

24-hour PSI reading a better reflection of haze impact on health



SINGAPORE — The Government yesterday took pains to explain its use of the 24-hour Pollutant Standards Index (PSI) reading when calibrating its response to the haze situation, saying that it is a better reflection of the impact of the smog on health, compared to the three-hour reading.

By Tan Weizhen - 22 JUNE

SINGAPORE — The Government yesterday took pains to explain its use of the 24-hour Pollutant Standards Index (PSI) reading when calibrating its response to the haze situation, saying that it is a better reflection of the impact of the smog on health, compared to the three-hour reading.

At a press conference helmed by the Haze Inter-Ministerial Committee, Second Minister for the Environment and Water Resources Grace Fu pointed out that the three-hourly PSI readings fluctuate widely.

“The health impact of the air pollutants is determined by both the concentration and the duration of exposure. When we measure the health impact, the 24-hour measurement is a better reflection of the total exposure of the individual to particulate matter,” said Ms Fu, who was standing in for Environment and Water Resources Minister Vivian Balakrishnan, who was flying back from a ministerial meeting in Jakarta.

Defence Minister and Chairman of the committee Ng Eng Hen elaborated on this point, saying that the effects of exposure to pollutants are based on a “continuum” rather than a “threshold”.

“The effects are based on factors such as the length of exposure, how dense the pollutants are and individual variation. Second, the studies co-relating such exposure to pollutants are for 24-hour measurements. There have been much less data correlated with three-hour measurements. For this reason, our health guidance is based on 24-hour PSI,” said Dr Ng.

However, doctors pointed out that Singapore’s situation is different from that of, say, Hong Kong or Mexico, where the level of pollution is constant throughout the day.

Associate Professor Philip Eng, a senior consultant in respiratory medicine, said: “In our situation, it is different because the winds and the PSI levels change so drastically. The studies might be looking at health impact based on pollution levels that are more constant ... here the PSI in one day can swing from 100 to 400. So it is hard to assess the health impact like this.”

Dr Lim Ing Ruen, an ear, nose and throat surgeon at Mount Elizabeth Medical Centre, felt that neither a 24-hour nor a three-hour measurement will give a very good picture of the health impact.

“People should be assessing the PSI level right before they go out, to see if the level at that particular hour poses a threat. An average figure for the whole day may not be that reflective, as the figures can fluctuate wildly throughout the day. The key is spot PSI.”

Whether one has a pre-existing condition is also a factor.

“If you are asthmatic, any level of PSI can set you off,” she said.

The committee was also asked why previous advisories indicated that the public should avoid physical activities outdoors when the PM2.5 reading — which measures particles smaller than 2.5 microns — was between 150 to 250, but now they are only told to avoid strenuous activities and stay at home or wear a mask.

Dr Ng stressed that a “higher-level advisory” would be issued when PM2.5 levels warrant it, but for the sake of clarity, the readings for now are “simplified” for the public. He added that medical professionals have said this is “sensible”.

He also reiterated that the daily advisories for the public and workers do not indicate “a hard line for stoppage of work or closure of schools”.

“It is not sensible to have these thresholds now because for some, the home environment is no different from the school or work. So if you stop work or close schools, they go back to the home environment, the exposure is the same,” he said. “It is not sustainable because it means a mass closure of outdoor businesses, airports, ports and other sectors.”

Minister of State for Health and Manpower Amy Khor urged employers to “remain vigilant and exercise flexibility”. She said: “There is no hard line for everything to come to a stop ... it depends on the nature of work, whether it’s indoor, outdoor, whether it’s strenuous, the health of the workers, whether they are frail, elderly and so on.” She also urged employers to show understanding and allow their staff to take leave if necessary.

At a technical briefing after the press conference, Dr Lee Hock Siang, Director of Occupational Safety and Health Specialist Department at the Ministry of Manpower, said that employers could be prosecuted if they do not follow the advisory, for example, if a worker is made to operate cranes when visibility is low.