Occupational diseases in Finland in 2012

New cases of recognized and suspected occupational diseases

Työterveyslaitos

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Panu Oksa
Lea Palo
Anja Saalo
Riitta Jolanki
Ilpo Mäkinen
Maria Pesonen
Simo Virtanen

FINNISH INSTITUTE OF OCCUPATIONAL HEALTH • HELSINKI 2014

FINNISH INSTITUTE OF
OCCUPATIONAL HEALTH
FIOH Bookstore
Topeliuksenkatu 41 a A
FI-00250 Helsinki
Finland

Tel: +358 30 4747 2543
Fax: +358 9 477 5071

www.ttl.fi
email: kirjakauppa@ttl.fi

Cover design: Arja Tarvainen
Layout: Iiris Väistölä

ISBN 978-952-261-469-8 (print)
ISBN 978-952-261-470-4 (pdf)

Juvenes Print Oy 2014

Preface

This publication presents a statistical summary of recognized and suspected occupational diseases in Finland. The first part of the publication is a review, which aims to give an overall picture of the incidence of occupational diseases in 2012, and of the main trends in recent years. The second part consists of statistical tables, which describe in greater detail the occurrence of occupational diseases in Finland in 2012.

The Finnish Institute of Occupational Health's Register of Occupational Diseases (FROD), established in 1964, was consolidated as a research register in Finnish legislation in 1993. The Register's unit of observation is a filed claim of an occupational disease, either recognized or suspected. Since 2007, FROD has published not only total numbers of notified diseases, that is, all recognized and suspected occupational diseases, but also separately cases recognized by insurance companies. Recognition means that the insurance company has received sufficient data and decided to officially recognize a person's disease as an occupational disease, in accordance with Finnish legislation.

Appendix 1 describes FROD in more detail, and Appendices 2–4 include the definition of an occupational disease in Finnish legislation. FROD cases are recorded according to the year of reporting rather than the insurance company's technical date of occurrence, which may differ by several years in cases of disease with a long latency time. In addition to cases diagnosed among wage-earners, the statistics also cover farmers, who are recorded under separate statistics in the insurance system.

This publication is available as a pdf document on the FIOH website at http://www.ttl.fi/en/publications/electronic_publications/all_in_alphabetical_order/pages/default.aspx. Further information on occupational diseases and their causes is also available on the FIOH website (www.ttl.fi).

Comments and questions are appreciated and should be addressed to FROD, Finnish Institute of Occupational Health, Topeliuksenkatu 41 a A, 00250 Helsinki, email at.rekisteri@ttl.fi

Helsinki, December 2014

The Authors

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Review of recognized and suspected occupational diseases in 2012

1 Occupational diseases

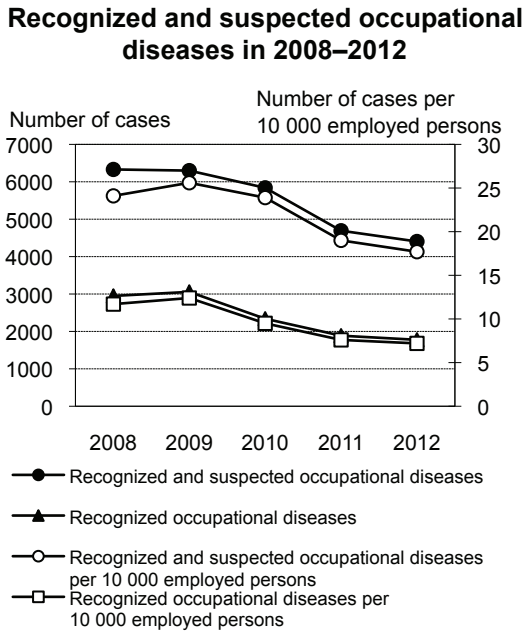

FIGURE 1.

An occupational disease that is entitled to compensation in accordance with Finnish legislation is a disease caused by any physical factor, chemical substance or biological agent encountered in the course of work carried out under a contract of employment, in public service or public office, or as an agricultural entrepreneur, as prescribed in the Act on Occupational Diseases (1343/88, appendix 2). This Act contains a list of physical, chemical and biological factors and diseases caused by these factors. This list is updated from time to time; for example, some years ago, carpal tunnel syndrome, retroperitoneal fibrosis caused by asbestos, and noise-induced tinnitus were added. The list is not exclusive; factors or diseases not on the list can also be suspected and recognized as causing or being an occupational disease.

In 2012, a total of 4 404 cases of occupational disease or suspected occupational disease were notified to the Finnish Institute of Occupational Health's Register of Occupational Diseases (FROD), i.e. 17.7 cases per 10 000 employed (Fig. 1/Table 1). Compared with 2011, this represented a decline of about 6%. The proportion of female cases was 37%, i.e. about the same as in 2011 (36%). These data cover the occupational diseases and suspected occupational diseases notified to the Federation of Accident Insurance Institutions (FAII) and the Farmers' Social Insurance Institution (Finnish abbreviation – MELA) in 2012. Data from 2005–

2012 are comparable, but because of changes in the communication arrangements and principles regarding compensation, they should not be compared directly with earlier FROD data.

This publication presents the numbers of recognized and suspected cases separately. The number of recognized occupational diseases is the data at the point when the material arrived at the Finnish Institute of Occupational Health (FIOH). This number changes over time as suspected cases are recognized as occupational diseases. In 2012, the proportion of all occupational diseases recognized by insurance companies was 40% of the total notified, the same figure as that in 2011.

In 2012, 2 773 of the patients were men and 1 631 women (Table 1). Among the men, the highest number of cases was notified in the 60–64-year and over 64-year age categories, and among women in the 45–49 and 55–59-year age categories (Fig. 2a and 2b). This difference in the mean age is explained by asbestos-induced diseases and noise-induced hearing loss, which are common in men and occur mainly in workers aged 50 years and more.

Recognized and suspected occupational diseases by age, gender and disease group in 2012

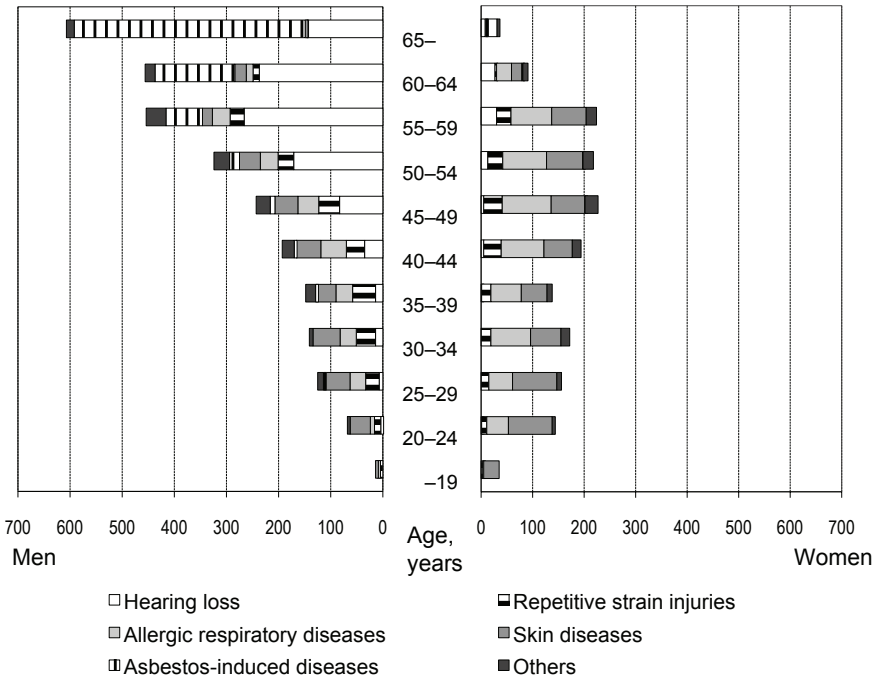

FIGURE 2a.

Recognized occupational diseases by age and gender in 2012

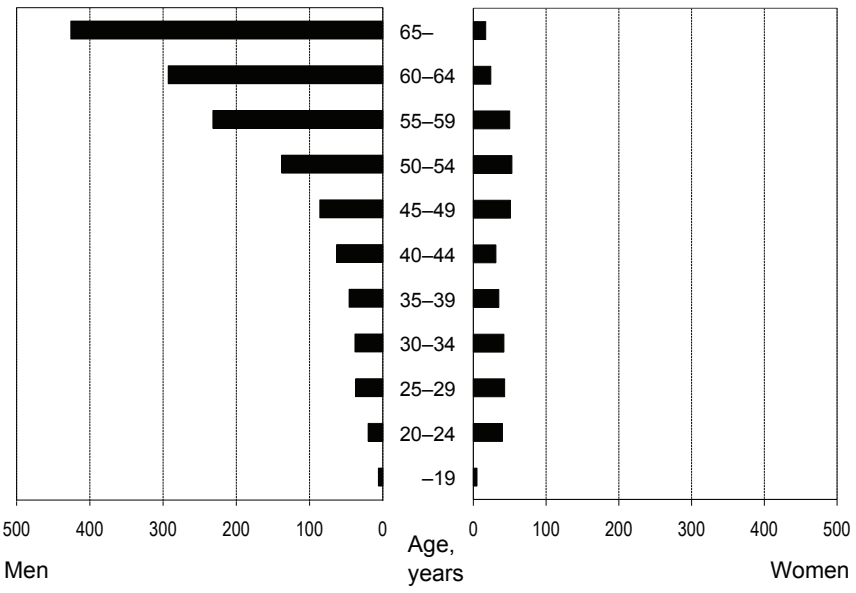

FIGURE 2b.

Half of all notified cases were recognized among men, 24% among women. The relative proportion of recognized occupational disease was largest in asbestos-induced diseases among both men (76%) and women (58%). The relative proportion was the smallest in allergic respiratory disease; 14% among men and 11% among women. These proportions are influenced by many factors, such as employees' readiness to undergo examination and acceptance of the symptoms or disease as an occupational disease, as well as how clearly the diagnosis can be made for each illness, and whether its cause is identified as work-related. The proportion of recognized occupational diseases, close to half of those notified, shows that the threshold for undergoing examination is not too high.

Recognized and suspected occupational diseases by industry in 2012

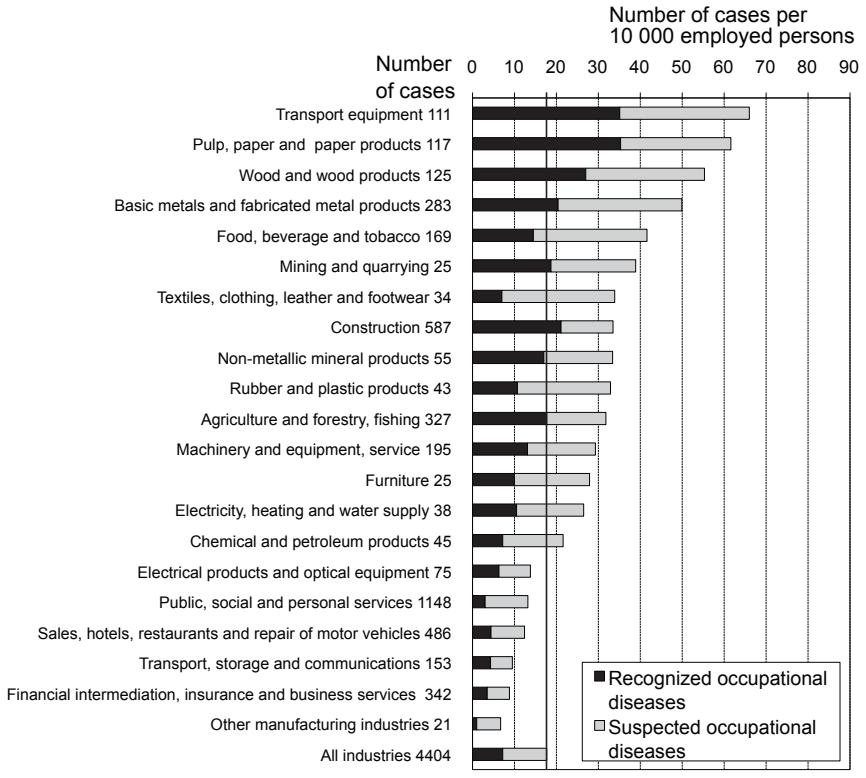

FIGURE 3.

Recognized and suspected occupational diseases by occupation in 2012

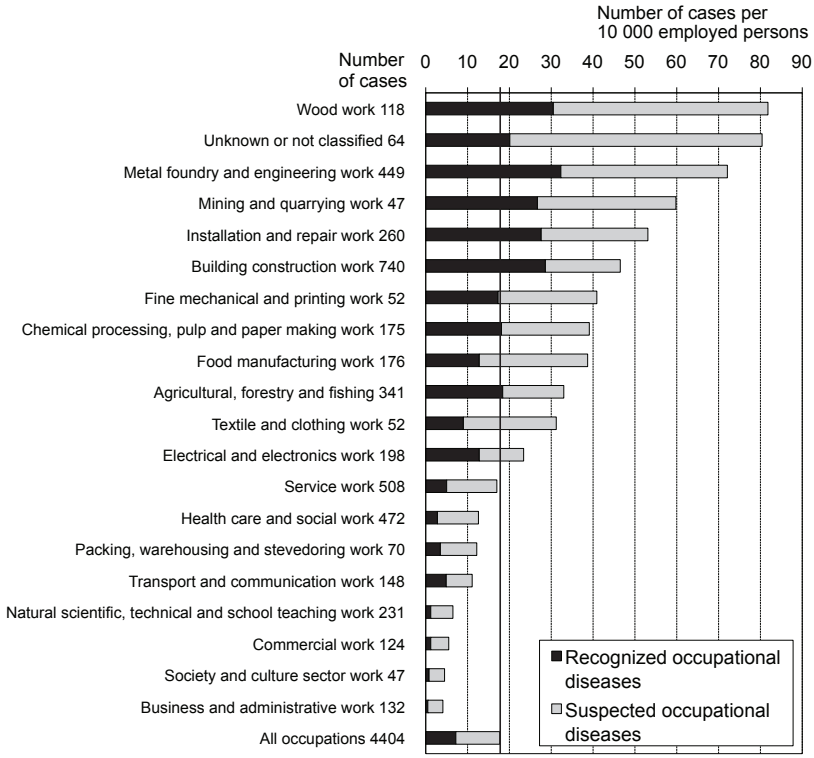

FIGURE 4.

The highest absolute number of notified occupational diseases was in public, social and personal services. The highest incidence rate of notified occupational diseases, however, was in the manufacture of motor vehicles and other transport equipment (66/10 000), followed by the manufacture of pulp, paper and paper products (62/10 000). As regards occupation, the highest incidence rate of notified occupational diseases was observed in wood work (82/10 000), followed by metal, foundry and engineering work (72/10 000), mining and quarrying work (60/10 000). The number of notified occupational diseases has been decreasing since 2008 in all disease groups (Fig. 5a and 5b). There was also a decrease from 2011 to 2012 in all except in asbestos-induced diseases.

This publication will present recognized and suspected occupational diseases in the following disease and exposure groups in more detail: hearing loss, repetitive strain injuries, allergic respiratory diseases, skin diseases, asbestos-induced diseases, cancers, and other diseases.

Recognized and suspected occupational diseases by disease group in 2008–2012

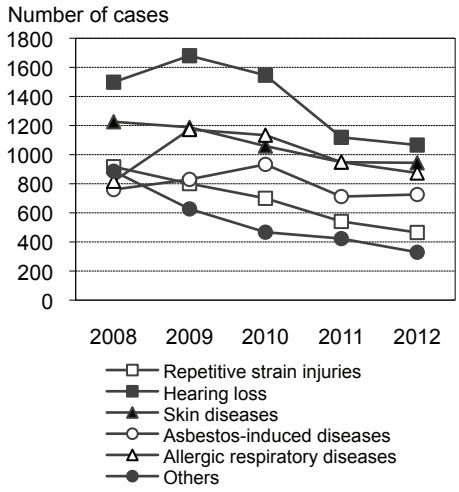

FIGURE 5a.

Recognized occupational diseases by disease group in 2008–2012

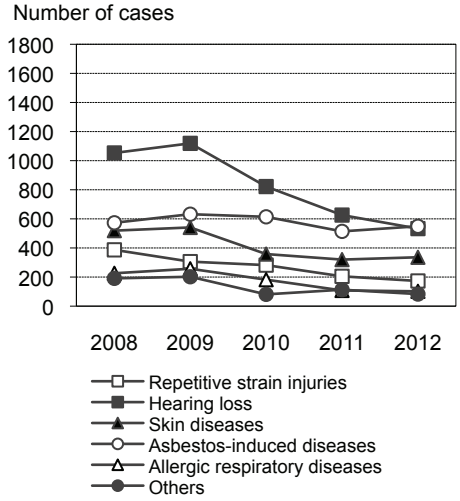

FIGURE 5b.

2 Hearing loss

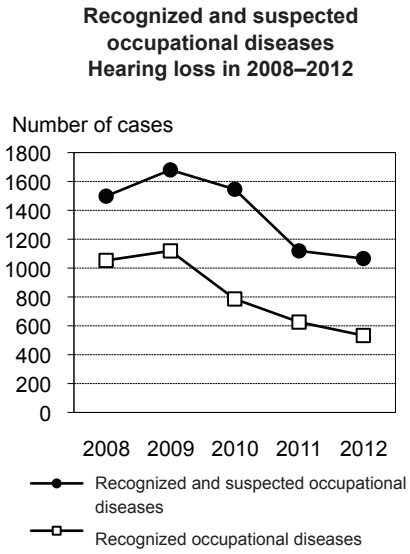

FIGURE 6.

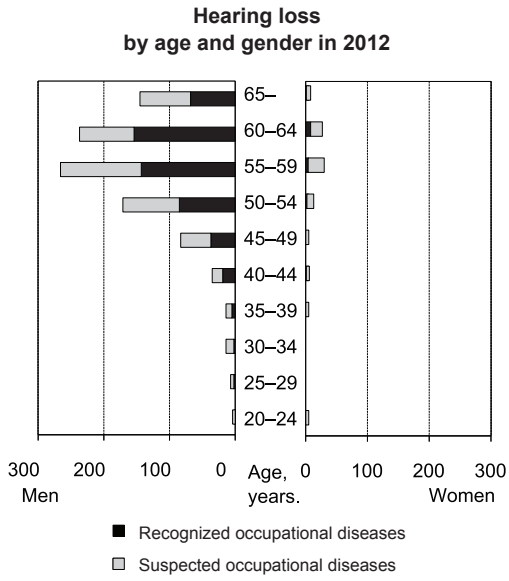

FIGURE 7.

Noise-induced hearing loss typically develops within one or two decades from the beginning of the exposure. The time required is influenced by the level of the noise, the daily duration of exposure, the frequency of the noise, and the number of intense noise peaks. Thus the cases of noise-induced hearing loss in 2012 relate mainly to exposure in the 1990s or earlier.

Noise-induced hearing loss is the most common notified occupational disease. In 2012, 1 066 cases were notified, which is 24% of all notified cases. (Fig. 6/ Table 1). Since 2011, the number of cases has decreased by 5%. The damage to hearing in the majority of cases was below the level required for compensation.

The highest number of cases was notified in the 55–59 and 60–64-year age categories (Fig. 7/Table 1). Hearing loss among men is over ten times more prevalent than among women. The small proportion of cases among women (8%), results from the small number of women in noisy occupations.

The highest incidence of hearing loss by industry was seen in the manufacture of pulp, paper and paper products (46/10 000), and in the manufacture of wood and wood products (27/10 000) (Fig. 8). By occupation, the highest incidence was in wood work (32/10 000) and in metal foundry and engineering work (28/10 000) (Fig. 9).

The proportion of recognized cases was 50%. This is higher than on average, and probably due to the fact that occupational exposure to noise is relative easy to observe, and that the diagnosis of hearing loss is relatively reliable.

Hearing loss in most common industries in 2012

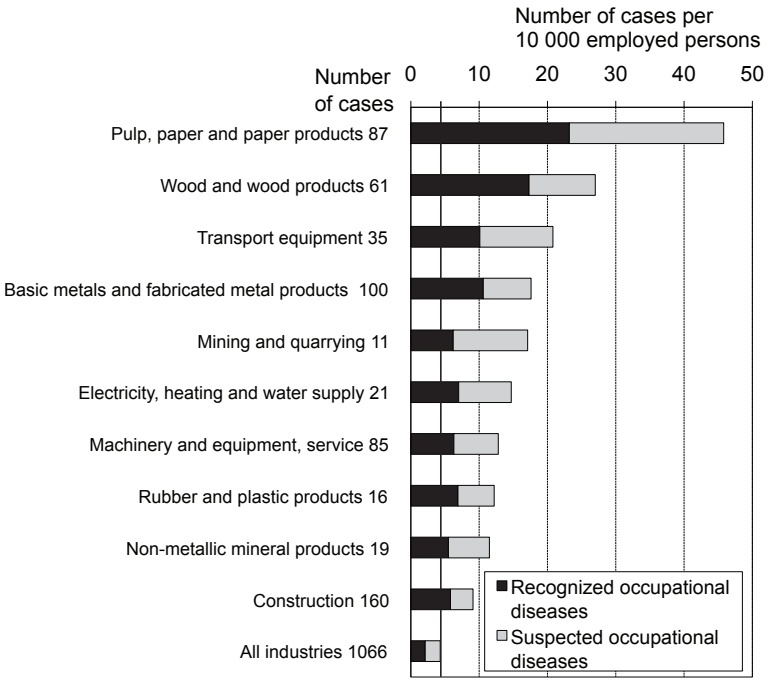

FIGURE 8.

Hearing loss in most common occupations in 2012

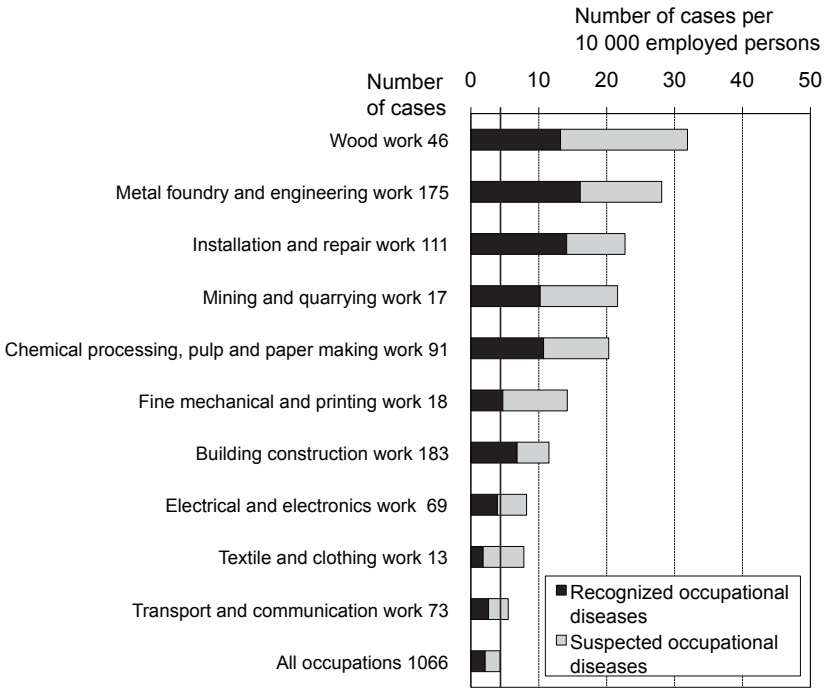

FIGURE 9.

3 Repetitive strain injuries

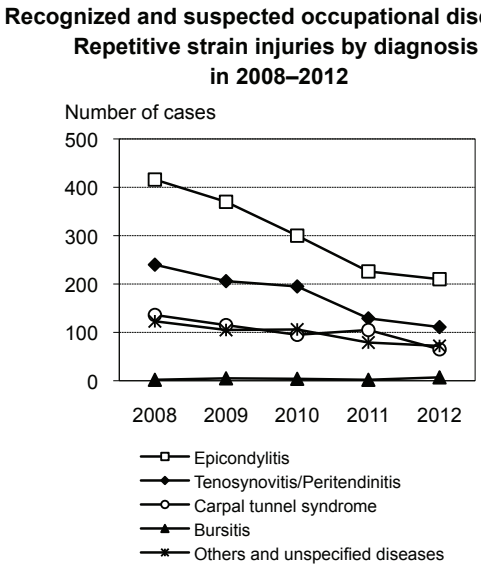

FIGURE 10a.

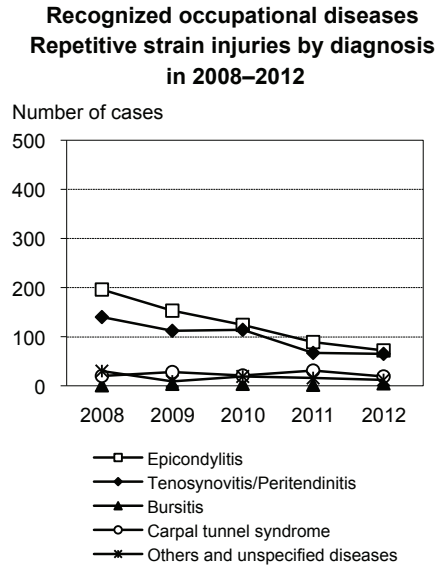

FIGURE 10b.

The most common work-related musculoskeletal disorders are back pain, neck pain and arthrosis of different joints. In these disorders and diseases, occupational strain is seldom the main etiological factor. Thus, although they might be work-related, they are seldom occupational diseases. Repetitive strain injuries (RSI) such as tenosynovitis/peritendinitis, epicondylitis, carpal tunnel syndrome, and bursitis are common in heavy manual work, and more clearly associated with workload (Act on occupational diseases 4 a § 1315/2002) (Appendix 2).

In 2102, 465 cases of RSI were notified (541 in 2011). This is 11% of all notified cases (Table 1). The most common RSI was epicondylitis (tennis elbow), with 210 cases, followed by tenosynovitis/peritendinitis, with 108 cases. Sixty-five cases of carpal tunnel syndrome cases (classified as diseases of the nervous system in the International Classification of Diseases) were notified (Fig. 10a, and 10b/Table 2). Seven cases of bursitis were notified.

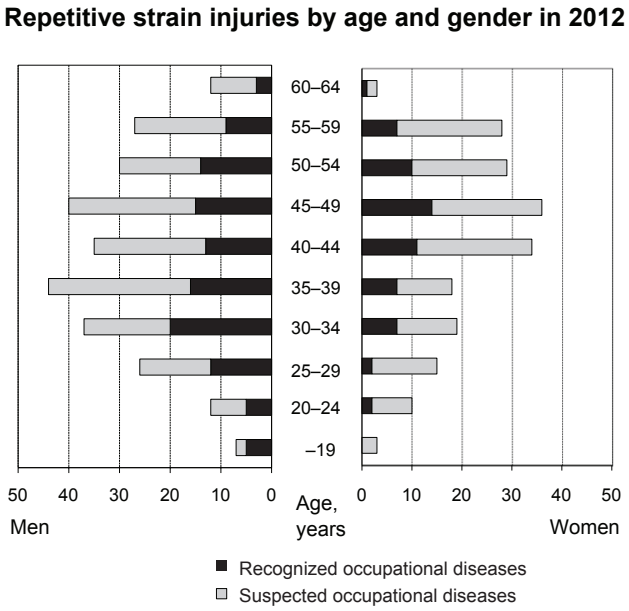

FIGURE 11.

RSI occurred in all age categories, but mostly in the 40–44 and 45–49-year age groups (Fig. 11). The proportion of RSI notified among women was 42% (Table 1).

The incidence of repetitive strain injuries was highest in the manufacture of food, beverages and tobacco (14/10 000), followed by the manufacture of rubber and plastic products (8/10 000) (Fig. 12).

Of the occupational categories, work in the food manufacturing industry had the highest incidence rate (11/10 000), followed by wood work (10/10 000) (Fig. 13).

The average proportion of cases recognized by insurance companies was 37%. The lowest proportion was that of carpal tunnel syndrome, at 29%, and the highest was that of tendinitis/peritendinitis, at 59%. In addition, 5 of the 7 bursitis cases were recognized.

Repetitive strain injuries in most common industries in 2012

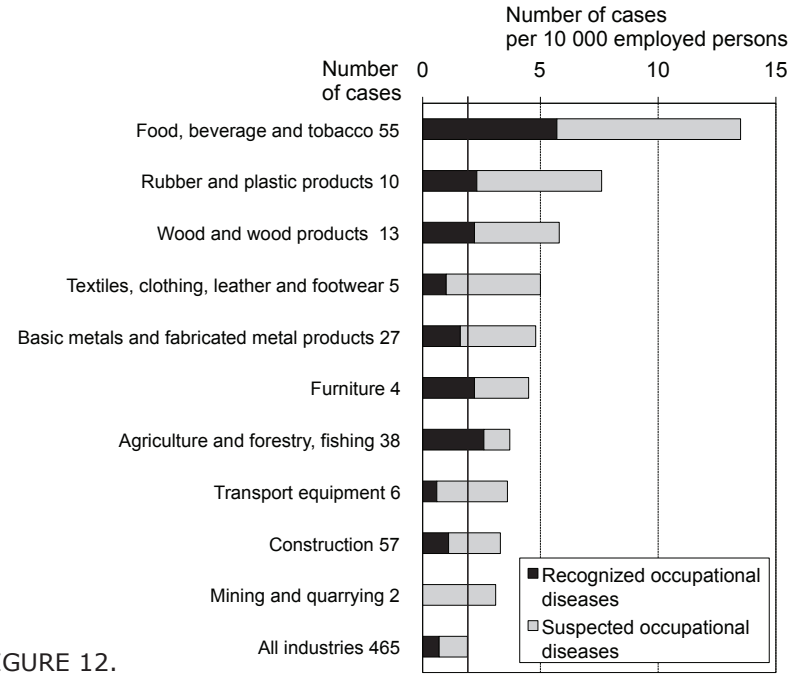

FIGURE 12.

Repetitive strain injuries in most common occupations in 2012

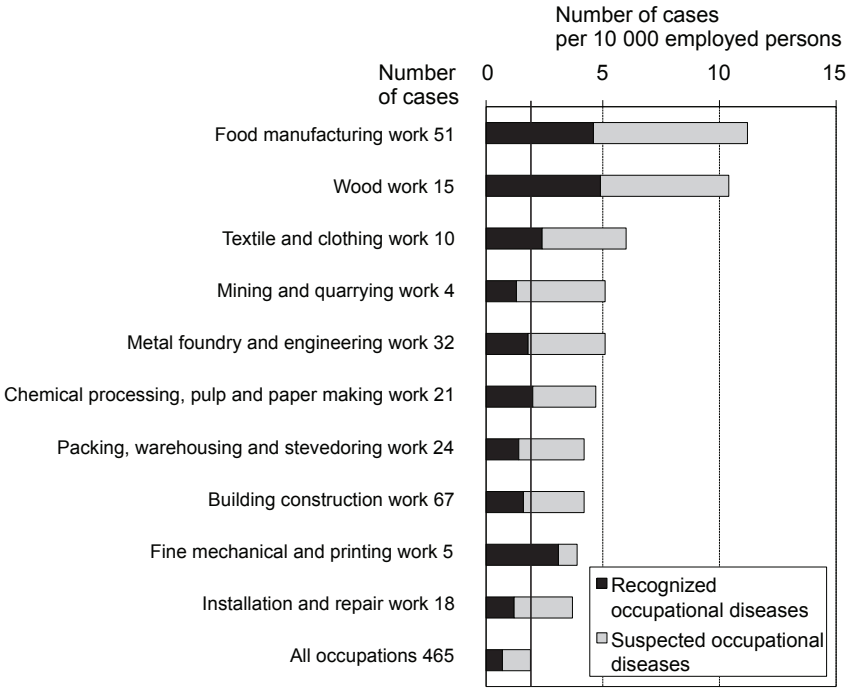

FIGURE 13.

4 Allergic respiratory diseases

Recognized and suspected occupational diseases
Allergic respiratory diseases
by diagnosis in 2008–2012

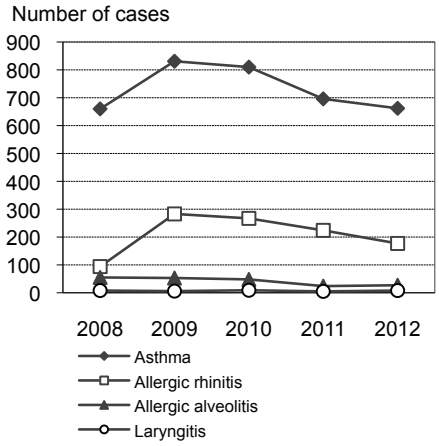

FIGURE 14a.

Recognized occupational diseases
Allergic respiratory diseases
by diagnosis in 2008–2012

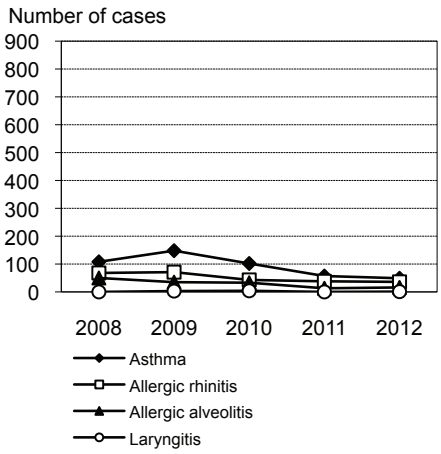

FIGURE 14b.

Occupational allergic diseases include occupational asthma, occupational rhinitis, occupational laryngitis, and occupational allergic alveolitis ('farmer's lung') (Fig. 14a and 14b). In 2012, 874 cases of allergic respiratory diseases were notified to FROD. Occupational allergic diseases made up 20% of all notified occupational diseases. Of these, 662 were asthma, 177 allergic rhinitis, and 27 allergic alveolitis and 8 allergic laryngitis (Table 6). Cases were most commonly seen in the 45–49 and 40–44-year age categories. Women accounted for 68% of allergic respiratory diseases (Fig. 15/Table 1).

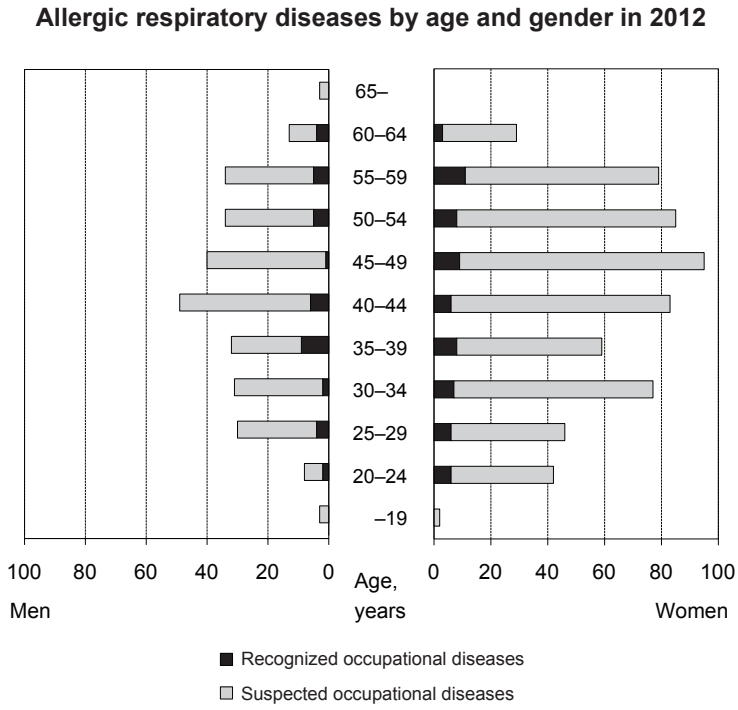

FIGURE 15.

The highest absolute number of notified allergic respiratory diseases (406) was in public, social and personal services. This large group consists of over 800 000 employees; one third of the Finnish workforce. They work in, for example, schools, hospitals, or as municipal farm relief workers. The highest incidence rate was in the manufacture of food, beverages and tobacco products (13/10 000) and in agriculture, forestry and fishing (11/10 000) (Fig. 16). By occupation, the highest incidence rate of notified cases was in wood work (16/10 000), followed by food manufacturing work (12/10 000) and agricultural, forestry and fishing work (12/10,000) (Fig. 17). The most common causes of occupational asthma were fungal spores, flour, grain, and animal feed, as well as animal epithelia, hair or excreta (Table 6). The number of cases with fungal spore exposure includes a great deal of patients from workplaces with indoor air problems and damp damage.

Of all the allergic respiratory diseases notified, 11% were recognized as occupational diseases by insurance companies. Of the alveolitis cases, 59% were recognized. Asthma was recognized the least, at 7%. Of the rhinitis cases, 20% and of the 8 notified allergic laryngitis cases, only one was recognized. The low proportion of recognized cases of asthma, rhinitis and laryngitis as an occupational disease indicates the difficulty of identifying the causes behind them. Allergic symptoms and diseases are common, and there is an abundance of indoor air problems at workplaces. This combination leads to examining the possibility of an occupational disease.

Allergic respiratory diseases in most common industries in 2012

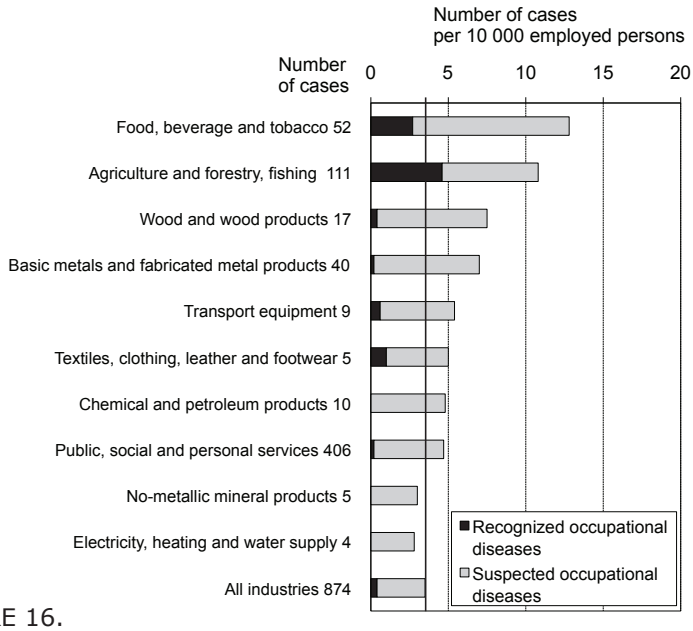

FIGURE 16.

Allergic respiratory diseases in most common occupations in 2012

FIGURE 17.

5 Skin diseases

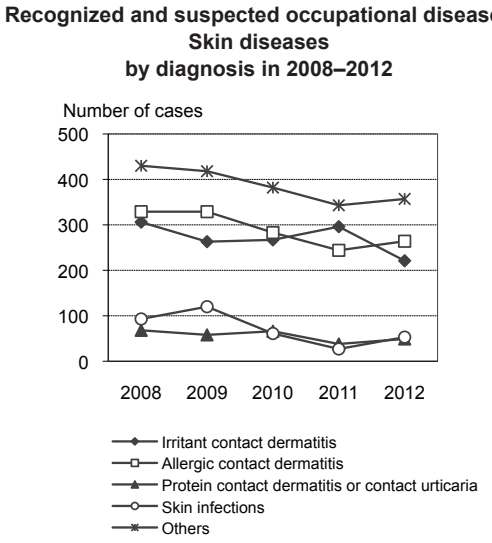

FIGURE 18a.

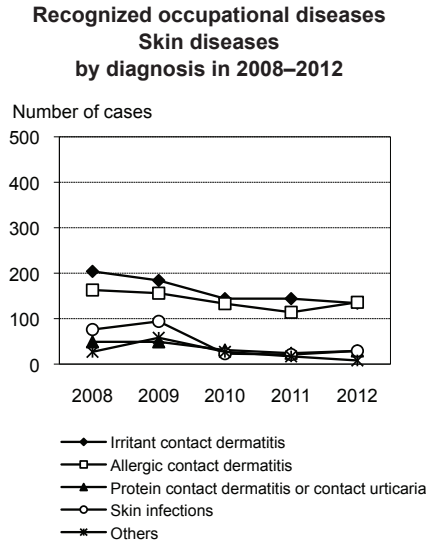

FIGURE 18b.

In 2012, skin diseases accounted for 21% of all occupational diseases and suspected occupational diseases, i.e. 944 cases, an average of 3.8 cases per 10 000 workers. The number of cases of occupational skin disease in 2012 was almost the same as that in 2011 (four cases less), which in turn was 10% lower than the previous year, thus it seems that the amount of skin disease cases notified to the register is no longer decreasing. The number of skin disease cases recognized as occupational diseases by an insurance company was 336 (36% of all notified cases). Of all notified skin diseases, 264 were allergic contact dermatitis (136, i.e. 52% recognized as occupational diseases), 221 irritant contact dermatitis (134 recognized, i.e. 61%), 49 contact urticaria or protein contact dermatitis (29 recognized, i.e. 59%), and 53 were skin infections (29 recognized, i.e. 55%).

Other skin diseases amounted to 357, and of these, eight cases were recognized as occupational diseases by insurance companies. A precise diagnosis was not given in 146 cases. Atopic dermatitis was diagnosed in 85 cases (one recognized, exposure to agents in cattle breeding). Of 38 non-specified contact dermatitis cases (allergy/irritation), three were recognized, and caused by construction dust and exposure agents in beautician's work and kitchen work. Three were cases of paronychia (one recognized, wet work). Other diagnoses included diagnostic skin and hypersensitivity tests, i.e. diagnosis not given (17 cases), urticaria other than

contact urticaria (16 cases) or eczema infectiosum (16 cases), eczema nummulare (five cases), seborrheic dermatitis (four cases), and four cases of other dermatitis (L30.8) (one recognized, exposure to agents in electronic and optician work).

The mean age of cases with suspected or recognized occupational dermatitis (38.7 years) was lower than the mean age of all cases notified to the register (50.0 years) (Fig. 19). Women made up 62% of all dermatitis cases (Table 1). This may be because women are more commonly exposed to agents which frequently cause work-related skin diseases, e.g. detergents and food, or because they may be more commonly involved in wet work, which is associated with a risk of dermatitis (in, e.g. the food industry, agriculture and cattle breeding, hairdressing and health care). The work of men with occupational skin diseases is often dirty, and they handle, for example, metalworking fluids, oils, lubricants, organic solvents, and epoxy resins more often than women.

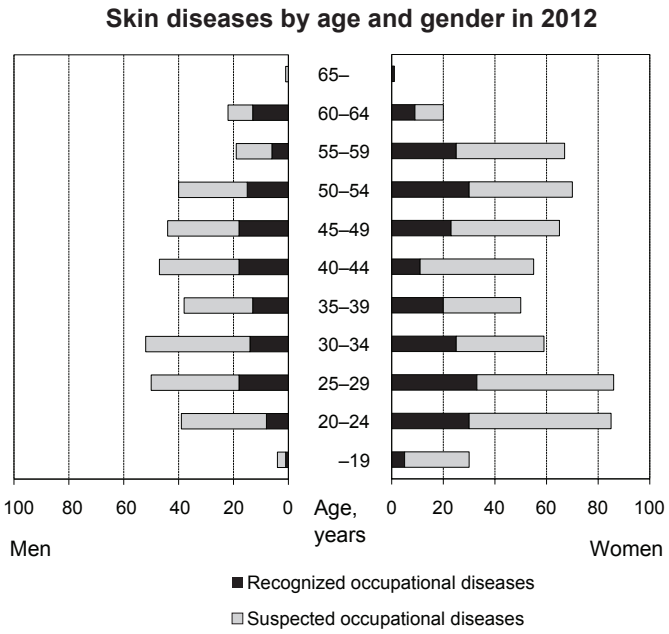

FIGURE 19.

The highest numbers of recognized occupational skin diseases adjusted to the number of workers in different sectors were seen in the manufacture of vehicles, agriculture, forestry and fishing (4 cases /10 000), and in the manufacture of furniture and non-metal mineral products (3/10 000) (Fig. 20).

As regards occupational groups, recognized occupational skin diseases were most commonly recorded in carpentry (6 cases/10 000 workers), in metal, foundry and engineering work, the food industry, agriculture, forestry and fishing, work in precision engineering and printing, and mining and quarrying work (3/10 000) (Fig. 21).

A total of 108 skin disease cases were notified in wet work (12% of all occupational skin diseases), of which almost half (48 cases) were recognized as occupational diseases (Table 7). Plastic chemicals, paints and glues were also frequently notified as causes of occupational skin diseases (67 cases, of which 37 recognized as occupational skin disease), of which the most common causative agents were epoxy resins, paints, glues and their hardeners (27 cases, of which 19 recognized), and acrylates, methacrylates and cyanoacrylates, as well as varnishes and glues containing these (11 cases, of which 7 recognized). Other common causative agents included rubber chemicals and rubber (43 cases, of which 27 recognized); formaldehyde and other preservatives (37 cases, of which 27 recognized); mites (42 cases, of which 24 recognized); detergents and disinfectants (41 cases, of which 19 recognized); cosmetic products including exposures from hairdressing (61 cases, of which 14 recognized); metals (38 cases, of which 14 recognized); animal epithelium, hair or secretions (21 cases, of which 14 recognized); dirty work (24 cases, of which 13 recognized); and metalworking fluids, oils and lubricants (39 cases, of which 10 recognized).

Most of the cases of occupational dermatitis notified as being caused by dirty work were diagnosed as irritant contact dermatitis (75% of all cases, 100% of recognized cases). The same was true for cases caused by wet work (69% of all, 9% of recognized) and detergents (59% of all, 89% of recognized).

Most of the cases caused by plastic chemicals, paints and glues (48 cases, i.e. 72%) were allergic contact dermatitis. As many as 89% of these were recognized as occupational diseases. The most common causes were epoxy resins, paints and glues and their hardeners (22 cases, 17 recognized); and acrylates, methacrylates and cyanoacrylates, etc. (9 cases, 7 recognized). Four cases of allergic contact dermatitis recognized as occupational diseases caused by the preservative methylisothiazolinone (MI) were notified to the register. A mixture of MI and methylchloroisothiazolinone (MCI) was notified as a cause of 14 cases of recognized allergic contact dermatitis. Limonene (oxidized), found in cosmetic products and solvents, was also notified as the cause of two allergic contact dermatitis cases recognized as occupational diseases.

Cases caused by rubber chemicals were mainly allergic contact dermatitis (32 cases, of which 25 recognized). Nine cases of allergic contact dermatitis were caused by nickel (of which five were recognized), and eight by chromium compounds (of which six were recognized).

Of notified cases of occupational skin diseases associated with cow dander, 88% (14 out of 16, 11 cases recognized) and 67% (12 out of 18, 7 cases recognized) of those caused by wheat and other flours were diagnosed as contact urticaria or protein contact dermatitis. Six cases of dermatitis caused by natural rubber protein were notified, of which one was recognized as an occupational disease (contact urticaria). Work-related scabies was also notified among health care workers.

Skin diseases in most common industries in 2012

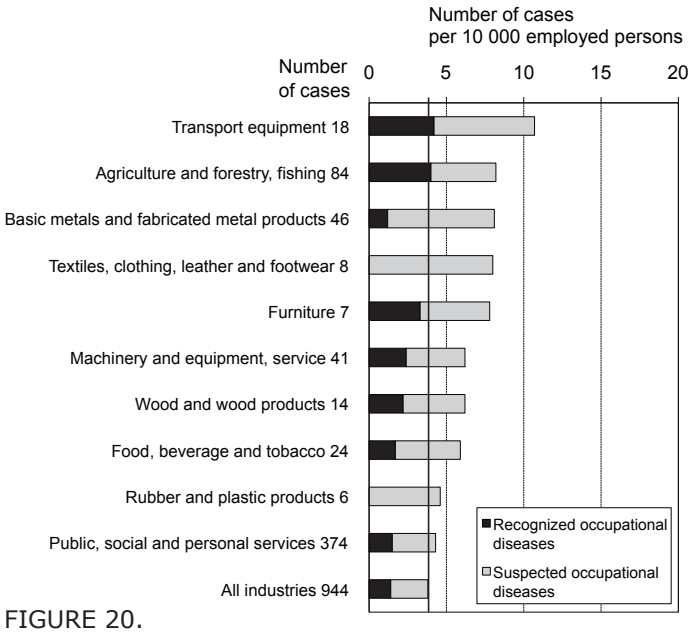

FIGURE 20.

Skin diseases in most common occupations in 2012

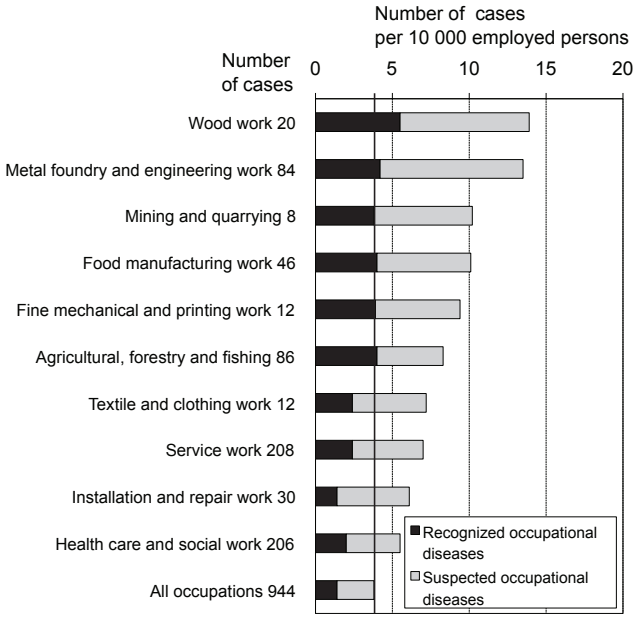

FIGURE 21.

6 Asbestos-induced diseases and cancers

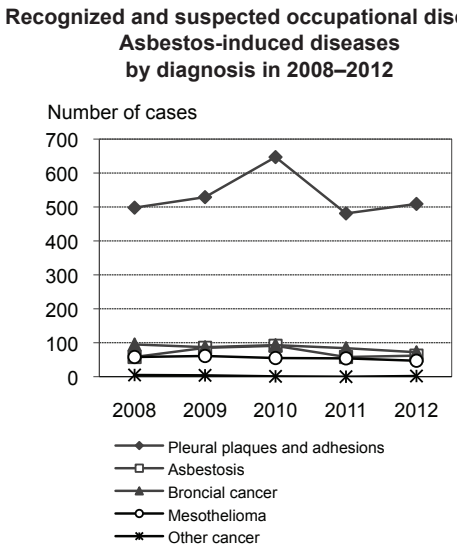

FIGURE 22a.

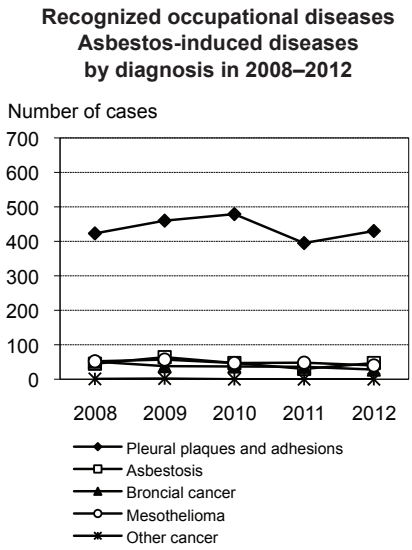

FIGURE 22b.

Asbestos can cause asbestosis, benign pleural changes and cancers. The use of asbestos has been banned since the beginning of 1994 in Finland. However, exposure is still possible today, in for example, asbestos demolition work. Due to their long latency time, asbestos-induced diseases diagnosed today are the result of asbestos exposure before 1994. Cancers other than those that are asbestos-induced are seldom notified, although exposure to different carcinogens at work is possible.

In 2012, 726 asbestos-induced diseases were notified, which is 16% of all cases (Table 1). The most common asbestos-induced disease was pleural plaques, diffuse pleural thickening and adhesions (509 cases). These rarely cause symptoms or observable reduction in lung function. The number of recognized and suspected cases of asbestosis was 62, and asbestos-induced cancer cases 121 (Fig. 22a and 22b). Seventy-two of the notified cancers were lung cancers, 47 mesotheliomas and 2 other cancers. Asbestos diseases develop slowly and they are most commonly seen among older men. Cases were seen most commonly in the 60–64-year age category. Over half of the cases (64%) were seen among men over 65 years of age, the oldest being over 90 (Fig. 23). The youngest patient with a recognized asbestos-induced disease was in the 40–44-year age category. Mainly men have been exposed to asbestos; only 3% of the notified cases were female. Five cancers other than asbestos-induced were notified.

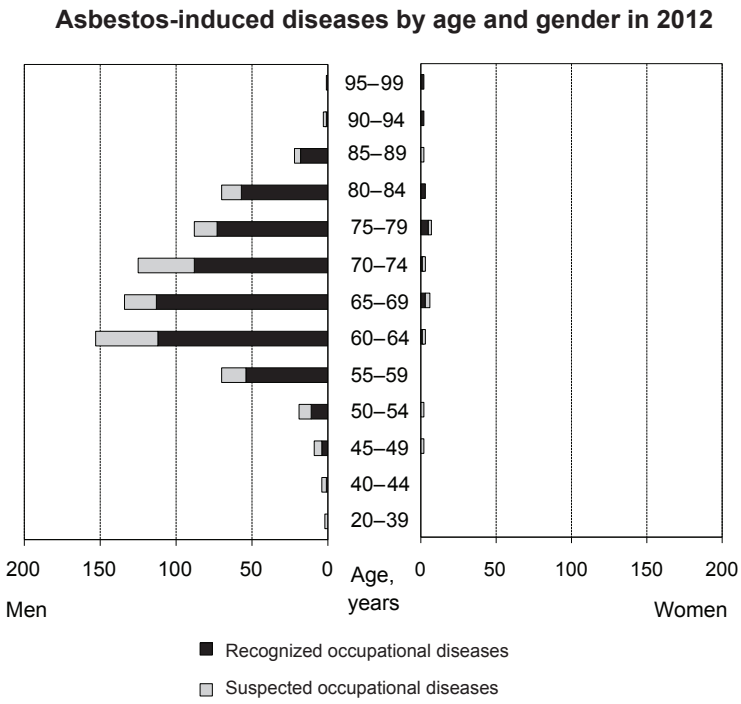

FIGURE 23.

The highest absolute number of notified asbestos-induced diseases, 260 (36%), was in the construction industry. The highest incidence rates were in the manufacture of transport equipment (21/10 000), followed by construction (15/10 000). By occupation, the incidence rate was highest in building and construction work

(22/10 000) followed by installation and repair work (14/10 000).

Of all asbestos-induced diseases, 76% were recognized by insurance companies, even 85% of the benign pleural changes and mesotheliomas. This higher than average percentage of recognition shows that the diagnosis and recognition of asbestos-induced diseases are established in Finland. Of the five cancer cases other than asbestos-induced, one was recognized, non-Hodgkin lymphoma caused by "other chemical factors".

Asbestos-induced diseases in most common industries in 2012

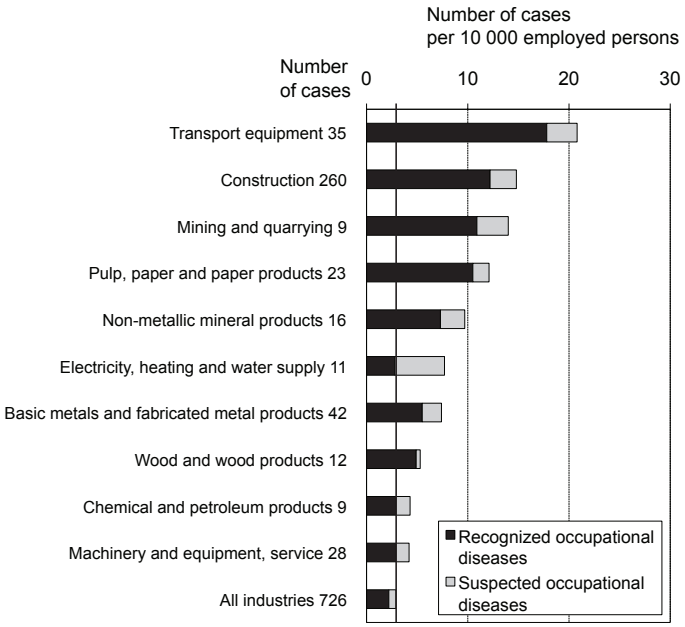

FIGURE 24.

Asbestos-induced diseases in most common occupations in 2012

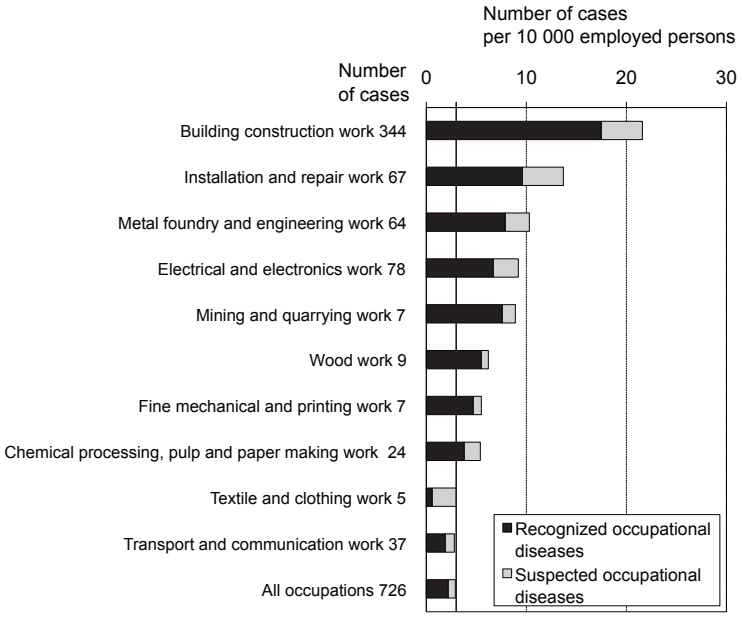

FIGURE 25.

7 Other occupational diseases and suspected occupational diseases

Some recognized and suspected occupational diseases in the disease group of other occupational diseases by diagnosis in 2008 - 2012

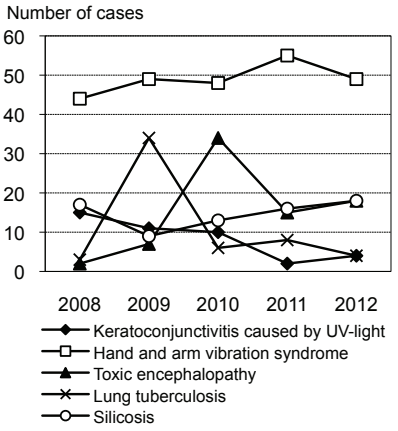

FIGURE 26a.

Some recognized occupational diseases in the disease group of other occupational diseases by diagnosis in 2008 - 2012

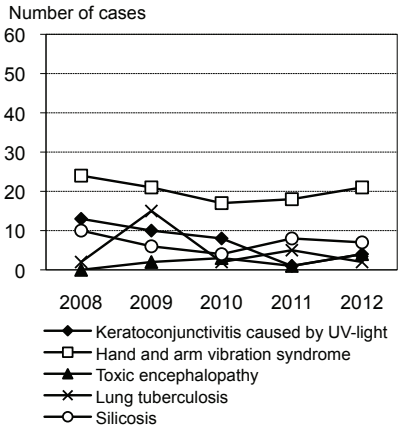

FIGURE 26b.

The number of notified occupational diseases other than those mentioned in the chapters above was 329, which is 7% of all cases.

Thirty-four infectious and parasitic diseases were notified (infectious skin diseases, such as scabies and ringworm are included in Skin diseases, Chapter 5). Of these 31 were recognized. The most common was haemorrhagic fever, epidemic nephritis ('mole fever'), 22 cases; others included tularaemia, 5 cases, and tuberculosis, 2 cases (Fig. 26a and 26b). The number of mole fever and tularaemia cases depends on the common epidemic situation of the year. During severe epidemics, exposure at work is also more common.

A total of 28 diseases of the nervous system were notified. Of these, 15 were cases of toxic encephalopathy. Of all the notified diseases of the nervous system, five (18%) were recognized, one case of bacterial meningitis and four cases of toxic encephalopathy (Fig. 26a and 26b).

Nineteen diseases of the eye were notified. Ten of these were conjunctivitis, and four superficial ceratitis without conjunctivitis. Of all these, only four cases were recognized, all of them conjunctivitis (Fig. 26a and 26b).

Fifty diseases of the circulatory system were notified; 49 of these hand and arm vibration syndromes. Altogether 21 cases (42%) were recognized as occupational diseases. Eighteen silicosis cases were also notified, 7 of which were recognized (Fig. 26a and 26b).

This group also included a significant number of cases in which the diagnosis notified was imprecise. Of the whole "other occupational diseases" group, 25% of the cases was recognized by an insurance company as occupational diseases.

Other occupational diseases in most common industries in 2012

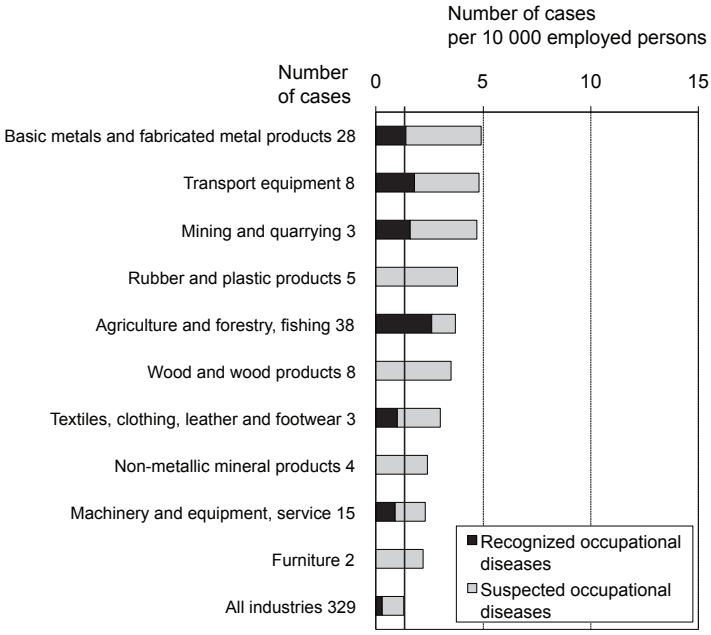

FIGURE 27.

Other occupational diseases in most common occupations in 2012

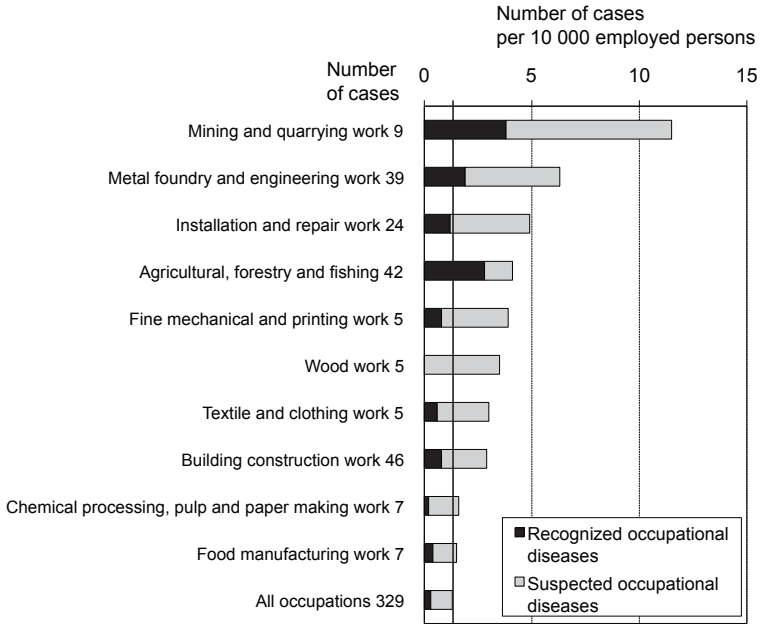

FIGURE 28.

8 Occupational Diseases by EU Classification

On May 22, 1990, the Commission of the European Communities published a recommendation on occupational diseases (90/326/EEC) which included a recommendation for the compilation of statistics on occupational diseases in the Member States, and a list called Annex 1 of the European Schedule of Occupational Diseases. Eurostat has collected pilot data concerning 31 occupational disease items and cases recognized in 1995. Analysis of the pilot data revealed several problems that reduce the comparability of statistical data from national occupational disease recognition systems. These include differences in the coverage of the national workforce, actual recognition criteria, recognition of mild cases, and inclusion of specific diagnoses into the items of the European Schedule of Occupational Diseases (Eurostat Working Papers 3/1990/no. 2).

In 2003, the Commission updated the above mentioned recommendation and the annexed lists (3297/2003/EC). Annex 1 of the European Schedule of Occupational Diseases contains items defined according to both cause and diagnosis. According to the recommendation of the Commission, at least the sex, diagnosis and cause of each case must be registered (Table 9). The recording of diagnosis and cause as separate variables is considered important for statistical purposes because some occupational diseases are recorded according to cause and others according to diagnosis. Recognized occupational diseases are delivered every year to the Commission (Eurostat). The diagnoses are defined in the list of the Appendix (EODS Phase 1 methodology – Working Paper 3/2000/E/no. 19), which contains 68 obligatory diagnoses and 41 voluntary diagnoses. The occupational diseases recognized according to the EODS diagnosis are shown in Table 10.

A total of 1 689 recognized occupational diseases could be classified according to the list of appendix in 2012. The most significant of the obligatory list of European occupational diseases were noise-induced hearing loss (533), pleural plaques (427), allergic contact dermatitis (146), irritant contact dermatitis (134), lateral epicondylitis (elbow) (63), asthma (49), and tenosynovitis of the hand and wrist (49). Diseases of the voluntary list of European occupational diseases were haemorrhagic fever (21), tularaemia (5), and typhoid and paratyphoid fever (1). The biggest group of recognized occupational diseases outside the classification was scabies (24). Many diseases found on the European list are actually quite rare nowadays in Finland: of about half of the occupational diseases mentioned on the European list, no cases were notified in 2012.

9 Summary

The Finnish Register of Occupational Diseases was established in 1964. Information on occupational diseases suspected and diagnosed by Finnish physicians is obtained from the Federation of Accident Insurance Institutions (FAII,) and the Farmers' Social Insurance Institution (MELA). In contrast to insurance statistics, in which cases are notified according to the insurance company's technical date of occurrence (which may differ by several years in diseases with a long latency time), the cases are recorded according to the year of reporting.

In 2012, a total of 4 404 cases of occupational disease or suspected occupational disease were notified to FROD, i.e. 18 cases per 10 000 employed. This was about 6% less than in 2011. The proportion of women's cases was 37%, i.e. about the same as in 2011 (36%).

These data cover the occupational diseases and suspected occupational diseases notified to the FAII and MELA in 2012. Although the data for 2005–2012 are comparable, they cannot be compared directly with earlier FROD data, as communication arrangements and principles regarding compensation have undergone changes.

This publication presents the numbers of recognized and suspected occupational diseases separately. The number of recognized occupational diseases is the data at the point when the material arrived at FIOH, which may change over time as suspected cases are recognized as occupational diseases. The proportion of all occupational diseases recognized by insurance companies was 40% of the total notified, as in 2011. The relative proportion of recognized occupational diseases was largest in noise-induced hearing loss and asbestos-induced diseases, and smallest in the asthma and other diseases group. This is due to many factors: the threshold for seeking medical care, recognition of the symptoms as those of an occupational disease, how clearly each illness can be diagnosed and its cause be identified as work related. The proportion of recognized occupational diseases, close to half of those notified, shows that the threshold for seeking an examination is not too high.

The most common recognized or suspected occupational disease is noise-induced hearing loss, of which 1 066 cases were notified. Of these, 50% were recognized as occupational disease by an insurance company. Hearing loss that is notified to insurance companies is mainly caused by exposure to noise in the 1990s or earlier. Hearing loss among men is over ten times that of among women. The highest incidence of hearing loss by industry was seen in the manufacture of pulp, paper and paper products, and the manufacture of timber and wood products. The damage to hearing in the majority of cases was below the level for compensation. Since 2011, the number of cases has fallen by 5%.

There were 465 cases of repetitive strain injury (RSI). The most common RSI was epicondylitis (tennis elbow) which made up almost half of the cases. The second most common was tenosynovitis/peritendinitis. Sixty five cases of carpal tunnel

syndrome were notified. The average amount of recognized RSI was 37%. The lowest number recognized was that of carpal tunnel syndrome, which indicates the difficulty of identifying it as work-related. The proportion of RSI notified among women was 42%. RSI was seen in all age groups, the most common age group being 45–49 years. When examined by industry, RSI was notified relatively most often in the manufacture of food products, beverages and tobacco products, and in the manufacture of rubber and plastic products. Since 2011, the number of cases has dropped by 14%.

A total of 874 cases of allergic respiratory diseases were notified (949 in 2011), of which 662 were asthma, 177 allergic rhinitis and 27 allergic alveolitis ('farmer's lung'). Female cases accounted for 68% of allergic respiratory diseases, which were seen most commonly among 45–49-year olds. The highest figures of notified cases were in the manufacture of food products, beverages and tobacco products, and in agricultural occupations. The most common causes of occupational asthma were fungal spores, flour, grain and animal feed, and animal epithelia, hair or excreta. Of all the allergic respiratory diseases notified, 12% were recognized as occupational diseases by insurance companies.

Asthma was recognized as an occupational disease the least often, which indicates the difficulty of identifying its causes. There are still many problems with indoor air and damp damage at workplaces. Because respiratory tract symptoms are also common, this combination is often examined as a suspected occupational disease.

There were 944 cases of recognized and suspected skin diseases. Of these, 28% were allergic contact dermatitis and 23% irritant contact dermatitis. Occupational skin diseases recognized by insurance companies accounted for 36% of the cases notified. Occupational dermatitis was seen slightly more frequently among women than men. Occupational dermatitis was observed in workers of all ages, but their average age (39 years) was eleven years lower than that of others. By industry, dermatitis most often occurred in the manufacture of motor vehicles and other transport equipment, and agriculture, forestry and fishing. The most common causes for occupational skin diseases were "wet work", cosmetics, various metals and metal compounds, washing agents, rubber allergens, and animal-derived substances. Itch mites caused 42 skin infections. Occupational scabies is mainly seen in the health care sector.

The number of cases of recognized and suspected occupational disease caused by asbestos was 726. The most common diseases caused by asbestos (509 cases) were pleural plaques and adhesions, which rarely cause symptoms or observable reductions in lung function. Sixty-two cases of asbestosis were notified, and 121 cases of cancer were caused by or suspected as being caused by asbestos. Of asbestos-induced diseases, 76% were recognized as occupational diseases by insurance companies. Asbestos diseases develop slowly and they are most commonly seen among older men. Over half of the cases (64%) were seen among men over 65 years of age, the oldest being over 90. By industry, the most asbestos-induced diseases

were notified in the manufacture of motor vehicles and other transport equipment and the construction sector. Exposure to asbestos was common in the earlier years in these sectors.

The number of cases of other diseases notified was 329, which is less than in 2011 (423). Other diseases included hand and arm vibration syndrome (49), epidemic nephritis ('mole fever') (22), conjunctivitis (12), silicosis (18), toxic encephalopathy (18) and tuberculosis (4). This group also included a significant number of cases of imprecise notified diagnosis. Of this group, 25% were recognized by insurance companies.

Further information can be obtained from the authors and from FROD, Finnish Institute of Occupational Health, Topeliuksenkatu 41 a A, 00250 Helsinki, email at.rekisteri@ttl.fi

II

Tables of recognized and suspected occupational diseases in 2012

Table 1 Recognized and suspected occupational diseases by gender, age and disease group in 2012

Age / Gender All	Hearing loss	Repetitive strain injuries	Allergic respiratory diseases	Skin diseases	Asbestos-induced diseases	Others	All	Cases/10 000 employed persons
15–19	-	10	5	34	-	-	49	6,9
20–24	5	22	50	124	-	11	212	10,7
25–29	7	41	76	136	1	20	281	10,9
30–34	14	56	108	111	-	24	313	11,6
35–39	15	62	91	88	1	29	286	10,5
40–44	40	69	132	102	4	40	387	13,5
45–49	88	76	135	109	10	52	470	14,5
50–54	184	59	119	110	20	50	542	17,8
55–59	296	55	113	86	70	58	678	24,1
60–64	264	15	42	42	155	29	547	32,5
65–	153	-	3	2	465	16	639	122,4
Total	1066	465	874	944	726	329	4404	17,7
Recognized diseases	533	173	102	336	549	83	1776	7,2
%	50,0	37,2	11,6	35,5	75,6	25,2	40,3	
Men								
15–19	-	7	3	4	-	-	14	4,8
20–24	4	12	8	39	-	5	68	6,7
25–29	7	26	30	50	1	11	125	9,1
30–34	14	37	31	52	-	7	141	9,3
35–39	14	44	32	38	1	19	148	10,0
40–44	35	35	49	47	4	23	193	13,2
45–49	83	40	40	44	9	27	243	14,8
50–54	171	30	34	40	19	30	324	21,7
55–59	266	27	34	19	70	38	454	34,7
60–64	237	12	13	22	153	19	456	53,5
65–	145	-	3	1	443	15	607	184,5
Total	976	270	277	356	700	194	2773	21,7
Recognized diseases	517	112	38	124	534	60	1385	10,8
%	52,9	41,4	13,7	34,8	76,2	30,9	49,9	
Women								
15–19	-	3	2	30	-	-	35	8,5
20–24	1	10	42	85	-	6	144	15,0
25–29	0	15	46	86	-	9	156	13,1
30–34	0	19	77	59	-	17	172	14,7
35–39	1	18	59	50	-	10	138	11,1
40–44	5	34	83	55	-	17	194	13,9
45–49	5	36	95	65	1	25	227	14,2
50–54	13	29	85	70	1	20	218	14,1
55–59	30	28	79	67	-	20	224	14,8
60–64	27	3	29	20	2	10	91	11,0
65–	8	-	-	1	22	1	32	16,6
Total	90	195	597	588	26	135	1631	13,5
Recognized diseases	16	61	64	212	15	23	391	3,2
%	17,7	31,2	10,7	36,0	57,6	17,0	23,9	

% = Proportion of recognized occupational diseases of all notified cases

Table 2 Recognized and suspected occupational diseases by diagnosis and gender in 2012

Disease	Men	Women	Total	Recognized occupational diseases, N/%
Infectious and parasitic diseases	*31*	*53*	*84*	*59/70,2*
Epidemic nephritis	15	7	22	
Mycosis	4	-	4	
Scabies	6	36	42	
Tuberculosis	1	3	4	
Tularemia	3	2	5	
Others	2	5	7	
Neoplasms	*122*	*5*	*127*	*69/54,3*
Bronchial cancer	73	2	75	
Mesothelioma	44	3	47	
Others	5	-	5	
Mental and behavioural disorders	*1*	*-*	*1*	*0/0,0*
Diseases of the nervous system	*56*	*39*	*95*	*24/25,3*
Carpal tunnel syndrome	33	32	65	
Mononeuropathy, upper extremity	2	-	2	
Polyneuropathy	4	-	4	
Toxic encephalopathy	14	4	18	
Others	3	3	6	
Diseases of the eye	*8*	*11*	*19*	*4/21,1*
Conjunctivitis	2	8	10	
Keratoconjunctivitis caused by UV-light	3	1	4	
Others	3	2	5	
Diseases of the ear	*976*	*90*	*1066*	*533/50,0*
Noise-induced hearing loss	971	88	1059	
Others	5	2	7	
Diseases of the circulatory system	*48*	*3*	*51*	*21/41,2*
Hand and arm vibration syndrome	47	2	49	
Others	1	1	2	
Diseases of the respiratory system	*899*	*670*	*1569*	*593/37,8*
Asthma	194	468	662	
Allergic rhinitis	73	104	177	
Allergic alveolitis	10	17	27	
Laryngitis	-	8	8	
ODTS	2	1	3	
Asbestosis	60	2	62	
Pleural plaques and adhesions	484	16	500	
Silicosis	18	-	18	
Vasomotor or other rhinitis	8	12	20	
Other irritant and hypersensitivity symptom of the upper respiratory tract	12	30	42	
Others	38	12	50	
Diseases of the gastrointestinal organs	*1*	*-*	*1*	*0/0,0*
*Diseases of the skin and subcutaneous tissue**	*341*	*528*	*869*	*308/35,4*
Irritant contact dermatitis	81	140	221	
Allergic contact dermatitis	115	149	264	
Protein contact dermatitis or contact urticaria	15	34	49	
Unspecified contact dermatitis	19	19	38	
Others	111	186	297	
Diseases of the musculosceletal system	*235*	*164*	*399*	*154/38,6*
Epicondylitis	125	85	210	
Tenosynovitis, peritendinitis	61	47	108	
Bursitis	7	-	7	
Others and unspecified diseases	42	32	74	

Disease	Men	Women	Total	Recognized occupational diseases, N/%
Injury, poisoning and other external outcomes	*18*	*11*	*29*	*9/31,0*
Toxic effects of solvents	3	1	4	
Poisoning	3	1	4	
Others	12	9	21	
Others	*37*	*57*	*94*	*2/2,1*
Total	2773	1631	4404	1776/40,3

* Skin infections and skin injuries are included under other headings
% = Proportion of recognized occupational diseases

Table 3 Recognized and suspected occupational diseases by cause and gender in 2012

Cause	Men	Women	Total
Physical factors	*1038*	*103*	*1141*
Noise	976	90	1066
Vibration	54	2	56
Temperature	1	1	2
Warm moisture	1	9	10
Ionizing radiation	2	-	2
Non-ionizing radiation	3	1	4
Acceleration factors	1	-	1
Chemical agents	1278	756	2034
Alicyclic hydrocarbons	1	3	4
Monohydric alchohols	1	-	1
Dihydric alcohols (glycols)	-	1	1
Phenols and phenolates (not chlorophenols)	-	1	1
Epoxides	1	-	1
Aliphatic aldehydes	2	8	10
Aliphatic carboxylic acids	2	1	3
Alicyclic carboxylic acids	1	1	2
Carboxylic acid anhydrides	1	-	1
Esters of aliphatic carboxylic acids (e.g. acrylates)	3	10	13
Esters of aromatic carboxylic acids	-	2	2
Esters of inorganic acids	-	1	1
Sultones and thioglycolates	-	1	1
Amines	6	1	7
Amides (e.g. thiuram sulfides)	3	13	16
Organic cyanides and nitriles (cyano compounds)	-	2	2
Isocyanates	9	1	10
Hydratzine, azo, diazo, and diazonium compounds	1	-	1
Thioureas and organic ammonium compounds	-	1	1
Heterocyclic compounds (oxygen in ring)	-	1	1
Heterocyclic compounds (sulfur in ring)	1	7	8
Polysaccarides	-	1	1
Inorganic gases containing chlorine	-	1	1
Inorganic acids	1	-	1
Carbon and silicon	1	-	1
Sulfur, carbon disulfide and ammonium sulfate derivatives	-	3	3
Bromine, iodine and halides	-	1	1
Alkali metals, alkali earth metals, aluminum and their comp.	-	1	1
Tin, lead and their compounds	3	-	3
Zinc, cadmium, mercury and their compounds	5	1	6
Chromium group metals and their compounds	12	2	14
Manganese, iron and their compounds	4	-	4
Cobalt, nickel and their compounds	10	9	19
Other known metals and metallic compounds	9	1	10
Metals and metallic compounds (not specified)	1	1	2
Organic solvent mixtures, not specified	31	6	37
Oils and lubricants	51	3	54
Bitumen and asphalt	1	-	1
Insecticides, miticides, rodenticides	-	1	1
Synthetic resins and plastics	28	6	34
Natural rubber (latex)	2	4	6
Natural resins, balsams and their derivatives (except latex)	2	3	5

Cause	Men	Women	Total
Resins, plastics and their derivatives (not specified)	10	3	13
Paints	11	7	18
Varnishes	-	1	1
Wood preservatives	1	-	1
Fillers, compaction masses and putties	-	1	1
Paints, varnishes and stains (not specified)	1	-	1
Synthetic glues	2	3	5
Glues (not specified)	-	2	2
Rubbers	2	2	4
Textile dyes	-	1	1
Printing inks	1	3	4
Hair dyes	-	9	9
p-Phenylene diamine (PPD)	-	5	5
Other dyes (except the above-mentioned)	1	-	1
Pharmaceuticals	-	8	8
Rubber chemicals	9	7	16
Detergents	6	29	35
Disinfectants	1	10	11
Cosmetics	-	71	71
Perfumes and aromatic substances	-	4	4
Preservatives and antimicrobial agents	8	14	22
Other known substances classiifed according to their use	7	27	34
Silicon dioxides	20	-	20
Types of asbestos	700	26	726
Clay minerals	1	-	1
Synthetic mineral fibers	2	1	3
Cement, concrete	7	1	8
Textiles	1	12	13
Flours, grains and fodders	18	59	77
Species of wood	29	8	37
Plants	6	15	21
Plant-derived dusts and substances	2	2	4
Animal ephithelia, hairs or secretions/excretions	35	44	79
Other animal-derived dusts or substances	4	-	4
Enzymes	1	-	1
Organic materials, not listed elsewhere (not specified)	46	64	110
Gas mixtures	2	-	2
Sprays, fumes, dusts and smoke (mixtures)	35	12	47
Wet work	9	99	108
Dirty work	19	5	24
Handling of foodstuffs	4	6	10
Indoor air	-	2	2
Other chemical agents (not specified)	84	94	178
Biological agents	*111*	*485*	*596*
Molds	61	407	468
Dermatophytes	3	-	3
Eubacteria	2	3	5
Actinomycetes	1	8	9
Francisella	3	2	5
Other bacteria	1	2	3
Herpesviruses	-	1	1
Poxviruses	1	2	3
Viruses (not specified)	15	7	22
Mites	17	43	60

Cause	Men	Women	Total
Insects	1	1	2
Intestinal parasites	-	1	1
Toxins and toxoids	2	-	2
Other biological agents (not specified)	4	8	12
Physical and psychophysical loading factors	*273*	*203*	*476*
Static muscular load due to work postures	-	2	2
Repetitive work	253	191	444
Nonphysiological working postures	1	-	1
Nonphysiological unusual working movements	4	4	8
Nonphysiological compression or stretching	6	-	6
Mechanical friction of the skin	4	3	7
Display terminal work	2	2	4
Physical and mechanical loading factors (not specified)	3	1	4
Others	*73*	*84*	*157*
Exposure factors of the agriculture	4	7	11
Exposure factors of the crop production	-	2	2
Exposure factors of the cattle	5	5	10
Exposure factors of the pig farming	2	-	2
Exposure factors of the food work	5	6	11
Exposure factors of the textile and clothing work	1	1	2
Exposure factors of the leatherwork	1	-	1
Exposure factors of the printing house	1	-	1
Exposure factors of the metal work	20	2	22
Exposure factors of the electronic and optical products	5	-	5
Exposure factors of kitchen work	10	27	37
Exposure factors of the cleaning work	6	18	24
Unknown factors	13	16	29
Total	2773	1631	4404

Table 4 Recognized and suspected occupational diseases by industry and disease group in 2012

Industry	Hearing loss	Repetitive strain injuries	Allergic respiratory diseases	Skin diseases	Asbestos induced diseases	Others	Total
Agriculture, forestry and fishing	*53*	*38*	*111*	*84*	*3*	*38*	*327*
Crop and animal production, hunting and related, service activities	36	34	109	83	2	35	299
Forestry and logging	17	4	2	1	1	3	28
Mining and quarrying	*11*	*2*	-	-	*9*	*3*	*25*
Extraction of crude petroleum and natural gas	-	-	-	-	-	1	1
Mining of metal ores	4	-	-	-	1	-	5
Other mining and quarrying	6	1	-	-	8	2	17
Mining support service activities	1	1	-	-	-	-	2
Manufacturing	*480*	*160*	*168*	*200*	*194*	*89*	*1291*
Manufacture of food products	17	53	52	23	8	8	161
Manufacture of beverages	5	2	-	1	-	-	8
Manufacture of textiles	8	3	3	4	3	-	21
Manufacture of wearing apparel	1	-	2	2	1	-	6
Manufacture of leather and related products	-	2	-	2	-	3	7
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	61	13	17	14	12	8	125
Manufacture of paper and paper products	87	3	1	3	23	-	117
Printing and reproduction of recorded media	5	2	2	4	-	1	14
Manufacture of coke and refined petroleum products	-	-	-	1	1	-	2
Manufacture of chemicals and chemical products	14	3	3	5	7	2	34
Manufacture of basic pharmaceutical products and pharmaceutical preparations	-	-	7	1	1	-	9
Manufacture of rubber and plastic products	16	10	3	6	3	5	43
Manufacture of other non-metallic mineral products	19	5	5	6	16	4	55
Manufacture of basic metals	34	2	2	11	14	6	69
Manufacture of fabricated metal products, except machinery and equipment	66	25	38	35	28	22	214
Manufacture of computer, electronic and optical products	11	3	4	3	1	-	22
Manufacture of electrical equipment	6	12	-	6	5	2	31
Manufacture of machinery and equipment n.e.c.	72	8	13	36	18	12	159
Manufacture of motor vehicles, trailers and semi-trailers	7	2	7	6	2	4	28
Manufacture of other transport equipment	28	4	2	12	33	4	83
Manufacture of furniture	8	4	2	7	2	2	25
Other manufacturing	2	1	3	7	6	3	22
Repair and installation of machinery and equipment	13	3	2	5	10	3	36

Industry	Hearing loss	Repetitive strain injuries	Allergic respiratory diseases	Skin diseases	Asbestos induced diseases	Others	Total
Electricity, gas, steam and air conditioning supply	*21*	*-*	*4*	*1*	*11*	*1*	*38*
Water supply; sewerage, waste management and remediation activities	*8*	*4*	*1*	*-*	*2*	*-*	*15*
Water collection, treatment and supply	2	-	-	-	1	-	3
Waste collection, treatment and disposal activities; materials recovery	6	2	1	-	-	-	9
Remediation activities and other waste management services	-	2	-	-	1	-	3
Construction	*160*	*57*	*26*	*51*	*260*	*33*	*587*
Construction of buildings	81	26	7	17	121	12	264
Civil engineering	10	3	1	2	5	2	23
Specialised construction activities	69	28	18	32	134	19	300
Wholesale and retail trade; repair of motor vehicles and motorcycles	*56*	*47*	*57*	*82*	*67*	*38*	*347*
Wholesale and retail trade and repair of motor vehicles and motorcycles	28	10	6	11	22	17	94
Wholesale trade, except of motor vehicles and motorcycles	16	15	19	15	27	9	101
Retail trade, except of motor vehicles and motorcycles	12	22	32	56	18	12	152
Transportation and storage	*65*	*16*	*10*	*17*	*35*	*4*	*147*
Land transport and transport via pipelines	32	6	6	10	16	4	74
Water transport	5	2	3	1	12	-	23
Air transport	1	-	-	1	-	-	2
Warehousing and support activities for transportation	25	4	1	2	6	-	38
Postal and courier activities	2	4	-	3	1	-	10
Accommodation and food service activities	*14*	*15*	*34*	*69*	*1*	*3*	*136*
Accommodation	-	-	2	7	1	-	10
Food and beverage service activities	14	15	32	62	-	3	126
Information and communication	*7*	*3*	*12*	*1*	*1*	*2*	*26*
Publishing activities	3	1	2	1	-	-	7
Programming and broadcasting activities	2	-	1	-	1	-	4
Telecommunications	2	1	-	-	-	-	3
Computer programming, consultancy and related activities	-	1	3	-	-	1	5
Information service activities	-	-	6	-	-	1	7
Financial and insurance activities	*-*	*2*	*3*	*1*	*12*	*6*	*24*
Financial service activities, except insurance and pension funding	-	-	1	-	10	4	15
Insurance, reinsurance and pension funding, except compulsory social security	-	2	2	-	2	2	8
Activities auxiliary to financial services and insurance activities	-	-	-	1	-	-	1
Real estate activities	*9*	*-*	*3*	*4*	*7*	*3*	*26*
Professional, scientific and technical activities	*37*	*13*	*23*	*17*	*56*	*10*	*156*

Industry	Hearing loss	Repetitive strain injuries	Allergic respiratory diseases	Skin diseases	Asbestos induced diseases	Others	Total
Legal and accounting activities	-	-	2	2	-	1	5
Activities of head offices; management consultancy activities	2	1	2	2	2	1	10
Architectural and engineering activities; technical testing and analysis	32	2	17	6	52	5	114
Scientific research and development	2	2	-	3	2	2	11
Advertising and market research	1	6	-	1	-	1	9
Other professional, scientific and technical activities	-	1	-	1	-	-	2
Veterinary activities	-	1	2	2	-	-	5
Administrative and support service activities	*16*	*37*	*18*	*44*	*9*	*8*	*132*
Rental and leasing activities	3	2	-	-	1	2	8
Employment activities	2	5	5	9	1	3	25
Travel agency, tour operator and other reservation service and related activities	-	2	1	-	-	-	3
Security and investigation activities	-	1	-	2	-	-	3
Services to buildings and landscape activities	10	26	11	32	7	2	88
Office administrative, office support and other business support activities	1	1	1	1	-	1	5
Public administration and defence; compulsory social security	*69*	*20*	*54*	*30*	*33*	*22*	*228*
Education	*29*	*5*	*98*	*52*	*6*	*29*	*219*
Human health and social work activities	*13*	*22*	*186*	*216*	*12*	*33*	*482*
Human health activities	4	17	127	148	11	29	336
Residential care activities	2	1	12	45	-	1	61
Social work activities without accommodation	7	4	47	23	1	3	85
Arts, entertainment and recreation	*9*	*5*	*9*	*5*	*1*	*1*	*30*
Creative, arts and entertainment activities	3	1	1	1	1	-	7
Libraries, archives, museums and other cultural activities	-	-	6	-	-	1	7
Gambling and betting activities	1	-	-	1	-	-	2
Sports activities and amusement and recreation activities	5	4	2	3	-	-	14
Other service activities	*6*	*19*	*56*	*68*	*5*	*6*	*160*
Activities of membership organisations	6	2	23	6	4	1	42
Repair of computers and personal and household goods	-	-	2	1	-	-	3
Other personal service activities	-	17	31	61	1	5	115
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	*2*	*-*	*1*	*2*	*1*	*-*	*6*
Industry unknown	*1*	*-*	*-*	*-*	*1*	*-*	*2*
Total	*1066*	*465*	*874*	*944*	*726*	*329*	*4404*

n.e.c. = not elsewhere classified

Table 5 Recognized and suspected occupational diseases by occupation and disease group in 2012

Occupation	Hearing loss	Repetitive strain injuries	Allergic respiratory diseases	Skin diseases	Asbestos induced diseases	Others	Total
Managers	*4*	*2*	*17*	*-*	*3*	*3*	*29*
Professionals	*61*	*15*	*136*	*45*	*21*	*38*	*316*
Teaching professionals	14	-	30	3	2	8	57
Vocational education teachers	5	1	5	4	1	2	18
Dentists	-	2	4	8	1	2	17
Engineering professionals (excluding electrotechnology)	5	-	4	3	2	1	15
Electrical engineers	9	-	1	1	3	1	15
Mechanical engineers	6	1	1	1	3	-	12
Early childhood educators	1	1	8	2	-	-	12
Generalist medical practitioners	-	-	3	6	1	1	11
Building architects	1	1	1	-	6	-	9
Ward sisters	-	1	8	-	-	-	9
Special needs teachers	-	-	5	1	-	2	8
Other professionals	20	8	66	16	2	21	133
Technicians and associate professionals	*54*	*25*	*137*	*99*	*42*	*32*	*389*
Nurses	-	1	40	39	-	8	88
Construction supervisors	12	-	-	-	16	1	29
Commercial sales representatives	4	4	8	2	2	1	21
Life science technicians (excluding medical)	2	1	10	4	-	2	19
Social instructors	1	-	3	12	-	-	16
Medical and pathology laboratory technicians	1	1	3	8	-	2	15
Mechanical engineering technicians	3	-	3	1	5	-	12
Health associate professionals	-	-	6	3	-	3	12
Public health nurses	-	-	5	4	-	2	11
Physiotherapy technicians and assistants	-	3	2	1	-	2	8
Other technicians and associate professionals	31	15	57	25	19	11	158
Clerical support workers	*16*	*14*	*41*	*8*	*9*	*16*	*104*
Secretaries (general)	-	-	16	1	-	2	19
General office clerks	4	3	7	1	1	1	17
General and keyboard clerks	4	3	2	1	2	4	16
Other clerical support workers	8	8	16	5	6	9	52
Service and sales workers	*41*	*68*	*183*	*289*	*18*	*30*	*629*
Hairdressers	-	15	23	62	1	4	105
Other practical nurses	-	1	27	64	-	3	95
Cooks	5	10	27	44	-	2	88
Shop sales assistants	-	14	22	32	4	3	75
Building caretakers	22	7	2	3	10	-	44
Restaurant services supervisors and shift managers	2	2	9	11	-	2	26
Childminders in kindergartens and other institutions	2	-	20	4	-	-	26
Social work assistants	-	-	9	13	-	2	24
Teachers' aides	-	1	15	-	-	1	17
Beauticians and related workers	-	1	5	9	-	1	16
Waiters	1	3	3	8	-	-	15

Occupation	Hearing loss	Repetitive strain injuries	Allergic respiratory diseases	Skin diseases	Asbestos induced diseases	Others	Total
Dental assistants	-	-	5	9	-	1	15
Food service counter attendants	1	2	-	6	-	1	10
Fire-fighters	1	-	2	1	3	3	10
Massage therapists and practical rehabilitation nurses	-	3	-	6	-	-	9
Shop keepers	1	3	2	-	-	2	8
Other service and sales workers	6	6	12	17	-	5	46
Skilled agricultural, forestry and fishery workers	*56*	*35*	*116*	*85*	*2*	*41*	*335*
Mixed crop and animal producers	31	24	70	44	-	33	202
Farm relief workers	1	6	28	23	-	2	60
Forestry and related workers	18	2	-	1	-	4	25
Gardeners, horticultural and nursery growers	2	2	2	2	1	2	11
Gardeners, horticultural and nursery growers and workers	-	1	4	6	-	-	11
Other skilled agricultural, forestry and fishery workers	4	-	12	9	1	-	26
Craft and related trades workers	*535*	*168*	*145*	*215*	*528*	*122*	*1713*
Motor vehicle mechanics and repairers	69	15	8	20	42	18	172
Plumbers and pipe fitters	28	5	3	14	107	8	165
Carpenters and joiners	54	14	9	6	71	8	162
House builders	43	12	6	9	65	8	143
Electrical mechanics and fitters	46	10	2	4	66	4	132
Metal working machine tool setters and operators	45	9	19	33	8	11	125
Welders and flamecutters	33	7	15	13	24	12	104
Agricultural and industrial machinery mechanics and repairers	35	3	2	9	24	6	79
Toolmakers and related workers	30	5	9	18	5	6	73
Painters and related workers	3	3	3	12	15	5	41
Structural-metal preparers and erectors	19	2	1	-	17	1	40
Bakers, pastry-cooks and confectionery makers	1	3	22	12	-	-	38
Spray painters and varnishers	4	4	5	9	5	8	35
Butchers, fishmongers and related food preparers	5	20	3	3	-	3	34
Woodworking-machine tool setters and operators	11	5	7	6	1	4	34
Sheet-metal workers	17	4	2	1	4	4	32
Cabinet-makers and related workers	5	4	6	8	5	1	29
Wood treaters	9	4	6	1	2	-	22
Insulation workers	4	2	-	-	13	1	20
Metal moulders and coremakers	12	1	-	2	3	2	20
Bricklayers and related workers	2	2	-	3	10	-	17
Pre-press technicians	7	2	2	4	-	1	16
Floor layers and tile setters	1	1	-	4	7	2	15
Printers	5	1	2	2	-	2	12
Electronics installers and repairers	4	2	1	3	1	1	12
Upholsterers and related workers	3	3	1	3	2	-	12
Electrical line installers and repairers	3	-	-	-	6	1	10
Aircraft engine mechanics and repairers	7	-	-	1	1	-	9
Precision-instrument makers and repairers	5	-	-	3	1	-	9
Glaziers	1	6	-	1	-	-	8

Occupation	Hearing loss	Repetitive strain injuries	Allergic respiratory diseases	Skin diseases	Asbestos induced diseases	Others	Total
Air conditioning and refrigeration mechanics	1	-	1	-	6	-	8
Glass makers, cutters, grinders and finishers	1	2	-	2	2	1	8
Other craft and related trades workers	22	17	10	9	15	4	77
Plant and machine operators, and assemblers	*224*	*72*	*58*	*74*	*67*	*33*	*528*
Heavy truck and lorry drivers	29	3	3	9	12	5	61
Food and related products machine operators	5	20	20	7	-	3	55
Paper products machine operators	33	1	-	2	1	-	37
Plastic products machine operators	7	11	1	12	1	4	36
Wood processing plant operators	20	1	3	5	1	-	30
Chemical products plant and machine operators	14	4	6	3	1	-	28
Mechanical machinery assemblers	6	1	6	8	-	2	23
Pulp and papermaking plant operators	17	-	-	-	5	-	22
Cement, stone and other mineral products machine operators	9	1	1	6	2	1	20
Electrical and electronic equipment assemblers	6	7	3	3	-	1	20
Lifting-truck operators, etc.	13	2	-	1	3	-	19
Miners and quarriers	4	2	1	-	4	6	17
Other plant workers, etc.	5	3	1	-	6	1	16
Steam engine and boiler operators	8	-	-	-	7	-	15
Metal finishing, plating and coating machine operators	3	2	3	3	-	-	11
Sewing machine operators	4	2	1	2	2	-	11
Earthmoving and related plant operators	4	1	-	-	5	1	11
Ships' deck crews and related workers	4	-	2	-	5	-	11
Packing, bottling and labelling machine operators	5	1	1	-	2	1	10
Metal processing plant operators	7	-	-	-	2	-	9
Stevedores	5	1	-	1	2	-	9
Rubber products machine operators	2	1	1	2	1	1	8
Other plant and machine operators, and assemblers	14	8	5	10	5	7	49
Elementary occupations	*42*	*63*	*30*	*94*	*30*	*8*	*267*
Office cleaners, etc.	5	20	13	44	1	2	85
Kitchen helpers	8	6	6	23	-	-	43
Freight handlers	12	13	6	3	4	2	40
Building construction labourers	4	5	1	1	13	1	25
Other cleaners not elsewhere classified	1	-	2	6	10	-	19
Hand packers	3	10	1	1	-	-	15
Civil engineering labourers	7	3	-	2	-	2	14
Hospital and institutional helpers	-	1	1	6	1	-	9
Other elementary occupations	2	5	-	8	1	1	17

Occupation	Hearing loss	Repetitive strain injuries	Allergic respiratory diseases	Skin diseases	Asbestos induced diseases	Others	Total
Armed forces	*20*	*1*	*4*	*-*	*3*	*2*	*30*
Commissioned armed forces officers	19	1	4	-	3	2	29
Other armed forces	1	-	-	-	-	-	1
Unknown	*13*	*-*	*1*	*-*	*3*	*2*	*19*
Economically inactive	*-*	*2*	*6*	*35*	*-*	*2*	*45*
Total	1066	465	874	944	726	329	4404

Table 6 Allergic respiratory diseases: Recognized and suspected occupational diseases by cause and diagnosis in 2012

Cause	Allergic alveolitis	Asthma	Allergic rhinitis	Laryngitis	Total
Dihydric alcohols (glycols)	-	1	-	-	1
Aliphatic aldehydes	-	3	-	-	3
Esters of aliphatic carboxylic acids (e.g. acrylates)	-	1	4	-	5
Sultones and thioglycolates	-	-	1	-	1
Amines	-	1	-	-	1
Amides (e.g. thiuram sulfides)	-	1	-	-	1
Organic cyanides and nitriles (cyano compounds)	-	1	1	-	2
Isocyanates	-	4	1	-	5
Polysaccarides	-	-	1	-	1
Bromine, iodine and halides	-	-	1	-	1
Zinc, cadmium, mercury and their compounds	-	2	-	-	2
Chromium group metals and their compounds	-	2	-	-	2
Manganese, iron and their compounds	-	2	-	-	2
Cobalt, nickel and their compounds	-	1	-	-	1
Other known metals and metallic compounds	-	1	2	-	3
Organic solvent mixtures, not specified	-	1	1	-	2
Oils and lubricants	-	7	5	-	12
Synthetic resins and plastics	-	1	1	-	2
Natural resins, balsams and their derivatives (except latex)	-	-	1	-	1
Resins, plastics and their derivatives (not specified)	-	4	1	-	5
Paints	-	3	-	-	3
Printing inks	-	3	-	-	3
Hair dyes	-	2	1	-	3
Pharmaceuticals	-	1	1	-	2
Rubber chemicals	-	1	-	-	1
Detergents	-	3	-	-	3
Disinfectants	-	1	-	-	1
Cosmetics	-	14	6	-	20
Other known substances classiifed according to their use	-	3	1	-	4
Synthetic mineral fibers	-	2	-	-	2
Cement, concrete	-	1	-	-	1
Textiles	-	3	1	-	4
Flours, grains and fodders	1	24	31	-	56
Species of wood	-	15	8	-	23
Plants	-	8	5	-	13
Plant-derived dusts and substances	-	1	2	-	3
Animal ephithelia, hairs or secretions/excretions	-	35	18	-	53
Enzymes	-	1	-	-	1

Cause	Allergic alveolitis	Asthma	Allergic rhinitis	Laryngitis	Total
Organic materials, not listed elsewhere (not specified)	3	61	17	1	82
Gas mixtures	-	1	-	-	1
Sprays, fumes, dusts and smoke (mixtures)	-	22	2	-	24
Handling of foodstuffs	-	-	1	-	1
Indoor air	-	1	1	-	2
Other chemical agents (not specified)	2	64	18	-	84
Molds	21	336	33	6	396
Actinomycetes	-	1	-	-	1
Mites	-	6	9	-	15
Insects	-	1	-	-	1
Other biological agents (not specified)	-	5	1	-	6
Exposure factors of the cattle	-	1	-	-	1
Unknown factors	-	9	1	1	11
Total	27	662	177	8	874

Table 7 Skin diseases: Recognized ja suspected occupational diseases by cause and diagnosis in 2012

Cause	Allergic contact dermatitis	Irritant contact dermatitis	Skin infec-tions	Protein contact dermatitis or contact urticaria	Others	Total
Vibration	-	-	-	-	1	1
Temperature	-	-	-	-	2	2
Warm moisture	-	10	-	-	-	10
Ionizing radiation	-	-	-	-	1	1
Alicyclic hydrocarbons	4	-	-	-	-	4
Monohydric alchohols	1	-	-	-	-	1
Phenols and phenolates (not chlorophenols)	1	-	-	-	-	1
Epoxides	1	-	-	-	-	1
Aliphatic aldehydes	6	-	-	-	1	7
Aliphatic carboxylic acids	-	1	-	-	1	2
Alicyclic carboxylic acids	2	-	-	-	-	2
Carboxylic acid anhydrides	-	-	-	1	-	1
Esters of aliphatic carboxylic acids (e.g. acrylates)	7	-	-	-	1	8
Esters of aromatic carboxylic acids	2	-	-	-	-	2
Amines	5	1	-	-	-	6
Amides (e.g. thiuram sulfides)	15	-	-	-	-	15
Isocyanates	4	-	-	-	-	4
Hydratzine, azo, diazo, and diazonium compounds	1	-	-	-	-	1
Thioureas and organic ammonium compounds	1	-	-	-	-	1
Heterocyclic compounds (oxygen in ring)	1	-	-	-	-	1
Heterocyclic compounds (sulfur in ring)	8	-	-	-	-	8
Inorganic gases containing chlorine	-	-	-	-	1	1
Carbon and silicon	-	-	-	-	1	1
Sulfur, carbon disulfide and ammonium sulfate derivatives	2	-	-	1	-	3
Alkali metals, alkali earth metals, aluminum and their comp.	-	1	-	-	-	1
Zinc, cadmium, mercury and their compounds	1	-	-	-	2	3
Chromium group metals and their compounds	8	-	-	-	3	11
Manganese, iron and their compounds	-	-	-	-	1	1
Cobalt, nickel and their compounds	12	1	-	-	2	15
Other known metals and metallic compounds	1	1	-	-	4	6
Metals and metallic compounds (not specified)	-	-	-	-	2	2

Cause	Allergic contact dermatitis	Irritant contact dermatitis	Skin infec-tions	Protein contact dermatitis or contact urticaria	Others	Total
Organic solvent mixtures, not specified	2	4	-	-	1	7
Oils and lubricants	11	15	-	-	13	39
Insecticides, miticides, rodenticides	1	-	-	-	-	1
Synthetic resins and plastics	27	1	-	-	3	31
Natural rubber (latex)	-	-	-	5	1	6
Natural resins, balsams and their derivatives (except latex)	4	-	-	-	-	4
Resins, plastics and their derivatives (not specified)	-	1	-	-	6	7
Paints	5	2	-	-	6	13
Varnishes	-	-	-	-	1	1
Wood preservatives	1	-	-	-	-	1
Fillers, compaction masses and putties	-	-	-	-	1	1
Paints, varnishes and stains (not specified)	-	-	-	-	1	1
Synthetic glues	3	1	-	-	1	5
Glues (not specified)	-	-	-	-	2	2
Rubbers	1	1	-	-	2	4
Textile dyes	1	-	-	-	-	1
Hair dyes	1	-	-	1	3	5
p-Phenylene diamine (PPD)	5	-	-	-	-	5
Other dyes (except the above-mentioned)	-	-	-	-	1	1
Pharmaceuticals	3	1	-	-	2	6
Rubber chemicals	12	1	-	-	1	14
Detergents	1	21	-	-	10	32
Disinfectants	1	3	-	-	5	9
Cosmetics	15	5	-	-	27	47
Perfumes and aromatic substances	4	-	-	-	-	4
Preservatives and antimicrobial agents	22	-	-	-	-	22
Other known substances classi-fied according to their use	6	-	-	-	20	26
Clay minerals	-	1	-	-	-	1
Synthetic mineral fibers	-	1	-	-	-	1
Cement, concrete	-	1	-	-	4	5
Textiles	2	-	-	1	6	9
Flours, grains and fodders	-	1	-	12	5	18
Species of wood	1	2	-	-	4	7
Plants	1	-	-	3	2	6
Plant-derived dusts and substances	-	-	-	-	1	1
Animal ephithelia, hairs or secretions/excretions	-	-	-	17	4	21
Other animal-derived dusts or substances	-	-	-	3	1	4

Cause	Allergic contact dermatitis	Irritant contact dermatitis	Skin infec-tions	Protein contact dermatitis or contact urticaria	Others	Total
Organic materials, not listed elsewhere (not specified)	-	3	-	-	10	13
Sprays, fumes, dusts and smoke (mixtures)	1	4	-	-	9	14
Wet work	-	74	-	-	34	108
Dirty work	-	19	-	-	5	24
Handling of foodstuffs	3	2	-	-	4	9
Other chemical agents (not specified)	17	8	-	-	49	74
Molds	-	-	-	2	6	8
Dermatophytes	-	-	3	-	-	3
Eubacteria	-	-	2	-	-	2
Poxviruses	-	-	3	-	-	3
Mites	-	-	42	-	2	44
Intestinal parasites	-	-	1	-	-	1
Other biological agents (not specified)	-	-	-	-	5	5
Mechanical friction of the skin	-	5	-	-	2	7
Exposure factors of the agriculture	2	3	1	-	5	11
Exposure factors of the crop production	-	-	-	-	2	2
Exposure factors of the cattle	1	1	-	-	7	9
Exposure factors of the pig farming	-	1	-	1	-	2
Exposure factors of the food work	2	2	-	2	5	11
Exposure factors of the textile and clothing work	-	-	-	-	2	2
Exposure factors of the leatherwork	-	-	-	-	1	1
Exposure factors of the printing house	-	1	-	-	-	1
Exposure factors of the metal work	9	7	-	-	5	21
Exposure factors of the electronic and optical products	1	1	-	-	3	5
Exposure factors of kitchen work	6	7	-	-	24	37
Exposure factors of the cleaning work	5	5	1	-	13	24
Unknown factors	4	1	-	-	7	12
Total	264	221	53	49	357	944

Table 8 Other recognized and suspected occupational diseases by diagnosis and gender in 2012

Disease	Men	Women	Total	Recognized occupational diseases N/%
Infectious and parasitic diseases	*20*	*14*	*34*	*31/91,2*
Epidemic nephritis	15	7	22	
Tuberculosis	1	3	4	
Tularemia	3	2	5	
Others (caused by bacteria)	1	2	3	
Neoplasms	*5*	-	*5*	*1/20,0*
Mental and behavioural disorders	*1*	-	*1*	*0/0,0*
Others	1	-	1	
Diseases of the nervous system	*21*	*7*	*28*	*5/17,9*
Toxic encephalopathy	14	4	18	
Polyneuropathy	4	-	4	
Others	3	3	6	
Diseases of the eye	*8*	*11*	*19*	*4/21,1*
Conjunctivitis	2	8	10	
Keratoconjunctivitis caused by UV-light	3	1	4	
Others	3	2	5	
Diseases of the circulatory system	*48*	*2*	*50*	*21/42,0*
Hand and arm vibration syndrome	47	2	49	
Others	1	-	1	
Diseases of the respiratory system	*54*	*52*	*106*	*12/11,3*
Vasomotor and/or allergic rhinitis	8	12	20	
ODTS/ organic dust toxic syndrome	2	1	3	
Silicosis	18	-	18	
Other irritant and hypersensitivity symptom of the upper respiratory tract	12	30	42	
Others	14	9	23	
Diseases of the gastrointestinal organs	*1*	-	*1*	*0/0,0*
Diseases of the musculoskeletal system	*1*	*1*	*2*	*1/50,0*
Injury, poisoning and other external outcomes	*14*	*10*	*24*	*6/25,0*
Toxic effects of solvents	3	1	4	
Poisoning	3	1	4	
Others	8	8	16	
Others and unspecified diseases	*21*	*38*	*59*	*2/3,3*
Total	194	135	329	83/25,2

*Skin infections and skin injuries are included under other headings, % = Proportion of recognized occupational diseases

Table 9 Recognized occupational diseases according to the classification of European Union by gender in 2012

Code	Disease	Men	Women	Total
1	*Diseases caused by the following chemical agents:*	*24*	*14*	*38*
100	Acrylonitrile	-	-	-
101	Arsenic or compounds thereof	-	-	-
102	Beryllium (glucinium) or compounds thereof	-	-	-
103.01	Carbon monoxide	-	-	-
103.02	Carbon oxychloride	-	-	-
104.01	Hydrocyanic acid	-	-	-
104.02	Cyanides or compounds thereof	-	1	1
104.03	Isocyanates	3	-	3
105	Cadmium or compounds thereof	-	-	-
106	Chromium or compounds thereof	5	1	6
107	Mercury or compounds thereof	-	-	-
108	Manganese or compounds thereof	-	-	-
109.01	Nitric acid	-	-	-
109.02	Oxides of nitrogen	-	-	-
109.03	Ammonia	-	-	-
110	Nickel or compounds thereof	2	3	5
111	Phosphorus or compounds thereof	-	-	-
112	Lead or compounds thereof	1	-	1
113.01	Oxides of sulphur	-	-	-
113.02	Sulphuric acid	-	-	-
113.03	Carbon disulphide	-	-	-
114	Vanadium or compounds thereof	-	-	-
115.01	Chlorine	-	-	-
115.02	Bromine	-	-	-
115.04	Iodine	-	-	-
115.05	Fluorine or compounds thereof	-	-	-
116	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol	-	1	1
117	Halogenated derivates of aliphatic or alicyclic hydrocarbons	-	-	-
118	Butyl, methyl and isopropyl alcohol	-	-	-
119	Ethylene glycol, diethylene glycol, 1,4-butanediol and the nitrated derivates of the glycols and of glycerol	-	-	-
120	Methyl ether, ethyl ether, isopropyl ether, vinyl ether, dichloroisopropyl ether, guaiacol etc.	-	-	-
121	Acetone, chloroacetone, bromoacetone, hexafluoroacetone, methyl ethyl ketone, methyl n-butyl ketone etc.	-	-	-
122	Organophosphorus esters	-	-	-
123	Organic acids	3	-	3
124	Formaldehyde	1	4	5
125	Aliphatic nitrated derivates	-	-	-
126.01	Benzene or counterparts thereof (the counterparts of benzene are defined by the formula: CnH2n-6)	-	-	-

Code	Disease	Men	Women	Total
126.02	Naphthalene or naphthalene counterparts (the counterparts of naphthalene are defined by the formula: CnH2n-12)	-	-	-
126.03	Vinylbenzene and divinylbenzene	-	-	-
127	Halogenated derivates of aromatic hydrocarbons	-	-	-
128.01	Phenols or counterparts or halogenated derivates thereof	-	-	-
128.02	Naphthols or counterparts or halogenated derivates thereof	-	-	-
128.03	Halogenated derivatives of the alkylaryl oxides	-	-	-
128.04	Halogenated derivatives of the alkylaryl sulfonates	-	-	-
128.05	Benzoquinones	-	-	-
129.01	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof	2	4	6
129.02	Aliphatic amines and halogenated derivatives thereof	3	-	3
130.01	Nitrated derivates of aromatic hydrocarbons	-	-	-
130.02	Nitrated derivates of phenols or their counterparts	-	-	-
131	Antimony and derivates thereof	-	-	-
132	Nitric acid esters	-	-	-
133	Hydrogen suphide	-	-	-
135	Encephalopathies due to organic solvents which do not come under other headings	4	-	4
136	Polyneuropathies due to organic solvents which do not come under other headings	-	-	-
2	*Skin diseases caused by substances and agents not included under other headings*	*102*	*173*	*275*
201	Skin diseases and skin cancers caused by:			
201.01	Soot	-	-	-
201.02	Tar	-	-	-
201.03	Bitumen	-	-	-
201.04	Pitch	-	-	-
201.05	Anthracene or compounds thereof	-	-	-
201.06	Mineral and other oils	9	1	10
201.07	Crude paraffin	-	-	-
201.08	Carbazole or compounds thereof	-	-	-
201.09	By-products of the distillation of coal	-	-	-
202	Occupational skin ailments caused by scientifically recognized allergy provoking or irritative substances not included under other headings	93	172	265
3	*Diseases caused by the inhalation of substances and agents not included under other headings*	*575*	*77*	*652*
301	Diseases of the respiratory system and cancers:			
301.11	Silicosis	7	-	7
301.12	Silicosis combined with pulmonary tuberculosis	-	-	-
301.21	Asbestosis	45	2	47
301.22	Mesothelioma following the inhalation of asbestos dust	39	1	40
301.31	Pneumoconioses caused by dusts of silicates	-	-	-

Code	Disease	Men	Women	Total
302	Complication of asbestos in the form of bronchial cancer	1	-	1
303	Broncho-pulmonary ailments caused by dusts from sintered metals	-	-	-
304.01	Extrinsic allergic alveolites	5	11	16
304.02	Lung diseases caused by the inhalation of dusts and fibres from cotton, flax, hemp, jute, sisal and bagasse	-	-	-
304.04	Respiratory ailments caused by the inhalation of dust from cobalt, tin, barium and graphite	-	-	-
304.05	Siderosis	-	-	-
304.06	Allergic asthmas caused by the inhalation of substances consistently recognised as causing allergies and inherent to the type of work	17	31	48
304.07	Allergic rhinitis caused by the inhalation of substances consistently recognised as causing allergies and inherent to the type of work	15	20	35
305.01	Cancerous diseases of the upper respiratory tract caused by dust from wood	-	-	-
306	Fibrotic diseases of the pleura, with respiratory restriction, caused by asbestos	419	12	431
307	Chronic obstructive bronchitis or emphysema in miners working in underground coal mines	-	-	-
308	Lung cancer following the inhalation of asbestos dust	27	-	27
309	Bronchopulmonary ailments caused by dusts of fumes from aluminium or compounds thereof	-	-	-
310	Broncho-pulmonary ailments caused by dusts from basic slags	-	-	-
4	*Infectious and parasitic diseases:*	*23*	*39*	*62*
401	Infectious or parasitic diseases transmitted to man by animals or remains of animals	3	22	25
402	Tetanus	-	-	-
403	Brucellosis	-	-	-
404	Viral hepatitis	-	-	-
405	Tuberculosis	-	2	2
406	Amoebiasis	-	-	-
407	Other infectious diseases caused by work for which a risk of infection has been proven	20	15	35
5	*Diseases caused by the following physical agents:*	*638*	*77*	*715*
502.01	Cataracts caused by heat radiation	-	-	-
502.02	Conjunctival ailments following exposure to ultraviolet radiation	-	-	-
503	Hypoacousis or deafness caused by noise	516	15	531
504	Diseases caused by atmospheric compression or decompression	-	-	-
505.01	Osteoarticular diseases of the hands and wrists caused by mechanical vibration	-	-	-
505.02	Angioneurotic diseases caused by mechanical vibration	19	2	21
506.1	Diseases of the periarticular sacs due to pressure	-	-	-
506.11	Pre-patellar and sub-patellar bursitis	5	-	5

Code	Disease	Men	Women	Total
506.12	Olecranon bursitis	-	-	-
506.13	Shoulder bursitis	-	-	-
506.21	Diseases due to overstraining of the tendon sheaths	43	21	64
506.22	Diseases due to overstraining of the peritendineum	-	-	-
506.23	Diseases due to overstraining of the muscular and tendonous insertions	45	30	75
506.3	Meniscus lesions following extended periods of work in a kneeling or squatting position	-	-	-
506.4	Paralysis of the nerves due to pressure	-	-	-
506.45	Carpal tunnel syndrome	10	9	19
507	Miner's nystagmus	-	-	-
508	Diseases caused by ionizing radiation	-	-	-
	Diseases not included to the European schedule	*23*	*11*	*34*
	Total	1385	391	1776

Table 10 Recognized occupational diseases by gender and EODS (European Occupational Diseases Statistics) diagnosis code in 2012

Code	Diagnosis	Men	Women	Total
EODS obligatory list		*1328*	*334*	*1662*
A15X	Tuberculosis	-	2	2
A23X	Brucellosis	-	-	-
A26X	Erysipeloid	-	-	-
A27X	Leptospirosis	-	-	-
B15X	Hepatitis A	-	-	-
B16X	Hepatitis B	-	-	-
B171	Hepatitis C	-	-	-
B172	Hepatitis E	-	-	-
B178	Other specific hepatitis	-	-	-
B24X	HIV	-	-	-
B760	Ancylostomiasis	-	-	-
C22X	Liver cancer	-	-	-
C300	Cancer of the nasal cavity	-	-	-
C31X	Cancer of the accessory sinuses	-	-	-
C32X	Laryngeal cancer	-	-	-
C34X	Lung cancer	28	-	28
C44X	Skin cancer	-	-	-
C45X	Mesothelioma	39	1	40
C67X	Bladder cancer	-	-	-
C95X	Leukaemia	-	-	-
D04X	Precancerous skin lesions	-	-	-
D59X	Haemolytic anaemia	-	-	-
D64X	Anaemia	-	-	-
D695	Secundary thrombocytopenia	-	-	-
D70X	Agranylotosis and neutropenia	-	-	-
G560	Carpal tunnel syndrome	10	9	19
G622	Polyneuropathy	-	-	-
G92X	Toxic encephalopathy	4	-	4
H268	Cataracts	-	-	-
H833	Noise-induced hearing loss	517	16	533
I730	Raynaud's syndrome	19	2	21
J303	Allergic rhinitis	15	21	36
J340	Nasal ulceration	-	-	-
J348	Nasal perforation	-	-	-
J44X	Chronic bronchitis	-	1	1
J45X	Asthma	18	31	49
J60X	Coal worker's pneumoconiosis	-	-	-
J61X	Asbestosis	45	2	47
J62X	Silicosis	7	-	7
J638	Pneumoconiosis due to other silicates	-	-	-
J65X	Pneumoconiosis associated with tuberculosis	-	-	-
J660	Byssinosis	-	-	-
J67X	Allergic alveolitis	5	11	16
J680	Brochitis (acute) or pneumonitis	1	-	1
J681	Pulmonary oedema	-	-	-

Code	Diagnosis	Men	Women	Total
J682	Upper respiratory inflammation	-	-	-
J683	Reactive airways dysfunction syndrome	-	-	-
J841	Pulmonary fibrosis	-	-	-
J90X	Pleura effusion	1	-	1
J92X	Pleural plaques	415	12	427
J948	Diffuse thickening of the pleura	2	-	2
K71X	Toxic liver disease	-	-	-
L23X	Allergic contact dermatitis	64	82	146
L24X	Irritant contact dermatitis	47	87	134
L25X	Unspecified contact dermatitis	2	1	3
L506	Contact urticaria	5	14	19
L708	Acne	-	-	-
M192	Arthrosis of the elbow	-	-	-
M232	Degenerative lesions of the meniscus (knee)	-	-	-
M700	Tenosynovitis of the hand and wrist	35	14	49
M703	Bursitis of elbow	-	-	-
M704	Bursitis of knee	5	-	5
M770	Medial epicondylitis (elbow)	3	6	9
M771	Lateral epicondylitis (elbow)	41	22	63
M931	Arthrosis of the wrist	-	-	-
N14X	Tubulo-interstitial kidney diseases	-	-	-
N18X	Chronic renal failure	-	-	-
R10X	Colic and gastrointestinal symptoms	-	-	-
EODS voluntary list		*18*	*9*	*27*
A00X	Cholera	-	-	-
A01X	Typhoid and paratyphoid fever	1	-	1
A02X	Salmonellosis	-	-	-
A03X	Shigellosis	-	-	-
A048	Other bacterial intestinal infection	-	-	-
A06X	Amoebiasis	-	-	-
A21X	Tularaemia	3	2	5
A22X	Anthrax	-	-	-
A35X	Tetanus	-	-	-
A36X	Diphteria	-	-	-
A46X	Erysipelas	-	-	-
A692	Borreliosis	-	-	-
A70X	Ornithosis	-	-	-
A78X	Q-fever	-	-	-
A79X	Rickettsiosis	-	-	-
A80X	Poliomyelitis	-	-	-
A82X	Rabies	-	-	-
A988	Haemorrhagic fever	14	7	21
B01X	Varicella	-	-	-
B05X	Measles	-	-	-
B06X	Rubella	-	-	-
B26X	Mumps	-	-	-
B358	Dermatophytosis	-	-	-
B54X	Malaria	-	-	-
G122	Amyotrophic lateral sclerosis	-	-	-

Code	Diagnosis	Men	Women	Total
G212	Secondary parkinsonism	-	-	-
G252	Intentional tremor	-	-	-
G40X	Epilepsy	-	-	-
G50X	Disorders of the trigeminal nerve	-	-	-
G561	Other lesions of the median nerve	-	-	-
G562	Lesion of the ulnar nerve	-	-	-
G563	Lesion of the radial nerve	-	-	-
G573	Lesion of the lateral popliteal nerve	-	-	-
G575	Tarsal tunnel syndrome	-	-	-
H10X	Conjuctivitis	-	-	-
J630	Aluminosis	-	-	-
J631	Bauxite fibrosis of lung	-	-	-
J632	Beryllosis	-	-	-
J633	Graphite fibrosis of lung	-	-	-
J634	Siderosis	-	-	-
J635	Stannosis	-	-	-
	Diseases not included in EODS list	*39*	*48*	*87*
	Total	1385	391	1776

III
Appendices

1 Register of Occupational Diseases
2 Act on Occupational Diseases, 1343/88
3 Ordinance on Occupational Diseases, 1347/88
4 Ordinance on amendments to Employment Accidents Act 1314/2002
5 Statistical classifications

APPENDIX 1 Register of Occupational Diseases

The Finnish Register of Occupational Diseases (FROD) was established at the Finnish Institute of Occupational Health (FIOH) in 1964. FROD's objectives are to serve as a source of statistics on occupational diseases, and to promote research on occupational health. FROD is maintained by FIOH's Surveillance and Reviews. Altogether 236 000 cases of occupational diseases, of which about 46 000 are skin diseases, have accumulated in the Register during 1964–2012.

Insurance companies send new occupational diseases and suspected diseases to the FAII. FROD obtains its information from the FAII and MELA. According to the Act on the Supervision of Labor Protection; physicians are obligated to notify cases of occupational diseases and work-related illnesses to the Regional State Administrative Agencies, which then forwards the notifes to FIOH. Information from this source can be used to augment and improve data in FROD.

Information in FROD

A recorded case of an occupational disease contains information on the timing (year of registration, date on which disease is recognized as an occupational disease), the patient's identification data (personal identity number, sex, age, occupation), information on the employer (industry, location of workplace), diagnosis, causes (exposures) and severity of the disease.

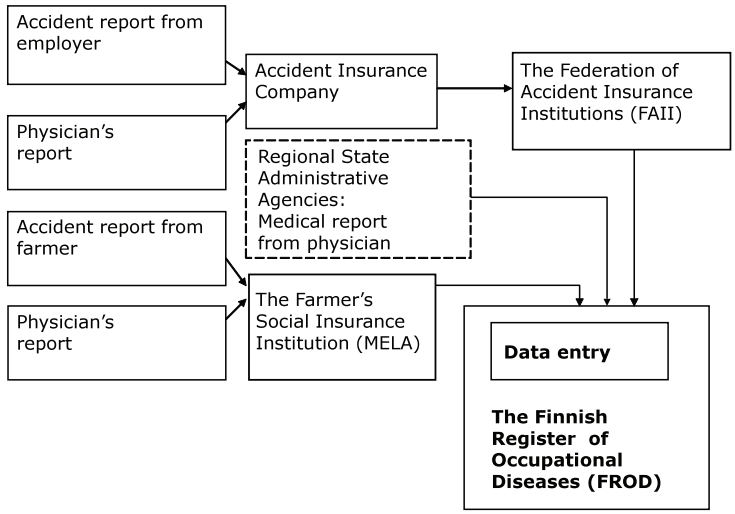

FIGURE 29. Data flows into the Finnish Register of Occupational Diseases

Disease groups

In the statistics, occupational diseases are classified into the following disease groups according to diagnosis and cause:

Hearing loss

Noise-induced hearing loss refers to the deterioration of hearing due to prolonged exposure to noise or sometimes due to momentary impulse noise.

Repetitive strain injury

A repetitive strain injury is a musculoskeletal disease, caused by non-physiological stress at work (repetitive and monotonous work, unusual working postures). The group includes tenosynovitis, peritendinitis, epicondylitis, bursitis, and mononeuropathy.

Allergic respiratory diseases

Allergic respiratory diseases include asthma, allergic rhinitis, allergic alveolitis and chronic laryngitis.

Skin diseases

Occupational skin diseases are caused by chemical agents or micro-organisms in the work environment; the most significant diseases in this group are irritant contact dermatitis and allergic contact dermatitis.

Asbestos-induced diseases

This group includes all occupational diseases caused by asbestos, pleural plaques, adhesions and calcifications being the most frequent. Cancer and asbestosis are the most severe diseases in this group.

Others

This group includes, for example, infectious diseases, conjunctivitis, vibration syndrome, and various types of poisoning.

Defects and sources of error

The coverage of FROD is not complete. Some physicians unfortunately neglect to notify occupational diseases. Moreover, not all physicians have training in occupational medicine, and may thus fail to connect diseases with working conditions. Information is also lacking on cases notified to insurance companies but not finally accepted as an occupational disease. For these reasons, some occupational diseases are neither diagnosed nor recorded.

Secrecy of information

The information in FROD is secret, in accordance to both the Act on the Supervision of Labor Protection and the Act on Insurance of Occupational Injuries. The information may only be used for scientific research, official plans or studies, and statistical purposes. The Register is also regulated by the Personal Data Act and the Act on the Openness of Government Activities. Only the persons authorized by the controller are allowed to process personal data. The authorized persons may not disclose the secret data. The person responsible for FROD is Dr. Simo Virtanen, Team Leader of FIOH's Surveillance and Reviews.

Recent publications

Oksa P, Palo L, Saalo A, Jolanki, R, Mäkinen I, Virtanen S. Ammattitaudit ja ammattitautiepäilyt 2012. Katsauksia 165. Työterveyslaitos 2014.

Riihimäki H, Kurppa K, Karjalainen A, Palo L, Jolanki R, Keskinen H, Mäkinen I, Saalo A, Kauppinen T. Occupational diseases in Finland in 2002. Finnish Institute of Occupational Health 2004.

Appendix 2 Act on Occupational Diseases (1343/88)

(Unofficial translation)

1 § An occupational disease that is entitled to compensation according to the Accident Insurance Act (608/48) or the Act on Agricultural Workers' Accident Insurance (1026/81) or the Act entitling persons employed in public service or holding public office to compensation in the event of an accident (154/35), is a disease mainly caused by a physical factor, chemical substance or biological agent encountered in the course of work carried out under a contract of employment, in the public service or in public office or as an agricultural entrepreneur , as prescribed in these acts.

What is stated in the first subsection on occupational diseases, shall also be applied in the case of notable deterioration of a disease or injury other than occupational during the period of this deterioration.

2 § The ordinance states that the causal connection between the disease mentioned in the first subsection of Paragraph 1 and a physical, chemical or biological factor is regarded as existing when such a factor has been present in the work to the extent that it can principally cause the disease designated by the Act.

3 § Liability for compensation, the amount of compensation payable, and the procedure to be followed for that purpose shall be governed by the Accident Insurance Act, the Act on Agricultural Workers' Accident Insurance, and the Act entitling persons employed in public service or holding public office to compensation for the event or accident.

For this purpose, the date on which the disease manifests shall be the same as the date of occurrence of the accident. If other specific reasons do not require it, the date of manifestation of the disease shall be determined as the date on which a person sought medical advice for the first time from a doctor concerning a later diagnosed occupational disease. The time limit within which compensation must be claimed shall invariably be set as beginning on the date on which the disease was diagnosed or the incapacity of the person began.

When a worker, agricultural entrepreneur or person employed in public service or holding public office is not, on the emergence of an occupational disease, engaged in a process that could have been the cause of the disease, liability for compensation shall be determined on the basis of the employment,

agricultural entrepreneurship, public service or public office in which he was last engaged in a process that may have been the cause of the disease.

3 a § (1643/1992) If the occupational disease appears in a time during which the employee is entitled to a pension paid on the basis of incapacity for work, old age or unemployment according to the Employees Pension Act (395/2006) or previous legislation as referred to in Section 1, Paragraph 2, of the Act on the Implementation of the Employees Pension Act (396/2006), or to unemployment pension based on previous legislation as referred to in Section 1, Paragraph 3, of the Act on the Implementation of the National Pensions Act (569/2007), the annual earnings shall be determined, as an exception to the regulations of Section 28, of the Employment Accident Insurance Act, based on the annual earnings of the employee before the termination of the work from which they retired to the said pension, and by revising the annual earnings so obtained to the index level of the year when the occupational disease became apparent using the salary factor referred to in Section 96 of the Employees Pension Act. Correspondingly, as an exception to Section 17, Paragraph 3, of the Employment Accident Insurance Act, the loss of capacity for work shall be determined by evaluating the employee's ability to work, after the occupational disease, in the position from which they retired to the said pension. The regulations of the second sentence of Section 28, Paragraph 6, of the Employment Accident Insurance act (21.12.2007/1360) shall not apply.

In cases referred to above in Paragraph 1, the daily allowance shall also be determined for the four-week period as stated in Section 16, Paragraph 1, Subsection 1, using the same grounds as in the period following those four weeks.

4 § (1315/2002) The following can be regulated in more detail by a government decree:

1) the determination of illness and the factors exposing to it; and

2) the implementation of this act.

4 a § (1315/2002) Tenosynovitis and epicondylitis of the shoulder shall be reimbursed as an occupational disease caused by a physical factor, if the employee's duties prior to the appearance of symptoms repeatedly included one-sided movements or movements unfamiliar to the employee.

Carpal tunnel syndrome shall be reimbursed as an occupational disease caused by a physical factor, if the employee's duties prior to the appearance of the symptoms included movements deviating from the middle position of the wrist, placing a load on the wrist for prolonged times.

5 § A copy of this Act and the related Ordinance shall be posted and kept available by the employer at the workplace.

6 § This Act shall come into effect on 11 January 1989 and repeal the Act on Occupational Diseases (638/67) and its later modifications.

Entry into force and application of amendments:

30.12.1992/1643:

This act shall enter into force on 1 January 1993.

This act shall also apply to occupational disease which became apparent before the entry into force of this act for which no legally valid decision concerning the reimbursement has been made before the entry into force of this act.

30.12.2002/1315:

This act shall enter into force on 1 January 2003.

Section 3 a, Subsection 1, of the act shall also apply to occupational disease which became apparent before the entry into force of this act for which no legally valid decision concerning the reimbursement has been made before the entry into force of this act.

This act shall repeal Section 4 of the Decree on Occupational Disease of 29 December 1988 (1347/1988).

30.12.2004/1366:

This act shall enter into force on 1 January 2005.

If the employee went on pension referred to in Section 3 a before the entry into force of this act, the index correction according to this act shall be done on the annual earnings which were corrected to the index level of 2004 on the basis of the index correction regulations of the Employment Accident Insurance Act which were applicable at the time of entry into force of this act.

21.12.2007/1360:

This act shall enter into force on 1 January 2008.

Appendix 3 Ordinance on Occupational Diseases (1347/88)

(Unofficial translation)

1§ a Diagnosis of a disease as an occupational disease requires medical examination by professionals with sufficient knowledge regarding exposure during work and, in the case of occupational diseases designated by the Act on Occupational Diseases in Paragraph 2, is led by a specialist in the field.

2§ A disease shall be deemed occupational according to 2 § and the first subsection of 4 § and later in 3 §, when the physical, chemical or biological factor mentioned in the paragraph is present in a person's work, and is covered by subsection 1 of 1 § of the Act on Occupational Diseases, to such an extent that its exposure effect is sufficient to cause the disease in question, unless it is stated that the disease has been clearly caused by exposure outside work.

3§ The following are the diseases and the physical, chemical and biological factors referred to in Paragraph 2:

Physical factors

Typical forms of disease	
1. Vibration	White finger syndrome; polyneuropathy of the upper limb.
2. Noise	Cochlear type of deterioration of hearing.
3. Overpressure	Direct effects of changes in pressure, such as maxillary haemorrhages and tympanic ruptures, indirect effects of pressure such as nitrous inebriation and diver´s disease; as a long-term effect an aseptic bone necrosis of the big joints.
4. Ionizing radiation	Bone marrow injuries, lens opacities, skin changes (dermatitis, wounds, scars, skin cancer).
5. Infrared radiation	Lens opacities, e.g. glassblower's cataract; skin changes (connective tissue changes, teleangiectasis).
6. Ultraviolet radiation	Conjunctivitis and keratitis of the eye; skin changes (photodermatitis, photocontact dermatitis).

Chemical factors

Typical forms of disease

1. Arsenic and its compounds	Acute arsenic intoxication (gastro-intestinal, respiratory, and nervous symptoms); long-term respiratory, mucous membrane symptoms; conjunctival irritation of the eye; skin changes such as chronic dermatitis, skin pigmentation, hyperkeratosis, skin cancer; pulmonary cancer; peripheral neuropathies.
2. Beryllium and its compounds	Irritation of mucous membranes; chemical pneumonitis in high exposure; chronic berylliosis; skin changes (contact dermatitis, foreign body reaction, e.g. granuloma); pulmonary cancer.
3. Mercury and its compounds	Irritation of mucous membranes and gastro-intestinal tract in acute intoxication, sometimes chemical pneumonitis. In subchronic or chronic intoxication the symptoms vary according to individual factors and forms of exposure: symptoms of the mouth (gingivitis); peripheral and central nervous injuries (e.g. shakes, psychic changes); renal injuries (albuminuria); and in connection with the injuries, elevated mercury levels in the urine and blood; skin changes (contact dermatitis or other widespread rash).
4. Phosphorus and its compounds	Injuries of bone and liver; respiratory irritation; central nervous symptoms; caustic injuries of the skin; depression of cholinesterase activity of the tissues in organic phosphorus compound intoxications.
5. Cadmium and its compounds	Acute intoxication with strong respiratory symptoms (chemical pneumonitis); chronic intoxication (renal injuries, emphysema
6. Cobalt and its compounds	Skin changes (contact dermatitis); rhinitis and asthma due to cobalt allergy; hard metal lung.
7. Chromium and its compounds	Local dermatic or mucosal irritation or corrosion caused by chromium (chrome wounds); skin changes (contact dermatitis); rhinitis and asthma due to chromium compound allergy; pulmonary cancer; cancer of the nasal accessory sinuses.
8. Lead and its compounds	The first sign of subchronic or chronic inorganic lead intoxication is disturbed haemoglobin synthesis, later anaemia, reticulocytosis, peripheral nerve injuries, gastrointestinal symptoms, liver and kidney injuries, and central nervous symptoms. Organic lead intoxication is characterized by central nervous symptoms.

	In inorganic lead intoxication, symptoms are associated with elevated blood lead level and elevated erythrocyte protoporphyrin values, and in organic lead, intoxication with elevated lead levels in blood and urine.
9. Manganese and its compounds	Acute chemical pneumonitis; chronic manganese intoxication (manganism), dominated by nervous symptoms.
10. Nickel and its compounds	Skin changes (contact dermatitis); rhinitis and asthma due to nickel allergy; chemical pneumonitis caused by nickel carbonyl; sinusal and pulmonary cancer.
11. Zinc and its compounds	Zinc fever; skin changes caused by zinc chloride (contact dermatitis, corrosion).
12. Vanadium and its compounds	Irritation of respiratory tract (chemical pneumonitis, bronchial constriction).
13. Halogens and their inorganic compounds (chlorine, bromine, fluorine)	Irritation and corrosion of mucous membranes and conjunctiva; chemical pneumonitis; bone changes caused by fluorine compounds (fluorosis); fever caused by fluorine polymer dispersion products (polymer fever); skin changes (contact dermatitis, corrosion caused by fluorides)
14. Cyano compounds	Acute cyanide intoxication, chronic intoxication (respiratory symptoms, nervous symptoms); respiratory diseases caused by isocyanates (asthma).
15. Carbon disulfide	Acute intoxication with mainly central nervous symptoms; chronic intoxication by carbon disulphide with central and peripheral nervous symptoms, possibly associated with coronary heart disease.
16. Hydrogen sulphide	Acute intoxication with symptoms of mainly the respiratory and central nervous system and pulmonary oedema
17. Sulphur dioxide and sulphuric acid	Irritative and inflammatory symptoms of mucous membranes and respiratory organs; corrosion of teeth and eyes; skin changes (contact dermatitis, corrosion).
18. Nitrogen oxides, nitric acid and ammonia	Acute respiratory irritation symptoms; pulmonary oedema; local irritation or corrosion of mucous membranes; skin changes (contact dermatitis, corrosion).
19. Carbon monoxide	Acute intoxication caused by carbon monoxide with mainly central nervous symptoms. Clinical picture is associated with elevation of carbon monoxide haemoglobinemia.

20. Phosgene	Acute irritative symptoms of respiratory tract and conjunctival tissues; pulmonary oedema.
21. Inorganic bases and their anhydrides	Skin changes (contact dermatitis, corrosion); acute irritation or corrosion symptoms of conjunctiva, mucous membranes, respiratory or gastro-intestinal tract.
22. Aliphatic, aromatic and alicyclic hydrocarbons	Mainly acute and chronic intoxications of the central and peripheral nervous system; skin changes (contact dermatitis); leukaemias caused by benzene.
23. Halogenated derivatives of hydrocarbons	Acute and chronic mainly nervous system intoxications; skin changes (contact dermatitis); cardiac arrhythmias and irritative respiratory symptoms caused by freons; liver changes caused by derivatives of halogenated hydrocarbons, HCFC-substances aka hydrochlorofluorocarbons substituted freons; hemangiosarcoma of the liver caused by vinyl chloride.
24. Nitro and amino derivatives of hydrocarbons, amines	Acute intoxications associated with methaemoglobinemia; haemolytic anaemia, liver and eye changes caused by trinitrotoluene; skin changes (contact dermatitis); asthma caused by amines; cancer of the urinary bladder caused by aromatic amines.
25. Nitroglycerol, and nitroglycol	Symptoms of the central nervous and circulatory systems (i.e. hypotension, vasodilation) caused either by acute or by chronic intoxication; skin changes (contact dermatitis).
26. Aldehydes, ketones,alcohols ethers and esters	Skin changes (contact dermatitis); asthma and rhinitis caused by formaldehyde; acute, mainly central nervous system intoxications caused by alcohols, ketones, ethers and esters; leukaemias caused by ethylene oxide.
27. Organic acids and acid anhydrides	Irritation and corrosion of skin and mucous membranes; asthma and rhinitis caused by acid anhydrides (i.e. phthalic acid, maleic acid and trimellitinic acid anhydride).
28. Phenol and its homologs and their halogen and nitro derivatives	Acute intoxications with respiratory, hepatic, renal and central nervous system symptoms; chronic intoxication with central nervous and gastro-intestinal symptoms; skin changes (contact dermatitis, changes in pigmentation); haemolytic anaemia; methaemoglobinemia; hepatic cancer caused by polychlorinated biphenyls and acne chlorica.
29. Antibiotics	Skin changes (contact dermatitis); respiratory allergies.

30. Cancer drugs Alkylating substances (cyclophosphamide, chlorambusil, melphalan, semustine, carmustine, lomustine) and antimetabolites (azathioprine).	Leukaemias, lymphohaematopoietic cancers and bladder cancer.
31. Plastics and synthetic resins and the substances and intermediates involved in their production	Respiratory diseases (asthma, rhinitis); skin changes (contact dermatitis).
32. Organic dusts and exposures I.e. flours, grain, wood dusts and materials, animal epithelia, excretions and other exposures of animal origin, dusts of natural fibres and enzymes, natural resins, indian rubber.	Skin changes (contact dermatitis, contact urticaria, protein contact dermatitis); allergic rhinitis, conjunctivitis or pulmonary asthma caused by organic dust, Monday fever (byssinosis) caused by raw cotton.
33. Mineral dusts	Pulmonary diseases caused by quartz and asbestos dust (pneumoconiosis); pulmonary cancer and mesothelioma caused by asbestos; pulmonary cancer caused by quartz dust; consequences of pneumoconiosis in respiratory and circulatory organs.
34. Thiurams, carbamates, derivatives of paraphenylene diamines	Skin changes (contact dermatitis).

35. Reactive and dispersion dyes	Skin changes (contact dermatitis); asthma and rhinitis caused by reactive dyes.
36. Aflatoxins	Cancer of the liver.

Biological factors

Typical forms of disease

1. Bacteria and spores released by moulds and other biologically active substances	Allergic alveolitis; asthma and rhinitis caused by moulds; humidifier fever; organic dust toxic syndrome (ODTS).
2. Tuberculosis bacilli	Different forms of tuberculosis.
3. Viruses, bacteria, fungi, protozoa and schistosomes	Hepatitis B, hepatitis C, paravaccinia, erysipeloid, brucellosis, anthrax, listeriosis, skin mycosis, toxoplasmosis, malaria, bilharziosis.
4 §	4 § has been repealed with the law 30.12.2002/1315. (30.12.2002/1315)
5 §	This ordinance enters into force on 1 January 1989. The ordinance (850/48) of 3 December 1948 passed under the Accident Insurance Act and the Act on Occupational Diseases shall remain in force in so far as it relates to occupational diseases.

Entry into force and application of amendments:

30.12.2002/1315:

This act shall enter into force on 1 January 2003.

Section 3 a, Subsection 1, of the act shall also apply to occupational disease which became apparent before the entry into force of this act for which no legally valid decision concerning the reimbursement has been made before the entry into force of this act.

This act shall repeal Section 4 of the Decree on Occupational Disease of 29 December 1988 (1347/1988).

27.3.2003/252:

This act shall enter into force on 1 April 2003.

Appendix 4 Ordinance on amendments to Employment Accidents Act (1314/2002)

4 § The following must have occurred to the employee under the conditions referred to in subsection 1
1) skin abrasion or sore,
2) injury caused by corrosive substance,
3) injury caused by inhaling dangerous gases,
4) injury caused by substantial variation of air pressure,
5) frostbite, sunstroke or similar injury caused by an unusual temperature,
6) inflammation of elbow or patella caused by continuous or repetitive compression or compression that is not usual for the employee or
7) muscle or tendon pain caused by a work movement and not by any other defect, injury or disease, which is not compensated as an occupational disease can be regarded as being due to an occupational accident, if the injury has occurred during a short period, of twenty-four hours at most.

This ordinance shall enter into force on 1 January 2003.

This ordinance shall repeal some of the injuries compensated as occupational accidents in the decree laid down on 10 December 1948 (852/1948).

Appendix 5 Statistical classifications

Causal agents

The causal agents of occupational diseases have been classified according to FIOH's new classification.

The classification of causal agents covers the work environment's physical exposures (main category 1), chemical exposures (2–5), biological exposures (6), physiological and psycho-physiological stress factors (7), psycho-social stress factors (8) as well as other and unspecified agents (9). In the agent-specific tables of this publication, the agents are displayed in the main category as well as at the three-digit level.

Diseases

The diseases included in the register can be classified either by medical diagnosis or by taking the causal agent into account. Since 1996, the register has used the Finnish version of the World Health Organization's classification ICD-10 for coding medical diagnoses. Skin diseases are additionally classified into nine categories according to FIOH's own classification.

In the publication the diseases have been divided into the disease categories according to a diagnosis or cause:

Disease	Grounds for classification
Hearing loss	***causal agent noise***
Repetitive strain injuries	***causal agent physical or mechanical stress factor or vibration and diagnosis either in group M or category G56***
Tenosynovitis	repetitive strain injury, diagnosis M65.4, M67.4. M70.0, M75.2–3, M76.6–8 or M77.5
Epicondylitis	repetitive strain injury, diagnosis M77.0 or M77.1
Bursitis	repetitive strain injury, diagnosis M70.2–M70.5
Carpal tunnel syndrome	repetitive strain injury, diagnosis G56.0
Other or unspecified repetitive strain injuries	repetitive strain injury than other those mentioned above
Allergic respiratory diseases	***Diagnosis in one of the categories J45, J67 or J30.3, J37.0***
Asthma	diagnosis in the category J45
Allergic rhinitis	diagnosis J30.3
Allergic alveolitis	diagnosis in the category J67
Laryngitis	diagnosis J37.0
Skin diseases	***Skin disease (skin cancers however, are classed in the cancer group)***
Allergic contact dermatitis	FIOH's occupational skin disease classification category 1
Irritant contact dermatitis	category 2 of abovementioned classification
Skin infections	category 6 of abovementioned classification
Protein contact dermatitis or Contact urticaria	category 7 of abovementioned classification
Other skin diseases	skin disease other than those mentioned above
Asbestos-induced diseases	***Caused by asbestos***
Pleural plaques and adhesions	asbestos-induced disease, diagnosis in category J92 or J94
Asbestosis	asbestos-induced disease, diagnosis J61
Cancer of respiratory organ	asbestos-induced disease, diagnosis in category C33 or C34
Mesothelioma	asbestos-induced disease, diagnosis in category C45

Occupations

The Finnish Register of Occupational Diseases uses the 2010 occupational classification of Statistics Finland (compatible with ISCO-08). The one-digit codes (main categories) as well as the most specific three- to five-digit codes are displayed in the tables. In figures, occupations have been grouped in the following manner:

Title of occupational group	Code in the occupational classification
Natural scientific, technical and school teaching work	1223, 133, 1345, 211, 212, 2131, 2133, 2131, 2141, 2143, 2144, 2149, 2153, 2166, 23, 25, 3111, 3115, 3118, 3119, 3122, 3141, 35
Health care and social work	1341–1344, 22, 2634, 2635, 32, 3412, 53
Business and administrative work	112, 1211, 1212, 1219, 1221, 1222, 1324, 1346, 24, 2631, 331, 333–335, 41, 431, 4322
Society and culture sector work	111, 1213, 1349, 1431, 261, 262, 2632, 2633, 2636, 264, 265, 3411, 3413, 342, 343
Transport and communication work	315, 4323, 5165, 83, 9331, 9332
Service work	0, 141, 1439, 42, 44, 511–515, 5161–5164, 5169, 54, 7543–7549, 91, 951, 96
Commercial work	142, 332, 52, 952
Agriculture, forestry and fishing	131, 2132, 3142, 3143, 6, 92
Building construction work	1323, 2142, 2161, 2162, 2164, 2165, 3112, 3123, 71, 7541, 7542, 9312, 9313
Metal foundry and engineering work	3135, 721, 722, 812, 8211, 8219
Installation and repair work	723
Fine mechanical and printing work	7311–7316, 7319, 732
Electrical and electronics work	2151, 2152, 3113, 3114, 74, 8212
Food manufacturing work	751, 816, 94
Wood work	7317, 752, 8172
Textile and clothing work	2163, 7318, 753, 815
Mining and quarrying work	1322, 2146, 3117, 3121, 811, 9311
Chemical processing, pulp and paper making work	1321, 2145, 3116, 3131–3134, 3139, 813, 814, 8171, 8181, 8182, 8189
Packing, warehousing and stevedoring work	4321, 8183, 932, 9333, 9334
Unknown or not classified	132, 134, 216, 311–314, 341, 432, 731, 754, 817, 818, 821, 931, 933, X, Z

Industries

The Finnish Register of Occupational Diseases uses the 2008 industrial classification of Statistics Finland (compatible with NACE Rev. 2). The main industrial categories (letter codes), as well as the two-digit codes are displayed in the tables. In the figures, industries have been grouped in the following manner:

Title of industrial group	Code in industrial classification
Agriculture and forestry, fishing	01–03
Mining and quarrying	05–09
Food, beverages and tobacco	10–12
Textiles, clothing, leather and footwear	13–15
Wood and wood products	16
Pulp, paper and paper products	17
Chemical and petroleum products	19–21
Rubber and plastic products	22
Non-metallic mineral products	23
Basic metals and fabricated metal products	24–25
Electrical products and optical equipment	26–27, 32
Machinery and equipment, service	28, 33
Transport equipment	29–30
Furniture	31
Other manufacturing industries	18, 58
Electricity, heating and water supply	35
Construction	41–43
Sales, hotels, restaurants and repair of motor vehicles	45–47,55–56, 95
Transport, storage and communications	49–53, 61, 79
Financial intermediation, insurance and business services	62–66, 68–74, 77–78, 80–82
Public, social and personal services	00, 36–39, 59–60, 75, 84–88,90–94, 96–99

FINNISH INSTITUTE OF
OCCUPATIONAL HEALTH

Bookstore
Topeliuksenkatu 41 a A
FI 00250 Helsinki
Finland

Tel. +358 30 474 2543
Fax +358 9477 5071

www.ttl.fi
email: kirjakauppa@ttl.fi

59.241

ISBN 978-952-261-469-8 (print)
ISBN 978-952-261-470-4 (pdf)