

Ear, Nose & Throat Problems, Monday Blues, and the Sick Building Syndrome

Copyright 2007 by Dr Kevin Soh
Senior Consultant
Ear Nose & Throat Partners
#07-02, Mt Elizabeth Medical Center
3 Mt Elizabeth
Singapore 228510
Tel: 6887-4385, 9093-3584, Fax: 6887-4291
Email: kevinsoh@singnet.com.sg
Web: <http://www.nosesinus.com>

"I've been having headaches, stuffy nose, cough, itchy eyes and sore throats for months for no apparent reason. I wake up in the morning and I'm fine. But at about 10.00 am every day, my eyes start to water, I sneeze continuously, and my throat is sore."

Celine has been having these complaints since she started work in a plush new office six months ago. Her new office is luxuriously adorned with wall-to-wall carpeting. The smell of freshly installed wallpaper greets her as she gets into her office every morning.

She loves her job, but her symptoms at work are causing her a great deal of concern. She has consulted her regular physician and several specialists but no solution has been found for the complaints.

However, while on vacation in Phuket over the Christmas holiday season, she noted that her symptoms disappeared miraculously. She also noticed that her symptoms normally improved over the weekends, but returned like clockwork the instant she stepped into her office on Mondays.

She wonders, "Could my symptoms be due to stress or something in the air at work?"

The Arab Oil Embargo

The 1973 Arab Oil Embargo was the first oil supply disruption to cause major price increases and a worldwide energy crisis. The acute shortage of oil sparked off a frenzied search for new energy sources and better ways to use energy more efficiently.

One of the consequences was the creation of energy efficient buildings that recycle air instead of taking in outside air. These buildings were designed to be "tight" in order to reduce energy requirements.

So what do Celine's new symptoms have to do with the Arab Oil Embargo?

The energy crisis

The Arab Oil Embargo and energy crisis spurred the construction of energy-saving buildings in an effort to reduce the reliance on oil. These buildings saved energy by blocking off natural ventilation and using recycled air.

The advances in material science worsened the situation created by inadequate ventilation. New and novel chemicals were being produced and utilized in the construction, insulation and furnishing of modern energy-efficient buildings.

These new materials may emit gases, irritants and particulate matter that are toxic to the occupants of the building.

Short duration and infrequent exposures to small quantities of these substances will not result in any adverse health effects.

However, when the exposures are long-term and cumulative, and when different compounds act synergistically with one another, the toll on human health becomes more profound.

Because we spend 90% of our time indoors, either at home, in the car or in the office, our exposure to these indoor pollutants can be significant enough to cause health problems.

What can bad indoor air do to you?

Exposure to various pollutants in a poorly ventilated environment can give rise to a range of symptoms, like headache, poor concentration, fatigue, drowsiness, and muscle tension.

The symptoms may resemble a common cold, allergy or flu. Nasal stuffiness, sinus problems, sore throat and chronic cough induced by bad air may be indistinguishable from a common cold or flu. The eyes may get irritated, and cause problems with the use of contact lens. Asthmatic patients may get flare-ups.

In the early stages, the symptoms develop only during exposure to the work environment. These symptoms improve during the weekends away from work.

However, with the passage of time, the problem becomes more chronic and persistent. The symptoms may then need more than just a weekend to resolve. Up to a week's vacation away from the offending environment may be required for the problem to disappear completely.

When this happens, it becomes increasingly difficult to make an association and to see the relationship between the symptoms and the office environment.

Bad air affects productivity, performance and profits

Bad air from sick buildings is a major public health problem. A 1984 WHO report estimated that indoor pollution is present in 30% of new or remodeled buildings. A strong relationship exists between work environment and performance, and between facility and productivity.

Indoor air pollution can negatively impact company performance by causing increased absenteeism, job dissatisfaction, reduced productivity and increased medical costs.

In the US, there is an increasing trend of litigation against employers and companies that fail to rectify the problems caused by poor indoor air quality.

Some of the toxic chemicals in the indoor environment are known carcinogens. It is presently not known how many cancers develop as a result of chronic low-dose exposures to these pollutants.

What causes the sick building syndrome

Many types of pollutants can affect indoor air quality. They include:

1. Micro-organisms: Viruses and bacteria that cause infections.
2. Allergens: Moulds and fungi that cause allergies.
3. Particulate matter
4. Irritants and carcinogens: Cigarette smoke that can cause cancer.
5. Volatile organic compounds (VOCs): Formaldehyde, pesticides, cleaning agents, adhesives.
6. Gases: Carbon monoxide that sabotages the oxygen-carrying ability of blood.
7. Ergonomic factors: Humidity, lighting, temperature, noise, over-crowding.
8. Psycho-social factors: Stress, depression, job dissatisfaction, poor work relationships, worker morale.

Some people react badly to air-conditioning

Studies have shown that the occupants of an air-conditioned building are more likely to perceive poor indoor air quality and to develop symptoms. This is because air conditioning systems that are poorly designed, constructed or maintained can harbor the growth of bacteria and fungi. The ventilation systems may also distribute pollutants from one location to other parts of the building.

Air-conditioning systems should maintain indoor humidity at the optimum of between 30% to 60%. If indoor humidity is too high, moulds and house dust mites will proliferate and cause allergies in those who are sensitive. On the other hand, humidity levels below 30% will dry the lining of the nose and mouth, and increase susceptibility to common colds and flu.

A dry mouth (seen in people who breathe through their mouth) can also cause discomfort and irritation.

Office equipment can be a risk factor!

The next time you use the photocopier, fax machine, printer, correction fluid or adhesives, think again. The emissions and gases they produce could be the cause of your health problems. Unbelievable but true!

Research shows that many types of office equipment produce volatile organic compounds (VOCs), gases that are released by certain solids or liquids at room temperature. When they are inhaled, they produce irritation and inflammation of the lining in the nose and throat.

In poorly ventilated buildings, VOC concentrations may reach more than 10 times compared to the outdoor environment.

New wallpaper coverings, paint, carpets and newly printed materials emit VOCs in large quantities. Renovations carried out during office hours will expose many office workers to the irritant effects of VOCs. New buildings that have not been adequately aired will also contain large amounts of VOCs.

Expensive textured furnishings facilitate house dust mite and fungal growth!

Materials like carpets and thick curtains are safe havens that harbor house dust mites. Damp and moist places like leaked roofs, wet carpets and rooms with high relative humidity facilitate the growth of fungi and moulds. Together they are potent causes of allergies.

People with nose problems or asthma will experience deterioration in their symptoms when exposed to such environments. Sweeping or vacuuming with a normal filter will stir up fine particles into the air. These air-borne borne

particles are more easily inhaled into the lungs. Ideally vacuum cleaners should be fitted with a HEPA (high efficiency particulate) filter that is able to trap the fine particles and prevent them from dissipating into the air.

What should I do if I have symptoms of sick building syndrome?

The first step is to ascertain that your problem is not due to some other medical illness. Coughs and sore throats may be due to tonsillitis. Facial pains may be due to sinusitis. Chronic headaches may be due to sleep deprivation and sleep apnea syndrome.

Next, form a hypothesis. Make an intelligent guess as to what the offending factors might be.

The sick building syndrome is caused by a multiplicity of influences that act in concert to produce the final symptom complex. A comprehensive approach is therefore required in order to cast a wide net in identifying all offending agents.

If it is because of recent renovation works in the building, then hopefully, the problem will subside spontaneously with the passage of time as the VOCs dissipate away.

If the air-conditioning system is perceived to be the problem, then get it serviced. If people are smoking in the building, lobby for a ban on smoking in the building.

Medications can help

Although the best strategy for alleviating sick building syndrome is to eliminate the offending agents, the judicious use of appropriate medications will offer a useful respite from the discomfort of the illness.

New generation steroid nasal sprays that are safe and effective are available. They can be used to down-regulate the inflammation and discomfort caused by environmental irritants.

Modern new classes of antihistamines are useful in reducing the itch and watery runny nose that many sufferers experience, without causing sedative side-effects.

It is very useful to confirm or exclude a diagnosis of allergy to house dust mite or fungi by performing a blood or skin test. Proper avoidance and environmental control measures can then be put into place once the offending cause has been properly identified.

The mind and psychology

Many scientists are now beginning to recognize that the sick building syndrome is not only caused by physical factors like poor indoor air quality, inadequate ventilation, and exposure to toxic chemicals.

The psychological aspects are just as important. Workers who are under stress and unhappy with their jobs, experience job dissatisfaction, or feel unchallenged by their work (i.e. they are simply bored to death by their work) are more likely to suffer from the sick building syndrome.

This is because unhappy workers are more intolerant of the little imperfections in ergonomic design or air quality in their offices. They are also more perceptive of their symptoms, and are more likely to vocalize and complain about their problems.

Psychological factors, human resource considerations and management-union issues have to be addressed in tandem with air quality, ventilation and the medical aspects of the problem.

Think again.....!

So the next time when you have a sinus problem that keeps creeping back after an initial period of improvement with medications or surgery, think again, maybe it is caused by what you are exposed to at work.