

Musculoskeletal Disorders in the Seafood Processing Industry: Summary of results from stage 1

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Introduction

- Musculoskeletal Disorders (MSD) are the most common type of non-fatal occupational injury and lost-time in New Zealand workplaces (ACC) and have been identified as having high incidence in seafood processing.
- There is little research about MSD in seafood processing, but ACC figures show that MSD compensation claims for seafood processing cost over \$1.3m in each of the last two years.
- The main aim of this study* is to reduce MSD in the seafood and meat processing industries.
- As part of this study, COHFE researchers collected data about injuries in the seafood industry in New Zealand to help them understand the extent of the problem as well as what tasks place workers most at risk of MSD.
- The results of this first stage help inform the next stage of work, and specifically aimed to:
 - i. Determine the extent of the MSD problem in the seafood processing industry
 - ii. Identify high MSD-risk tasks and processes in the seafood processing industry
 - iii. Find out what is being done currently to prevent MSD.
- National data was collected from ACC and two types of information were also collected through collaboration with seafood processing plants: records from accident registers and questionnaire data from health and safety personnel.
- The purpose of this report is to provide you with a summary of results from the study so far. As the study progresses there will be further summaries where we will also request your feedback on developing effective interventions to address MSD. We hope that this will be a straightforward and simple way for you to have input into the study.

*This research is funded by the Health Research Council of New Zealand, Accident Compensation Corporation and the Department of Labour. It is a collaborative study between COHFE and Massey University.

ACC injury data

This is the only data source that covers the entire industry.

All relevant MSD injury claims in the seafood processing industry accepted by ACC between July 2002-June 2004 were analysed.

Both treatment claims (visit to Doctor) and compensation claims (usually lost earnings) were included in the data.

The claimants' identities were unknown to researchers for ethical reasons.

A selection of variables were analysed (e.g. year, month, age, gender). Also, where a narrative description of the injury was provided (in around 62% of claims), this was analysed by categorising the content into new variables such as: 'activity at time of MSD injury'; 'injury agency'; and 'MSD initiating event'.

- Over thirteen hundred records were analysed
- 20% were compensation claims
- Nearly forty percent of claims were from ACC-accredited companies
- Over 60% of claimants were males
- The body areas most commonly involved were:
 - back/spine (36%)
 - wrist/hand (17%)
 - shoulder (14%)
- The cost of MSD compensation claims for the two years data was slightly over \$2.4 million (around 45% of total cost of all injuries in seafood processing in that time)
- MSD compensation claims costs are rising as a percentage of the total ACC injury costs for seafood processing (from 38% in 2001/02 to 57% in 2004/05).

Activity at time of MSD	% of reports
Lifting	38
Walking	9
Pushing/pulling	6
Knifework	5
Shucking	4
Loading/unloading	4
Packing	3

- Boxes (29%) and bins (26%) were the most common items lifted
- Tasks with highest percentage of compensation claims were:
 - stacking/loading activities (40%)
 - knifework (34%)
 - shucking (30%)
 - lifting (25%)

Accident Register Data Analysis

Researchers developed and piloted a form to gather injury data directly from processing plants.

From the information sent to us, we identified tasks / events where MSD injuries were most common. Information provided included: department, job title, task, species, body part involved, severity, and incident date.

- Thirteen plants provided their 2004 data. This is only an 18% response rate, covering approximately 30% of the industry workforce
- The species involved included mussels 58%, salmon (17%) and fish (16%)
- The most common body areas involved
 - wrist/hand (26%)
 - back/spine (26%)
 - shoulder (11%)
- The reported injuries were classified as 58% minor, 7% alternative duties, 20% lost time, 15% unspecified
- The tasks most involved in lost time injuries were: shucking, grading, packing, cleaning (all from shellfish)
- Main tasks specified in shellfish:
 - grading – mussels (28%)
 - shucking (19%)
 - lifting bags/bins (8%)
- Main tasks specified in fin fish:
 - lifting bins/cartons (13%)
 - packing (12%)
 - gutting – salmon (12%).

Health and Safety Staff Questionnaire

A questionnaire was sent out to the health and safety staff at the same time as the accident register activity was being conducted. The questionnaire covered: processing plant details, respondent details, MSD management practices, and opinions about the tasks most likely to lead to MSD and reasons why.

- 16 plants responded (22% response rate representing approximately 41% of the industry workforce).

Fin Fish Tasks	Rating	Shellfish Tasks	Rating
Loading / unloading	20	Shucking (& opening)	29
Trimming	16	Grading	17
Filleting	14	Packing	8
Gutting – Salmon	10		
Packing	9		
Lifting bins	7		

- The tasks identified were consistent with the injury data apart from knife-related tasks, which were perceived as being a higher risk than indicated in the ACC and Accident Register data.

Summary

The use of these sources of information has provided researchers with a more objective view of MSD in the industry than has previously been available. Despite the relatively low response rates for accident register data and the questionnaire, the combination of this data along with the ACC data (which covers the whole industry) as well as feedback from members of the Seafood Processing Safer Industries Group has resulted in the following summary list of tasks being developed.

The combination of sources of information implied that the main tasks to consider are*:

Fin Fish Tasks	Priority (1= highest)	Shellfish Tasks	Priority (1= highest)
Lifting bins/cartons (processing & packing)	1	Shucking (& opening)	1
Trimming	2	Grading	2
Filleting	3	Lifting bins/bags	3
Loading/unloading	4	Packing	4

* Presentation and discussion of these findings with members of the Seafood Processing Safer Industries Group occurred in August/September.

The next stage of the study is underway and involves assessing these tasks at a sample of approximately 15 plants around the country. These site visits involve:

- Assessment of high-risk tasks on site, identifying key MSD risk factors.
- Assessment of organisational measures within the industry used to address MSD.

Findings from these assessments, including key risk factors and intervention ideas, will be presented back to industry in the next report for your feedback.

Relevant Publications

- Accident Compensation Corporation, 2004, ACC Injury Statistics 2004 (Third Edition), ACC Wellington, New Zealand.
- Buckle, P.W., Devereux, J.J., 2002, The nature of work-related neck and upper limb musculoskeletal disorders. Applied Ergonomics, 33, pp. 207-217.
- Kuorinka, I; Forcier, L., 1995, Work related musculoskeletal disorders (WMSDs): A reference book for prevention. (London: Taylor & Francis)
- National Research Council and Institute of Medicine, 2001, Musculoskeletal Disorders and the Workplace: Low Back and Upper Extremities. (Washington: National Academy Press).



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