

# Water damage at home and your health

A HANDBOOK TO SUPPORT EVERYDAY LIFE

1<sup>st</sup> edition

The Organisation for Respiratory Health in Finland promotes respiratory health and good life for people suffering from respiratory diseases.

 Hengityслиitto

In this handbook you will find summarised information on water damage in homes and other residential buildings as well as on the prevention, investigation and repair of water damage. Information on the health effects of water damage and peer support available through the Organisation for Respiratory Health in Finland is also included.

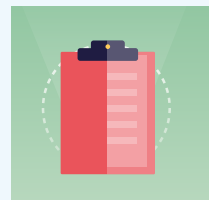
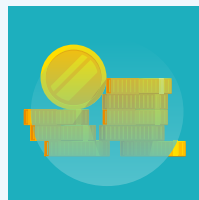
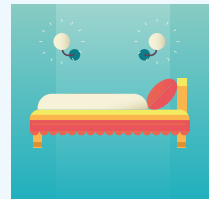
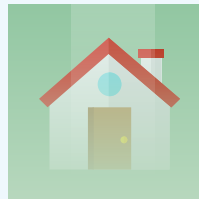
It is worth remembering that water damage and mould are only one possible cause of indoor air problems. Indoor air quality is affected by various chemical, biological and physical factors, which can also decrease comfort and cause symptoms. One of the most common factors that reduces indoor air quality is inadequate or improper ventilation. The problems may also be caused by indoor conditions (incorrect temperature, dry indoor air), inadequate cleaning and maintenance of the building or improper repairs.

Various deficiencies and impurities can be introduced into indoor air from outdoor air, soil and building structures, as well as from indoor sources such as construction and interior materials.<sup>1</sup> In Finland, particles from outside, radon in indoor air, indoor air particles, noise pollution, UV radiation from the sun and exposure to tobacco smoke are the largest negative factors related to our surroundings and causing health issues. Water damage in homes is one of the less significant negative factors in indoors.<sup>2</sup>

See also the Organisation for Respiratory Health in Finland's handbook on good indoor air and ventilation.

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1 Terve ihminen terveissä tiloissa 2018 report, p. 20–22, THL <http://urn.fi/URN:ISBN:978-952-343-158-4>

2 Hänninen et al.: Ympäristöaltisteiden kansanterveysvaikutukset, Ympäristö- ja terveys journal 1/2020



## 2 What are water damage and mould exposure?

Water damage occurs in a buildings when too much moisture accumulates in the normally dry structures or materials. Microbial growth (i.e. mould) occurs when the structure or material is exposed to moisture for so long that abnormal amounts of microbes, i.e. mould, yeast and bacteria, begin to grow.

Short-term and rapidly drying moisture usually does not cause water damage and mould growth. If the moisture occurs frequently or becomes a long-term occurrence, materials and structures intended for dry conditions may be damaged in different ways.

Visible changes on the surfaces of materials or structures can be signs of water damage and mould growth. The most common signs of damage are:

- » changes in the colour of materials
- » tiles becoming loose
- » wallpaper bubbling
- » paint flaking
- » drywall swelling
- » powdery or web-like growths on surfaces or hot spots.

Mould is not always easy to observe with just your senses. Mould often grows inside structures and causes hidden damage that can be hard to find and can require dismantling some structures of the building.

If there is a damp, musty, earth-cellar-like, sweet or mouldy smell in the air, the possibility of mould should be investigated. The presence of the smell can be intermittent, since its strength varies according to air humidity and pressure fluctuations in the building. Water damage and mould are not always accompanied with a smell.

When the moisture level in the wood structure or material remains high for an extended period of time, wood-decay fungi begin to break down the wood and wood-based materials. As a result, the material starts to decay and becomes weak.

The reasons for beginning an inspection to find mould are usually visible growths on the surfaces of materials, condensation of moisture on surfaces, issues with smells and symptoms experienced by the residents of the apartment.



**Indoor air and renovation hotline:** Our indoor air and renovation specialists provide advice on matters related to mould exposure, ventilation problems, construction and other questions related to indoor air quality. The service is available from 9 a.m. to 3 p.m., Mon–Thu, at +358 20 757 5181. If the line is busy, the call will be directed to an answering machine.



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**The Hometalkoot.fi** website offers practical information (in Finnish) on building maintenance, risk-prone structures and the prevention of water damage and mould growth. The site serves the owners of properties and apartments, as well as those responsible for the maintenance of buildings or those considering the purchase of a home.

 HOME TALKOOT.FI  
terveiden talojen puolesta

## Microbes

Microbes (bacteria, algae, eukaryotic organisms, yeasts, moulds and viruses) are commonly found everywhere in our living environments and are an important part of the natural cycle. Microbes from outdoors and outdoor air are almost always found in small amounts in buildings, on inside surfaces and structures, and in indoor air.

When we talk about microbial growth in buildings, we usually refer to mould, yeast, wood-decay fungi and bacteria. Depending on the genus and species, these microbes release spores, pieces of mycelium and various gaseous metabolites and toxic substances in the air. Actinomycetes are bacteria that grow in formations that resemble mould.

Microbes do not grow in a dry environment. Instead, they need heat, nutrients and moisture to grow. Microbial growth and the rate of the growth depend on these factors. In general, buildings have enough heat and material microbes can use for nutrients, which means moisture is the limiting factor for growth.

Indicators of water damage include microbes that have entered the building from the outdoor air or soil and continue to grow in the materials of structures with water damage. Indicators of water damage may be present in normal indoor

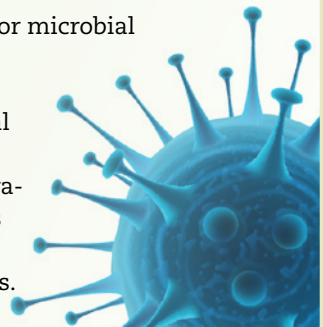
air in small quantities. Some microbes have been declared as indicators of water damage because they require more moisture to grow and have been found in structures with water damage in studies.

Microbial growths in dry or dried structures and materials can also cause symptoms. This means water damage must always be repaired and the causes of the damage removed. Damaged material should primarily be removed and completely renewed, if possible.

In addition to water damage, indoor air quality is affected by various gaseous pollutants and particulate matter and fibres: volatile organic compounds (VOCs), carbon dioxide, carbon monoxide, fine particles and mineral fibres, among others. These and other factors affecting indoor air quality are described in more detail in the handbook entitled 'Sisäilma ja ilmanvaihto' (Indoor air quality and ventilation).



- » In general, the minimum humidity percentage for mould to grow in building material is between RH 75% and 80%, and RH 95% for bacteria, actinomycetes and wood-decay fungi.
- » (RH = relative humidity). The temperature required for microbial growth in buildings is between 5 °C and 50 °C.
- » The minimum humidity and temperature are interdependent and vary between different microbial species.
- » With a suitable base medium and in optimal temperature and humidity conditions, it takes days or weeks for mould to start growing. With a less suitable medium and less suitable conditions, it can take years.



### 3 Prevention of water damage and mould exposure

Preventing and repairing water damage and mould is important for ensuring the good quality of indoor air and for preserving the value of the building. It is the responsibility of the resident to maintain their apartment properly and to ensure that it remains in good condition. Any deficiencies and issues identified should be investigated and corrected without delay. The owner of the building is responsible for the condition of the building. The resident must promptly report any deficiencies or issues they detect to the right party (see p. 9).

All buildings are exposed to moisture, which is why moisture management is important for the condition of buildings and the quality of indoor air. Rain exposes roofs and walls to moisture. Surface runoff, rainwater streaming down from the roof, floods and soil water expose the foundations of the building and basement spaces to moisture. Moisture can accumulate inside the structures as well. It might have gotten in during construction or due to a pipe leak, for example. Everyday activities – such as showering, cooking and drying laundry – cause moisture, and it is normal.

Regular inspections and maintenance are carried out on both the inside and outside structures and compartments of apartments. Regular inspections of the exterior parts of buildings include inspecting the roof and its drainage systems.

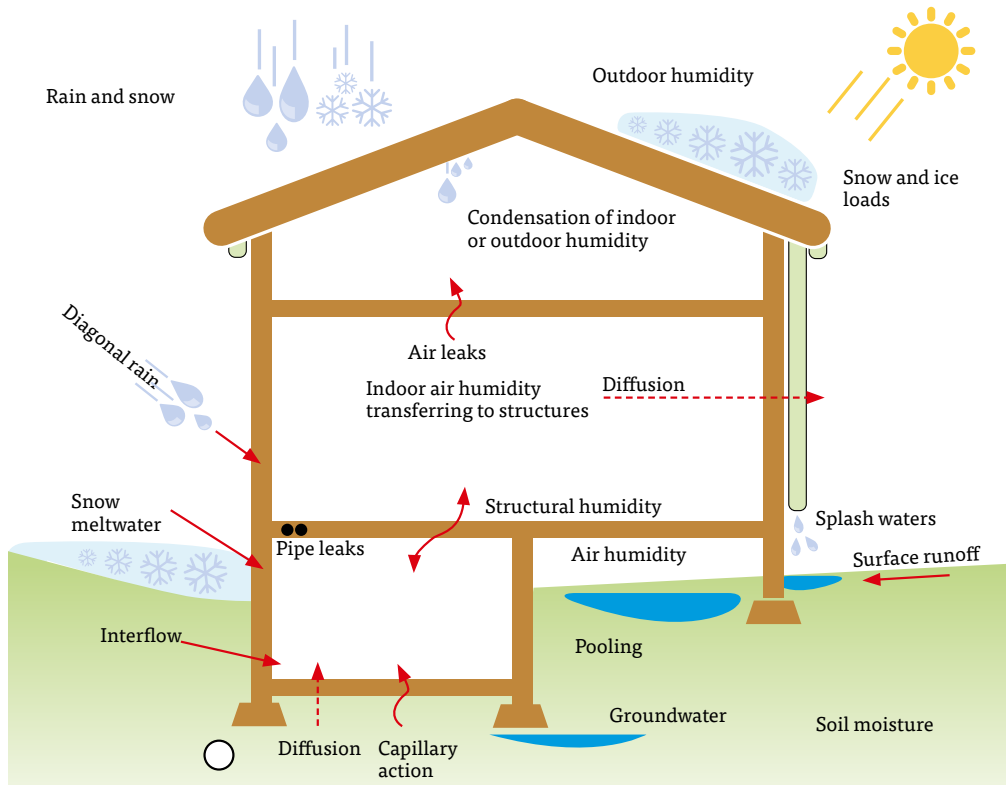
Care must also be taken to ensure the condition and cleaning of roof dry wells, rain gutters and downpipes. It is important to direct rainwater into the rainwater drainage system or at least further away from the foundations of the buildings. The condition of drains is regularly checked, and clogged and deficient drains are fixed. The condition of the surfaces, doors, windows and window frames of the exterior walls are also checked. Snow should not be piled against walls of buildings, and flower beds and shrubs should not be placed next to walls either. In detached houses, these maintenance measures fall under the responsibility of the residents. Housing companies usually handle these for the residents.

Water damage and mould in buildings can be caused by different factors throughout the building's life cycle:

- » Incorrect building design (e.g. incorrect structural solutions and incorrect material choices) can lead to damage.
- » Deficiencies in moisture management during construction (e.g. failure to protect the site from weather and coating damp materials) can lead to damage.
- » Much of the water damage and mould found in buildings are due to shortcomings in the maintenance and repair of buildings.
- » Damage is also caused by improper use of buildings. Building must be used correctly.



Observing and maintaining the home and its systems regularly, as well as repairing structures at the end of their service life in a timely manner, can prevent indoor air problems.



Sources of moisture that place stress on the structures of a house can be found outside, inside and in the soil.

The function of ventilation is to remove gaseous and particulate impurities and moisture from indoor air and to bring clean air inside. Ventilation must be dimensioned according to the intended use and maintained regularly to ensure proper operation.

Measurements and adjustments of air currents and regular maintenance of the ventilation equipment, such as cleaning the equipment and ducts and changing the filter, are required for ventilation to function as designed. See also the Organisation for Respiratory Health in Finland's handbook on good indoor air and ventilation.

It is a good idea to monitor the condition of surface materials. Paint flaking, materials coming off their base, wallpaper bubbling, discoloration of surfaces and swollen dry wall can all be caused by water damage.

The condition of wet rooms should be monitored in particular. The air-tightness

and condition of seams, seals and ducts should also be paid attention to. Check the surroundings of floor drains and that no tiles have come loose, as well as the seams in the corners. The drying of shower facilities can be accelerated and the moisture load reduced by drying the floor and walls with a squeegee after showering and by temporarily increasing ventilation. Under-floor heating should be kept on all year round. Ventilation must be always be on.

Factors promoting healthy living and preventing indoor air issues include:

- » appropriate ventilation
- » the right indoor air conditions, such as a suitable temperature and humidity level
- » proper cleaning
- » environmentally friendly interior and building materials
- » avoiding smoking.

These issues are discussed in the handbook for good indoor air and ventilation.

## 4 Responsibility for home maintenance and investigating indoor air problems

Responsibility for the condition of the building always falls on the owner of the building. The resident's responsibility for indoor air problems depends on the type of housing.

**The owner of a detached house** is responsible for taking care of the building and the quality of indoor air. In the case of problems, the owner must find expert help (e.g. civil engineering firms carrying out condition inspections) themselves and start the inspection process. It is worth ensuring that the party implementing the inspection has up-to-date training and qualifications.

**Shareholders of housing companies** do not own the structures or systems in their apartments, which is why the housing company is responsible for these. The

principles for the division of responsibilities in a housing company are determined in the Limited Liability Housing Companies Act. The main principle is that the shareholder is responsible for the interior of the apartment, such as interior surfaces and furniture, while the housing company is responsible for the structures and systems.

The Finnish Real Estate Federation maintains a table on the interpretations of the Limited Liability Housing Companies Act on the distribution of the housing company's maintenance responsibilities (Taloyhtiön vastuuajakotaulukko). The table provides more detailed information on the division of maintenance responsibilities between the housing company and the shareholders. If any maintenance work under the responsibility of the housing company has been transferred to the share-





holder, this should be stated in the Articles of Association. Shareholders should familiarise themselves with the Articles of Association and find out who is responsible for what maintenance tasks. As the responsibility for structures and systems and their maintenance is primarily the responsibility of the housing company, the shareholder must contact the building manager as quickly as possible when suspecting indoor air or moisture problems. It is advisable to contact the building manager in writing and send it to the housing company's board for information as well.

It is the responsibility of the housing company to solve problems related to the structures and systems of the building. If the housing company does not take the necessary measures to investigate the health hazard and, when necessary, to fix or limit it, the resident can contact the health protection authority. Health protection authorities can order the housing

company to carry out the necessary measures.

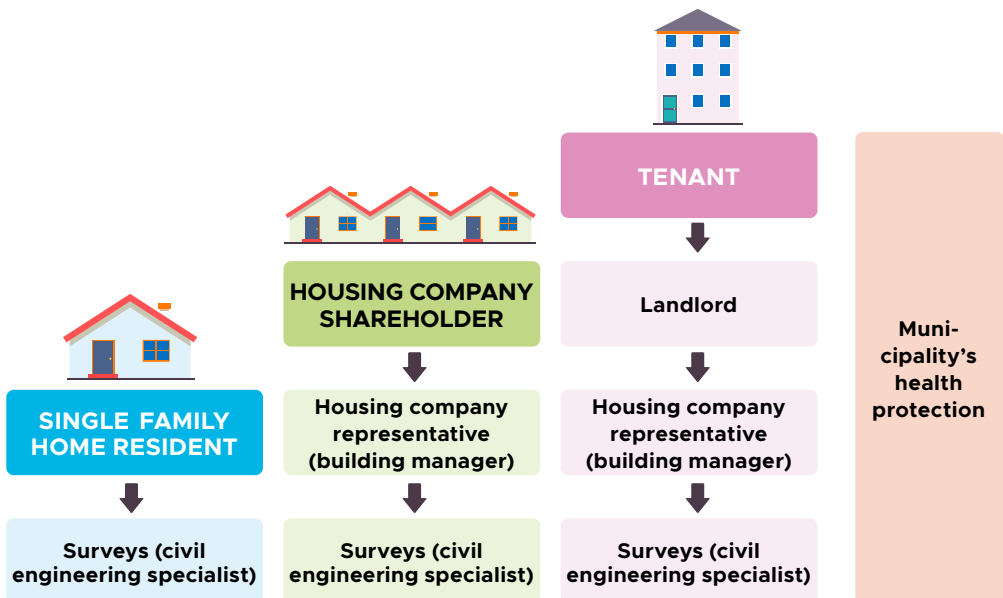
Without the permission of the housing company, no inspections requiring dismantling structures or changes to the systems may be made.

**Tenants** are responsible for keeping the apartments they lease in good condition. Tenants must report any identified deficiencies, damage and suspicions of indoor air problems as quickly as possible to their landlord. It is advisable to submit the notification in writing. If the landlord does not take the necessary measures to eliminate the health hazard, the tenant can contact the health protection authority.

The tenant will have to pay for the damage caused to the apartment wilfully by the tenant or due to negligence. Negligence also includes not reporting a deficiency or issue that you have detected.



Information on building health experts with a personal certificate and indoor air specialists can be found on Eurofins Expert Services Oy's website [www.sertifikaattihaku.fi](http://www.sertifikaattihaku.fi) and information on building investigators of moisture damaged structures can be found on Fise Oy's website [www.fise.fi](http://www.fise.fi)



## 5 Water damage and mould inspections<sup>5</sup>

A moisture and indoor air quality surveys should be carried out on a building if the issues detected in the structures, the smell of indoor air or symptoms experienced by the residents indicate a possible indoor air or mould problem. Similar surveys should also be carried out when planning on renovating a building. Indoor air and moisture surveys are carried out by civil engineering companies, for example.

Before the actual surveys, the specialist studies the building's information (e.g. structural and mechanical systems drawings), talks with the users of the building and conducts an audio-visual-olfactory inspection at the site. The specialist collects information on the history of the building and on the repairs and maintenance carried out, as well as observations made by residents. The specialist tours all the interior spaces of the building and also get to know the building from the outside. The specialist may also carry a surface moisture meter to map moisture variations in structures.

Based on the building's information and the tour, the specialist forms an idea of the structures and systems in the building as well as their functionality and condition. Based on the information, the specialist may prepare a preliminary risk assessment, including an assessment on what types of damage the structures can most likely suffer, possible causes of the damage and risk locations to which particular attention should be paid in the actual surveys. Risk locations are structures of the house that are most likely to contain possible moisture problems. The preliminary risk assessment also reveals whether other indoor air quality surveys and harmful materials surveys (e.g. asbestos in buildings completed before 1994) need to be carried out in the building, in addition to moisture and mould surveys.

Asbestos and other potential harmful materials in structures are examined in advance so that the necessary protective measures can be taken before the work is started to ensure the safety of the required repair and demolition work.



**The telephone services**, provided by the Organisation for Respiratory Health in Finland, are made possible by STEA funding. The services are free of charge. Calls to numbers with a 0207 prefix cost 0.08 cents/call + 0.17 cents/minute.



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<sup>5</sup> Source: Ympäristöopas 2016; Rakennuksen kosteus- ja sisäilmatekninen kuntotutkimus

The structures of risk locations were usually constructed in accordance with the regulations and instructions in force at the time of construction, and the risk of damage to the structure has only been noticed afterwards, after which the use of the structure has been abandoned. The risk location is not always damaged, but it has a higher risk of damage.

### Process of structural surveys

If the specialist suspects a structure is affected by moisture or a condition-related issue, the structure must be examined in more detail. A detailed survey plan should be drawn up if there are several structures to be studied.

In more invasive structural surveys, structures are dismantled and samples are taken from them, air leakage pathways are investigated, thermal scans are carried out, moisture is measured from inside the structures, etc. The ventilation system, its functionality and its possible impact on the transport of impurities and mould spores in indoor air must also be investigated.

The survey methods to be used are selected according to the location and its problems. The survey and measurements must be carried out using established methods for which benchmarks exist. The measuring instruments must be maintained and calibrated regularly. The studies must comply with the Decree on health-related conditions of housing and the guidelines to its application.



A report must be written on the survey that describes in detail the water damage or mould problem in the building and its extent and causes. It is also worth asking the specialist to include conclusions and suggestions for corrective measures in the report. A comprehensive condition survey serves as a basis for the planning of repairs.

### Information from samples

Microbial samples complement structural surveys and are collected if necessary, for example, while examining the extent of the damage. Microbial growth is primarily surveyed with samples collected from the building material.

It has not been possible to set health-based reference values for microbes and no direct conclusions can be drawn from the results of the microbial samples. Several factors influence the quality and quantity of impurities released from microbial growth, the access of the impurities to indoor air and the likelihood of exposure.

When assessing the exposure of humans to structural impurities, it is important to find the paths the air takes from the source of the impurities to the indoor air. Air leakage testing can be done with markers or smoke detection for example, and the testing includes examining the building's pressure distribution, which is affected by the air tightness of structures and ventilation.

The damage to materials and microbial growth can also be assessed with an audio-visual-olfactory inspection and based on the analyses conducted on samples collected from the building materials. The audio-visual-olfactory inspection primarily focuses on observing materials visually. The material showing clear mould growth or signs of decay are signs of damage. A clear mouldy smell is also a sign of damage. The amounts of microbes and microbial species present in the material can be determined with a laboratory analysis.

The following factors affect the quality and quantity of impurities released from microbial growth and the likelihood of exposure to microbes:

- » abundance of microbial growth
- » the species of the microbes in the damaged area
- » the extent of the damage
- » the location of the damage
- » the material acting as the growth medium
- » air leakage paths from the damaged location into the indoor air
- » the pressure distribution of the building.

**Microbial test results** on indoor air are difficult to interpret and unreliable, and a mould problem of a building is often not evident from indoor air samples. Even if the result of an indoor air sample is normal, it does not exclude the possibility of microbial damage to structures, and indoor air samples cannot therefore be used to demonstrate that the space under investigation is in good condition. Similarly, the abnormal microbial findings in indoor air do not always directly mean that there is a problem in the structures.

Even if the amounts microbes present in an indoor air sample and the species of the microbes give cause to suspect damage in the structures, further evidence is required before action is taken. The pieces of evidence can be a mouldy smell, visible damage, proven water damage within the structures, or microbial samples collected from the building materials or surfaces that come out positive for microbial growth.



## Mould detection dogs

Currently, no official system for testing mould detection dogs that ensures the competence of the handler and the dog and that is approved by authorities exists.

Typically, a mould detection dog is trained to detect mould and wood-decay fungi in structures. A mould detection dog can assist a specialist in situations where it is difficult to locate the mould.

When assessing a detection dog's alerts, the limitations and uncertainties caused by the sensory-based and non-destructive method should be taken into account. The dog only indicates the existence of a smell. The dog can also make alerts that are not actually caused by damage to the structures, but still affect the quality of indoor air, such as the smell from the soil of the base floor. Airflows in structures can also cause the dog to indicate the smell coming from the wrong place. The condition of the structures cannot be fully confirmed without dismantling the structures or using other methods of analysis, so a detection dog's alerts always require further examination.

There are currently two organisations operating in the field in Finland, Suomen Homekoirayrittäjät ry and Suomen Homekoirayhdistys ry. Both organisations maintain their own register of dogs and handlers who have passed their qualification exams.



**More information** on the use of mould detection dogs can be found in the customer's instructions for the use of mould detection dogs in the inspection of microbial odours present in the property. The handbook is available for download online [www.hometalkoot.fi](http://www.hometalkoot.fi).



## 6 Repairing water damage and removing mould

The specialist drafts a tailored repair plan based on the building condition survey that shows what and how to repair and how extensively the structures need to be repaired. When planning and implementing renovations of old buildings, the old structures and materials of the building and the original uses of the premises must be taken into account. In a worst-case scenario, improper repairs can damage the structures.

The aim is to mechanically remove all damaged materials and the causes of the damage, and to repair the structures so that they fulfil the function they were built for. All damaged material must be removed and replaced with clean materials suitable for the purpose. Repairs should also prevent future damage.

Repairs must be carried out under supervision in accordance with the renovations plan. Repairing damage caused by mould includes several steps that are all important for the final result. Attention should be paid to dust control during the demolition phase particularly. The area must be appropriately isolated and pressurised. Site moisture management and proper storage of building materials are vital.

Any asbestos and other harmful substances in the structures should be surveyed before the repairs are started. The dismantling of structures containing them must be carried out by professionals with the appropriate permits.

It is a good idea to move all furniture out of the room to be repaired before the work is started. This makes removing the mould easier and reduces the need for cleaning after the work is completed.

The use of biocides and ozonation is not recommended as a solution to indoor mould problems, for boosting the mould removal or for preventing mould growth.

The final stage of mould repair, the removal of mould from inside surfaces, fixtures and furniture, is also important. Mould removal work always releases a large amount of microbes into indoor air and surfaces. The whole space must be cleaned, fixtures and furniture included. Otherwise, some of the microbes that were already removed and that caused the residents symptoms can remain on the surfaces. Unfortunately, this final cleaning is often neglected.



Read more:  
Organisation for  
Respiratory  
Health in Finland's  
handbook on as-  
bestos and asbes-  
tos exposure



More information on repairing  
water damage and removing mould  
as well as cleaning is available on  
the websites [www.hengitysliitto.fi](http://www.hengitysliitto.fi)  
and [www.hometalkoot.fi](http://www.hometalkoot.fi).

## 7 Cleaning the space and furniture

All fixtures and furniture of a residential space with water damage or mould should be carefully cleaned before they are taken into storage or moved to a new home. Furniture start to smell like mould if they are exposed to the odorous molecules produced by the metabolism of the mould. If fixtures or furniture smell like mould or cause symptoms even after they are cleaned, they should be disposed of.


The aim of cleaning furniture is to prevent the symptoms persisting and smells moving to the new home as well. However, mould cannot grow in the new home unless it provides suitable conditions for mould growth, i.e. extra moisture.

Items with visible mould should be disposed of, as should items that smell strongly of mould. Damaged items that are disposed of must be taken directly to a waste sorting station. They must not be sold or recycled.



# Instructions for cleaning furniture

- » Dispose of items with visible mould growth or a strong smell of mould.
- » Clean the things that can be saved according to their material either by vacuuming them carefully with a vacuum cleaner with a HEPA filter, with a damp cloth or by washing the item according its cleaning instructions.
- » Clean items with hard surfaces with a universal detergent and according to each item's cleaning instructions.
- » Wash all clothing, curtains, rugs and other textiles at the highest temperature possible (at least 60 °C). Keep in mind the care instructions of each item.
- » Wipe dust off from the lids and casings of electronic devices. Request someone with experience to clean your IT devices.
- » Renew all houseplants, or at least replace the soil of each plant.
- » Avoid detergents containing biocides. Use disinfectants only in premises contaminated with sewage water. Check the suitability of each detergent for different surfaces and follow the instructions for use.
- » Copy or scan important documents. Original documents and items of personal importance (e.g. photographs, books, paintings) can be stored in boxes in a room that is not used regularly (e.g. a ventilated storage room). Letters and cards that you want to save as mementoes can be laminated.
- » Dispose of items that smell abnormal or cause symptoms even after cleaning.



**More detailed instructions can be found on the Website of the Finnish Institute of Occupational Health [ttl.fi](https://www.ttl.fi).**

## 9 Health effects of water damage and mould exposure

According to a 2010 estimate by the Ministry of the Environment, 600,000–800,000 Finns are affected by water damage and mould exposure on a daily basis. Nearly half a million working-aged people experienced symptoms due to indoor air quality in their workplace in 2019. Some 250,000 people have visited healthcare sometime in their lifetime due to symptoms or illness caused by bad indoor air.<sup>6</sup>

The most common harmful conditions in the workplace are stuffy and dry air, inadequate ventilation, draught and unpleasant odours. The most common symptoms are nose, eye and throat irritation, as well as fatigue and feeling foggy in the brain. Healthcare professionals experience more symptoms than those working in a school or an office.<sup>7</sup>

Symptoms developed at home are significantly less frequent than those developed at work. According to the Finterveys 2017 survey, 8% of working-aged respondents reported that they had sometimes experienced symptoms resulting from bad indoor air in their home. 10% of women and 6% of men have sometimes experienced indoor air-related symptoms in their home.

The national indoor air survey examined in more detail how severe the people experiencing the symptoms felt the symptoms to be. According to the results, the majority of respondents reporting symptoms felt that their indoor air-related symptoms were either mild or moderate.<sup>8</sup>

It has not been possible to establish a causal relationship between any health issues and water damage, as it is not yet known what factors and mechanisms the health issues would be caused by. However, water damage in buildings has been proven to be one of the risk factors for respiratory symptoms and asthma. There are several risk factors for respiratory symptoms and asthma, and it is often impossible to determine the impact an individual factor has on the disease.

The existence of a risk factor increases the likelihood of illness, but its existence does not necessarily mean that a person gets sick.

There is sufficient evidence on the health effects of water damage to justify the comprehensive prevention and repair of water damage in buildings.<sup>9</sup>

### **Medically, there is moderate evidence that water damage in buildings is connected to:**

- » upper respiratory symptoms in people with asthma
- » the development of asthma
- » upper respiratory symptoms
- » coughing
- » shortness of breath
- » wheezing.

### **Medically, there is weak evidence that water damage in buildings is connected to:**

- » respiratory infections
- » allergic rhinitis
- » general symptoms (fatigue, headache, nausea)
- » atopic dermatitis.

Respiratory symptoms caused by water damage are predominantly mild and transient, if the harmful exposure stops. Symptomatic people may feel that their symptoms are endangering their health and threatening their future. A physician's task is to clearly explain the nature of the symptoms, to provide advice on the treatment of the symptoms and to provide information on the health hazards of indoor air problems. In addition, physicians should support the investigation of indoor air problems as far as possible.

6 THL:Finterveys-2017 report, p. 90–91.

7 Tähtinen, K., Remes, J., Karvala, K., Salmi, K., Lahtinen, M. and Reijula, K. 2020. Perceived indoor air quality and psychosocial work environment in office, school and health care environments in Finland. *International Journal of Occupational Medicine and Environmental Health* 33 (4); 479-495.

8 Sisäilma- ja terveystaportti report 2019, p. 55

9 Sisäilma- ja terveystaportti report 2019, p. 72



For many people, encountering indoor air problems is also difficult because of the indirect problems they cause, such as financial difficulties. A difficult life situation can also cause physical symptoms, such as depression.

### Treatment of symptomatic people

Symptomatic people are treated in primary and occupational healthcare. Since the list of symptoms is person specific, the physician will assess the situation through discussion.

Through the discussion, the physician tries to resolve the suspicion of a possible illness (e.g. asthma) that could cause the symptoms. If the physician suspects there is a disease causing the symptoms, they will carry out the necessary diagnostic studies, discuss treatment and try to identify factors that exacerbate the symptoms or illness.

The physician may also try to examine the temporal connection of the symptoms and different buildings. For an individual symptomatic person, the assessment of a link existing between symptoms and specific water damage in a building is always

uncertain. However, the physician must recommend that appropriate building surveys are carried out in the building, if water damage is suspected to cause the symptoms.

Keeping the appointment confidential and mutual respect are important. The importance of the physician-patient relationship is also emphasised in the Current Care Guidelines. It is often necessary for those experiencing respiratory symptoms to determine whether they have atopy. For this, testing of common allergens is usually enough.

So far, there are no laboratory studies to see whether water damage or mould exposure to has caused the symptoms. General symptoms are assessed on the basis of standard medical criteria. Respiratory symptoms and diseases are very common. Around 20% of Finns suffer from a respiratory disorder at some point in their life or have been diagnosed with a respiratory disease. Treatment always follows normal treatment practices for the disease in question, regardless of the cause.



**Read more about the Current Care Guidelines:** Patient with symptoms caused by water damage and mould exposure

## 10 National influencing work

The Organisation for Respiratory Health in Finland continuously influences political decision-making by keeping in touch with policymakers and officials and by raising issues in various working groups and in the public discussion.

In addition, the Organisation for Respiratory Health in Finland designs tools and models in collaborative projects to bring solutions to the promotion of respiratory health.

### National programmes

The Organisation for Respiratory Health in Finland engages in long-term influencing work via national programmes. The Organisation for Respiratory Health in Finland brings the perspectives of those who have experienced symptoms caused

by bad indoor air and the perspectives of those who have been affected by water damage and mould exposure to the *Terveet tilat 2028* programme and the *Kansallinen sisäilma ja terveyst 2018–2028* programme. We will pass on the information on solutions found to work and best practices to the programmes.

- » We highlight the importance of peer support.
- » Being affected by water damage and mould exposure in your own home can also lead to financial difficulties.
- » In addition to the financial situation, the prolonged need for a storage and the need to renew all fixtures and furniture, as well as temporary accommodation strain social relations as well.

Organisation for Respiratory Health in Finland brings the perspective of those experiencing symptoms due to indoor air to working groups, where solutions affecting people's everyday lives are discussed. Dialogue must take place throughout the programme period, so that understanding increases and different views are heard before decisions are taken.

### Peer support to move forward

In peer support activities, people sharing the same life situation, experience or problem meet and share their thoughts, feelings, experiences and knowledge with each other. Peer activities are based on a sense of belonging, a sense of community and mutual respect. Peer activities highlight expertise through experience and, as a result, increase the participants' hope and faith in themselves.

Peer support and feeling understood by those close to you are an invaluable help to those experiencing symptoms. Too often, the people experiencing symptoms due to bad indoor air are dismissed or not believed. It can be difficult for those close to someone with such symptoms to under-

stand something that involves so much fragmented information. The phenomenon is also complicated by the symptoms being person specific, the inconsistent nature of the sources of the symptoms and the spaces in which each symptomatic person is able to be. Some people experiencing symptoms due to indoor air also have a respiratory disease, such as asthma.

Experience gained from peer activities encourage symptomatic people to strive to find a balance and calmness in their lives. Stress management, healthy nutrition and regular exercise support well-being and your physician's instructions support managing the symptoms.

Peer support is available both by phone, online and in different locations around Finland. The Organisation for Respiratory Health in Finland's indoor air help line, run by volunteers, is part of the PuhEet advisory board (advisory board for the ethical principles of phone and online help services in Finland). The advisory board ensures that the help lines and online help service accepted by it provide high quality assistance and operate in an ethically justified and sustainable manner.



**The peer support line** for people with indoor-air-induced disorders is open from 9 a.m. to noon on Tuesdays and from 4 p.m. to 7 p.m. on Thursdays, at +358 44 407 7010. Volunteers trained by the Organisation for Respiratory Health in Finland provide peer support to those who have encountered indoor air problems and those with indoor air-related symptoms and their loved ones.



**Organisation for Respiratory Health in Finland indoor air peer group on Facebook**  
The purpose of the indoor air peer group is to provide peer support in a confidential and resource-focused environment to those with symptoms caused by bad indoor air.

Approximately once a month, expert lectures and/or live chats are organised.



**The Organisation for Respiratory Health in Finland's Lempeä Liike online exercise group** Once a week, a workout session streamed to your home.



**Peers groups of respiratory associations** Many of our local respiratory associations have set up peer groups for sharing experiences and concrete tips for coping with everyday life for those with symptoms caused by indoor air problems. See an up-to-date list: [www.hengitysliitto.fi/paikallisyhdistykset](http://www.hengitysliitto.fi/paikallisyhdistykset).

# REMEMBER!



Other materials and handbooks  
by the Organisation for  
Respiratory Health in Finland.

Kirsi Säkkinen, Sari Mäki, Hanna Salminen and Kukka-Maria Ahokas were responsible for designing the contents of this handbook, and expert comments on a draft of this handbook were received from the Secretariat of the Finnish Indoor Air and Health Programme. The contents were reviewed by Timo Kujala and Mervi Puolanne.

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## JOIN YOUR LOCAL ASSOCIATION

The Organisation for Respiratory Health in Finland and its local associations promote respiratory health and good life for people suffering from respiratory diseases.

**Become a member**

**I want to become a secondary member of the local organisation of, I am a member of the local organisation.**  
(paying the member fee of both associations)

You can also fill  
out a form online at  
[www.hengityслиitto.fi/  
liity-jaseneksi](http://www.hengityслиitto.fi/liity-jaseneksi).

SURNAME AND GIVEN NAMES (underline the name by which you wish to be referred)	ADDRESS >
DATE OF BIRTH >	POSTCODE AND CITY/TOWN
PROFESSION >	PLACE OF DOMICILE >
TELEPHONE >	EMAIL >
FIRST LANGUAGE >	

You can send me information about events and activities by text message and e-mail

I am interested in respiratory diseases (please indicate which):

I am a guardian of the child who is under 15     I am under 15 years old  
 I do not have a respiratory disease

There is a member of a local respiratory association in our family:

No     Yes    NAME >

Your membership fee is depends on your local respiratory organisation. We will send your membership application to the respiratory association of your home municipality. The privacy statement of the membership register is available at: [www.hengityслиitto.fi/liity-jaseneksi](http://www.hengityслиitto.fi/liity-jaseneksi).

**I hereby accept that the information above will be saved in the register of members of which the local association is the data controller and Hengityслиitto ry (The Organisation for Respiratory Health in Finland) is the data processor.**

DATE >	SIGNATURE >	GUARDIAN'S SIGNATURE IF YOU ARE UNDER 15 >
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The website and YouTube channel of The Organisation for Respiratory Health in Finland feature a lot of up-to-date information on respiratory health and respiratory diseases, including asthma. Stay updated on our activities and latest news by following us at:

[www.hengityслиitto.fi](http://www.hengityслиitto.fi)

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**LOCAL ASSOCIATIONS FOR RESPIRATORY HEALTH OFFER MANY BENEFITS FOR THEIR MEMBERS:**

- » You can download the mobile membership card from your app store. It helps you keep track of the news, activities and events of your local respiratory association and The Organisation for Respiratory Health in Finland, as well as find peer activities and edit your personal information.
- » Local respiratory associations regularly organise peer groups and sports activities, events, lectures and other types of recreational activities.
- » Come and join the activities as a volunteer peer instructor, sports instructor, expert by experience or an elected representative in the organisation. The Organisation for Respiratory Health in Finland offers training for its volunteers.
- » The member magazine, *Hengitys*, comes out four times a year.
- » You can check the member benefits of your local respiratory organisation and national organisation on their respective websites.

 Fill in the form, cut it out and fold it as along the reverse line to form a letter. Fasten the edges with tape. The postage is paid by The Organisation for Respiratory Health in Finland, so you can drop the letter in a mailbox without a stamp.

Postage paid by  
The Organisation  
for Respiratory  
Health.

Hengityслиitto ry

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