

Chapter 1 : Sick building syndrome—“is it the buildings or the people who need treatment?

The sick building syndrome comprises of various nonspecific symptoms that occur in the occupants of a building. This feeling of ill health increases sickness absenteeism and causes a decrease in productivity of the workers. As this syndrome is increasingly becoming a major occupational hazard, the.

What It Is and Tips for Prevention Oct 01, "Sick building syndrome" is the name given to a collection of illnesses and symptoms that afflict multiple occupants of particular buildings. The symptoms include sniffles; stuffy noses; itchy eyes; sinus infections; scratchy throats; dry, irritated skin; upset stomachs; headaches; difficulty concentrating; and fatigue or lethargy. The key factors in diagnosing sick building syndrome are a rapid recovery and the disappearance of symptoms after an affected individual leaves the building. Occurrences are not rare, nor is there a simple solution. Sick building syndrome is common enough that many government agencies have published research on causes and symptoms. Causes of Sick Building Syndrome During the first energy crisis in the s, builders and building owners took steps to reduce energy consumption in office buildings. Measures included increased insulation, building wraps, weatherstripping doors, and using insulated double- and triple-pane windows, among others. Some modern buildings feel as if they are airtight. Many paints, carpet fibers, furniture, and even wallboard off-gas noxious fumes, sometimes for years after installation. These products may emit formaldehyde, acetic acid, or volatile organic compounds VOCs and other chemicals. Modern office equipment such as copiers and electrostatic air cleaners add to the problem by adding ozone to the mix. Mold or mildew from damp conditions also create air quality problems. Manufacturing processes and material-handling equipment may add hydrocarbons or smog, and many chemical cleaning agents give off harmful vapors. The result is a chemical stew in the air that makes people ill—“with sick building syndrome. How to Identify Sick Building Syndrome There is no specific medical test to diagnose sick building syndrome. Physicians usually treat the symptoms individually, but the real identification of a "sick building" is subjective. Telltale clues include increased absenteeism among the building occupants, a large number of occupants complaining about vague but similar symptoms, and a common history of symptom resolution when people are not in the building. To help identify whether your building is causing or contributing to the problems, look for these common characteristics: Symptoms occur when occupants are in the building or a specific area of the building. Symptoms dissipate or disappear when affected persons are away from the building or area. Symptoms coincide seasonally with the use of heating or cooling equipment. Multiple co-workers have similar complaints. If the majority of people find their symptoms clear up when they are out of the building, it may be safe to assume the building air quality is a contributing factor to illness. You have a "sick building. Resolving Sick Building Syndrome OSHA and most other government agencies that have weighed in on sick building syndrome believe the problem is primarily related to indoor air quality. Here are some key actions to start you off: Clean up wet or damp areas. Mold and mildew aggravate allergies and cause irritation even in non-allergic individuals, so getting rid of them in the building may help. Seek out any sources of dampness or standing water and repair all leaks. Clean up all remaining dampness. Set up fans in the dank areas to speed-dry any remaining water and wash away visible mildew or mold with a solution of bleach and water or a commercial mold cleaner if the affected area is small enough. Be sure to rinse and dry the area completely after cleaning, and wear goggles, a mask, and gloves when using any bleach solution. After a thorough cleaning, if you still see visible signs of mold or smell mildew, you may need to bring in a mold remediation expert to help resolve the problem permanently. If the area is large or the problem is extensive, you should not attempt to clean it yourself. In that case, call a mold remediation specialist, who will have the proper training and equipment to do the job correctly. Install HVLS fans for ventilation. The large blades of these fans enable a high volume of air to move, while reversing the fan in the cooler months will eliminate drafts that can make working under traditional fans uncomfortable. The best HVLS fans are reversible, so they work for both winter and summer. Some systems even allow you to control multiple fans remotely from a single control box, making HVLS fans an ideal solution for efficiently and effectively improving indoor air quality. Traditional box fans or standard ceiling fans also can provide

movement of air that gives the illusion of freshness, but they often create unpleasant drafts and may not provide the outdoor air volume necessary for fresh indoor air. In addition, they are frequently noisy, making them unsuitable for quiet office environments. Perform regular HVAC maintenance. HVAC systems require regular maintenance, including changing filters and regular tune-ups. You may need to bring in a service firm to do the required tune-up and to make sure the system is operating at peak efficiency. Changing the filters will improve efficiency and increase airflow. Once you have the equipment working efficiently, you should create and follow a regular maintenance schedule. You also might want to consider having your ducts cleaned, or at least inspected. If they contain mold, dirt or vermin, increasing the airflow through them actually might exacerbate your sick building problem. Install air cleaners or filters. If your business environment includes equipment that releases ozone or other air contaminants, you might want to install air cleaners or filters. OSHA recommends air cleaners for smoking areas, so if you provide an indoor smoking area, you should look into this option. You also might consider this as a solution for areas that include printers or copiers suspected of causing a problem or for doorways between manufacturing and office areas, where fumes and emissions may enter. This solution is best for smaller, more confined areas of a building. If you suspect your problem covers a large part of the building, this solution may not provide as much relief as installing HVLS fans that can cover a greater area more effectively. Open windows to improve natural air circulation. Many modern office and business buildings do not have windows that open. If you are lucky enough to have operable windows, consider opening them for at least part of the day to provide natural ventilation and a greater flow of fresh outdoor air. Do not open windows that face high-traffic areas, industrial areas, or areas that leave them vulnerable to rain or wet weather. Opening windows where these air quality hazards exist can do more harm than good as you seek to resolve your sick building issues. Choose interior materials carefully. Many modern building materials and interior furnishings emit harmful substances for months or years after installation. Choosing materials that emit harmful substances during a renovation may actually create a sick building issue where none existed previously, so it makes sense to take the time to choose wisely. Look for paints with low VOC ratings and carpeting or furniture made from natural materials or that do not have large quantities of noxious chemicals. The Carpet and Rug Institute and the Environmental Protection Agency worked together to create standards for these substances, so look for the conformance label when buying new carpets. EPA has worked with the furniture, building, adhesives and paint industries to create similar standards and certifications as a guide to consumers looking for the healthiest options. Conclusion Indoor air quality can have a profound effect on the health and productivity of your employees or building occupants. HVLS fans, mold remediation, and thoughtful selection of materials during renovations can help to clear up or prevent sick building syndrome problems.

Chapter 2 : The sick building syndrome

Sick-Building Syndrome From the WebMD Archives Pat B., a web designer in upstate New York, didn't think much of it when she got a sinus infection the first week at her new job.

Many people get confused when they hear for the very time the Sick Building Syndrome. Sick Building Syndrome refers to illnesses that occur because of spending long periods of time in well-sealed, poorly ventilated buildings that contain indoor air toxins. Too many cases have been reported that the Environmental Protection Agency approximates that one out of four new or renovated indoor buildings in the U. To eradicate this problem, many companies are searching for answers. Per the American Phytopathological Society , biological contaminants such as mold and pollen also contribute to indoor air pollution. History Nonspecific symptoms reported by tenants in newly constructed homes, offices, and nurseries were noted in the late s. Symptoms of the said illness were explained through early Danish and British studies. Poor indoor atmospheres concerned attention. Various physical and chemical factors in the buildings were examined on a broad front. Symptoms Headache, irritated throat, itchy eyes and nose, coughing, nausea, fatigue and poor concentration are the usual indications of the illness. As observed, the symptoms are generic and varied, which makes it especially tough to pinpoint sick building syndrome as the cause. One of the most alarming problems related to the illness is usually undiagnosed and untreated. A divulging sign are ailments that flare up when you are in a specific building and pass after you leave. When your colleagues or family members experience the same symptoms, then it is a great indication that the carrier of the illness has passed it on them. To avoid suffering from BRI, it is important to recognize the symptoms and address them as soon as possible. Who can be affected by Sick Building Syndrome? Although anyone can be affected by the illness, office employees in modern buildings without opening windows and with machine-driven ventilation or air conditioning systems are most at risk. If you have a routine work that involves you sitting in front of the computer or any other display screen equipment in an 8-hour shift, the probability of having the symptoms is much higher. It was also reported that women get a higher percentage of developing the symptoms of the illness for the reason that a larger population of women works in offices. What are the common environment this kind of illness? The syndrome seems to be linked with certain types of buildings. Most cases occur in open plan offices; however, some individuals also experience the symptoms if they are mostly in an area with a lot of people such as schools, libraries and museums. There have also been anecdotal reports of people experiencing symptoms such as headaches, tiredness and dizziness at home. Safety is always important. Make sure that you always clean your home and be familiar with the materials used when you have one build to void the symptoms. Make sure you have working smoke alarms fitted and that gas appliances, such as cookers and boilers, are regularly checked and maintained functional. Make it habitual to open the windows to allow you to ventilate your home naturally, and keep your home as dust-free as possible. Keeping the rooms free of clutter and in good decorative order will also help make your home a pleasant environment in which to live. Is there anything to do to prevent Sick Building Syndrome? Improve the inside quality of your homes or offices if you think you experience the symptoms presented related to this syndrome. By the time the building stops giving off toxins, your symptoms should also go away. However, you need to measure the scale of the problem. If it is too massive, then in-depth renovation of the building to remove large amounts of toxins is required. In some situations, an air purification system or even quick and simple methods may work. Nature has very powerful tools to clean the air. The natural negative ionization and UV waves from sunlight work wonders and opening the blinds to let in some rays is an easy achieve the benefits. Additionally, open the windows and doors frequently to maximize the effect. Minimize from using chemical sprays and deodorizers. There are natural alternatives for air fresheners, cleansers and other chemical toxins used to cleanse the home. Plant automatically remove harmful elements from the air Good choices of plants are peace lilies and dracaenas. Remember that you are removing toxins. Be it as natural as possible. In Conclusion Good awareness is always very important and can save you from adverse sufferings of the illness. Make others aware as well to minimize the increasing prevalence of the syndrome. If you think your working environment is making you ill, talk to

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your colleagues. By doing this, you can discover if there are also people in the same place who are experiencing the same symptoms as you do. Then, talk to your HR representatives and building personnel to identify the root cause of the problem. Take action and help solve the problem as early as possible and contact a Reputable Houston Mold Remediation and Inspection Company. Mold Removal Doctor Houston.

Sick building syndrome is a condition where many of a building's occupants come down with symptoms and signs ranging from nausea, headaches, dizziness, and fatigue to ear, nose, or throat irritation and rash.

Republish In early September , when the weather in Finland had begun to turn its back on summer and trudge towards winter, a woman prepared to leave her home in the suburbs of Helsinki. A lot of things, carrying a lot of memories, remained behind that closed door. We sit in the lobby of a hotel in downtown Helsinki, a few blocks from the apartment she lives in today. When she first moved, she bought a bed, a TV and a broken sofa from the previous tenant. For information about how we handle your data, please read our privacy policy. Check your email for a confirmation from us. The problems with her old house started in , when she began to get fevers and developed issues with her voice. A building company found high levels of mould in her basement. She says that, although she tried to get her house cleaned, the mould seeped its way into all her belongings. She began to feel so ill that she had no choice but to abandon her home. After leaving, her symptoms persisted and her health continued to deteriorate. She tells me she became highly sensitive to other buildings, minuscule levels of mould, and chemicals or smells. In a way, life was over. Other researchers have claimed there are psychological forces at play, that SBS is related to anxiety, dissatisfaction at home or work, or other mental conditions. Sick building syndrome was a common term in the s and s. It has since faded out of use in the USA, where I live, but continues to be studied and discussed in Nordic countries like Denmark and Finland. Family photos were salvaged and wrapped in plastic. They are going to make photocopies of them through their coverings. Jesse says he often has reactions at school. Sometimes he has to do his classwork in the hallways, away from other students. The doctors told them there was nothing wrong. Others are not so lucky. In , she got sick from her office where she worked in child services. She would get stomach pains, infections, high blood pressure – all medical issues she had never had before. In , mould was found in the building but, despite loving her work, she had already left the job. But being diagnosed with SBS in Finland does not open up access to support. No sick pay, nothing. No rehabilitation, no retraining in a new profession, no unemployment benefit. I was being left out without any rights at all, with nothing. Building-related health complaints began to rise shortly after. No study ever returned definitive results or caught a single compound red-handed making people sick. Focus turned from fleecy fabrics to allergens, and for a short time it was believed that indoor carpeting was the culprit. How else to explain that women are more likely to have SBS than men? In other words, no consistent pattern of all of the symptoms. In one of his cases, people felt ill only in the mornings between When the air was tested later in the day , nothing unusual was detected. Hedge eventually found a cause that explained the odd timing: In another case, a man had a tiny hole in his bed – which Hedge noted was a water bed. Water was seeping under the carpet and growing mould, causing the man to become ill. He found only a couple of mouldy oranges left in the desk of an employee on vacation. Smelly, but not dangerous. People who claim they have it say they can be intolerant to any chemicals or materials in any building. I ask Hedge to apply his standard line of inquiry: People can end up homeless, broke and feeling cynical about doctors and therapists alike, just like it has played out in Finland. They reinforce each other. And in the absence of that, all they have is their imagination. Her own experience began when she started getting frequent coughs, colds and flu-like symptoms in the summer of At first, she attributed them to her grandkids, whom she was babysitting on the weekends. But her health steadily got worse. She always felt tired, her voice would disappear and she would cough all the time. Was her thyroid damaged? Did she have HIV? I started to think about very unusual things. I am a doctor, but could not understand. Back at the hospital, it disappeared again and the coughing returned. Until, that is, her technicians found a large mushroom growing in the lab next to her office. Her boss told her that they would renovate, and that when she returned from sick leave she would work in a different office on a different floor, away from the lab. When she went back in January , her symptoms started up again. Doctors told her there was no logical explanation. It was so offensive. Anna says it was a wake-up call: She wanted to work, she loved her profession – but how can you have a job without being able to go into a building? Instead, she started to

research mould-related illness and its after-effects and to work out her rights. I ask her what she thinks about psychological treatment, which is often turned to in the absence of any confirmed physical cause. She is adamant in her answer: They need new apartments. A place to stay. A place where they can breathe. They are strong people, they have overcome such difficult situations. They need real help, real support. She is level-headed, forceful, clear and has a seemingly perfect memory. There is no doubt in my mind not to believe her, and the debate over mould illness and SBS seems ridiculous. They found a huge mushroom in her office, how could there be any dispute? I continued to think this about pretty much every mould sufferer I met: How could a real mould exposure be considered psychological? Anna says that one of the most upsetting parts of her illness was being disappointed by her own profession. And when I was in the position of a patient, nobody really wanted to help me. The first ones he saw came in the late s. They would be previously healthy, usually early middle-aged people who had started getting repeated infections. Now, in his retirement, he is returning to the mystery of those early patients. He is one of the few doctors in Finland who is willing to give mould patients a diagnosis, which he calls Dampness and Mould Hypersensitivity Syndrome. Valtonen defines five stages of the disease. First, a history of exposure to mould in water-damaged buildings, then an increase in infections. He says there is still hope for a mould-exposed patient with only SBS, because their symptoms will stay away if they avoid any source of mould or chemical that triggers them. He says many of his mould patients can no longer use mobile phones. Some develop chronic fatigue syndrome, unable to walk even 10 metres; others develop epileptic seizures, but show normal electrical activity in the brain when tested. His theory is that the illness involves an immunological reaction that combines with secondary infections. He was a turning point in their illness, a moment when they could finally get better, because he gave them a diagnosis. The most valuable thing he provides, I think, is his acceptance of the biological nature of their symptoms. Mikko is a mould patient they have cured. Before researching mould, Vaali studied food allergies and chronic fatigue syndrome “ she has an interest in diseases that others cast off as psychological, she says. She emphatically tells me that mould illness is actually related to mitochondrial damage, and that she has a candidate gene that could predict susceptibility. This is the moment when doubts begin to surface in my mind. It was easier to offer my belief, as Valtonen does, to the patients. I have yet to see any data and I want details. Has Vaali taken blood samples from patients? Could they see or measure mitochondrial damage in people with SBS? What, I ask, is the connection between immune system function and mitochondria? What are these miracle supplements?

Chapter 4 : Sick Building Syndrome - SBS condition information page | Patient

Sick building syndrome (SBS) is a medical condition where people in a building suffer from symptoms of illness or feel unwell for no apparent reason. The symptoms tend to increase in severity with the time people spend in the building, and improve over time or even disappear when people are away from the building.

An examination of 37 buildings throughout California found that all of the buildings had very ineffective filtering systems. Furthermore, many buildings failed to meet ventilation standards. Is it for lack of codes or lack of enforcement? Well, researchers called for regulators to implement more complete building inspections. It makes sense, symptoms of SBS are often direct causes for increased absenteeism and can also progress to situations of a class-action magnitude. Recently, the National Institute for Occupational Safety and Health was asked to evaluate a water-damaged office building where employees worked and reported respiratory problems, specifically airway irritation. Of course, symptoms were thought to be building related. Relocating everyone to better conditions, while repairs are made, is necessary to create a situation where respiratory health may improve. Well, surprisingly, a survey by the Finnish Institute of Occupational Health found that hospital staff experience indoor air-related symptoms more even often than office workers! Because of the unique environmental needs of hospitals, they recommended the development of a model for resolving indoor air problems. Every hospital should have a task force specifically created to address air quality problems. When a building lacks ventilation, harmful air pollutants build up to horrible levels and lead to respiratory and other problems. Alleviating the problem has to be, at minimum, a one-two attack. First, ventilation must be increased! Open the window, turn on a fan, consider an air exchange system! Second, reduce the sources of air pollution! As some pollutants are natural byproducts of nature skin dander, complete removal is difficult but you can make a world of difference by switching to organic cleaning products, only purchasing organic home furnishings and using non-toxic building materials. Using an efficient air purification system may also help purify your air and remove toxic invaders. Natural versions of Lysol may also be underway. Cedar leaf oil, from the Western red cedar, was evaluated in a Canadian Study as a safe cleansing agent for applications in buildings. Specifically, the alleviation of sick building syndrome. References 9 hinova D, Pieckova E. Moldy buildings, health of their occupants and fungal prevention.

Chapter 5 : What is Sick Building Syndrome? | Enviroklenz

The initial walkthrough should allow the investigator to develop some possible explanations for the complaint. At this point, the investigator may have sufficient information to formulate a.

The WHO has classified the reported symptoms into broad categories, including: The key to discovery is the increased incidence of illnesses in general with onset or exacerbation within a fairly close time frame—usually within a period of weeks. In most cases, SBS symptoms will be relieved soon after the occupants leave the particular room or zone. In some cases—particularly in sensitive individuals—there can be long-term health effects. Cause[edit] It has been suggested[by whom? In addition, pollution from outdoors, such as motor vehicle exhaust, can contribute to SBS. For example, higher light intensity was significantly related to skin dryness, eye pain, and malaise. In , in response to the oil crisis and conservation concerns, ASHRAE Standards and reduced required ventilation from 10 cubic feet per minute 4. Research has shown that SBS shares several symptoms common in other conditions thought to be at least partially caused by psychosomatic tendencies. Other members of the suggested group include Silicosis , Macrophagic myofascitis , Gulf War syndrome , Post-vaccination phenomena. The report concluded that the physical environment of office buildings appears to be less important than features of the psychosocial work environment in explaining differences in the prevalence of symptoms. However, there is still a relationship between sick building syndrome and symptoms of workers regardless of workplace stress. Specific work-related stressors are related with specific SBS symptoms. Workload and work conflict are significantly associated with general symptoms headache, abnormal tiredness, sensation of cold or nausea. While crowded workspaces and low work satisfaction are associated with upper respiratory symptoms. Transport, communication, healthcare, and social workers have highest prevalence of general symptoms. Skin symptoms such as eczema, itching, and rashes on hands and face are associated with technical work. Forestry, agriculture, and sales workers have the lowest rates of sick building syndrome symptoms. When comparing low ventilation rate areas of the building to higher ventilation rate areas, the relative risk of short-term sick leave was 1. Laminated flooring can cause more exposure to chemicals and more resulting SBS symptoms compared to stone, tile, and cement flooring. These can typically be identified, measured, and quantified. SBS does not have any known cure; alleviation consists of removing the affected person from the building associated with non-specific symptoms. BRI, on the other hand, utilizes treatment appropriate for the contaminant identified within the building e. In most cases, simply improving the indoor air quality IAQ of a particular building will attenuate, or even eliminate, the acute symptoms of SBS, while removal of the source contaminant would prove more effective for a specific illness, as in the case of BRI. Office BRI may more likely than not be explained by three events: History describes the action of continually monitoring and recording the health of workers experiencing BRI, as well as obtaining records of previous building alterations or related activity. Examinations go hand in hand with monitoring employee health. This step is done by physically examining the entire workspace and evaluating possible threats to health status among employees. Interventions follow accordingly based off the results of the Examination and History report. Using ozone to eliminate the many sources, such as VOC, molds, mildews, bacteria, viruses, and even odors. However, numerous studies identify High-ozone shock treatment as ineffective despite commercial popularity and popular belief. Replacement of water-stained ceiling tiles and carpeting. Only using paints, adhesives, solvents, and pesticides in well-ventilated areas or only using these pollutant sources during periods of non-occupancy. Increasing the number of air exchanges; the American Society of Heating, Refrigeration and Air-Conditioning Engineers recommend a minimum of 8. Proper and frequent maintenance of HVAC systems. Regular vacuuming with a HEPA filter vacuum cleaner to collect and retain Place bedding in sunshine, which is related to a study done in a high-humidity area where damp bedding was common and associated with SBS. A study published in the Journal Indoor Air gathered office-working participants to increase the scientific understanding of gender differences under the Sick Building Syndrome phenomenon. The study team found that across most test variables, prevalence rates were different in most areas, but there

was also a deep stratification of working conditions between genders as well. This information was similar to that found in previous studies, indicating a potential difference in willingness to report. Along with this, some studies have found that women have a more responsive immune system and are more prone to mucosal dryness and facial erythema. Also, women are alleged by some to be more exposed to indoor environmental factors because they have a greater tendency to have clerical jobs, wherein they are exposed to unique office equipment and materials example: Please improve it by verifying the claims made and adding inline citations. Statements consisting only of original research should be removed. August Learn how and when to remove this template message In the late s, it was noted that nonspecific symptoms were reported by tenants in newly constructed homes, offices, and nurseries. In media it was called "office illness". Early Danish and British studies reported symptoms. Poor indoor environments attracted attention. The Swedish allergy study SOU In the s, therefore, extensive research into "sick building" was carried out. Various physical and chemical factors in the buildings were examined on a broad front. The problem was highlighted increasingly in media and was described as a "ticking time bomb". Many studies were performed in individual buildings. In the s "sick buildings" were contrasted against " healthy buildings ". The chemical contents of building materials were highlighted. Many building material manufacturers were actively working to gain control of the chemical content and to replace criticized additives. The ventilation industry advocated above all more well-functioning ventilation. Others perceived ecological construction, natural materials, and simple techniques as a solution. At the end of the s came an increased distrust of the concept of "sick building". A dissertation at the Karolinska Institutet in Stockholm questioned the methodology of previous research, and a Danish study from showed these flaws experimentally. It was suggested that sick building syndrome was not really a coherent syndrome and was not a disease to be individually diagnosed. Thereafter, it has become increasingly less common to use terms such as "sick buildings" and "sick building syndrome" in research. However, the concept remains alive in popular culture and is used to designate the set of symptoms related to poor home or work environment engineering. Sick building syndrome made a rapid journey from media to courtroom where professional engineers and architects became named defendants and were represented by their respective professional practice insurers. Proceedings invariably relied on expert witnesses, medical and technical experts along with building managers, contractors and manufacturers of finishes and furnishings, testifying as to cause and effect. Most of these actions resulted in sealed settlement agreements, none of these being dramatic. The insurers needed a defense based upon Standards of Professional Practice to meet a court decision that declaredâ€”that in a modern, essentially sealed building, the HVAC systems must produce breathing air for suitable human consumption. ASHRAE empirical research determined that "acceptability" was a function of outdoor fresh air ventilation rate and used carbon dioxide as an accurate measurement of occupant presence and activity. Building odors and contaminants would be suitably controlled by this dilution methodology. ASHRAE codified a level of 1, ppm of carbon dioxide and specified the use of widely available sense-and-control equipment to assure compliance. This apparently ended the SBS epidemic. Over time, building materials changed with respect to emissions potential. Smoking vanished and dramatic improvements in ambient air quality, coupled with code compliant ventilation and maintenance, per ASHRAE standards have all contributed to the acceptability of the indoor air environment.

Chapter 6 : What is Sick Building Syndrome (SBS)? - Definition from Safeopedia

Sick building syndrome (SBS) is a name for a condition that's thought to be caused by being in a building or other type of enclosed space. It's attributed to poor indoor air quality.

Sick building syndrome is it the buildings or the people who need treatment? May 1, by Shayla Love, Mosaic In early September, when the weather in Finland had begun to turn its back on summer and trudge towards winter, a woman prepared to leave her home in the suburbs of Helsinki. Kirsti Paasikallio emptied her refrigerator, packed some clothes, her toothbrush, toothpaste and an iron, and left the house she had lived in for 34 years for good. A lot of things, carrying a lot of memories, remained behind that closed door. We sit in the lobby of a hotel in downtown Helsinki, a few blocks from the apartment she lives in today. When she first moved, she bought a bed, a TV and a broken sofa from the previous tenant. The problems with her old house started in, when she began to get fevers and developed issues with her voice. A building company found high levels of mould in her basement. She says that, although she tried to get her house cleaned, the mould seeped its way into all her belongings. She began to feel so ill that she had no choice but to abandon her home. After leaving, her symptoms persisted and her health continued to deteriorate. She tells me she became highly sensitive to other buildings, minuscule levels of mould, and chemicals or smells. In a way, life was over. Other researchers have claimed there are psychological forces at play, that SBS is related to anxiety, dissatisfaction at home or work, or other mental conditions. Sick building syndrome was a common term in the 1970s and 1980s. It has since faded out of use in the USA, where I live, but continues to be studied and discussed in Nordic countries like Denmark and Finland. Another member of the group, Alex Vinska, a slim year-old with dyed blond hair, tells me that he and his mum, Heli, also had to leave their home. Family photos were salvaged and wrapped in plastic. They are going to make photocopies of them through their coverings. Vinska says he often has reactions at school. Sometimes he has to do his classwork in the hallways, away from other students. The doctors told them there was nothing wrong. Others are not so lucky. In, she got sick from her office where she worked in child services. She would get stomach pains, infections, high blood pressure all medical issues she had never had before. In, mould was found in the building but, despite loving her work, she had already left the job. But being diagnosed with SBS in Finland does not open up access to support. No sick pay, nothing. No rehabilitation, no retraining in a new profession, no unemployment benefit. I was being left out without any rights at all, with nothing. Building-related health complaints began to rise shortly after. No study ever returned definitive results or caught a single compound red-handed making people sick. Focus turned from fleecy fabrics to allergens, and for a short time it was believed that indoor carpeting was the culprit. How else to explain that women are more likely to have SBS than men? In other words, no consistent pattern of all of the symptoms. In one of his cases, people felt ill only in the mornings between 7 and 9. When the air was tested later in the day, nothing unusual was detected. Hedge eventually found a cause that explained the odd timing: In another case, a man had a tiny hole in his bed which Hedge noted was a water bed. Water was seeping under the carpet and growing mould, causing the man to become ill. He found only a couple of mouldy oranges left in the desk of an employee on vacation. Smelly, but not dangerous. People who claim they have it say they can be intolerant to any chemicals or materials in any building. I ask Hedge to apply his standard line of inquiry: People can end up homeless, broke and feeling cynical about doctors and therapists alike, just like it has played out in Finland. They reinforce each other. And in the absence of that, all they have is their imagination. She has short sandy brown hair and is wearing a green sweater with a matching pendant. Tuuminen tells me there are thousands of people in Finland who are sick from indoor mould exposures, who have been told they are crazy, referred to psychiatrists, have lost their jobs, left vacant furnished houses and, in some cases, destroyed their homes. Her own experience began when she started getting frequent coughs, colds and flu-like symptoms in the summer of 1998. At first, she attributed them to her grandkids, whom she was babysitting on the weekends. You know kids, she tells me they always want to "puss," she says, puckering her lips and miming kisses in the air. But her health steadily got worse. She always felt tired, her voice would disappear and she would cough all the time. Tuuminen is a medical doctor and a specialist in clinical

microbiology, and at the time worked at Mikkeli Central Hospital. Was her thyroid damaged? Did she have HIV? I started to think about very unusual things. I am a doctor, but could not understand. Back at the hospital, it disappeared again and the coughing returned. Until, that is, her technicians found a large mushroom growing in the lab next to her office. Her boss told her that they would renovate, and that when she returned from sick leave she would work in a different office on a different floor, away from her bacteriology lab. When she went back in January, her symptoms started up again. Doctors told her there was no logical explanation. It was so offensive. Tuuminen says it was a wake-up call: And the technician said to me, "No, you are not breathing well. She wanted to work, she loved her profession" but how can you have a job without being able to go into a building? Instead, she started to research mould-related illness and its after-effects and to work out her rights. I ask her what she thinks about psychological treatment, which is often turned to in the absence of any confirmed physical cause. She is adamant in her answer: They need new apartments. A place to stay. A place where they can breathe. They are strong people, they have overcome such difficult situations. She is level-headed, forceful, clear and has a seemingly perfect memory. There is no doubt in my mind not to believe her, and the debate over mould illness and SBS seems ridiculous. I continued to think this about pretty much every mould sufferer I met: How could a real mould exposure be considered psychological? Tuuminen says that one of the most upsetting parts of her illness was being disappointed by her own profession. And when I was in the position of a patient, nobody really wanted to help me. Ville Valtonen, a bald year-old in a pressed coat and a dark cap, waves me over to his car. The first ones he saw came in the late s. They would be previously healthy, usually early middle-aged people who had started getting repeated infections. Now, in his retirement, he is returning to the mystery of those early patients. He is one of the few doctors in Finland who is willing to give mould patients a diagnosis, which he calls Dampness and Mould Hypersensitivity Syndrome. Valtonen defines five stages of the disease. First, a history of exposure to mould in water-damaged buildings, then an increase in infections. Finally, an enhanced scent sensitivity, meaning a person is extremely sensitive to the smell of moulds, "a hundred-fold more accurate than normal," he says. He says there is still hope for a mould-exposed patient with only SBS, because their symptoms will stay away if they avoid any source of mould or chemical that triggers them. He says many of his mould patients can no longer use mobile phones. Some develop chronic fatigue syndrome, unable to walk even 10 metres; others develop epileptic seizures, but show normal electrical activity in the brain when tested. His theory is that the illness involves an immunological reaction that combines with secondary infections. He was a turning point in their illness, a moment when they could finally get better, because he gave them a diagnosis. The most valuable thing he provides, I think, is his acceptance of the biological nature of their symptoms. Before researching mould, Vaali studied food allergies and chronic fatigue syndrome" she has an interest in diseases that others cast off as psychological, she says. She emphatically tells me that mould illness is actually related to mitochondrial damage, and that she has a candidate gene that could predict susceptibility. This is the moment when doubts begin to surface in my mind. It was easier to offer my belief, as Valtonen does, to the patients.

Chapter 7 : Sick Building Syndrome: Is Your Office Making You Sick?

Sick Building Syndrome (SBS) is a widespread problem. Factors such as poor ventilation and poorly maintained structures can lead to biological and chemical contamination and a host of health problems for the buildings occupants.

You might be able to work with your employer to eliminate possible risk factors. This way, you can get to the source of the problem. How is sick building syndrome diagnosed? Diagnosing SBS involves a process of elimination. Your doctor will rule out other conditions that could mimic sick building symptoms, such as a cold, asthma, or allergies. They will also ask you about your work and home environment. You may consider keeping a journal to record your symptoms. Write down when and where they start, as well as when they go away. Also, be as specific about your symptoms as you can. How is sick building syndrome treated? SBS is primarily treated by alleviating symptoms while reducing your exposure to the causes of these symptoms. Allergy medications can help alleviate itchy eyes, nose, and skin. Over-the-counter options, such as Benadryl and Zyrtec, are widely available. Asthma medications may be needed for wheezing and other breathing difficulties. These may include long-term medications, such as leukotriene modifiers or an inhaler for acute symptoms. Some steps to treat SBS can also be taken by employers. You or your boss may consider the following: Use cleaning products with low fumes and no fragrances. Vacuum regularly to remove dust. Change out air filters every couple of months or more, if necessary. Find the right humidity – NHS Choices recommends an optimal humidity level of 40 to 70 percent. Get a test for possible indoor mold or fungus. Update computer monitors and other display systems. Change lights as needed. What is the outlook for sick building syndrome? The symptoms of sick building syndrome most often get better once you leave the hazardous building in question. In some cases, long-term exposure to poor indoor air quality can lead to lung diseases, such as asthma. Unfortunately, you may not be able to tell if an indoor space has poor air quality factors that can make you feel sick. Still, you may be able to take preventive measures to reduce your risk of SBS. You can help decrease your own risk factors for sick building syndrome by:

Chapter 8 : Sick Building Syndrome: What It Is and Tips for Prevention -- Occupational Health & Safety

The term "sick building syndrome" (SBS) is used to describe situations in which building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, but no specific illness or cause can be identified.

Oil and gas fumes Symptoms Related to Sick Building Syndrome Common symptoms of sick building syndrome include headache, irritated throat, itchy eyes and nose, coughing, nausea, and fatigue. As you can see, the symptoms are generic and varied, which makes it especially difficult to pinpoint sick building syndrome as the cause. One of the most problematic issues related to sick building syndrome is that it often goes misdiagnosed and untreated. Many people assume their illness is the result of a "bug" and fail to consider their home or workplace is the cause. A telltale sign are ailments that flare up when you are in a specific building and pass after you leave. Another indication is if your colleagues experience similar issues. To avoid suffering from BRI, it is important to recognize the symptoms of sick building syndrome and address them quickly. If you think your home or office may be causing sick building syndrome, you need to improve the quality within. Once the building stops giving off toxins, your symptoms should go away. Sometimes this is easier said than done, and, depending on the scale of the problem, might require a massive renovation and replacement of toxic building materials with non-toxic replacements. In some situations, an air purification system or even quick and simple methods may work. Nature has very powerful tools to clean the air. The natural negative ionization and UV waves from sunlight work wonders and opening the blinds to let in some rays is an easy way to reap those benefits. Additionally, open the windows and doors and let the ozone and negative ions help remove toxins from the air. Avoid toxic room sprays and deodorizers. There are natural alternatives for air fresheners, cleansers and other chemical toxins used to cleanse the home. Live plants can absorb toxins right from the air! Good choices of plants are peace lilies, golden pothos, and dracaenas. Have you dealt with sick building syndrome? How did you solve the problem? Leave a comment below and share your experience with us. References 2 American Phytopathological Society. ScienceDaily, 8 February Information and statements made are for education purposes and are not intended to replace the advice of your doctor. Global Healing Center does not dispense medical advice, prescribe, or diagnose illness. The views and nutritional advice expressed by Global Healing Center are not intended to be a substitute for conventional medical service. If you have a severe medical condition or health concern, see your physician. Plants are the best solution for purifying your indoor air but NASA found out: If you want to get the full air purifying benefit of a plant, the dirty air has to pass by the roots. Therefore it was about time to re-invent the plant pot. As a result, plants that grow in this pot can absorb pollutants up to 8 times as much as in conventional plant pots. That means that one plant is able to purify a room of 25 square meters within a day. And all you need to do for maintenance is to up the water reservoir every two to three weeks. I need to speak with someone who can help. Please, if anyone can help me. My email is aniaadderley yahoo.

Chapter 9 : Are You Suffering from Sick Building Syndrome?

Sick building syndrome is believed by some to be an illness caused by unknown agents in buildings. Sick building syndrome is a controversial subject because many experts do not think it is a true syndrome.

By Chris Woolston Workers have fallen sick in buildings ranging from libraries and hospitals to offices, and some of them say poor indoor air is to blame. Complaints are especially common in newer, energy-efficient buildings where windows are sealed shut and fresh air is scarce. Of course, sometimes indoor air is actually better than outdoor air, depending on pollution levels. But in other cases employees are working in a sort of low-level chemical stew -- an unwelcome byproduct of our industrialized environment. Employees in high-rises, particularly those over parking garages or loading docks, may breathe in carbon monoxide carried into the building through the fresh-air-intake vents. If smokers are chatting outside next to an air intake vent, workers inside the building may even inhale secondhand smoke through the ventilation system. Printers and fax machines emit ozone, which may combine with other organic chemicals in the workplace. Exterminators spray pesticides that may linger for days in the carpet. Cleaning products sprayed on walls and floors at night add to the mix, as do copy machines, which emit ozone and are frequently unvented. Revolving doors suck in car exhaust and cigarette fumes from people smoking outside; building renovations throw in construction dust, paint fumes, and "off-gassing" fumes from new carpets. The American Society of Heating, Refrigerating, and Air Conditioning Engineers recommends that ventilation systems pump in 20 cubic feet of fresh air per minute for every person in office spaces. In many cases, however, building operators pump in only 5 cubic feet -- giving the building air the appeal of a long-distance plane flight. The difference is, a long-distance flight lasts only a few hours, while you may spend up to 10 hours a day at work breathing bad indoor air. Building-related diseases As experts began tackling "sick buildings," they soon found two completely different types of problems: Building-related diseases are distinct maladies that can be traced to a specific cause, such as colds that spread through an office, allergies and asthma brought on by dust or mold, or even cancer triggered by pesticides or asbestos. Perhaps the best-known case of building-related infection occurred in , when cases of a mysterious pneumonia struck members of the American Legion attending a conference in Philadelphia. It took months of investigation and lab work to uncover the culprit: When mists from that water are conducted into a building via the ventilation system, researchers found, mass illness can result. Another building-related disease caused by *Legionella* is Pontiac fever, marked by fever, chills, headaches, and body aches. Does that mean if you have fever, chills, headache, and body aches you should assume that *Legionella* is the culprit? Most illnesses in the workplace are simple cases of the flu or colds. If you suspect that something in your work environment may be to blame, ask your human resources representative to talk to the building manager about having the building inspected. If others in your work area are ill as well, document your symptoms, including when and where they occur. Building-related asthma, for example, can cause permanent damage to your health -- and lost productivity and increased health costs for your employer. Investigators should check for water damage and humidifiers contaminated with microbes, which may contribute to work-related asthma and hypersensitivity pneumonitis, according to work-health specialists Mark Cullen and Kathleen Kreiss, who discuss indoor air pollution in the textbook *Occupational Health* Lippincott, Cullen and Kreiss suggested that researchers should also look into specific toxins as possible causes -- nausea and headaches suggest carbon monoxide may be sneaking into the building through the air-duct system, for example, from trucks idling outside. Mysterious itching may be caused by exposure to fibrous glass from an air-duct lining. And relentless coughing and throat irritation may be the end result of harsh or improperly used carpet cleaners. Sick building syndrome More common than illnesses with a traceable cause, however, are complaints of "sick building syndrome" -- a constellation of symptoms that usually includes fatigue, headache, dry, itchy skin, and irritation of mucous membranes in the eyes, nose, and throat. Unlike building-related diseases, these symptoms tend to disappear once people are out of the suspect building. In some people, the constant exposure of working in a sick building can trigger sensitivities and auto-immune conditions that are difficult to treat. In some cases, the symptoms are so severe that a person can no longer work at the building in question. Nobody

knows for sure why so many people are getting sick: Is it really the air, or is it something else? Some researchers have speculated that sick building syndrome is related to the energy crisis of the 1970s, which resulted in highly insulated "tight buildings" and a lowering of ventilation standards to 5 cubic feet of outdoor air per person per minute. Or perhaps small impurities in the air are adding up to something big. As explained in an article in *The Lancet*, a British medical journal, tiny amounts of chemicals escaping from paints, carpets, office supplies, photocopiers, and other sources may be combining to make the air hazardous. Still other experts believe the epidemic of sick building syndrome may be linked to easily fixed factors like poor lighting. John Rekus, a Baltimore-area safety consultant and contributing editor to *EHS Today*, says many of the symptoms are really caused by simple problems with heat, humidity, and light. As a case in point, Rekus mentions an office he once visited in which almost everyone had headaches --and where almost everyone blamed bad air. Noticing a striking glare on the computer screens, he turned off half of the fluorescent lights buzzing overhead. Within days, the headaches disappeared. Some reports of sick building syndrome have been linked to another great epidemic of our times -- job stress, according to Cullen and Kreiss. Anybody who spends all day doing tedious work and sparring with bosses and coworkers is bound to feel terrible, fumes or no fumes. Whether the main problem is stress or bad air, employers have to realize their employees are suffering real symptoms -- and sick employees are never good for business, says Rekus. If something is wrong with the building -- if, say, the fresh-air vent really is pumping in carbon monoxide or tar fumes -- companies should do whatever it takes to clear the air, he says. Employees can do their part as well. The Environmental Protection Agency has these tips to help keep the air in your workplace as fresh as possible: Get rid of garbage promptly to prevent odors and biological contamination. Keep perishable food in the refrigerator, and clean the refrigerator out frequently to prevent odors and mold. Keep eating areas clean to avoid attracting pests. Cockroaches have been linked to respiratory problems -- according to the EPA, certain proteins in cockroach droppings and saliva can cause allergic reactions or trigger asthma symptoms. If you or your coworkers are having health problems that you think may be related to your office environment, work with your HR representative and building personnel to find the cause of the problem. An Introduction for Health Professionals.