobs.

Based on National Health Interview Survey (NHIS) data collected between 1997 and 2004, 36% of men and 31% of women workers met the *Healthy People 2010* PA guidelines (<http://www.healthypeople.gov/2010/>). Again, substantial variability was noted across occupations.

Using National Health and Nutrition Examination Survey (NHANES) 1999–2004 data, average CRF among workers across 40 occupations was estimated to be 43.8 ml/kg/min for men, 35.9

ml/kg/min for women, and 40.4 ml/kg/min overall. Another study reported an estimated CRF among employees (N=9944; mean age=43.1 yrs) from among 298 companies of 34.2 ml/kg/min. These observations place the U.S. workforce in *fair to poor* classifications of CRF.

## DESIGN ISSUES FOR WORKPLACE WELLNESS PROGRAMS

Programs designed to improve worker fitness levels should ideally be based on, or informed by, existing evidence of effectiveness. Available systematic reviews are highly informative for this purpose, and the Community Preventive Services Task Force provides easy access to high-quality reviews and recommendations through The Guide to Community Preventive Services (<http://www.thecommunityguide.org/worksites/index.html>). Available evidence, in general, indicates that well-designed, multicomponent and multi-level workplace wellness programs can improve health and generate savings. A critical factor, however, is the proper design of such programs so they may be considered a bona fide solution for health improvement at the workplace setting.

Based on a review of best practices and benchmark studies that identified 44 best practice elements, nine design dimensions have been identified for best practice workplace programs (Table 1). Adherence to these design dimensions has been associated with best-in-class programs.

**Table 1. Best practice design dimensions for workplace wellness programs**

Leadership	Design elements that set program vision, set organizational policy, ensure resources, support implementation, and connect the program to business goals. Leadership should be engaged at multiple levels of the organization.
Relevance	Design elements that address factors critical to participation and employee engagement. Participatory approaches should be promoted.
Partnership	Design elements that relate to efforts that integrate the program with other people and entities including employees, unions, external vendor companies, community organizations, among others.
Comprehensiveness	Design elements that address health education, supportive social and physical environments, integration of the worksite program into the organization's structure, linkage to related programs, and worksite screening programs.
Implementation	Design elements that ensure a planned, coordinated, and fully executed work plan and process tracking system. Action plan execution matters.
Engagement	Design elements that promote an ongoing connection between employees and the program through actions that create respect, trust, and an overall culture of health and well-being. Experience as an important predictor for long-term engagement.
Communications	Design elements that ensure a strategic communications plan that generates a day-to-day presence of the program in the workplace. Communications should be ongoing and engaging.
Data-Driven	Design elements that ensure the use of data in measuring, integrating, evaluating, and reporting program evolution and continuous improvement efforts. "Best data available" approaches should be encouraged.
Compliance	Design elements that ensure the program meets regulatory requirements, follows ethical standards, and protects personal information of employees and participants.

## **POLICY CONSIDERATIONS**

Legislation, regulatory statutes, and policies place responsibility on employers to protect the health of their workforce, provide safe and healthful workplaces, and provide guidance for programs to promote worker health and well-being. These rules and regulations include, but are not limited to, the Occupational Safety and Health Act (OSHA); the Americans with Disabilities Act (ADA); the Health Insurance Portability and Accountability Act (HIPAA); the Genetic Information Nondiscrimination Act (GINA); the Equal Employment Opportunity Commission (EEOC); and the Patient Protection and Affordable Care Act (PPACA). How may employers best leverage these regulations to set optimal working conditions for worker fitness? For example, employers could consider reimbursing employees for bicycling to work by leveraging the qualified transportation fringe benefits covered in section 132(f) of the Internal Revenue Service code.<sup>1</sup> These types of financial incentives make it attractive for employers to affect the health and fitness of their workforce.

The National Physical Activity Plan (<http://www.physicalactivityplan.org/business.php>) provides specific guidance for business and industry to enhance daily movement patterns, increase overall physical activity, and improve fitness levels for employees.<sup>5</sup> Implementation and progress toward the stated goals of this plan will benefit corporate America, individual workers, their families, and communities throughout the nation in both health-related and economic outcomes.

## **CONCLUSION**

Workforce fitness is important to both companies and workers, yet the overall fitness level of the U.S. workforce appears low and in decline. Sedentary occupations have become increasingly prevalent over the past 5 decades and obesity among workers has doubled since 1985. Employers should consider best practices and design their workplace health programs accordingly. Policies and regulations should be leveraged to improve health, generate savings, and ensure a human-centered culture at the workplace.

## SUMMARY BOX

**What is already known about this topic?** Workforce fitness matters for the prevention of premature death, chronic diseases, productivity loss, excess medical costs, loss of income, loss of family earnings, and other social and economic concerns. Over the past 50 years, daily occupational energy expenditure has decreased by more than 100 calories.

**What is added by this report?** Workforce fitness levels, operationally defined by obesity, physical activity, and cardiorespiratory fitness, appear to be relatively low and declining. Over the past half century obesity has doubled, physical activity levels remain below par, and cardiorespiratory fitness often does not meet minimally acceptable job standards. Program design principles, based on best practices for workplace wellness, have been identified and outlined. Policies and regulations should be leveraged to improve health, generate savings, and ensure a human-centered culture at the workplace.

**What are the implications for public health practice, policy, and research?** Employers should consider best practice principles when designing workplace wellness programs to address workforce fitness. Policies and regulatory requirements should be leveraged by employers to create optimal working conditions for worker fitness. The National Physical Activity Plan provides specific guidance and goals for business and industry to address workforce fitness—progress toward achievement of these goals will benefit companies, workers and their families, and communities. Research priorities include improved surveillance systems for workforce fitness, a stronger evidence base regarding the association between workforce fitness and health-, financial-, and productivity-related outcomes, and a strengthening of the business case for employers to intentionally engage in community health.

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