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Climate health warning: mind the vulnerable

Reasons behind vulnerability to climate health effects range from the biological to the spiritual



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Plans to protect people from the impact of global climate change should take into account population groups whose defences against health effects are weak for reasons that could be biological, economic, or geographical, according to a report¹ published this month in the *Journal of Occupational and Environmental Medicine*.

"Particularly vulnerable subpopulations include children, pregnant women, older adults, impoverished populations, people with chronic conditions and mobility and cognitive constraints, outdoor workers, and those in coastal and low-lying riverine zones," write John Balbus and Catherine Malina from the Environmental Defense Fund in Washington, DC, USA.

Indigenous people make up another group of people with special vulnerability to the health effects of climate change, argue Donna Green and colleagues in a separate article. Writing² this month in the *Medical Journal of Australia*, they point out that a history of social disadvantage and cultural concepts of well-being suggest special concerns for indigenous groups in Australia.

Addressing the needs of these people is another challenge for professionals that must be met in order to prevent an **unequal burden** of climate-related health effects, say Green *et al.* "It is vital to acknowledge the significance of this situation now, so that anticipatory adaptive policies can be implemented."

The threats to health posed by changes to the global climate are **real and already underway**, according to the World Health Organization. As a result people are expected to cope with rising **heat stress** and air pollution, more frequent **extreme weather events**, and changes in the **occurrence** or **spread** of diseases transmitted via water, food, or animal vectors.

For each population deemed vulnerable, Balbus and Malina describe factors behind a lower capacity to cope with various health problems linked to exposures affected by climate change. These include the biological immaturity of children, pre-existing health problems of elderly people, inadequate shelter or food for the poor, physical or mental limitations of patients with chronic conditions, and lengthy exposures for some workers.

People in some parts of the USA could face several climate-related health problems at once, according to Balbus and Malina. "One approach to identifying such areas is to map regions currently experiencing increased rates of climate-sensitive health outcomes or other indicators of increased climate risk."

Unequal effects are being documented already in Australia, note Green and colleagues. Heat stress is a major concern for indigenous people, they say, as it can hit communities hard in remote parts of Australia where rates of heart and lung disease are high, most residents are elderly, and services are poor.

"Their vulnerability to climate change is intensified by the social and economic disadvantage they already experience — the result of factors that include decades of inadequate housing and public services, and culturally inappropriate medical services," Green *et al.* point out.

The way that indigenous Australians think of health also sets them apart as a special population, the authors explain. Their view is broad and connects closely with 'country', a concept of place that includes notions of ancestry and identity. As a result, land degraded by climatic changes could translate to a feeling of sickness for the people who live on it.

"As ecosystems change in response to biophysical impacts and extreme weather events, many traditional owners living in remote areas are likely to face increased physiological, psychological, economic and spiritual stress as it becomes more difficult to 'look after their country'," Green and colleagues point out.

References and links

1. Balbus JM, Malina C. Identifying vulnerable subpopulations for climate change health effects in the United States. *J Occup Environ Med* 2009, 51:33–37. doi: [10.1097/JOM.0b013e318193e12e](https://doi.org/10.1097/JOM.0b013e318193e12e)

2. Green D, King U, Morrison J. Disproportionate burdens: the multidimensional impacts of climate change on the health of Indigenous Australians. *Med J Aust* 2009, **190**:4–5. [Article](#)

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