

Tools for the Prevention of Cumulative Trauma Disorders in the Poultry Slaughterhouse Sector. Jean-Guy Richard / IRSST et al.

http://www.irsst.qc.ca/en/projet_2228.html#haut

Survey of Stunning and Handling in Federally Inspected Beef, Veal, Pork, and Sheep Slaughter Plants. Agricultural Research Service/United States Department of Agriculture - 3602-20-00. Project Number -3602-32000-002-08G. Temple Grandin, Ph.D. <http://www.grandin.com/survey/usdarpt.html>

Success with Ergonomics. State: Missouri. Company: Tyson Foods of Monett, Monett, MO. Industry: Poultry slaughterhouse - SIC Code:2015.

<http://www.osha.gov/SLTC/ergonomics/tyson.html>

Esta es una empresa proveedora, comercial, que tiene ejemplos de diseños.

<http://www.stork-mps.com/MPS-EN/projects/grieder.html>

American Journal of Industrial Medicine. Volume 29, Issue 4 , Pages 402 - 408. Published Online: 6 Dec 1998. Copyright © 1996 Wiley-Liss, Inc. Use of participatory ergonomics teams to address musculoskeletal hazards in the red meat packing industry.

J. Steven Moore, MD, MPH 1 *, Arun Garg, PhD 2.

1Department of Occupational Health Sciences, University of Texas Health Center at Tyler, Tyler, Texas

2Department of Industrial and Systems Engineering, University of Wisconsin - Milwaukee

Keywords: participatory ergonomics; ergonomics teams; red meat packing industry; participatory action research; intervention; research; disease prevention

Abstract: Participatory ergonomics teams from two departments of a pork slaughtering plant analyzed musculoskeletal hazards and proposed ergonomics solutions for several jobs in the plant. The jobs were targeted based on association with a large number of injuries, one or more particularly severe injuries, high workers' compensation expenses, and/or high turnover plus absence of obvious solutions to abate the hazards. The teams used a structured problem-solving method that was generally derived from principles associated with quality improvement processes. Workers performing the targeted jobs were involved in the problem-solving process, even if they were not members of the team. The effectiveness of each team was assessed and compared in terms of the numbers of problem jobs addressed and feedback from team members. One team addressed all nine of its targeted jobs; the other team addressed eight of 12 targeted jobs. Feedback from team members regarding their teams' methods and performance was generally favorable. The major obstacle to effective team functioning in this project was the scheduling of meetings. There were also some obstacles related to team leadership. Overall, this project demonstrated that the use of participatory ergonomics teams that rely on structured problem-solving methods are able to work effectively to address musculoskeletal hazards, especially related to the upper extremities, in the red meat packing industry. © 1996 Wiley-Liss, Inc.

*Correspondence to J. Steven Moore, Department of Occupational Health Sciences, University of Texas Health Center at Tyler, Tyler, TX

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Design of functional work clothing for meat-cutters

R. Ilmarinen, E. Tammela and E. Korhonen

a Department of Physiology, Institute of Occupational Health, Topeliuksenkatu 41 a A, SF-00250, Helsinki, Finland

b Department of Occupational Safety, Institute of Occupational Health, Laajaniityntie 1, SF-00620, Vantaa, Finland

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Abstract: The aim of this study was to design new functional work clothing for meat-cutters, paying particular attention to the metabolic requirements of the work and the thermal and general working conditions in slaughterhouses. On the basis of the results of the pilot study (review of the literature, questionnaires and interviews, work analysis, physiological measurements) different types of work clothing were designed for prolonged use during normal work in meat cutting. Physical material tests and measurements of thermal insulation values (Icl), and the follow-up of clothing maintenance were carried out. Further modifications and evaluations of work clothing were based on the opinions of meat-cutters and on the physiological trials in slaughterhouses.

The final assembly of work clothing consists of three pieces (cotton/polyester): an apron, trousers with extra insulation in the lower back, and a work coat with extra insulation in the neck and shoulders, and at the wrists. The sleeves are protected against moisture by special textile material. The thermal insulation of this new set of work clothing together with long sleeved and legged underwear is 1.3 clo and it proved to be sufficient for thermal comfort in moderate work in an air temperature of 10°C.

Author Keywords: Protective clothing; thermal comfort; meat cutting; cold environment; physiological effects

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A technique for field measurement of knife sharpness.

Raymond W. McGorrya, , Peter C. Dowdb and Patrick G. Dempsey

aLiberty Mutual Research Institute for Safety, 71 Frankland Road, Hopkinton, MA 01748, USA

bAnago Ltd., Hamilton, New Zealand

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Abstract: Knife sharpness can affect the productivity of meatpacking operations as well as the forces to which meat cutters are exposed. This report describes the development and evaluation of a “sharpness tester” designed to meet the criteria that the system be portable for field use at meatpacking plants, requires no special skills to operate, provides a non-destructive test of the entire blade edge, and incorporates a test motion that is representative of meat cutting. The system was bench tested for sensitivity to incremental changes in blade sharpness; suitability of the test material as a surrogate for red meat; and ability to detect variations in sharpness along the length of the blade. A graphical presentation showed that changes in cutting forces measured with the system correspond to changes in blade sharpness. Measurements made with both the test material and with red meat showed good correlation ($r=0.89$). The system demonstrated the capacity to detect differences in sharpness in regions of a knife edge as well as providing visual evidence of defects along the edge of a knife blade.

Keywords: Meatpacking; Sharpness; Knife

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Cutting moments and grip forces in meat cutting operations and the effect of knife sharpness

Raymond W. McGorry, , a, Peter C. Dowdb and Patrick G. Dempsey
a Liberty Mutual Research Center for Safety and Health, 71 Frankland Road,
Hopkinton, MA 01748, USA

b AgResearch Ltd., Hamilton, New Zealand

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Abstract: The force exposure associated with meat cutting operations and the effect of knife sharpness on performance and productivity have not been well documented. Specialized hardware was used to measure grip force and reactive moments with 15 professional meat cutters performing lamb shoulder boning, beef rib trimming and beef loin trim operations in a field study conducted in two meat packing plants. A system for measuring relative blade sharpness was developed for this study. Mean and peak cutting moments observed for the meat cutting operations, averaged across subjects were 4.7 and 17.2 N m for the shoulder boning, 3.5 and 12.9 N m for the rib trim, and 2.3 and 10.6 N m for the loin trim, respectively. Expressed as percent of MVC, mean grip forces of 28.3% and peak grip forces of 72.6% were observed overall. Blade sharpness was found to effect grip forces, cutting moments and cutting time, with sharper blades requiring statistically significantly lower peak and mean cutting moments, and grip forces than dull knives. Efforts aimed at providing and maintaining sharp blades could have a significant impact on force exposure.

Author Keywords: Meat packing; Cutting moment; Force; Torque; Sharpness; Grip force

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