

*“Everyone has the right to a standard of living  
Adequate for the health and wellbeing of themselves and their family...  
including housing”*

*Universal Declaration of Human Right, Article 25*

## **COLD, DAMP AND MOULD**

***“Compared to housing in other OECD countries, New Zealand housing is inadequately heated and unusually cold”***

THE World Health Organisation (WHO) recommends a minimum indoor temperature of 18°C. New Zealand houses are cold. The temperature in almost a third of New Zealand homes is below WHO recommendations.

Older people often do not notice temperature changes as quickly as younger people. Below 12°C, cold hands and feet and slight lowering of core temperatures can create a short-term rise in blood pressure which is dangerous for older people.

Considering the BRANZ Household Energy End-Use Project (HEEP) from 2002 found that average house temperatures in New Zealand do not seem to have risen since the 1970s. The mean temperature in Auckland houses was 16.5°C. The un-insulated houses were on average 1.4°C colder. Neither of these are up to the standards of the WHO recommendation of 18°C.

Does this mean that insulation is not entirely doing what the authorities want? An increase of only 1.4°C once they have insulated the homes, I feel this needs to be thought through far more than just wrapping the houses up with double glazing and insulation.

### **Cold, damp, mould and Health**

Dampness and cold are a very common health hazards in any housing.

“A damp dwelling is more difficult and expensive to heat and a poorly heated and ventilated dwelling is more susceptible to damp. Cold air has a higher relative humidity, increasing the risk of condensation indoors and providing a more favorable environment for the growth of moulds and micro-organisms.”

The more people we put into each house the more likely it is to be damp, especially if poorly ventilated or closed while the occupants are at work or away. Portable, unflued gas heaters, common in New Zealand homes, carry their own health risks. In poorly ventilated houses, moisture from cooking, drying and cleaning will condense as dampness. Occupants of damp houses are more likely to be ill with a wide range of medical symptoms, regardless of smoking, income or over crowding.

***“Poor ventilation in my house causes the asthmatic person to constantly have asthma attacks.”***

Children living in damp houses are more likely to have respiratory problems, fevers, sore throats, headaches and skin problems than those in dry homes. Adult symptoms include nausea, vomiting, constipation, blocked noses, breathlessness, backache, aching joints and fainting. Elderly people are more vulnerable.

Dust mites, tiny parasites that live in carpets and mattresses, are an asthma trigger. Dust mites need moisture to breed and rarely survive under 50% humidity. Asthmatics who live in damp housing have more asthma attacks, use more asthma drugs and have to go to the hospital more often.

***“.. insulating and ventilating all houses will more than pay for itself by improving people’s health and saving electricity.”***

***“Indoor temperatures under 16°C significantly increase the risk of respiratory infections.”***

Damp houses encourage the growth of moulds and fungi, which are strongly associated with respiratory problems and asthma.

Everyone is exposed to some mould spores every day, **but in large numbers** mould spores usually cause health problems. A third of New Zealand households reported visible mould in a 2002 national survey.

www.EasierVentilation.co.nz

Mould can produce allergic reactions, respiratory problems, nose and sinus congestion, eye or throat irritation and skin rashes. People who already have asthma are at greater risk, as even a small number of spores could trigger an asthma attack. Certain types of greenish-black moulds produce toxins that cause coughing, runny nose, burning sensations in the mouth or nose, nose bleeds, headache, fatigue and skin irritation at the site of contact. There are few standards for judging acceptable quantities of mould; it is usually measured by the size of visible mould patches. Active mould is easily smelt. One study found the amount people worried about mould affected their reporting of respiratory symptoms.

“Like the mould’s black marks on the wall, in the bedrooms and that, cos it smells.”

Cold houses have been associated with poorer general health and increased use of health services. Indoor temperatures under 16°C significantly increase the risk of respiratory infections. One study of 1,376 South Auckland children in Pacific families found that more than half had cold homes and 37% reported damp, which were associated with asthma and probable depression for the mothers. New Zealand has greater seasonal fluctuations in death rates, particularly in those aged over 65, than countries with more extreme climates. More than four out of five deaths at home from a drastic drop in body temperature (hypothermia) are in people over 65. One Auckland study found that cold stress was the dominant climatic factor in cardiovascular deaths.

Concern about family health in a damp and mouldy home, a reluctance to receive guests, and the cost of repairs can cause emotional distress. Women are more likely than men to be emotionally upset due to disturbed sleep and frustration from trying to keep a mouldy house clean and organise repairs.

## Occupant behaviour

People’s actions can be as important as the construction of the house in making homes damp. Drying wet clothes outside and ventilating a house correctly will lower the level of dampness in the home compared to an identically built house where people do none of these things.

A series of Otago hui in 1998 found that many residents did not understand the importance of insulation and ventilation. Some people did not know how to use heaters or set temperatures.

The importance of ventilation to reduce dangerous levels of carbon monoxide from unflued gas heating was not widely known.

The British Medical Association concluded in a major report:

**“A warm, damp free healthy indoor environment requires properly planned ventilation, heating and insulation. Strategies that do not address all three factors are unlikely to succeed.”**

## Recommendations to all home owners and landlords

- \_ Investigate retrofitting of **complete ventilation** and **insulation** in all houses.
- \_ Improve housing standards, including **complete ventilation, extraction fans and good insulation**.
- \_ Require all properties to display an energy-efficiency warrant of fitness or rating before being rented out or sold.
- \_ Apply building regulations about **ventilation** and **insulation** retrospectively to all houses and private landlords.
- \_ Use **complete ventilation, solar energy** and **passive solar building design** rather than building houses off the ground.

### *A couple of things to think about*

Imagine a cardboard box slightly damp and put out in the sun, it will dry out, and the moisture evaporates into the atmosphere. Now imagine the same cardboard box, it has been dampened in the same manner but is wrapped up to keep the heat in, this also keeps the moisture in. It is now put out in the sun, the box takes longer to warm up but once warm it also takes a lot longer to cool and the moisture cannot escape.

The enclosed box will decay as there has been no dry air passing through it to remove the offending moisture. Ultimately the box will have a far shorter life expectancy than the one the got damp but also was dried out.

Now for an interesting observation, place two bowls in front of you, fill one with water and allow the water to become room temperature, please use a thermometer to confirm, if you leave this to feel it will never happen. For explanation purposes I’ll use 20°C as the temperature of both the room and the water.

Now place your hand in the bowl of room air, that's what 20°C feels like when there is little if any moisture in it. Now place your hand in the bowl of water (also 20°C) how does that feel? It should, feel cold as your skin temperature is around 28-32°C and the water is busy dragging the heat out of your skin making your skin cold. As an example that most of us have experienced, public swimming pools, the water temperature is shown as being 22°C and we think great it'll be warm water but when we jump in it feels very cold, this is a practical example of the description above.

[www.EasierVentilation.co.nz](http://www.EasierVentilation.co.nz)

EasierVentilation.co.nz