

Manufacturing

Work related injuries and ill health

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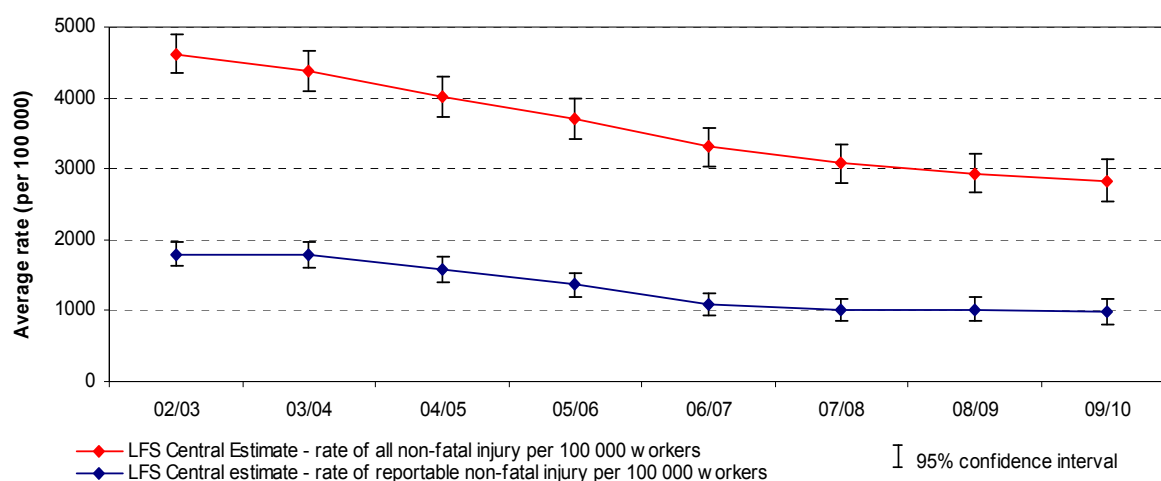
Summary

In 2010/11 manufacturing jobs accounted for about 10% of the British workforce, but for 21% of fatalities and 15% of reported injuries to employees. There have been reductions in injury and ill health rates over the past decade.

In 2010/11 there were:

- **27 fatal injuries to workers** compared to an average of 30 in the previous five years – about a quarter of the number 20 years ago (RIDDOR);
- **17 599** reported non-fatal injuries and an estimated **27 000** self-reported injuries. 11% of the reported injuries involved contact with moving machinery (RIDDOR and LFS);
- Food manufacture had a rate of reported major injury of almost twice the rate for manufacturing as a whole (RIDDOR);
- over **3 000** occupational cancer cases are estimated to arise each year as a result of past exposures in the manufacturing sector (Cancer Burden Study, 2010)
- an estimated **32 000** new cases of work-related ill health (LFS)
- about **1.9 million lost working days** (0.73 days per full-time equivalent worker) due to self-reported work-related illness or workplace injury (LFS).

Figure 1 Estimated incidence rates of non-fatal injury per 100 000 people working in manufacturing in the last 12 months (all injuries and reportable injuries with over 3 day absence)



What is manufacturing?

HSE now uses the SIC 2007 classification scheme to define industries, rather than the SIC 2003 scheme, which we used in previous years see www.hse.gov.uk/statistics/industry/sic2007.htm. The industry for RIDDOR reports before April 2010 was coded using the older classification whilst the Labour Force Survey (LFS) was coded using SIC2003 prior to 2008/09. This data has been computer recoded to allow for comparisons over time. There may be errors as a result of this recoding.

The definition of manufacturing is very similar in the two coding schemes except that, under SIC2007, it now excludes:

- recycling of waste and scrap;
- some publishing work (previously associated with printing); and
- some repair of computers and household goods has been transferred to services.

A new division (33) has also been created for the repair and installation of machinery and equipment. Deciding whether a company's main activity is manufacturing or repair and maintenance is difficult, especially for RIDDOR injuries reported before 2009/10, so this may lead to repair/maintenance injuries being allocated to the wrong division within manufacturing.

The LFS also introduced a new automatic coding tool at the same time as the change to SIC2007. A more detailed explanation of the impact to the LFS can be found on the ONS website, see www.statistics.gov.uk in the LFS User Guide – Volume 3. Nevertheless, LFS rates of illness and injury for manufacturing are of a similar order to those previously published under SIC2003.

Motor vehicle repair (MVR) is included in *wholesale and retail trade; repair of motor vehicles and motorcycles*, not in *manufacturing*. However, a few references are included, because of the links with manufacturing.

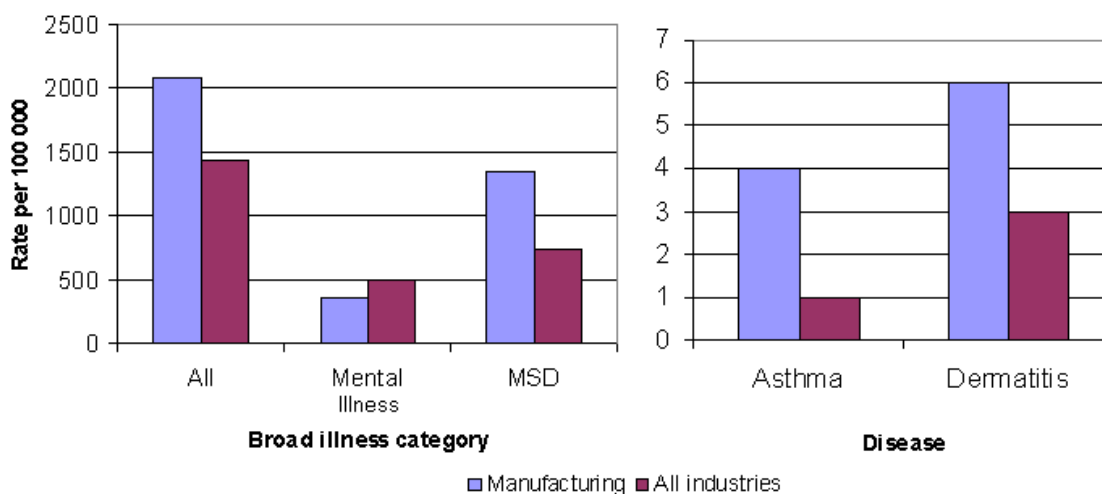
Ill health

THOR/LFS

The Labour Force Survey (LFS) and voluntary reporting of occupational diseases by doctors (THOR and THOR-GP) provide data about health risks in different industries and occupations. Additional data, for example, for previous years may be found in the various tables. For further information on these data sources see www.hse.gov.uk/statistics/sources.htm

The incidence rates (new cases) for work-related illness seen by consultants participating in one of the THOR surveillance schemes are shown in the following charts. The rate for manufacturing and the all sector average rate are shown for selected disease categories.

**Figures 2 and 3 Work related ill health identified:
in General Practice (THOR GP) by Consultants (SWORD and EPIDERM)**



From THOR the estimated average rate per 100 000 persons in manufacturing between 2008 and 2010 of:

- contact dermatitis reported by dermatologists to EPIDERM was 6, compared with three for all industries see www.hse.gov.uk/statistics/tables/thors05.xls. This is about 2.3 times the average rate for all industries. Within manufacturing however there is substantial variation, so:
 - manufacture of chemicals and chemical and chemical products had a rate of 19
 - printing and reproduction of recorded media and manufacture of basic metals each had rates of 13
 - and several other divisions had rates of 5 to 9;
- occupational asthma reported by chest physicians to SWORD and classified by occupation was:
 - 66 for vehicle spray painters;
 - 61 for bakers and flour confectioners;
 - 19 for assemblers of electrical products and;
 - 17 for metal machining setters / setter-operators;
 - 5 for welding trades; and
 - 3 for process, plant and machine operatives

This compares with a rate of one across all occupations. Isocyanates and flour were the biggest identified causes of occupational asthma see www.hse.gov.uk/statistics/tables/thorr06.xls.

In addition the LFS and THOR both provide information about some health risks. When comparing results, however, it is important to understand that cases reported under THOR have been **diagnosed by doctors** while those reported under LFS are cases of **self-reported illness** caused or made worse by current or most recent job for people working in the last 12 months.

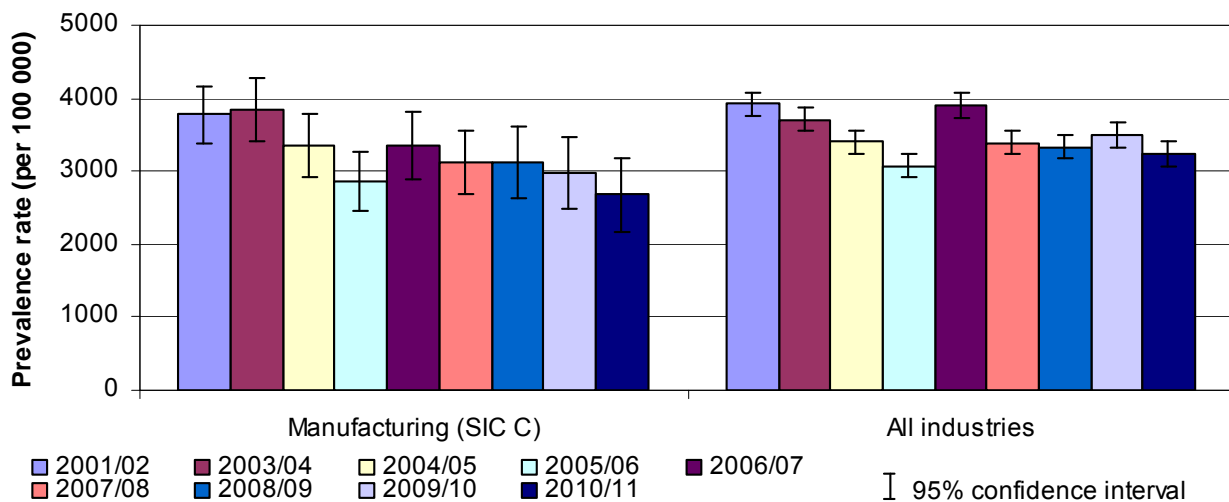
| Health issue | THOR – The estimated average rate per 100 000 persons between 2008 and 2010 | LFS – The estimated average rate of self-reported illness per 100 000 persons between 2008/09 and 2010/11 |
|--|--|--|
| New cases of work-related ill health (incidence rate) | 2 089 (THORGP04) This is about one third higher than the rate (1 429) for all industries. | 1 300 (WRIIND4_3YR). This is statistically significantly lower than the all industry rate of 1 600. |
| New cases of work-related musculoskeletal disorders (incidence rate) | 1 356 (THORGP05). This is almost twice the rate (734) for all industries. | 540 (MSDIND4_3YR) This is similar, not statistically significantly different, than the all industry rate (550). |
| Mental ill-health/self-reported stress, depression or anxiety (incidence) | 358 (THORGP06), lower than the rate (500) for all industries. | 410 (STRIND4_3YR) This is statistically significantly lower than the all industry rate (680). |
| See www.hse.gov.uk/statistics/tables/index.htm for further information | | <i>The values quoted above are the central estimates from the LFS survey. The respective tables include the confidence interval (C.I. - an indicator of the reliability) for each estimate.</i> |

The Labour Force Survey also estimated that in 2010/11, 78 000 people whose current or most recent job in the last year was in the manufacturing sector suffered from an illness (longstanding and new cases) which was caused or made worse by this job, see www.hse.gov.uk/statistics/lfs/wriind2.xls. The associated prevalence rate, 2 700 (2.7%) working in the last year, was statistically significantly lower than that for all industries (3 200 per 100 000 people – 3.2%).

Examining the prevalence rates over time using smoothing techniques, which aim to reduce irregularities (random fluctuations) in the times series, suggests a downward trend. The smooth trend indicates a fall of around 27% between 2001/02 and 2010/11, with a range of possibilities (95% confidence interval) of 17% to 37%.

A total of 1.3 million working days, or 0.51 days per worker, were lost in 2010/11 due to self-reported work-related illness, see www.hse.gov.uk/statistics/lfs/wdliind.xls. This is significantly lower than that of 0.82 days per worker for all industries.

Figure 4 Estimated prevalence rates of self-reported¹ illness caused or made worse by the current or most recent job, per 100 000 people working in the last 12 months



Occupational Cancer

About 17% of occupational cancer registrations in men and 15% of deaths are attributable to occupational carcinogen exposure in the manufacturing industry. There are over 2 000 deaths per year that are attributed to occupational carcinogens (eg substance or occupational circumstance).

Mineral oils are the most significant occupational carcinogen, accounting for over 40% of deaths while past exposure to asbestos accounts for another 20%. Acid mist, Arsenic, Chrome IV, Cobalt, dioxins and welding fume are also significant occupational carcinogens.

Further information is available from our cancer page see www.hse.gov.uk/statistics/causdis/cancer/index.htm or from research report 800 “The burden of occupational cancer in Great Britain” see www.hse.gov.uk/research/rrpdf/rr800.pdf

¹ The breakdown by industry section for 2008/09 onwards is not entirely consistent with those of previous years. This is because:

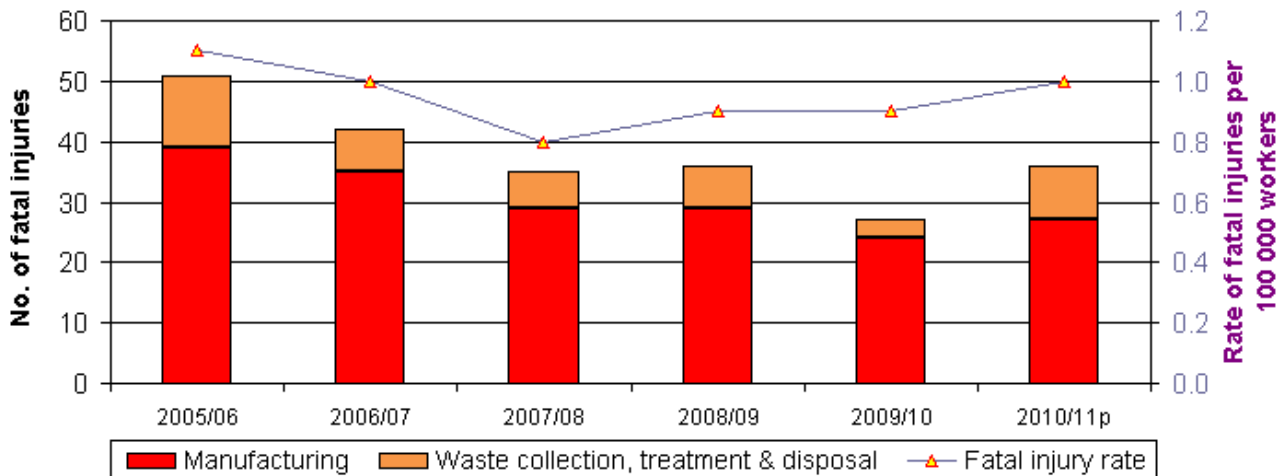
- (i) the LFS data was coded directly to SIC92 for years up to 2008/09 and then mapped to the new industrial classification, SIC2007, according to the assumed relationship between the two classifications;
- (ii) data from 2008/09 onwards has been coded directly to SIC2007; and
- (iii) a new method of coding industry data, using an automatic tool, was introduced with the new classification.

Injuries

Fatal injuries

In 2010/11 there were 27 fatal injuries to workers compared to an average of 30 in the previous five years. This equates to a fatal injury rate of 1.0 per 100 000 workers. This is slightly higher than the average figure for the previous five years of 0.9 per 100 000 workers.

Figure 5 Number and rate of fatal injuries to workers 2005/06 to 2010/11p



The number of fatalities is slightly lower than when calculated using the SIC2003 definition of manufacturing as this included waste collection and recycling, which averaged seven fatalities per year over the last 10 years. For convenience the numbers of waste and recycling fatalities are shown above, but they are not included in the rate.

The number of manufacturing fatalities has fallen, roughly in line with the decline in manufacturing employment. As a result there has been relatively little change, overall, in the fatal injury rate in recent years. Over the longer term, however, rates have roughly halved over the last 30 years although the number of fatalities is about one quarter (28%) of what it was in 1990/91.

The fatal injury rates quoted above are slightly lower than those provided in June because a different employment estimate (Annual Population Survey) has been used. This gives a higher estimate for manufacturing employment. See www.hse.gov.uk/statistics/sources.htm#employment for further information.

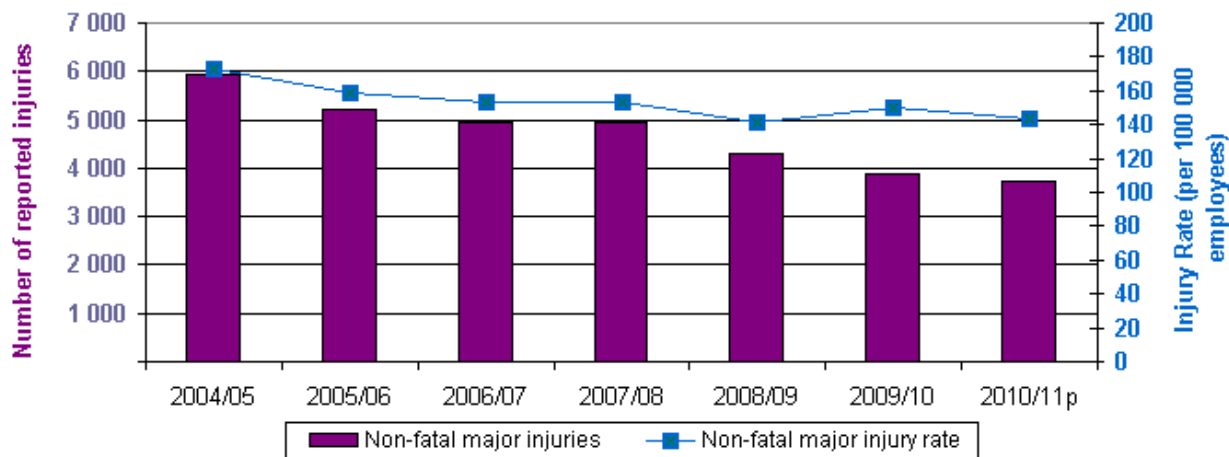
Manufacture of fabricated metal products, except machinery/equipment and manufacture of other transport equipment accounts for the largest number of fatalities within manufacturing – an average of four employees each over the last five years. The highest rate is in repair and installation of machinery and equipment, but deciding whether a company's main activity is manufacturing or repair and maintenance is difficult.

Major injuries

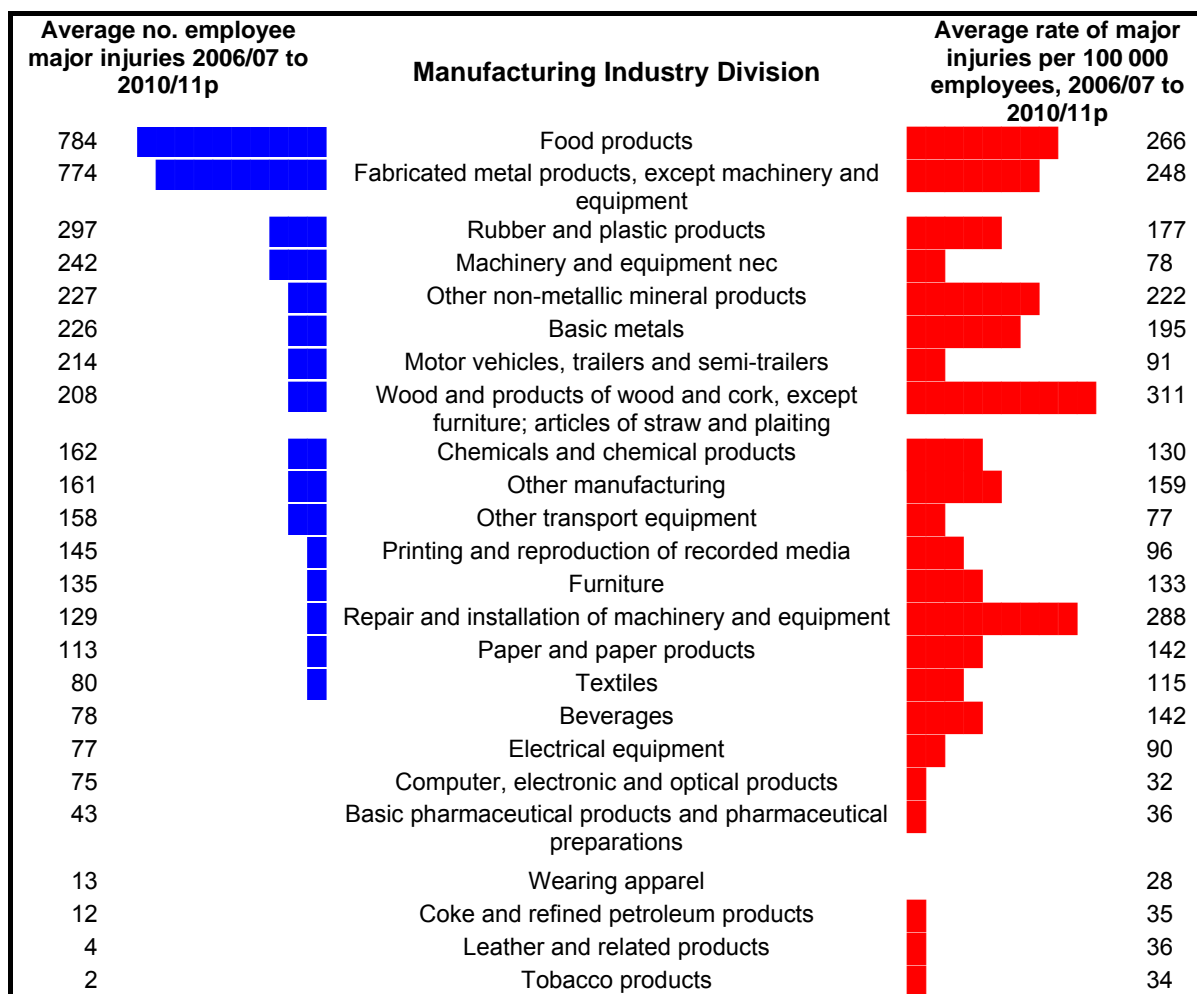
In 2010/11p, there were 3 726 reported major injuries to employees – a rate of 143.5 per 100 000 employees compared with averages of 4 662 and 151.4.

There is a general downward trend in both the numbers and rates.

Figure 6 Number and rate of major injuries to employees 2005/06 to 2010/11p



There is considerable variation in the number and rate of reported major injury within manufacturing.



Wood/wood products and the repair and installation of machinery and equipment have over twice the all manufacturing rate of major injuries (310.9 and 287.7, averaged between 2006/07 and 2010/11p), but relatively small numbers of reported injuries (208 and 129 respectively, on average).

Food manufacture had a rate of reported major injury (265.7 per 100 000 employees, on average) of almost twice the rate for manufacturing as a whole and involves the largest number of reported injuries (784, on average).

Fabricated metal products has the next largest number of reported major injuries (774 cases and a rate of 247.9, on average). Together with food manufacture it accounts for 36% of reported major injuries in manufacturing.

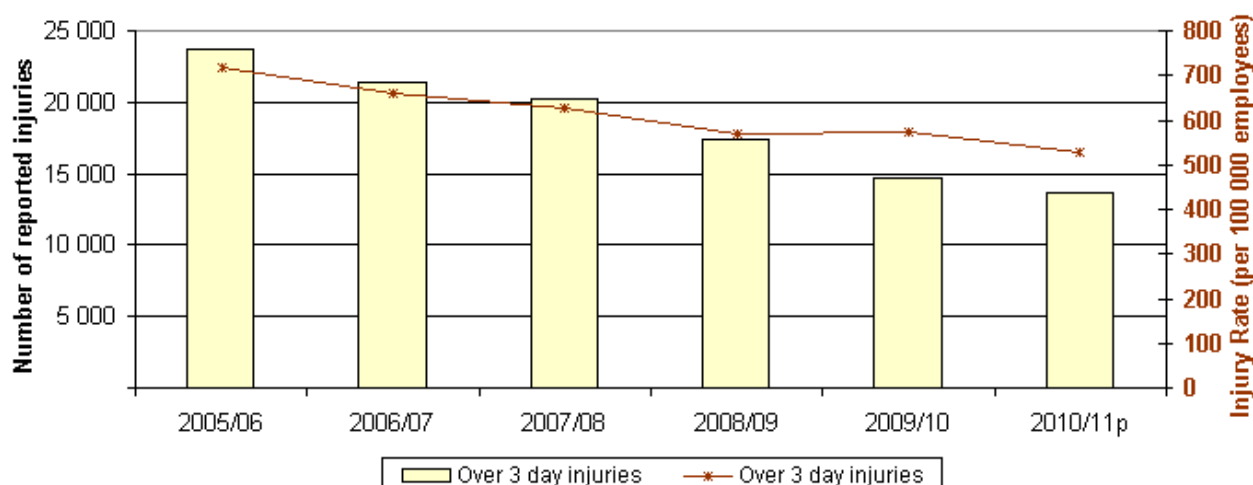
Over three day injuries

In 2010/11p, there were 13 713 reported over-3-day injuries to employees – a rate of 528.0 per 100 000 employees. This compares with an average of rate of 633.1 over the previous five years.

The number and rate of injury has declined steadily over the last few years and is now roughly half the rate in 1986.

As with major injuries, rates for over-3-day injuries vary greatly between different manufacturing industries. Manufacture of food products has an average rate of 1 386.6 per 100 000 employees between 2006/07 and 2010/11p.

Figure 7 Number and rate of over 3 day injuries to employees 2005/06 to 2010/11p



Manufacture of food products also has the highest average number of reported over three day injuries (4 112) Manufacture of fabricated metal products, except machinery and equipment, is the next highest (2 269), but in both cases the numbers reported in 2010/11p were much lower, at 3 527 and 1 657 respectively.

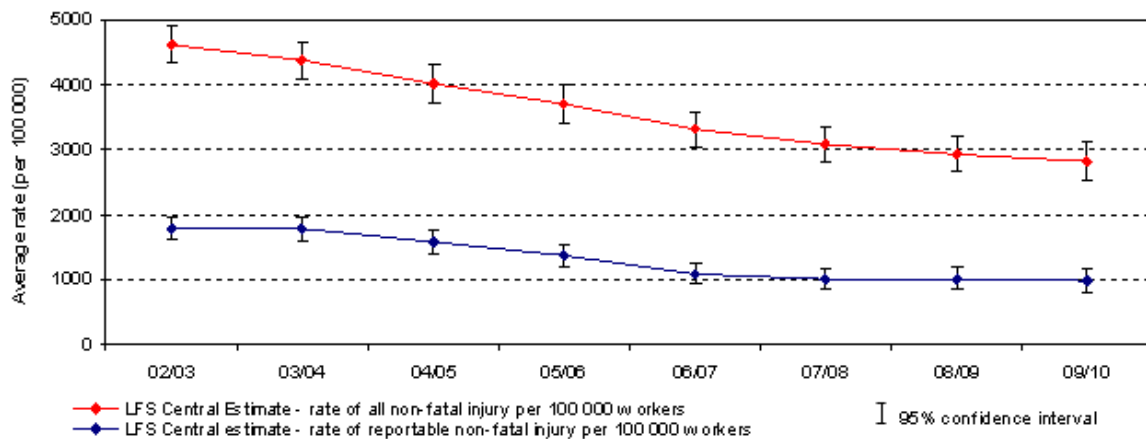
Labour Force Survey (LFS) injuries and days lost

The LFS suggests that the manufacturing sector accounted for around an estimated 13% of all reportable non-fatal injuries and 12% of all non-fatal injuries in 2009/10 (three-year average).

The estimated incidence rates of reportable non-fatal injury and all non-fatal injuries were 990 and 2 800 per 100 000 workers respectively (0.99% and 2.8%) in 2009/10 (three-year average). Both were statistically significantly higher than the corresponding average rates of 750 and 2 300 per 100 000 workers (0.75% and 2.3%) across all industries. For reportable non-fatal-injury rates see www.hse.gov.uk/statistics/lfs/injind1_3yr.xls.

Examining the reportable non-fatal injury rates over time using smoothing techniques, which aim to reduce irregularities (random fluctuations) in the times series, suggests a downward trend.

Figure 8 Estimated incidence rates of reportable non-fatal injury and all non-fatal injury caused or made worse by the current or most recent job, per 100 000 people working in manufacturing in the last 12 months



Results from the LFS suggest that around half of reportable non-fatal injuries are recorded under RIDDOR, but that the level for manufacturing is higher than this.

The LFS also indicates that in 2010/11 the estimated total number of days lost (full-day equivalent) due to workplace injury and work-related ill health attributed to the current or most recent job was about 587 000, equating to approximately a quarter of a day per worker. See www.hse.gov.uk/statistics/lfs/injind2.xls for further information.

The average rate for all industries was 0.16 days per worker and the rate for manufacturing is not statistically significantly different from the average across all industries.

Industry Profile

Manufacturing accounts for about 10% of the British workforce, but for 15% of reported injuries to employees (21% fatalities, 15% Major, 15% over three day injuries). The Labour Force Survey (LFS) estimates that around 12% of all non-fatal injuries occurred in Manufacturing in 2009/10 (three-year average).

The most common kinds of reported injuries to workers in all industries occur as a result of handling or slips & trips. These also represent the most common kinds of reported injury across manufacturing. In 2010/11p, handling accounted for 32% and slips & trips for 21% of reported injuries (compared with 31% and 27% respectively across all industries).

Manufacturing also accounts for 55% (1 975 cases in 2010/11p) of all reported injuries that involved contact with moving machinery, 24% (20) involving explosions, 21% (2 851) hit by moving, falling objects or fire (51) and 19% (605) contact with harmful substance

Further detail can be obtained using HandS-On at www.hse.gov.uk/statistics/hands-on/index.htm.