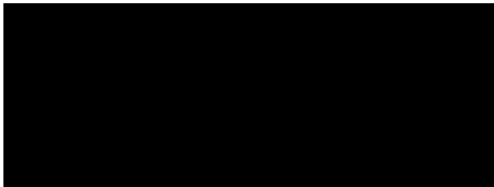


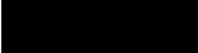


MAR 31 2006

Reply to the attention of:



(Name removed)

Dear  (Name removed)

This responds to your October 27, 2005, letter appealing the decision to deny your information correction request related to three Occupational Safety and Health Administration (OSHA) 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).

After careful review of the issues raised in your October 27 letter, your appeal is denied. The information in the three OSHA publications (the ergonomics guidelines) meets the Department of Labor's information quality guidelines (IQG). The information 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).<sup>1</sup> These publications presumptively meet the objectivity criteria of the IQG because they have been subjected to formal, independent, external peer review. See IQG, p. 12; NAS Report, pp. xiii-xiv; NIOSH Report, p. xvii. The information is also presented fairly and accurately in each guideline. The ergonomics guidelines say that more remains to be learned about the relationship between workplace physical risk factors and musculoskeletal disorders (MSDs) and that there are other factors that are related to MSD development. The guidelines make clear that employers are not expected to implement every ergonomic solution described in the guidelines and that they should tailor their efforts to address MSDs to the individual circumstances in their worksites. The guidelines highlight the multi-factorial nature of MSDs and encourage employers to analyze their own work environments before implementing any solutions.

<sup>1</sup> National Research Council and Institute of Medicine, 2001, *Musculoskeletal Disorders and the Workplace: Low Back and Upper Extremities*, National Academy of Sciences, Washington, DC, National Academies Press (NAS Report); *Musculoskeletal Disorders and Workplace Factors: A Critical Review of Epidemiologic Evidence for Work-Related Musculoskeletal Disorders of the Neck, Upper Extremity, and Low Back*, Cincinnati, OH, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS, 1997 (NIOSH Publication No. 97-141) (NIOSH Report).

In your appeal, you reiterate your challenge to three aspects of the guidelines: (1) OSHA's use of the terms MSDs and injuries; (2) OSHA's treatment of the relationship between workplace physical risk factors and MSDs; and (3) OSHA's descriptions of recommended solutions. I address each contention below. I also address your contention that OSHA has ignored recent scientific evidence related to ergonomics and MSDs.

## Response to Complaints on Appeal

### 1. Use of the Terms MSDs and Injuries

You contend that OSHA misstates the NAS Report by using the term "injuries" in referring to MSDs. Appeal, p. 5. According to your letter, the Report refers to MSDs as "disorders" and draws a distinction between "injuries", which involve objectively verifiable changes to the body, and disorders such as MSDs, which do not. *Id.* at 4-5. You also criticize OSHA for referring to MSDs as affecting certain body parts, "which can be remedied by solutions that act on these body parts alone." *Id.* at 5.

These contentions are incorrect. OSHA's use of terms is consistent with the NAS Report and meets the IQG quality standards.

The ergonomics guidelines use several terms in referring to MSDs, including disorders and injuries. The NAS Report includes separate definitions for the terms disorders and injuries. NAS Report, p. 36. However, disorders and injuries are not mutually exclusive and the Panel uses both terms throughout the report to describe the conditions addressed. *See, e.g.*, pp. 1-2 (discussing the prevalence of "musculoskeletal disorders" and the Panel's approach to examine the risk of "musculoskeletal injury"); p. 19 (describing the charge to the Panel using both "musculoskeletal disorders" and "musculoskeletal injuries"); p. 29, Figure 1.1 (examining the risk factors for "injury" attributed to "musculoskeletal disorders"); p. 328 (summarizing literature for prevention of "musculoskeletal disorders" and "musculoskeletal injuries"); *see also* NAS Chapter on Tissue Mechanobiology discussing injury mechanisms for various musculoskeletal disorders. OSHA's use of both terms to describe the conditions the guidelines are designed to prevent is consistent with the NAS Report.<sup>2</sup>

The NAS Panel does not distinguish between injuries and disorders based on the presence of objective changes in the body, as you suggest in your appeal.<sup>3</sup> Appeal, pp.

---

<sup>2</sup> The NAS Report describes injuries as biological events "representing the impact of an environmental alteration on the individual. Such alterations are of numerous types and intensities and may range from invasion by biological agents . . . to physical forces, including those capable of damaging musculoskeletal structures." NAS Report, p. 23 (emphasis added). These are precisely the types of events OSHA's guidelines are designed to prevent.

<sup>3</sup> MSDs are also not "distinct" from other medical conditions with respect to diagnostic certainty, as you suggest. Appeal, pp. 4-5. MSDs are no different from other clinical disorders in terms of the degree of objective support that

4-5. As used in the NAS Report, both disorders and injuries may or may not be associated with detectable physical change. The NAS Report states that disorders “*may or may not* be associated with well-recognized anatomic, physiologic, or psychiatric pathology.” NAS Report, p. 36 (emphasis added). According to the NAS Panel, “symptomatic injury of the low back or upper extremity *may or may not* be accompanied by definitive objective change.” *Id.* at 25 (emphasis added). The Panel describes the anatomical change associated with certain MSDs. *See, e.g., id.* at 196, descriptions of tendonitis (may be accompanied by swelling, warmth, and erythema) and epicondylitis (tears in the tendon with disorganized collagen). The NAS Report Chapter on Tissue Mechanobiology is devoted, in part, to describing the damage to the musculoskeletal system that can occur from exposure to physical load. *Id.* at 184-218.

The NAS Report also stresses that medical conditions that may not satisfy certain diagnostic criteria still may be serious and debilitating and related to “identifiable risk factors.” *Id.* at 25. OSHA’s guidelines are rightfully concerned with preventing MSDs and all of their adverse effects, including their associated pain, impairment, and disability.

In addition, the guidelines do not violate the IQG by stating that MSDs affect certain body parts. In most cases, the scientific literature describes MSDs by region or area of the body affected. For example, like OSHA’s guidelines, the NAS Report describes MSDs as related to specific areas of the body. The Panel examines separately the two main body areas affected by MSDs: (1) upper extremity disorders, including the neck, shoulder, elbow, wrist, hand, fingers; and (2) low back. The NAS Report’s Chapter on Tissue Mechanobiology further ties MSDs to individual parts of the musculoskeletal system (e.g., discs, tendons, ligaments, skeletal muscle, peripheral nerves, and spinal nerve roots). The NIOSH Report discusses the epidemiological literature regarding MSDs by discussing the relationships in terms of certain body parts and exposures. *See* NIOSH Report Chart at xiii (examining evidence for causal relationship between risk factors and Neck and Neck/Shoulder; Shoulder; Elbow; Hand/wrist; Back).

is often available for diagnostic purposes. *See* NAS Report, p. 24. In fact, with respect to many MSDs, the NAS concludes that there is a great deal of diagnostic certainty:

Diagnostic criteria for some of the musculoskeletal disorders considered to be work-related and considered in this report are clear-cut, especially those that can be supported by objective ancillary diagnostic tests, such as carpal tunnel syndrome. Others, such as work-related low back pain, are in some instances supported by objective change, which must be considered in concert with the history and physical findings. In the case of radicular syndromes associated with lumbar intervertebral disc herniation, for example, clinical and X-ray findings tend to support each other. In other instances, in the absence of objective support for a specific clinical entity, diagnostic certainty varies but may nevertheless be substantial. NAS Report, pp. 431-432.

By stating that MSDs can affect certain body parts, OSHA's guidelines also are not inconsistent with the NAS Report's conclusion that MSDs should be approached in the context of the whole person. OSHA agrees with the NAS that MSDs are multi-factorial in nature. That is why each guideline stresses that MSDs are associated with other work and non-work risk factors. It is also why OSHA strongly recommends that employers implement an ergonomics process, which helps to ensure that MSDs are approached broadly. Furthermore, the NAS Report's recommendation that MSDs be addressed in the context of the whole person does not mean that employers should ignore workplace physical risk factors. On the contrary, like OSHA's guidelines, the NAS Report recommends implementing interventions that "mediate physical stressors, largely through the application of principles of ergonomics." NAS Report, p. 328. The ergonomics guidelines are consistent with the NAS Report's focus on the whole person.

## 2. Relationship Between Physical Risk Factors and MSDs

In large part your appeal challenges the extent to which OSHA suggests there is a relationship between the development of MSDs and exposure to various physical risk factors at work. You assert that the guidelines "falsely portray findings from NAS and NIOSH" by disregarding the "substantial disagreement and controversy" about the link between work-related risk factors and MSDs. Appeal, p. 6. You also contend that OSHA's statements that exposure to physical risk factors at work "can lead to" or "can result in" MSDs "falsely imply a causal link that science has been unable to establish." *Id.* at 6.

The language OSHA uses in the guidelines to describe the relationship between MSDs and physical risk factors is supported by the language used in the NAS and NIOSH Reports and meets the IQG quality standards. The reference to the "debate" from the NAS Report that you cite in your appeal is from the very beginning of the document and does not qualify the overall findings and conclusions of the Report. In fact, Congress commissioned the NAS precisely to help clarify the debate by comprehensively examining the relationship of various risk factors to the development of MSDs. NAS Report, pp. 2-5. In response, the NAS thoroughly analyzed hundreds of the highest quality studies on MSDs and concluded that (1) there is a clear relationship between back disorders and physical load and that for upper-extremity disorders, "repetition, force, and vibration are particularly important work-related factors"; and (2) interventions "must mediate physical stressors, largely through the application of principles of ergonomics." *Id.* at 328, 364-65. Contrary to your assertions, these findings from the NAS Report are not selected passages or isolated quotes representing one side of an ongoing debate about MSDs and ergonomics. Rather, they are part of the Panel's

overall conclusions and recommendations, arrived at through an exhaustive analysis of the scientific evidence related to MSD development and prevention.<sup>4</sup>

In addition, OSHA's use of the phrases "can lead to" or "can result in" to describe the link between physical risk factors and MSDs is entirely consistent with authoritative scientific analyses related to MSD development. For example, the NAS Report uses these same terms to describe the relationship between physical risk factors and the development of MSDs. *See, e.g.*, NAS Report, p. 213 ("Exposure to vibrating hand tools at work *can lead to* permanent peripheral nerve injury"); p. 235 ("In terms of the loading, the musculoskeletal system may be influenced by either adaptation to or intensification of the load.... Overall, if the loading of the structure exceeds the tolerance, then this situation *can result in* a disorder"); p. 253 ("...our review of the literature has shown that the loading of these spinal structures *can lead to* structural damage that can precipitate the pain response pathway") (emphasis added). The guidelines' use of the terms "can lead to" or "can result in" to describe the relationship between physical risk factors and the development of MSDs meets the standards for quality under the IQG.

OSHA does not assert in the guidelines that in a particular case an MSD is caused by exposure to a workplace physical risk factor. The decision as to whether an MSD is caused by such an exposure is appropriately made by health care practitioners who can make evaluations of the circumstances surrounding an individual's symptoms and work and non-work exposures. The American College of Occupational and Environmental Medicine (ACOEM) Practice Guidelines, which you cite in your appeal, are directed to these practitioners. The passage you cite from the ACOEM Guidelines instructs health care practitioners that they should not presume that a work-related risk factor caused a particular MSD, "in the absence of other obvious causes." ACOEM Guidelines, p. 3. The ACOEM Guidelines do not assert that exposure to workplace physical risk factors cannot result in MSDs.

In fact, rather than casting doubt on the information presented in the ergonomics guidelines, the ACOEM Guidelines are consistent with OSHA's recommendations. For example, the ACOEM Guidelines recommend many of the same preventive measures found in the ergonomics guidelines to "reduce occupational health concerns and the costs of lost productivity due to illness and injury as well as related medical costs." *Id.* at 6. They suggest, for example, "[d]ecreasing force or load as well as repetitions through redesign, tool changes, or automation" and "[p]roviding lift-assist devices, particularly for those performing frequent, heavy lifts." *Id.* They also list numerous

<sup>4</sup> What the NAS and NIOSH Reports make clear is that more research is needed to further understand the many complicated aspects of MSD development. OSHA agrees that more research is needed to understand the relationship between workplace physical risk factors and MSDs. In fact, OSHA formed the National Advisory Committee on Ergonomics to make recommendations on various research gaps that exist with respect to ergonomics and MSDs. OSHA also states clearly in the second paragraph of each guideline that more remains to be learned about the relationship between workplace activities and MSD development.

"ergonomics tactics" to prevent MSDs and state that engineering controls that reduce exposure levels "are the preferred method of preventing the development of work-related musculoskeletal health effects." *Id.* at 7-9, 12.

### 3. OSHA's Descriptions of Proposed Solutions

Your appeal again asserts that the recommended solutions in the guidelines do not meet IQG standards.<sup>5</sup> Appeal, pp. 7-9. The basis for your challenge is the following two statements that you believe qualify the NAS' general conclusion that workplace interventions can reduce the risk of MSDs:

4. Because of limitations in the scientific literature a comprehensive and systematic research program, supported by an infrastructure linking industry, labor, government, and academic efforts, is needed to further clarify and distinguish the features that make interventions effective for specific musculoskeletal disorders.

5. Although generic guidelines have been developed and successfully applied in intervention programs, no single specific design, restriction, or practice for universal application is supported by the existing scientific literature.

*Id.* at 7 (emphasis omitted) (citing NAS Report, p. 329).

OSHA's statements in the guidelines recommending certain interventions are consistent with the IQG. The first passage you cite from the NAS Report calls for a research program to "clarify and distinguish the features that make interventions effective." The recognition that more research is needed on the relationship between workplace activities and MSDs is stated in each guideline. OSHA believes, however, that the scientific literature and the experiences of employers and employees in the affected industries provide a sufficient basis for the recommended solutions. This is consistent

<sup>5</sup> While the ergonomics guidelines play a valuable role in informing employers and employees about MSDs and ergonomics in the industries addressed, the information disseminated in the guidelines is not influential, as that term is defined in the IQG. Influential information under the IQG has "a clear and substantial impact on important public policies or important private sector decisions." IQG, p. 5. The IQG also stresses that a particular piece of information may not be influential because it is cumulative or because it involves policy issues. *Id.* at 6. "Information that has a low cost or modest impact on a limited range of affected parties is less likely to be influential than information that can have a very costly or crucial impact on a broad range of parties." *Id.*

OSHA's guidelines build on existing practices and programs that employers have already implemented in their workplaces. In this way, the guidelines present cumulative information based on the experiences of employers who have implemented ergonomics solutions. In addition, many of the solutions suggested are low cost solutions that are easily implemented. To the limited extent the guidelines address scientific issues, the information they provide is not new but merely repeats findings that have been broadly disseminated by the National Academy of Sciences and others. The voluntary guidance presented in the guidelines is not comparable to an economically significant rule, the Consumer Price Index, or the Producer Price Index that implicate the standards for influential information.

with the NAS Report, which makes recommendations to reduce physical risk factors in the workplace, while recognizing that more research is needed in various areas. As the NAS Panel stated:

[T]he report makes plain the panel's view that the literature about musculoskeletal disorders is incomplete, as all clinical and scientific literatures are, and also emphasizes the importance of continuing research on a variety of fronts. There is, however, sufficient basis in the research to date to support our conclusions and recommendations. NAS Report, p. 460.

In addition, the guidelines do not, as you assert, suggest that specific interventions have been found uniformly effective. Rather, the guidelines recognize that not all solutions will be effective in all circumstances and that continuous fine-tuning is required to ensure the effectiveness of any ergonomic solution an employer decides to implement. For example, the Nursing Home Guidelines state: "Nursing homes should evaluate the effectiveness of their ergonomics efforts and follow-up on unresolved problems. Evaluation helps sustain the effort to reduce injuries and illnesses, track whether or not ergonomic solutions are working, identify new problems, and show areas where further improvement is needed." Nursing Home Guidelines, p. 11. Similarly, the guidelines reflect the findings of the NAS Report when they recommend that employers tailor ergonomic interventions to their specific circumstances (*see, e.g., Poultry Guidelines, p. 10*). The guidelines also state that not all the solutions will be implemented in every facility (*see, e.g., Poultry Guidelines, p. 10*) and that small businesses, in particular, may not need to implement as comprehensive an ergonomics process as is suggested in each guideline (*see, e.g., Grocery Guidelines, p. 3*).

Citing the dissenting opinion of Dr. Robert Szabo and the Panel's response to his dissent, you also contend that the NAS has expressly disclaimed "any implication that ergonomic interventions can reduce the risk of specific MSDs." Appeal, p. 7. In support of your contention, you rely on the Panel's observations in their response that certain upper extremity intervention studies demonstrated decreases in pain reports and symptoms and not "the occurrence of specifically defined disorders of the upper extremities." *Id.* 7-8 (citing NAS Report, pp. 458-459).

Dr. Szabo's dissent and the Panel's response do not undermine the Panel's overall finding that interventions "must mediate physical stressors, largely through the application of principles of ergonomics." NAS Report, p. 328 (emphasis added). Dr. Szabo was the lone dissenter to the NAS Report. All eighteen other members of the Panel agreed with the conclusions and recommendations made. In addition, his dissenting opinion focused primarily on one musculoskeletal disorder - carpal tunnel syndrome. The Panel makes clear, after comprehensively reviewing all of the relevant intervention literature, that "[t]he weight of the evidence justifies the introduction of appropriate and selected interventions to reduce the risk of musculoskeletal disorders

of the low back and upper extremities. These include . . . the application of ergonomic principles . . .” *Id.* at 9. This conclusion supports the recommendations included in OSHA’s guidelines.

Furthermore, the fact that some of the intervention literature related to upper-extremity disorders focused on the amelioration of symptoms is consistent with the information presented in OSHA’s guidelines. One of the purposes of the guidelines is to help employers and employees deal with MSDs and their associated pain and symptoms. The guidelines note that many workplace physical risk factors are associated with musculoskeletal pain and OSHA encourages employers to address reports of injury early, before injuries become severe and debilitating.

Finally, you contend that Yassi et al. (2001)<sup>6</sup> reaches “negative conclusions” about the effectiveness of mechanical assist devices and suggest that this one study changes the “weight” of the evidence discussed by the NAS Panel. Appeal, p. 8. Yassi et al. (2001) did not reach “negative conclusions” about the effectiveness of ergonomic interventions. Even though the reductions in certain injury rates found were not statistically significant over the one year follow-up period studied, the authors concluded that their study “should *not* be seen as a ‘failure’ of the interventions” examined. Yassi et al. (2001), p. 1746 (emphasis added). In fact, as the initial decision noted, Yassi et al. (2001) found “decreased fatigue of workers, improved comfort with patient-handling tasks, and increased perception of safety among staff” in their study – all positive outcomes associated with accessible mechanical equipment. *Id.* As the authors stated, “Our findings confirm that there is clearly a role for mechanical assistive equipment.” *Id.* at 1745.

The NAS Report is based on a comprehensive review of a broad and varied literature base, including analyses of other literature reviews, peer reviewed studies, and best practices.<sup>7</sup> With respect to the back intervention literature alone – one of the major health outcomes examined in the Yassi et al. (2001) study – the Panel examined six “high-quality reviews,” seven “recent high-quality studies,” and thirteen “case studies of best practices” in coming to its recommendations that interventions “must mediate

<sup>6</sup> *A Randomized Control Trial to Prevent Patient Lift and Transfer Injuries of Health Care Workers*, Spine, 2001, 26(16).

<sup>7</sup> You again challenge OSHA’s use of best practices in its development of the guidelines. The IQG lists examples of acceptable sources of information, including accident reports provided by the public, relevant analyses of such reports, and testimony of experts and the public. IQG, p. 16-19. Contrary to your suggestion that reports of best practices do “not even remotely satisfy” the IQG (Appeal, p. 8), the IQG envisions agencies using such reports when preparing information products. OSHA’s site visits to employers in the industries affected and the information obtained from industry stakeholders during the public comment period for the guidelines are important sources of information gathered and used in accordance with the IQG. Furthermore, the NAS Panel utilized best practices in its analysis and found that the “congruence” between the best practices literature and other sources of information “is important in establishing a weight or pattern of evidence.” NAS Report, p. 328. The members of the NAS Panel also conducted site visits of two auto assembly plants during the Panel’s deliberations (NAS Report, pp. xiv). The NAS Panel’s use of this practice underscores its importance and utility.



physical stressors." NAS Report, pp. 308-314, 328. This is in addition to the hundreds of epidemiological, tissue mechanobiological, and biomechanical studies the Panel reviewed. It is the consistency of the evidence across all of these disciplines that supports the recommendations made in the NAS Report. In our view, the findings in Yassi et al. (2001) do not in any way undermine the evidence supporting OSHA's guidelines.

### Use of Outdated Information

Your appeal contends that OSHA relies on outdated information, such as the NAS and NIOSH Reports, to support the guidelines, and ignores more recent scientific studies that cast doubt on the information presented. Appeal, p. 9. On December 20, 2005, you also submitted an addendum to your appeal, which you contend "make[s] a strong case that the evidence base OSHA uses to support its guidelines on ergonomics needs to be updated." Supplemental Reviews, p. 1. The addendum was not timely submitted in accordance with the IQG and the extension OSHA granted to you on September 8, 2005. Nevertheless, we have reviewed the studies included in the addendum and have determined that they do not support an alteration or an additional disclaimer to the guidelines.

Many of the supplemental studies you submitted support the information contained in OSHA's guidelines. Several note the utility of implementing ergonomic changes in the workplace, along with components of an ergonomics process, to reduce the occurrence of MSDs and their associated pain and symptoms. For example, the *European Guidelines for Prevention in Low Back Pain*, state that "ergonomic workplace adaptations can be recommended to facilitate earlier return to work." *European Guidelines*, p. 3; see also pp. 26-27 (discussing "good quality studies" reporting "that physical ergonomics interventions may reduce the prevalence and severity of LBP"). Another study by S. Hignett found that a multifactor intervention program (including risk assessment, equipment provision, and equipment evaluation/design) is "most likely to be successful reducing risk factors related to patient handling activities." See S. Hignett, *Intervention strategies to reduce musculoskeletal injuries associated with handling patients: a systematic review*, *Occ. Environ. Med.*, 2003, 60(9), E6, p. 1.<sup>8</sup>

Furthermore, many of the studies are not directly related to workplace physical risk factors and MSDs, but address other risk factors that may be related to MSD

<sup>8</sup> See also Tveito et al., *Low back pain interventions at the workplace: a systematic literature review*, *Occ. Med.*, 2004, 54(1), 3-13, p. 3 (comprehensive multidisciplinary interventions (including ergonomics) "have a documented effect on LBP"); P. Loisel et al., *Implementation of a participatory ergonomics program in the rehabilitation of workers suffering from subacute back pain*, *Appl. Ergonomics*, 2001, 32(1), 53-60, p. 59 ("This participatory ergonomics program was intended to generate appropriate ergonomic solutions that would modify the work demands to better match the worker's reduced capacity. The program seemed to successfully modify their job tasks.").

development.<sup>9</sup> These studies are important to the overall knowledge base related to MSDs, but are not directly relevant to OSHA's ergonomics guidelines, which focus on the relationship between physical risk factors at work and the development of MSDs.

There have been numerous studies of MSDs and ergonomics interventions published since 2001. For example, while you cite Yassi et al. (2001) as raising "very serious" questions about the information presented in the guidelines (Appeal, p. 9),<sup>10</sup> you do not mention two recent studies co-authored by Yassi that are also relevant to the information presented. In a study published last year, Engst et al. found that the installation of ceiling lifts in extended care facilities greatly reduced the perceived risk of injury and discomfort to the neck, shoulders, back, hands, and arms of care staff when lifting or transferring residents. The study also found that compensation claims due to lifting and transferring tasks were reduced by 68% for the unit of extended care nurses who received the studied interventions. See Engst et al., *Effectiveness of overhead lifting devices in reducing the risk of injury to care staff in extended care facilities*, *Ergonomics*, 48(2), 187-199. A longitudinal case-study conducted by Chhokar et al., also published last year, examined the effectiveness of ceiling lift interventions. Analysis of injury trends over three years prior to the intervention and three years after the intervention "found a significant and sustained decrease in days lost, workers' compensation claims, and direct costs associated with patient handling injuries." See Chhokar et al., *The three-year economic benefits of a ceiling lift intervention aimed to reduce healthcare worker injuries*, *Applied Ergonomics*, 36 (2005) 223-229. While these two studies are directly relevant to the information presented in the Nursing Home Guidelines, you do not include them in your Addendum.

One of the strengths of the NAS and NIOSH reports is that they describe precisely the process and criteria they used for selecting the studies analyzed. See, e.g., NAS Report, pp. xiii-xv, 85-87, 187, 236-237, 253-254; NIOSH Report, pp. 1-9 - 1-11. The IQG stresses the importance of transparency and explaining the methodology used to identify particular studies and reach conclusions about those studies.

Finally, OSHA's guidelines do not need to be revised to include an additional disclaimer about the science related to ergonomics and MSDs. OSHA's guidelines

<sup>9</sup> See, e.g., van Poppel et al., *An update of a systematic review of controlled clinical trials on the primary prevention of back pain at the workplace*, *Occ. Med.*, 2004, 54(5), 345-352 (examining education, lumbar supports, and exercise); Linton, *Occupational Psychological Factors Increase the Risk for Back Pain: A Systematic Review*, *J. Occ. Rehab.*, 2001, 11(1), 53-66 (examining psychological factors).

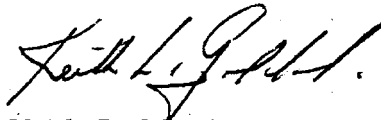
<sup>10</sup> The study you cite by Gerr et al. (*A Randomised Controlled Trial of Postural Interventions for Prevention of Musculoskeletal Symptoms Among Computer Users*, *Occ. Env. Med.*, 2005, 62, 478-87) also does not require revisions to the guidelines. First, OSHA notes that the Gerr et al. study has very little bearing on the information presented in the guidelines because it focuses on the development of upper extremity disorders by computer users. None of the guidelines deals with MSDs in computer users. Second, OSHA believes that the true effects of the interventions may have been obscured given the acknowledgment by the study's authors of an "inability to fully implement the intervention among the study participants." Gerr et al., p. 486.

explain that "more remains to be learned" about MSDs. OSHA also states that MSDs are multi-factorial in nature and that the guidelines only address workplace physical risk factors. Other risk factors mentioned in the guidelines include age, gender, genetic causes, certain activities outside the workplace, and psychosocial factors. The guidelines make clear that the solutions presented are voluntary and that employers need not implement every solution. OSHA also says that different employers, and particularly small businesses, may not have or need as comprehensive an ergonomics process as would result from implementation of every action described in the guidelines. These statements ensure that the information in the guidelines is presented in a fair and accurate manner, as required by the IQG,

## Conclusion

After thoroughly reviewing your appeal, your request that OSHA "withdraw and reconsider" the guidelines is denied. Both the process OSHA used to produce the guidelines and the information presented comply with the IQG quality standards. This is the Department's final decision on your information correction request.

Sincerely,



Keith Goddard

Director, Directorate of Evaluation and Analysis