Work-related skin disease in Great Britain 2014

Contents

Summary 2
Introduction 3
Data sources 3
Overall scale of disease 4
Trends in incidence 5
Dermatitis by causative agents 6
Dermatitis by occupation and industry 7
References 9
Summary

The information in this document relates to Health and Safety statistics for 2013/14. The document can be found at: www.hse.gov.uk/statistics/causdis/dermatitis/

Work-related skin disease continues to be common, particularly in certain occupations, and can be severe in some cases.

The latest information shows:

- Most occupational skin disease cases are contact dermatitis and similar numbers of these are caused by exposures to allergens and irritants (THOR-EPIDERM)
- Reports of more severe cases of occupational dermatitis from specialist doctors suggest that the number of new cases per year is now lower than it was a decade ago, but apart from the latest year being lower there has been little change since about 2005 and cases due to certain specific causes may still be increasing (THOR-EPIDERM).
- Working with wet hands, and contact with soaps and cleaning materials continue to be the most common causes of occupational contact dermatitis (THOR-EPIDERM).
- Occupations with the highest rates are florists, hairdressers, cooks, beauticians, and certain manufacturing and health care related occupations (THOR-EPIDERM).
Introduction

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. 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/.

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 disease1.

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.

Estimation of the overall scale of these 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.

Data sources

A number of data sources provide information about the incidence of occupational skin disease in Great Britain (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. General practitioners included in THOR also report cases of occupational skin disease within a scheme known as THOR-GP. 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).

Occupational 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. THOR-GP captures those cases which are of enough concern to have triggered a visit to a GP and be subsequently diagnosed and attributed to work. However, the relatively small sample of participating GPs results in imprecise estimates of the overall scale of occupational skin disease in Great Britain.

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 the best basis for more detailed analyses such as by occupational group or causal agent. The SWI survey is the only current source of information about the prevalence of occupational skin disease at any given time (the proportion of the population currently with the disease).

Further information about data sources is available – see www.hse.gov.uk/statistics/sources.htm.
Overall scale of disease

Incidence of self-reported work-related skin disease
The number of respondents self-reporting new cases of skin problems in each individual SWI (LFS) survey is usually too small to produce reliable incidence estimates.

- Pooled data from the latest three available SWI surveys suggests that the incidence of work-related skin problems is currently around 5000 new cases per year (95% Confidence Interval: 3000-7000)


Specialist physician-diagnosed work-related skin disease
- In 2013, there were an estimated 1297 new diagnoses of occupational skin disease by dermatologists reporting to EPIDERM (Table THORS01 www.hse.gov.uk/statistics/tables/thors01.xls). Of these, 970 (75%) were contact dermatitis, 79 (6%) were other non-cancerous dermatoses (mainly contact urticaria), and the remaining 248 (19%) were skin cancers.

- A slightly lower proportion of total diagnoses of occupational dermatitis within EPIDERM in 2013 were among women (47%) than men (53%) (Table THORS01 www.hse.gov.uk/statistics/tables/thors01.xls).

- Contact dermatitis often occurs at a young age, particularly among female workers, where nearly half of reports to EPIDERM were for those aged less than 35 years (Table THORS02 www.hse.gov.uk/statistics/tables/thors02.xls).

- Reported cases were distributed by country broadly in the proportions expected given the size of the underlying working populations (Table THORS03 www.hse.gov.uk/statistics/tables/thors03.xls).

Reports to EPIDERM include only those cases of skin disease that were serious enough to be seen by a dermatologist. The majority, but not all, of eligible dermatologists are included in the scheme, and some of those are included do not report any cases. A recent analysis suggested that non-participation and non-response led to an underestimation of the true incidence of specialist diagnosed occupational dermatitis in 2005-2007 of about 38%. Many cases that failed to be diagnosed at all, or where the link with work activity was not recognised, will not be included. Thus, this scheme inevitably substantially underestimates the true incidence of work-related disease – particularly for those conditions such as contact dermatitis where there may be substantial numbers of less serious cases. The final year for which figures are available from the OPRA scheme – which includes only those cases that mainly occurred in workplaces where there is access to occupational physicians – was 2010.

Industrial Injuries Disablement Benefit (IIDB) cases
The coverage of the IIDB scheme is much more restricted than that of THOR and typically identifies only the most severe cases of dermatitis.

- In 2013, there were 40 cases assessed for disablement benefit (Table IIDB02 www.hse.gov.uk/statistics/tables/iidb02.xls).

Total currently ill – disease 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 the SWI survey.

- There are too few sample cases in the latest available LFS (in 2013/14) to produce reliable estimates, however, the 3-year average based on the LFS in 2010/11, 2011/12 and 2013/14 suggest that among people currently or recently in work, the prevalence of skin problems caused or made worse by their work was 12 000 with 95% confidence interval 9 000 to 15 000 (See Table SWIT3W12 www.hse.gov.uk/statistics/lfs/swit3w12.xls and Table SWIT3W12 www.hse.gov.uk/statistics/lfs/swit3w12_3yr.xls for statistics based on those working in the last 12 months).
**Sickness absence**

THOR-GP suggests that skin disease diagnoses were substantially less likely to be issued with a sickness notification and tended to be associated with much shorter periods of sickness absence than average for all occupational disease diagnoses.

Based on reports made during 2011-2013 to the THOR GP scheme, skin diseases accounted for around 2% of total sickness absence days certified due to occupational illnesses. For skin diseases, a sickness certificate was issued in 16% of cases (Table THORGP01 [www.hse.gov.uk/statistics/tables/thorgp01.xls](http://www.hse.gov.uk/statistics/tables/thorgp01.xls)). For contact dermatitis specifically, a sickness certificate was issued in 9% of cases (based on reports during 2006-2012), and 16% of cases were referred to a hospital specialist or other health practitioner.

**Trends in incidence**

**Trends in overall incidence of contact dermatitis**

Statistics based on reports of occupational skin disease within the EPIDERM scheme are affected by various factors including the number and type of participating physicians, their reporting habits, and by seasonal effects associated with the time of year they report. This makes assessment of trends based on total annual estimated cases problematic since these factors, as well as the true incidence, can vary over time. Apparent trends in the annual number of assessed cases of occupational diseases within the IIDB scheme also need to be treated with caution; even for diseases like dermatitis where the IIDB prescription criteria have remained unchanged for a number of years, the proportion of those eligible who actually make a claim could still be influenced by other factors.

The annual estimated number of new diagnoses of contact dermatitis within the EPIDERM scheme and the number of cases assessed within the IIDB scheme from 1996-2013 are shown in Figure 1 below. Both series suggest a downward trend, though the annual numbers in the IIDB are much lower than in EPIDERM. The red line in Figure 1 shows estimated annual incidence rates of contact dermatitis, relative to the latest year (2013) i.e. as a proportion of the 2013 EPIDERM figure, based on statistical modelling by the University of Manchester. This analysis shows that there is still a downward trend in contact dermatitis incidence after allowing for some of the main factors that can affect EPIDERM reporting levels and that the incidence in recent years was statistically significantly lower than in the late 1990s and early 2000s.³

The statistical modelling does 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 and this could be an indication of reporting fatigue. If the data were affected by reporting fatigue, adjusting for its effect would tend to reduce the size of the observed downward trend – although initial investigations so far suggest not by a large extent. Such adjustments can only be made overall for EPIDERM, and not for contact dermatitis on its own. They suggest that the average annual decrease over the period 1996-2013 would change from 3.6% to 3.2%.³
Figure 1: Occupational contact dermatitis in Great Britain, 1996-2013

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 in certain specific industry sectors. One general feature of the data is that there appears to have been a larger reduction in the number of allergic contact dermatitis cases than in cases caused by irritants, which may even have increased slightly in recent years. Part of the explanation for the reduction in allergic cases may be a reduction in the use of powdered latex gloves, particularly among health care workers.4 Work to investigate whether this coincided with an increase in irritant cases – perhaps as a result of more frequent hand washing – has produced a recently submitted work on “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.”7

Another recent analysis by the University of Manchester show a reduction in allergic contact dermatitis due to chromates that is likely to be a result of reduced exposures in cement following the introduction of EU legislation in 2005.5 However, a further analysis suggests there has been an increase in the incidence of allergic contact dermatitis caused by acrylates among beauticians.6

Dermatitis by causative agents
Analyses of EPIDERM data 1996-2013 shows that around 37% of cases of contact dermatitis were allergic in nature, 45% were irritant and the remainder mixed or unspecified.3

Physicians reporting to EPIDERM and THOR-GP 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.xls). Figure 2 shows that there were some similarities in the most common agents associated with reported cases of contact dermatitis in EPIDERM and THOR-GP.

Working with wet hands – i.e. “wet work” – and contact with soaps and cleaners were the most commonly recorded agents in both schemes. “Rubber chemicals and materials”, “personal protective equipment” (including latex gloves), “hairdressing chemicals”, and “foods and flour” were also common – and cited to a similar extent within EPIDERM and THOR-GP reports. “Nickel”, “bleaches and sterilisers”, “fragrances and cosmetics”, “preservatives”, and “aromatics amines” were cited more frequently in EPIDERM than THOR-
GP, whereas “petroleum and products” and “cements, plaster and masonry” was cited more frequently in THOR-GP than EPIDERM.

Note that 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: Most common agents for contact dermatitis, THOR-EPIDERM and THOR GP

Dermatitis by occupation and industry

Of the available data sources, EPIDERM includes the highest numbers of actual reported cases of occupational dermatitis each year and as such provides the best basis for comparisons of incidence across occupation and industry groups. Whilst such 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. This is because rates are calculated by using denominators from the Labour Force Survey 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).

Occupation

Statistics for occupational dermatitis by occupational group based on EPIDERM reports during the period 2002-2013 are shown in Table THORS04 www.hse.gov.uk/statistics/tables/thors04.xls.

These statistics show that there is considerable variation in the incidence of occupational dermatitis between the major groupings of occupations. The groups “Managers, Directors and Senior Officials” and “Administrative and Secretarial Occupations” had the lowest incidence rates (1 case per 100,000 workers per year during 2004-2013), whereas the groups “Caring, Leisure and Other Service Occupations” and “Skilled Trades Occupations” had incidence of rates that were 10 or more times higher. “Process, Plant and Machine Operatives” and “Professional Occupations” also had much higher rates that 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 2004-2013 were:

- Florists (110 cases per 100,000 workers per year),
- Hairdressers and barbers (88 cases per 100,000 workers per year),
- Cooks (70 cases per 100,000 workers per year),
- Beauticians (64 cases per 100,000 workers per year), and
- Metal working machine operatives (61 cases per 100,000 workers per year).

Other occupations with high incidence rates (over 30 new cases per 100,000 per year) were chemical, rubber, glass and ceramic process operatives, dental practitioners, nurses, dental nurses, and podiatrists.

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 occupational dermatitis by industry group based on EPIDERMM reports during the period 2008-2013 are shown in Table THORS05 [www.hse.gov.uk/statistics/tables/thors05.xls](http://www.hse.gov.uk/statistics/tables/thors05.xls).

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 2011-2013 was “Other service activities” with a rate of 24 cases per 100,000 workers per year. The industry division with the highest incidence rate – “Other personal service activities” with a rate of 46 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.
References


7. 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

National Statistics

National Statistics are produced to high professional standards set out in the National Statistics Code of Practice. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.

An account of how the figures are used for statistical purposes can be found at www.hse.gov.uk/statistics/sources.htm .

For information regarding the quality guidelines used for statistics within HSE see www.hse.gov.uk/statistics/about/quality-guidelines.htm

A revisions policy and log can be seen at www.hse.gov.uk/statistics/about/revisions/

Additional data tables can be found at www.hse.gov.uk/statistics/tables/.

Statistician: Andrew Darnton

Contact: andrew.darnton@hse.gsi.gov.uk

Last updated: October 2014

Next update: October 2015

© Crown copyright If you wish to reuse this information visit www.hse.gov.uk/copyright.htm for details. First published 10/14.