Silicosis and coal workers’ pneumoconiosis statistics in Great Britain, 2021

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Summary

Important Note

Silicosis

- Available sources are likely to substantially underestimate the annual incidence of silicosis. Both the reporting of new cases by doctors within THOR scheme and assessments for Industrial Injuries Disablement Benefit (IIDB) during 2020 were disrupted by the coronavirus pandemic.
- Annual new cases assessed for IIDB have reduced during the last 10 years with 20 cases in 2019 with 60 in 2010.
- Chest physicians participating in the SWORD scheme with The Health and Occupation Reporting (THOR) network have typically identified around 30 estimated new cases each year.
- There has been an average of 12 deaths per year from silicosis over the last 10 years.

Coal workers’ pneumoconiosis

- Available sources are likely to substantially underestimate the annual incidence of coal workers’ pneumoconiosis. Both the reporting of new cases by doctors within THOR scheme and assessments for Industrial Injuries Disablement Benefit (IIDB) during 2020 were disrupted by the coronavirus pandemic.
- In 2019, there were 135 new cases assessed for IIDB.
- Estimated numbers of annual new cases identified by chest physicians participating in the SWORD scheme have fluctuated substantially year-on-year averaging around 25 per year.
- Annual deaths from pneumoconiosis have remained relatively constant over the 10 years to 2019 with an average of around 130 deaths per year. There were 102 deaths in 2019 and 73 in 2020. The figure for 2020 may have been affected by the coronavirus pandemic, though this is uncertain.

The document can be found at: www.hse.gov.uk/statistics/causdis/index.htm.
Pneumoconiosis is a serious lung disease caused by inhaling various forms of dust in certain kinds of occupations.

The most common forms are coal workers' pneumoconiosis (due to coal dust), silicosis (due to respirable crystalline silica), and asbestosis (due to asbestos). The different forms of disease are usually identified based on assessment of an occupational history of exposure to one of these dusts.

This report describes available statistics for forms of pneumoconiosis other than asbestosis, which is covered in a separate report available at www.hse.gov.uk/statistics/causdis/asbestos-related-disease.pdf.

Pneumoconiosis is a ‘long latency’ disease which typically develops gradually over a number of decades following exposure to these dusts and can eventually be fatal. Therefore, current and recently occurring cases and deaths largely reflect the effect of past working conditions.

Statistics based on individual cases of pneumoconiosis occurring in Britain are available from the following sources:

- cases identified by chest physicians participating in the SWORD scheme within The Health and Occupation Reporting (THOR) network (main source table THORR01 www.hse.gov.uk/statistics/tables/thorr01.xlsx).
- deaths recorded with pneumoconiosis as the underlying cause (Table DC01 [www.hse.gov.uk/statistics/tables/dc01.xlsx]).

Both the reporting of new cases within the SWORD scheme and assessments for IIDB during 2020 were disrupted by the coronavirus pandemic. Death statistics may also have been affected by disruption to certification processes and increased mortality in older age groups, however, this is uncertain.

**Silicosis**

![Silicosis graph](image)

- The majority of Industrial Injuries Disablement Benefit (IIDB) cases that are not due to coal or asbestos are silicosis\(^1\). Annual new cases assessed for IIDB have reduced during the last 10 years with 20 cases in 2019 compared with 60 in 2010. There were 10 cases in 2020 but this figure is likely to have been affected by the coronavirus pandemic.

\(^1\)Causal agents other than coal or asbestos are not recorded in the IIDB scheme, but details of the industrial setting in which cases occurred suggest that the majority of other cases are in fact silicosis.
An estimated 27 new cases of silicosis were identified by chest physicians participating in the SWORD scheme in 2019 compared to 24 in 2018. Annual estimated cases have averaged around 30 per year over the previous decade. There were 17 estimated cases in 2020 but this figure is likely to have been affected by the coronavirus pandemic.

There are typically between 10 and 20 annual deaths in recent years, with an average of 12 per year over the last 10 years. There were 10 deaths from silicosis in 2020 and 12 in 2019.

Given the different patterns suggested and the limitations of these data sources it is difficult to draw any firm conclusions about an overall trend in silicosis incidence during the period.

Both the IIDB and THOR data sources are likely to substantially underestimate the incidence of silicosis. Estimates of annual lung cancer cases due to past exposures to silica (nearly 800 deaths per year) [1] imply that the extent of underestimation of silicosis by IIDB and THOR was substantial. This is because many such lung cancers would be expected to develop from among highly exposed workers who were also developing silicosis, and so the number of silicosis cases would be expected to be of a similar order of magnitude.

Estimates of the risk of silicosis following long-term exposure [2], together with information about the likely extent of past exposures in Britain, also suggest that silicosis incidence could be much higher than recorded in the available IIDB and THOR statistics.

The following industries and occupations were most commonly associated with silicosis cases reported within the THOR scheme based on data for the 10-year period 2006-2015 (not tabulated):

- Stonemasons and bricklayers (26% of actual reported cases)
- Other construction-related occupations (25% of actual reported cases)
- Mining and quarrying (20% of actual reported cases)
- Foundry-related occupations (13% of actual reported cases)

Around 75% of IIDB cases of pneumoconiosis due to ‘other’ agents (mainly silica) occur in men aged over 65 (see table IIDB07 [www.hse.gov.uk/statistics/tables/iidb07.xlsx].)

Previous analyses of data from the THOR scheme indicate that around 5% of silicosis cases are female and 10% of other (non-asbestos and not coal related) pneumoconiosis cases are female. THORR02 ([www.hse.gov.uk/statistics/tables/thorr02.xlsx]) indicates that for all types of pneumoconiosis (including asbestosis) all female cases and 83% of male cases are aged 65 or over.
The role of silica exposure in work-related respiratory disease is also supported by information about how individuals currently with “breathing or lung problems” thought that work had caused or made their illness worse, according to the Labour Force Survey (LFS).

The most recent estimate of the annual prevalence of work-related respiratory disease (based on data from the LFS in 2018/19, 2019/20 and 2020/21) suggests that around 142,000 people who had ever worked currently had breathing or lung problems caused or made worse by work (95% Confidence Interval: 125,000 – 160,000).

Based on questions about what respondents thought was the cause of their work-related illness in the 2009/10, 2010/11, and 2011/12 surveys, “Dusts from stone, cement, brick or concrete” contributed in 19% of estimated cases of breathing and lung problems.

### Coal workers’ pneumoconiosis

![Graph showing coal workers' pneumoconiosis in Great Britain, 2009-2019](image)

- There were 135 new cases assessed for IIDB in 2019 and this reduced to 30 in 2020 but this figure is likely to have been affected by the coronavirus pandemic (see table IIDB01 [link](www.hse.gov.uk/statistics/tables/iidb01.xlsx)).
• Figures for the three years 2017-2019 are somewhat lower than the 200-300 annual new cases per year seen over the last 10 years.
• Estimated numbers of annual new cases identified by specialist chest doctors fluctuated year-on-year with an average of around 25 cases per year (see table THORR01 www.hse.gov.uk/statistics/tables/thorr01.xlsx). There were an estimated 12 cases in 2019 and 16 cases in 2018. In 2020 there were 15 cases, but this figure is likely to have been affected by the coronavirus pandemic.
• Annual deaths from pneumoconiosis other than silicosis and asbestosis (which are mainly coal workers’ pneumoconiosis) have remained relatively constant over the 10 years to 2019 with an average of around 130 deaths per year. There were 102 deaths in 2019 and 73 in 2020. The figure for 2020 may have been affected by the coronavirus pandemic, though this is uncertain. (see Table DC01 www.hse.gov.uk/statistics/tables/dc01.xlsx).

Current numbers of annual coal workers’ pneumoconiosis cases and deaths are now lower than in previous decades and this reflects an overall reduction in exposure to coal dust over time driven, at least in part, by the substantial reduction in the size of the coal mining industry since the 1980s.

There are no IIDB and THOR cases of female coal workers’ pneumoconiosis. Both the IIDB and THOR schemes indicate that most cases of pneumoconiosis occur in men aged over 65 (see table IIDB07 www.hse.gov.uk/statistics/tables/iidb07.xlsx and THORR02 www.hse.gov.uk/statistics/tables/thorr02.xlsx). For example, around 83% of coal pneumoconiosis IIDB cases assessed in the ten years to 2019 were over 65 years of age.
References


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