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Ergonomics in agriculture: Musculoskeletal complaints and risk factors among dairy farmers in Israel

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Agricultural workers face high exposure to risk factors for musculoskeletal disorders, including awkward or sustained postures, high forces, repetitive motion and whole-body vibration. These exposures are intensive, often incurred during long or unusual working hours, and throughout a range of ages. The IIOSH undertook a multidisciplinary project among dairy farmers throughout the country, in order to characterize the types and levels of exposures, to document a baseline health profile and to propose appropriate interventions. Alongside the ergonomic intervention, the project involved experts in occupational medicine, industrial hygiene and safety. The main findings and activities in the field of ergonomics are presented here. The project surveyed farmers from 50 dairy farms, obtaining background data on health status, musculoskeletal complaints and work history, as well as observational data on ergonomic risk factor exposure during daily farming tasks, such as milking, feeding and machinery operation. Data were obtained using survey tools developed by the Institute. Health surveys reveal a high level of complaints of back and neck pains, and a notable level of distal arm complaints. Observational analysis revealed high exposure to risk factors such as repetitive shoulder movement, sustained neck rotation and flexion and exposure to vibration. For example, during a single milking session, a worker may be required to extend his arm above shoulder height as much as 200 times each hour, for up to 6 hours a day.

The intervention phase of the project included individual meetings with farmers, instruction and recommendations for reduction of risk factors.

Biography

Joan S Geiger serves as Chief Ergonomics Advisor to the Israeli Institute for Occupational Safety and Hygiene, and is a member of the Managing Committee of the Israel Ergonomics Association. She has published in journals such as *Work* and *International JSPH* and regularly publishes ergonomics information for the general public in the Institute's publications. She has taught ergonomics at Ben Gurion University, Tel Aviv University, Zefat Academic College and other academic institutions. She holds a DPT from the University of Montana, and a Master of Occupational Health from Tel Aviv University.

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