



Reply to the attention of:

(Names have been removed in order to protect the privacy of the individuals submitting the complaint.)

July 28, 2005

[REDACTED] (Name removed)
National Coalition on Ergonomics
1615 H Street, N.W.
Washington DC, 20062-2000

[REDACTED] (Name removed)

I am responding to your letter of April 1, 2005 requesting that OSHA withdraw and reconsider three Agency publications:

- *Ergonomics for the Prevention of Musculoskeletal Disorders: Guidelines for Poultry Processing* (Poultry Guidelines);
- *Ergonomics for the Prevention of Musculoskeletal Disorders: Guidelines for Retail Grocery Stores* (Grocery Guidelines); and
- *Ergonomics for the Prevention of Musculoskeletal Disorders: Guidelines for Nursing Homes* (Nursing Home Guidelines).

Your letter contends that certain information provided in the publications does not meet the standards established in the Information Quality Act (Pub L. No. 106-554, § 515) and the Department's Information Quality Guidelines (IQG). OSHA appreciates your longstanding interest in ergonomics and your participation as a public commenter in the guideline development process.

As you know, the Department's ergonomics guidelines are purely advisory and create no duties. They consist primarily of practical recommendations for addressing specific work situations that employers are free to use or not as they seek to protect their workers from various ergonomic hazards. Under the IQG, an "affected person" may file a complaint about information the Department disseminates, and a complainant bears the burden of showing that it is affected. IQG, p. 9.

After having carefully considered the issues you raise, I have determined that OSHA's ergonomics guidelines meet the standards for information quality provided in the IQG, and am therefore denying your request. The information presented in the guidelines about the relationship between workplace risk factors and musculoskeletal disorders (MSDs) is supported by authoritative analyses of the scientific evidence conducted by the National Academy of Sciences (NAS) and the National Institute for Occupational Safety and Health (NIOSH), as well as other sources. The NAS study is especially important because it was conducted pursuant to a congressional charge and represents a comprehensive analysis of available high-quality studies from the full range of relevant disciplines, including epidemiological evidence, tissue mechanobiology, biomechanics,

and intervention studies. The standards observed by NAS are sufficiently rigorous that the Office of Management and Budget (OMB) recently concluded that NAS studies presumptively meet the performance standards of its Peer Review Bulletin. OMB Final Information Quality Bulletin for Peer Review, p. 27.

Further, the guidelines meet the IQG standards for presentation of information. While the guidelines provide advice to employers about how to address physical factors in the workplace that are related to the development of MSDs, they clearly explain that more remains to be learned about that relationship and that many other factors are also related to the development of MSDs.

In what follows, I summarize the Department's information quality guidelines, describe the purpose of the ergonomics guidelines and the process OSHA followed in developing them, and respond to the objections presented in your letter.

Department of Labor's Information Quality Guidelines

The Department of Labor issued the IQG on October 1, 2002. The IQG reflects the Department's commitment to information quality as an important management objective. IQG, p. 2. Information is defined in the IQG as "any communication or representation of knowledge." *Id.* at 13.

Before developing an information product, the IQG recommends that an agency set up a process for ensuring the quality of information disseminated. Information quality is comprised of "utility," "objectivity," and "integrity."

The IQG also establishes a complaint and appeal procedure to address concerns raised about the quality of information disseminated. Your information correction request (CR) is the first step in the IQG complaint and appeal process. The IQG emphasizes that "[t]he purpose of the information complaint and appeal process is to deal with information quality matters, not to resolve underlying substantive policy or legal issues." *Id.* at 8.

Development of OSHA's Ergonomics Guidelines

OSHA's ergonomics guidelines are one prong of the Department's comprehensive approach to ergonomics. The purpose of the guidelines is to provide employers and employees with practical recommendations to help reduce the number and severity of MSDs and to improve conditions in their workplaces. The guidelines also provide a process for systematically addressing ergonomics issues that can be incorporated into an overall program to recognize and prevent occupational safety and health hazards in the workplace.

The target audiences for the ergonomics guidelines are, of course, employers and employees in each industry addressed. For example, the management audience in nursing homes is the nursing home administrator; in grocery stores, the store or department manager; and in poultry processing facilities, the first line supervisors and

safety personnel. In all cases, OSHA is “speaking” to the personnel who purchase equipment, design facilities and processes, and perform the work. In order to maximize the usefulness of the guidelines, the information in them needs to be presented in a technically correct, yet user-friendly manner that uses the language of each industry addressed. This approach was encouraged by several stakeholders. See, e.g., American Nurses Association, GE2002-1, Ex. 4-18, p. 2 (“OSHA should make more of an attempt to write the guidelines in language more familiar to both staff and management ...”).

The guidelines have intentionally been designed not to resemble a professional journal article. There are a number of comprehensive analyses of the scientific literature related to MSDs available to the public. Some of these analyses are cited in the guidelines and OSHA encourages the public to review them. OSHA’s ergonomics guidelines, however, are not designed to be comprehensive reviews of the scientific literature related to MSDs. As described above, they have a different purpose – to provide information in an easy-to-understand format to employers and employees to use in attempting to reduce the incidence of MSDs in the workplace. It would have detracted from the “readability” and usefulness of the guidelines, had OSHA included numerous citations for every statement made. Thus, OSHA limited the number of references used in the guidelines, while still appropriately citing sources that meet the standards of quality established in the IQG.

The guidelines share best practices that employers have successfully implemented in their workplaces. In developing each guideline, OSHA conducted site visits of facilities to see first-hand what solutions employers have implemented, how they were implemented, and to discuss the effectiveness of them. As you point out in your correction request, one of the goals of the guidelines is to facilitate communication among employers and employees in an industry to inform them about ergonomics issues and ways that others in their industry have addressed them. In fact, the majority of each guideline is dedicated to the practical recommendations that employers have implemented in their own work environments. The guidelines are voluntary, and employers are free to implement any of the recommendations in their workplaces, as appropriate.

To ensure the quality of the information disseminated, OSHA developed and followed a rigorous information quality process. The process included reviewing the IQG and reviewing all of the information in the guidelines to ensure that it met the IQG standards for quality. The process also involved reviewing all of the underlying references to ensure they (1) met the IQG quality standards, and (2) supported the proposition for which they were cited. Additionally, before publishing each guideline, OSHA reviewed available scientific information and existing practices and programs, reached out to a wide range of stakeholders, solicited public comment, and held stakeholder meetings.¹ The Department appreciates the comments submitted by the NCE and others during the development of each guideline.

¹ OSHA did not hold a stakeholder meeting on its poultry guidelines because interested parties informed OSHA that a stakeholder meeting was not necessary for the public to adequately contribute to the formulation of the guideline.

OSHA's use of these comprehensive product development processes demonstrates the Agency's commitment to information quality.

Response to NCE Complaints about the Quality of Information

Your correction request challenges the quality of some of the information in the ergonomics guidelines. Quality involves both substance and presentation. Under the IQG, information must itself be "accurate, reliable, and unbiased" and must be presented in an "accurate, clear, complete, and unbiased manner." IQG, p. 12. You make a few specific complaints about both the substance and presentation of the information in the guidelines.

For the reasons below, OSHA disagrees with your contention that the information in the guidelines does not meet the standards of the IQG. OSHA's statements are supported by the authoritative scientific literature related to MSDs. The IQG does not require a document to discuss or cite every study that could be read as casting doubt on information an agency provides.

Complaints about the Substance of the Information

Your correction request challenges the accuracy of statements in the guidelines related to (1) OSHA's use of the term MSD, (2) OSHA's description of the relationship between risk factors and the development of MSDs, and (3) OSHA's assertions about the effectiveness of various workplace interventions. CR, pp. 5-9.

1. OSHA's Use of the Term MSD

OSHA refers to the disorders addressed by the guidelines as musculoskeletal disorders or MSDs. For instance, the Poultry Guidelines state that "we use the term MSD to refer to a variety of injuries and illnesses that occur from repeated use or overexertion, including: Carpal tunnel syndrome; Tendinitis; Rotator cuff injuries (a shoulder problem); Epicondylitis (an elbow problem); Trigger finger; and Muscle strains and low back injuries." Poultry Guidelines, p. 4. See also p. 4 ("MSDs include injury to the nerves, tendons, muscles, and supporting structures of the hands, wrists, elbows, shoulders, neck, and low back."). You contend that OSHA's use of the term MSD and the examples of MSDs given in the guidelines inaccurately express the scientific knowledge related to MSDs.² CR, pp. 3-5.

² You also suggest that OSHA's decision not to include a separate MSD column on the recordkeeping log shows that use of the term MSD is inappropriate under the IQG. OSHA did not omit the column because the term MSD lacked value, but because the column would not have served a useful purpose in the recordkeeping system. OSHA explained that the Department, through the Bureau of Labor Statistics (BLS), already collects comprehensive information about MSDs, and that a column would not materially add to the "detailed picture of the MSD problem" available in the national statistics. 68 FR 38606. In addition, a column would be of little use to an employer at the establishment level, because other parts of the form already provide detailed information about injuries and illnesses occurring in the workplace. *Id.* at 38604.

OSHA's use of the term MSD in the guidelines meets the IQG standards. The term MSD is a useful one to explain the types of disorders addressed by the guidelines. Because OSHA was frequently referring to a group of conditions, listing each type of condition separately would have decreased the readability and utility of the documents. Furthermore, the term is widely used in authoritative scientific studies and by the public. For example, both the NAS and NIOSH use the term "musculoskeletal disorder" in the titles of their comprehensive analyses of the scientific literature related to the disorders covered by the guidelines: *Musculoskeletal Disorders and the Workplace: Low Back and Upper Extremities* (NAS Report) and *Musculoskeletal Disorders and Workplace Factors: A Critical Review of Epidemiologic Evidence for Work-Related Musculoskeletal Disorders of the Neck, Upper Extremity, and Low Back* (NIOSH Report). Indeed, Congress itself employed the term in the charge that led to the NAS Report, asking the NAS Panel to review "What are the conditions affecting humans that are considered to be work-related *musculoskeletal disorders*?" NAS Report, p. 431 (emphasis added). MSD was also the term used by employers and employees in the site visits OSHA conducted during the preparation of the guidelines.

Additionally, use of the term MSD has an advantage over other terms that have been used to describe the disorders of relevance to the guidelines, such as cumulative trauma disorders (CTDs) and repetitive strain injuries (RSIs). Those other terms can be confusing in that they include a presumed cause (e.g., "repetitive" in RSI) with a demonstrated effect ("injury" in RSI) in the same term.³ Use of the term MSD avoids this cause-and-effect implication, and instead focuses only on the specific conditions of relevance to the guidelines.

Furthermore, although MSD is a general term, the specific conditions listed in the guidelines are referred to as MSDs in the authoritative scientific literature. The NAS Report identified rotator cuff injuries, epicondylitis, carpal tunnel syndrome, tendinitis, trigger finger, back pain, and sciatica as conditions falling within the category of MSDs.⁴ NAS Report, p. 19. These are the very conditions OSHA identified as MSDs in the guidelines. In fact, in response to the question posed by Congress on "What are the conditions . . . considered to be work-related musculoskeletal disorders?" the NAS singled out the following:

³ See Hagberg *et al.*, *Work Related Musculoskeletal Disorders (WMSDs): A Reference Book for Prevention*, section 2.1.

⁴ Contrary to your suggestion, the NAS Report supports use of the term "injury" when referring to MSDs. You suggest that NAS uses injury only to refer to objective physical changes to the body and that MSDs do not satisfy this criterion. This is incorrect. NAS defines injury as "any damage to the individual (physiological, anatomic, or psychiatric)" resulting from exposure to stressors. NAS Report, p. 36. The Report stresses that "symptomatic *injury* of the low back or upper extremity *may or may not* be accompanied by definitive objective change." *Id.* at 25 (emphasis added). Similarly the NAS Panel found that disorders can include "well-recognized" anatomic or physiologic pathology. *Id.* at 36. Rather than drawing a sharp distinction between injuries and "pain syndromes," the NAS Report notes that the concept of injury and its effect on an individual are "inextricably bound," and that "injury is a psychosocial event as well as a biological or physical one." *Id.* at 23. See also NAS Report Discussion of Tissue Mechanobiology, p. 199 (repetitive motion or overuse loading can cause chronic "injury" to tendon tissues), p. 209 (repetitive mechanical strain exceeding tolerance limits results in chronic skeletal muscle "injury"), p. 213 (vibrating hand tools can lead to peripheral nerve "injury").

The disorders of particular interest to the panel, in light of its charge, focus on the low back and upper extremities. With regard to the upper extremities, these include *rotator cuff injuries* (lateral and medial), *epicondylitis*, *carpal tunnel syndrome*, tendonitis, tenosynovitis of the hand and wrist (including De Quervains' stenosing tenosynovitis, trigger finger, and others) and a variety of nonspecific wrist complaints, syndromes, and regional discomforts lacking clinical specificity. With regard to the low back, there are many disabling syndromes that occur in the absence of defined radiographic abnormalities or commonly occur in the presence of unrelated radiographic abnormalities. Thus, the most common syndrome is nonspecific backache. Other disorders of interest include *back pain* and sciatica due to displacement and degeneration of lumbar intervertebral discs with radiculopathy, spondyloysis, and spondylolisthesis and spinal stenosis

NAS Report, p. 431 (emphasis added).

The NIOSH Report also supports the list of conditions given as MSDs. See Chapter 3 (shoulder problems including rotator cuff injuries); Chapter 4 (epicondylitis); Chapter 5a (carpal tunnel syndrome); Chapter 6 (low back pain, including muscle strains and sciatica). The NIOSH Report, in discussing the major disorders of interest analyzed, stated:

This evaluation and summary of the epidemiological evidence focuses chiefly on disorders affecting the neck and the upper extremity – including tension neck syndrome, shoulder tendonitis, epicondylitis, carpal tunnel syndrome, and hand-arm vibration syndrome This document also concentrates on studies that have dealt with the issue of work-related back pain and sciatica.

NIOSH Report 1-1.

You criticize OSHA for relying “almost exclusively” on the NAS and NIOSH reports. CR, p. 11. However, support for OSHA’s use of the term MSD in the NAS and NIOSH Reports is particularly important. The NAS and NIOSH Reports presumptively meet the objectivity criteria of the IQG. Both reports were subject to external peer review before publication, and “[i]f data and analytic results have been subjected to formal, independent, external peer review, the information” is generally presumed to be of acceptable objectivity under the IQG. IQG, p. 12.

The NAS Report represents the most comprehensive review of the scientific literature related to MSDs. The report reviewed all the different types of scientific studies relevant to the congressional charge, including epidemiological evidence, basic sciences, biomechanics, and intervention literature. OMB recognized the high quality of NAS studies in its recently issued “Final Information Quality Bulletin for Peer Review” (Peer Review Bulletin). In light of the rigorous standards undertaken by NAS in publishing reports, OMB presumes that studies put forth by the NAS comply with the recently

issued Peer Review Bulletin. OMB Information Quality Bulletin for Peer Review, p. 27. Similarly, the NIOSH Report examined over 600 peer reviewed epidemiological studies examining the effect of workplace risk factors on the development of MSDs. NIOSH's conclusions in the Report are based upon a rigorous analytical examination of these studies. See pp. 1-9 – 1-11. The NIOSH Report underwent a thorough internal and external review process before it was published. After receiving comments from a number of individuals inside the agency, NIOSH sent a draft of its Report to external reviewers from management, labor, and academia. Twenty seven external reviewers (see page xvii of the NIOSH Report) sent NIOSH comments, which it considered in conducting its analyses. Congress created NIOSH in the OSH Act to advise OSHA on research and experimental programs in order to effectuate the purposes of the OSH Act, and OSHA's use of the NIOSH Report is consistent with this legislative design and the IQG.

You also contend that OSHA cites only two or three studies in support of the information presented in the guidelines.⁵ CR, p. 11. As you know, the NAS and NIOSH Reports are not single studies related to workplace risk factors and MSDs. They are analyses of thousands of individual studies related to different scientific disciplines. The NAS Report lists over 50 pages of references used in formulating its findings and conclusions. The congressional charge to the NAS Panel requested that the Panel assess and evaluate the medical, biomechanical, and behavioral science literature bases related to MSDs. See pp. 375-430. Similarly, the NIOSH Report began its review by identifying over 2000 published epidemiological studies. See p. 1-9. Reliance on these types of high-quality reviews is precisely what is called for by the IQG, especially since listing or describing all of the studies related to MSDs would have defeated the guidelines' purpose of conveying best practices to employers in an accessible manner.

Therefore, OSHA's use of the term MSD and its statements in the guidelines that MSDs "include" a variety of conditions, or "include" various injuries and illnesses fully meet the IQG standards.

2. OSHA's Description of the Relationship Between Risk Factors and MSDs

OSHA includes various statements in its guidelines describing the relationship between workplace physical risk factors and MSDs. These include the following:

- "Manual lifting and other tasks involving the repositioning of residents are associated with an increased risk of pain and injury to caregivers, particularly to

⁵ In addition, you criticize OSHA for not considering two studies (Stevens, J. *et al.* and Anderson, J. *et al.*) related to computer use in specific work environments and the development of carpal tunnel syndrome. CR, p. 11. These studies limited their analyses to computer use, a work task that is not addressed in the guidelines. Most of the references in the guidelines were to comprehensive analyses of the scientific literature related to MSDs, studies of specific relevance to the jobs and tasks analyzed in the guidelines, and site visit reports by OSHA to facilities in the industries addressed. In determining which studies to include as references in the guidelines, OSHA decided to focus on those that were directly related to the tasks examined and would thus be more useful to the audience of employers and employees. This approach is consistent with the IQG.

the back.” Nursing Home Guidelines, p. 7 (citations omitted).

- “Whether certain work activities put an employee at risk of injury depends on the duration (how long), frequency (how often), and magnitude (how intense) of the employee's exposure to the risk factors in the activity. For example, performing cashier work for an extended period of time without a break has been associated with increased hand and wrist problems and could contribute to back and lower limb problems.” Grocery Guidelines, p. 8 (citations omitted).
- “[W]hen an employee develops carpal tunnel syndrome, the employer needs to look at the hand activity required for the job and the amount of time spent doing the activity. If an employee develops carpal tunnel syndrome and his or her job requires frequent hand activity, or forceful exertions or sustained awkward hand positions, then the problem may be work-related. If the job requires very little hand activity, then the disorder may not be work-related.” Poultry Guidelines, p. 4.
- “Excessive exposure to these risk factors [force, repetition and awkward postures] can result in a variety of disorders in affected workers.” Nursing Home Guidelines, p. 8 (citations omitted).
- “Excessive exposure to these risk factors [repetition, force, awkward and static postures and vibration] can lead to MSDs.” Poultry Guidelines, p. 4 (citation omitted).
- “Jobs and tasks that have multiple risk factors have a higher probability of causing MSDs.” Poultry Guidelines, p. 7 (citation omitted).

You contend that assertions such as these “misstate the current state of knowledge concerning the causative link between ‘risk factors’ and ‘injuries’ or ‘disorders.’” CR, p. 6. I disagree. OSHA’s statements of the relationship between workplace risk factors and the development of MSDs fully meet the IQG standards. Appropriate citations for OSHA’s statements are included in the guidelines. See Nursing Home Guidelines, p. 35; Grocery Guidelines, p. 27; Poultry Guidelines, p. 23. These statements are supported by the underlying references and, contrary to your assertions (CR, pp. 6-8), are consistent with “accurate, reliable, and unbiased” studies of the relationship between workplace physical risk factors and MSDs.

The NAS Report, in particular, supports OSHA’s statements. In your correction request, you cite the NAS Report’s discussion of the “ongoing ‘debate’” (CR, p. 6) about MSDs and the mechanism for injury, but fail to mention the major findings, conclusions, and recommendations of the Report. A thorough review of the NAS Report reveals that it is entirely consistent with the information in the guidelines:

The panel concludes that there is a clear relationship between back disorder and physical load; that is, manual material handling, load moment, frequent bending

and twisting, heavy physical work, and whole-body vibration. For disorders of the upper extremities, repetition, force, and vibration are particularly important work-related factors.

NAS Report, pp. 364-65.

The NAS made similar conclusions when discussing each type of scientific evidence examined:

- *NAS Discussion of Epidemiological Evidence* – p. 100 (“This review concludes that there is a clear relationship between back disorders and physical load imposed by manual material handling, frequent bending and twisting, physically heavy work, and whole-body vibration.”); p. 103 (“The findings from the studies reviewed indicate that repetition, force, and vibration are particularly important work-related factors associated with the occurrence of symptoms and disorders in the upper extremities.”); p. 115 (“In conclusion, the epidemiological evidence provides support for associations between workplace physical and psychosocial exposures and both back and upper extremity musculoskeletal disorders.”).
- *NAS Discussion of Tissue Mechanobiology* – p. 199 (“Basic science studies support the conclusion that repetitive motion or overuse loading can cause chronic injury to tendon tissues.”); p. 209 (“The scientific studies reviewed support the conclusion that repetitive mechanical strain exceeding tolerance limits, imposed in a variety of ways, results in chronic skeletal muscle injury.”); p. 213 (“Exposure to vibrating hand tools at work can lead to permanent peripheral nerve injury.”).
- *NAS Discussion of Biomechanics* – p. 253 (“[I]t is clear, from a biomechanical perspective, that exposure to excessive amounts of physical loading can increase the risk of low back disorder.”); p. 253 (“It is important to note . . . that the results from the review of the epidemiological literature on upper extremities concludes that there is a strong association between physical factors and upper extremity disorders. Specifically, the following factors are implicated – force, vibration, repetition, and temperature as well as combinations of repetition and force or repetition and cold.”).

Support for OSHA’s statements about the relationships between risk factors and MSDs is also contained in the NIOSH Report. NIOSH found that “[a] substantial body of credible epidemiologic research provides strong evidence of an association between MSDs and certain work-related physical factors when there are high levels of exposure and especially in combination with exposure to more than one physical factor (e.g., repetitive lifting of heavy objects in extreme or awkward postures [Table 1]).” NIOSH Report, p. xiv. Additionally, Table 1 from the NIOSH Report, summarizing the “Evidence for causal relationship between physical work factors and MSDs,” finds “Evidence” or “Strong Evidence” of a causal relationship between the following risk factors and the following MSDs:

- Repetition: Neck and Neck/Shoulder; Shoulder; Carpal Tunnel Syndrome; Tendinitis.
- Force: Neck and Neck/Shoulder; Elbow; Carpal Tunnel Syndrome; Tendinitis; Back.
- Posture (including static and awkward postures): Neck and Neck/Shoulder; Shoulder.
- Awkward Posture: Tendinitis; Back.
- Vibration: Carpal Tunnel Syndrome; Hand-arm vibration syndrome; Back (whole body vibration).

The NIOSH Report also supports OSHA's statements that the duration, frequency, and magnitude of employee exposure to risk factors should be examined to determine whether certain work activities put an employee at risk of injury, contrary to your suggestion that the document does not support such a statement (CR, p. 11). The report states: "The risk of each exposure [to risk factors] depends on a variety of factors such as the *frequency, duration, and intensity* of physical workplace exposures." NIOSH Report, p. xiv (emphasis added).⁶ OSHA's statements that employers should examine these factors when analyzing the risk of certain work activities meet the IQG standards for quality.

Accordingly, OSHA's statements that excessive exposure to physical risk factors "can lead" or "can result" in MSDs or that such risk factors "are associated" with increased risk of pain and injury are well supported by sources of information that meet the IQG standards.

3. OSHA's Statements on the Effectiveness of Interventions

OSHA recommends in the guidelines that employers implement an ergonomics process and solutions (e.g., equipment and work practices to reduce physical risk factors) to reduce the risk of injury. See, e.g., Grocery Guidelines, p. 13 ("This section describes storewide ergonomic principles on safe work practices employees can follow to reduce their risk of injury."); Nursing Home Guidelines, p. 9 ("The number and severity of injuries resulting from physical demands in nursing homes – and associated costs – can be substantially reduced [through an ergonomics process]." (citations omitted)). You object to statements such as these, contending that OSHA's reliance on "'equipment' and 'work practices' as a panacea for reducing the 'risk of injury' is unsupported by the science." CR, p. 8.

OSHA's statements regarding the effectiveness of suggested interventions are consistent with the IQG. As with OSHA's statements regarding the relationship between workplace physical risk factors and MSDs, OSHA's statements regarding the effectiveness of

⁶ The NIOSH Report (see page xiv) also supports OSHA's statements in the guidelines that combinations of risk factors pose a greater risk of injury to employees than does exposure to a single risk factor. See e.g., Grocery Guidelines, p. 8 ("When there are several risk factors in a job, there can be a greater risk of injury.").

certain workplace modifications are well supported. The NAS Report, in particular, clearly states that workplace physical modifications and an ergonomics process can effectively reduce the risk of MSDs:

The weight and pattern of the evidence supports the conclusion that primary and secondary prevention interventions to reduce the incidence, severity, and consequences of musculoskeletal injuries in the workplace are effective when properly implemented.

* * *

Specifically, the panel concludes that: (1) *Interventions must mediate physical stressors, largely through the application of principles of ergonomics.* (2) *Employee involvement is essential to successful implementation.* (3) *Employer commitment, demonstrated by an integrated program and supported by best practices review, is important for success.*

NAS Report, p. 328 (emphasis added).

Contrary to your suggestions that the NAS Report “reject[s]” the importance of workplace “physical modifications” (CR, p. 8), the NAS Report clearly supports (1) OSHA’s recommendation that employers implement a program to reduce the incidence of MSDs, and (2) statements in the guidelines that “[e]ffective solutions usually involve workplace modifications,” and employers can “usually” meet the goal of reducing MSDs “by changing work methods, equipment, or workstations.” Nursing Home Guidelines, p. 10; Poultry Guidelines, p. 4.⁷

The NAS Report also makes clear the value of the practical experience of employers and employees in the intervention literature, in contrast to your criticisms of the “anecdotal evidence” examined by OSHA in preparing the guidelines (CR, p. 8). The NAS Panel reviewed case studies of “best practices” for back and upper extremity interventions, along with other intervention studies. The NAS found great value to these “best practices” studies and found they contributed to the “weight” and “pattern” of evidence on the effectiveness of interventions. NAS Report, p. 328. OSHA’s analysis of the

⁷ You also state (CR, p. 12) that OSHA disregarded a nursing home intervention study published by Yassi *et al.*, “A Randomized Controlled Trial to Prevent Patient Lift and Transfer Injuries of Health Care Workers.” OSHA included a reference to the Yassi *et al.* study in the draft of the Nursing Home Guidelines. OSHA deleted the reference in the final Nursing Home Guidelines as part of the Agency’s broader effort to greatly reduce the number of references used in the documents to make them more useful for employers and employees in the industries addressed. Further, this single study does not undermine the “weight” of evidence supporting the effectiveness of interventions. NAS Report, p. 365. While Yassi *et al.* found no statistically significant reductions in certain injury rates, the study lasted only one year and the authors stated that their findings “should not be seen as a ‘failure’ of the interventions” examined. Yassi *et al.*, p. 1746. Indeed, Yassi *et al.* provides important support for some of the information presented in OSHA’s guidelines. For example, OSHA states in its Grocery Guidelines that workplace changes based upon ergonomic principles may result in reduced fatigue and better morale among workers. Yassi *et al.* supports this, finding that accessible mechanical equipment in certain wards “decreased fatigue of workers, improved comfort with patient-handling tasks, and increased perception of safety among staff.” *Id.*

practical experience of many employers and employees in the affected industries serves as an important source of information supporting the recommendations made in the ergonomics guidelines.

Complaints about the Presentation of the Information

Your correction request also suggests that OSHA's presentation of the information fails to meet the IQG standards because the Agency does not "appropriately and prominently acknowledge scientific uncertainty" in the guidelines. CR, p. 13. You request that OSHA add language to the guidelines communicating "the uncertain state of the science" related to ergonomics. Id.

OSHA's presentation of the information is accurate, complete and in accordance with the IQG. The IQG stresses that agencies should present information within the proper context: "Sometimes in disseminating certain types of information to the public, other information must also be disseminated in order to ensure an accurate, clear, complete, and unbiased presentation." IQG, p. 12. OSHA fulfills this obligation under the IQG by making several important points in each guideline, including that "[m]ore remains to be learned about the relationship between workplace activities and the development of MSDs," and that MSDs are multi-factorial in origin. See Poultry Guidelines, pp. 3,4. See also Nursing Home Guidelines, pp. 5,8; Grocery Guidelines, pp. 3,6. OSHA makes clear that activities outside the workplace may cause or contribute to MSDs, and that the development of MSDs may be related to genetic causes, age, gender, and other factors. See Poultry Guidelines, p. 4; Nursing Home Guidelines, p. 8; Grocery Guidelines, p. 6. OSHA also states that there is evidence that reports of MSDs may be linked to certain psychosocial factors such as job dissatisfaction, monotonous work, and limited job control. While the guidelines focus on workplace physical risk factors and not other occupational or non-occupational risk factors that may be associated with MSDs, OSHA makes clear that workplace physical risk factors are not the only factors in MSD development. See, e.g., Nursing Home Guidelines, p. 8.

Finally, OSHA states that the solutions presented in the guidelines are just measures for employers to consider in their worksites. OSHA states in the Nursing Home Guidelines, for example, that the solutions "represent[] a range of available options that a facility can consider using." Nursing Home Guidelines, p. 17. In the Grocery Guidelines, OSHA states that it is not providing solutions for every department of every grocery store and that it does not expect that all of the solutions will be used in a single grocery store. Grocery Guidelines, p. 12. In the beginning of each guideline, OSHA also makes clear that different employers, particularly small businesses, may not need to implement as comprehensive an ergonomics process as is explained in each guideline. See, e.g., Grocery Guidelines, p. 3.

These statements set the proper context for employers and employees to view the information presented in the guidelines. They ensure that the information presented is "accurate, clear, complete, and unbiased," and meets the IQG standards. OSHA does not

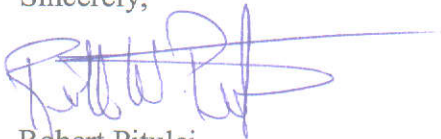
believe that it needs to add further disclaimer language to its guidelines to satisfy the IQG.

Transparency

OSHA has utilized a highly transparent process to produce the guidelines, and the guidelines themselves are transparent. OSHA collected data and information through accepted methods, including literature searches, site visits, and public comments. Furthermore, OSHA relied upon the best available peer reviewed analyses of the scientific literature in support of the information presented, including the NAS and NIOSH Reports. The information in the guidelines is appropriately cited, consistent with the IQG goals of objectivity and utility. Finally, the presentation of the information is informative and understandable, so that employers and employees can take the recommendations included and successfully apply them to their work environments.

For the reasons discussed above, I am denying your request for correction. Pursuant to the IQG, if you do not agree with this decision on your request, you may send a request for reconsideration within forty-five (45) days of receipt of this decision. The appeal request should describe the specific reasons why you believe the agency response to your complaint is inadequate. Please address your appeal request to Keith Goddard, Director, OSHA Directorate of Evaluation and Analysis.

Sincerely,



Robert Pitulej
Deputy Director
Directorate of Evaluation and Analysis