More than comfort

For those dealing with diseases such as multiple sclerosis, keeping cool can be a medical imperative, writes Dr Michael Summers from MS Australia.

MEDICALLY COOL

If you have multiple sclerosis, you have to keep cool. The slightest increase in core body temperature results in a major increase in MS symptoms. This can include problems with sight, walking, continence, pain and anything else controlled by the central nervous system. Heat interferes with the function of nerve cells, and when cells are already damaged by MS the problems are amplified.

It is not surprising then that those with MS in Australia rely extensively on domestic and commercial air conditioners to keep cool for much of the year. This helps to ensure that they are able to participate in social, household and work activities that most of us take for granted. There are about 21,000 people with MS in Australia, two-thirds are women and average age of onset is about 30. Additionally, in 2007, 52 per cent of Australians with MS had annual incomes below $26,000, and 80 per cent were unemployed within 10 years of diagnosis.

THE SURVEY

As part of the Australian MS Longitudinal Study, in 2009 we conducted the Keeping Cool Survey. Of the 2,400 people with MS that responded, 90 per cent are heat-intolerant, and run their domestic air conditioners more frequently and for longer periods than most Australians. Nationally, people with MS averaged 1,557 hours of air conditioner use for cooling annually.

In Victoria the annual MS household average was 1,508 hours of air conditioner use for cooling. This compares with two other surveys that found that “average” Victorian household air conditioner use is around 102-107 hours annually. Economic modelling based on the Keeping Cool Survey estimates that average costs for those with MS across Australia from September to April for running their air conditioners is approximately $850 (based on electricity costs of $0.25 per kWh). Not surprisingly costs are higher in the hotter areas ($1,370 in Queensland) and lower in cooler areas ($500 in the ACT). The estimated average annual cost of cooling for all Australian households is $200. This indicates that people with MS spend about four times more on keeping cool than the average Australian household.

As an indicator of the importance of keeping cool, statistical testing of differences between households on pensions and other benefits, and wealthier households indicated that there were no differences in relation to the external temperature at which people turned on air conditioners, age of air conditioner, hours of use or size of space cooled.

There were, however, clear differences across states in relation to when air conditioners were turned on, with warmer locations being turned on at higher temperatures.

To help minimise these costs and the related carbon emissions, those with MS make minor modifications to improve the thermal efficiency of their homes.

The arrows in the photos above show lesions on the brain caused by multiple sclerosis. In some cases the lesions are far more dramatic.
more often than the average Australian household. For example, about 10 per cent more people with MS have roof and wall insulation in their homes than average Australian households, and are more likely to have external window coverings.

However, notwithstanding these measures to reduce both economic and environmental costs, it is increasingly difficult for people with MS on low incomes to afford keeping cool on hot days and nights due to a combination of factors including rising electricity prices, other additional MS-related out-of-pocket costs (about $4,000 annually), the increasing economic pressures on households generally, and the increasing number of hot days and nights due to climate change.

POLICY CHALLENGES
The heavy reliance of people with MS on domestic air conditioning raises four key public policy challenges:

1. Maximising the efficiency of air conditioners used in these households by replacing inefficient air conditioners; promoting the purchase of very-high – efficiency units; encouraging regular maintenance and other habits related to efficient air conditioner use

2. Assisting those with MS (and other heat-intolerant conditions) on low incomes with the affordability of electricity to run their air conditioners as needed for medically required cooling

3. Improving the thermal efficiency of housing

4. Minimising the impact of catastrophic events such as power-blackouts on this group, including heatwave management plans for these households

WHAT YOU CAN DO
The air conditioning industry could potentially play a major role in relation to maximising air conditioner efficiency in these very-high-use households. Opportunities include getting involved in research efforts to demonstrate the value of using high-efficiency air conditioners and maintaining them properly; promoting the use of high-efficiency air conditioners in high-use households such as those that include people with MS; and finding ways to make these high-efficiency air conditioners more affordable to low-income households with a medical need to keep cool.

Using “age of air conditioner” as a rough proxy for efficiency, nationally about 64 per cent of non-evaporative air conditioners being used probably do not use inverters (that is, were more than three years old in 2008–09).

In relation to assistance with electricity costs, MS Australia in conjunction with state MS organisations, has been running a series of policy campaigns over the last three years to secure “medical cooling” electricity rebates for those on low incomes. Western Australia already had a good “medical heating and cooling” scheme in place, and Victoria has had a medical cooling rebate for over 10 years.

As a result of these campaigns the Victorian rebate has increased substantially, and there are new state-government-funded medical cooling and heating rebates in New South Wales, Qld and South Australia. A Tasmanian campaign began recently, and a campaign for the ACT is scheduled for next year.

Also as a result of this work the federal government has recently announced, as part of its Carbon Pricing policy to compensate low-income households that require medical cooling/heating (and other essential medical equipment) via an annual essential medical equipment payment of $140. This comes on top of other payments.

Clearly the need for some people to keep cool (or warm) because of medical conditions such as MS is increasingly being recognised. In addition to those with MS, people with many other chronic illnesses and disabilities can have significant problems with the heat (and many also have problems with cold weather), including Parkinson’s Disease, motor neurone disease, spinal cord injury, polio, and acquired brain injuries.

Although the work outlined here has helped raise the profile of these issues, and is making a real difference in the affordability of electricity for people who need to stay cool at home, much more needs to be done. In particular we need to find ways to replace inefficient air conditioners with very-high-efficiency units in households, and to target programs to improve household thermal efficiency to these very-high-use households.

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Would you like to know more? For more info, write to michael.summers@msaustralia.org.au