

空氣質素健康指數

— 是開始或是終結

余德新醫生

香港職業及環境健康學院

主席及名譽院長

香港中文大學公共衛生及基層醫療學院

名譽臨床教授，前副長（研究）

保障市民健康？

- + 相比於空氣污染指數(API)
- + 個別市民能做什麼
- + 香港新的研究結果

相比於空氣污染指數

- # 同時考慮不同空氣污染物的共同效應
- # 相對更及時反映空氣污染對健康的風險
- # 提供健康忠告，讓市民在戶外活動時，可掌握充分資料及作出準備，保障市民健康

個別市民能做什麼？

- # “公眾可因應自己的健康情況及指數級別，調整其體力活動的程度。”
- # 個別市民能做的相對被動及有限
- # 從源頭上減少污染物
- # 戶外與戶內間之矛盾

戶外與戶內間之矛盾

污染物濃度 $\mu\text{g}/\text{m}^3$	懸浮粒子 (PM_{10})	二氧化氮 (NO_2)	臭氧 (O_3)	二氧化硫 (SO_2)
戶外 空氣質素指標 [AQO]	100 (24 h)	200 (1 h)	160 (8 h)	125 (24 h)
戶內 室內空氣質素 指標(良好級) [IAQ]	<180* (8 h)	<150* (8 h)	< 120 (8 h)	不包括
工作場所 職業接觸限值 [OEL]	10,000 (8 h) [其他未經分 類微粒]	5,600 (8 h)	100-200 (最高暴露限 值)	5,200 (8 h)

* Referencing AQO (1987)

香港新的研究結果

- ✦ Qiu H, Yu ITS*, Tian LW, Wang XR, Tse LA, Tam W, Wong TW. *Effects of Coarse Particulate Matter on Emergency Hospital Admissions for Respiratory Diseases: A Time Series Analysis in Hong Kong*. *Environ Health Perspect* 2012; 120:572–576.
- ✦ Qiu H, Yu ITS*, Wang XR, Tian LW, Tse LA, Wong TW. *Differential effects of fine and coarse particles on daily emergency cardiovascular hospitalizations in Hong Kong*. *Atmospheric environment* 2013; 64: 296–302.
- ✦ Tian L, Ho K-f, Louie PKK, Qiu H, Pun VC, Kan H, Yu ITS, Wong TW. *Shipping emissions associated with increased cardiovascular hospitalizations*. *Atmospheric Environment* 2013; 74: 320–325.
- ✦ Qiu H, Yu ITS*, Wang XR, Tian LW, Tse LA, Wong TW. *Season and humidity jointly modified the effects of air pollution on COPD hospitalizations in Hong Kong*. *Atmospheric environment* 2013; 76:74–80.

香港新的研究結果

- ✦ Qiu H, Yu ITS*, Wang XR, Tian LW, Tse LA, Wong TW. *Cool and Dry Weather Enhances the Effects of Air Pollution on Emergency IHD Hospital Admissions*. *International Journal of Cardiology* 2013; 168:500–505.
- ✦ Yu ITS*, Qiu H, Wang XR, Tian LW, Tse LA. *Synergy between particles and nitrogen dioxide on emergency hospital admissions for cardiac diseases in Hong Kong*. *Int J Cardiol* (2013), 168: 2831–2836.
- ✦ Tian LW*, Qiu H, Pun VC, Lin H, Ge E, Chan JC, Louie PK, Ho KF, Yu ITS. *Ambient carbon monoxide associated with reduced risk of hospital admissions for respiratory tract infections*. *American Journal of Respiratory and Critical Care Medicine* 2013; 188:1240–1245.
- ✦ Pun VC, Yu ITS, Ho KF, Qiu H, Sun ZW and Tian LW*. *Differential effects of ambient source-specific particulate matter on ischemic heart disease emergency hospitalizations*. *Environmental Health Perspectives* 2014; 122:391–396.

香港新的研究結果

- ✦ *Pun VC, Yu ITS, Qiu H, Ho KF, Sun ZW, Louie PKK, Wong TW, Tian LW*. Short-term associations of cause-specific emergency hospitalizations and particulate matter chemical components in Hong Kong. Am J Epidemiol 2014; 179: 1086-95.*
- ✦ *Wong MCS*, Tam WWS, Wang HHX, Lao XQ, Zhang DD, Chan SWM, Kwan MWM, Fan CKM, Cheung CSK, Tong ELH, Cheung NT, Tse LA, Yu ITS. Exposure to air pollutants and mortality in hypertensive patients according to demography: a 10 year case-crossover study. Environmental Pollution 2014; 192:179-85.*
- ✦ *Tian L*, Ho KF, Wang T, Qiu H, Pun VC, Chan CS, Louie PKK, Yu ITS. Ambient Carbon monoxide and the risk of hospitalization due to chronic obstructive pulmonary disease. American Journal of Epidemiology 2014; 180:1159-1167.*
- ✦ *Qiu H, Tian LW*, Pun VC, Ho KF, Wong TW, Yu ITS. Coarse particulate matter associated with increased risk of emergency hospital admissions for pneumonia in Hong Kong. Thorax 2014; 69:1027-33.*

香港新的研究結果

重點新發現

- ✦ 粗顆粒(PM_{2.5-10})對呼吸系統疾病有獨立的不良效應
- ✦ 懸浮粒子的不同來源和化學成分對呼吸及心血管疾病急診入院可能有決定性影響
- ✦ 污染物與污染物之間可以有協同效應 [1+1 > 2]
- ✦ 污染物在不同氣象條件下健康效應可有差異,一般在低溫及乾燥日子影響相對較大
- ✦ 一氧化碳可能減少呼吸系統疾病急診入院的機會
- ✦ 在慢性病(高血壓)患者中之特定風險評估數據

空氣質素健康指數

- ✦ 只是開始
- ✦ 不是終結

Hope you have enough food for thought ...



ignatiusyu78@gmail.com

謝謝!