

Hot and bothered: heat affects all of us, but older people face the highest health risks

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Credit: Mikhail Nilov from Pexels

Australian summer temperatures have risen by [1.66°C over the past 20 years](#). In the past century we've seen a significant increase in the [number, intensity and duration of heatwaves](#) during our summers.

Heat is the natural hazard associated with the [highest mortality in Australia](#). When heatwaves occur, the death toll routinely reaches [into the hundreds](#). For example, the 2009 heatwave across southeast Australia resulted in close to 500 deaths.

Heat is more likely to endanger the health of people with pre-existing conditions, people who are socially isolated, and people who have limited access to air conditioning. These are often older members of the community.

Heat affects people of different ages in different ways

Human body temperature is set [at 36.8°C, although our normal temperature can vary slightly](#) and may marginally decrease as we age.

Ambient temperatures well below this prompt us to keep ourselves warm, and as the temperature rises we look for ways to keep ourselves cool.

An important mechanism of cooling is perspiration. As sweat evaporates, it cools our skin. However, humid weather impedes our capacity to cool ourselves in this way.

Heat stress occurs when the body can't cool itself and maintain a healthy temperature. Heat stress can begin at temperatures [around 30°C](#) when the humidity is high, and at temperatures closer to 40°C in dry heat.

Babies and young children are [highly vulnerable to the heat](#) because of their small size. They can become dehydrated and develop heat stress more quickly than adults.

This is because they absorb heat faster, and often cannot remove themselves from hot environments. So little ones need to be kept cool

and well hydrated (with milk for babies and water for small children) during hot periods.

While young people and adults face lower health risks from the heat, extended periods of hot weather can adversely affect our mood. One recent study pointed to increased [intimate partner violence](#) during heatwaves.

This effect appears to be exacerbated when night time temperatures are also high. High overnight temperatures are associated with increased [crime rates](#), decreased [productivity](#) and poorer academic results.

But generally, it's people over 65 who are at highest risk from the heat.

How does heat affect older people's health?

The ageing body doesn't cope with sudden stresses as quickly or effectively as a younger body. For example, an elderly person's skin [does not produce sweat](#) and cool the body as efficiently as a younger person's skin.

Importantly, heat stress can exacerbate existing health conditions common in older people, such as diabetes, kidney disease, and [heart disease](#). Many heat deaths are recorded as [heart](#) attacks.

In short, this is because heat requires our hearts to work harder. In very hot conditions, our [blood vessels](#) dilate, increasing our heart rate. For people with abnormal heart function, these hot periods can lead to worsening of their heart failure.

With severe, prolonged heat stroke, heart failure can even develop in people [without pre-existing heart disease](#).

For people with pre-existing kidney disease, dehydration during hot periods can impact their kidney function. So people with [kidney disease](#) need to take extra care to stay hydrated during hot periods.

Dehydration can also affect older people's blood pressure, making falls more likely.

Further, hot weather can affect blood sugar control for people with [diabetes](#). Heat stress can increase blood sugar levels even in people without diabetes, but is most concerning in those with the condition. Poor blood sugar control is associated with many different diabetes complications including [increased risk of infections](#).

Older people with chronic medical problems usually take regular medications. Some medications can hinder the body's ability to regulate temperature and make people more susceptible to heat stress.

For example, people with heart failure often take diuretic medications to manage symptoms like swelling and shortness of breath. But increasing diuretic medications in hot weather can cause dehydration, worsening heart failure and often affecting the kidneys.

Added to this, [heat stress](#) may cause disorientation, confusion and delirium. This risk is more pronounced for older people with cognitive conditions and dementia.

Social factors and exercise

Socioeconomic factors and isolation [can magnify the risk of heat exposure](#) among older people. For example, some pensioners may not be able to afford air conditioning at home.

Being part of social networks can help. One person may recognise if

another is unwell, increasing the likelihood of their friend getting medical attention.

Further, extended periods of hot weather can interrupt our exercise routines. This can be particularly problematic for older people who may be using exercise to manage chronic health conditions.

Regular exercise correlates with improved quality of life in many conditions, including [heart failure](#), [chronic obstructive pulmonary disease](#), [depression](#), [diabetes](#), cognitive impairment and [osteoporosis](#).

When our activity is disrupted for weeks at a time it can be hard to regain previous fitness. This can be especially true for older people, as muscle mass is commonly lost as we age. Periods of inactivity accelerate muscle loss, and regaining strength and endurance is often more difficult in this context.

Australia's climate is changing. We're likely to experience longer periods of hot temperatures, with hotter summers and some extraordinarily high temperatures. This will test our health and our health-care systems. Understanding the challenge ahead can help to reduce the risks.

On a practical level, be aware of spending too much time in hot temperatures, stay hydrated, and know where you can access air conditioning—particularly if power fails. Consider vulnerable relatives, friends and neighbours, especially those of advanced age.

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