



Safe Work Australia – Insights report

Insights from the Beta Occupational Hazards Dataset

November 2023 | Our Data. Your Stories.



safe work australia

Disclaimer

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Limitations of this analysis

When interpreting results in this report, it is important to consider the following things:

- O*NET data can show the *frequency* of exposure to a hazard, or *time spent* in a particular body position, but it does not indicate the likelihood of injury or illness if exposed, or the intensity of exposure.
- There is no data for some ANZSCO occupations, because around 10% have no sufficiently matching O*NET occupation. The excluded occupations are listed in the 'Exclusions' tab of the Beta Occupational Hazards Dataset file which accompanies this report. Please consider these exclusions when interpreting data in this report.
- Even for ANZSCO occupations that have an O*NET match, the match is not always perfect (54% of occupations only have an 'acceptable' match', while 35% have a 'good match').
- Some O*NET data are several years old (some occupations were assessed as part of the rolling survey program as far back as 2006).
- The analysis doesn't account for how well persons conducting a business or undertaking (PCBUs) and workers in different occupations manage or protect against exposure to hazards. This analysis also does not consider how factors from different workforces may increase their propensity for injury (e.g. age).
- Safe Work Australia has not attempted to validate or transform the O*NET information for the Australian context. Feedback on approaches that could be explored to facilitate this are welcomed.
- This report uses workers' compensation claims data to look at the association between exposure to hazards and injuries and illnesses.
 - Compensation claims do not capture all work-related injuries and illnesses. The latest ABS Work-related injuries publication (2021-22) shows that around one third of people (31%) who had a work-related injury or illness received workers' compensation.
 - Compensation claims data are coded to the most significant aspect of the injury only.

Part 1: Purpose and background

This report presents key insights from the prototype Beta Occupational Hazards Dataset (BOHD).

The BOHD contains information on the ‘work context’ of occupations. Part of this includes information on how often occupations are exposed to, or involve doing, things which may result in injury or illness. Safe Work Australia constructed this dataset by mapping selected fields from the United States’ O*NET database onto the Australian occupational classification (ANZSCO) and combining this contextual information about the nature of work that occurs in different occupations with Safe Work Australia’s workers’ compensation claims data, alongside ABS employment levels for each occupation to reflect the composition of the Australian labour market.

This data adds to the evidence base for work health and safety (WHS) policy in Australia because many of the work context variables can be considered hazards which may cause injury or illness. The BOHD shows to what extent each hazard is associated with each occupation, and which hazards are most closely associated with high rates of workers’ compensation claims.

As a summary of key insights from the BOHD, this report will seek to inform the following questions:

- What types of occupations are most exposed to different hazards?
- How does frequency of exposure to various hazards differ across occupations?
- How does the frequency of exposure compare with workers’ compensation claims data?

Safe Work Australia has undertaken this work to further develop the evidence base available for our national policy work improving WHS and workers’ compensation arrangements across Australia. The analysis in this report, and the dataset itself, are available to support the WHS community, persons conducting a business or undertaking, employees and researchers to more deeply explore and understand the drivers of work-related injuries and illnesses. Enriching our understanding of the context around how work is performed will enable us to work towards the vision of the *Australian Work Health and Safety Strategy 2023-2033* – safe and healthy work for all.

We welcome feedback and discussion to improve the Beta Occupational Hazards Dataset, including the translation of the O*NET information to Australian working environments and the contexts in which you are using the data. You can contact us at statsonline@swa.gov.au.

The O*NET program and database

The data on occupational hazards in the BOHD is sourced from the United States' Occupation Information Network (O*NET) database which is produced through the O*NET program.

The O*NET program is sponsored by the U.S. Department of Labor and involves collecting information on job characteristics through a rolling survey of employers, workers, and occupational analysts. Information is collected on both the nature of the occupation itself, and the people employed in that occupation. Data is collected across six major domains, with several topics sitting under each domain.

1. Worker Characteristics (abilities, interests, work values and work styles)
2. Worker Requirements (skills, knowledge, education)
3. Experience Requirements (experience and training, skill and license entry requirements)
4. Occupation Requirements (work activities, organisational context, work context)
5. Workforce Characteristics (economic conditions and labour force characteristics)
6. Occupation Specific Information (tasks, technology skills and tools).

The O*NET database is continually updated. The analysis in this report is based on version O*NET 27.2, which was released in February 2023.

How the O*NET database has been used previously in Australia

O*NET data has been used for a variety of purposes in Australia. Some key projects have included:

- The Australian Skills Classification, published by Jobs and Skills Australia, uses O*NET data and other inputs to derive a classification of skills according to core competencies, specialist tasks, and technology tools.
- The Work Task Automatability Model¹ ranks the O*NET detailed activities according to how automatable they are. This analysis has been adapted into an Australian context by matching O*NET data to ANZSCO occupations to derive automatability scores for each occupation. This analysis was published in the National Skills Commission's *The State of Australia's Skills 2021: now and into the future*.
- Research conducted by the CSIRO² mapped the work activities from O*NET occupations onto the ANZSCO occupations to look at how occupations have changed from 1991 to 2015.
- In the early months of the COVID-19 pandemic in Australia, analysis published in the *Sydney Morning Herald* ranked occupations by risk of exposure to disease. It did this by matching O*NET data on physical proximity to ANZSCO occupations.³

¹ Duckworth, P, Graham, L, Osborne, M, 2019, '[Inferring work task automatability from AI expert evidence](#)', [conference paper], AIES '19 (Artificial intelligence, ethics, and society), Honolulu

² Khan, A., Rudd, L., Reeson, A., 2016, '[Modelling Occupational Changes in Australia](#)', CSIRO

³ Singhal, P (2020) 'The jobs with the highest exposure to disease and infection', *Sydney Morning Herald*, 19 March 2020. Available at <https://www.smh.com.au/national/the-jobs-with-the-highest-exposure-to-disease-and-infection-20200319-p54bmr.html> (accessed 2/3/2023)

Converting the O*NET occupation classification to ANZSCO

The O*NET database uses the [O*NET-SOC 2019 taxonomy](#) to classify occupations. This classification contains 1016 occupations, of which 873 have Work Context data.

To enable the analysis of O*NET data in the Australian context, the O*NET-SOC 2019 taxonomy had to be converted to the ANZSCO classification. This was done using a concordance file produced by the National Skills Commission, available on the [Labour Market Insights](#) website.

Matches between ANZSCO occupations O*NET occupations range in quality and could be 'Good', 'Acceptable', 'Poor' or 'None'. The table below shows how many occupations had each type of match.

Table 1a: 4-digit ANZSCO occupation unit groups – how they match to O*NET

| Match strength | ANZSCO 4-digit Unit Groups | | ANZSCO 6-digit Occupations | |
|-------------------|----------------------------|------------------|----------------------------|------------------|
| | Number of occupations | % of occupations | Number of occupations | % of occupations |
| NONE | 8 | 2% | 39 | 4% |
| POOR | 28 | 8% | 73 | 8% |
| ACCEPTABLE | 195 | 54% | 469 | 53% |
| GOOD | 127 | 35% | 297 | 34% |
| Total | 358 | 100% | 878 | 100% |

The analysis in this report focuses on the 4-digit ANZSCO Unit Groups (referred to from here on as occupations), because this allows analysis against Safe Work Australis's workers' compensation claims data, which is also at the 4-digit ANZSCO Unit Group level.

Only occupations which matched as 'Acceptable' or 'Good', *and* which had available O*NET Work Context data, were used for this analysis. This means about 89% of 4-digit occupations are in scope for this analysis.

Variables used in this analysis

Below is a list of the O*NET variables used in this analysis, selected from the Work Context sub-domain of the O*NET database. They represent potential hazards which might be associated with higher rates of injury/disease. For a full list of Work Context O*NET variables please see Appendix A.

Note that these hazards have been selected to illustrate the broad usefulness of the information. There are other elements of the database that could be investigated, and we welcome feedback from the user community on the applications of this data in their work.

Frequency of exposure to job hazards

- Exposed to disease or infections
- Exposed to hazardous conditions
- Exposed to hazardous equipment
- Exposed to high places
- Exposed to minor burns, cuts, bites, or stings
- Exposed to radiation.

Frequency in environmental conditions

- Cramped work space, awkward positions
- Exposed to contaminants
- Exposed to whole body vibration
- Extremely bright or inadequate lighting
- Sounds, noise levels are distracting or uncomfortable
- Very hot or cold temperatures.

Time spent in body positions

- Spend time bending or twisting the body
- Spend time climbing ladders, scaffolds, or poles
- Spend time keeping or regaining balance
- Spend time kneeling, crouching, stooping, or crawling
- Spend time making repetitive motions
- Spend time sitting
- Spend time standing
- Spend time using your hands to handle, control, or feel objects, tools, or controls
- Spend time walking and running.

Work setting

- Frequency required to work in an enclosed vehicle or equipment
- Frequency required to work in an open vehicle or equipment.

Conflictual contact

- Deal with physically aggressive people
- Deal with unpleasant or angry people
- Frequency of conflict situations.

Criticality of position

- Consequence of error
- Freedom to make decisions.

Job interactions

- Coordinate or lead others.

Pace and scheduling

- Time pressure.

Routine versus challenging work

- Importance of repeating same tasks.

How to interpret the O*NET variables

The O*NET variables contain, for each occupation, a score out of 100 (an ‘exposure score’), which indicates how often a worker is exposed to a particular hazard.

For **Job hazard**, **Environment condition**, and **Conflictual contact** variables, responses can range from 0 (“Never”) to 100 (“Every day”).

For **Time spent in body position** variables, responses can range from 0 (“Never”) to 100 (“Continually or almost continually”).

Table 1b: Response scales for O*NET variables

| Type of variables | Scale |
|--|--|
| Job hazards (e.g. exposure to disease/infections, hazardous conditions ect) | How often does this job require _____? |
| Environmental conditions (e.g. how often job requires working in cramped spaces, bright/inadequate lighting etc.) | 100: Every day |
| Frequency required to work in an enclosed/open vehicle or equipment | 75: Once a week or more but not every day |
| Conflictual contact (e.g. dealing with unpleasant or angry people) | 50: Once a month or more but not every week |
| Time pressure | 25: Once a year or more but not every month |
| | 0: Never |
| | How much does this job require _____? |
| Time spent in body positions (e.g. how often job requires bending or twisting the body, making repetitive motions etc) | 100: Continually or almost continually |
| | 75: More than half the time |
| | 50: About half the time |
| | 25: Less than half the time |
| | 0: Never |
| | How important is it to _____? |
| Importance of repeating same tasks | 100: Extremely important |
| Coordinate or lead others | 75: Very important |
| | 50: Important |
| | 25: Fairly important |
| | 0: Not important at all |

Also used in this report is the Freedom to make decisions variable, which ranges from a score of 0 (“No freedom”) to 100 (“A lot of freedom”); and Consequence of error, which ranges from 0 (“Not serious at all”) to 100 (“Extremely serious”).

Interpreting exposure scores in between the benchmarks

Exposure scores can be any value between 0 and 100; they don't always align with the benchmark values of 0, 25, 50, 75 or 100.

For example, Electricians have an exposure score of 85 for how often they work in cramped workspaces / awkward positions. This reflects an average of the responses that workers provided for this occupation. Some said "Every day" (a score of 100), while others said "Once a week but not every day" (75), and a small number gave other responses (corresponding to values of 25 and 50). The score of 85 reflects the average of all these responses. See Appendix B for a detailed example of this.

For ease of interpretation, most of the analysis in this report categorises scores according to the nearest benchmark value. In the case of Electricians' exposure to cramped workspaces / awkward positions, they are categorised as being exposed "Once a week or more but not every day", because 85 is closer to 75 than to 100. The table below shows how each exposure score is categorised / interpreted in this report:

Table 1c: Interpretation of exposure scores

| Exposure score | Interepretation used in this report |
|----------------|--|
| 87.5 to 100 | Every day (100) |
| 62.5 to <87.5 | Once a week or more but not avery day (75) |
| 37.5 to <62.5 | Once a month or more but not every week (50) |
| 12.5 to <37.5 | Once a year of more but not every month (25) |
| 0 to <12.5 | Never (0) |

The same approach is applied for the other types of scales shown in table 1b. Note that for much of the following analysis, data will be presented for occupations with exposure "once a week or more". Or in the case of time spent in body position variables, "More than half the time". As per table 1c, this means these occupations had an exposure score of 62.5 or higher.

Interpreting the counts of employed people in this report

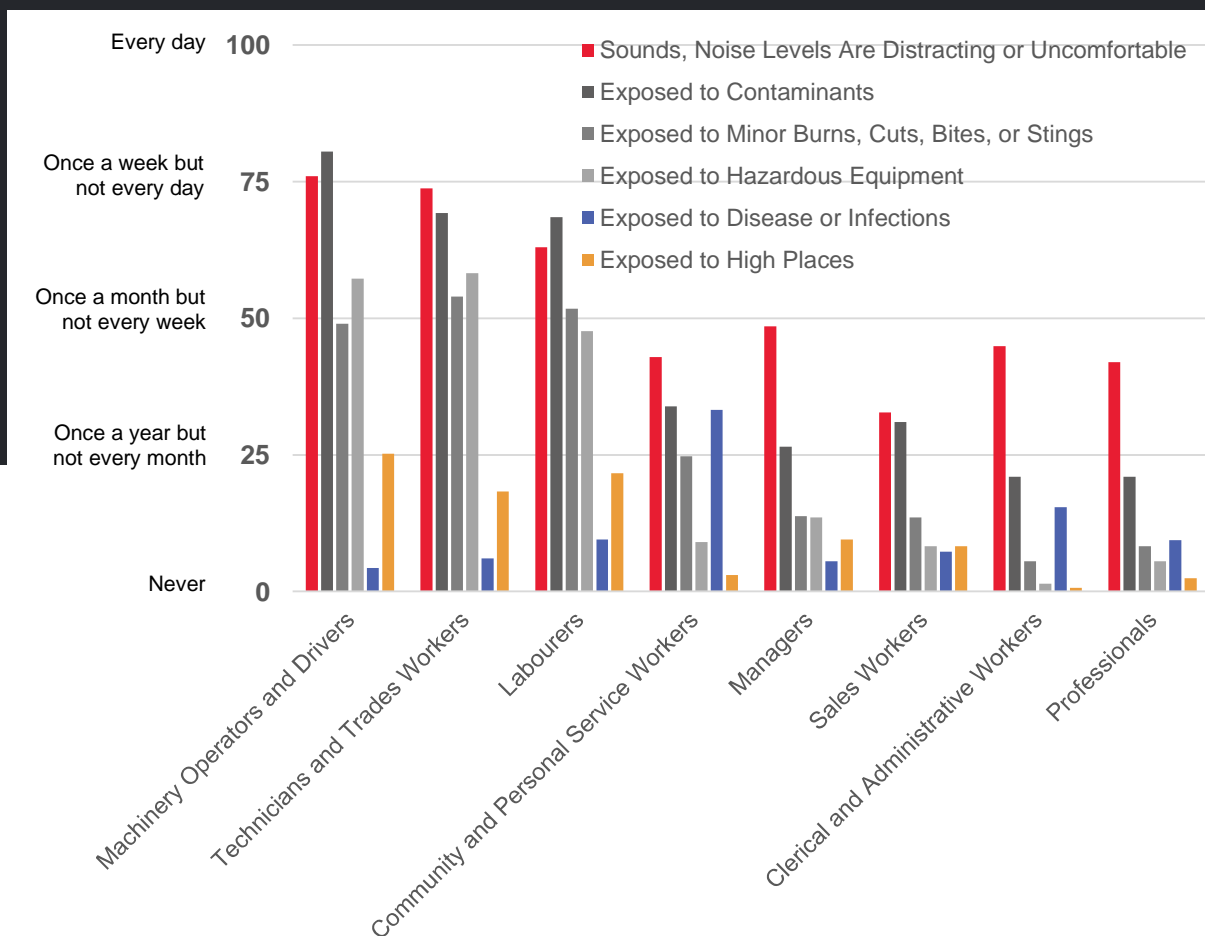
Tables 2a, 2b and 2c (in Part 2) and the hazard summaries (in Part 5) contain counts of people employed in occupations with frequent exposure to a hazard (jobs with an exposure score of 62.5 or more). Note that these are estimates of numbers of workers in frequently exposed occupations, rather than estimates of the total number of workers frequently exposed. These numbers have been included to give more context to the proportions of occupations. For example, when we say that 30% of occupations are exposed to contaminants on a weekly basis, it can be useful to know that in these occupations around 2.7 million people are employed.

Estimates for the *total* number of workers frequently exposed have not been provided in this report, but may be included in a follow-up analysis. To determine these numbers, detailed O*NET data would need to be used to account for proportions of workers frequently exposed in occupations with an exposure score of less than 62.5. For example, Sales assistants have an exposure score of 32 for 'Exposure to contaminants'. However, the detailed O*NET data tells us that despite the low overall exposure score, there are still 22% of Sales assistants who are exposed once a week or more. These 22% of Sales assistants would therefore be included in a total number of workers exposed to contaminants figure.

Part 2: Prevalence of hazards amongst occupations and employed persons

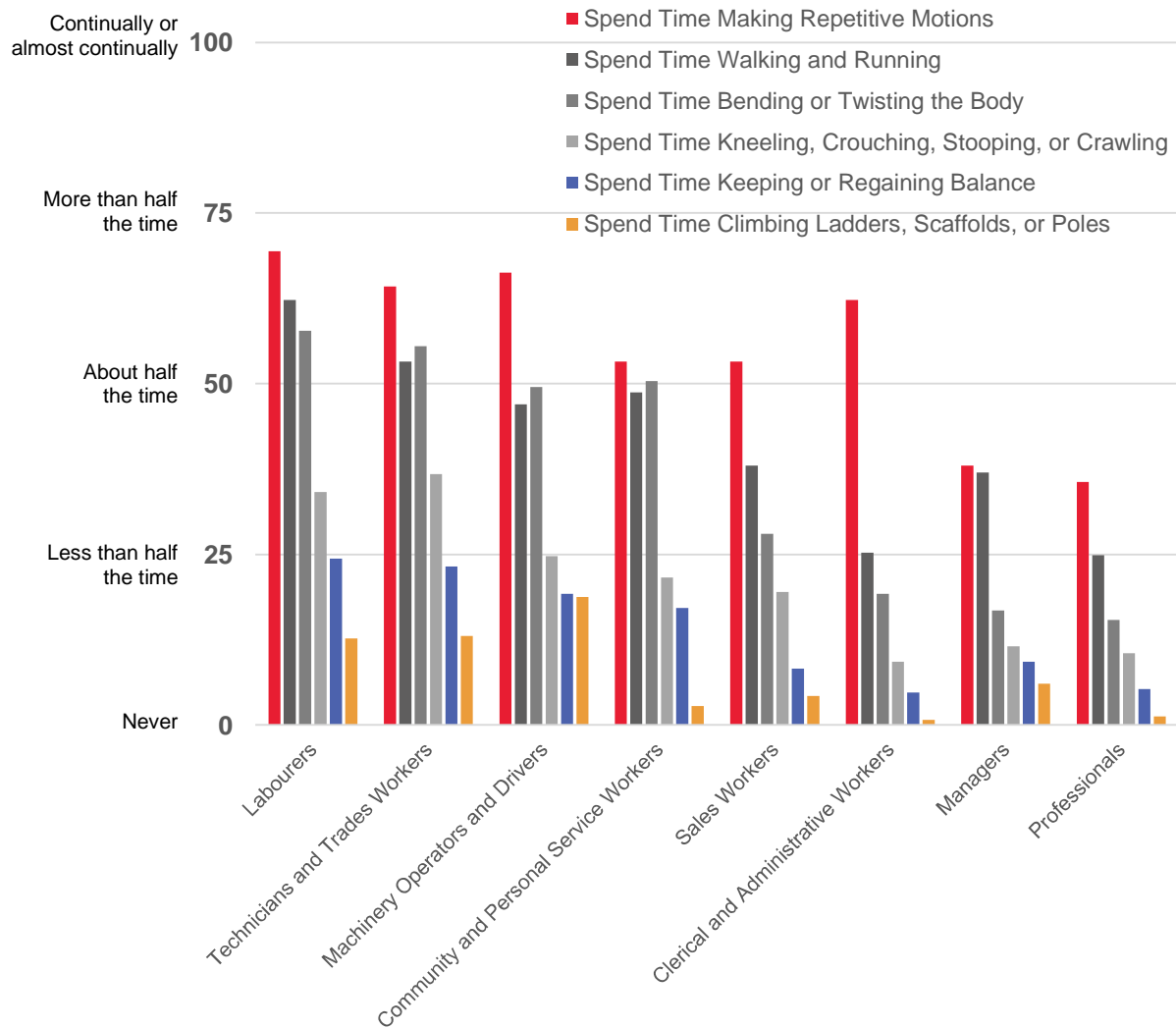
In general, the occupation groups with the highest frequency of exposure to job hazards and potentially hazardous environmental conditions are Machinery operators and drivers, Technicians and trades workers, and Labourers. However, note that Community and personal service workers have the highest median exposure to disease or infections. This is shown in Chart 2a.

Chart 2a: Median Exposure scores for selected job hazards and environmental conditions, by occupation group



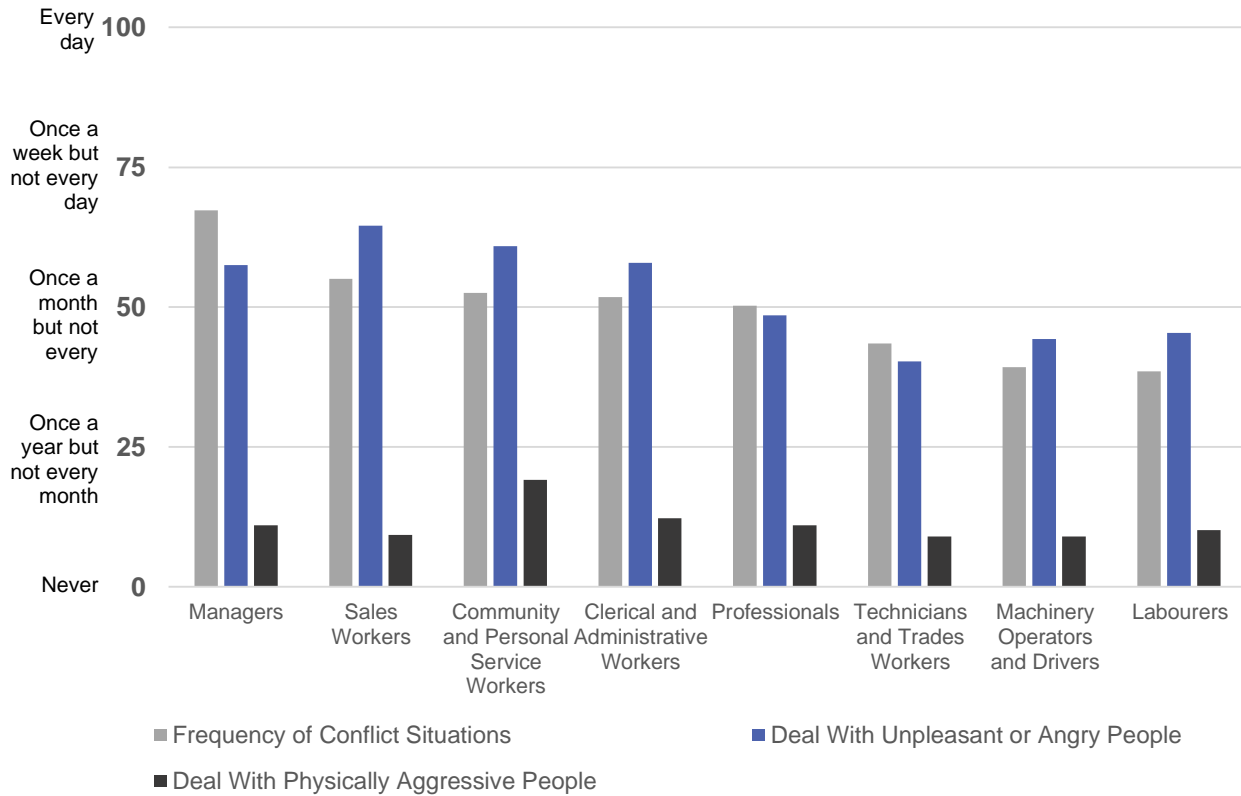
Similarly, the occupation groups that generally spend the most time in potentially hazardous body positions are Labourers, Technicians and trades workers, Machinery operators and drivers, and Community and personal service workers. Sales workers and Clerical and administrative workers have frequent exposure to repetitive motions, but have notably less exposure to the other body positions than the aforementioned top four occupation Major Groups.

Chart 2b: Median Exposure scores for selected body positions, by occupation group



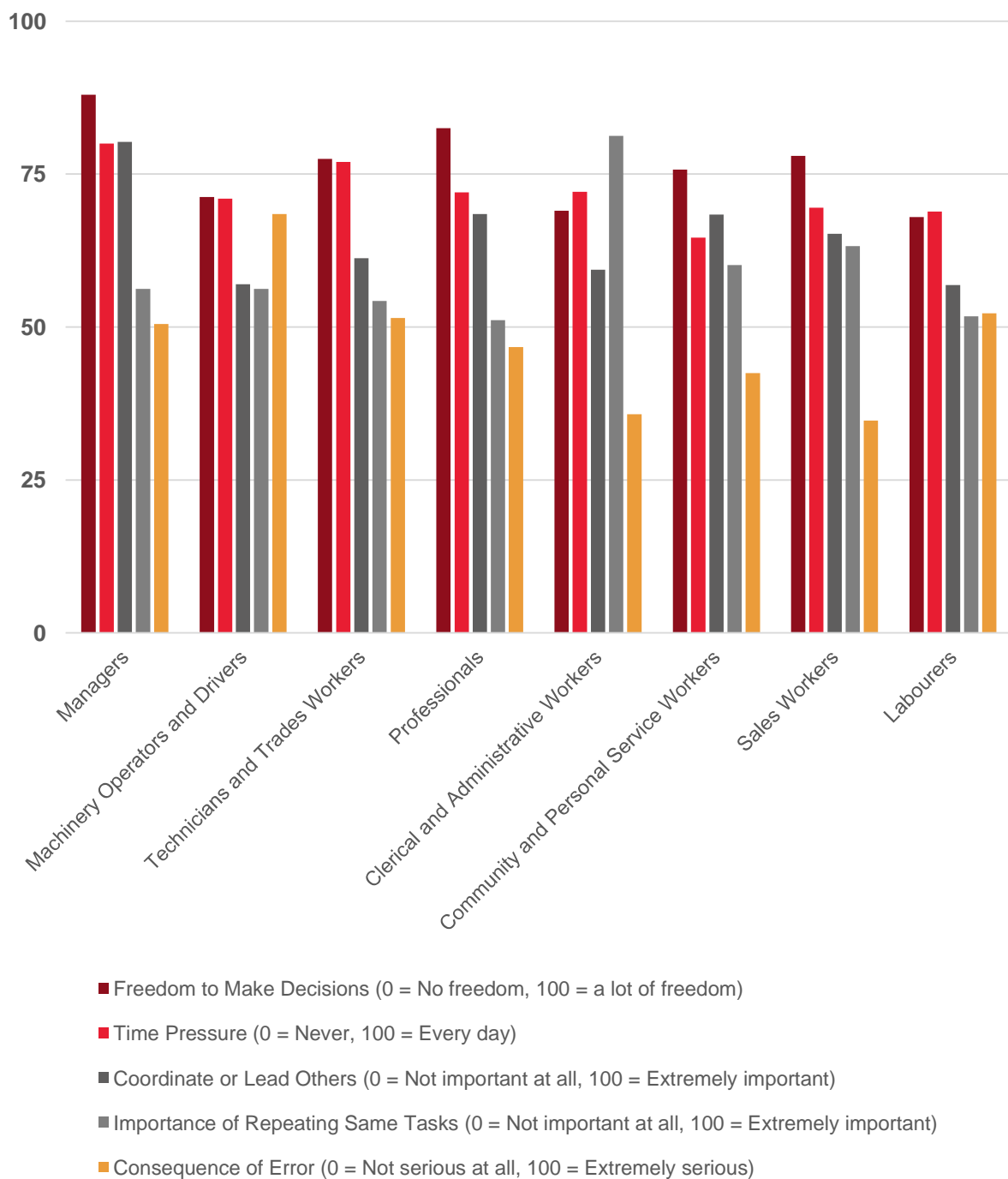
Exposure to conflictual contact tends to be most common for Managers, Sales workers, Community and personal service workers, and Clerical and administrative workers (Chart 2c). Managers are in general most commonly exposed to conflict situations, while Sales workers most often deal with unpleasant or angry people. Dealing with physically aggressive people was generally far less common for all occupations groups, but it was more common for Community and personal service workers than for other occupations.

Chart 2c: Median Exposure scores for conflictual contact variables, by occupation group



Exposure to other psychosocial hazards varied amongst the occupation groups. Chart 2d shows that compared with other occupation groups, Managers have more freedom to make decisions than other occupation groups, are most often under time pressure, and coordinating or leading others is more likely to be an important aspect of their job. Repeating the same tasks was most likely to be important for Clerical and administrative workers, while the consequence of making a mistake was likely to be most serious for Machinery operators and drivers.

Chart 2d: Median Exposure scores for other psychosocial hazards, by occupation group



Tables 2a, 2b and 2c show what proportion of occupations are exposed once a week or more to a particular hazard, and how many workers are in these occupations. Table 2a shows these figures for job hazard and environmental condition variables. Some key insights include:

- 31% of the 318 in-scope occupations are exposed to 'Sounds or noise levels which are distracting or uncomfortable' at least once per week; 2.73 million people are employed in these jobs.
- 30% of occupations have weekly exposure to contaminants such as gases, dust, odours and pollutants; 2.67 million people are employed in these jobs.
- One in ten occupations are exposed to disease or infection at least once per week. Nearly a million people (974,000) work in these occupations.
- In 5% of occupations, workers have cramped workspaces or must put their body in awkward positions at least once per week; 564,800 people work in these occupations.
- More than 130,000 people work in jobs which involve exposure to radiation at least once per week.

Table 2a: Job hazards and environmental conditions – prevalence amongst occupations

| Hazard | % of occupations [^] that are exposed once a week or more* | Approx. number of people employed in these occupations |
|--|---|--|
| Sounds, noise levels are distracting or uncomfortable ⁴ | 31% | 2,729,900 |
| Exposure to contaminants | 30% | 2,670,000 |
| Very hot or very cold temperatures | 21% | 2,140,900 |
| Exposure to hazardous equipment | 17% | 1,725,700 |
| Frequency required to work in an enclosed vehicle or equipment | 16% | 1,652,400 |
| Exposure to minor burns, cuts, bites or stings | 13% | 1,278,400 |
| Exposure to disease or infections | 10% | 974,100 |
| Exposure to high places | 6% | 702,500 |
| Extremely bright or inadequate lighting | 6% | 675,400 |
| Cramped work space, awkward positions | 5% | 564,800 |
| Exposure to hazardous conditions | 7% | 541,600 |
| Frequency required to work in an open vehicle or equipment | 5% | 538,300 |
| Exposure to radiation ⁵ | 3% | 137,700 |
| Whole body vibration ⁶ | 2% | 132,000 |

[^] Proportions are of the 318 occupations in scope for this analysis. 'Number of employed people affected' is the number of people employed in the occupations with an exposure score of 62.5 or higher.

* once a week or more corresponds to an exposure score of 62.5 or higher.

Table 2b is similar to Table 2a, except it shows hazards related to time spent in body positions, instead of environmental conditions and job hazards. Note that these variables have a different scale - in this case the table indicates the proportion of occupations in which workers spend more than half their time in the specified body position. The table shows that:

⁴ The [Exposure to noise and ototoxic chemicals in the Australian workforce](#) study found that 19.5% of men and 2.8% of women exceeded the recommended full shift noise limit of 85 dBA during their last working day. This article was authored by Lewkowski K, Heyworth JS, Li IW, et al and published in Occupational and Environmental Medicine 2019;76:341-348.

⁵ While the type of radiation is not specified in the O*NET database, the [Estimated prevalence of exposure to occupational carcinogens in Australia \(2011–2012\)](#) study provides estimates of the Australian workforce exposed to various types of radiation. It found that 37.0% of men and 7.9% of women were exposed to Solar UV radiation on their most recent working day; 8.3% of men and 0.3% of women were exposed to artificial UV radiation; and 2.7% of men and 2.3% of women were exposed to ionising radiation. The article was authored by Carey RN, Driscoll TR, Peters S, et al and published in Occupational and Environmental Medicine 2014; 71:55-62.

⁶ The [Exposure to Hand-Arm Vibration in the Australian Workforce](#) study examined vibration which is transmitted to a person's hand and arm from tools or hand-guided machinery. It found that 3.8% of the Australian workforce exceeded the HAV limit of 2.5m/s² in their most recent working day. This report was authored by Kate Lewkowski and others, and published in Annals of Work Exposures and Health, Volume 65, Issue 6, July 2021, Pages 659–667.

- In 45% of occupations, half the time or more is spent 'Using hands to handle, control, or feel objects, tools, or controls'. Some 4.2 million people are employed in these jobs.
- More than a third (36%) of occupations involve making repetitive motions more than half the time. Around 3.8 million people are employed in these occupations.
- In 15% of occupations workers spend more than half the time bending or twisting their body. Around 1.8 million people are employed in these occupations.

Table 2b: Body position hazards – prevalence amongst occupations

| Hazard | % of occupations in body position most of the time or continually* | Approx. number of people employed in these occupations |
|---|---|---|
| Spend time standing | 41% | 5,575,300 |
| Spend time sitting | 38% | 4,920,600 |
| Spend time using your hands to handle, control, or feel objects, tools, or controls | 45% | 4,232,900 |
| Spend time making repetitive motions | 36% | 3,846,900 |
| Spend time walking and running | 18% | 2,643,700 |
| Spend time bending or twisting the body | 15% | 1,765,200 |
| Spend time climbing ladders, scaffolds, or poles | 2% | 362,700 |
| Spend time kneeling, crouching, stooping, or crawling | 3% | 349,500 |
| Spend time keeping or regaining balance | 0.3% | 170,700 |

[^] Proportions are of the 318 occupations in scope for this analysis. 'Number of employed people affected' is the number of people employed in the occupations with an exposure score of 62.5 or higher.

* most of the time or continually corresponds to an exposure score of 62.5 or higher.

Table 2c shows occupations frequently exposed to psychosocial hazards. The scale varies depending on the hazard, but in each case it corresponds to an exposure score of 62.5 or above. Some interesting findings from the table include:

- In four fifths (79%) of occupations, workers are under pressure to meet strict deadlines at least once a week. Some 9.8 million people work in these occupations – the majority of the Australian workforce.
- Around a fifth of occupations involve dealing with unpleasant or angry people on a weekly basis. Around 3.5 million people are employed in these occupations.
- In around one fifth of occupations, the consequence of making a mistake is very or extremely serious. Around 2.4 million people are employed in these occupations.
- Around 100,000 people work in occupations which involve dealing with physically aggressive people at least once per week.

Table 2c: Psychosocial hazards – prevalence amongst occupations

| Hazard | % of occupations [^] with exposure score of 62.5 or more | Approx. number of people employed in these occupations |
|--|---|--|
| Freedom to make decisions (% with some or a lot of freedom) | 85% | 10,156,000 |
| Time pressure (% under pressure at least once per week) | 79% | 9,810,900 |
| Coordinate or lead others (% important or very important) | 59% | 8,236,100 |
| Importance of repeating same tasks (% important or very important) | 36% | 5,174,600 |
| Deal with unpleasant or angry people (% at least once per week) | 21% | 3,474,000 |
| Frequency of conflict situations (% at least once per week) | 20% | 3,064,900 |
| Consequence of error (% very or extremely serious) | 22% | 2,394,000 |
| Deal with physically aggressive people (% at least once per week) | 1% | 100,400 |

[^] Proportions are of the 318 occupations in scope for this analysis. 'Number of employed people affected' is the number of people employed in the occupations with an exposure score of 62.5 or higher. Proportions in the table above indicate the proportion of occupations with an exposure score of 62.5 or higher.

Part 3: Comparing the hazards to workers' compensation claims data

This section explores the relationship between hazard exposure and workers' compensation data collected by Safe Work Australia.

About workers' compensation claims data

Safe Work Australia compiles national workers' compensation statistics using data obtained from workers' compensation authorities in each state, territory and the Commonwealth government. These data are collated into the National Data Set for Compensation-based Statistics (NDS), which is Safe Work Australia's primary source of information on work-related injuries and diseases.

Data is collected on the nature of the injury/disease, mechanism of the incident, breakdown agency of the incident, and bodily location of the injury.

In 2021-22⁷, there were 127,756 serious claims⁸. From 2017-18 to 2021-22p, there was an average of 119,811 claims per year. In the BOHD, 5-year averages have been used to report NDS data, to reduce the volatility that can occur at the detailed occupation level – particularly with frequency and incidence rates, which incorporate ABS labour force estimates of the number of employees covered under workers' compensation schemes.

Table 3a: Number of serious claims

| Measure | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22p | 5-year average |
|--------------------------|---------|---------|---------|---------|----------|----------------|
| Number of serious claims | 107,962 | 114,835 | 119,361 | 129,143 | 127,756 | 119,811 |

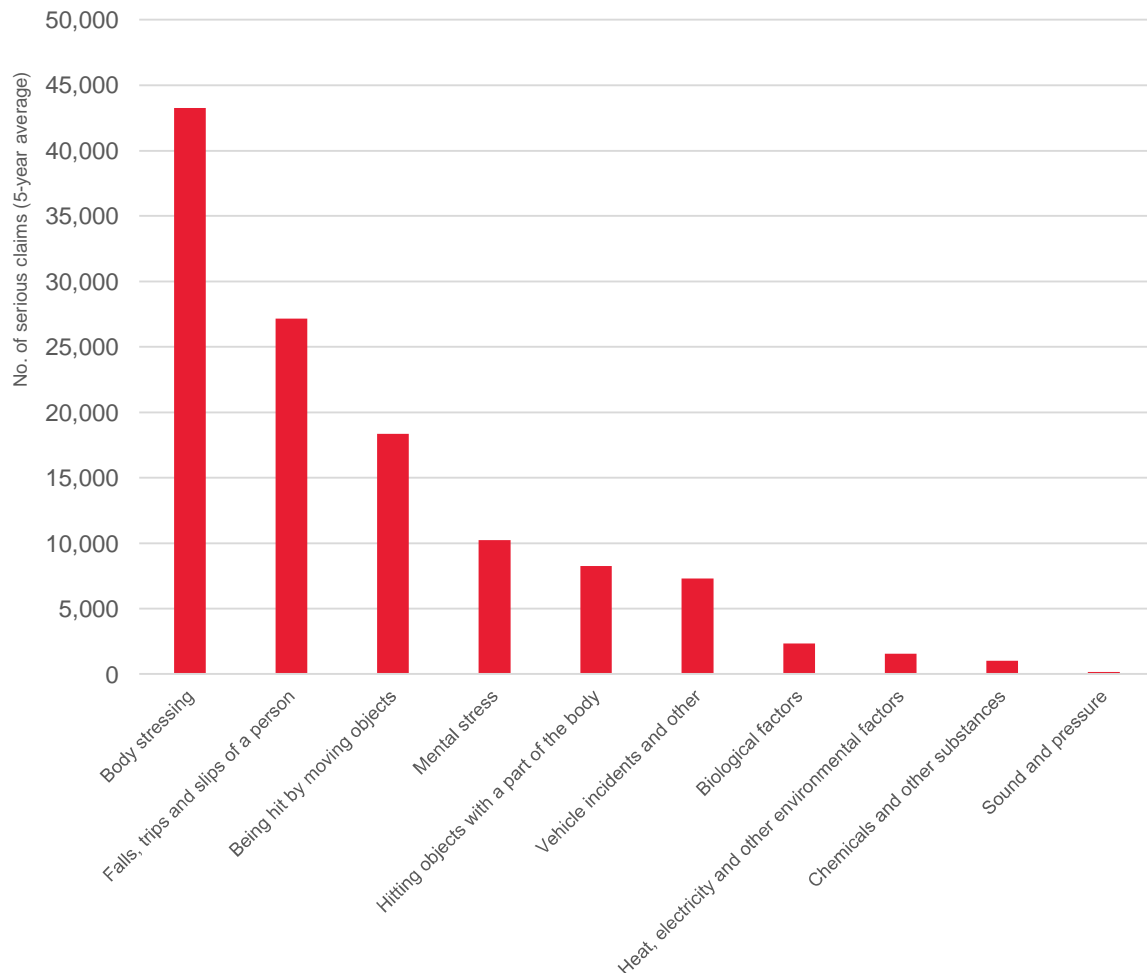
⁷ NDS data for 2021-22 is considered preliminary (denoted by 'p') and are likely to change as revisions may occur in future years as open compensation claims are resolved.

⁸ Serious claims are accepted workers' compensation claims for an incapacity that results in a total absence from work of one working week or more.

Most common 'mechanisms' of incident

The mechanisms⁹ which caused these injuries or illnesses are shown in Chart 3a below. From 2017-18 to 2021-22p, claims most commonly resulted from 'Body stressing' (an average of 43,300 serious claims per year), 'Falls, trips and slips of a person' (27,200), 'Being hit by moving objects' (18,300), and 'Mental stress' (10,200).

Chart 3a: Number of serious claims by mechanism of incident (5-year averages to 2021-22p)



Note that there are very few claims resulting from 'Heat, electricity and other environmental factors', 'Chemicals and other substances', and 'Sound and pressure'. In part, this may be due to the long latency periods of diseases that may develop due to, say, exposure to certain chemicals, making the disease difficult to link to a particular occupation.

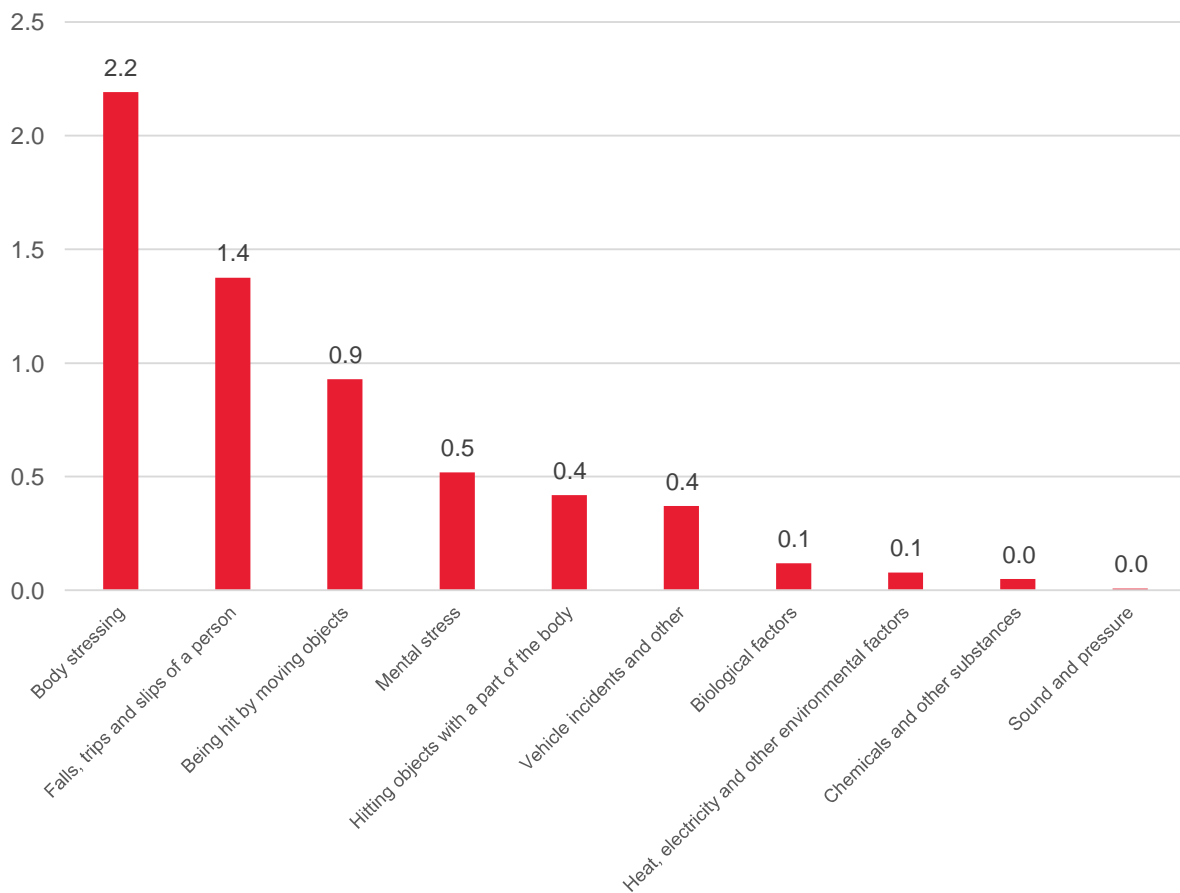
⁹ Mechanism of incident classifications are derived from [Type of Occurrence Classification System, 3rd Edition – Revision 1](#).

The claim frequency rate

A key measure used in reporting NDS data is the 'claim frequency rate', defined as the number of serious claims per million hours worked. In 2021-22p, the claim frequency rate was 6.5, while the average frequency rate from 2017-18 to 2021-22p was 6.1.

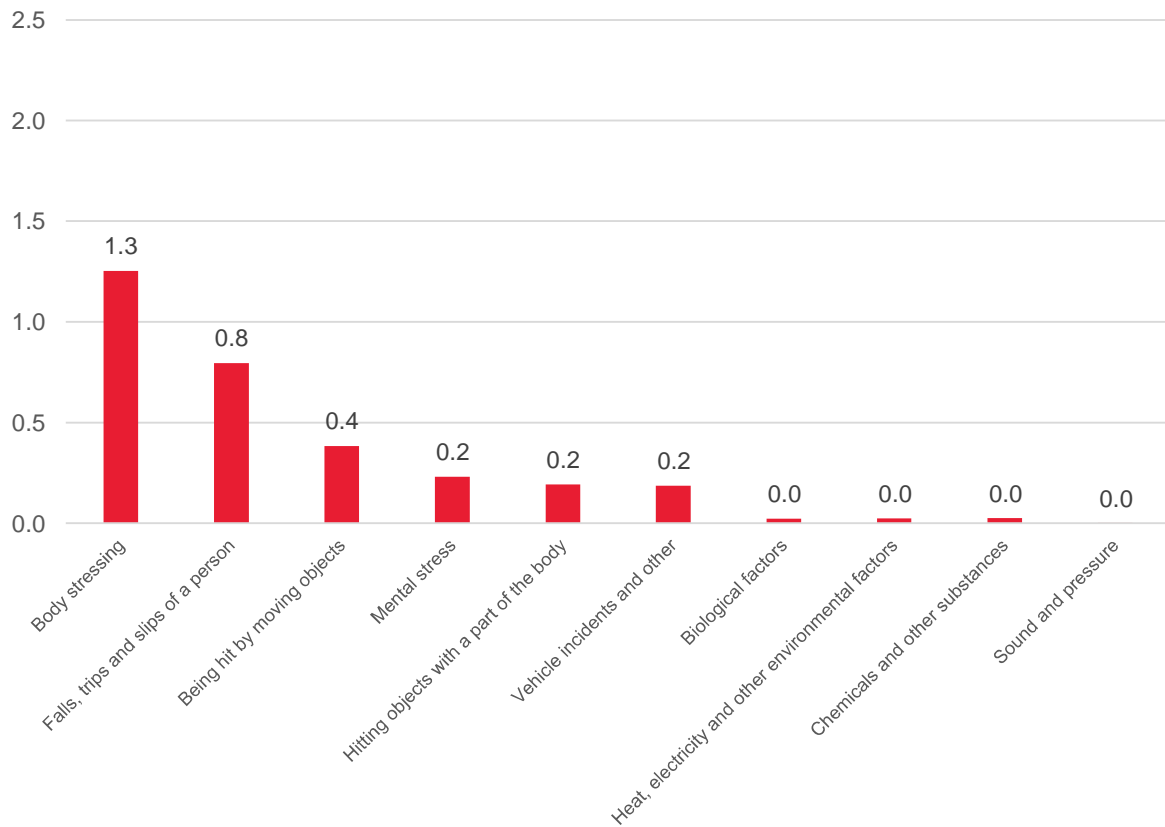
By dividing the numbers in Chart 3a by the average number of hours worked (in millions) over this period, we can obtain frequency rates for each mechanism type – these will be referred to as 'mechanism frequency rates' and are shown in Chart 3b below. This chart shows for example that there were 2.2 'body stressing' claims per million hours worked.

Chart 3b: Mechanism frequency rates of serious claims (based on 5-year averages)



Another way to aggregate the data is to summarise occupation-level results. We can calculate mechanism frequency rates for each of the 318 in-scope occupations, and then calculate the median for each mechanism (Chart 3c). This approach essentially gives all 318 occupations equal weighting (so the results aren't dominated by the largest-employing occupations), and using the median minimises the impact of outliers.

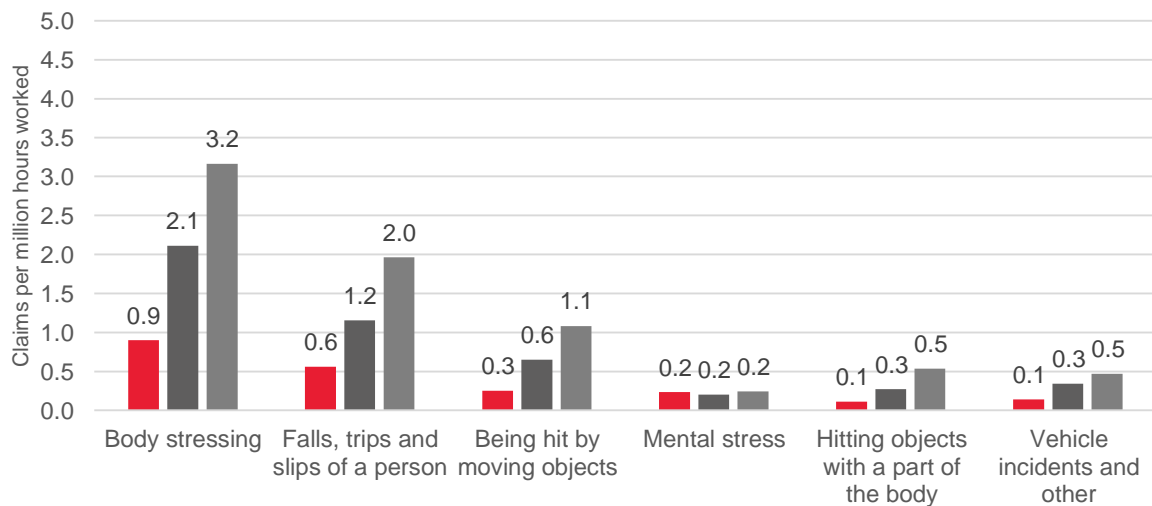
Chart 3c: Median mechanism frequency rates across occupation-level results



Note: Based on data from 2017-18 to 2021-22p

We can now split the median mechanism frequency rates by frequency of exposure to each hazard. For example, Chart 3d shows the median mechanism frequency rates by how often a job requires being 'in an enclosed vehicle or equipment'. The chart shows that for occupations requiring being in an enclosed vehicle once a week or more, there was a median rate of 3.2 'Body stressing' claims per million hours worked, 2.0 'Falls, trips and slips of a person' claims per million hours worked, and 1.1 'Being hit by moving objects' claims per million hours worked. These were all higher than claim rates for occupations that don't often involve being in an enclosed vehicle or equipment.

Chart 3d: Median mechanism frequency rates by exposure to being in an enclosed vehicle or equipment



How often required to be in an enclosed vehicle or equipment (based on exposure score):

■ Less than once a month ■ Once a month or more but not every week ■ Once a week or more

Note that while there is a relationship between being 'in an enclosed vehicle' and mechanism frequency rates such as 'Body stressing', 'Falls, trips and slips of a person', and 'Being hit by moving objects', these claims have probably not been *caused* by being in an enclosed vehicle. In this case, it seems more likely that jobs which involve being in an enclosed vehicle often involve tasks and situations which involve stressing the body (e.g. unloading stock from a delivery truck).

Summarising results for the examined hazards

Table 3b shows median mechanism frequency rates for occupations which have frequent/high exposure to each type of hazard. For example, the first row of the table shows that there are 31 occupations which are exposed to 'disease or infections' once a week or more. For this group, there was a median of 1.9 'Body stressing' claims per million hours worked, and 0.7 'Falls, trips and slips of a person' claims per million hours worked.

Some key trends from the table are identified below:

- Regardless of the type of exposure, 'Body stressing' was always the most (or equal-most) common mechanism of injury, followed by 'Falls, trips and slips of a person'.
- For some mechanisms, frequency rates were very low regardless of the exposure type. This was the case for 'Heat, electricity and other environmental factors', 'Chemicals and other substances', 'Biological factors' and 'Sound and pressure'.
- 'Body stressing' claims tend to occur most commonly in occupations which involve:
 - Spending more than half the time 'walking and running'
 - Spending more than half the time 'bending or twisting the body'
 - 'Exposure to high places' at least once a week
 - Spending more than half the time 'kneeling, crouching, stooping, or crawling'
- 'Falls, trips and slips of a person' claims tend to occur most commonly in occupations which involve:
 - 'Exposure to high places' at least once a week
 - Spending more than half the time 'walking and running'
- 'Mental stress' claims, while having low median rates in general, tended to be more frequent in occupations which involve:
 - 'Dealing with unpleasant or angry people' at least once a week
 - 'Conflict situations' at least once a week
 - 'Exposure to disease or infections' at least once a week
- Occupations that involve sitting more than half the time had much lower claim frequency rates across all mechanisms, implying that jobs that involve sitting are much safer than other jobs.

Table 3b: Median mechanism frequency rates for occupations with high exposure to hazards

| Hazard | 'High' exposure (score of 62.5 or higher) | No. of occupations | Body stressing | Falls, trips and slips of a person | Being hit by moving objects | Mental stress | Hitting objects with a part of the body | Vehicle incidents and other | Biological factors | Heat, electricity and other environmental factors | Chemicals and other substances | Sound and pressure |
|---|---|--------------------|----------------|------------------------------------|-----------------------------|---------------|---|-----------------------------|--------------------|---|--------------------------------|--------------------|
| Exposed to disease or infections | Once a week or more | 31 | 1.9 | 0.7 | 0.3 | 0.4 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 |
| Exposed to hazardous conditions | Once a week or more | 22 | 2.8 | 1.7 | 1.0 | 0.2 | 0.7 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 |
| Exposed to hazardous equipment | Once a week or more | 53 | 3.3 | 1.9 | 1.5 | 0.2 | 0.9 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 |
| Exposed to high places | Once a week or more | 18 | 3.7 | 2.7 | 1.5 | 0.1 | 1.0 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 |
| Exposed to minor burns, cuts, bites, or stings | Once a week or more | 42 | 3.4 | 2.0 | 1.9 | 0.2 | 1.0 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 |
| Cramped work space, awkward positions | Once a week or more | 16 | 2.9 | 1.9 | 1.2 | 0.1 | 1.0 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 |
| Exposed to contaminants | Once a week or more | 95 | 3.3 | 1.9 | 1.3 | 0.2 | 0.6 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 |
| Extremely bright or inadequate lighting | Once a week or more | 20 | 3.5 | 2.1 | 1.3 | 0.2 | 0.6 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 |
| Sounds, noise levels are distracting or uncomfortable | Once a week or more | 98 | 3.0 | 1.8 | 1.2 | 0.2 | 0.7 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 |
| Very hot or cold temperatures | Once a week or more | 67 | 3.3 | 2.1 | 1.5 | 0.2 | 0.9 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 |
| Spend time bending or twisting the body | More than half the time | 47 | 3.7 | 2.0 | 1.7 | 0.2 | 1.0 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 |
| Spend time kneeling, crouching, stooping, or crawling | More than half the time | 11 | 3.6 | 1.9 | 1.1 | 0.1 | 0.9 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 |
| Spend time making repetitive motions | More than half the time | 116 | 2.3 | 1.2 | 0.7 | 0.2 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Spend time sitting | More than half the time | 122 | 0.3 | 0.3 | 0.1 | 0.2 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Spend time standing | More than half the time | 130 | 2.9 | 1.9 | 1.2 | 0.2 | 0.6 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 |
| Spend time using your hands to handle, control, or feel objects, tools, or controls | More than half the time | 144 | 2.6 | 1.3 | 0.9 | 0.2 | 0.5 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 |
| Spend time walking and running | More than half the time | 56 | 4.0 | 2.6 | 1.5 | 0.3 | 0.9 | 0.6 | 0.1 | 0.1 | 0.1 | 0.0 |
| In an enclosed vehicle or equipment | Once a week or more | 50 | 3.2 | 2.0 | 1.1 | 0.2 | 0.5 | 0.5 | 0.0 | 0.0 | 0.1 | 0.0 |
| In an open vehicle or equipment | Once a week or more | 17 | 2.7 | 1.9 | 1.3 | 0.1 | 0.6 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 |
| Deal with unpleasant or angry people | Once a week or more | 68 | 0.9 | 0.8 | 0.3 | 0.4 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Frequency of conflict situations | Once a week or more | 64 | 0.7 | 0.6 | 0.2 | 0.4 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Consequence of error | Very or extremely serious | 70 | 2.3 | 1.3 | 0.8 | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 | 0.1 | 0.0 |
| Coordinate or lead others | Very or extremely important | 188 | 0.9 | 0.7 | 0.3 | 0.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Time pressure | Once a week or more | 251 | 1.2 | 0.7 | 0.3 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Freedom to make decisions | Some / a lot of freedom | 270 | 1.0 | 0.7 | 0.3 | 0.2 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Importance of repeating same tasks | Very or extremely important | 115 | 1.0 | 0.7 | 0.3 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| All occupations | | 318 | 1.3 | 0.8 | 0.4 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |

Note: Some exposures have been excluded from this table due a low number of occupations with an exposure score of 62.5 or above. For further detail on each hazard, please see the 'Hazard Profiles' in Part 5 of this report.

Part 4: Hazard profiles of jobs with high claim frequency rates

This section shows how exposure to hazards differs between occupations with high claim frequency rates, and those with low claim frequency rates.

Chart 4a shows this comparison for job hazards and environmental conditions. The grey bars represent the 71 occupations that have high claim rates (10 or more serious claims per million hours worked)¹⁰, while the red bars represent the 166 occupations with low claim rates (less than 4 serious claims per million hours worked).

For each job hazard or environmental condition, occupations with high claim rates are more likely to be exposed on a weekly basis than occupations with low claim rates (indicated by the grey bars being higher than red bars).

Amongst occupations with high claim rates, 52% are exposed to contaminants (pollutants, gases, dust or odours) once a week or more, and 52% are exposed to distracting or uncomfortable noise levels once a week or more – these exposures may result in long-term disease, rather than injury.

However, Chart 3a (in Part 3) showed that compensation claims are primarily caused by physical mechanisms such as ‘Body stressing’ or ‘Falls, trips and slips of a person’; only a very small share of claims are due to mechanisms such as ‘Chemicals and other substances’, or ‘Sound and pressure’. Chart 4a therefore shows that occupations associated with high rates of claims are *also* the most likely to be most exposed to hazards associated with disease (i.e. contaminants and loud noises). Due to the long latency period that may occur between initial exposure and onset of symptoms, it may be harder to link a disease to a person’s occupation and therefore diseases are likely to be under-reported in compensation claims data.

¹⁰ Based on 5-year averages from 2017-18 to 2021-22p.

Chart 4a: Proportion of occupations with frequent exposure to job hazards and environmental conditions, by claim frequency rates

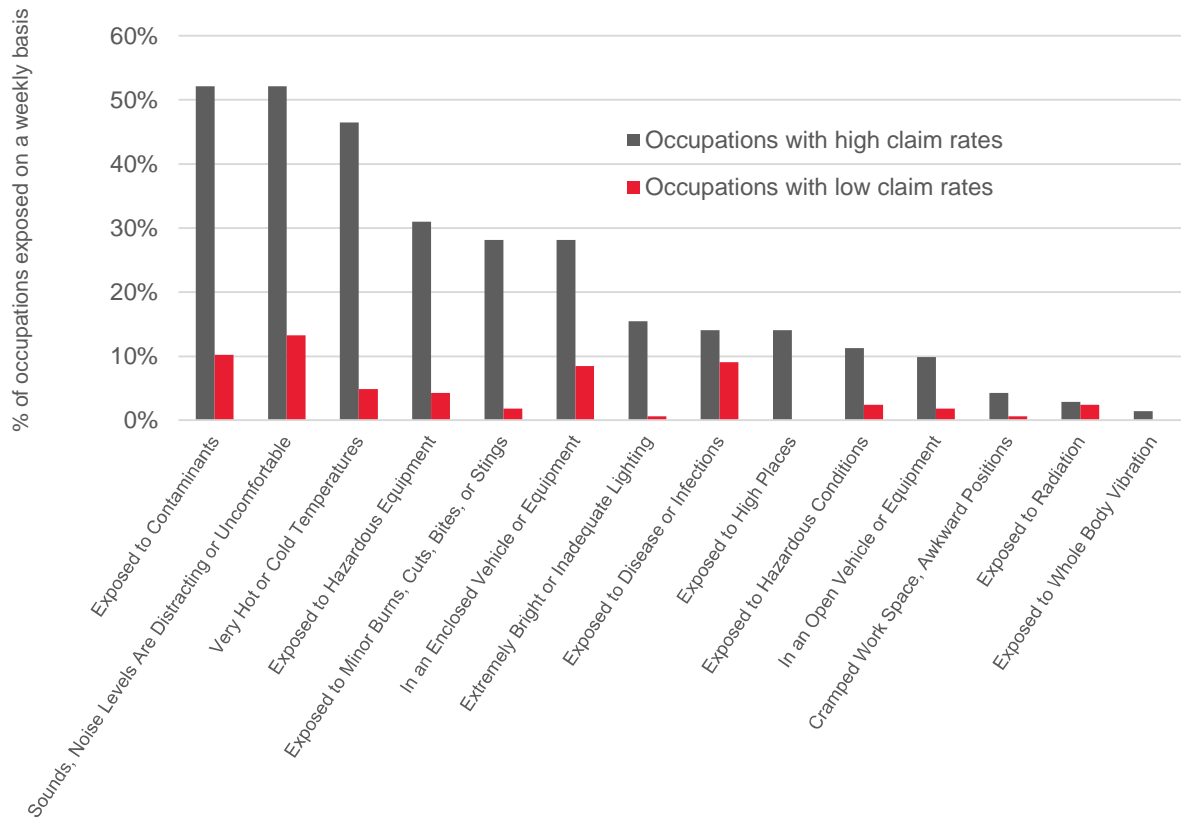


Chart 4b is similar to Chart 4a but focuses on body positions. It shows that for occupations with high claim rates (grey bars):

- 72% involve standing more than half of the time
- 68% involve handling controls, objects or tools more than half of the time.
- 48% involve making repetitive motions more than half of the time
- 41% involve walking and running more than half of the time
- 30% involve bending or twisting the body more than half of the time.

On the other hand, occupations with low claim rates (red bars) do not commonly involve the aforementioned body positions more than half the time. However, 62% of low claim rate occupations involve sitting more than half the time, compared with only 11% of high claim rate occupations.

Chart 4b: Proportion of occupations with frequent exposure to body positions, by claim frequency

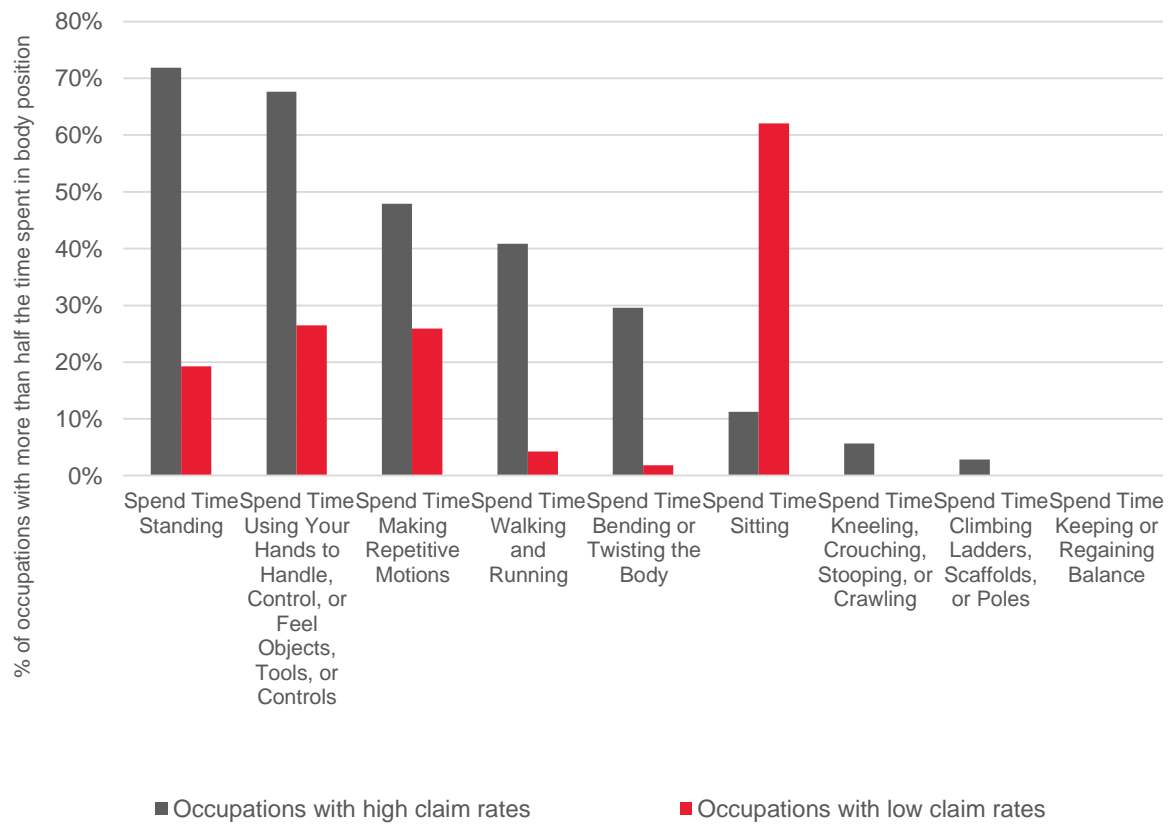
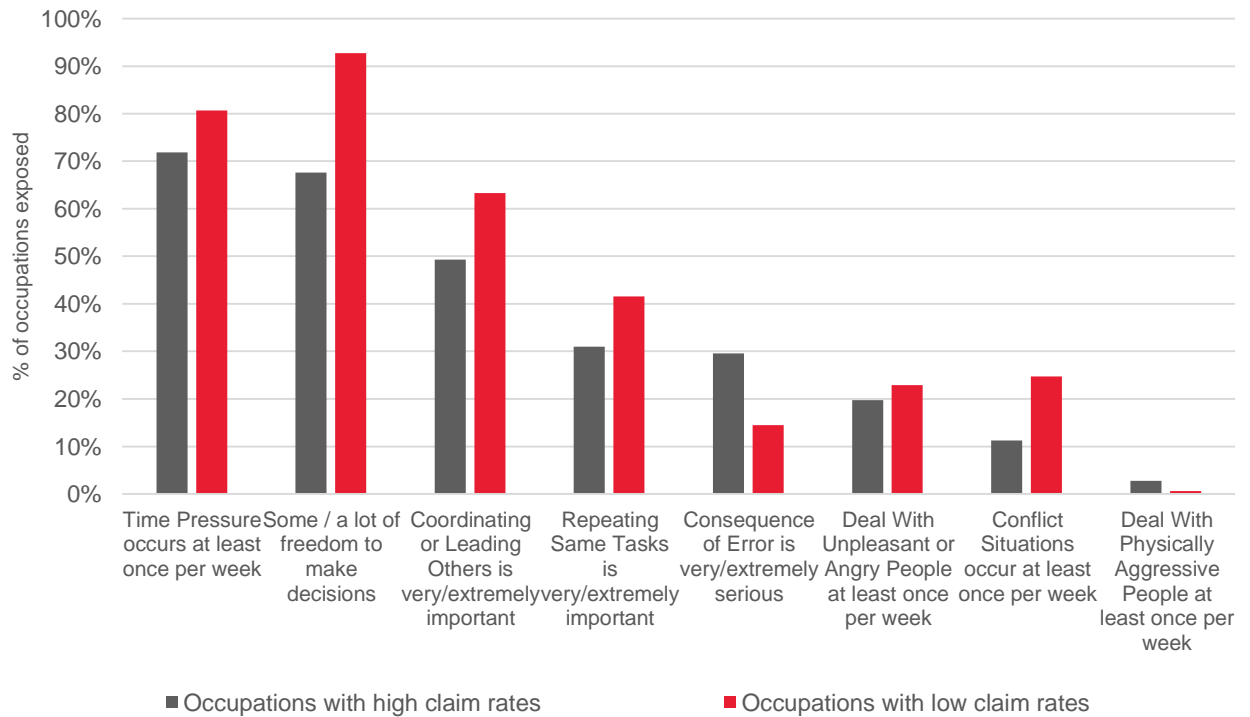


Chart 4c provides this same comparison but for psychosocial hazards. There isn't much difference between the low claim rate and high claim rate occupations, although for the most part high claim rate occupations are less likely to be exposed to these hazards. The main exception to this is 'Consequence of error': in 30% of high claim rate occupations, the Consequence of error is very/extremely serious (compared to only 14% for low claim rate occupations).

Chart 4c: Proportion of occupations with high exposure to psychosocial hazards, by claim frequency rates



The top 5 occupations (of 318 analysed) with the most workers' compensation claims each year on average are:

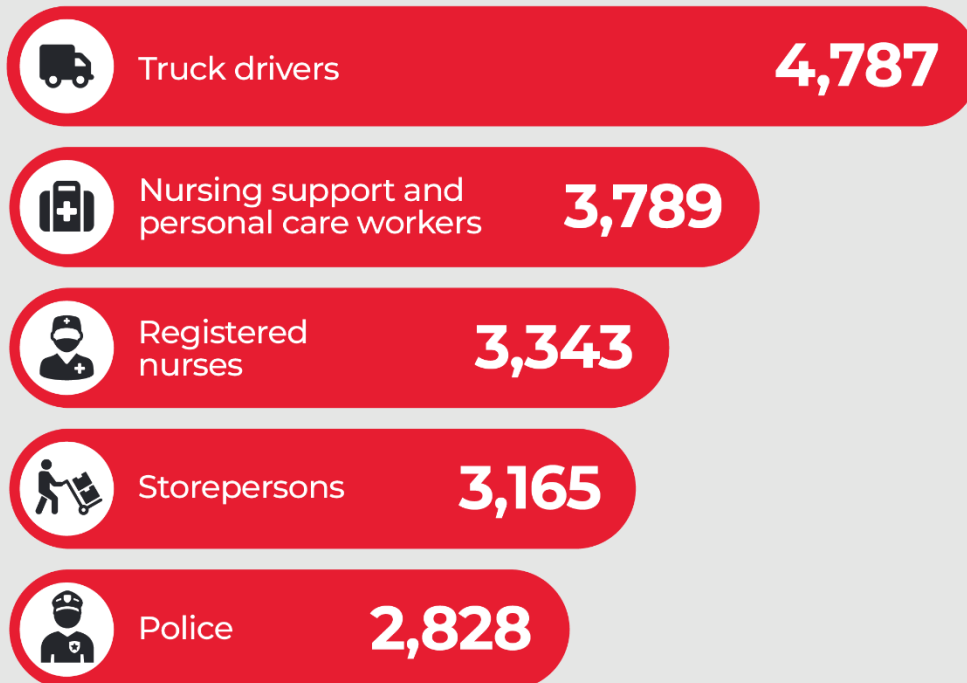


Table 4a provides a hazard profile for the top 10 in-scope occupations which had the largest number of workers' compensation claims on average from 2017-18 to 2021-22p. All these occupations, except for Sales assistants, also have above-average claim *rates* (all have a frequency rate above 7, except Sales assistants, which have a frequency rate of 4.7).

This data is broadly consistent with the types of injuries/diseases¹¹ that occur in these occupations, according to workers' compensation data. Most of these occupations have a high exposure score for bending or twisting the body, which is reflected in the most common injury/disease for most of these occupations being 'Traumatic joint/ligament and muscle/tendon injury'. For Police, the most common claim type is mental health related, which may in part reflect the very high exposure to conflict situations and physically aggressive people. Carpenters and joiners have a very high 'Exposed to hazardous equipment' score, which may explain why their most common injury/disease is 'Wounds, lacerations, amputations and internal organ damage'. Sales assistants don't have a particularly high score in any hazard category, but are likely in this top 10 list due to the large number of people employed in this occupation.

¹¹ The nature of injury/disease classification is defined in the [Type of Occurrence Classification System, 3rd Edition – Revision 1](#).

Table 4a: Hazard profiles of the top 10 in-scope occupations which have the highest number of serious claims

| ANZSCO Unit Group | No. Serious claims (annual average) | Spend Time Bending or Twisting the Body | Spend Time Kneeling, Crouching, Stooping, or Crawling | Cramped Work Space, Awkward Positions | Exposed to Contaminants | Exposed to Hazardous Equipment | Exposed to Minor Burns, Cuts, Bites, or Stings | In an Enclosed Vehicle or Equipment | Deal With Physically Aggressive People | Frequency of Conflict Situations |
|--|-------------------------------------|---|---|---------------------------------------|-------------------------|--------------------------------|--|-------------------------------------|--|----------------------------------|
| Truck drivers | 4,787 | 39 | 19 | 36 | 72 | 37 | 38 | 99 | 16 | 37 |
| Nursing support and personal care workers | 3,789 | 64 | 28 | 22 | 30 | 3 | 18 | 29 | 28 | 46 |
| Registered nurses | 3,343 | 43 | 15 | 25 | 39 | 8 | 13 | 23 | 41 | 71 |
| Storepersons | 3,165 | 45 | 28 | 18 | 27 | 10 | 14 | 13 | 12 | 38 |
| Police | 2,828 | 37 | 27 | 42 | 62 | 68 | 50 | 93 | 75 | 86 |
| Aged and disabled carers | 2,703 | 63 | 42 | 14 | 46 | 2 | 21 | 21 | 42 | 46 |
| Sales assistants (general) | 2,641 | 28 | 20 | 11 | 32 | 9 | 18 | 34 | 14 | 52 |
| Carpenters and joiners | 2,479 | 65 | 52 | 39 | 73 | 68 | 48 | 40 | 18 | 58 |
| Welfare support workers | 1,777 | 22 | 15 | 13 | 42 | 0 | 13 | 48 | 30 | 70 |
| Commercial cleaners | 1,615 | 58 | 39 | 33 | 72 | 27 | 27 | 17 | 10 | 32 |
| Median exposure score for ALL 318 occupations | | 33 | 17 | 18 | 37 | 15 | 21 | 23 | 11 | 49 |

Note: 'Other miscellaneous labourers' had the highest number of serious claims over this period, but is considered out-of-scope due to having no matching O*NET data, and is hence excluded from the above table. Exposure scores higher than 62.5 have been highlighted in red; exposure scores have been highlighted in orange if equal to or above 40 (body position variables) or 50 (all other variables).

Part 5: Hazard summaries



Exposure to disease or infections

How often does this job require exposure to disease/infections?

Exposed at least once a week



10%

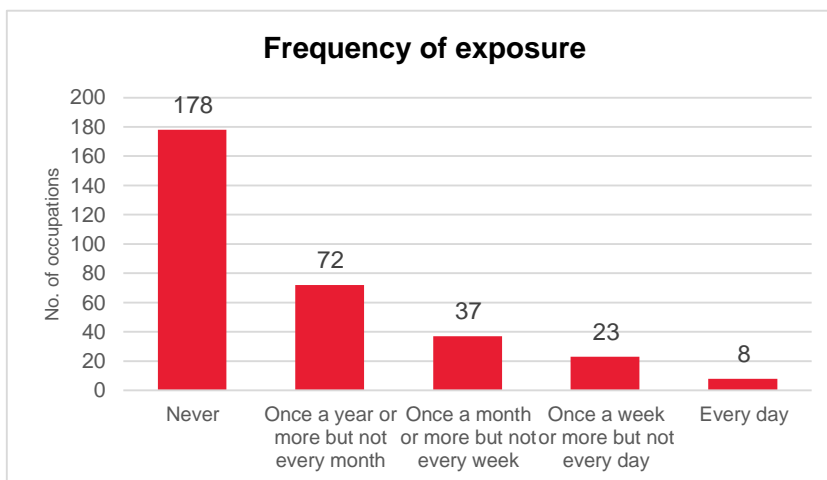
of occupations

8%

of employed people

974,100

employed people



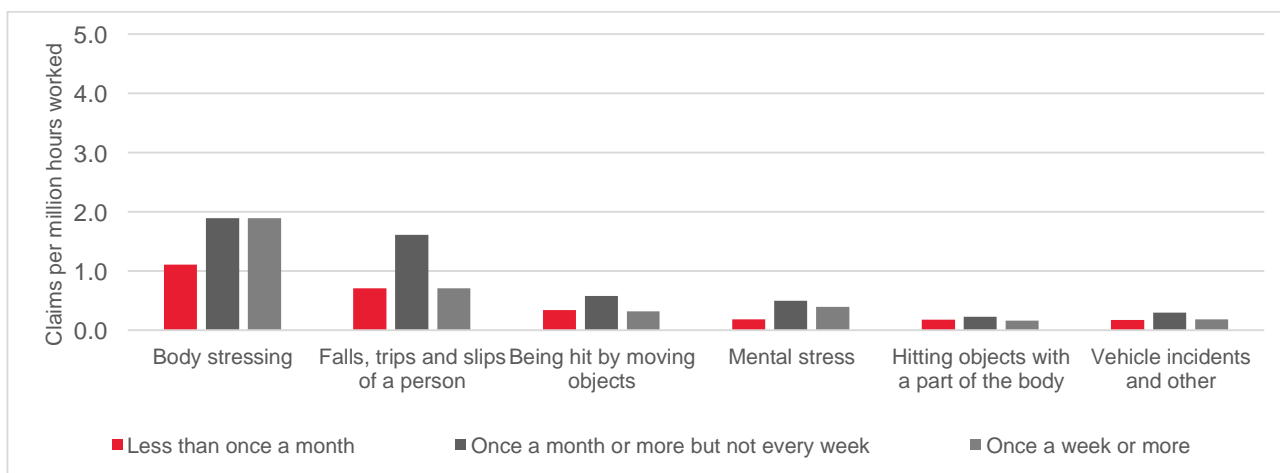
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Specialist physicians | 100 | 12.1 |
| Dental hygienists, technicians and therapists | 99 | 7.6 |
| Medical imaging professionals | 97 | 20.5 |
| Dental practitioners | 95 | 18.5 |
| General practitioners and resident medical officers | 95 | 76.6 |
| Podiatrists | 92 | 7.0 |
| Anaesthetists | 90 | 7.1 |
| Midwives | 89 | 18.2 |
| Pharmacists | 86 | 35.8 |
| Complementary health therapists | 84 | 8.1 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Exposure to hazardous conditions

How often does your current job require that you be exposed to hazardous conditions?

This can happen when working with high voltage electricity, flammable material, explosives, or chemicals. Does not include working with hazardous equipment.

Exposed at least once a week



7%

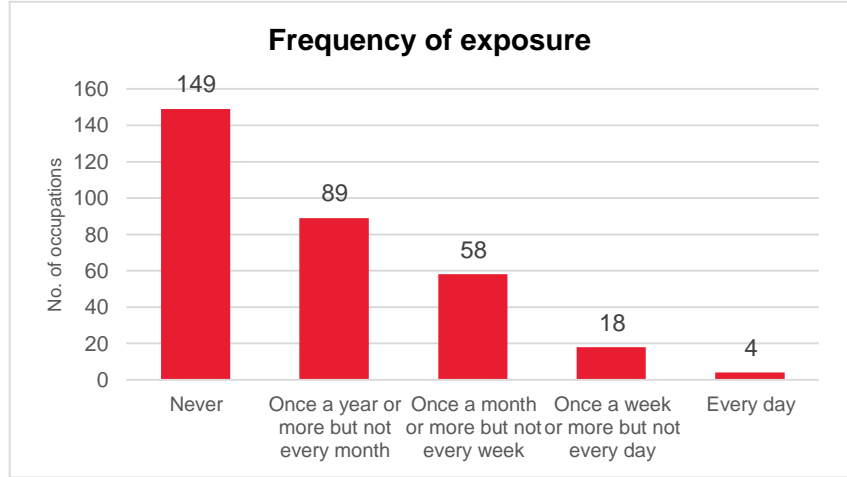
of occupations

4%

of employed people

541,600

employed people



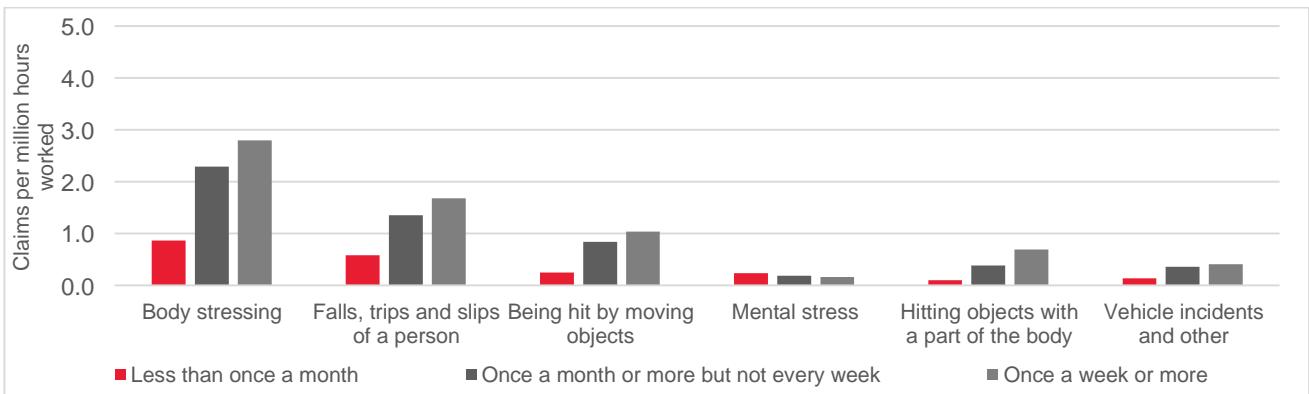
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Electrical distribution trades workers | 98 | 9.2 |
| Chemical, gas, petroleum and power generation plant operators | 95 | 10.2 |
| Electricians | 90 | 170.7 |
| Other stationary plant operators | 89 | 22.6 |
| Panelbeaters | 87 | 10.2 |
| Vehicle body builders and trimmers | 87 | 4.1 |
| Chemists, and food and wine scientists | 85 | 7.1 |
| Motor mechanics | 84 | 109.2 |
| Other construction and mining labourers | 82 | 6.2 |
| Engineering production workers | 82 | 20.2 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Exposure to hazardous equipment

How often does your current job require that you be exposed to hazardous equipment?

This includes working with saws, close to machinery with exposed moving parts, or working near vehicular traffic (but not including driving a vehicle).

Exposed at least once a week



17%

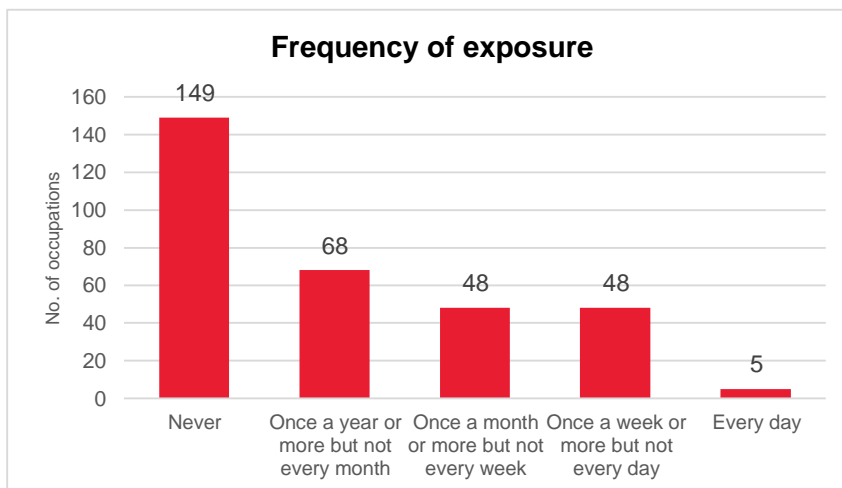
of occupations

14%

of employed people

1.73 million

employed people



Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Metal casting, forging and finishing trades workers | 100 | 3.8 |
| Other construction and mining labourers | 97 | 6.2 |
| Electrical distribution trades workers | 94 | 9.2 |
| Earthmoving plant operators | 92 | 49.6 |
| Bricklayers and stonemasons | 90 | 32.5 |
| Gardeners | 87 | 83.3 |
| Greenkeepers | 87 | 12.5 |
| Service station attendants | 86 | 9.7 |
| Canvas and leather goods makers | 85 | 3.0 |
| Building and plumbing labourers | 84 | 61.1 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Exposure to high places

How often does your current job require that you be exposed to high places?

This can happen for workers who work on poles, scaffolding, catwalks, or ladders longer than 8 feet in length.

Exposed at least once a week



6%

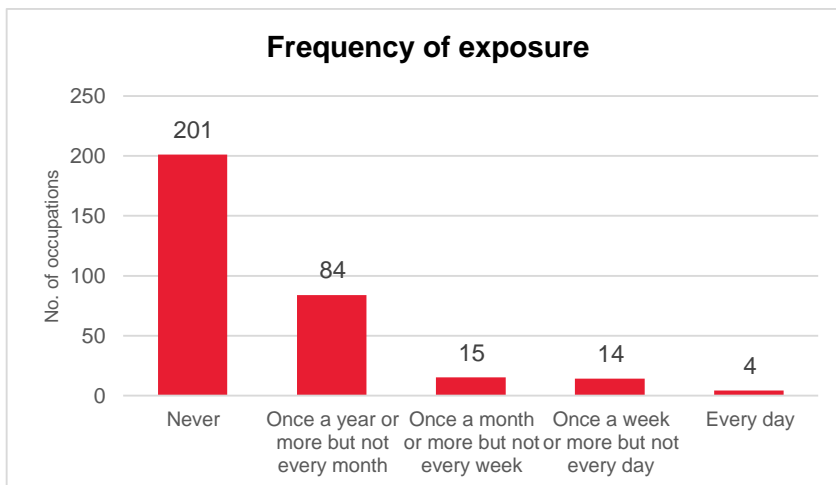
of occupations

6%

of employed people

702,500

employed people



Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Roof tilers | 98 | 6.9 |
| Electrical distribution trades workers | 96 | 9.2 |
| Structural steel construction workers | 92 | 20.5 |
| Travel attendants | 88 | 11.0 |
| Bricklayers and stonemasons | 82 | 32.5 |
| Other stationary plant operators | 80 | 22.6 |
| Chemical, gas, petroleum and power generation plant operators | 79 | 10.2 |
| Airconditioning and refrigeration mechanics | 72 | 27.6 |
| Glaziers | 72 | 9.3 |
| Fencers | 71 | 11.1 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Exposed to minor burns, cuts, bites, or stings

How often does this job require exposure to minor burns, cuts, bites, or stings?

Exposed at least once a week



13%

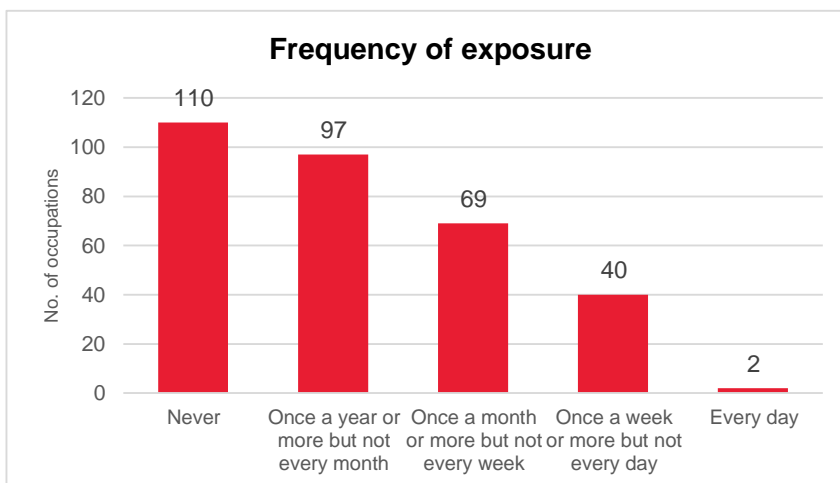
of occupations

10%

of employed people

1.28 million

employed people



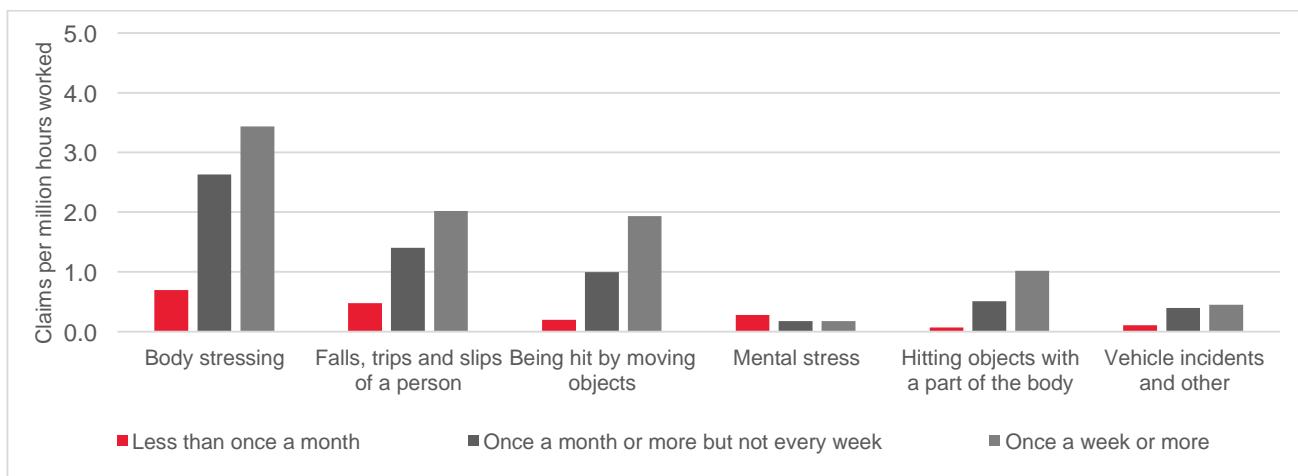
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|--|-----------------------------|-------------------|
| Engineering production workers | 97 | 20.2 |
| Metal engineering process workers | 93 | 10.2 |
| Electricians | 87 | 170.7 |
| Chefs | 85 | 109.1 |
| Other stationary plant operators | 84 | 22.6 |
| Electrical distribution trades workers | 83 | 9.2 |
| Structural steel construction workers | 80 | 20.5 |
| Veterinary nurses | 79 | 14.6 |
| Service station attendants | 78 | 9.7 |
| Veterinarians | 77 | 10.0 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Exposed to radiation

How often does this job require exposure to radiation?

Exposed at least once a week



3%

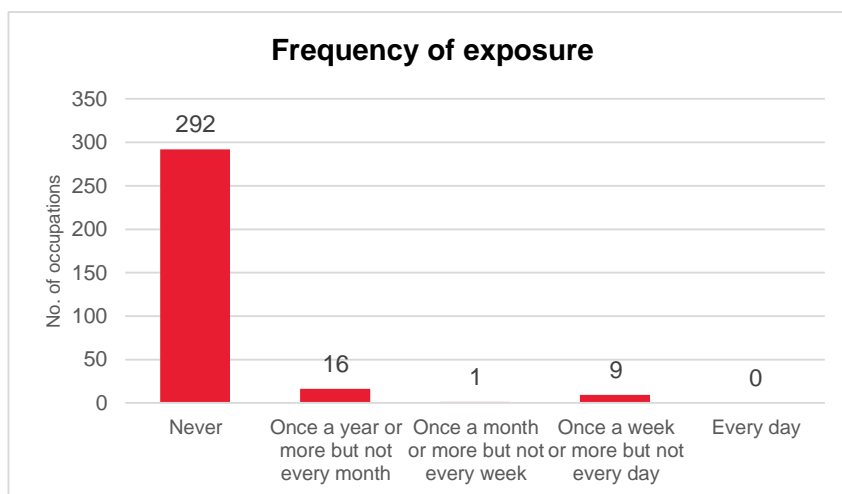
of occupations

1%

of employed people

137,700

employed people



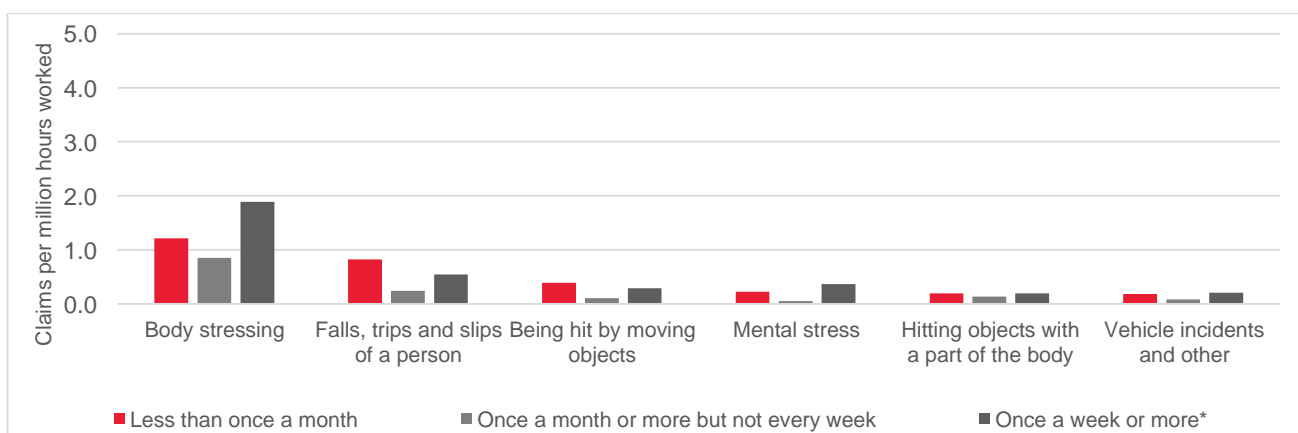
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Dental assistants | 87 | 31.1 |
| Dental practitioners | 85 | 18.5 |
| Medical imaging professionals | 85 | 20.5 |
| Travel attendants | 82 | 11.0 |
| Dental hygienists, technicians and therapists | 77 | 7.6 |
| Veterinary nurses | 76 | 14.6 |
| Veterinarians | 75 | 10.0 |
| Anaesthetists | 72 | 7.1 |
| Air transport professionals | 63 | 17.3 |
| Podiatrists | 58 | 7.0 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Note: the category 'Once a month or more but not every week' has been excluded due to insufficient records (<5).

*The category 'Once a week or more' is based on a low number of records (5 to 9).

Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Cramped workspace, awkward positions

How often does this job require working in cramped workspaces that requires getting into awkward positions?

Exposed at least once a week



5%

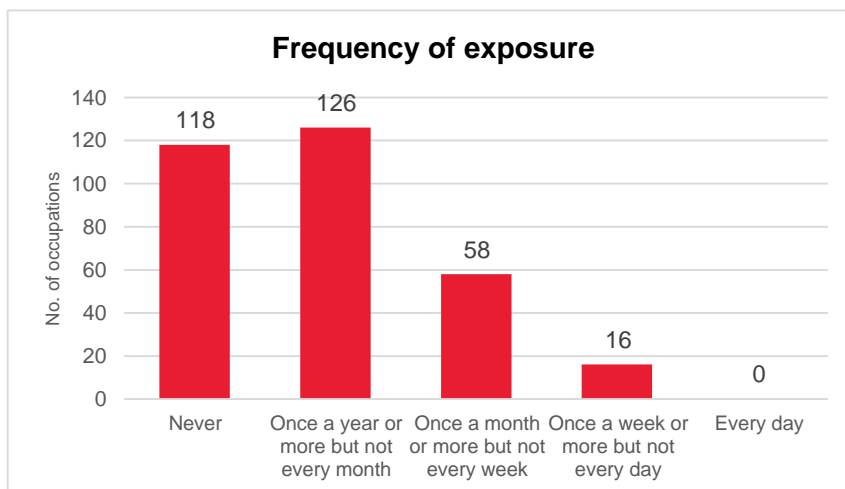
of occupations

5%

of employed people

564,800

employed people



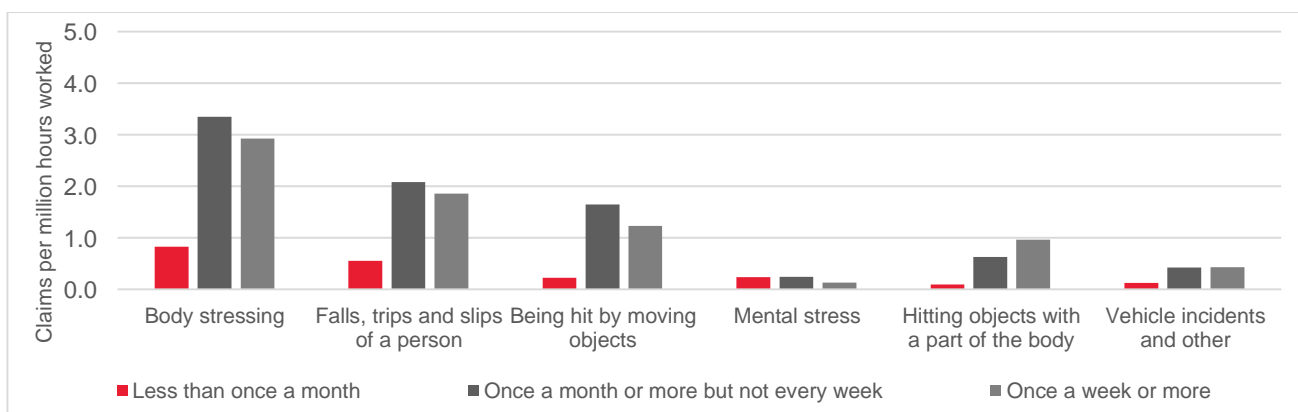
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Electricians | 85 | 170.7 |
| Motor mechanics | 80 | 109.2 |
| Travel attendants | 80 | 11.0 |
| Automotive electricians | 73 | 8.5 |
| Airconditioning and refrigeration mechanics | 72 | 27.6 |
| Wall and floor tilers | 72 | 18.3 |
| Structural steel construction workers | 72 | 20.5 |
| Aircraft maintenance engineers | 70 | 11.4 |
| Plumbers | 70 | 98.6 |
| Insulation and home improvement installers | 70 | 20.9 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Exposure to contaminants

How often does this job require working exposed to contaminants (such as pollutants, gases, dust or odours)?

Exposed at least once a week



30%

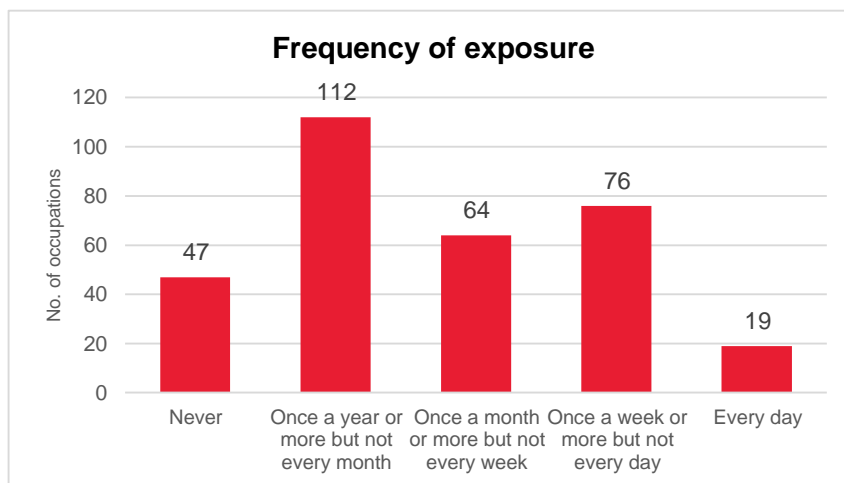
of occupations

21%

of employed people

2.67 million

employed people



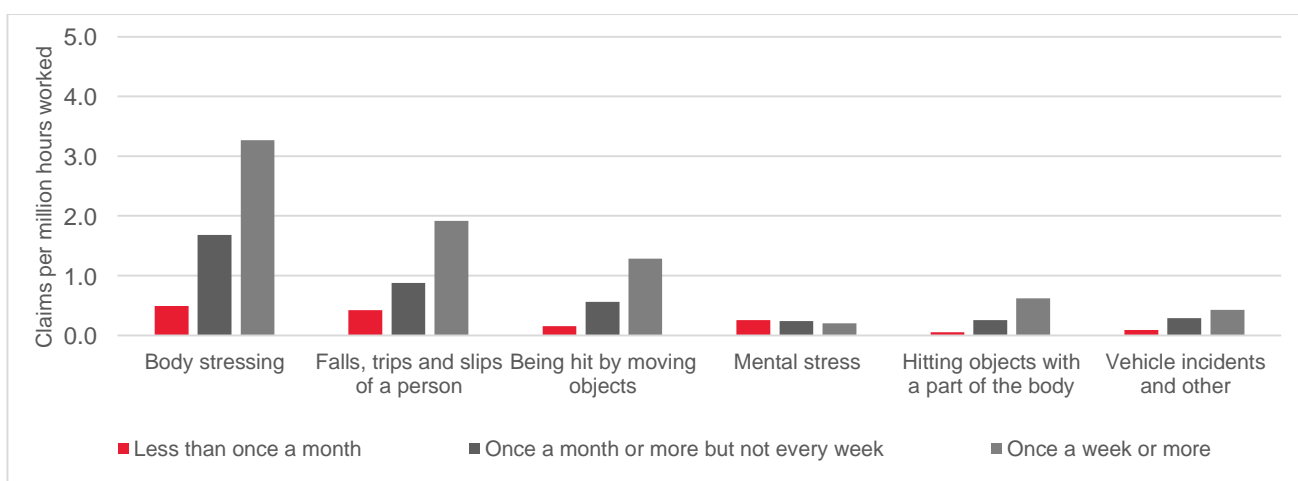
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Metal engineering process workers | 100 | 10.2 |
| Panelbeaters | 100 | 10.2 |
| Vehicle body builders and trimmers | 100 | 4.1 |
| Engineering production workers | 99 | 20.2 |
| Other stationary plant operators | 99 | 22.6 |
| Recycling and rubbish collectors | 97 | 2.7 |
| Motor mechanics | 96 | 109.2 |
| Car detailers | 94 | 18.9 |
| Other construction and mining labourers | 92 | 6.2 |
| Wood machinists and other wood trades workers | 92 | 2.2 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Whole body vibration

How often does this job require exposure to whole body vibration (e.g., operate a jackhammer)?

Exposed at least once a week



2%

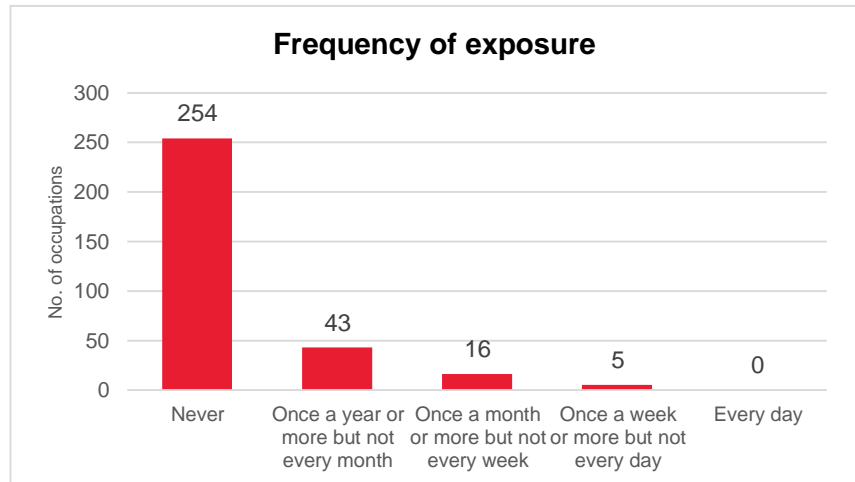
of occupations

1%

of employed people

132,000

employed people



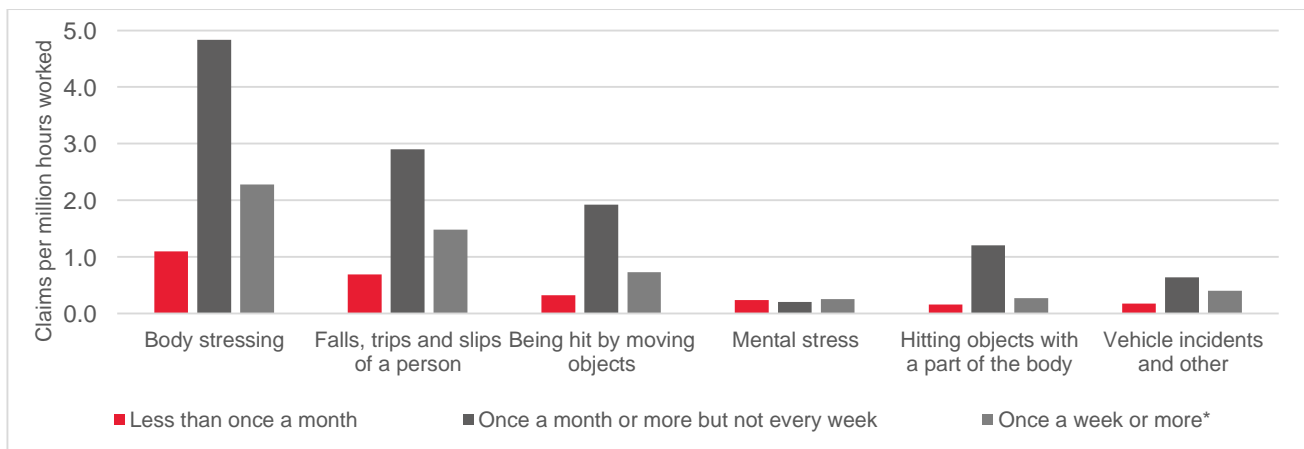
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Drillers, miners and shot firers | 85 | 59.2 |
| Paving and surfacing labourers | 82 | 7.2 |
| Earthmoving plant operators | 74 | 49.6 |
| Train and tram drivers | 74 | 11.7 |
| Railway track workers | 68 | 4.3 |
| Marine transport professionals | 60 | 12.1 |
| Concreters | 58 | 36.5 |
| Travel attendants | 58 | 11.0 |
| Other construction and mining labourers | 57 | 6.2 |
| Fencers | 57 | 11.1 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



*The category 'Once a week or more' is based on a low number of records (5 to 9).

Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Extremely bright or inadequate lighting

How often does this job require working in extremely bright or inadequate lighting conditions?

Exposed at least once a week



6%

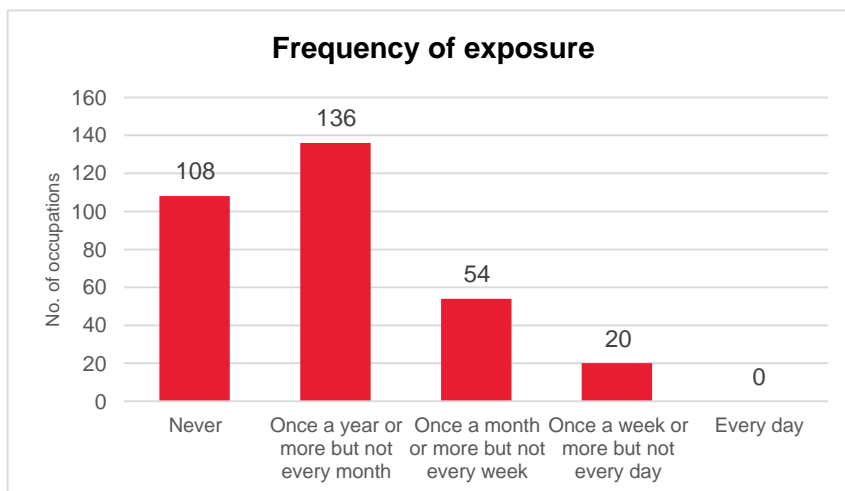
of occupations

5%

of employed people

675,400

employed people



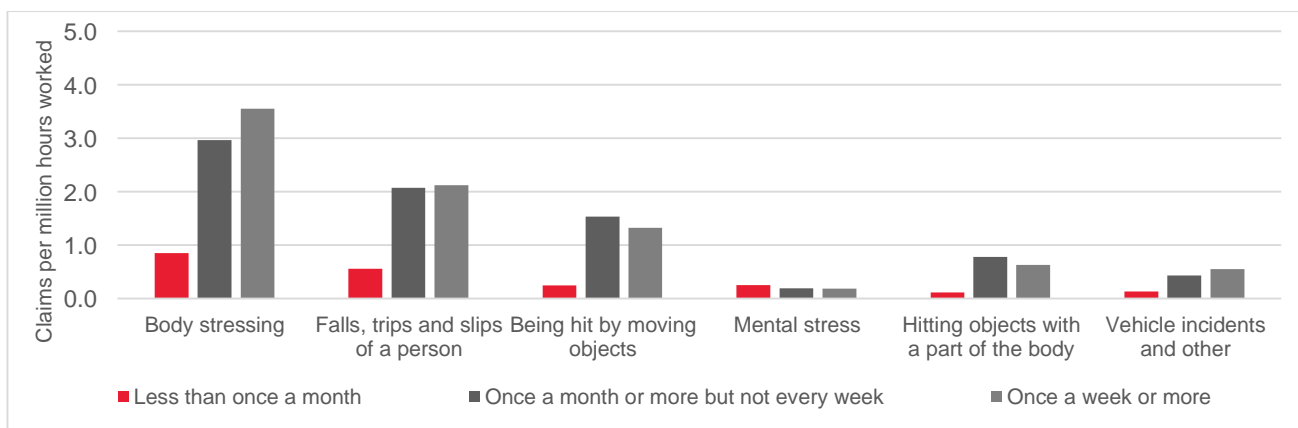
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Electrical distribution trades workers | 86 | 9.2 |
| Metal fitters and machinists | 78 | 110.7 |
| Structural steel and welding trades workers | 78 | 73.9 |
| Fire and emergency workers | 77 | 18.3 |
| Marine transport professionals | 77 | 12.1 |
| Structural steel construction workers | 77 | 20.5 |
| Police | 75 | 74.1 |
| Railway track workers | 74 | 4.3 |
| Chemical, gas, petroleum and power generation plant operators | 71 | 10.2 |
| Clay, concrete, glass and stone processing machine operators | 70 | 1.8 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Sounds, noise levels are distracting or uncomfortable

How often does this job require working exposed to sounds and noise levels that are distracting or uncomfortable?

Exposed at least once a week



31%

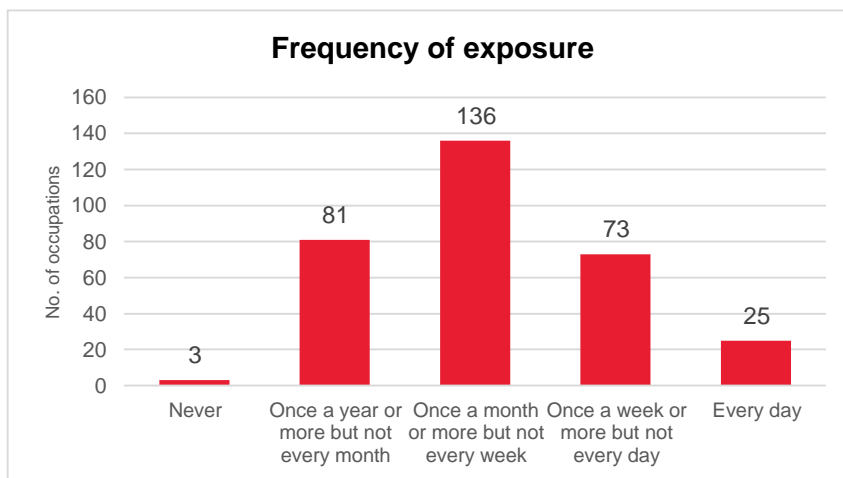
of occupations

22%

of employed people

2.73 million

employed people



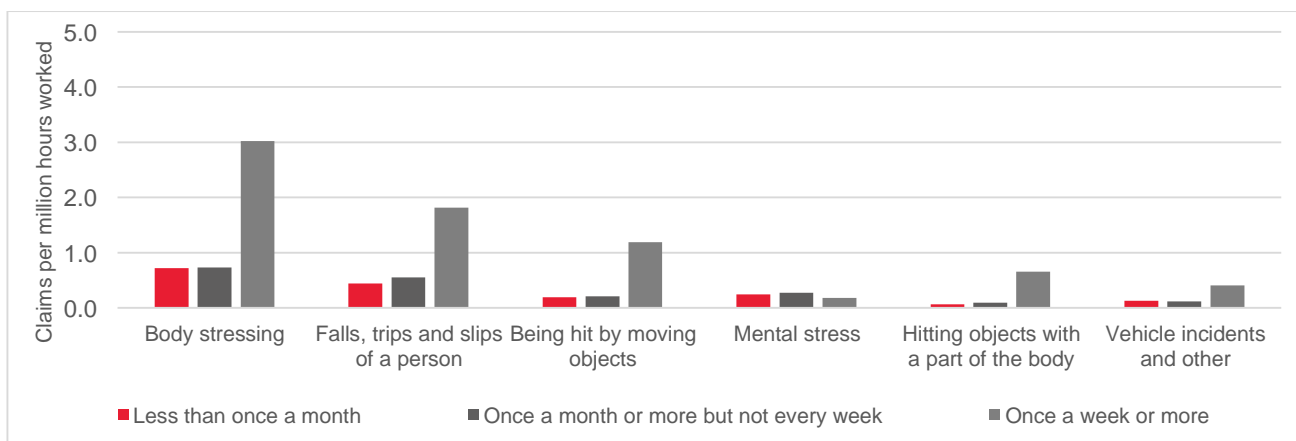
Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Metal engineering process workers | 100 | 10.2 |
| Other stationary plant operators | 98 | 22.6 |
| Chemical, gas, petroleum and power generation plant operators | 97 | 10.2 |
| Paper and wood processing machine operators | 97 | 6.9 |
| Train and tram drivers | 97 | 11.7 |
| Travel attendants | 96 | 11.0 |
| Structural steel construction workers | 96 | 20.5 |
| Railway track workers | 95 | 4.3 |
| Other construction and mining labourers | 94 | 6.2 |
| Gardeners | 94 | 83.3 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Very hot or very cold temperatures

How often does this job require working in very hot (above 90 F degrees) or very cold (below 32 F degrees) temperatures?

Exposed at least once a week



21%

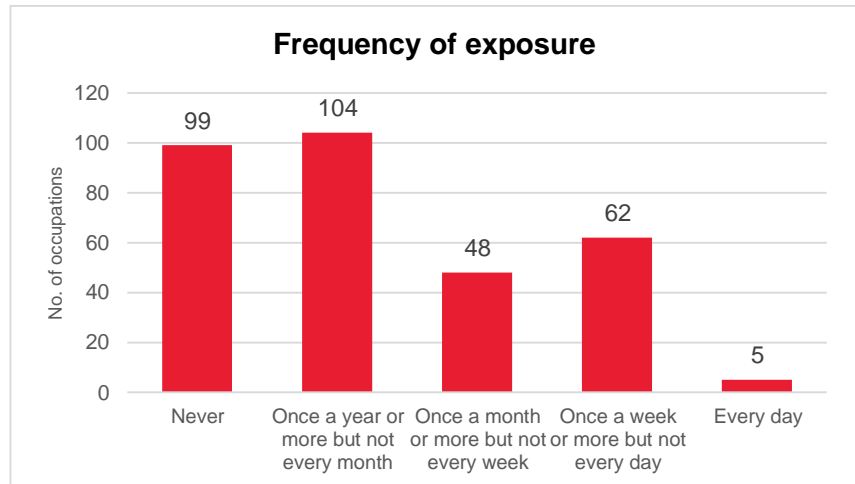
of occupations

17%

of employed people

2.14 million

employed people



Note: 'Exposed at least once a week' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---------------------------------------|-----------------------------|-------------------|
| Metal engineering process workers | 100 | 10.2 |
| Engineering production workers | 96 | 20.2 |
| Gardeners | 94 | 83.3 |
| Greenkeepers | 94 | 12.5 |
| Structural steel construction workers | 88 | 20.5 |
| Building and plumbing labourers | 87 | 61.1 |
| Other stationary plant operators | 87 | 22.6 |
| Train and tram drivers | 86 | 11.7 |
| Forklift drivers | 86 | 68.2 |
| Bricklayers and stonemasons | 86 | 32.5 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time bending or twisting the body

How much does this job require bending or twisting your body?

More than half the time or continually



15%

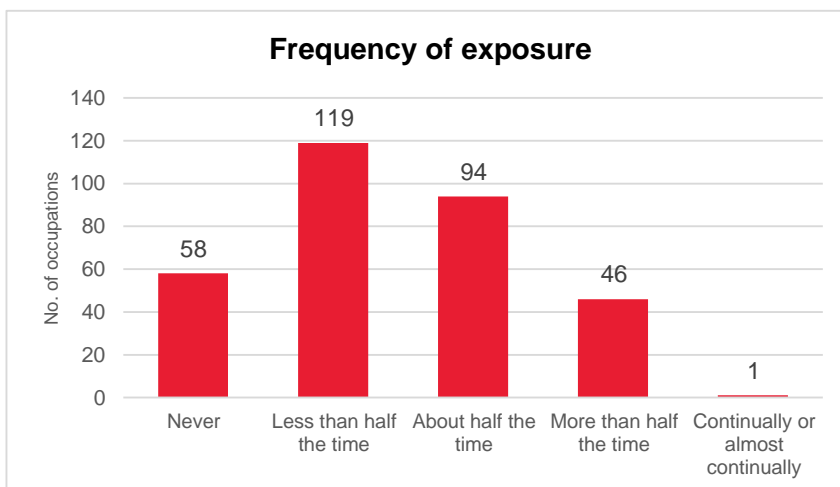
of occupations

14%

of employed people

1.77 million

employed people



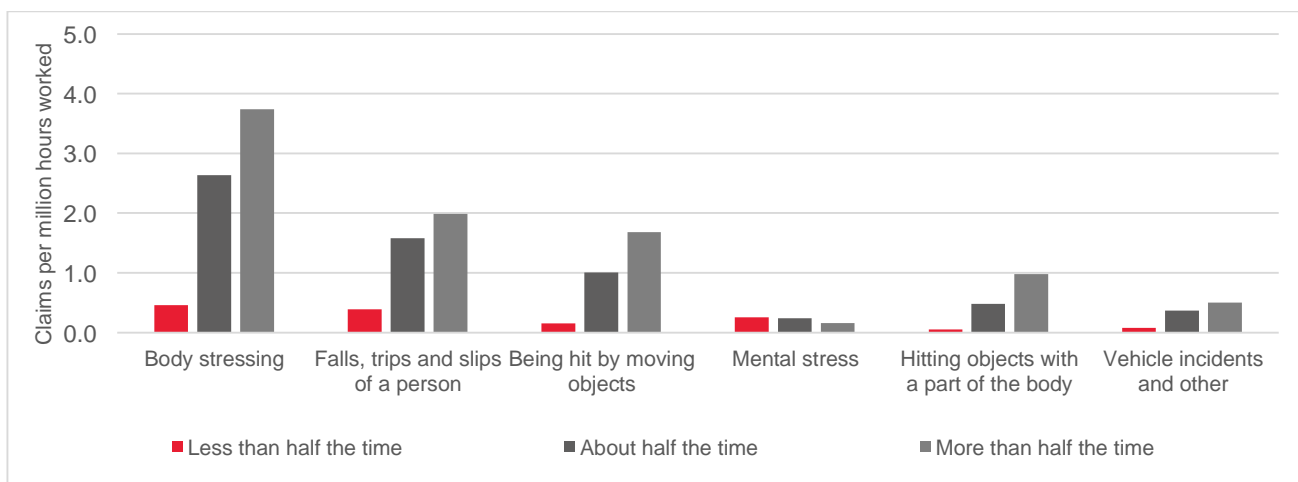
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Electricians | 92 | 170.7 |
| Housekeepers | 87 | 28.4 |
| Domestic cleaners | 87 | 45.1 |
| Panelbeaters | 81 | 10.2 |
| Vehicle body builders and trimmers | 81 | 4.1 |
| Wall and floor tilers | 80 | 18.3 |
| Concreters | 78 | 36.5 |
| Bricklayers and stonemasons | 78 | 32.5 |
| Painting trades workers | 77 | 56.6 |
| Dental hygienists, technicians and therapists | 75 | 7.6 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time climbing ladders, scaffolds, or poles

How much does this job require climbing ladders, scaffolds, or poles?

More than half the time or continually



2%

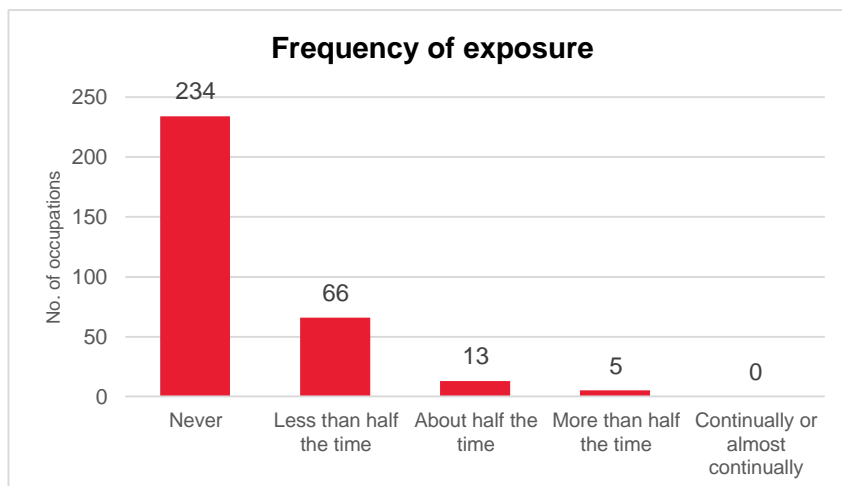
of occupations

2%

of employed people

362,700

employed people



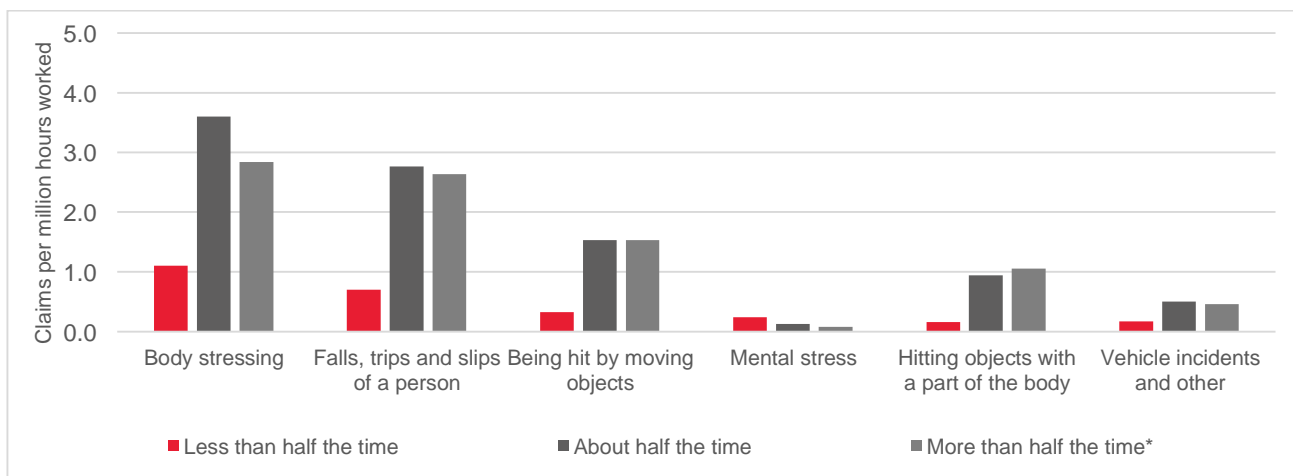
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Electricians | 80 | 170.7 |
| Bricklayers and stonemasons | 79 | 32.5 |
| Painting trades workers | 70 | 56.6 |
| Plumbers | 69 | 98.6 |
| Sheetmetal trades workers | 68 | 4.4 |
| Structural steel construction workers | 60 | 20.5 |
| Plasterers | 59 | 34.0 |
| Roof tilers | 58 | 6.9 |
| Insulation and home improvement installers | 57 | 20.9 |
| Airconditioning and refrigeration mechanics | 54 | 27.6 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



*The category 'More than half the time' is based on a low number of records (5 to 9).

Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time keeping or regaining balance

How much does this job require keeping or regaining your balance?

More than half the time or continually



0.3%

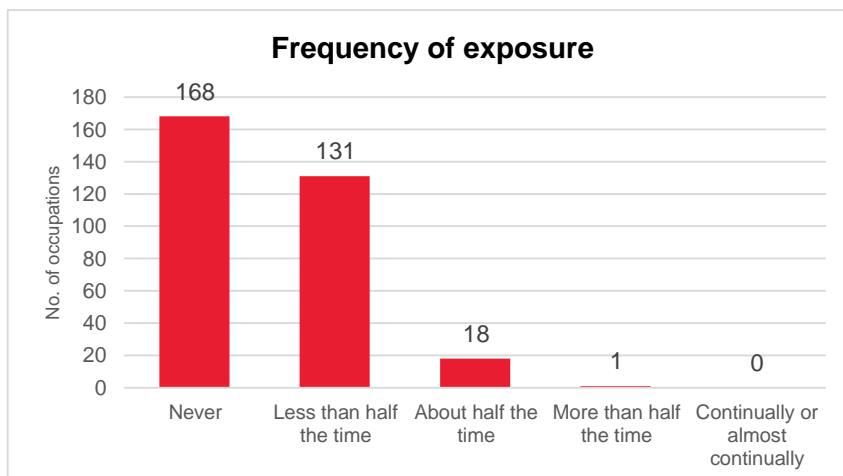
of occupations

1%

of employed people

170,700

employed people



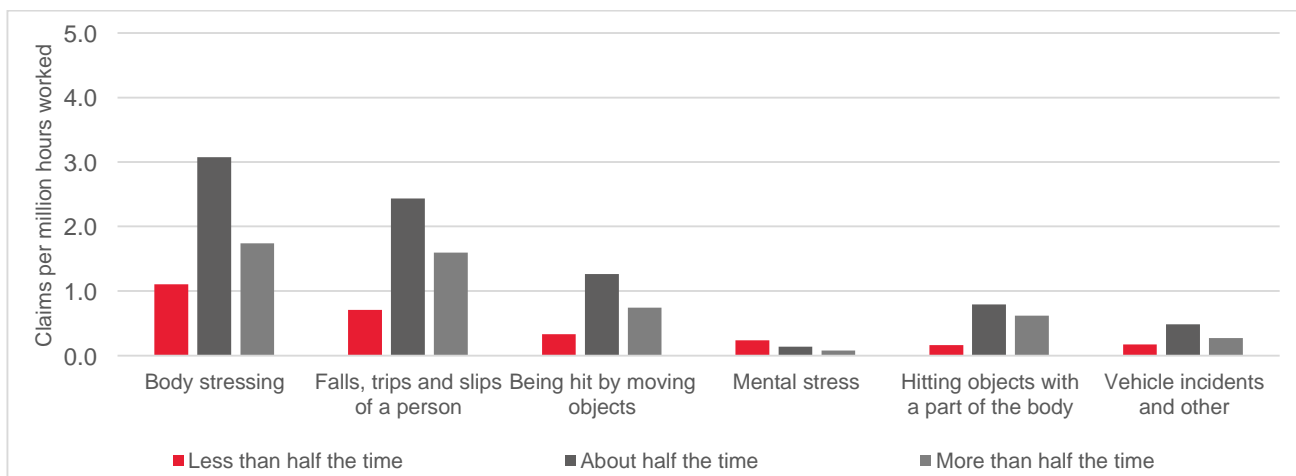
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|--|-----------------------------|-------------------|
| Electricians | 71 | 170.7 |
| Concreters | 62 | 36.5 |
| Structural steel construction workers | 60 | 20.5 |
| Electrical distribution trades workers | 54 | 9.2 |
| Sportspersons | 53 | 12.4 |
| Bricklayers and stonemasons | 51 | 32.5 |
| Travel attendants | 51 | 11.0 |
| Deck and fishing hands | 51 | 6.6 |
| Enrolled and mothercraft nurses | 49 | 23.0 |
| Insulation and home improvement installers | 49 | 20.9 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



Note: the category 'More than half the time' has been excluded due to insufficient records (<5).

Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time kneeling, crouching, stooping, or crawling

How much does this job require kneeling, crouching, stooping or crawling?

More than half the time or continually



3%

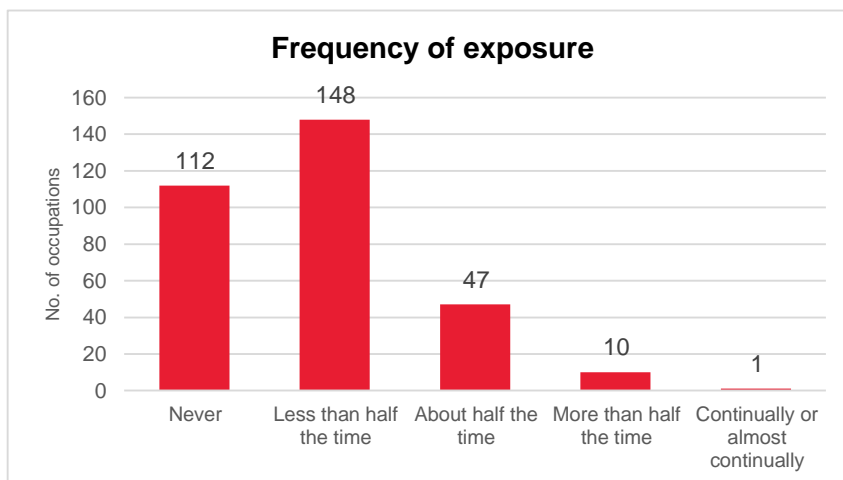
of occupations

3%

of employed people

349,500

employed people



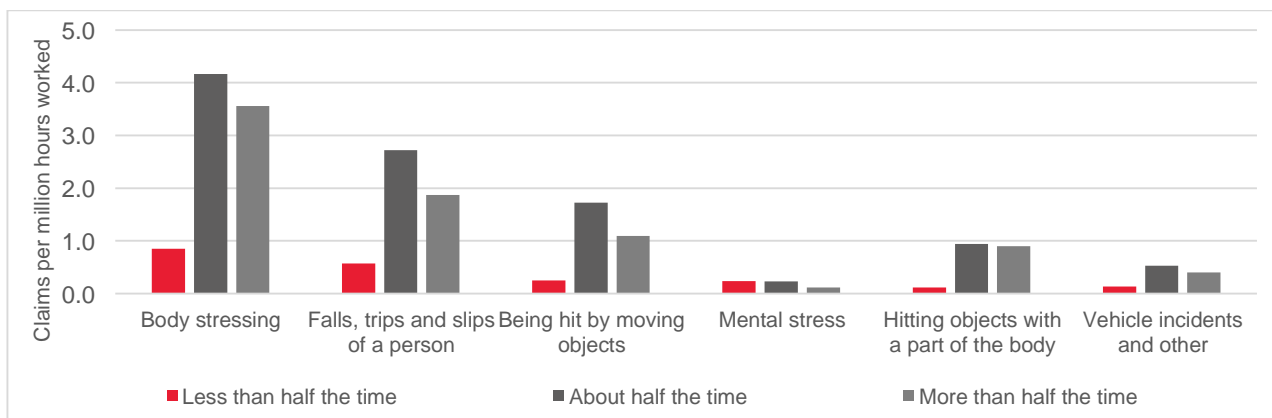
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|------------------------------------|-----------------------------|-------------------|
| Wall and floor tilers | 89 | 18.3 |
| Floor finishers | 87 | 8.5 |
| Panelbeaters | 73 | 10.2 |
| Vehicle body builders and trimmers | 73 | 4.1 |
| Concreters | 71 | 36.5 |
| Electricians | 69 | 170.7 |
| Service station attendants | 69 | 9.7 |
| Roof tilers | 66 | 6.9 |
| Fencers | 66 | 11.1 |
| Domestic cleaners | 64 | 45.1 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time making repetitive motions

How much does this job require making repetitive motions?

More than half the time or continually



36%

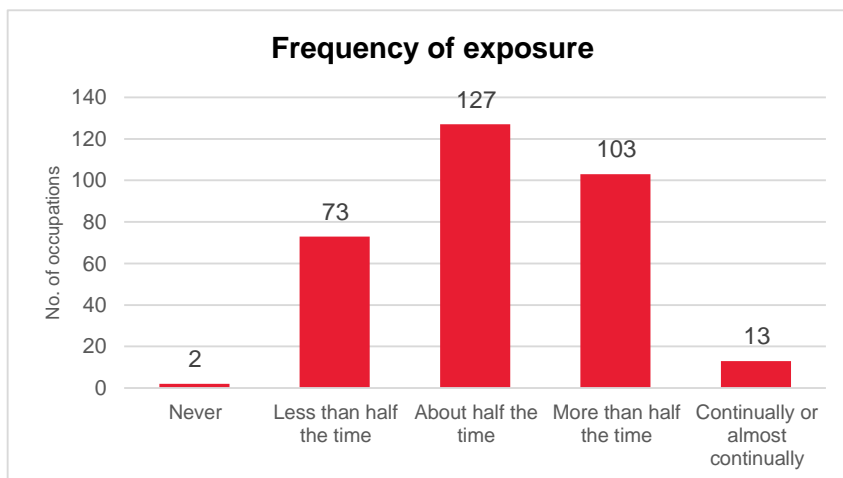
of occupations

31%

of employed people

3.85 million

employed people



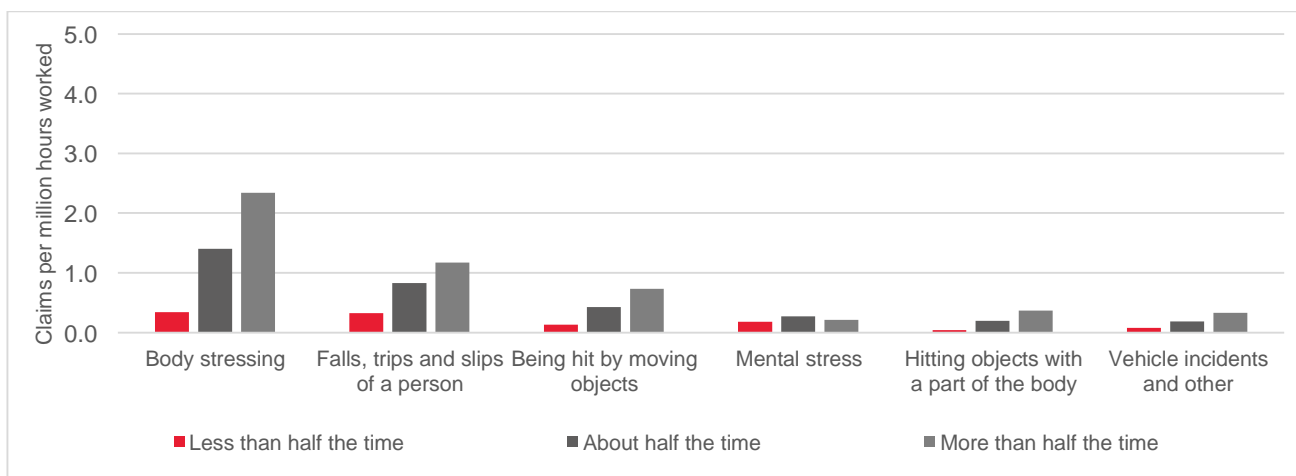
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Dental hygienists, technicians and therapists | 100 | 7.6 |
| Domestic cleaners | 94 | 45.1 |
| Housekeepers | 94 | 28.4 |
| Meat boners and slicers, and slaughterers | 94 | 7.4 |
| Recycling and rubbish collectors | 91 | 2.7 |
| Dental practitioners | 90 | 18.5 |
| Industrial spraypainters | 90 | 6.9 |
| Vehicle painters | 90 | 9.6 |
| Keyboard operators | 90 | 50.5 |
| Bank workers | 89 | 37.8 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time sitting

How much does this job require sitting?

More than half the time or continually



38%

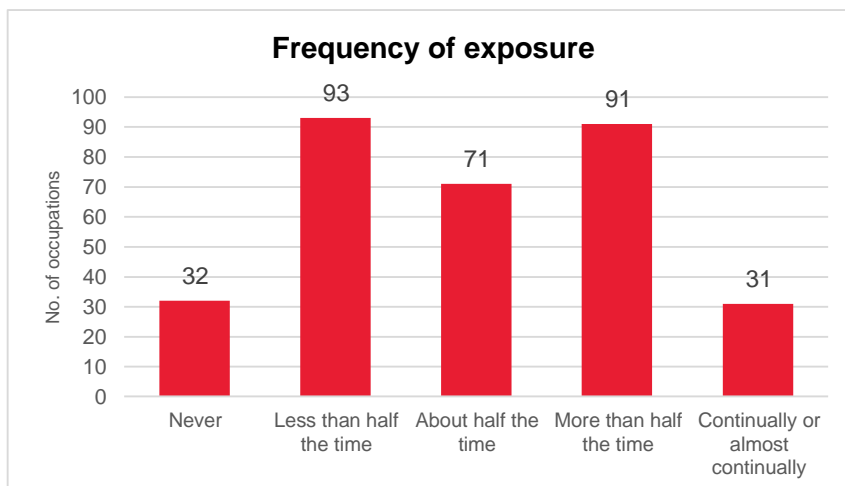
of occupations

39%

of employed people

4.92 million

employed people



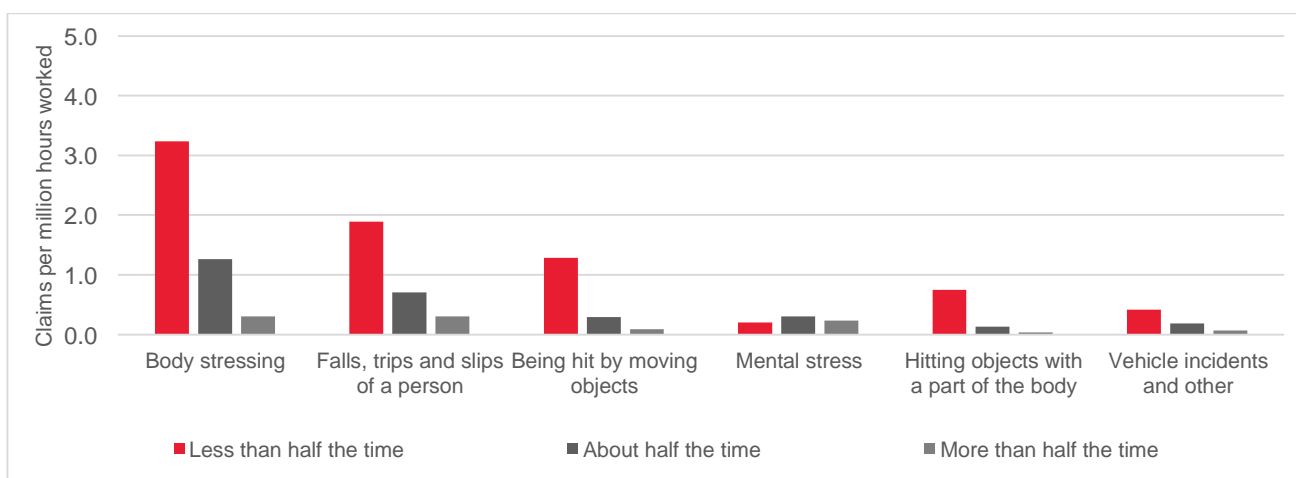
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|--|-----------------------------|-------------------|
| Telemarketers | 98 | 5.4 |
| Insurance, money market and statistical clerks | 97 | 38.5 |
| Keyboard operators | 97 | 50.5 |
| Graphic and web designers, and illustrators | 97 | 56.2 |
| Tourism and travel advisers | 97 | 15.8 |
| Bus and coach drivers | 96 | 42.6 |
| Software and applications programmers | 96 | 157.9 |
| Judicial and other legal professionals | 95 | 12.4 |
| Multimedia specialists and web developers | 95 | 14.8 |
| Payroll clerks | 95 | 43.5 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time standing

How much does this job require standing?

More than half the time or continually



41%

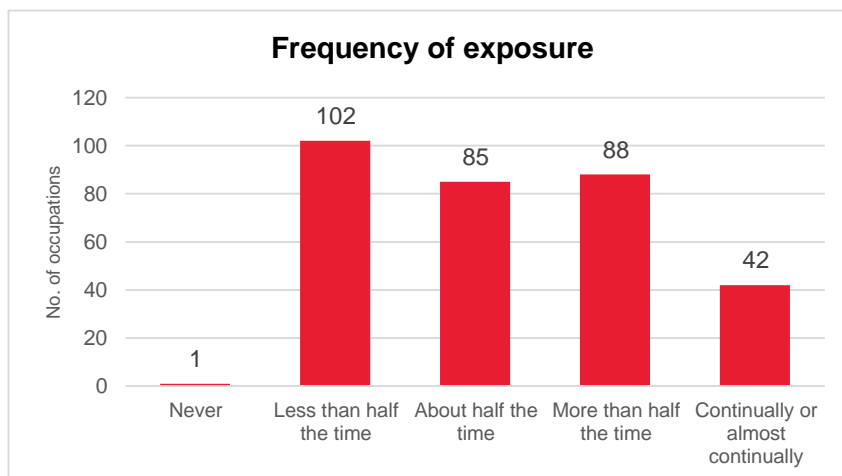
of occupations

45%

of employed people

5.58 million

employed people



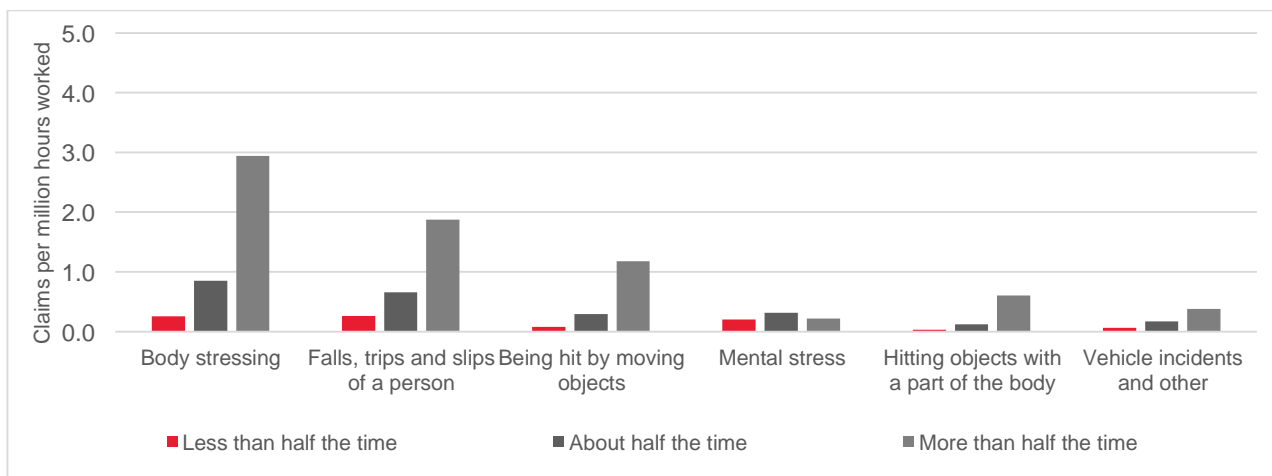
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Cooks | 100 | 42.1 |
| Meat boners and slicers, and slaughterers | 100 | 7.4 |
| Cafe workers | 100 | 32.9 |
| Pharmacy sales assistants | 97 | 36.7 |
| Sheetmetal trades workers | 97 | 4.4 |
| Bricklayers and stonemasons | 97 | 32.5 |
| Butchers and smallgoods makers | 97 | 13.3 |
| Plasterers | 97 | 34.0 |
| Painting trades workers | 96 | 56.6 |
| Caretakers | 96 | 7.4 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time using your hands to handle, control, or feel objects, tools, or controls

How much does this job require using your hands to handle, control, or feel objects, tools or controls?

More than half the time or continually



45%

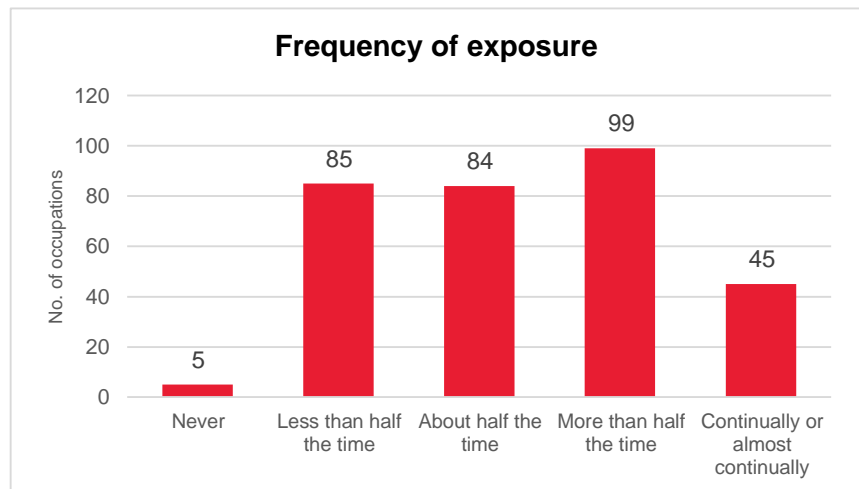
of occupations

34%

of employed people

4.23 million

employed people



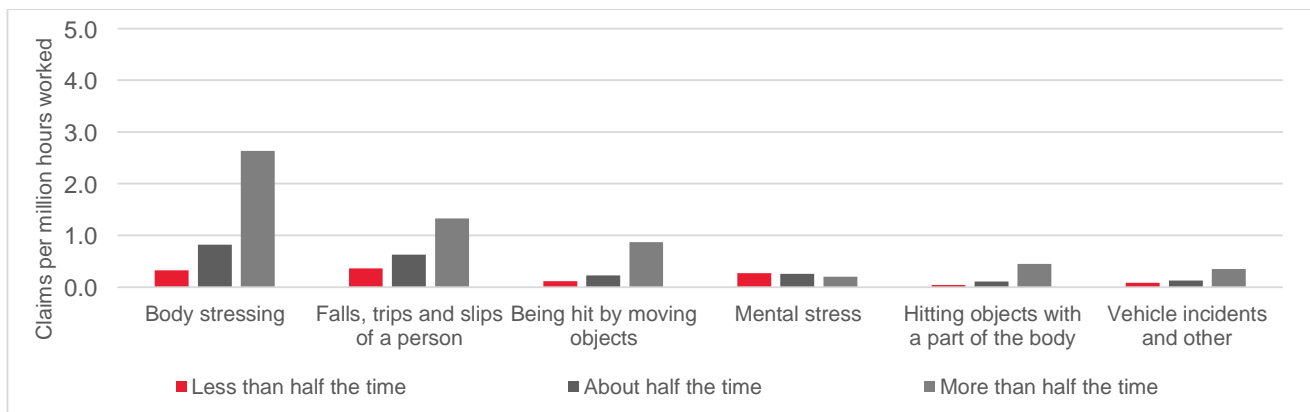
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Canvas and leather goods makers | 100 | 3.0 |
| Dental hygienists, technicians and therapists | 100 | 7.6 |
| Recycling and rubbish collectors | 100 | 2.7 |
| Panelbeaters | 99 | 10.2 |
| Vehicle body builders and trimmers | 99 | 4.1 |
| Electricians | 99 | 170.7 |
| Concreters | 98 | 36.5 |
| Motor mechanics | 98 | 109.2 |
| Hairdressers | 98 | 69.0 |
| Upholsterers | 97 | 1.8 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Spend time walking and running

How much does this job require walking and running?

More than half the time or continually



18%

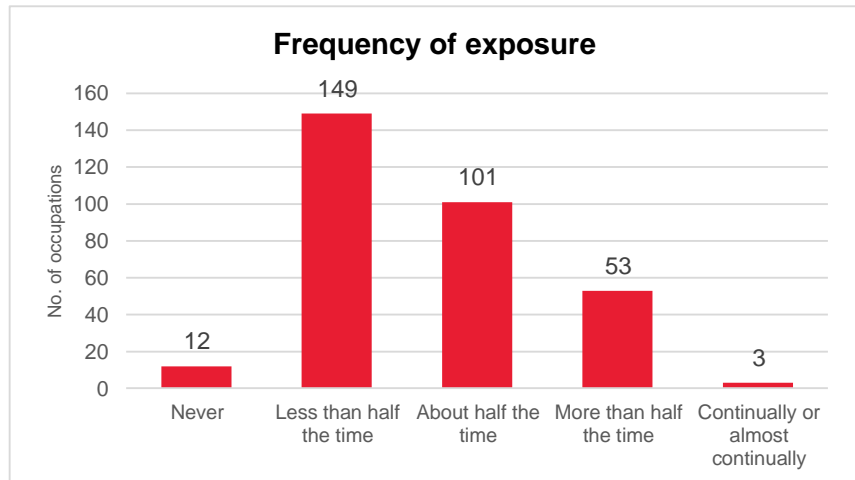
of occupations

21%

of employed people

2.64 million

employed people



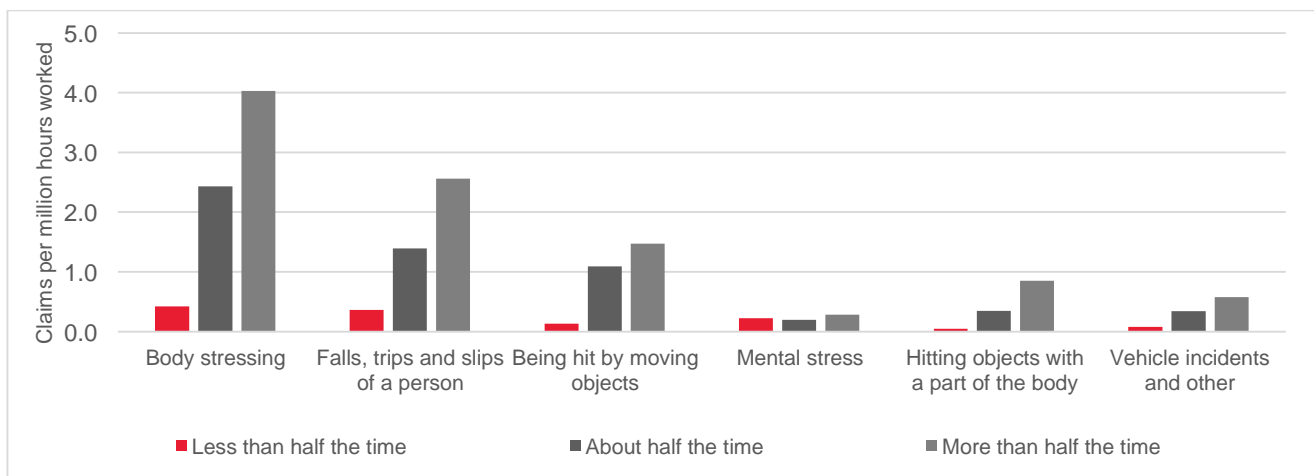
Note: 'More than half the time or continually' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Waiters | 93 | 136.4 |
| Enrolled and mothercraft nurses | 89 | 23.0 |
| Textile and footwear production machine operators | 88 | 2.2 |
| Domestic cleaners | 87 | 45.1 |
| Housekeepers | 87 | 28.4 |
| Concreters | 85 | 36.5 |
| Electricians | 81 | 170.7 |
| Chefs | 80 | 109.1 |
| Visual merchandisers | 80 | 7.6 |
| Cafe and restaurant managers | 78 | 63.5 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by time spent in body position



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Frequency required to work in an enclosed vehicle or equipment

How often does this job require working in a closed vehicle or equipment (e.g., a car)?

Once a week or more



16%

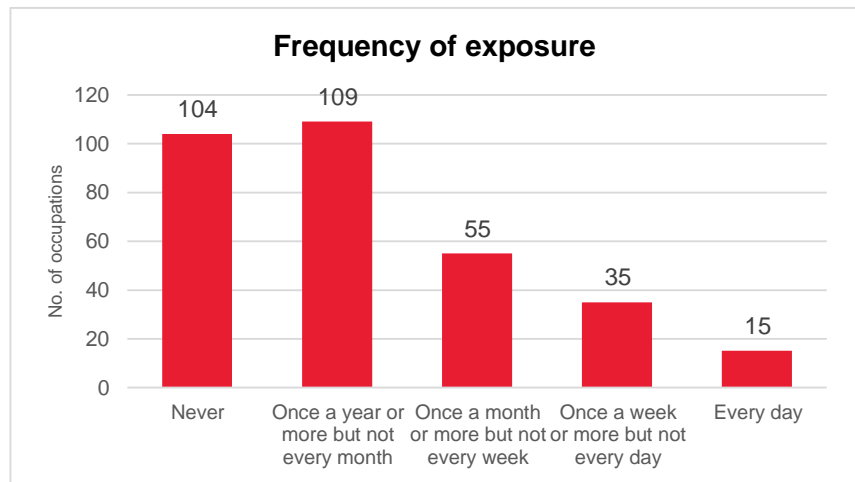
of occupations

13%

of employed people

1.65 million

employed people



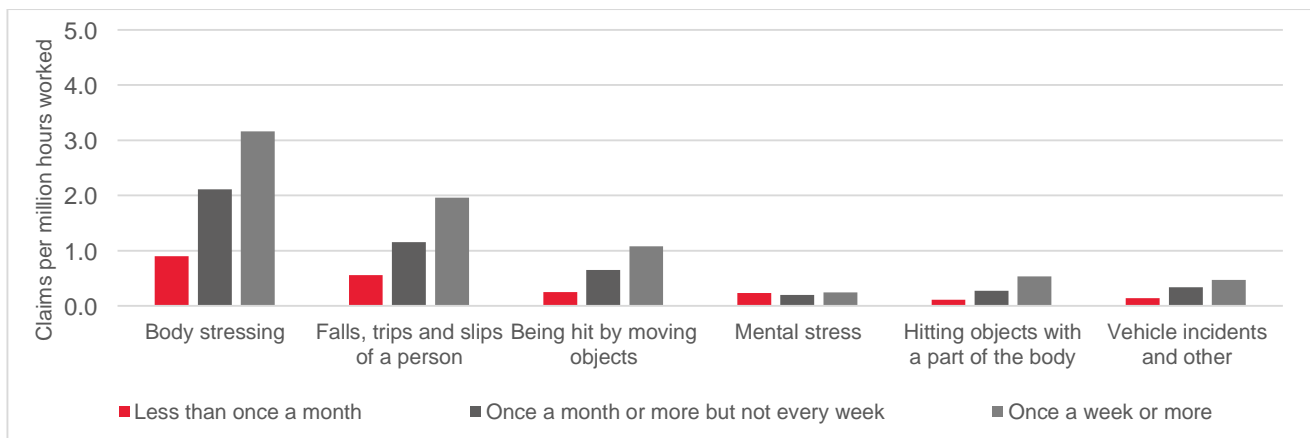
Note: 'Once a week or more' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|------------------------------------|-----------------------------|-------------------|
| Recycling and rubbish collectors | 100 | 2.7 |
| Truck drivers | 99 | 202.5 |
| Car detailers | 99 | 18.9 |
| Motor mechanics | 95 | 109.2 |
| Commissioned officers (management) | 95 | 2.8 |
| Other hospitality workers | 94 | 6.8 |
| Train and tram drivers | 94 | 11.7 |
| Telecommunications trades workers | 93 | 17.8 |
| Police | 93 | 74.1 |
| Automotive electricians | 92 | 8.5 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Frequency required to work in an open vehicle or equipment

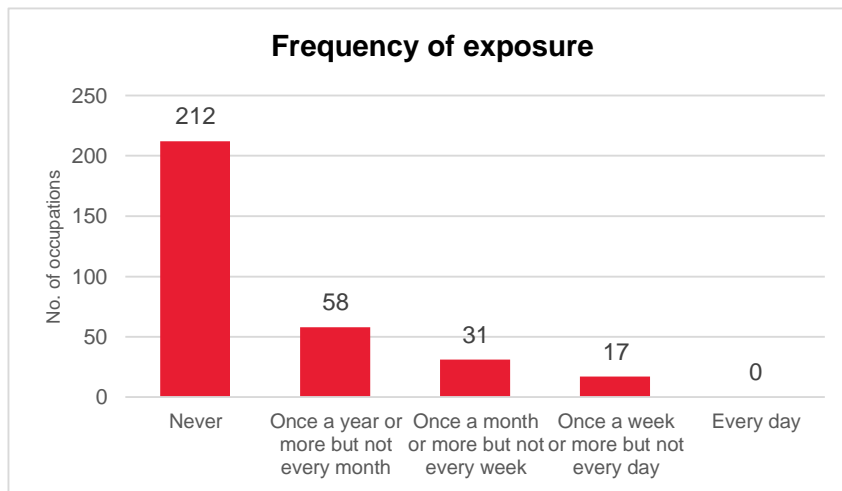
How often does this job require working in an open vehicle or equipment (e.g. tractor)?

Once a week or more 

5%
of occupations

4%
of employed people

538,300
employed people



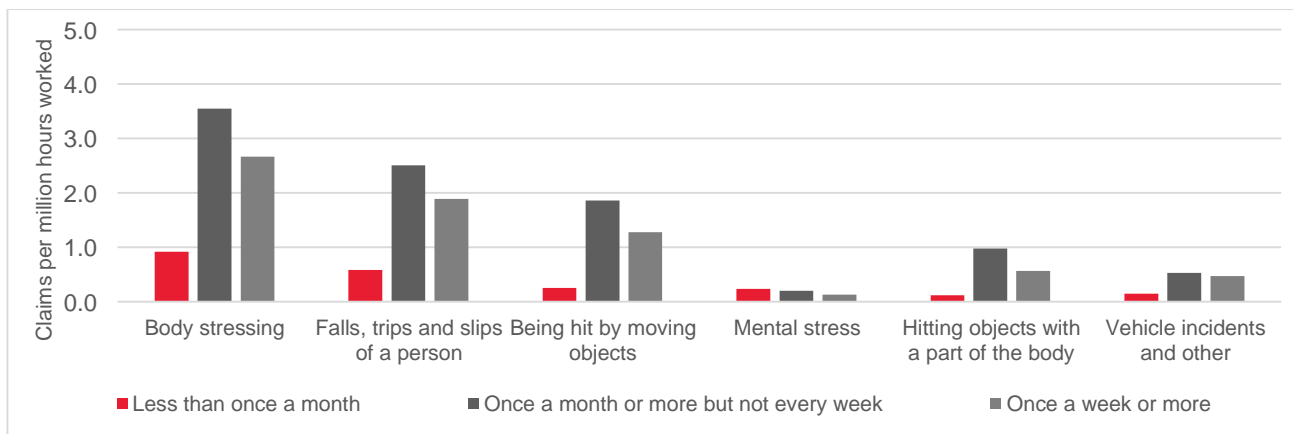
Note: 'Once a week or more' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Forklift drivers | 85 | 68.2 |
| Electrical distribution trades workers | 85 | 9.2 |
| Earthmoving plant operators | 84 | 49.6 |
| Other construction and mining labourers | 81 | 6.2 |
| Paving and surfacing labourers | 81 | 7.2 |
| Metal casting, forging and finishing trades workers | 77 | 3.8 |
| Freight and furniture handlers | 76 | 14.1 |
| Structural steel construction workers | 73 | 20.5 |
| Crop farmers | 72 | 35.1 |
| Livestock farmers | 72 | 80.6 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Deal with unpleasant or angry people

How frequently does the worker have to deal with unpleasant, angry, or discourteous individuals as part of the job requirements?

Once a week or more



21%

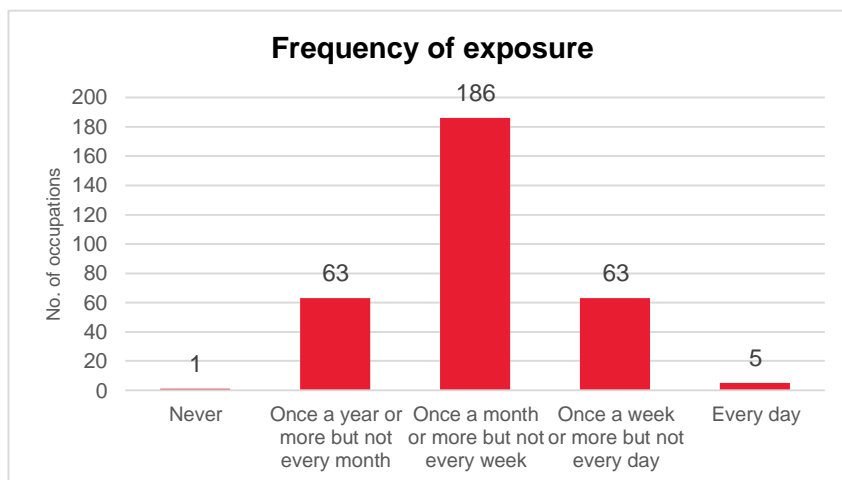
of occupations

28%

of employed people

3.47 million

employed people



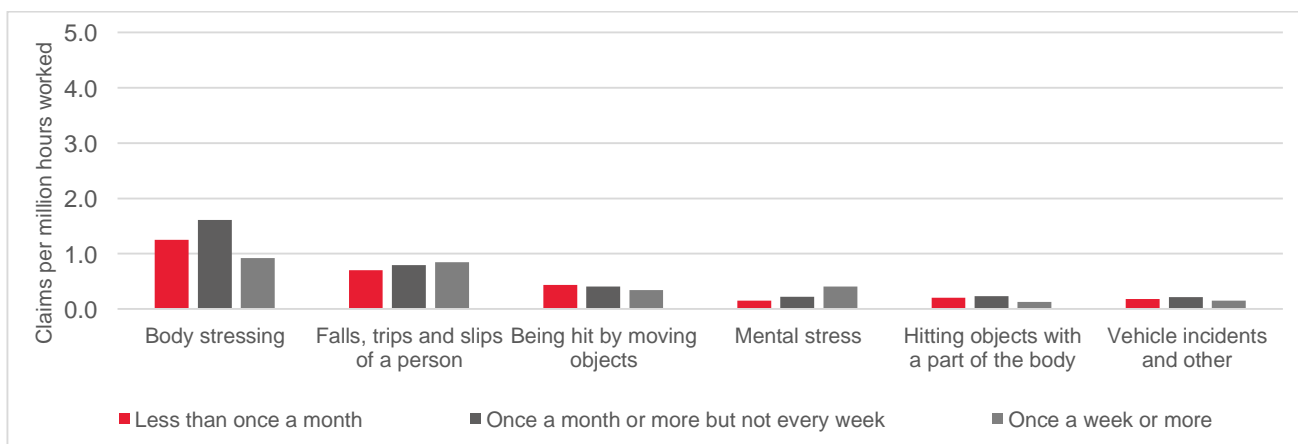
Note: 'Once a week or more' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|--|-----------------------------|-------------------|
| Telemarketers | 95 | 5.4 |
| Prison officers | 94 | 23.5 |
| Police | 91 | 74.1 |
| Debt collectors | 91 | 5.3 |
| Travel attendants | 90 | 11.0 |
| Social workers | 87 | 42.3 |
| Switchboard operators | 84 | 2.4 |
| Gaming workers | 83 | 6.1 |
| Judicial and other legal professionals | 83 | 12.4 |
| Psychiatrists | 82 | 4.2 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Frequency of conflict situations

How often are there conflict situations the employee has to face in this job?

Once a week or more



20%

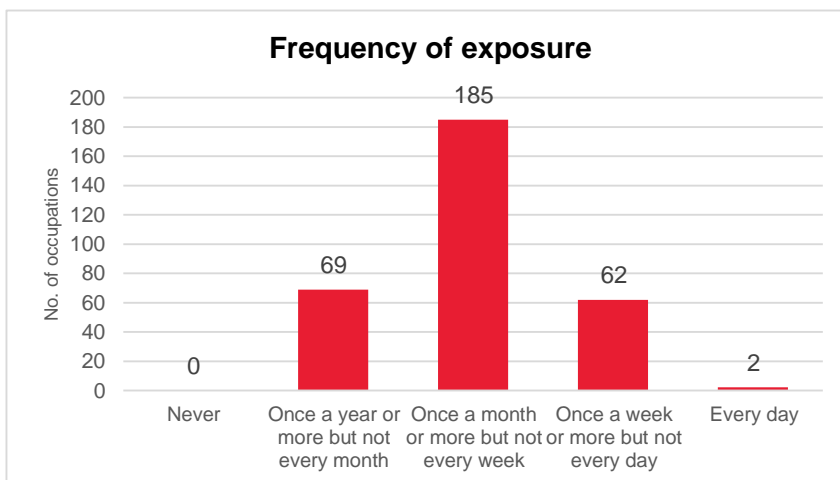
of occupations

25%

of employed people

3.06 million

employed people



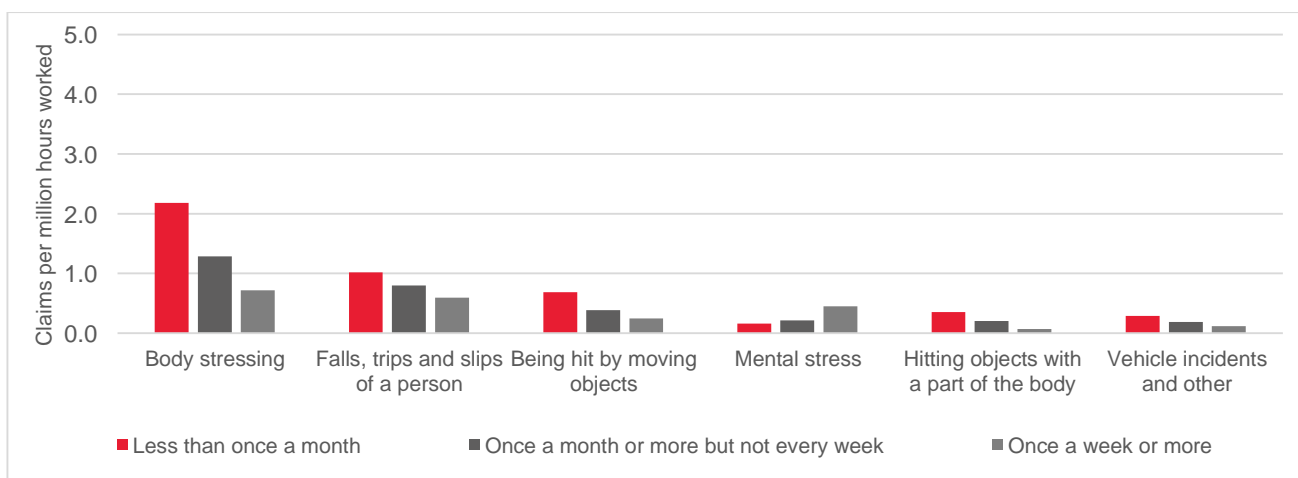
Note: 'Once a week or more' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|--|-----------------------------|-------------------|
| Judicial and other legal professionals | 92 | 12.4 |
| Social workers | 88 | 42.3 |
| Commissioned officers (management) | 86 | 2.8 |
| Police | 86 | 74.1 |
| Travel attendants | 85 | 11.0 |
| Other education managers | 81 | 14.9 |
| School principals | 81 | 28.2 |
| Barristers | 80 | 8.5 |
| Solicitors | 80 | 87.8 |
| Middle school teachers (AUS) \ intermediate school teachers (NZ) | 77 | 2.0 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Deal with physically aggressive people

How frequently does this job require the worker to deal with physical aggression of violent individuals?

Once a week or more



1%

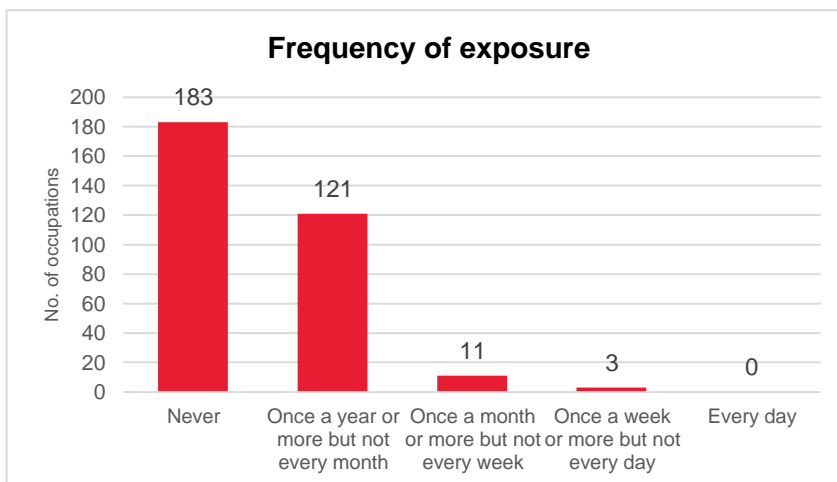
of occupations

1%

of employed people

100,400

employed people



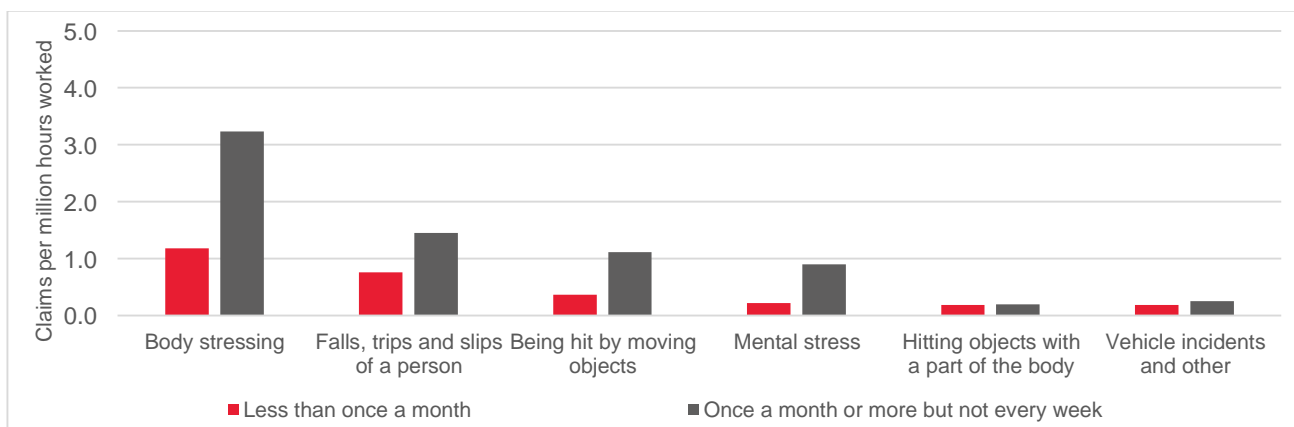
Note: 'Once a week or more' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|--|-----------------------------|-------------------|
| Prison officers | 78 | 23.5 |
| Police | 75 | 74.1 |
| Commissioned officers (management) | 64 | 2.8 |
| Enrolled and mothercraft nurses | 62 | 23.0 |
| Psychiatrists | 62 | 4.2 |
| Judicial and other legal professionals | 59 | 12.4 |
| Social workers | 58 | 42.3 |
| Fire and emergency workers | 47 | 18.3 |
| Travel attendants | 45 | 11.0 |
| Counsellors | 43 | 34.6 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Note: the category 'Once a week or more' has been excluded due to insufficient records (<5)

Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Consequence of error

How serious would the result usually be if the worker made a mistake that was not readily correctable?

Very or extremely serious



22%

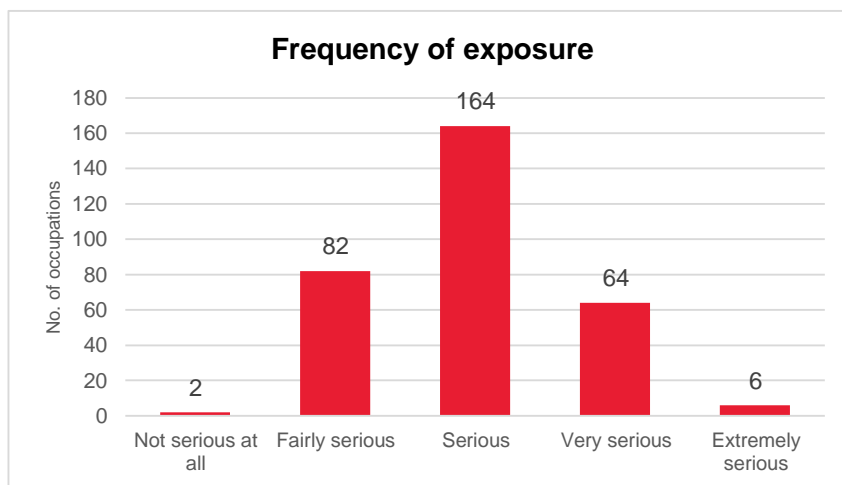
of occupations

19%

of employed people

2.39 million

employed people



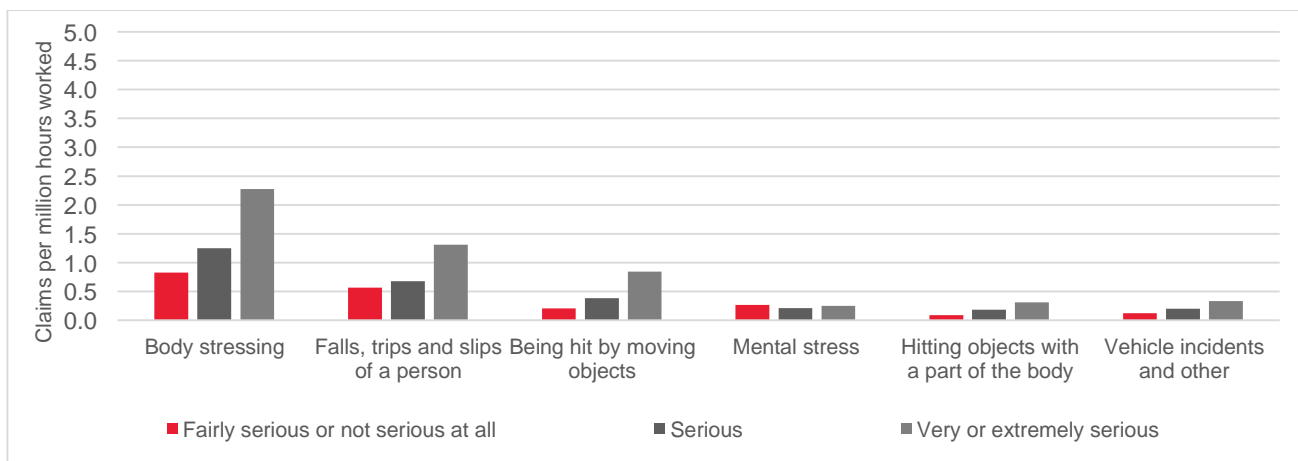
Note: 'Very or extremely serious' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| General practitioners and resident medical officers | 99 | 76.6 |
| Earthmoving plant operators | 97 | 49.6 |
| Pharmacists | 96 | 35.8 |
| Midwives | 92 | 18.2 |
| Anaesthetists | 88 | 7.1 |
| Chemical, gas, petroleum and power generation plant operators | 88 | 10.2 |
| Travel attendants | 87 | 11.0 |
| Aircraft maintenance engineers | 86 | 11.4 |
| Air transport professionals | 84 | 17.3 |
| Specialist physicians | 83 | 12.1 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Coordinate or lead others

How important is it to coordinate or lead others in accomplishing work activities in this job?

Very or extremely important



59%

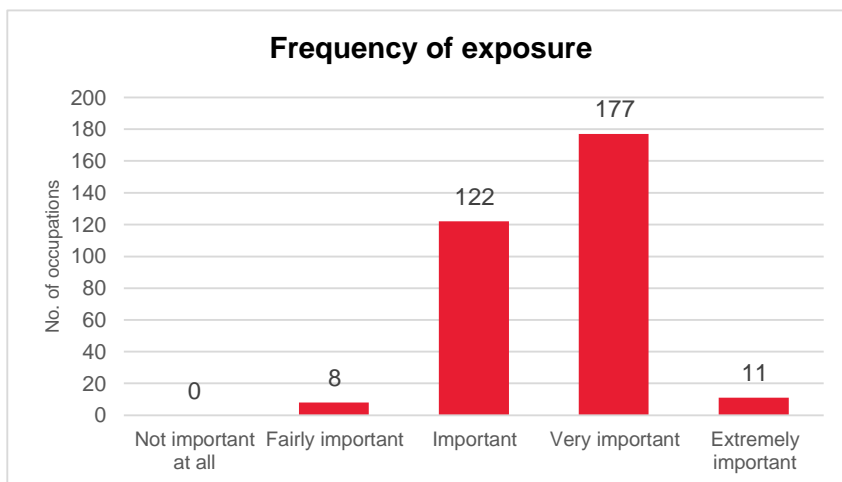
of occupations

66%

of employed people

8.24 million

employed people



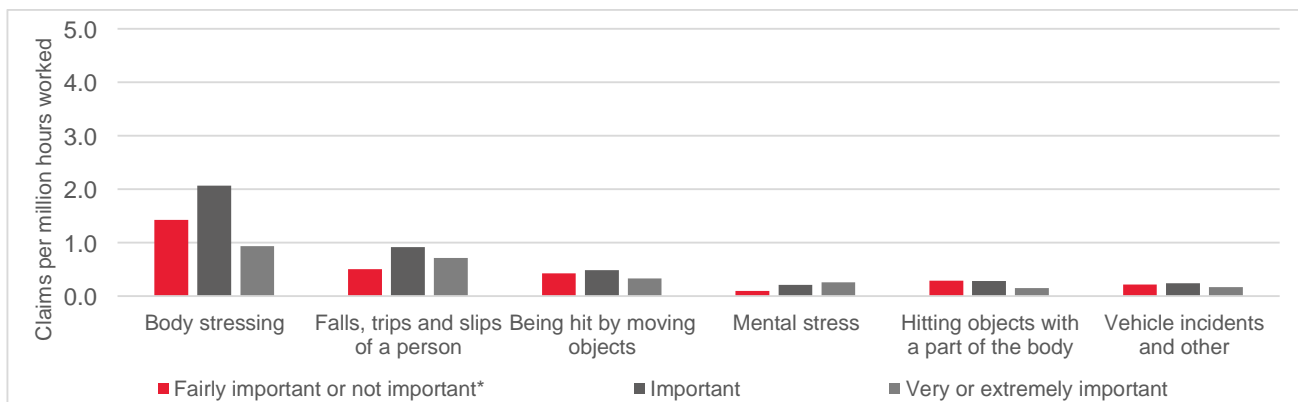
Note: 'Very or extremely important' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|--|-----------------------------|-------------------|
| Chief executives and managing directors | 92 | 49.5 |
| Policy and planning managers | 92 | 31.1 |
| Conference and event organisers | 91 | 28.8 |
| Other education managers | 89 | 14.9 |
| School principals | 89 | 28.2 |
| Call or contact centre and customer service managers | 89 | 38.8 |
| Veterinarians | 89 | 10.0 |
| Caravan park and camping ground managers | 88 | 3.5 |
| Hotel and motel managers | 88 | 25.7 |
| Hotel service managers | 88 | 10.5 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



*The category 'Fairly important or not important' is based on a low number of records (5 to 9).

Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Time pressure

How often does this job require the worker to meet strict deadlines?

Once a week or more



79%

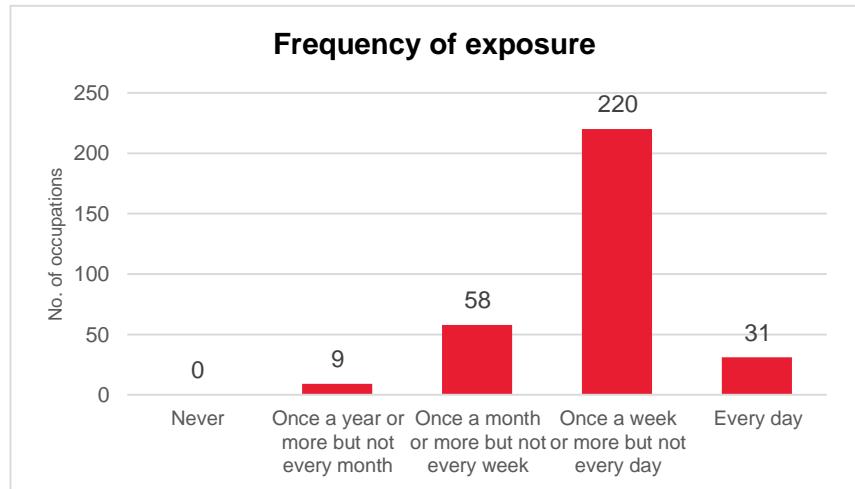
of occupations

79%

of employed people

9.81 million

employed people



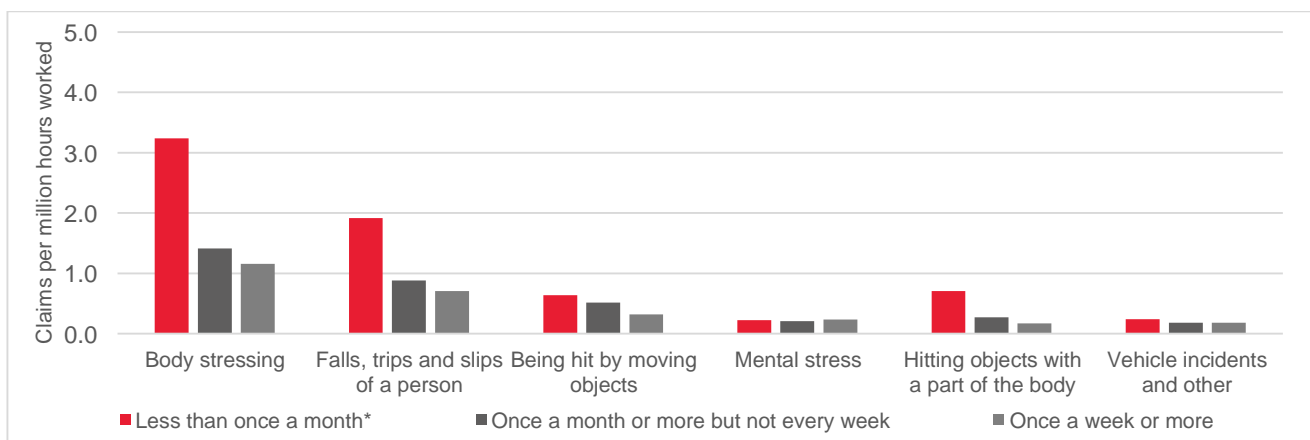
Note: 'Once a week or more' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Graphic pre-press trades workers | 98 | 1.1 |
| Journalists and other writers | 97 | 22.6 |
| Printers | 95 | 12.6 |
| Chefs | 94 | 109.1 |
| Funeral workers | 94 | 2.5 |
| Judicial and other legal professionals | 93 | 12.4 |
| General practitioners and resident medical officers | 93 | 76.6 |
| Couriers and postal deliverers | 93 | 38.7 |
| Authors, and book and script editors | 93 | 6.3 |
| Mail sorters | 92 | 13.9 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



*The category 'Less than once a month' is based on a low number of records (5 to 9).

Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Freedom to make decisions

How much decision making freedom, without supervision, does the job offer?

Some or a lot of freedom



85%

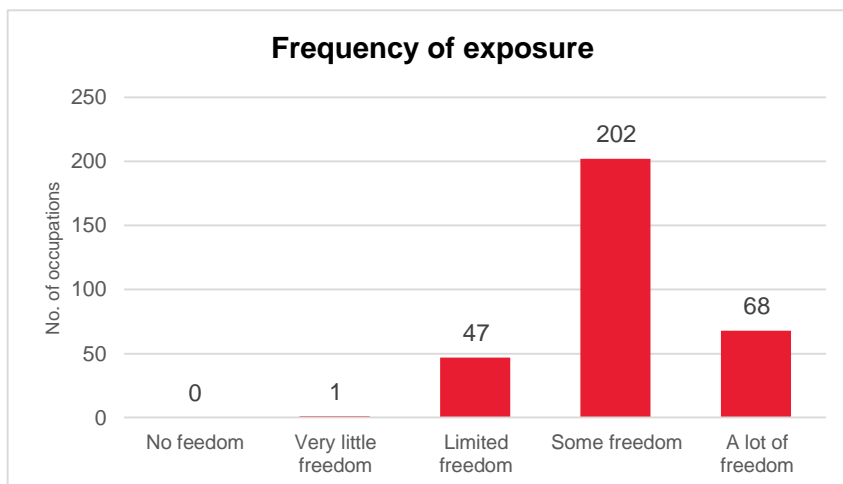
of occupations

82%

of employed people

10.16 million

employed people



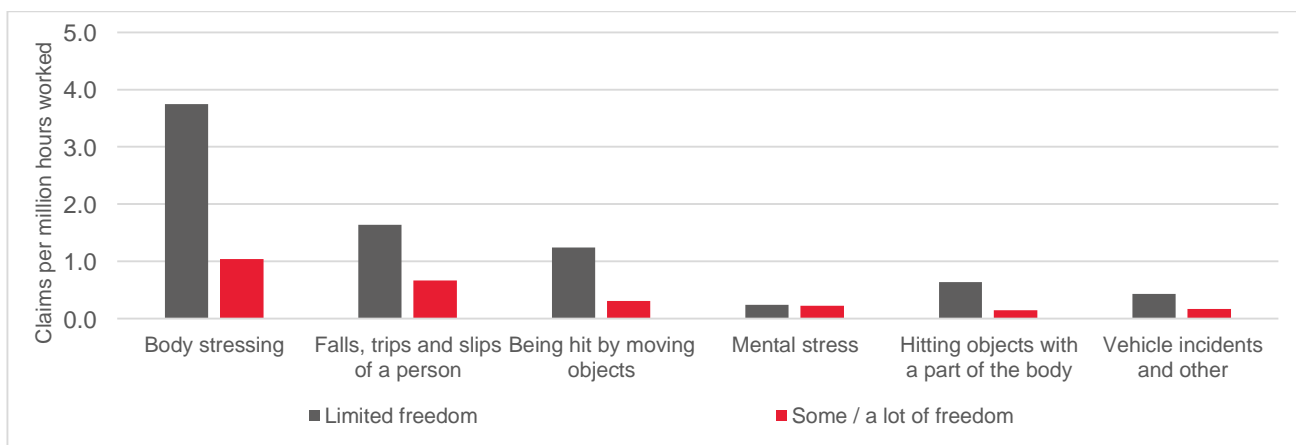
Note: 'Some or a lot of freedom' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|---|-----------------------------|-------------------|
| Podiatrists | 100 | 7.0 |
| Judicial and other legal professionals | 100 | 12.4 |
| General practitioners and resident medical officers | 100 | 76.6 |
| Chiropractors and osteopaths | 99 | 7.1 |
| Chief executives and managing directors | 98 | 49.5 |
| Policy and planning managers | 98 | 31.1 |
| Recycling and rubbish collectors | 98 | 2.7 |
| Real estate sales agents | 97 | 95.4 |
| Floor finishers | 97 | 8.5 |
| Psychiatrists | 97 | 4.2 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Note: the category 'No / Very little freedom' has been excluded due to insufficient records (<5).

Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Importance of repeating same tasks

How important is repeating the same physical activities (e.g., key entry) or mental activities (e.g., checking entries in a ledger) over and over, without stopping, to performing this job?

Very or extremely important



36%

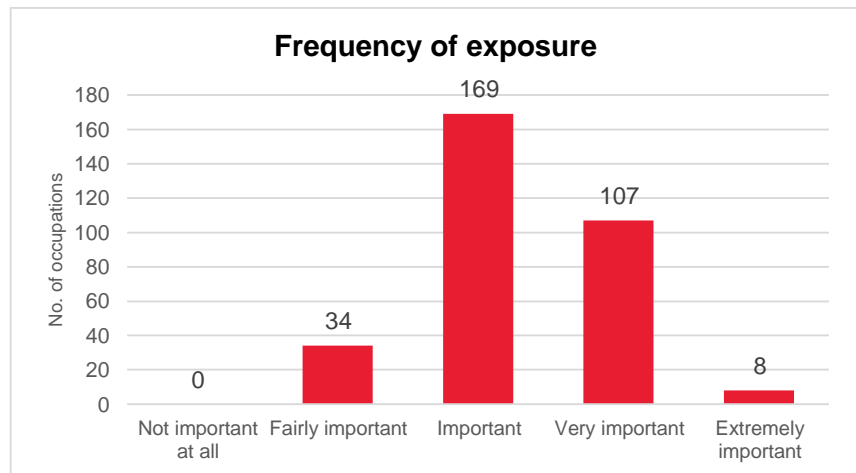
of occupations

42%

of employed people

5.17 million

employed people



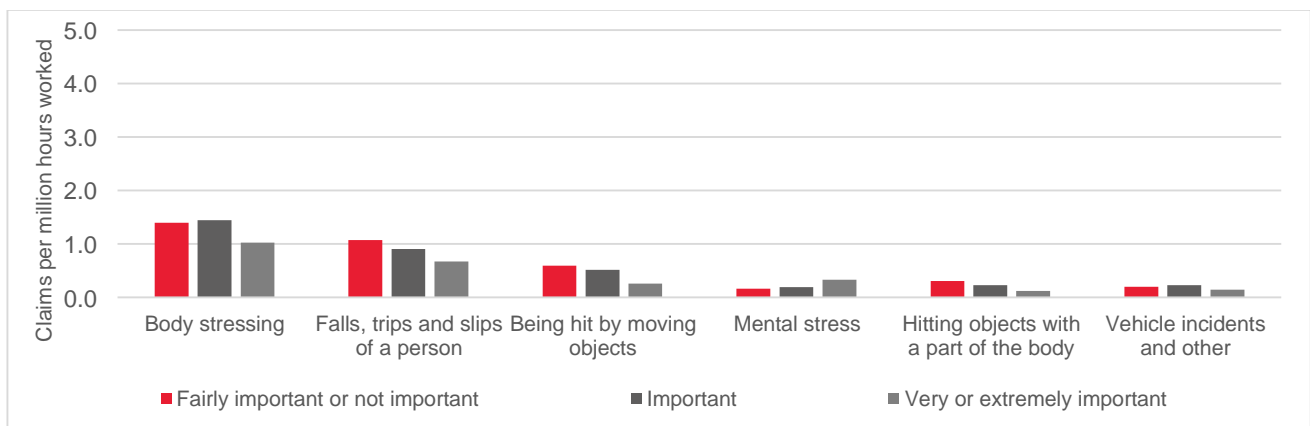
Note: 'Very or extremely important' corresponds with an exposure score of 62.5 or higher.

Top 10 occupations by Exposure Score

| ANZSCO title | Frequency of Exposure Score | Employment ('000) |
|--|-----------------------------|-------------------|
| Ticket salespersons | 98 | 14.3 |
| Keyboard operators | 95 | 50.5 |
| Bank workers | 93 | 37.8 |
| Accounting clerks | 91 | 124.1 |
| Bookkeepers | 91 | 99.6 |
| Survey interviewers | 91 | 2.7 |
| Payroll clerks | 89 | 43.5 |
| Insurance investigators, loss adjusters and risk surveyors | 88 | 5.8 |
| Pharmacists | 87 | 35.8 |
| Insurance, money market and statistical clerks | 87 | 38.5 |

Note: Larger occupations highlighted in red

Median mechanism frequency rates by exposure level



Insights from the Beta Occupational Hazards Dataset contains analysis of experimental data. Results should be interpreted with caution.

Appendix A: List of Work Context variables from the O*NET database

List of Work Context variables from the O*NET database

| | |
|--|---|
| Communication methods | Electronic mail |
| | Face-to-face discussions |
| | Letters and memos |
| | Public speaking |
| | Telephone |
| Contact with others | Contact with others |
| Conflictual contact | Deal with physically aggressive people |
| | Deal with unpleasant or angry people |
| | Frequency of conflict situations |
| Responsibility for others | Responsibility for outcomes and results |
| | Responsible for others' health and safety |
| Job interactions | Coordinate or lead others |
| | Deal with external customers |
| | Work with work group or team |
| Time spent in body positions | Spend time bending or twisting the body |
| | Spend time climbing ladders, scaffolds, or poles |
| | Spend time keeping or regaining balance |
| | Spend time kneeling, crouching, stooping, or crawling |
| | Spend time making repetitive motions |
| | Spend time sitting |
| | Spend time standing |
| | Spend time using your hands to handle, control, or feel objects, tools, or controls |
| | Spend time walking and running |
| Frequency in environmental conditions | Cramped work space, awkward positions |
| | Exposed to contaminants |
| | Exposed to whole body vibration |
| | Extremely bright or inadequate lighting |
| | Sounds, noise levels are distracting or uncomfortable |
| | Very hot or cold temperatures |

| | |
|---|---|
| Frequency of exposure to job hazards | Exposed to disease or infections |
| | Exposed to hazardous conditions |
| | Exposed to hazardous equipment |
| | Exposed to high places |
| | Exposed to minor burns, cuts, bites, or stings |
| | Exposed to radiation |
| Frequency of wearing work attire | Wear common protective or safety equipment such as safety shoes, glasses, gloves, hearing protection, hard hats, or life jackets |
| | Wear specialized protective or safety equipment such as breathing apparatus, safety harness, full protection suits, or radiation protection |
| Frequency required to work | In an enclosed vehicle or equipment |
| | In an open vehicle or equipment |
| | Indoors, environmentally controlled |
| | Indoors, not environmentally controlled |
| | Outdoors, exposed to weather |
| | Outdoors, under cover |
| Physical proximity | Physical proximity |
| Competition | Level of competition |
| Criticality of position | Consequence of error |
| | Freedom to make decisions |
| | Frequency of decision making |
| | Impact of decisions on co-workers or company results |
| Pace and scheduling | Duration of typical work week |
| | Pace determined by speed of equipment |
| | Time pressure |
| | Work schedules |
| Routine versus challenging work | Degree of automation |
| | Importance of being exact or accurate |
| | Importance of repeating same tasks |
| | Structured versus unstructured work |

Appendix B: How exposure scores are derived from the raw data

The table below is an sample of the O*NET data available from [Work Context - O*NET 27.2 Data Dictionary at O*NET Resource Center \(onetcenter.org\)](https://www.onetcenter.org/).

O*NET data for Dentists

| Title | Element name | Scale name | Category | Date value |
|-------------------|----------------------------------|--------------------------|----------|------------|
| Dentists, General | Exposed to Disease or Infections | Context | | 4.78 |
| Dentists, General | Exposed to Disease or Infections | Context (Categories 1-5) | 1 | 0 |
| Dentists, General | Exposed to Disease or Infections | Context (Categories 1-5) | 2 | 0 |
| Dentists, General | Exposed to Disease or Infections | Context (Categories 1-5) | 3 | 9.51 |
| Dentists, General | Exposed to Disease or Infections | Context (Categories 1-5) | 4 | 3.34 |
| Dentists, General | Exposed to Disease or Infections | Context (Categories 1-5) | 5 | 87.15 |

To derive the exposure score out of 100 for each occupation, the following calculation was applied:

$$((4.78 - 1)/4)*100 = 94.5$$

In this report, 94.5 is called the 'exposure score', and can be compared to a response scale to determine how often the job requires exposure to disease or infections. The response scale is:

How often does this job require exposure to disease or infection?

100: Every day

75: Once a week or more but not every day

50: Once a month or more but not every week

25: Once a year or more but not every month

0: Never

So a score of 94.5 for Dentists indicates that in general they are exposed to disease or infections every day.