

# WORK-RELATED INJURIES IN AUSTRALIA, 2005–06

## Construction industry

OCTOBER 2009



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## Foreword

Safe Work Australia principally uses workers' compensation claims data to measure occupational health and safety (OHS) performance in Australia. The claims data are collated in the *National Data Set for Compensation Based Statistics* (NDS) and are published annually in the *Compendium of Workers' Compensation Statistics, Australia*. This publication is a key reference documenting patterns of work-related injuries and diseases incurred by Australian workers and the cause of that injury or disease. For the purposes of this report, the expression 'work-related injury' will be used to represent all work-related conditions, including work-related diseases.

While the NDS is a valuable tool for monitoring OHS, it does not provide information on work-related injuries for groups not well covered by workers' compensation schemes, such as self-employed workers. It is estimated that workers' compensation schemes, and therefore the NDS, covered only 88%<sup>1</sup> of the workforce in 2005–06. In addition, the NDS does not contain information on some types of employment conditions, such as shiftwork or access to paid leave entitlements. Finally, the NDS is unable to provide any information on work-related injuries where workers' compensation was not sought. Therefore, although the NDS generally provides a good picture of the characteristics of work-related injuries, it underestimates the true number of work-related injuries occurring each year.

To address this situation, the National Occupational Health and Safety Commission (now known as Safe Work Australia) agreed to contribute funding towards a national survey of work-related injuries run by the Australian Bureau of Statistics (ABS) as part of the Multi-purpose Household Survey. The *Work-Related Injuries Survey* (WRIS) was conducted for the period 2005–06 with results released in December 2006. In this survey, participants aged 15 years and over, were asked to recollect and relate a range of details about their most recent work-related injury or illness, no matter how minor, that occurred within the last 12 months. The survey collected information on labour force characteristics (e.g. industry, occupation) and personal demographics (e.g. age, sex) which are useful when making comparisons to the NDS. The WRIS also collected information on employment arrangements, such as whether the worker worked under shift arrangements, worked part-time or had access to paid leave. This type of information is not collected in the NDS. Importantly, the WRIS also collected information about whether or not workers' compensation was sought, and if not, why not.

Unless otherwise stated, all data presented in this report have relative standard errors (RSEs) less than 25%. Data with RSEs greater than 50% have generally been suppressed. Unfortunately, this has, on occasions, limited the scope of the reports.

This report is one in a series of industry based reports that explore the types and causes of work-related injury and how these compare to those in the NDS.

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<sup>1</sup> The percentage of employees is calculated from the Australian Bureau of Statistics, *Work-related Injuries Australia* (Cat. No. 6324.0)



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## Summary of findings

The following key findings are contained in this report:

- Construction industry workers experienced 86 injuries per 1000 workers in 2005–06, nearly 25% higher than the rate for all Australian workers of 69 injuries per 1000 workers.
- Overall, employees and non-employees (self-employed workers) recorded similar incidence rates (88 injuries per 1000 employees and 83 injuries per 1000 non-employees).
- Just over half of injuries incurred by non-employees involved five or more days off work compared to only one-quarter of those incurred by employees.
- Similarly there was little difference in the rate of injury between those working on a contract basis (91 injuries per 1000 contract workers) and non-contract workers (85 injuries per 1000 non-contract workers).
- *Sprains/strains; Cuts and open wounds; and Chronic joint or muscle condition* accounted for three-quarters of all injuries experienced by workers in the Construction industry.
- *Lifting, pushing or pulling object* and *Hitting or being hit or cut* resulted in 80% of injuries in the Construction industry.
- Workers' compensation data provides good information on the way in which serious injuries occurred but does not provide as good a picture of the types of injury incurred.





## General trends

There were 877 000 workers in the Construction industry in 2005–06, and around 75 700 of these workers experienced a work-related injury. This equates to 86 injuries per 1000 workers: 25% higher than the incidence rate for all Australian workers of 69 injuries per 1000 workers.

In 2005–06, 88% of Construction workers were male. The number of work-related injuries recorded by female workers was too small to undertake any type of analysis by sex.

## Age

The age profile of the workers in the Construction industry is shown in Figure 1. These data show that workers in the Construction industry had a similar profile to that of all Australian workers, except for a lower percentage of workers in the 55 years and over age group.

**Figure 1 Workers in the Construction industry: Percentage by age**

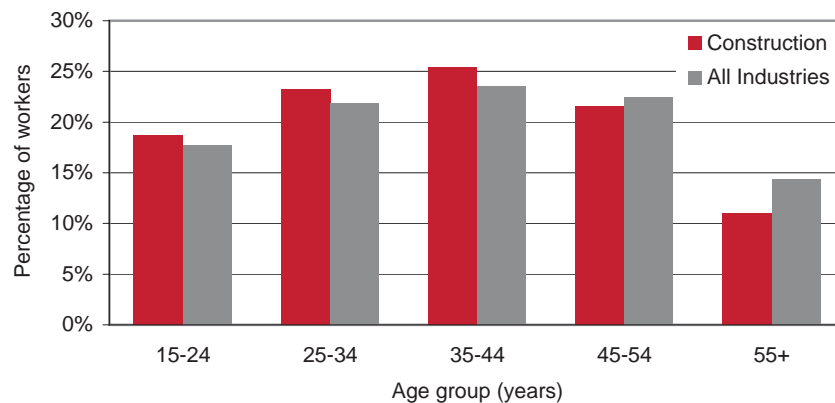
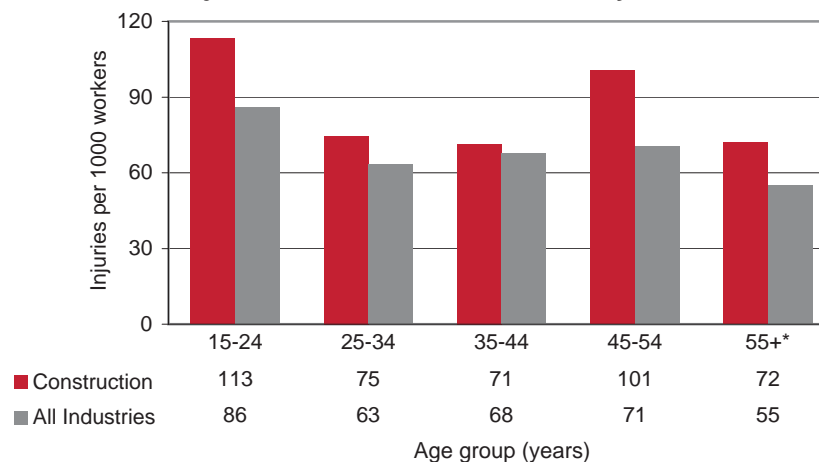


Figure 2 shows that in the Construction industry, incidence rates were highest in the 15–24 and 45–54 years age groups. The incidence rate for all Australian workers was highest in the 15–24 years age, although the incidence rate in the Construction industry was substantially higher. This indicates that Construction workers in the 15–24 and 45–54 years age groups are at a heightened risk of injury compared to all Australian workers.

**Figure 2 Work-related injuries in the Construction industry: Incidence rate by age**

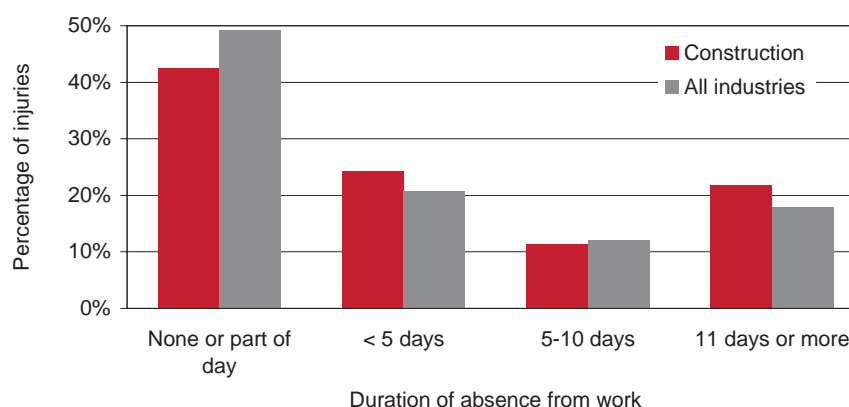


\* The WRIS Construction data for the 55+ age group has a relative standard error (RSE) between 25% and 50%. The incidence rate for this age group should be used with caution.

## Duration of absence from work

The Construction industry has a similar pattern of time lost following an injury to the data for all Australian workers. Figure 3 shows that while the Construction industry recorded a slightly lower percentage of injuries that resulted in no or little absence from work compared to the Australian workforce, it recorded slightly more in the group that required no more than four days off. The data suggests that the construction industry had a slight tendency to more serious injuries, as measured by duration of absence from work. Interestingly, the Construction industry recorded the same percentage of injuries requiring five to ten days off work as the Australian data.

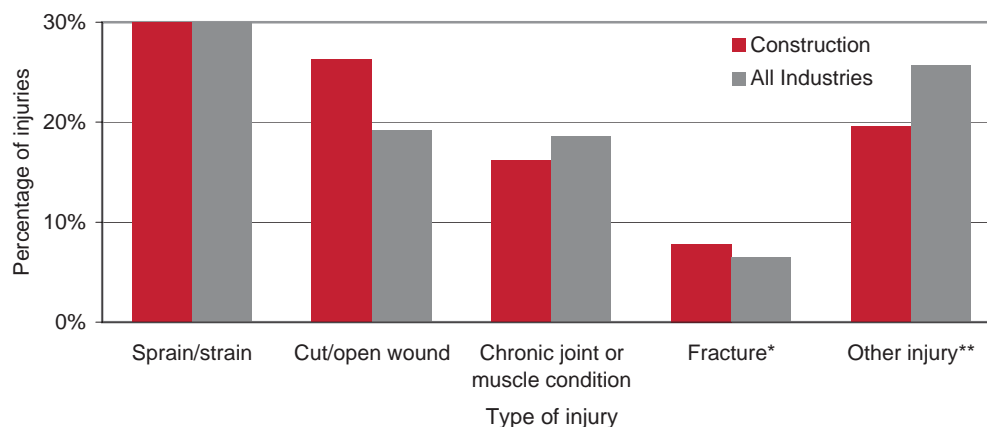
**Figure 3 Work-related injuries in the Construction industry: Percentage by duration of absence from work**



## Type of injury

The most common type of work-related injury experienced by Construction workers was *Sprains/strains* (30% of all injuries). This was followed by *Cuts/open wounds* (26%) and *Chronic joint or muscle conditions* (16%). Figure 5 shows that the injury type profile of the Construction industry closely matched the profile of the Australian data. The notable exception was the *Cuts/open wounds* category, where there was a much higher percentage of injuries of this type than in the general workforce and subsequently less in the *Other injury* category.

**Figure 4 Work-related injuries in the Construction industry: Percentage by type of injury**



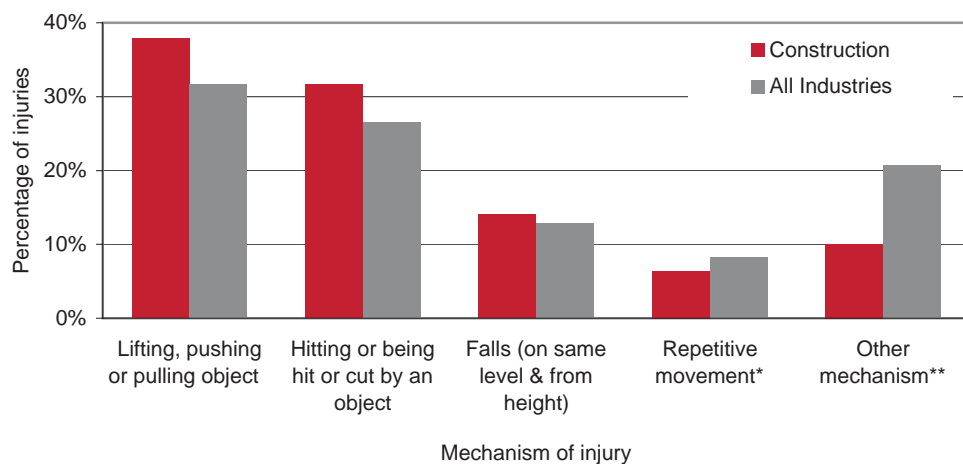
\* The Construction data for *Fracture* has an RSE between 25% and 50% and should be used with caution.

\*\* Other injury includes *Stress or other mental condition; Crushing injury, internal organ damage or amputation; and Superficial injury.*

## Mechanism of injury

The most common means by which Construction workers were injured was *Lifting, pushing or pulling object* (38% of all injuries) followed by *Hitting or being hit or cut by objects* (32% of injuries). Figure 5 shows that the profile of mechanisms of injury in the Construction industry was generally similar to the profile for all workers. The main difference between the Construction industry and the Australian data is in the *Other mechanism* category. This category includes *Exposure to mental stress*, *Contact with chemical or substance* and *Vehicle accident*. The data for the Construction industry was too small to provide a comparison of these mechanisms but does tend to indicate that workers in the Construction industry incurred lower percentages of injuries due to mental stress and vehicle accidents.

**Figure 5 Work-related injuries in the Construction industry: Percentage of injuries by mechanism of injury**



\* The Construction data for *Repetitive movement* has an RSE of between 25% and 50%. This result should be used with caution.

\*\* *Other mechanism* includes *Contact with chemical or substance*; *Exposure to mental stress*; *Long term exposure to sound*; *Prolonged standing, working in cramped or unchanging position*; and *Vehicle accident*.

## Employment status

Workers can be grouped into three Employment status categories:

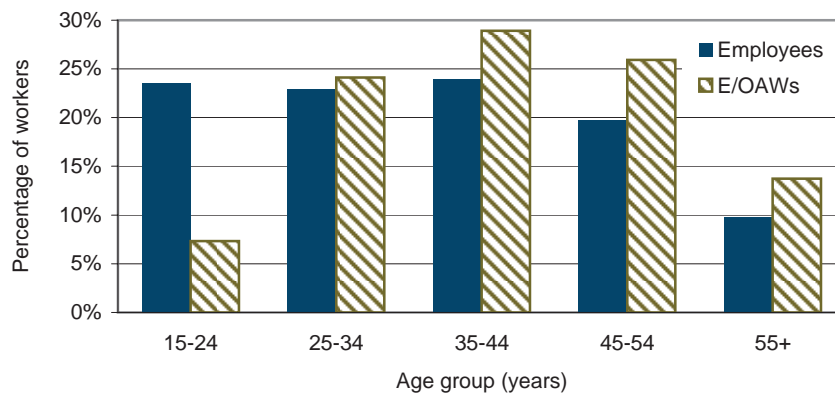
- Employees: people who work for an employer and receive remuneration, or people who operate their own incorporated enterprise;
- Employers: people who operate their own unincorporated economic enterprise and hire one or more employees; and
- Own account workers: people who operate their own unincorporated economic enterprise and hire no employees.

Employees are covered by workers' compensation, while Employers and Own account workers are not. The WRIS reported that 70% of Construction workers were employees and 30% were employers and own account workers. The Construction industry had a lower percentage of E/OAWs than all Australian workers; 88% of whom were employees.

The following analysis has combined Employers with Own account workers, with this group referred to as E/OAWs. Overall, Employees recorded an incidence rate of 88 injuries per 1000 employees, slightly higher than the rate for E/OAWs of 83 injuries per 1000 E/OAWs.

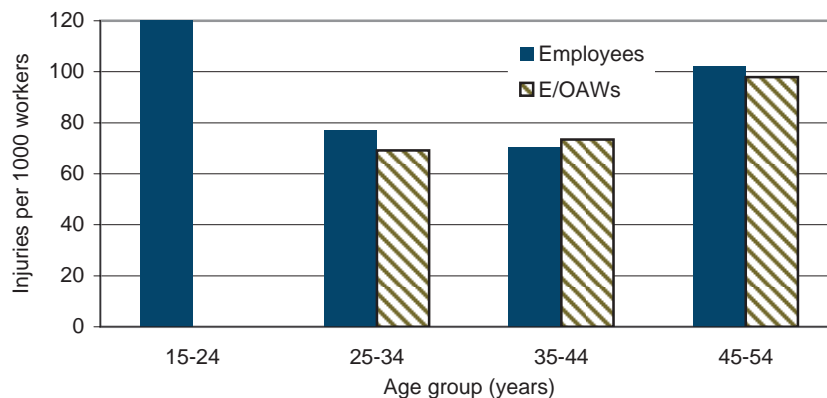
Figure 6 shows that Employees and E/OAWs had different age profiles. For Employees, the percentage of workers was fairly constant in the younger and middle age groups, and tapered off in the older age groups. In contrast, there were very few E/OAWs in the 15–24 years age group, with the number of workers increasing up to the 35–44 years age group before dropping off for the older age groups. E/OAWs were predominantly older than employees.

**Figure 6 Workers in the Construction industry: Percentage by age and employment status**



Incidence rates by employment status and age can only be calculated for some groups. While the data for E/OAWs has high RSEs, the incidence rates in Figure 3 show there is no difference in the rate of injury between the two employment status groups when age was taken into account. It can be concluded from these data that the overall slightly lower rate for E/OAWs was due to the much smaller percentage of workers aged 15–24 years who incurred substantially higher rates of injury than the other age groups.

**Figure 7 Work-related injuries in the Construction industry: Incidence rate by age\* and employment status**

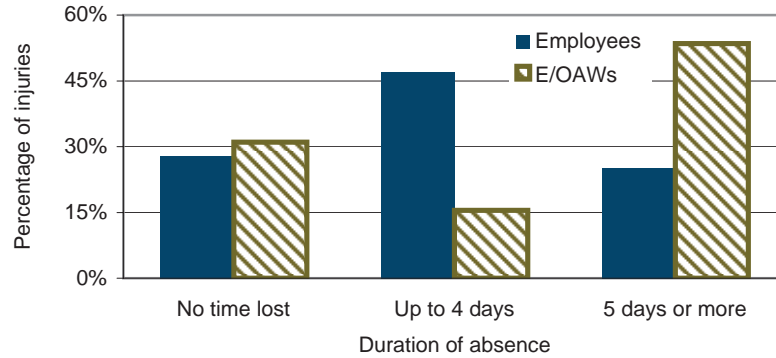


\* Due to high RSEs, incidence rates cannot be shown for E/OAWs in the 15–24 age group and for both employees and E/OAWs in the 55 years+ category.

Figure 8 shows that the duration of absence from work for E/OAWs was quite different to that for Employees. While both groups reported similar percentages for injuries involving no time off from work, E/OAWs reported very few injuries involving up to four days off work but a substantially higher percentage of injuries that involved five or more days off work. Just over half (53%) of all injuries incurred by E/OAWs involved five or more days off work

compared to around one-quarter of injuries to Employees. This difference is likely to be a consequence of the ability to work having a direct impact on the continued viability of a business operated by an E/OAW. These data suggest that E/OAWs are more likely than employees to continue working with a minor injury and will only take time off when the injury is quite severe.

**Figure 8 Work-related injuries in the Construction industry: Incidence rate by length of time off from work and employment status\***

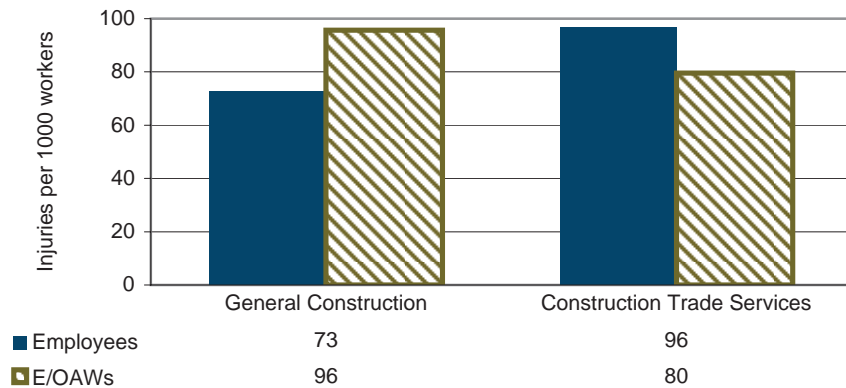


\* The incidence rates for E/OAWs for No time lost and Up to 4 days of time lost are subject to RSEs between 25% and 50% and should be used with caution.

Within the Construction industry, just under 70% of Construction workers worked in the Construction trade services subdivision, while just over 30% worked in the General construction subdivision. E/OAWs predominantly worked in the sub-division with only 20% employed in General Construction. For Employees there was more of an even split with around 60% employed in Construction trade services and 40% in General Construction.

Figure 9 shows that Employees recorded a higher incidence rate of injury when working in the Construction trade services sub-division than when working in General construction. While Figure 9 also shows that the opposite pattern for E/OAWs these data should be used with caution due to the incidence rate for E/OAWs in the General Construction subdivision having an RSE of around 40%.

**Figure 9 Work-related injuries in the Construction industry: Incidence rates by industry sub-division and employment status**



## Contract work

Contract workers accounted for a much greater percentage of workers in the Construction industry than they did in the Australian workforce as a whole with 23% of workers in the Construction industry working on contract compared to 9% for the full Australian workforce. Contract workers in the Construction industry recorded an incidence rate of 91 injuries per 1000 workers: slightly higher than the incidence rate for non-contract workers of 85 injuries per 1000 workers.

Contract workers include Employees working on fixed term contracts and E/OAWs working on a contract basis. Contract workers were predominantly E/OAWs with only 3% of employees employed on fixed term contracts compared to 47% of E/OAWs who worked on a contract basis.

Figure 10 shows that Owner managers who worked on a contract basis had a 40% higher incidence rate of injury than Owner managers who did not work on a contract. These data show that Employees recorded a higher incidence rate than both groups: 93 injuries per 1000 employees. It was not possible to produce an incidence rate for Employees working on a contract due to the small number of workers in this category.

**Figure 10 Work-related injuries in the Construction industry: Incidence rates by employment status and contract status**

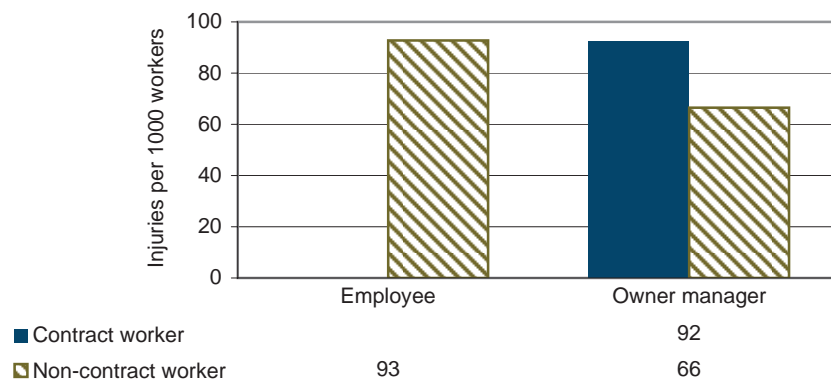
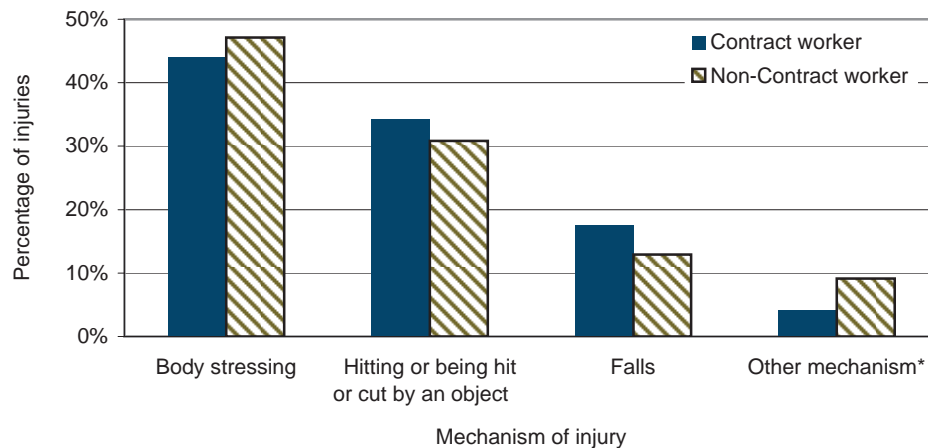


Figure 11 shows that there was little difference in the causes of injury between contract and non-contract workers.

**Figure 11 Work-related injuries in the Construction industry: Percentage of injuries by mechanism of injury and contract status\***



\* These data are subject to RSEs up to 50% and should be used for trend purposes only.

## Comparison with the NDS

There are some significant differences in the scope of information published in the WRIS compared to the NDS which need to be addressed prior to undertaking a comparison.

The published NDS data only include information on claims lodged by employees with serious injuries — those requiring an absence from work of one week or more or where a permanent incapacity or death has occurred. The WRIS data include all injuries incurred by all workers, no matter how minor.

In order to compare the two datasets, they both need to be scoped to only include injuries to employees with similar periods of time lost. The NDS data were restricted to those claims where one or more weeks of time lost was recorded and the WRIS data were restricted to injuries to employees which required five or more days absence from work.

The WRIS data showed that 13 600 employees in the Construction industry incurred injuries which required five or more days off work. Of these, 7000 employees received workers' compensation. This suggests that around 6600 Construction employees had an injury which kept them from work for five or more days for which they did not receive the compensation.

Over the same period, the NDS recorded 13 100 claims involving one or more weeks off work. This pattern between the WRIS and NDS is different to other industries where the number of injuries recorded in the WRIS has been much higher than those included in the NDS serious claims data. A possible explanation may lie in the WRIS results also indicating that some E/OAWs received workers' compensation. While only employees are entitled to workers' compensation, E/OAWs can be classed as employees if the majority of the work they undertake is for one business. The WRIS showed that 8400 workers received workers' compensation for injuries that required five or more days absence. This is still lower than the figure given by the NDS. This suggests that the WRIS is only reporting two thirds of serious injuries in the Construction industry.

Part of this underreporting may be due to the fact that long-term diseases were recorded differently in the WRIS and the NDS. The WRIS only includes illness cases if they were first diagnosed in the twelve months prior to interview. The NDS however is based on lodgement of a claim which can happen many years after first diagnosis. In the NDS, 10 200 of the 13 100 serious claims were for injury.

The low number of employees who indicated they had been compensated for their injury may also be due to the small sample size.

These unresolved factors need to be considered when reviewing the information in this section of the report.

When the WRIS data were restricted to serious injuries, the incidence rate for the Construction industry was 29 serious injuries per 1000 workers while the rate for employees was 22 serious injuries per 1000 employees. These rates are similar to the NDS incidence rate of 23 serious injuries per 1000 employees. As was shown in the previous section, E/OAWs recorded an incidence rate of 44 serious injuries per 1000 E/OAWs, with this higher rate contributing to the WRIS incidence rate for serious work-related injuries being

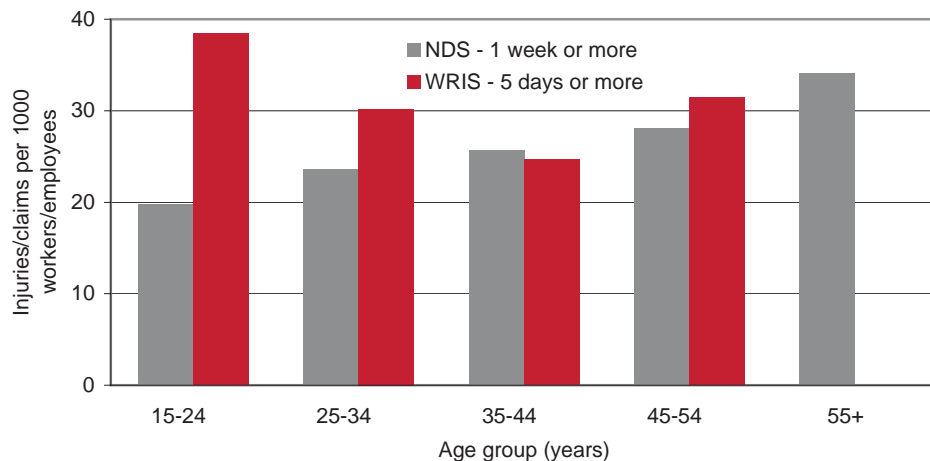
higher than the rate recorded by the NDS.

The following sections compare WRIS serious injuries incurred by both employees and non-employees to the NDS serious claims. This will indicate if the NDS adequately represents serious injuries incurred by all workers in the Construction industry.

## Age

Figure 12 shows that the incidence rates for serious injury by age reported by the WRIS had a very different profile to the incidence rates published from the NDS for the youngest age groups but were similar for the older age groups. As we have seen in other reports in this series, the NDS underestimated the incidence rate for workers aged 15–24 years, with the WRIS rate nearly double the NDS rate. While the WRIS data are subject to high relative standard errors, the data suggest that the NDS may also have understated the incidence rate for workers aged 25–34 years. However, the incidence rates were similar for the 35–44 and 45–54 years age groups.

**Figure 12 Serious work-related injuries in the Construction industry: Incidence rates by age\* and dataset**



\* the number of serious injuries to workers aged 55+ was too small to report on. All other WRIS incidence rates have RSEs of between 25% and 50%. These results should be used with caution.

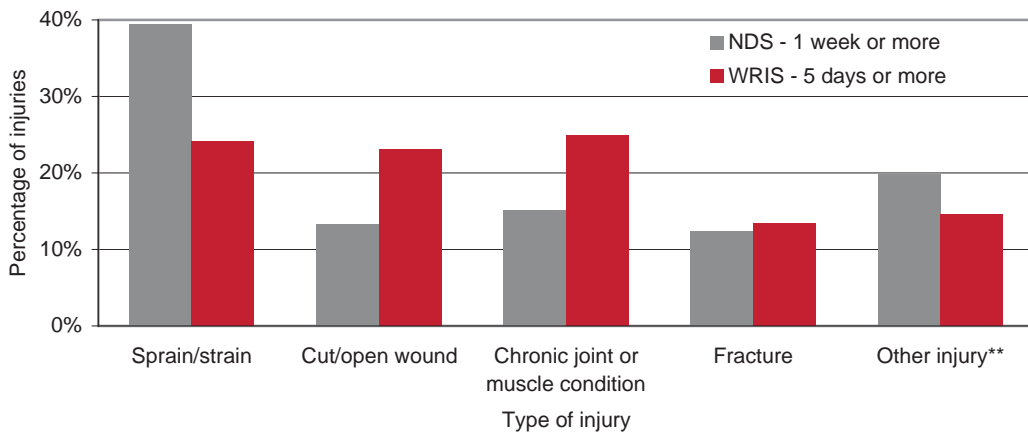
## Type of injury

Figure 13 shows that the profile by type of injury shown in the two datasets were not similar. While the WRIS recorded similar percentages of injuries for *Sprains/strains*; *Cuts/open wounds*; and *Chronic joint or muscle conditions*, the NDS data for *Sprains/strains* was three times the percentage of the other two types of injury. This may indicate that it is easier for Construction workers to claim workers' compensation for *Sprains/strains* than for other types of injury.

Another possibility is that E/OAWs incurred a considerably different profile of injuries than were incurred by Employees. While the WRIS data by employment status are subject to very high relative standard errors, they suggest that E/OAWs incurred considerably more *Cuts/open wounds* and less *Fractures* than Employees. These data therefore indicate that the NDS is not a good source of information on the proportional distribution of the types of injuries incurred by all Construction workers.



**Figure 13 Serious work-related injuries in the Construction industry: percentage of injuries by type of injury\* and dataset**



\* the WRIS data have RSEs of between 25% and 50%. These results should be used with caution.

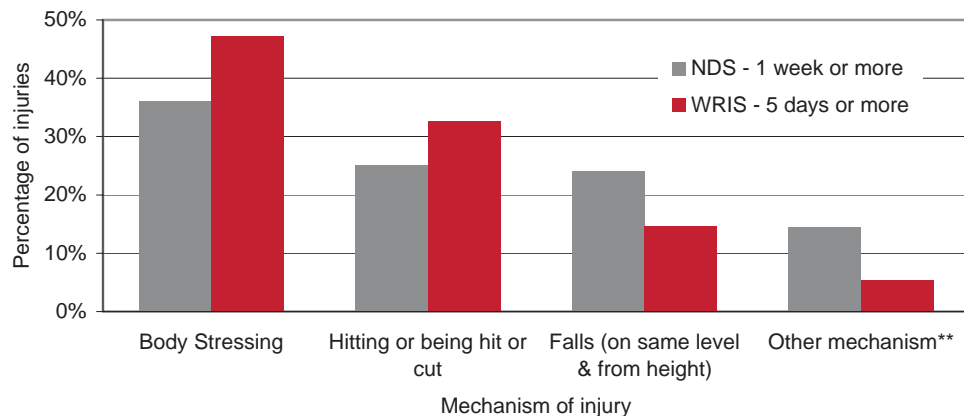
\*\* Other injury includes Stress or other mental condition; Crushing injury, internal organ damage or amputation; and Superficial injury.

## Mechanism of injury

The way in which an injury occurred is referred to as the Mechanism of injury. The WRIS and NDS use different classification systems for recording the mechanism of injury. When comparing the WRIS and NDS data on mechanism of injury, it is necessary to group the WRIS classifications to match the NDS classifications. For this analysis, the NDS classification *Body stressing* has been compared to the combination of the WRIS categories *Lifting, pushing or pulling object, Repetitive movement; and Prolonged standing, working in cramped or unchanging position*.

Figure 14 shows that the WRIS and NDS data had similar profiles by mechanism of injury with *Body stressing* and *Hitting or being hit or cut* recording the highest percentages of injuries in both datasets.

**Figure 14 Serious work-related injuries in the Construction industry: Percentage of injuries by mechanism of injury\* and dataset**



\* the WRIS data have RSEs of between 25% and 50%. These results should be used with caution.

\*\* Other mechanism includes Contact with chemical or substance; Exposure to mental stress; Long term exposure to sound; and Vehicle accident.

The main difference between the WRIS and NDS data was in the percentage of injuries due to *Falls*, where the NDS was significantly higher than the WRIS. This could in part be due to the high relative standard error (over 40%) on the WRIS result. It also suggests that workers find it easier to claim workers' compensation for a fall than for injuries by other mechanisms. Due to the small sample size it was not possible to determine if there was a different pattern between Employees and E/OAWs in regards to falls.

Despite this difference, the NDS can be said to provide a good picture of the way in which injuries occur.

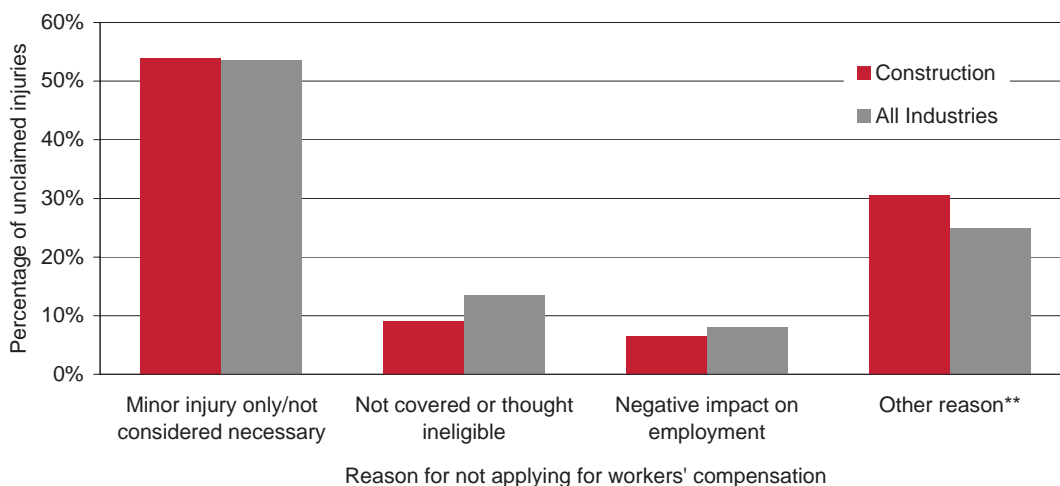
## Reasons for not applying for workers' compensation

The WRIS data showed that nearly half of all injured employees applied for workers' compensation. This was higher than the average for all Australian employees, which showed that 38% of employees with work-related injuries applied for compensation.

Figure 15 shows that of the employees who did not apply for workers' compensation, 54% said that the injury was too minor or they thought it was not necessary to apply. This is the same as the percentage for the Australian data.

The Construction industry recorded a lower percentage of injured employees who felt they were not covered by workers' compensation: 9% compared to 14% of all Australian employees.

**Figure 15 Work-related injuries incurred by Employees in the Construction industry which were not claimed: Percentage by reason for not applying for workers' compensation\***



\* The WRIS data for *Not covered or thought ineligible*; *Negative impact on employment*; and *Other reason* have RSEs of between 25% and 50%. These results should be used with caution.

\*\* *Other reason* includes *Inconvenient or required too much effort or paperwork*; *Employer agreed to pay costs*; and *Did not know*.

When restricting to only those injuries which involved five or more days off work, the WRIS data showed that just over half of the employees in the Construction industry applied for workers' compensation, compared to two thirds of Australian employees. Unfortunately, the small sample size precludes further analysis of the reasons for not applying for workers' compensation for serious injuries.

## Conclusion

This report has shown that the injuries incurred by workers in the Construction industry display a similar pattern to the Australian data.

While 30% of the Construction industry workforce are classed as Employers and Own account workers, this report has shown they incur the same rate of injury as Employees. The NDS slightly underestimates the rate of serious injury in the Construction industry, but otherwise produces a reliable estimate. These analyses have shown that the NDS is capturing nearly all serious injuries to Construction workers, and reliably reports the way Construction workers are injured. However, the NDS does not provide as good a picture of the types of injuries incurred.

In addition, the WRIS data shows that injury rates for young workers (those aged 15 to 24 years) are much higher than reported in the published data from the NDS. This result is consistent with other industries.

# Explanatory Notes

## Definitions

<b>ABS</b>	Australian Bureau of Statistics
<b>Contract workers</b>	Owner managers engaged by an organisation to provide a particular service at an agreed price, or employees (excluding Owner managers of incorporated enterprises) with a contract of employment which specifies that the employment will be terminated on a particular date or on completion of a specific task
<b>Employees</b>	People who work for a public or private employer and receive remuneration, or people who operate their own incorporated enterprise with or without hiring employees
<b>Employers</b>	People who operate their own unincorporated economic enterprise or engage independently in a profession or trade, and hire one or more employees
<b>E/OAWs</b>	Employers and Own account workers
<b>Incidence rate</b>	The number of injuries per 1000 workers
<b>Mechanism of injury</b>	The mechanism of injury is the action, exposure or event that was the direct cause of the injury, or how the injury was sustained
<b>NDS</b>	Safe Work Australia National Data Set for Compensation Based Statistics
<b>Own account workers</b>	A person who operates his or her own unincorporated economic enterprise or engages independently in a profession or trade, and hires no employees.
<b>Owner managers</b>	People who work in their own business, with or without employees
<b>Serious injuries</b>	Injuries that resulted in at least five days absence from work
<b>Type of injury</b>	Refers to the type of injury sustained
<b>WRIS</b>	ABS Work-related injury survey (ABS Cat. No. 6324.0)

## Industry classification

The industry of the worker has been classified in accordance with the Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993 edition (ABS Cat. No.1292.0).

## Mechanism of injury classification

The mechanism of injury classification is based on the Type of Occurrence Classifications System (TOOCS). Refer to Appendix 1 in ABS Cat. No.6324.0 for a detailed breakdown of each mechanism of work-related injury.

## Type of injury classification

In the WRIS this variable is referred to as 'Work-related injury or illness'. This variable's classification is based on the Nature of injury classification in the Type of Occurrence Classifications System (TOOCS). Refer to Appendix 1 in ABS Cat. No. 6324.0 for a detailed breakdown of each type of work-related injury.

## Relative Standard Errors (RSEs)

All data presented in this report conform with the ABS guidelines regarding data quality. Unless otherwise noted, all data presented have RSEs below 25%. Data with RSEs above 50% have not been published. Comprehensive information about RSEs can be found in the ABS Work- related injuries publication (ABS Cat. 6324.0)

### Inquires

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