

AN ERGONOMICS TRAINING INTERVENTION WITH CONSTRUCTION WORKERS: EFFECTS ON BEHAVIOR AND PERCEPTIONS

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ABSTRACT:

A two-hour ergonomics and body conditioning training module was presented to construction workers on a large building site as part of a program to prevent musculoskeletal disorders. Half the training time was devoted to spine physiology, common work-related musculoskeletal injuries, potential benefits of prework stretching and body conditioning, and instruction in performing a set of prework stretches. The second half covered specific ergonomic risk factors in construction, links between specific construction tasks and injuries to particular body regions, modifications that could reduce ergonomic risk factors, and overcoming obstacles to implementing such changes. Videotape of tasks done on the site was used in the training. Body-mapping techniques allowed workers to link their own experience of musculoskeletal pain and discomfort with tasks of their craft. Training was tied to a process in which an ergonomist worked with foremen on the site to identify specific ergonomic risks and develop control measures.

The training was attended by 583 people. Questionnaires assessing demographic information, musculoskeletal symptoms, and perception of the training and of ergonomic risks were collected from 479 attendees (82%) immediately after the training, of whom 370 were craft workers or foremen. More than 60 percent found the information in the training mostly or all new. Over 84% thought ergonomic risk factors were present all or most of the time in their work, with awkward postures and working overhead cited as posing the highest risk. Seventy-two percent reported musculoskeletal pain or discomfort in the past 12 months related to their work, while 18% had missed work and 24% had seen a physician for such pain. A follow-up questionnaire was administered during the sixth month of the project to determine behavior and perception change and to assess actual ergonomic activity on the part of workers, foremen, and contractors. Of 202 respondents 129 had attended the ergonomics training. The information most applied from the training was regarding stretching and lifting techniques (88-90%), although 66% said the training caused them to make some tool, equipment, or work practice changes to reduce ergonomic risk factors, compared to 80% who predicted they would in the initial survey. Sixty-nine percent said that ergonomic risk factors were present most or all of the time in their work. Respondents felt they themselves should have most responsibility for reducing ergonomic risks. The impact of training every worker was seen in the increased frequency with which workers brought ergonomic problems to the attention of management and safety personnel compared to previous experience on the site.

The paper discusses several implications of the findings:

- Workers find it easier to make changes that are within their control (stretching behavior, lifting techniques) than those that require action by management and others (tools, equipment, design, etc.)
- Increasing construction worker awareness of ergonomic risks does seem to lead to improved hazard recognition
- Steps need to be taken to expand training opportunities in ergonomics in apprenticeship and journey-level programs as well as at building sites where training time is at a premium.