

Survey of MSD Prevention Tools/Methods: 10-year Follow-Up

Request for Office of Management and Budget (OMB) Review and Approval
for a Federally Sponsored Data Collection

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September 2, 2016
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LIST OF ATTACHMENTS

- Attachment A: Authorizing Legislation
- Attachment B: 60- Day Federal Register Notice
- Attachment C: (IRB Exemption Determination for NIOSH Protocol 16-DART-01XM,
"Survey of MSD Prevention Tools/Methods: 10-year Follow-Up")
- Attachment D: Questionnaire

- Goal of the study: The purpose of this study is to administer a survey of ergonomics practitioners (those holding professional certification) to gather information on the basic tools, direct and observational measurement techniques, and software used at work sites to assess risk factors for musculoskeletal disorders.
- Intended use of the resulting data: Data will be used to determine current use of various assessment methods and to identify changes in the use of tools and assessment methods based on comparison to a similar survey published in 2005.
- Methods to be used to collect: Data will be collected by web-based survey.
- The subpopulation to be studied: Professional ergonomists in five English-speaking countries (U.S., Canada, U.K., Australia, New Zealand) with certifications endorsed by the International Ergonomics Association. The population of these certificate holders will be invited to participate.
- How data will be analyzed: Descriptive statistics will be reported and tests of proportions will compare 2005 percentages to those of the present.

SECTION A. JUSTIFICATION

A1. Circumstances Making the Collection of Information Necessary

A Strategic Goal of the NIOSH Musculoskeletal Disorders (MSD) Cross Sector Program is to reduce the incidence of work-related MSDs by reducing exposure to MSD risk factors. This project addresses the prevalence of use of ergonomics and MSD risk factor assessment methods by practitioners within the discipline. This study will have implications for dissemination efforts related to musculoskeletal disorder risk assessment tools and methods since the results will provide insight into the current practices of ergonomics professionals. It is ineffective to continue dissemination efforts for tools and methods that practitioners do not have a need for or do not find useful.

This Information Collection Request (ICR) is a NEW request to administer a survey to a specific targeted population of professionals in the Ergonomics discipline. The request is for a 12 month period. NIOSH will administer this survey of ergonomics professionals as a 10-year follow-up to a survey conducted of U.S. Certified Professional Ergonomists (CPEs) by Dempsey et al and published in 2005 (A survey of tools and methods used by certified professional ergonomists. *Applied Ergonomics*, 36, 489-503). The motivation for the original 2005 survey was to better understand the types of tools and methods practitioners use, their opinions of these tools, and to potentially gain an understanding of

the constraints or preferences that influence this selection. The planned questionnaire was modified from that originally published in 2005 by Dempsey et al. (Attachment D).

At the time of the 2005 survey there were many tools reported in the literature, but little information on the extent to which these different tools were used by practitioners. Similarly, there was little published information on users' experiences with these different tools. There has been considerable interest in the findings and the Dempsey et al (2005) publication has been widely cited. It is anticipated that this follow-up effort will result in even greater interest as changes in the practice of ergonomics and prevention of soft tissue MSDs can be inferred from comparisons between the two surveys time points.

A2. Purpose and Use of Information Collection

The purpose of this survey will be to gather information on the types of basic tools, direct and observational measurement techniques, and software used in the field of Ergonomics by practitioners to assess workplace risk factors for work related musculoskeletal disorders (WMSDs) and to evaluate workplace interventions. The project is innovative in that we are not aware of any international formalized survey of tools and methods used by ergonomics practitioners in the assessment of workplace risk factors having ever been conducted. The study by Dempsey et al. (2005) is the most comprehensive data we are aware of on the degree of use of various tools and techniques for MSD risk factor assessment. With time, the development and acceptance of newer technologies, and new emerging issues of relevance to the scope of ergonomics practice, the 2005 study becomes increasingly dated.

Two specific aims are (1) Extend the original ergonomist survey population to include the international community of practicing ergonomists. This will serve to better characterize the current scope of practices of the international community of specialists working in the field of MSD prevention and to formally determine international use of various tools and techniques. (2) Through modification to the original survey, determine the use of contemporary technologies that in the 2005 survey were not yet available, or used by only the earliest adopters. One specific example is the use of touch screen smartphone or pad/tablet devices with photo and video capture capabilities, and associated use of mobile applications ("apps"). A second example includes the class of physical activity monitoring technologies based on popular consumer-grade smartphone/smartwatch/app activity monitoring systems.

Since publication of the initial survey findings there has been a proliferation of smart phone/smart device-embedded gyroscopic and linear acceleration sensors and related "apps" for human motion and activity logging. Further, the capture of digital still photos and video is now trivial with small touchscreen mobile pads, tablet and smartphones. In the 2005 survey summary digital and video cameras were used by 87% and 96%, respectively, of the respondents. Little is known about the extent to which ergonomics

practitioners are using newer technologies towards assessing workplace physical activity (and now, workplace inactivity and “sedentarism”) and other job demands. Thus, the survey will provide a contemporary perspective on the scope of use of assessment tools and methods by these professionals.

A3. Use of Improved Information Technology and Burden Reduction

This data collection will be conducted (100%) through an on-line web survey service (SurveyMonkey). Electronic data collection procedures are being used to eliminate paper questionnaire mailing costs and to eliminate the handling of paper surveys. Questionnaire responses submitted through the web will not contain any IIF.

A4. Efforts to Identify Duplication and Use of Similar Information

NIOSH has searched the scientific literature, contacted colleagues throughout the occupational safety and health community, and contacted professional organizations. The original collection of this information was done approximately 12 years ago and that information is outdated.

A5. Impact on Small Businesses or Other Small Entities

This data collection will not involve small businesses.

A6. Consequences of Information Collected Less Frequently

Respondents will be asked to voluntarily respond to the data collection one time. There is no lesser frequency of information collection.

A7. Special Circumstances Relating to the Guidelines of 5 CFR 1320.5

This request fully complies with the regulation 5 CFR 1320.5.

A8. Comments in Response to the Federal Register Notice and Efforts to Consult Outside the Agency

A: A 60-day publication period in the *Federal Register* (published June 7, 2016; vol. 81, page 36547 (see Attachment B). No comments were received.

B: NIOSH has consulted with numerous individuals outside the agency regarding the availability and usefulness of the proposed data collection. The following chronology documents these contacts:

- Peer review of a study protocol conducted by NIOSH in November, 2015. This external peer review was part of the NIOSH project funding process with expert and stakeholder comments incorporated in the funded project plan.
- Ad hoc discussions with a group of eight professional ergonomists at the *Applied Ergonomics Conference* in March, 2016.

A9. Explanation of Any Payment or Gift to Respondents

No direct remuneration or gifts will be provided for respondents. Past experience (Dempsey et al, 2005) indicates that a significant percentage of eligible participants will contribute this time out of professional interest and good will.

A10. Protection of the Privacy and Confidentiality of Information Provided by Respondents

The NIOSH's Information Systems Security Officer reviewed this submission and determined that the Privacy Act does not apply. The survey instrument (Attachment D) does not involve the collection of individually identifiable information. Survey response data will initially contain a linkage to identities of individual respondents through the e-mail address used to invite them to participate in the web survey. Identities of respondents will be known insofar as the Investigator will send e-mail invitations to individuals eligible to participate in the survey. Eligibility is based on the respondent holding a specific professional certification related to the practice of Ergonomics in the eligible English-speaking Ergonomics certification countries. The Investigator currently has access to a list of eligible individuals and e-mail addresses.

Participants' responses submitted through the web-based survey instrument will not contain Information in Identifiable Form (IIF), but the investigators will have a linkage between respondent's personal identity (name, e-mail address, country) and the unique URL entry to the survey for each respondent. Only the Investigator and two members of the research team will have access to this linkage and the linkage will be destroyed within ten (10) business days of the completion of the survey administration period. The sole use of this linkage will be to calculate response rates in each of the countries from which the eligible respondents are invited. Response rate will be calculated as the number of submitted questionnaires from a country divided by the eligible respondents from that

country less e-mails that unsuccessfully transmitted. Importantly, no sensitive data whatsoever is being collected in this study.

Respondents will be required to acknowledge informed consent by checking a box to indicate this on an entry screen to the survey questionnaire. Respondents will be informed that their participation is voluntary, and that they may discontinue participation at any time. They will not be able to proceed to the survey until that consent box is checked.

Individual participant's personal information will not be published in any identifiable form and will be protected to the extent allowed by law (Freedom of Information Act and the Privacy Act). Information will be maintained until the conclusion of the study in 2018.

The confidentiality of all data collected will be protected to the extent legally possible, as covered by the Privacy Act of 1974, Title 5, United States Code, Section 522 (a). The method of handling the information complies with the Freedom of Information Act and the Privacy Act of 1974. Disclosure under the Privacy Act System is permitted: to private contractors assisting NIOSH; to collaborating researchers under certain limited circumstances to conduct further investigations; to the Department of Justice in the event of litigation; and to a congressional office assisting individuals in obtaining their records. Records management practices will adhere to all applicable federal, Health and Human Services (HHS), Centers for Disease Control (CDC), and NIOSH IT security policies and procedures [Security Requirements for Federal Information Technology Resources, January 2010; Health and Human Services Acquisition Regulation (HHSAR), Clause 352.239-72]. For example, data will be stored on encrypted CDs, flash drives, and/or ftp sites according to applicable Federal Information Processing Standards Publications (FIPS PUBS, see <http://www.itl.nist.gov/fipspubs>).

A11. Institutional Review Board (IRB) and Justification for Sensitive Questions

IRB Approval

The NIOSH IRB reviewed the request to exempt this data collection (protocol 16-DART-01XM), and found this research activity (administration of the survey) is exempt under 45 CFR 46.101(b)(2). That determination is valid for a period of three years through May 17, 2019. (IRB memo is contained in Attachment C.)

Sensitive Questions

The questionnaire instrument contains no questions of a sensitive nature, such as criminal behavior, sexual behavior and attitudes, alcohol or drug use, religious beliefs, and other

matters that are commonly considered private. The questions pertain only to the professional practice of Ergonomics.

A12. Estimates of Annualized Burden Hours and Costs

A. Annualized Burden to Respondents

The respondents eligible for this study will include only ergonomics professionals from five countries with specific certification credentials. From rosters of the professional organizations we have identified 1,172 eligible individuals who will be invited to participate. The number of respondents will be 938 in the estimation of annualized burden hours, which assumes an 80% response rate. It is estimated that it will take 30 minutes to complete the survey. No direct costs will accrue to respondents. All hour-burden estimates were derived based on actual statistics reported from the administration of an original similar survey in 2004.

The following table provides an estimate of the annualized burden hours.

Table A.12-1. Estimated Annualized Burden to Respondents

Respondents	Form Name	No. of Respondents	No. of Responses per Respondent	Average Burden per Response (in hours)	Total Burden (in hours)
Practicing Ergonomist	Survey of Tools and Methods	938	1	30/60	469
	Total				469

B. Annualized Cost to Respondents

There is no cost to respondents beyond voluntary time to participate in the research.

A13. Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers

There are no capital or maintenance costs to respondents.

A14. Annualized Cost to the Government

Total costs include work performed over the course of three years by CDC research personnel at partial levels of effort (1 research industrial engineer) and contracted administrative personnel, including tasks such as: (1) development of survey materials; (2) development of sampling frame and sample selection; (3) survey conduct; (4) sample tracking; (5) data receipt and processing; and (6) data entry and delivery. Estimated annualized costs to the Federal Government for the survey period are presented in Table A.14-1 below.

Table A.14-1. Estimated Annualized Cost to the Federal Government

Fiscal Year	FY2016	FY2017	FY2018	Total Project	Annualized
CDC Personnel Salaries and Benefits ^a	\$67,000	\$69,010	\$71,080	\$207,090	\$69,030
Travel	\$4,000	\$2,000	\$3,000	\$9,000	\$3,000
Equipment	\$2,000	\$2,000	\$2,000	\$6,000	\$2,000
Supplies	\$1,000	\$1,000	\$1,000	\$3,000	\$1,000
Contract(s)		\$20,000		\$20,000	\$6,667
Total for year	\$74,000	\$94,010	\$77,080	\$245,090	\$81,697
Total for all years				\$245,090	

^a Includes a 3% personnel cost of living salary increase per year

A15. Explanation for Program Changes or Adjustments

This is a new data/information collection.

A16. Plans for Tabulation and Publication and Project Time Schedule

Plans for Tabulation and Publication

Data collection is planned to be completed over a 5 month period, followed by statistical analysis and dissemination of data. A full description of the statistical protocol is provided in Part B1 and B2 of this ICR. Results of the study will be disseminated in the scientific literature by NIOSH. Publications would be prepared in FY18. We anticipate a publication in a peer reviewed journal (e.g. Applied Ergonomics) and a NIOSH published information product, in a format to be determined, that describes the state of the art in Ergonomics and MSD prevention.

The findings from this project will be transferred to stakeholders and OSH practitioners in the private sector using several channels:

Professional trade organizations (website, publications, etc.)

- A report targeted towards professional society dissemination will be prepared in a format to be determined.

Peer reviewed journals

- At least one manuscript is planned for publication in the peer reviewed literature. Main audiences for these types of journals are fellow researchers, but also OSH practitioners, and stakeholders.

We will explore other modes of dissemination of the findings through the certification organizations from which we recruit participants. Results of this study will be critical to understanding the prevalence of use of tools and methods by practitioners within the discipline. Findings will have implications for dissemination efforts related to musculoskeletal disorder risk assessment tools and methods since they will provide insight into the current practices of ergonomics professionals. It is ineffective to continue dissemination efforts for tools and methods that practitioners do not have a need for or do not find useful.

Project Time Schedule

Table A.16-1. Project Time Schedule

Activity	Time Schedule (Months After OMB Approval)
E-mail invitations sent; survey period opens	0
Follow-up e-mail to non-respondents	1-2
Third and final e-mail to non-respondents	3
Close data collection period	5
Data analysis, preparation of reports, publication	12

A17. Reason(s) Display of OMB Expiration Date is Inappropriate

The display of the OMB expiration date is not inappropriate.

A18. Exceptions to Certification for Paperwork Reduction Act Submissions

There are no exceptions to the certification statement.