

本署檔號 Our Ref.: (2) in DH SEB NCD/15/38 Part 23

3 January, 2014

Dear Doctor,

**Air Quality Health Index has come into effect**

I would like to inform you that a new air pollution information system, the Air Quality Health Index (AQHI), has been launched by the Environmental Protection Department (EPD) on 30 December, 2013. The AQHI has fully replaced the Air Pollution Index to communicate the health effects of air pollution to the public.

You may wish to know that the AQHI is a health risk-based index that estimates the short-term health risk caused by air pollution. It is calculated based on the cumulative health risk attributable to the three-hour moving average concentrations of four air pollutants, namely ozone, nitrogen dioxide, sulphur dioxide and particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>). The AQHI is reported on a scale of 1 to 10 and 10+, and is grouped into five health risk categories, i.e. low, moderate, high, very high and serious.

Apart from reporting the hourly AQHI, the new system provides AQHI forecasts twice a day. The forecasts will alert the public ahead of the onset of serious air pollution episodes and help the public in considering whether to take precautionary measures to protect their health. The detailed health advice in respect of different AQHI and health risk categories is shown at the Annex. The health advice varies with different susceptible groups. All AQHI information including the real-time AQHI, the AQHI forecast and health advice are available on EPD's AQHI website at [www.aqhi.gov.hk](http://www.aqhi.gov.hk).



Scientific studies have shown association between an increase in concentrations of air pollutants in the ambient air and an increase in medical consultations, hospital admissions and deaths from respiratory and cardiovascular diseases. Children, seniors and people with existing heart or respiratory illnesses are more susceptible to health hazards of air pollution. When AQHI reaches 10+ (i.e. serious category), people with existing heart or respiratory illnesses may experience significant aggravation of their symptoms while members of the public may experience symptoms including eye irritation, coughing, phlegm and sore throat.

We would like to enlist your support in providing the following health advice to your patients and the public when the AQHI is at 10+:

- Children, seniors and people with existing heart or respiratory illness should avoid physical exertion and outdoor activities while other members of the public should reduce physical exertion and outdoor activities to the minimum. As health effects of air pollutants may vary for individuals, persons who are in doubt or experience discomfort should seek advice from a medical doctor.
- The following should be noted when providing advice on the use of mask to reduce inhalation of respirable suspended particulates –
  - \* Although surgical masks may filter larger particles in the air, studies have shown that they are not effective in the filtration of respirable suspended particulates of less than 10 microns, let alone the fine suspended particulates of less than 2.5 microns. Thus, they are not useful in preventing the inhalation of these particles. This is an important point to convey to persons with existing heart or respiratory illnesses so that they do not get a sense of false reassurance about the protective effect of surgical masks.
  - \* The efficiency of respirators such as N95 masks to filter these particles depends on whether they are fitted properly. Moreover, they are uncomfortable to use and increase the effort of breathing especially if worn over an extended period of time.



For more information on assessment of medical fitness to use respirators in conditions of high AQHI, you may wish to refer to the “Guidance for Physicians” which is available from: [http://www.epd.gov.hk/epd/english/envir\\_standards/non\\_statutory/files/Guidance\\_for\\_Physicians\\_eng\\_2013.pdf](http://www.epd.gov.hk/epd/english/envir_standards/non_statutory/files/Guidance_for_Physicians_eng_2013.pdf).

Yours faithfully,



( Dr. Regina Ching )  
Consultant Community Medicine  
(Non-Communicable Disease)  
Centre for Health Protection  
Department of Health



衛生防護中心乃衛生署  
轄下執行疾病預防  
及控制的專業架構  
*The Centre for Health  
Protection is a  
professional arm of the  
Department of Health for  
disease prevention and  
control*

香港灣仔皇后大道東213號胡忠大廈18樓  
18/F, Wu Chung House, 213 Queen's Road East, Wan Chai, Hong Kong

### The recommended precautionary actions for different AQHI and health risk categories

Health Risk Category	AQHI	People who are sensitive to Air Pollution		Outdoor Workers*	General Public
		People with existing heart or respiratory illnesses <sup>#</sup>	Children and the Elderly		
Low	1-3	No response action is required.	No response action is required.	No response action is required.	No response action is required.
Moderate	4-6	No response action is normally required. Individuals who are experiencing symptoms are advised to consider reducing outdoor physical exertion.	No response action is required.	No response action is required.	No response action is required.
High	7	People with existing heart or respiratory illnesses are advised to reduce outdoor physical exertion, and to reduce the time of their stay outdoors, especially in areas with heavy traffic.  They should also seek advice from a medical doctor before participating in sport activities and take more breaks during physical activities.	Children and the elderly are advised to reduce outdoor physical exertion, and to reduce the time of their stay outdoors, especially in areas with heavy traffic.	No response action is required.	No response action is required.
Very High	8-10	People with existing heart or	Children and the elderly are	Employers of outdoor	The general public is

		respiratory illnesses are advised to reduce to the minimum outdoor physical exertion, and to reduce to the minimum the time of their stay outdoors, especially in areas with heavy traffic.	advised to reduce to the minimum outdoor physical exertion, and to reduce to the minimum the time of their stay outdoors, especially in areas with heavy traffic.	workers performing heavy manual work are advised to assess the risk of outdoor work, and take appropriate preventive measures to protect the health of their employees such as reducing outdoor physical exertion, and reducing the time of their stay outdoors, especially in areas with heavy traffic.	advised to reduce outdoor physical exertion, and to reduce the time of their stay outdoors, especially in areas with heavy traffic.
Serious	10+	People with existing heart or respiratory illnesses are advised to avoid outdoor physical exertion, and to avoid staying outdoors, especially in areas with heavy traffic.	Children and the elderly are advised to avoid outdoor physical exertion, and to avoid staying outdoors, especially in areas with heavy traffic.	Employers of all outdoor workers are advised to assess the risk of outdoor work, and take appropriate preventive measures to protect the health of their employees such as reducing outdoor physical exertion, and reducing the time of their stay outdoors, especially in areas with heavy traffic.	The general public is advised to reduce to the minimum outdoor physical exertion, and to reduce to the minimum the time of their stay outdoors, especially in areas with heavy traffic.

\* The advice does not apply to outdoor workers who are sensitive to air pollution.

# Such as coronary heart disease and other cardiovascular diseases, asthma and chronic obstructive pulmonary diseases including chronic bronchitis and emphysema.