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United States Senate

COMMITTEE ON SMALL BUSINESS
WASHINGTON, DC 20510-6350

EMILIA D. SANTO, STAFF DIRECTOR
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March 15, 2000

Via Facsimile: (202) 619-0521

The Honorable June Gibbs Brown
Inspector General, Department of Health
and Human Services
Room 5250
Wilbur J. Cohen Building
330 Independence Avenue, S.W.
Washington, DC 20201

RE: National Academy of Sciences Study on Musculoskeletal Disorders
(MSDs) and the Workplace; Award No. HHS-100-99-0001

Dear Inspector General Brown:

As part of the Omnibus Spending measure passed by Congress and signed by the President in October 1998, \$890,000 was appropriated to the Department of Health and Human Services to fund a study to be conducted by the National Academy of Sciences to determine whether sufficient evidence exists to support OSHA's effort to promulgate an ergonomics regulation. That study is now underway through a contract (Award No. HHS-100-99-0001) executed between the National Institute of Occupational Safety and Health and the NAS. I am now concerned that the Panel conducting this study may not be acting consistent with the Congressional mandate which authorized it.

The scope of work for the contract focuses on six tasks (Attachment 1) that have been drafted ostensibly to respond to seven questions that were originally posed by Congressman Livingston and later captured in the report (Attachment 2) accompanying the Omnibus Spending measure. As the enclosed letter to Secretary Shalala and Drs. Alberts and Shine (Attachment 3) and analysis by the Congressional Research Service (Attachment 4) indicates, these tasks deviate materially from the questions which Congress believed would drive this study.

Accordingly, I request that your office investigate the following questions:

- 1) What has been NIOSH's role in performing oversight of the performance of the contract with NAS to conduct this study? In particular, has NIOSH exercised appropriate management and direction in assuring that NAS has been responsive to its Congressional mandate?
- 2) How have the appropriated funds been spent? In particular, have the expenditures been consistent with the legislative language authorizing their use?

The Honorable June Gibbs Brown
Page 2

Thank you for your effort. If you have any questions please contact Emilia DiSanto or Marc Freedman who can both be reached at (202) 224-5175.

Sincerely

A handwritten signature in black ink that reads "Chris Bond". The signature is written in a cursive, slightly slanted style.

Christopher S. Bond
Chairman

cc: Helen Albert

Attachments: Six Tasks from Scope of Work for Award No. HHS-100-99-0001
Seven Questions as Posed by Congressman Livingston
Letter to Secretary Shalala and Drs. Alberts and Shine
CRS Analysis of NAS Six Tasks and Livingston's Seven Questions

APPENDIX A

FY 1999 Appropriations Conference Report Language

NAS Study

Office of the Secretary Account (DHHS):

House Committee Report Language:

National Academy of Sciences Study. —The Committee has provided \$890,000 for a contract with the National Academy of Sciences (NAS) to conduct a study of all the available scientific literature examining the cause-and-effect relationship between repetitive tasks in the workplace and musculoskeletal disorders. The NAS study should address the following questions: (1) what are the conditions affecting humans that are considered to be work-related musculoskeletal disorders; (2) what is the status of medical science with respect to the diagnosis and classification of such conditions; (3) what is the state of knowledge, characterized by the degree of certainty or lack thereof, with regard to occupational and non-occupational activities causing such conditions; (4) what is the relative contribution of any causal factors identified in the literature to the development of such conditions in the general population, specific industries, and specific occupational groups; (5) what is the incidence of such conditions in the general population, specific industries, and specific occupational groups; (6) does the literature reveal any specific guidance to prevent the development of such conditions in the general population, specific industries, and specific occupational groups; and (7) what scientific questions remain unanswered, and may require further research, to determine which occupational activities in which specific industries cause and contribute to work-related musculoskeletal disorders.

NATIONAL ACADEMY OF SCIENCES/NATIONAL RESEARCH COUNCIL/
INSTITUTE OF MEDICINE

Commission on Behavioral and Social Sciences and Education
Division on Education, Labor, and Human Performance

and

Institute of Medicine
Division of Health Sciences Policy

MUSCULOSKELETAL DISORDERS AND THE WORKPLACE

Project Summary

In response to a congressional request (Hrpt. 105-635) the Department of Health and Human Services' National Institute of Occupational Safety and Health (NIOSH) and the National Institutes of Health (NIH) have asked the National Academy of Sciences/National Research Council/Institute of Medicine (hereafter referred to as the Academy Complex) to conduct a study of the state of scientific knowledge relevant to work-related musculoskeletal disorders. The congressional request raises a set of questions about causation, diagnosis, and prevention of musculoskeletal disorders. It asks as well about research needs (Appendix A).

The study proposed here builds on the work of a National Research Council steering committee that conducted a Workshop on Work-Related Musculoskeletal Injuries in August of 1998. In its report (National Research Council, 1998) the steering committee provided a framework for examining the multiplicity of factors that can contribute to musculoskeletal disorders and developed an approach for assessing the strength of the causal links. The framework, shown in Appendix B, was used to organize the evidence presented at the workshop and will be used as a starting point for the study proposed here. It portrays the physiological pathway from load to response to impairment and disability and identifies the factors that can potentially affect the functioning of the mechanisms in the physiological pathway. The steering committee's review of the evidence led to the following major conclusions. First, there is a higher incidence of reported pain, injury, loss of work, and disability among individuals who are employed in occupations where there is a high level of exposure to physical loading than for those employed in occupations with lower levels of exposure. Second, there is strong biological plausibility to the relationship between the incidence of musculoskeletal disorders and the causative exposure factors in high-exposure occupational settings. Third, research clearly demonstrates that specific interventions can reduce the reported rate of musculoskeletal disorders for workers who perform high-risk tasks.

The new study will expand upon the steering committee's examination of the biological responses of tissues (muscles, tendons, and nerves) to biomechanical stressors; work factors and biomechanics; and the interplay of individual factors, environmental factors, and work stressors.

Six complementary tasks, designed to be responsive to the seven questions posed by Congress, are proposed:

- Task 1 assesses the state of the medical and biomechanical literature describing the models and mechanisms characterizing the load response relationships and the consequences (adaptation, impairment, disability) for musculoskeletal structures of the neck, the upper extremities, and the low back.
- Task 2 evaluates the state of the medical and behavioral science literature on the character of jobs and job tasks, the conditions surrounding task performance, and the interactions of person, job, and organizational factors and the research literature on the individual and non-work related activities that can contribute to or help prevent or remediate musculoskeletal disorders. This task will also include a review and application of the methodological literature on risk analysis and decision making under conditions of uncertainty.
- Task 3 assesses the strengths and weaknesses of core data sets that form the basis for examining the incidence and epidemiology of musculoskeletal disorders reported in the workplace. The central focus is to determine if improvements can be made in current surveillance systems that would provide more accurate answers to questions about work-related musculoskeletal disorders.
- Task 4 examines programs and practices associated with primary, secondary, and tertiary prevention of musculoskeletal injuries, ranging from organization-wide promotion of a safety culture to modified work and a variety of clinical treatment programs. The goal is to evaluate the current state of the art and, if possible, identify promising approaches to reducing the incidence of injury.
- Task 5 will focus on the future of work, how the workforce and jobs are changing and the potential impact of these changes on the incidence of musculoskeletal disorders.
- Task 6 will characterize the most important gaps in the science base and recommend needed research.

The proposed study will be conducted according to established policies and procedures which are designed to ensure that the Academy Complex provides independent, objective, science-based advice to government. A study committee of approximately 14 experts, drawn from such fields as occupational medicine, orthopedics, physiology, biochemistry, epidemiology, psychology, biomechanics, human factors engineering, and quantitative analysis, will be assembled to conduct the investigation. It is anticipated the study will require 24 months.



Memorandum

February 7, 2000

TO : Senate Committee on Small Business
Attention: Marc Freedman

FROM : Edward Rappaport
Analyst in Industry Economics
Domestic Social Policy Division

SUBJECT : **Comparison of Ergonomics Research Contract with Legislative Mandate**

As you requested, we comment here on how a current research contract with the National Academy of Sciences (NAS) compares with the stated intent of Congress in funding the study via the Fiscal 1999 appropriations for the Department of Health and Human Services (HHS). \$890,000 was allocated for this contract within the account for "General Departmental Management" in the Office of the Secretary of HHS, and it was to study "all the available scientific literature examining the cause-and-effect relationship between repetitive tasks in the workplace and musculoskeletal disorders." As we agreed, the analysis here consists of comparing (1) the report language of the House Appropriations Committee, with (2) the plan of action spelled out in the contract, a copy of which you have provided to us.¹

What follows is not to be taken as a legal analysis of whether the contract complies with the statutory provisions, but is intended only as a commonsense reading of these documents.

The House appropriations report lays out seven specific questions to be addressed by the study, and we will structure these comments according to that schema. (The Plan of Action in the contract divides the work into six "tasks.")

Question 1 asks "what are the conditions affecting humans that are considered to be work-related musculoskeletal disorders" (MSDs). This would seem to call for a listing of specific injury types or syndromes in the MSD category that are "work related." The contract does not explicitly provide for such a listing. It is possible, though, that the NAS will address this issue in some form as part of its Task 1, where it will review the literature on "medical procedures for diagnosing and classifying musculoskeletal conditions."

¹ NAS Revised Proposal No. 99-CBSSE-131-01. p. 6-8.

Question 2 asks for an assessment of the state of the art with respect to diagnosis and classification of MSDs. As just noted, NAS Task 1 deals with this issue.

Question 3 asks for an assessment of the state of the art with respect to “occupational and non-occupational activities” causing MSDs. Question 4 is closely related to Question 3, as both inquire into causation. Question 4 asks, “what is the relative contribution of any causal factors identified in the literature to the development of such conditions in the general population, specific industries, and specific occupational groups.” Generally speaking, Tasks 1 and 2 of the contract address the issue of causation. The approach taken, however, may differ in emphasis from what some may have expected. Task 1 in particular proposes to pay particular attention to the physiological mechanisms through which stresses on the body lead to impairment and disability. “Causation” is taken to include an understanding, as far as possible, of the whole causal chain of events. This may be more than what some may believe they need for future legislative consideration. On the other hand, Task 1 does not seem to distinguish between work and non-work activities; it considers stresses as physical phenomena independent of the social or economic context. Task 2 focuses more on that dimension by relating injuries and causal factors to job types, industries, etc. Moreover, Task 2 will consider “personal factors that workers bring to the job.”

Question 5 asks about the “incidence” of MSDs in various contexts. Task 2 would seem to address this by the “prevalence” of such injuries by job type, industry, etc.

Question 6 asks what “specific guidance to prevent the development of such conditions” can be found in the scientific literature. This is generally addressed by Task 4, which mentions the categories of “organizational safety processes,” best practices among “targeted prevention strategies,” and “treatment strategies.” The last of these might be considered to go beyond the intent of the mandate, as it deals with mitigating impairments that have already begun, as opposed to “prevention” strictly construed.

It may also be noted that Task 4 appears exclusively concerned with the work context, while Question 6 asks about prevention among the general population as well as occupations and industries.

Question 7 asks about the need for further research, which is addressed by Task 6.

Finally, we note that Task 5 of the contract is not explicitly related to the mandated questions. Task 5 is to “examine the implications of the changing nature of work.” This may be useful to policymakers by illuminating the future effects of rules that are adopted in the present. However, the legislated mandate is generally stated in terms of workplaces as they currently exist.

If you have any further questions, please call me at extension 7-7740.