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The Royal Australasian College of Physicians

# The Health Benefits of Mitigating Climate Change Position Statement

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## Executive summary

Anthropogenic climate change poses a major threat to human physical and psychological health. However, it can be mitigated by reducing the emission of greenhouse gases. This Position Statement outlines four major mitigation strategies and associated health benefits most relevant to Australia and New Zealand. These strategies are:

- a) Decrease fossil fuel combustion in energy generation and transport
- b) Reduce fossil fuel extraction
- c) Decrease emissions from agriculture and food production
- d) Improve energy efficiency of homes and buildings.

This Position Statement outlines the evidence for the association between these strategies and improved health outcomes, as well as some ways by which the Royal Australasian College of Physicians (RACP), government, and the broader community can advocate for action.

## Background

Anthropogenic climate change occurs primarily because of greenhouse gas emissions from human activities.<sup>1 2 3</sup> Climate scientists concur that anthropogenic global warming is occurring, is accelerating, and will not stabilise or improve without significant mitigation.<sup>3 4 5</sup> Although there is uncertainty as to the projected magnitude<sup>6</sup>, without immediate intervention average global temperatures relative to the year 2000 are likely to rise by 1–2°C by 2050, and by 3–4°C by 2100.<sup>7</sup>

The health impacts of climate change are mediated by environmental exposures such as ambient heat, air pollution, storms, floods, reduced water quality, reduced food production, increased food spoilage, and change in disease vectors.<sup>8</sup> These exposures underlie health effects including heat stress illnesses, cardiovascular disease, infectious gastrointestinal disease, physical trauma, malnutrition, psychological stress, vector-borne disease, and other epidemic illnesses.<sup>6 9–18</sup> In addition, forced migration and conflict caused by scarce food and water resources will have consequent impacts on health.<sup>9</sup>

Importantly, actions to mitigate climate change have many benefits for both the environment and human health. Climate change is not only a threat to health, but also an opportunity to enhance health.

Policy responses to climate change distinguish between mitigation and adaptation.<sup>19</sup> Mitigating actions reduce or reverse human forcing of global temperature<sup>19</sup>, while adaptive actions reduce the impact of climate change on human and natural systems.<sup>20 3</sup>

Many climate change mitigation approaches have been identified.<sup>9 21–23</sup> This statement develops four key strategies, and describes how their adoption by government, other organisations and the broader community can have a positive impact on human health. All doctors have a professional duty towards the health of individuals and the community. The RACP sees these strategies to mitigate climate change as consistent with doctors' professional duty, and is committed to leadership in their support.

# 1. Decrease fossil fuel combustion in energy generation and transport

Combustion of fossil fuels causes many health harms. Stationary energy use, such as domestic heating and electricity generation, releases air pollutants which may cause increased rates of respiratory disease such as asthma.<sup>9 24</sup> Fine particle air pollution, released during fossil fuel combustion, increases the risk of cardiovascular disease and death, and may increase the risk of premature births.<sup>25–27</sup>

Fossil fuel for transportation, particularly in urban areas, also causes air pollution and associated respiratory disease.<sup>28</sup> Each extra hour spent in a car per day is associated with a 6 per cent increase in the likelihood of obesity.<sup>29</sup> The relationship between private car use and health is complex, with more than one reinforcing loop. For example, use of cars supports development of towns, suburbs and outer semi-rural properties that require cars for everyday trips. This, in turn, promotes development of retail facilities that depend on car travel for their business, with shopping patterns encouraging consumption of unhealthy food. Resultant impaired health statuses require further use of cars for transport. In addition, inequities in health are amplified as public transport is unevenly distributed away from communities of lower socioeconomic status.<sup>30–32</sup>

In Australia, fossil fuel combustion is the annual attributable cause of 1,600 to 2,400 premature deaths<sup>33 34</sup>, 1,250 paediatric Emergency Department visits and admissions (for asthma, respiratory disease) and 2,600 adult Emergency Department visits and admissions (for cardiovascular and respiratory disease).<sup>33</sup> The annual health care costs to Australia amount to \$2.6 billion from coal combustion<sup>35</sup> and \$2.7 billion from use of motor vehicles.<sup>36</sup>

Public transport (for example, rail or bus) is more energy efficient (after adjusting for carrying capacity) than motorcycles, taxis or cars.<sup>37</sup> In addition to a reduced carbon footprint, public transport is also associated with higher levels of physical activity, as commuters make incidental journeys between transport nodes.<sup>38</sup> Increased incidental walking can assist individuals in meeting physical activity targets<sup>38</sup>, which, in turn, reduces risk factors and diseases associated with sedentary lifestyles.<sup>39</sup>

Active transport (for example, cycling and walking) is associated with decreased childhood asthma, obesity, cardiovascular disease, stroke, diabetes and certain cancers, as well as mental health benefits (particularly if undertaken in a group).<sup>40 41</sup> Increasing physical activity via active transport options could help to prevent up to 3.2 million premature deaths annually worldwide.<sup>42</sup>

## The RACP will:

- support action to reduce fossil fuel usage
- help its members to advise patients and their families as to the benefits of active transport in their daily routine.

## The RACP calls upon Australian and New Zealand governments to:

- facilitate the transition from fossil fuels to renewable energy and improved energy efficiency across all economic sectors
- increase public transport, particularly to inadequately serviced areas

- increase active transport use and safety, for example by funding the construction of bicycle and pedestrian paths
- ensure that public and active transport are incorporated into the planning phase of new developments, by using environmentally and health-sensitive urban planning.

## 2. Reduce fossil fuel extraction

Extraction of fossil fuels in activities such as coal mining and unconventional oil and gas development is associated with occupational and environmental health hazards. Such hazards include local area release of toxic byproducts, noise pollution, air pollution, damage to the water table, contamination of water supplies, and social and ecological disruption. Adverse health consequences include respiratory and cardiac injury<sup>9 43</sup>, loss of food security<sup>44</sup>, exposure to organic compounds and heavy metals<sup>44 45</sup>, societal and psychological disruption<sup>9 46</sup>, and sleep disruption.<sup>47</sup> A regional example is the 2009 Montara oil spill that released an estimated 400 barrels of oil per day into the Timor Sea for approximately 10 weeks, with a deleterious impact on fisheries in Indonesia.<sup>48</sup>

Since 1990, Australia's carbon dioxide exports through coal have increased over 250 per cent, and in 2016, the carbon dioxide emissions attributable to coal exported from Australia will be almost double its domestic emissions.<sup>49</sup> In this way, Australia's fossil fuel extraction has a global impact, affecting not only the health of its own citizens, but also those of other countries.

The assessment and documentation of these occupational and environmental consequences of fossil fuel extraction can be a sensitive topic for physicians, who may find themselves in direct public conflict with commercial interests. The RACP's primary aim, as summarised in the motto *hominum servire saluti*, is to serve the health of the people. As such, the College has an important corporate role in protecting those of its members who carry out this duty.

### The RACP will:

- support its members in their independent assessment of the health impacts of fossil fuel extraction and dissemination of this knowledge.

### The RACP calls upon Australian and New Zealand governments to:

- require of all fossil fuel extraction projects within their jurisdiction to undertake a full independent Health Impact Assessment before proceeding, including the effects on climate change
- seek comparable standards of their international partners in the trade of fossil fuels.

## 3. Decrease emissions from agriculture and from food production

Land clearing, agricultural fertilisers, livestock production, and processed foods all have significant impacts on both climate change and human health.<sup>9 50 40 51</sup>

Deforestation and land clearing are major issues in Australia and New Zealand, where some of the best carbon dioxide sequestering forests in the world are still being cleared.<sup>52</sup> Maintaining forests and

reducing land clearing is also beneficial for biodiversity, air and water quality, recreational activities, and mental health.<sup>53</sup>

At present, global agriculture and food production produce more than 25 per cent of all greenhouse gases, a figure likely to increase as low- to middle-income countries shift towards consuming more processed foods.<sup>50 54–56</sup> Current trends suggest that, by 2050, global greenhouse gas emissions from food production and land clearing will have increased by an estimated 80 per cent.<sup>50</sup>

Industrial urbanisation is replacing traditional plant-based diets with diets high in refined sugars, fats, oils and meats.<sup>55</sup> Processed food consumption is associated with obesity<sup>57 58</sup>, diabetes<sup>59 60</sup>, under-nutrition for some micronutrients<sup>61</sup>, depression<sup>62</sup>, and sodium-related hypertension.<sup>63 64</sup> Furthermore, red meat consumption beyond the Australian National Dietary Guidelines recommendation of a maximum of 455 grams per week, or 65 grams per day<sup>65</sup>, is associated with increased rates of colon cancer<sup>66 67</sup>, obesity<sup>68 69</sup>, and heart disease.<sup>70</sup>

Greenhouse gas emissions from agriculture and food production may be reduced by moving towards plant-based diets, such as Mediterranean and lacto-ovo-vegetarian diets.<sup>71</sup> Plant-based food production is less energy-intensive and releases fewer emissions compared to diets with high amounts of meat, particularly processed meats.<sup>40 50 72</sup>

Plant-based diets are also associated with reduced risk of heart disease and cancer.<sup>50 71</sup> Researchers have estimated that transitioning to a diet which is more plant-based (but still in accordance with standard guidelines) could reduce global mortality by 6–10 per cent and food-related greenhouse gas emissions by 29–70 per cent by 2050.<sup>73</sup> Similarly, reducing intake of processed foods, which require intensive energy for production, may help reduce both greenhouse gas emissions and the risk of diseases such as diabetes or obesity.<sup>74</sup>

### **The RACP will:**

- raise awareness of the environmental and health benefits of a plant-based diet and a reduction in meat consumption, based on research evidence
- work with other health professionals (such as dietitians and general practitioners) to provide patients, their families, and the community with advice on healthy plant-based diets.

### **The RACP calls upon Australian and New Zealand governments to:**

- facilitate low carbon systems of food production.

## **4. Improve energy efficiency of homes and buildings**

Inefficient energy usage caused by poor home and building design is harmful to health.<sup>75</sup> People who live in homes with insufficient heating or poor insulation are more likely to acquire respiratory diseases during winter.<sup>75</sup> Conversely, during summer, people who live in homes with insufficient insulation and cooling are more likely to have heat stress and associated health problems.<sup>76</sup>

Improving the energy efficiency of homes and buildings can reduce cold- and heat-related illnesses.<sup>76</sup> Health gains from improved energy efficiency are particularly important for vulnerable groups, such as children, the elderly, and low income earners, who are more likely to experience cold- and heat-

related illnesses.<sup>78</sup> Improved energy efficiency also reduces economic stress on households and demand pressures on healthcare resources.<sup>77</sup> For example, researchers in New Zealand retrofitted insulation in 1350 houses in which at least one person had symptoms of respiratory disease. The total benefits with respect to health gains and energy and carbon emission savings were one and a half to two times the cost of the insulation.<sup>77</sup>

### **The RACP will:**

- raise public awareness of the health and environmental co-benefits of energy efficient homes and buildings.

### **The RACP calls upon Australian and New Zealand governments to:**

- facilitate construction of buildings to high health and environmental standards.

### **About this Position Statement**

*This Statement was developed by The Royal Australasian College of Physicians (RACP) 2015 Climate Change and Health Working Party (CCHWP). It forms part of a set with the updated Climate Change Position Statement and Environmentally Sustainable Healthcare Position Statement.*



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