

Work-related skin disease statistics in Great Britain, 2020

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Summary



Work-related skin disease

875

Estimated new cases of work-related contact dermatitis reported by dermatologists in 2019
The Health and Occupation Reporting network

- Most cases of work-related skin disease reported by dermatologists participating in the EPIDERM scheme within The Health and Occupation Reporting (THOR) network are *work-related contact dermatitis* caused by exposure to allergens or irritants.
- The estimated rate of annual new cases of contact dermatitis seen by dermatologists has reduced steadily during the period 2010-2019.
- Contact with soaps and cleaning materials and working with wet hands continue to be the most common causes of work-related contact dermatitis according to reports by dermatologists.
- Occupations with the highest rates are florists, beauticians, cooks, hairdressers and barbers, and certain manufacturing and health-care related occupations.
- Other conditions reported in EPIDERM include *contact urticaria*, *folliculitis*, *acne*, *infective* and *mechanical skin disease*, and *skin cancer*.

The document can be found at: www.hse.gov.uk/statistics/causdis/

Introduction

Work-related skin diseases include any disorder of the skin caused by or made worse by work or workplace activity. "Occupational" skin disease is usually reserved for those cases that are directly caused by work.

There are a number of different types of work-related skin diseases, including contact dermatitis, contact urticaria, folliculitis, acne, infective and mechanical skin disease, and skin cancer (see the Technical note for further information about disease characteristics).

Work-related skin disease can vary widely in severity from serious cases of dermatitis, to minor skin irritation, which may not be recognised as an adverse health outcome by the individual. Statistics are available based on a variety of sources of data each with different strengths and weaknesses.

Overall scale of work-related skin disease

Incidence of self-reported work-related skin disease

There were an estimated 7,000 (95% Confidence Interval: 4,000-9,000) new cases of self-reported "skin problems" each year that were caused or made worse by work according the Labour Force Survey (LFS) over the last six years. (These estimates are not tabulated: there were insufficient sample cases in the LFS to provide an estimate for the last three years – see lfsilltyp www.hse.gov.uk/statistics/lfs/lfsilltyp.xlsx.)

Specialist physician-diagnosed work-related skin disease

Estimated numbers of annual case reports of skin disease by dermatologists within the EPIDERM scheme – part of The Health and Occupation Reporting (THOR) network – are much lower than estimates based on the LFS, and include only those cases serious enough to be seen by a skin disease specialist:

- In 2019, there were an estimated 1015 individuals with new cases of work-related skin disease within EPIDERM [Table THORS01 www.hse.gov.uk/statistics/tables/thors01.xlsx].
- There were 1018 new diagnoses among these individuals and of these diagnoses, 875 (86%) were contact dermatitis, 22 (2%) were other non-cancerous dermatoses, and the remaining 121 (12%) were skin cancers.
- Of the 875 contact dermatitis diagnoses in 2019, 42% were among men, and 58% among women [Table THORS01 www.hse.gov.uk/statistics/tables/thors01.xlsx].
- Contact dermatitis often occurs at a young age, particularly among female workers: 54% of reports to EPIDERM among women were aged less than 35 years compared with 37% among men [Table THORS02 www.hse.gov.uk/statistics/tables/thors02.xlsx].

EPIDERM is likely to underestimate the true incidence of specialist physician-diagnosed work-related skin disease since not all eligible dermatologists are included in the scheme, and some of those included do not report any cases.

Cases assessed for Industrial Injuries Disablement Benefit (IIDB)

The coverage of the IIDB scheme is much more restricted than that of THOR and typically identifies only the most severe cases of dermatitis. Annual numbers of cases assessed for IIDB have been reducing over the last decade.

- In 2019, there were 10 cases of dermatitis assessed for IIDB, with an annual average of 37 over the last 10 years [Table IIDB02 www.hse.gov.uk/statistics/tables/iidb02.xlsx]. Around 25% of IIDB cases are typically among women.

Self-reported skin problems – illness prevalence

Estimates of the total number of people with occupational illnesses at any given time (disease prevalence) in Great Britain may also be derived from self-reports made in the Labour Force Survey (LFS).

- There are an estimated 18,000 (95% confidence interval: 13,000-23,000) people working within the last year with skin problems they regard as caused or made worse by work. This is based on data from the LFS in 2017/18, 2018/19 and 2019/20 [Table-1 lfsilltyp www.hse.gov.uk/statistics/lfs/lfsilltyp.xlsx].
- The LFS figures for the prevalence of self-reported skin problems caused or made worse by work, whilst quite variable, have been broadly flat over the last ten years.

Trends in incidence

Trends in overall incidence of contact dermatitis

Data from EPIDERM can be used as the basis for inferences about time trends in the annual incidence of work-related contact dermatitis. However, such inferences cannot be made solely on the basis of the number of estimated annual cases since various factors can influence these numbers as well as true changes in incidence.

Relative changes in annual incidence based on the latest statistical modelling by the University of Manchester¹, which takes account of some of these factors (including the number and type of participating specialists, their reporting habits, and seasonal effects associated with the time of year they report), give the best guide available to date about year-on-year changes.

Figure 1: Work-related contact dermatitis in Great Britain, 2009-2019

Figure 1A: Estimated rate of annual new cases reported by dermatologists relative to 2019 (EPIDERM)

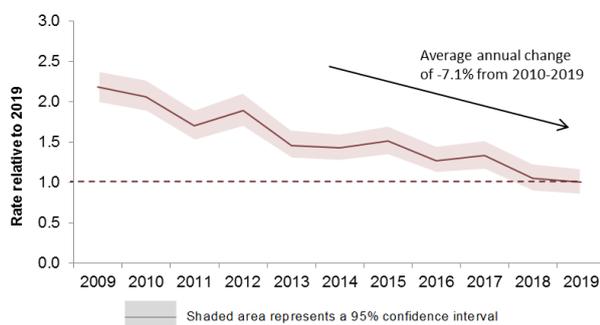
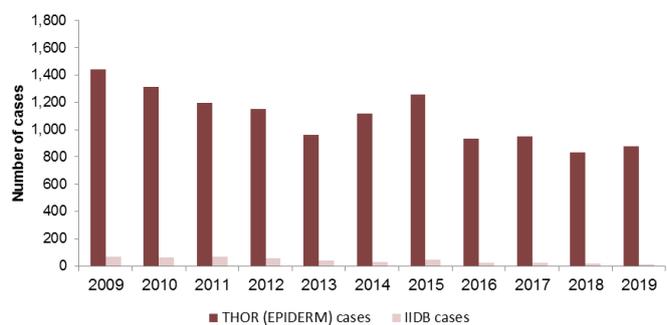


Figure 1B: Estimated number of cases reported by dermatologists (EPIDERM) and IIDB cases



Source: THOR (EPIDERM) scheme, University of Manchester

The latest analyses show:

- The annual average change in incidence during the period 2010-2019 was -7.1% per year (95% CIs: -8.6%, -5.7%)¹.
- An analysis of longer-term trends estimated the overall average change in incidence to be -4.1% per year (95% confidence interval: -4.5, -3.7) over the period 1996-2019.

These estimates do not take account of a possible tendency for THOR reporters to include fewer cases than they should once they have been reporting for some time (so called "reporting fatigue").

There is some evidence of an increase in non-response and in the number of those reporting zero cases within EPIDERM over time suggesting some degree of reporting fatigue. Adjusting for this affect when considering all kinds of skin disease together reduces the size of the downward trend over the period 1996-2019 from -4.2% per year (95% CI: -4.6, -3.8) to -3.0% per year (95% CI: -4.2, -1.8). It is not possible to adjust for reporting fatigue in the statistical modelling of specific skin conditions.¹

Trends in contact dermatitis in relation to specific agents

While the statistical analyses of EPIDERM data by the University of Manchester suggest that the overall incidence of contact dermatitis is likely to have reduced, this is not necessarily the case for contact dermatitis caused by exposure to some specific agents.

The longer-term downward trend in annual incidence of dermatitis caused by allergens was fairly consistent over the whole period 1996-2019, with an overall change of -4.5% per year (95% CI: -5.1, 4.0). For cases caused by irritants, the downward trend was more gradual in the early part of the period, becoming steeper from 2013 onwards, with an overall average change of -3.4% (95% CI: -3.9, -2.9).

Part of the explanation for a more rapid fall in the incidence of allergic cases in the earlier part of the period may have been a reduction in the use of powdered latex gloves, particularly among health care workers.² Work by the University of Manchester suggested that this coincided with an increase in irritant dermatitis incidence in these workers that may have resulted from initiatives to increase in hand hygiene³.

Other analyses by the University of Manchester have demonstrated the effect of changes in exposure to specific agents: for example, a reduction in allergic contact dermatitis due to chromates that was likely to have been a result of reduced exposures in cement following the introduction of EU legislation in 2005⁴, and an increase in the incidence of allergic contact dermatitis caused by acrylates among beauticians.⁵

Dermatitis by causative agents

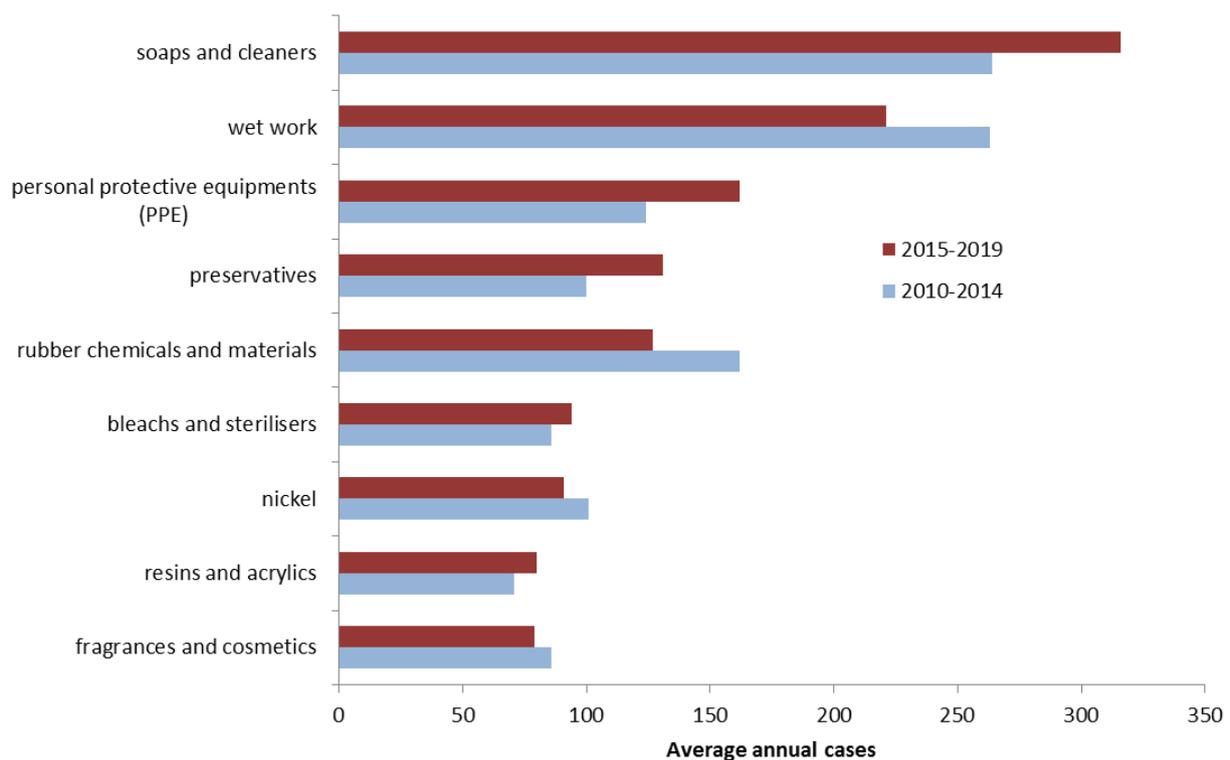
Analyses of EPIDERM data for 1996-2019, show that around 53% of cases of contact dermatitis were allergic in nature and 60% were due to irritants (a small proportion of cases had both allergic and irritant components).¹

Dermatologists reporting to EPIDERM try to identify the causes of cases of skin disease they see. The causative agents recorded by dermatologists for contact dermatitis cases reported in EPIDERM are shown in Table THORS06 [www.hse.gov.uk/statistics/tables/thors06.xlsx]. Figure 2 below shows the most common agents mentioned in these case reports of contact dermatitis during the last two 5-year periods.

Contact with soaps and cleaners and working with wet hands – i.e. “wet work” – have consistently been the most commonly recorded causes. Other common causal agents include “Rubber chemicals and materials”, “Personal protective equipment” (including latex gloves), “Preservatives”, “Bleaches and sterilisers”, and “Nickel”.

Note, there may be some degree of overlap between agent categories, with some diagnoses being assigned more than one agent code. For example, some cases caused by the use of latex gloves may appear in both the “Rubber chemicals and materials” and “Personal protective equipment” categories.

Figure 2: Contact dermatitis: causal agents most commonly reported to THOR (EPIDERM) during 2010-2014 and 2015-2019



Dermatitis by occupation and industry

Of the available data sources, EPIDERM includes the highest numbers of actual reported cases of work-related dermatitis each year and as such provides the best basis for comparisons of incidence across occupation and industry groups.

The overall all worker rate for contact dermatitis 2017-2019 was 2.73 cases per 100,000 workers.

Occupation

Statistics for occupational dermatitis by occupational group based on EPIDERM reports during the period 2001-2019 are shown in Table THORS04 [www.hse.gov.uk/statistics/tables/thors04.xlsx].

These statistics show that there is considerable variation in the incidence of occupational dermatitis between the major groupings of occupations.

“Managers, Directors and Senior Officials” and “Administrative and Secretarial Occupations” had the lowest incidence rates (0.8 and 0.5 cases per 100,000 workers per year during 2010-2019 respectively), whereas the groups “Caring, Leisure and Other Service Occupations” and “Skilled Trades Occupations” had incidence of rates of 8.5 and 6.7 per 100,000, which are several times higher.

“Process, Plant and Machine Operatives”, “Professional Occupations” and “Elementary Occupations” also had much higher rates than the managerial and administrative groups.

More detailed statistics (for occupation unit groups) are subject to considerable statistical uncertainty due to smaller number of actual reported cases, however, they show that some occupations have much higher dermatitis incidence rates than any of the major groupings of occupations.

The five occupations with the highest rates of the period 2010-2019 were:

- Beauticians (75.4 cases per 100,000 workers per year),
- Cooks (68.0 cases per 100,000 workers per year),
- Florists (56.1 cases per 100,000 workers per year),
- Hairdressers and barbers (50.9 cases per 100,000 workers per year), and
- Metal working machine operatives (46.4 cases per 100,000 workers per year), and
- Dental practitioners (32.9 cases per 100,000 workers per year).

Caution must be applied when comparing incidence rates for successive time periods for individual occupation major and unit groups. In addition to the issues discussed under Trends in incidence above, the figures are subject to increased statistical variation resulting from the often small numbers of actual reported cases within specific groups.

Industry

Statistics for work-related dermatitis by industry group based on EPIDERM reports during the period 2010-2019 are shown in Table THORS05 [www.hse.gov.uk/statistics/tables/thors05.xlsx].

Variations in the incidence of occupational dermatitis by industry are a reflection of where the occupations with the highest rates are likely to predominate within the industry classification. For example, the industry section with the highest annual incidence of occupational dermatitis during 2017-2019 was “Other service activities” with a rate of 14.3 cases per 100,000 workers per year. The industry division with the highest incidence rate – “Other personal service activities” with a rate of 28.2 cases per 100,000 workers per year – is a subgroup within this section and includes the hairdressing and beauty treatment industries which, as the statistics by occupation show, have particularly high rates of dermatitis.

The high incidence rates seen in the human health related industry sections and divisions reflect the high rates among dentists and nurses, and a higher than average rate in the manufacturing industry also reflects high rates seen in the various manufacturing associated occupations mentioned above.

Whilst these statistics can give insight into the types of workplaces and activities where the burden of occupational dermatitis in the British workforce is highest, they should be seen as minimal estimates of the absolute incidence in each setting. Rates are calculated by using denominators from the Labour Force Survey (LFS), which are representative of overall numbers employed in each occupation or industry, whereas the number of cases reported is limited by underreporting (as discussed above under Overall scale of disease).

Technical notes

Disease definitions

Work-related skin disease may be defined as any disorder of the skin which is caused by or made worse by work or workplace activity. The term “occupational” skin disease is usually reserved for those cases that are directly caused by work.

There are a number of skin diseases - so called ‘dermatoses’ - in which occupational factors can play a role. These are discussed briefly below. The focus of this document is on non-cancerous skin disease; occupational skin cancers are covered separately – see www.hse.gov.uk/statistics/causdis/cancer.pdf .

The identification of specific cases of skin diseases as work-related will typically be based on a consideration of when the disease first developed, whether the disease improves away from the work environment and whether there is a plausible causative agent present in the work environment which can be linked to the expression of the disease⁶.

Contact dermatitis may be defined as inflammation of the skin resulting from contact with a chemical or physical agent. There are two main forms of the disease. Irritant contact dermatitis (ICD) includes a range of abnormal skin changes due to cell damage by various irritants, and where the changes are non-immunological in nature. In contrast, allergic contact dermatitis (ACD) occurs as an immunological response to an allergen, and therefore only in those that develop such a reaction to that specific agent. There is likely to be a delay between initial contact with the allergen and manifestation of the condition, but, once sensitised, any further contact with the allergen is likely to lead to the disease.

Contact urticaria is a transient immunological response of the skin which typically occurs rapidly following exposure and may resolve soon after exposure ceases.

Other non-allergic chemically induced dermatoses include folliculitis and acne — inflammation of the skin or hair follicles – and infective skin diseases resulting from exposures to bacteria, fungi or viruses.

Mechanical skin disease is characterised by skin damage due to mechanical trauma associated with particular occupations – for example, those involving repetitive tasks – and skin neoplasia can result from occupational exposure to various chemical and non-chemical carcinogens.

Data sources

Estimation of the overall scale of work-related diseases in Great Britain, trends in incidence, and identification of high risk occupations and activities, relies on a variety of sources of data each with different strengths and weaknesses.

A number of data sources provide information about the incidence of work-related skin disease in Great Britain (i.e. the number of new cases occurring each year). The Health and Occupation Research Network (THOR) includes a scheme known as EPIDERM, in which dermatologists record any new cases of occupational skin disease they see. Statistics are also available based on the Self-reported Work-related Illness (SWI) survey – a module of questions included annually in the national Labour Force Survey (LFS) – and from assessments for Industrial Injury and Disablement Benefit (IIDB).

Work-related skin disease can vary widely in severity from serious cases of dermatitis, to minor skin irritation, which may not be recognised as an adverse health outcome by the individual.

EPIDERM provides by far the largest numbers of actual reported cases of skin disease and, though restricted to more severe cases and subject to a degree of underreporting, provides a basis for detailed analyses such as by occupational group or causal agent.

The Labour Force Survey (LFS) is the only current source of information about the prevalence of occupational skin disease at any given time (i.e. the proportion of the population currently with the disease).

References

1. Iskandar I, Carder M, Barradas A, Byrne L, Gittins M, Seed M, van Tongeren M (2020) Time trends in the incidence of contact dermatitis and asthma in the UK, 1996-2019: estimation from THOR surveillance data. www.hse.gov.uk/statistics/pdf/thortrends20.pdf
2. Turner S, McNamee R, Agius R, et al. (2012) Evaluating interventions aimed at reducing occupational exposure to latex and rubber glove allergens. *Occup Environ Med.* 69:925–931.
3. Stocks SJ, McNamee R, Turner S, Carder M, Agius R. A reduction in healthcare-associated infections following a nationwide campaign promoting frequent hand washing coincided with a simultaneous increase in contact dermatitis in healthcare workers. Submitted to *British Journal of Dermatology*.
4. Stocks SJ, McNamee R, Turner S, et al. (2012) Has European Union legislation to reduce exposure to chromate in cement been effective in reducing the incidence of allergic contact dermatitis attributed to chromate in the UK? *Occup Environ Med.*69:150-152.
5. Kwok C, Money A, Carder M, Turner S, Agius R, Orton D, and Wilkinson M Occupational disease in Beauticians reported to The Health and Occupation Research (THOR) network from 1996 to 2011. *Clinical and Experimental Dermatology*, 2014; 39 (5): 590-595
6. Beltrani V (1999) Occupational dermatoses. *Annals of Allergy, Asthma and Immunology* 83(6):607-613

National Statistics

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