

GUEST EDITORIAL

CLIMATE CHANGE AND ALLERGY



While climate scientists, politicians, economists, sceptics and protagonists argue about whether climate change is real and if so, is it the result of human activities or natural forces, the earth's temperature continues to rise. In February 2007 the International Panel on Climate Change (IPCC) confirmed what many scientists had believed for a long

time, the earth's rising temperature and associated climate change are the result of human activities.

The ever-increasing number of factories, power stations, aeroplanes and cars that have been spewing gases, especially CO₂, into the atmosphere almost since the start of the industrial revolution have enhanced the greenhouse effect. This is the process by which the earth regulates its own temperature. The earth's surface absorbs energy from the sun and re-radiates it out as heat energy which is trapped by greenhouse gases such as CO₂ and methane in the atmosphere. Raising the concentrations of greenhouse gases starts the planet on the path of overheating.

Although the world has only recently woken up to the fact that human-induced climate change is upon us, scientists have been aware for more than a century that it could occur. As far back as 1896 the Swedish scientist Arrhenius predicted that the CO₂ being added to the atmosphere by factories springing up across Europe could raise the earth's temperature. He predicted that coal-burning would raise the concentration of CO₂ in the atmosphere by 50% in 3 000 years. In fact this concentration of CO₂ has already increased by some 35% in little more than a century and is rising by 2 parts per million (ppm) per year. Carbon dioxide can linger for 100 years and pollution emitted in Arrhenius's lifetime may still be warming the earth today. Scientists have warned that even if we manage to keep CO₂ levels to no more than 550 ppm, which will be difficult, we could still experience a global temperature rise of 3-4°C by the end of the 21st century. Our only hope is to make large cuts in greenhouse gases in the near future.

While climate change will inevitably have a direct and indirect impact on the environment and human development, up to recently the challenges posed to human health have been largely ignored and are poorly understood.

The Commonwealth Medical Association (CMA), concerned about the mounting implications of climate change, decided to be pro-active in dealing with this issue in Africa. The CMA convened an international symposium on climate change and health, held in Tanzania in 2009. Delegates agreed on the need for health professionals to give attention to the issue of climate change and its effect on human health. South Africa is a signatory to the Kyoto Accord which calls on industrialised nations (Annexure 1 nations) to monitor and reduce CO₂ emissions. Although South Africa is not classified as an Annexure 1 nation, it is the largest CO₂ emitter in Africa. This is largely due to this country's huge coal-dependent energy, industrial and mining sectors. With the rise in the earth's temperature, heat waves that set

new records will become commonplace. Ecosystems will be subjected to climates far removed from those that they evolved in, thus endangering many species. Rainfall will be heavier in future in those parts of the sub-continent which have good rainfall patterns at present, thereby increasing the danger of floods. Drought-prone areas will become drier sometimes to the point of desertification. Southern Africa is regarded as being especially vulnerable to this possibility. Increasing temperatures will result in melting of the earth's ice caps leading to rising sea levels.

As the economies of developing nations grow they will consume more and more energy. Wealthy countries will need to assist by offering support for greener energy technologies allowing them to make use of their capacity for generating renewable energy from wind, sunlight and water.

As life becomes harder in vulnerable parts of this country and the rest of the continent in future, people will migrate both within and between countries in greater numbers. Food security will become a crucial issue as will the need for water. Drought-resistant seeds will be needed and farmers least able to afford to pay will require the hardest varieties. State-funded subsidies will inevitably be required. Even with better crops, improved soil conservation and more reliable weather forecasting and farming methods there will still be regional catastrophes.

More than half of the world's people now live in the cities; three-quarters or more may do so by mid-century. Climate change will become an important factor in African urbanisation. One of the downsides to urbanisation is that cities are hotter than the surrounding countryside creating what meteorologists call 'urban heat islands'.

Climate change is bound to affect the health of the nation in the years and decades ahead. It is my firm conviction that of all the special interest medical societies in South Africa, ALLSA is best placed and indeed is obligated to play an important role in raising the awareness of this immense threat to the environment and human health in this region. The reality is that climate change is with us to stay and unless we adapt accordingly it will have a catastrophic effect on the health of this nation and the rest of the continent.

It has been a great honour and privilege to be Guest Editor for this special issue with the focus on 'Climate change and allergy'

The first article in this issue is on 'South Africa's changing climate' written by Leonie Joubert, renowned science writer and award-winning author of three excellent and highly readable books on climate change. Many of the predictions made in her books regarding the effects of climate change on this country have already occurred.

This is followed by a truly outstanding article on 'Climate change and aeroallergens in South Africa' by Dilys Berman, South Africa's foremost authority on the aerobiology of allergenic pollens and fungal spores.

One of the privileges of living in a small town is that one has the opportunity of meeting many interesting people. It has been my good fortune to meet Les Minter, one of South Africa's foremost authorities on

frogs. Frogs are highly sensitive to a changing ecological environment and may be regarded as an early warning system for impending climate change. I am sure you will enjoy reading Les Minter's article about 'Frogs and climate change in South Africa' complemented by his wonderful photographs.

Our final two articles, both philosophical in nature, are in a class of their own and are among the most erudite I have ever read. Matt Haus's outstanding article entitled 'Can one be philosophical about climate change?' explores the view that man will not alter his behaviour until his very life and existence are threatened.

At Sharon Kling's invitation Prof Johan Hattingh has written a brilliant article 'Towards shared ethics of global climate change'. He discusses the kinds of ethics we may require to meet the challenge of climate change both now and in the future.

I hope that you enjoy reading and learning from the superb articles contained in this most unique and very special issue.

Eugene Weinberg

Guest Editor

Asthma limits the full potential of millions of South Africans



As a long term condition, asthma affects people of all ages and all walks of life. The provision of good asthma care provided by highly motivated professionals eases what many consider to be a burden. The right care changes lives and makes it possible for people with asthma to live a normal, healthy and active life.

The NAEP is striving to improve the health and well being of people living with asthma and is here to help you with:

- Dissemination and Interpretation of accredited Asthma Treatment Guidelines
 - Free asthma information
- Accredited education programmes for health professionals

Become a professional member today. Encourage your patients to become members.



Tel: (011) 643 2755 • Fax: (011) 678 3069 • E-mail: naepr@netactive.co.za
www.asthma.co.za

