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1-23-2003

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*Congressional Research Service*

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# Ergonomics in the Workplace: Is It Time for an OSHA Standard?

## **Keywords**

Ergonomics, work, OSHA, jobs, employer, cost, compensation, program, musculoskeletal disorders, injuries, employee, standard, Congress

## **Comments**

### **Suggested Citation**

Rappaport, E. (2003). *Ergonomics in the workplace: Is it time for an OSHA standard?* Washington, DC: Congressional Research Service.

# CRS Report for Congress

Distributed by Penny Hill Press

<http://pennyhill.com>

## Ergonomics in the Workplace: Is It Time for an OSHA Standard?

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### Summary

Improper ergonomic design of jobs is one of the leading causes cited for work-related illness, accounting for perhaps a third of employers' costs under state workers' compensation laws, according to OSHA. Due to the wide variety of circumstances, however, any comprehensive standard would probably have to be complex and costly, while scientific understanding of the problem is not complete.

On November 14, 2000, OSHA promulgated an ergonomics standard. It would require employers to set up control programs for job categories where "work-related musculoskeletal disorders" are reported. These programs would include job hazard analysis and control, medical management of reported injuries, employee participation, training and evaluation.

Congress has signaled its interest in the issue for a number of years. After a draft proposal was released in 1995, riders to the Labor Department appropriations bills were passed preventing OSHA from issuing a standard during most of fiscal years 1995 through 1998. After the final standard was released in November 2000, opponents of OSHA's approach introduced and quickly passed a congressional resolution of disapproval (S.J.Res. 6), which revoked the rule upon being signed by the President. Consideration is being given to further legislation that would instruct OSHA to develop a new standard. (This report will be updated to reflect significant congressional actions.)

### A Complex Phenomenon

Ergonomics is the science of designing worksystems taking into account the "human factors," so as to make them efficient as well as healthful. The philosophy is one of "fitting the job to the worker." A particular concern, and the source of increasing numbers of injuries, is the question of body position and motion ("*kinesiology*"). A wide variety of ailments can occur when jobs entail repetitive motion, forceful exertions or awkward postures. According to the Occupational Safety and Health Administration

(OSHA), improper physical design of jobs is one of the leading causes of work-related illness. But because of the wide variety of tasks, equipment, stresses and injuries involved, any comprehensive standard would probably have to be complex and costly.

Ergonomics is a difficult issue because, while there is substantial evidence of a problem, it is very complex and only partially understood. Cumulative trauma disorders can be aggravated by non-work activities and be complicated by work and non-work psychological factors such as stress. A host of new products and services has become popular – such as back braces and newly designed keyboards – but there is little in the way of scientific evidence about whether they do any good.<sup>1</sup> The state of scientific knowledge about ergonomics – especially the role of non-work and psychological factors in producing observed syndromes – has become a key issue in the debate over how OSHA should proceed.

Even if the problem were fully understood, the wide variety of circumstances will bedevil efforts to frame simple, cost-effective rules. What are called “ergonomic” injuries are actually a range of distinct problems, much as “cancer” is not one but a family of diseases. The term may cover stresses as diverse as repetitive motion, awkward postures, contact stress (as from hammering), vibration and forceful muscular exertions:

In the debate over ergonomics, very large monetary estimates have been cited for both the benefits of a national standard and the costs thereof. Many businesses take the problem seriously and have extensive voluntary programs to deal with it.<sup>2</sup> OSHA estimates that ergonomic injuries and illnesses cost employers \$20 billion in workers’ compensation claims, or one-third of their total workers’ compensation costs. Thus, the agency contends, savings on compensation costs could largely, if not fully, offset the employers’ costs of the new ergonomics standard, which OSHA estimates to be about \$5 billion per year. Industry estimates of the rule’s costs range much higher – as high as \$90 billion per year, according to the Employment Policy Foundation.<sup>3</sup>

The Bureau of Labor Statistics (BLS) reported 740 thousand lost-workday cases during 1999 due to sprains and strains (some of which might not be considered “ergonomic”) and another 45 thousand due to carpal tunnel syndrome (CTS) or tendinitis, which together accounted for 46% of all lost workday injuries. While sprains and strains are similar in severity to other types of injury (a median of 6 days away from work), CTS

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<sup>1</sup> For example, back-support belts for lifting jobs became popular in the 1980s, but no well-controlled study of them was available until 1996. Rundle, Rhonda. Back Corsets Receive Support in UCLA Study. *Wall Street Journal*, October 9, 1996. p. B1, B8. See also Oldenburg, Don. The “Ergonomics” Boom. *Washington Post*, February 25, 1997. p. E5. Murphy, Kate. What’s Correct Ergonomically? Good Question. *New York Times*, October 9, 1995. p. D3.

<sup>2</sup> For example, the automotive industry has ongoing programs in cooperation with the United Auto Workers. NUMMI, the California joint venture of General Motors and Toyota, reduced ergonomic injuries by 73% from 1993 to 1998, and the company believes product quality has benefited. Fernberg, Patricia. Ergonomics is Driving Quality. *Occupational Hazards*, May 1999. p. 79-83.

<sup>3</sup> Details of their estimation can be found at the website:  
[<http://www.epf.org/documents/oshacomment.pdf>].

cases have a median loss of 25 workdays.<sup>4</sup> However, there is some question about whether the problem is already coming under control. While the number of reported cases of musculoskeletal disorders grew rapidly to 784 thousand in the decade ending in 1992, they since backed down to 582 thousand by 1999. Labor representatives attribute the drop to increased OSHA enforcement as well as labor-management programs in key industries. But an industry coalition commented that the figures show that repetitive stress injuries “are not an epidemic.”

## OSHA Rulemaking

As the number of reported cases increased rapidly in the 1980s, OSHA started paying more attention to ergonomics, relying on its general authority pending development of a formal standard. Notable cases were brought and remedial settlements reached in the meatpacking and automotive industries. In 1992, OSHA issued a notice of proposed rulemaking, and in 1994 circulated a draft proposal, and in 1995 a revised draft. The 1994 proposal received a negative reaction from major industry groups, and the National Association of Manufacturers helped form the National Coalition on Ergonomics to oppose its adoption. The 1995 draft was somewhat less extensive, particularly in coverage. Rather than requiring comprehensive action by all employers, the revised approach was to have employers do an initial self-evaluation to identify whether certain “signal risk factors” were present.

Although OSHA was prohibited by appropriations riders, during most of fiscal 1995 through 1999, from promulgating formal ergonomics proposals, the agency was able to continue development work, and issued its final standard on November 14, 2000. It would apply to all employers in all industries (except construction, agriculture, railroads and maritime) and firms of all sizes. It took effect formally on January 16, 2001, although most of the employers’ responsibilities were not to begin until October, 2001. Before that could happen, a congressional resolution voided the rule. (See below.)

The final regulation was a program standard, meaning that employers would be required to establish ergonomic programs in their workplaces under the general guidelines of the standard. The specific preventive and corrective measures to be taken were to come out of those programs, rather than being mandated in detail by OSHA. Not all employers would need to establish programs. The obligation to do so would be triggered if and when a work-related “musculoskeletal disorder” (MSD) is reported, if it occurs in a job that has certain risk factors – forceful exertions, repetition, vibration and awkward postures – playing a significant part in each workday. (The risk factors are spelled out in a 2-page “Basic Screening Tool.” The definition of MSDs is discussed further in this report *infra*.) Whether or not a program is required, all covered employers must furnish their employees with basic information about ergonomic injuries and how they are to be reported and dealt with under this standard.

Upon report of an MSD, the employer must either fully control the reported ergonomic hazard within 90 days (the “Quick Fix” option) or implement a full

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<sup>4</sup> U.S. Department of Labor. Bureau of Labor Statistics. *Lost-Worktime Injuries and Illnesses: Characteristics, 1997*. Washington: the Bureau, 1999.

ergonomics program. In either case, the employer must also take steps to prevent aggravation and promote healing of those injuries that were reported (“MSD management”).

An ergonomics program consists of management leadership, employee participation and training, hazard analysis and control, medical management for those suffering injuries, and program evaluation. Hazard analysis means that problem jobs must be looked at closely by management in consultation with affected employees “to pinpoint the cause of the problem.” Corrective actions include (in order of preference) physical redesign of the workstation or equipment, modification of work procedure or technique, reduction of exposure (e.g., through job rotation), and personal protective equipment. Medical management means referral to a qualified health care practitioner (at the employer’s expense), compliance with the practitioner’s recommendations, and continuation of pay and benefits during any necessary work restriction (for up to three months).

An ergonomics program could be discontinued when the risk factors for all jobs have been reduced below the levels described in the Basic Screening Tool. Unless and until that is achieved, the employer must continue trying to reduce the hazards to the extent feasible, with formal reviews of progress and options at least every three years.

In the initial response to the proposed standard, the most controversial of these provisions was work restriction protection (WRP). In cases where continued work could cause aggravation of an ergonomic injury, WRP would require that the employer maintain the employee’s pay and benefits at their normal level for up to 90 days if assigned to less productive work, or with 90% of pay (and full benefits) if not able to work at all. Critics charge that WRP constituted a substantial expansion of workers compensation benefits without legislative authority and that workers compensation has always been a matter of state legislation. OSHA contended that it has sufficient authority and that a number of previous health standards have included such provisions. The agency said that WRP was especially needed for this standard because so much depends on employees reporting their injuries. Without WRP, they might fear being laid off without pay or with relatively meager workers compensation benefits.

The scope of the rule – which employers and which jobs require action – did depend to a great extent on the triggering event of a work-related MSD. Turning, then, to its definition, an MSD is a disorder of the soft tissues associated with the skeleton, and that is caused by cumulative trauma (also known as repetitive stress). The definition in OSHA’s standard explicitly excludes injuries caused by single events, such as trips and falls. To constitute a “MSD incident,” the injury must be serious enough to require medical treatment beyond first aid, or to have “signs or symptoms” that last more than seven consecutive days. Finally, “work-related” means that “exposure in the workplace caused or contributed to an MSD or significantly aggravated a pre-existing MSD.” (Note also that action need not be taken unless the employee reporting the injury is in a job that routinely involves exposure to the risk factors spelled out in the Basic Screening Tool.)

Since key responsibilities under the rule would be triggered by the reporting of one MSD, there is something of a stochastic (random) element to its scope. Large establishments with ergonomically problematic jobs would probably have to start corrective programs fairly soon after the rule goes into effect, while other establishments

with less hazardous jobs could go years without such responsibilities. However, this is not a hard and fast rule, but would depend on when and where MSDs are reported. The stochastic element would play a further role in the case of the Quick Fix. The employer could use that option only if there were no more than one incident reported in a job, and two in the establishment, over the preceding 18 months. In short, smaller employers would be more likely to avoid some requirements, at least for periods, but this was not assured.

## Opposition to the OSHA Standard

Riders to Labor Department appropriations bills prohibited OSHA from issuing a proposed or final standard on ergonomics during FY1995, 1996 and 1998. (In a close floor vote, the rider proposed for FY1997 was deleted.)

By 1997, the argument that scientific knowledge of ergonomics was inadequate for rulemaking had come to the fore. Specifically, many Members proposed that further work on the rulemaking should be suspended until independent research institutions could report on the state of scientific knowledge. It was argued that an independent, expert review was needed because OSHA had shown bias in its interpretation of available studies. Over the next few years, a number of governmental reviews of the scientific literature were published. The National Institute for Occupational Safety and Health (NIOSH, a research agency in the Department of Health and Human Services) released its extensive review of the literature in July, 1997.<sup>5</sup> Pursuant to congressional mandates, the National Academy of Sciences (NAS) issued reports in October, 1998 and January 2001 summarizing the results of a 2-day workshop and an extensive review of the literature.<sup>6</sup> Basically, these reports found a significant statistical link between workplace exposures and musculoskeletal disorders, but also noted that the exact causative factors and mechanisms are not understood. For example, it is recognized that non-work activities may interact with work exposures to aggravate symptoms, so that separating the effects of each is problematic.

Stand-alone measures, H.R. 987 (Blunt) and S. 1070 (Bond), were introduced in the 106<sup>th</sup> Congress, to prohibit OSHA from issuing an ergonomics rule before the NAS completed its second study. H.R. 987 was passed by the House in August, 1999 by a vote of 217-209.<sup>7</sup> On November 23, 1999 – shortly after the Congress recessed without further action on these measures – OSHA issued its draft standard and expressed the intention of finalizing the rule by the end of 2000.

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<sup>5</sup> Bernard, Bruce, ed. *Musculoskeletal Disorders (MSDs) and Workplace Factors*. Available via World Wide Web at: [<http://www.cdc.gov/niosh/ergosci1.html>].

<sup>6</sup> Sandler, Howard. Evaluating the Science of Ergonomics. *Occupational Health*, November 1998. p. 73-74. The second NAS report, *Work-Related Musculoskeletal Disorders: A Review of the Evidence*, is available at the Academy website: [<http://www.nas.edu/>].

<sup>7</sup> Debate in *Congressional Record* of August 3, 1999. pp. H6901-H6927. The Senate took up a similar measure (a rider to an appropriation), but it was withdrawn in the face of a threatened filibuster. *Congressional Record*, October 7, 1999. pp. S12,159-12,176.

In June, 2000 opponents were able to get a restrictive rider attached to Labor's appropriation bill (H.R. 4577) in both chambers, which would have prohibited issuance of a final rule through FY2001,<sup>8</sup> but a final bill was still not passed, leaving the issue unresolved when Congress recessed for the elections. During that recess, on November 14, OSHA issued the final rule.

As soon as the rule was issued, opponents launched actions to overturn it in various forums, both judicial and legislative. Two industry groups filed suit in the U.S. Court of Appeals for the District of Columbia, arguing variously that the standard exceeded OSHA's authority, that the agency did not follow proper procedure, and that the standard was vague, incomprehensible, and not based on sound medical science or economic analysis. Labor groups also sued in separate actions, arguing that employers should be required to act proactively, before an injury "trigger."

However, the more expeditious course for opponents proved to be the Congressional Review Act (CRA – 5 U.S.C. Sections 801-808). In the first-ever application of that statute, a "resolution of disapproval," S.J.Res. 6 (Nickles et al.), was introduced March 1, 2001, passed by the Senate on March 6 by vote of 56-44, and passed by the House the next day by a vote of 223-206. The President signed the measure into law as P.L. 107-5 on March 20. Thereupon, the standard was nullified.

The Bush Administration, after its own study of the matter, announced a new action plan on April 5, 2002, consisting of four parts: guidelines, outreach, enforcement and research. The guidelines will be advisory rather than mandatory, and tailored to particular industries or tasks, with a draft of the first one (pertaining to the nursing home industry and the task of lifting patients) issued in August 2002. Although the guidelines are not mandatory, enforcement will be accomplished by pursuing clearly negligent employers via an existing, broad provision of law known as the "general duty clause."

Some Members of Congress, believing that a new, formal rulemaking leading to a mandatory standard is called for, sponsored S. 2184 (Breau et al.) in the 107<sup>th</sup> Congress, (approved by the Senate HELP Committee in June 2002). This would have directed OSHA to produce an ergonomics rule within two years that would: apply only to work-related disorders, state employers' obligations "in clear terms," and not expand employers' obligations under the workers compensation laws. Sponsors of the bill, many of whom voted for the resolution of disapproval, emphasized that they believe ergonomic problems need to be controlled even if OSHA's previously attempted approach was not acceptable.

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<sup>8</sup> The House provision, authored by Ms. Northup, was adopted by the Appropriations Committee and upheld in a floor vote June 8, 2000 on Mr. Traficant's motion to strike (debate at *Congressional Record* pages H4094-4104). The Senate amendment, authored by Mr. Enzi, was added on the floor on June 22 (debate at pages S5590-5609, 5629-35 and 5641-5646).