

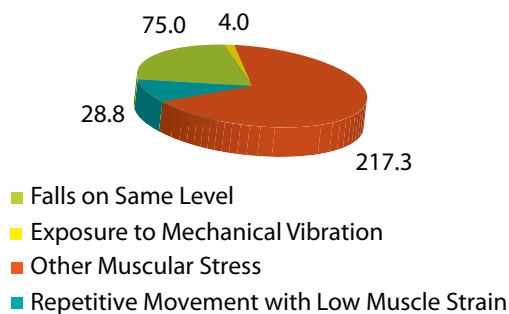
Musculoskeletal damage is a big issue for NSW metalliferous and extractives mining sectors

40% of claims are musculoskeletal claims

A musculoskeletal disorder is an injury or disease of the musculoskeletal system that arises in whole or in part from undertaking manual tasks in the workplace, whether occurring suddenly or over a prolonged period of time.

There are on average 325 new musculoskeletal injuries each year, representing nearly 40% of the total workers compensation claims made by the NSW mining industry. The proportion of musculoskeletal claims for the metalliferous and extractives sector is less than national all-industry trends where musculoskeletal disorders account for an average of 56% of claims.

Average Number of Musculoskeletal Claims per Year (2002/3 - 2005/6)



83 person years lost to the industry in 4 years

Some 83 person years were lost to the NSW metalliferous/extractives industry because of musculoskeletal injuries in the period 2002/3 - 2005/6. The average time lost per claim was 3.5 weeks and 15% of claims resulted in lost time of more than 4 weeks.



NSW DEPARTMENT OF
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Almost 1000 person weeks were lost to musculoskeletal injuries in 2005/6.

Over 200 permanent disabling cases in 4 years

There were 208 cases of permanent disablement and 36 cases of temporary disability of 6 months and over arising from musculoskeletal injury in the period 2002/3 - 2005/6.

In 2005/6 there were 32 cases of permanent disablement, a reduction of almost 50% on the average of previous years. However, there is an upwards trend in permanent disablement claims over this period for Falls (from 9% to 15%) compared with a downwards trend (17.5% to 9%) for Other Muscular Stress. Fourteen serious bodily injuries classified as musculoskeletal were notified in the period 2002/3 - 2005/6, an average of 3.5 each year. Most involved Falls on the Same Level.

\$26 million in claims over 4 years

The total cost of new musculoskeletal claims in the four-year period 2002/3 - 2005/6 was \$26 million. These costs do not include additional direct and indirect costs to companies of lost production and productivity or the personal costs of pain and suffering and family impact. In 2005/6 the total cost of new musculoskeletal claims was \$2.5 million, at an average cost of \$8000 per claim.

Costs have declined sharply since 2002/3, particularly through reduced numbers of high-cost Repetitive Movement claims and Other Muscular Stress claims over \$20,000.

Musculoskeletal blackspots

The most common agencies of injury are:

- Environmental factors for Falls on the Same Level
- Non-powered Handtools, Appliances and Equipment for Other Muscular Stress

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What is the purpose of this profile?

The purpose of this profile is to bring to the attention of the NSW mining industry the endemic nature of musculoskeletal damage and the extreme high cost associated with it. While representing approximately half of the claims in the NSW mining industry, musculoskeletal damage is still not an issue readily targeted by employers. If musculoskeletal damage was targeted and programs put into place to reduce incidents, the result would be large health improvements for employees and large cost savings for employers.

In what circumstances are the injuries occurring?

Main categories

There are four main categories of musculoskeletal claims (see graph 1 on page 1):

- More than half (66%) are Other Muscular Stress, that is strains related to the manual handling of objects or strains that occur when no objects are being handled
- Almost 25% of claims are Falls on the Same Level
- 9% are Repetitive Movement with Low Muscle Strain
- 1% are Vibration related.

The number of claims for each type of musculoskeletal injury has remained steady for all categories except Repetitive Movement with Low Muscle Strain, which has decreased from a high of 74 claims in 2002/3 to a low of 6 claims in 2005/6. In fact, more than half of the total claims for Repetitive Movement in the period 2002/3 - 2005/6 (64%) occurred in the first year of the period (2002/3).

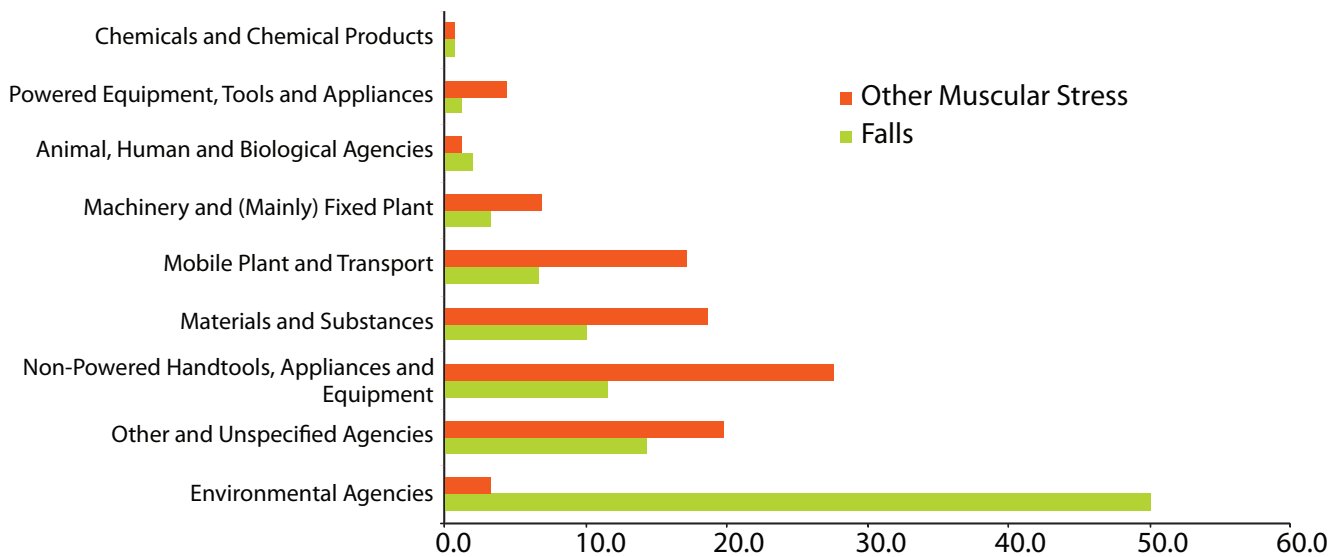
Context

Graph 2 shows that:

- Environmental Agencies are associated with 50% of Falls claims
- Non-powered Handtools, Appliances and Equipment are associated with almost 30% of Other Muscular Stress claims.

Many Repetitive Movement claims (46%) have been attributed to Other and Unspecified Agencies and since few Repetitive Movement claims have been made since 2002/3, little can be characterised about the context in which Repetitive Movement claims occur.

Graph 2: % Claims for Falls and Other Muscular Stress by Agency
Average 2002/3 - 2005/6



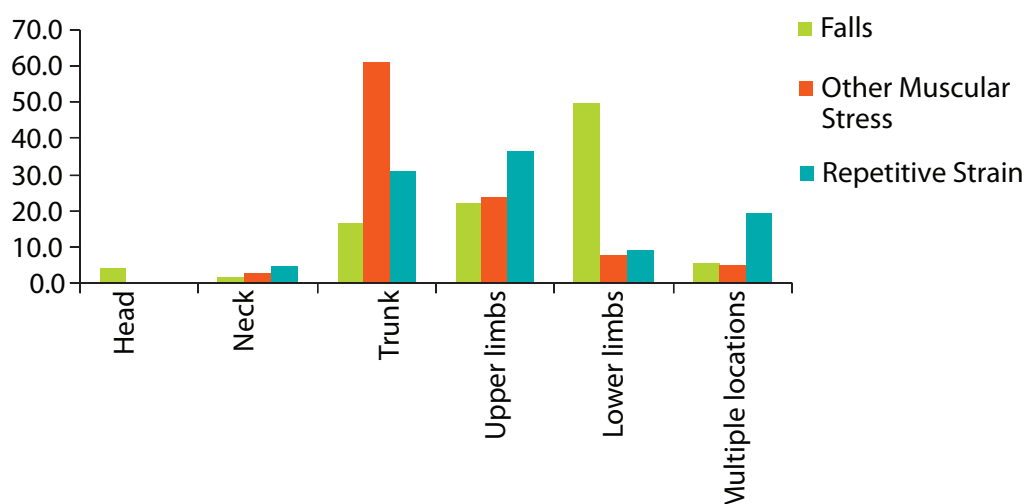
What is the nature of the injuries being experienced?

Body location

The body location of damage is quite different for the three types of musculoskeletal injury (see graph 3):

- Falls on the Same Level are more often associated with a lower limb injury
- Other Muscular Stress is associated with trunk and upper limb locations
- Repetitive Strain is associated with upper limbs, trunk and multiple locations.

Graph 3: % Musculoskeletal Claims by Body Location
Average 2002/3 - 2005/6



Level of disability

Musculoskeletal injuries can cause permanent or long-term damage.

On average, 16% of musculoskeletal claims (in the period 2002/3 - 2005/6) resulted in permanent disablement. Over the period, 11.9% (139) of Other Muscular Stress and Falls on the Same Level claims resulted in permanent disability and 2.7% (31) temporary disablement of 6 months and over. While 60% of Repetitive Movement claims (69 cases) resulted in permanent disablement, most of these (58 cases) occurred in 2002/3.

The proportion of claims for Falls on the Same Level resulting in permanent disablement increased (from 9% to 15%) over the 2002/3 - 2005/6 period, while claims for Other Muscular Stress decreased (from 17.5% to 9%) over the same period.

Time lost

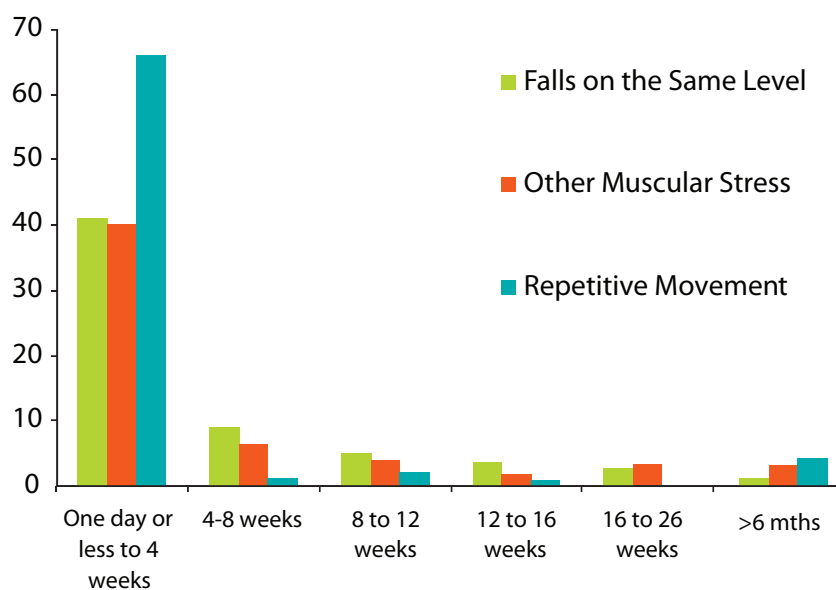
Between 2002/3 - 2005/6, 750 or 58% of claims resulted in lost time. These are made up of:

- 184 Falls on the Same Level claims
- 481 Other Muscular Stress claims
- 85 Repetitive Movement claims.

The distribution of time lost for Falls and Other Muscular Stress is similar while Repetitive Movement claims follow a different pattern (see graph 4):

- Average time lost over the 2002/3 - 2005/6 year period was 3 weeks for Falls claims and 3.5 weeks for Other Muscular Stress claims
- Repetitive Movement claims had a high average of 6 weeks lost per claim over this period, however this average had decreased to 0.5 weeks in the 2005/6 year.

Graph 4: % Musculoskeletal claims by Time Lost 2002/3 to 2005/6



Who is being injured?

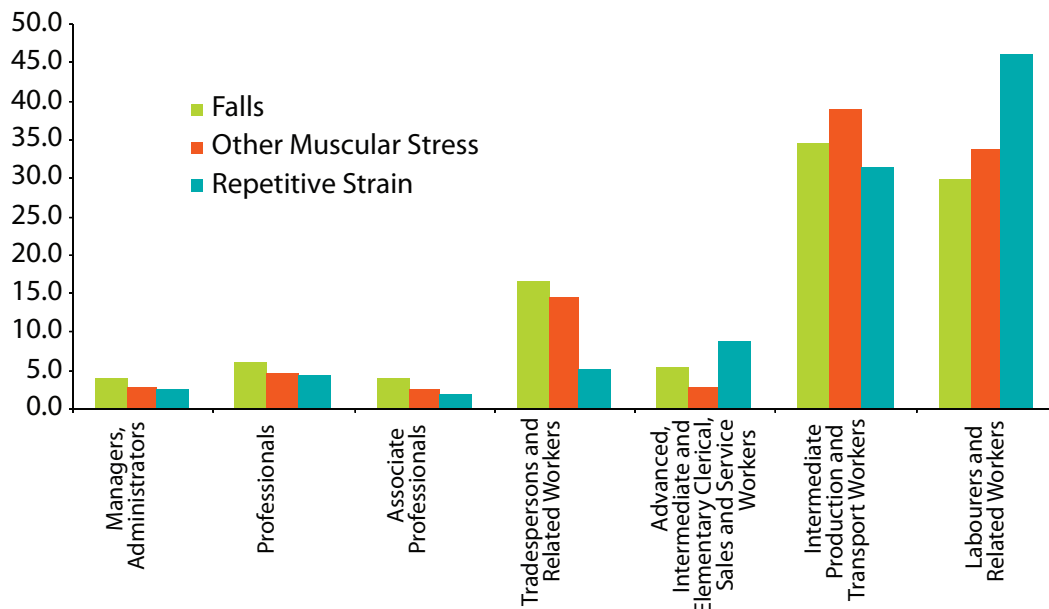
Occupation

In the NSW metalliferous and extractives sectors the following occupational groupings experience musculoskeletal claims (see graph 5).

The highest proportion of musculoskeletal claims in the industry are:

- Intermediate Production and Transport Workers and Labourers and Related Workers
- Tradespersons and Related Workers.

Graph 5: % Musculoskeletal Claims by Occupation
Average 2002/3 - 2005/6



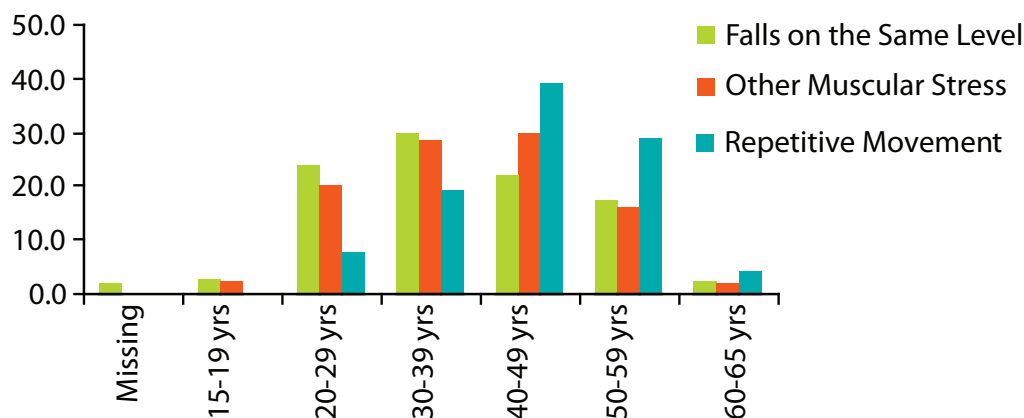
Age

Graph 6 shows similar patterns for musculoskeletal claims related to Falls on the Same Level and Other Muscular Stress across the age groups, with those in the band 20-49 experiencing the most claims. There are trends towards:

- A higher proportion of Falls on the Same Level claims occurring in the younger end of this age band, with Other Muscular Stress claims occurring in the older end of the age band
- Repetitive Movement claims being more common in the older 30-59 age group.

Note that age-related trends may simply reflect the age distribution of the metalliferous and extractive industry employees rather than increased risk.

Graph 6: % Musculoskeletal Claims by Age (years)
Average 2002/3 - 2005/6



Musculoskeletal impairments are among the most prevalent and symptomatic health problems of middle and old age. Nonetheless, age groups with the highest rates of compensable back pain and strains are the 20–24 age group for men and 30–34 age group for women. In addition to decreases in musculoskeletal function due to the development of age-related degenerative disorders, loss of tissue strength with age may increase the probability or severity of soft-tissue damage from a given incident.

How much is this costing?

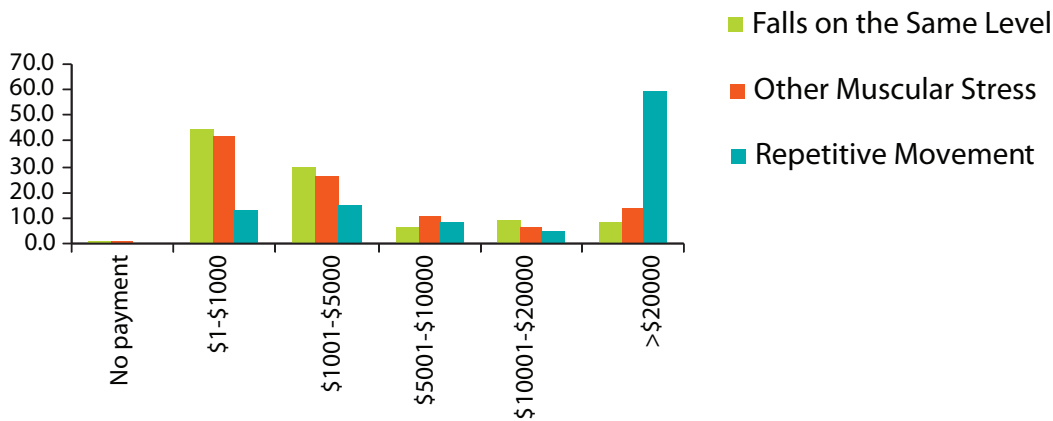
Claim costs are significant

The total cost of new musculoskeletal claims in the four-year period 2002/3 - 2005/6 was \$26 million. Over the period 2002/3 - 2005/6 Repetitive Movement claims have the highest average cost at almost \$85,000, followed by Other Muscular Stress at \$16,600 and Falls on the Same Level at \$6600. However, there have been significant changes in the cost of claims over the period.

In 2005/6:

- The total cost of new musculoskeletal claims was \$2.5 million at an average cost of \$8000 per claim
- Other Muscular Stress still had the highest average claim cost but at a significantly lower average of \$8296 (compared to \$31,000 in 2002/3)
- Claims for Falls on the Same Level had the second highest average claim cost at \$7525
- Repetitive Movement claim costs have reduced significantly to an average of \$2936 (compared to \$118,000 in 2002/3). As noted earlier there has also been a major reduction in the number of Repetitive Movement claims during the period.

Graph 7: %Musculoskeletal Claims by Cost Average 2002/3-2005/6



What is the issue?

About musculoskeletal injuries

Musculoskeletal injuries are associated with a range of work and non-work risk factors and, particularly, exposure to multiple risk factors.

Task risk factors

- Heavy work – lifting, handling and forceful exertions
- Work requiring awkward postures
- Prolonged sedentary work
- Psychological stress

Environmental risk factors

- Unclear pathway
- Unsuitable walking surfaces
- Vibration
- Noise
- Lighting
- Humidity

Personal risk factors

- Age
- Previous history of lower back pain
- Low overall fitness
- Smoking

What can be done about it?

Industry resources

Sites can start to manage their musculoskeletal disorders risks. People can access the following publications for guidance and practical tools:

- The National Code of Practice for the Prevention of Musculoskeletal Disorders from Performing Manual Tasks at Work, Australian Safety and Compensation Council (2007)
- Reducing Injury Risks Associated with Underground Coal Mining Equipment. Burgess-Limerick, R, (2007) ACARP Project C14016
- Practical Ergonomics, Barbara McPhee, Coal Services Health and Safety Trust (2005)
- Manual Handling Risk Guide, WorkCover (2007).

What are we doing about it?

NSW DPI resources

The NSW Department of Primary Industries is developing guidance material to give advice and assistance to help sites manage their musculoskeletal disorders and is looking to develop an education and assistance program on musculoskeletal disorders.

For further information go to www.dpi.nsw.gov.au/minesafety or email mine.safety@dpi.nsw.gov.au

Coal – Metalliferous and extractives comparison

- Metalliferous and extractives sectors have a smaller percentage of musculoskeletal claims than coal mining (40% compared with 52%).
- There is a much higher proportion of Vibration-related musculoskeletal claims in coal mining while the metalliferous/extractives sector has a much higher proportion of Repetitive Movement-related claims.
- The four-year claim costs for the metalliferous/extractives sectors are much higher than for coal (\$26 million compared with \$17 million), however:
 - Metalliferous/extractives claim costs have reduced while coal costs have increased (\$2.5 million for metalliferous/extractives compared with \$10 million in coal in 2005/6).
 - The average cost of claims is much lower in the metalliferous/extractives sectors (\$8000 per claim compared with \$13,000 per claim in coal).
- Coal has a lower average time lost per claim (2.3 weeks versus 3.5 weeks) but a higher proportion of claims extending beyond 4 weeks (18% compared with 15% in the non-coal sector).
- Metalliferous/extractives sectors have a higher rate of claims that result in permanent disablement, for example:
 - 10% of Falls on the Same Level claims are permanent disablement claims compared with 1.7% in coal.
 - 12.5% of Other Muscular Stress claims are permanent disablement claims compared with 1.8% in coal.

The NSW Mine Safety Advisory Council

The NSW Mine Safety Advisory Council, a tripartite forum made up of representatives of employers, unions, government and independent experts, provides support for the NSW Mining Industry Health and Safety Action Plan to 2008.

Unless otherwise stated all data in this report is drawn from data provided by NSW Workcover and Coal Services Pty Ltd.



NSW DEPARTMENT OF PRIMARY INDUSTRIES

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The information contained in this publication is based on knowledge and understanding at the time of writing July 2008. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Department of Primary Industries or the user's independent adviser.