Health Effects of Cold Homes

We've all heard that a warm, dry home is a healthy home, but how warm does it need to be? How warm are New Zealand homes, generally? How can living in a cold indoor environment affect your health? Below what temperature are adverse health effects likely? Azwood Energy has looked at the most recent research to find the answers to these questions.

Earlier this year, the World Health Organisation, (WHO), released a report[1] that provides evidence-based recommendations relevant to indoor temperatures, amongst other aspects related to housing. The guidelines highlight the increasing impact of housing conditions on human health.

University of Otago Professor of Public Health, Philippa Howden-Chapman, who chaired the group responsible for the report, said, "The guidelines are a world first and bring together the most recent evidence to provide practical recommendations on how to improve housing conditions. We are hopeful the guidelines will assist in helping to turn around the type of preventable health costs identified in this latest research."

[1] Healthy housing for a sustainable and equitable future – the WHO Housing and Health guidelines, p31 Low indoor temperatures section, https://apps.who.int/iris/bitstream/handle/10665/276001/9789241550376-eng.pdf?ua=1

Negative Effects

The section of the report that looks at low indoor temperatures and insulation highlights the health implications of cold air, noting it inflames lungs and inhibits circulation. This increases the risk of respiratory conditions and infection. It also causes stress to the circulatory system, which can affect cardiovascular health.

Professor Howden-Chapman notes that being cold stresses the immune system, too, making it harder to fight off those winter viruses. Shivering to generate heat makes the muscles work harder, stressing the cardiovascular system. “We know that being cold has an impact on older people’s circulation in particular, because the blood gets more viscous and is more likely to form plaques, and people are more likely to have atrial fibrillation, or stroke and malfunctioning of their heart.”[2]

The WHO report found that cold indoor temperatures have been associated with increased blood pressure, asthma symptoms and poor mental health. Cold homes contribute to increases in deaths and disease. It is estimated that in New Zealand 1600 additional people die each winter, with respiratory and cardiovascular disease highly prevalent in these alarming statistics. Elderly people, children and those with long-term illnesses are particularly vulnerable, (they spend relatively more time indoors).

The Real Costs

A recent New Zealand study[3] found that preventable injuries and hospitalisations due solely to poor housing conditions could be costing more than $145 million a year in ACC claims and hospitalisation costs. It found that homes that were damp or mouldy caused more than 35,000 nights in hospital with an associated cost of around $35 million. An insulation subsidy programme in New Zealand, similarly, found reduced hospitalisation costs due to fewer re-admissions, fewer transfers and shorter stays in hospital.

Ministry of Health statistics show 6,000 children are admitted each year for 'housing-sensitive hospitalisations' and are nearly four times more likely to be re-hospitalised and 10 times more likely to die in the following 10 years.

[2] As quoted in https://www.noted.co.nz/currently/social-issues/1600-deaths-attributed-to-cold-houses-each-winter-in-new-zealand/

[3] Study by He Kainga Oranga, the Housing and Health Research Programme, which examines the links between Housing and Health.

What's the Best Temperature

The WHO report found that warming cold homes will have significant health benefits. It said current evidence was insufficient to establish a temperature below which adverse health effects are likely to occur but noted that a minimum of 18 °C is widely accepted. It found a higher minimum indoor temperature, up to 24°C, may be necessary for vulnerable groups including older people, children and those with chronic illnesses, particularly cardiorespiratory disease.

Massey University's environmental health specialists[4] agree that cold and damp housing can worsen asthma symptoms,[5] is associated with an increased risk of asthma development, respiratory tract infections and may contribute to excess winter deaths. They advise indoor temperatures below 16°C increase the risk of respiratory infections, and below 12°C stress the cardiovascular system.

A Country-wide Issue

A 2006 study found that New Zealand homes are cold compared to temperatures expected in other temperate climates. The average winter evening temperature is 17.9°C, but it can be as low as 10°C.[6]

As part of its Healthy Homes Standards, from July 2021, the Government will require rental homes to have a heater that can heat a main living area to 18°C, (as well as underfloor and ceiling insulation).

At just 13-20 cents per kilowatt hour to run, your pellet fuel burner is a clean, sustainable, energy and cost-efficient form of heating. Its thermostat and timer options allow you the convenient, adjustable flexibility you need to maintain your home at an optimal heat for your optimal health.

For more information on Azwood Energy, visit www.azwood.co.nz

[4] Environmental Health Indicators New Zealand (EHINZ) team is a research and consultancy group, specialising in environmental health information.
[5] WHO modelling, based on a NZ trial involving children with asthma, found that every 1 °C increase in room temperature was associated with a small but significant increase in lung function.
[6] Winter Temperatures in NZ Houses, http://www.branz.co.nz/cms_show_download.php?id=8478d968515ad24b90d44165b95ee3f04e796a10