

# Medicine for Managers

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## It's Too Darned Hot!

So sang the wonderful Ella Fitzgerald in the Cole Porter Musical, *Kiss Me Kate*, in 1948. She describes how the temperature discouraged her from “meeting her baby tonight”. I can sympathise with her because I find it too hot to do just about anything, other than retreating to my nice cool study to write about the weather with which we are trying to cope at the moment. The question for medicine is “is this a recurring and worsening problem?”

**F**rankly the news doesn't appear to be good. Global warming is, over the long-term, the rise in Earth's average surface temperature.

News bulletins repeatedly report that burning fossil fuels results in the accumulation of heat-trapping gases in the atmosphere. Extreme weather patterns, melting ice and rising sea levels are just some of the catastrophic changes which the world faces.

Scientists have identified 2035 as the critical climate deadline by which greenhouse gas emissions must be cut to avoid the catastrophe of a 2°C rise in temperature, after which such changes as melting ice and Amazon rainforest degradation will become irreversible.

Countries throughout the world will have to cope with extreme heatwaves, prolonged droughts, and severe flooding. Medicine will have to prepare itself to manage the increasing numbers of patients with health consequences.

It will not only affect the elderly most vulnerable but will impinge on the young as well.

There is much speculative data about the possible consequences but some is robust and very concerning. The European Union, for instance, warns that people over 65 will increase from 21.6% to 32.5% by 2100.

Alarmingly, heat-related mortality is expected to increase **ten-fold** if the rise in temperature is limited to 1.5°C by that date and, if the temperature increases by 3°C, mortality could increase **thirty-fold**.

Data on annual heat-related deaths is steadily increasing and, in the EU in 2024, over 19,000 people died as a result.

A report in *Nature* stated that the highest mortality heat-related death rates in 15 of 32 EU countries were experienced in 2024.

Rising heat affects a wide-range of chronic disease sufferers, including significant impacts on:

- **Cardio-vascular disease** including heart failure and heart attack
- **Lung disease** including worsening asthma and chronic airways disease
- **Neurological disease** including stroke, dementia, MS, epilepsy and Parkinson's disease
- **Psychiatric mental illnesses** and Alzheimer's disease
- **Kidney diseases, diabetes, and pregnancy complications**

Exposure to excessive heat may have profound effects including the risk of **heat stroke** which may have a mortality of up to 80% with multi-organ failure.

Features of heat stroke include:

- **Altered mental state** with confusion, agitation, delirium, incoherent speech
- **Loss of consciousness**
- **High temperature** of 40°C
- **Fits or convulsions**
- **Rapid pulse rate**
- **Rapid, shallow breathing** and **breathlessness**
- **Skin changes** feeling hot and dry

If not treated effectively with cooling, the risk is increased particularly in older men. Clearly anyone exposed to high temperatures and especially if working outside, should take key precautions including:

- Training about the risks of heat and how to minimise them, including such

measures as avoiding working between 11 a.m. and 3 p.m.

- Having regular rest
- Having a cool shower at break times if feasible
- Appropriate clothing and headwear
- Remaining in shade where possible
- Having plenty of fluids, particularly water

Many medications may have effects influenced by dehydration and overheating and include diuretics, blood pressure medications, anti-psychotics, anticonvulsants, and also lithium and digoxin.

Medication reviews are important and patients should ask the question of reviewers.

### Managing Heat Stroke

In the early stages of disease, the person should be moved to a cool place, clothing should be removed, cool water applied and cold packs used, if available, to the neck and armpits.

If heat stroke symptoms already exist, rapid treatment is essential given the risk of mortality. Rapid cooling, including if possible cold-water immersion or, if not possible, pouring cold water on the person to allow evaporation is very important.

The patient should be transferred to hospital as quickly as possible. Rapid and effective action may reduce the risk of mortality by 80-90%.

Various authors have written expressing concerns that, not only is the global warming crisis not fully recognised throughout the world, but the medical consequences of exposure to such weather is under-recognised and under-

estimated. Apart from the direct effects of heat stroke, there are other factors of import which may impact medical care. Problems tend to increase social inequalities with the poor less able to protect themselves against hot weather. The divide manifests itself in

- Availability of air-conditioning, poorer cramped housing, less ability to avoid adverse working conditions and other social factors
- Children in poor areas missing more schooling in heatwaves
- Floods, wildfires and consequent smoke inhalation, and service failures producing environmental hazard

The view of many is that the climate crisis does not feature sufficiently in the attention of Governments throughout the world. It needs to do so, and very quickly, if the rising temperature is not to cause catastrophic change as early as to the next adult generation.

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