

Route of transmission of COVID-19

Dr CHEN Hong

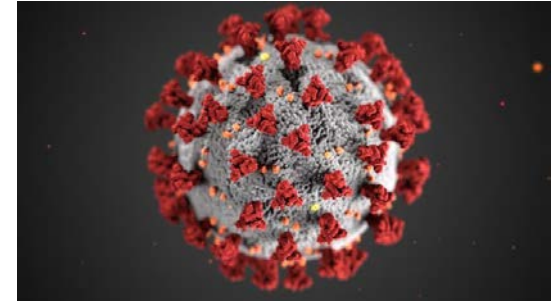
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Coronavirus Disease 2019 (COVID-19)

- Causative agent
 - A novel coronavirus is found to be the causative agent, which named as SARS-CoV-2
- Clinical features
 - Symptoms of the cases include fever, malaise, dry cough and shortness of breath
 - Some cases were in serious condition
 - People of older age or having underlying disease are at a higher risk of deterioration into serious condition
- Incubation Period
 - Estimated range from 1 to 14 days, most commonly around 5 days



Courtesy of CDC

Coronavirus Disease 2019 (COVID-19)

- Routes of transmission

- The main mode of transmission is through respiratory droplets
 - Droplet transmission: when the mucous membrane of the eyes, nose and mouth of a susceptible person come into contact with infectious respiratory droplets
- Can also be transmitted through contact
 - Direct contact: direct contact with secretions or other body fluid
 - Indirect contact: contact with contaminated object or environment

Prevention

- There is no vaccine for this infectious disease at the moment
- Daily life
 - To maintain at all times strict personal and environmental hygiene is key to personal protection against infection and prevention of the spread of the disease in the community
- During work
 - Strictly comply with IC recommendations, especially HH and appropriate use of PPE



Hand Hygiene

Hand hygiene is the single most important measure of reducing the spread of diseases.

- Perform hand hygiene frequently.
- Wash hands with soap and water when hands are visibly dirty or visible soiled with blood, body fluid, after using the toilet or changing the diapers.
- When hands are not visibly soiled, 70-80% alcohol-based handrub is also an effective alternative.



Rub hands for at least 20 seconds

Hand hygiene technique



潔手技巧 搓手 20 秒

Personal Protective Equipment (PPE)

- The primary use of PPE is to protect healthcare workers and reduce opportunities for transmission of microorganisms in healthcare facilities
- Appropriate use of PPE can safeguard oneself and the others



Appropriate of PPE

- Routes of transmission



- Risk assessment

- Nature of contact
- Working environment

Aerosol Generating Procedures



WHO - The COVID-19 Risk Communication Package For Healthcare Facilities

The COVID-19 Risk Communication Package For Healthcare Facilities



This package provides healthcare facility management and healthcare workers with an overview of the key actions required to keep safe and healthy in the workplace.

Updated March 2, 2020.

This toolkit is designed to be easily edited, printed and shared. The layout is suitable for any ISO-sized paper (A4, A3, A2).

Images and text have been separated so the layout can be adjusted depending on the requirements.

To print, export the files as PDF or PNG and send to the printer. For borderless printing, the image may be scaled to fit the printable area and trimmed along the edges.

Novel Coronavirus COVID-19

FOR HEALTHCARE WORKERS

Personal Protective Equipment (PPE) According to Healthcare Activities

Remember Hand hygiene is always important. Clean hands before putting on, and after taking off, PPE.

Triage/points of entry screening personnel
medical mask

Collecting respiratory specimens
goggles OR face shield
Respirator (N95 or FFP2)
gown
gloves

Caring for a suspected/confirmed case of COVID-19 with NO aerosol-generating procedure
goggles OR face shield
gown
medical mask
gloves

Caring for a suspected/confirmed case of COVID-19 WITH aerosol-generating procedure
goggles OR face shield
Respirator (N95 or FFP2)
gown
gloves

Transport of suspected/confirmed case of COVID-19, including direct care
goggles OR face shield
medical mask
gown
gloves

WHO WPRO

CHP - Recommended Personal Protective Equipment (PPE) in hospitals/clinics under Serious/ Emergency Response Level Coronavirus disease (COVID-19) (Interim)



衛生防護中心
Centre for Health Protection

Infection Control Branch

Recommended Personal Protective Equipment (PPE) in
hospitals/clinics under Serious/ Emergency Response Level
Coronavirus disease (COVID-19)
(Interim)

Last updated:
2 March 2020

Recommended Personal Protective Equipment for routine patient care and performing aerosol-generating procedures in hospitals/clinics under Serious / Emergency Response Level.

Apply Standard Precautions +/- transmission based precautions for all patients			
Areas	Activities	Serious Response Level	Emergency Response Level
		Recommended PPE	
High-risk patient areas I. Triage stations of Out-patient Clinics and AEDs	Routine patient care and aerosol-generating procedures (a,b)	<ul style="list-style-type: none"> Surgical mask eye protection (d) gown gloves cap(optional) Use N95 respirator when performing aerosol-generating procedures.	<ul style="list-style-type: none"> Surgical mask eye protection (d) gown gloves cap(optional) Use N95 respirator when performing aerosol-generating procedures.
	High-risk patient areas II. Designated clinics III. Isolation rooms (including isolation rooms in ICU and AEDs)	Routine patient care and aerosol-generating procedures (a,b)	<ul style="list-style-type: none"> N95 respirator eye protection (d) gown gloves cap(optional) Use N95 respirator when performing aerosol-generating procedures.
	No patient contact (e.g. outside patient room)	<ul style="list-style-type: none"> Surgical mask 	<ul style="list-style-type: none"> Surgical mask
Other patient areas	Routine patient care	<ul style="list-style-type: none"> Surgical mask, Standard Precautions +/- transmission based precautions 	<ul style="list-style-type: none"> Surgical mask, Standard Precautions +/- transmission based precautions
	Aerosol-generating procedures (a,c,e)	<ul style="list-style-type: none"> N95 respirator eye protection (d) gown gloves cap (optional) 	<ul style="list-style-type: none"> N95 respirator eye protection (d) gown gloves cap (optional)
	No patient contact	<ul style="list-style-type: none"> Surgical mask is required in patient areas 	<ul style="list-style-type: none"> Surgical mask is required in ALL areas

Why not always N95?

Acta Neurol Scand 2006; 113: 199–202 DOI: 10.1111/j.1600-0404.2005.00560.x

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ACTA NEUROLOGICA
SCANDINAVICA

- According to a study in Singapore involving 212 health care workers:
- continuous use of the N95 face-mask exceeding 4 hours were associated with development of headaches.

Headaches and the N95 face-mask amongst healthcare providers

Lim ECH, Seet RCS, Lee K-H, Wilder-Smith EPV, Chuah BYS, Ong BKC. Headaches and the N95 face-mask amongst healthcare providers. Acta Neurol Scand 2006; 113: 199–202
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Background: During the 2003 severe acute respiratory distress syndrome epidemic, healthcare workers mandatorily wore the protective N95 face-mask. **Methods:** We administered a survey to healthcare workers to determine risk factors associated with development of headaches (frequency, headache subtypes and duration of face-mask wear) and the impact of headaches (sick days, headache frequency and use of abortive/preventive headache medications). **Results:** In the survey, 212 (47 male, 165 female) healthcare workers of mean age 31 years (range, 21–58) participated. Of the 79 (37.3%) respondents who reported face-mask-associated headaches, 26 (32.9%) reported headache frequency exceeding six times per month. Six (7.6%) had taken sick leave from March 2003 to June 2004 (mean 2 days; range 1–4 days) and 47 (59.5%) required use of abortive analgesics because of headache. Four (2.1%) took preventive medications for headaches during this period. Multivariate logistic regression showed that pre-existing headaches [$P = 0.041$, OR = 1.97 (95% CI 1.03–3.77)] and continuous use of the N95 face-mask exceeding 4 h [$P = 0.053$, OR = 1.85 (95% CI 0.99–3.43)] were associated with development of headaches. **Conclusions:** Healthcare providers may develop headaches following the use of the N95 face-mask. Shorter duration of face-mask wear may reduce the frequency and severity of these headaches.

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Keywords: headaches; N95; frequency; risk factors; severity

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Why not always N95?

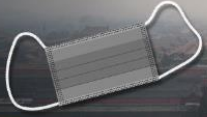




霧霾藏隱形殺手PM2.5 邊種口罩最有保護力?

社會 18:48 2019/12/21 16

分享: f t p

熱門: 口罩防疫措施 停課不停學 口罩供應 武漢肺炎 大逃殺 劇情預告 法證先鋒 星夢學院肺炎 開心運送

防毒霧霾邊種口罩好? Topick			
			
	活性炭口罩	普通外科口罩	N95口罩
特性	吸附揮發性有機物及口氣	防飛沫飛出	過濾懸浮粒子
防PM2.5能力	30%	30-70%	95%以上

專家指長戴N95或頭痛 外科口罩已可阻隔飛沫

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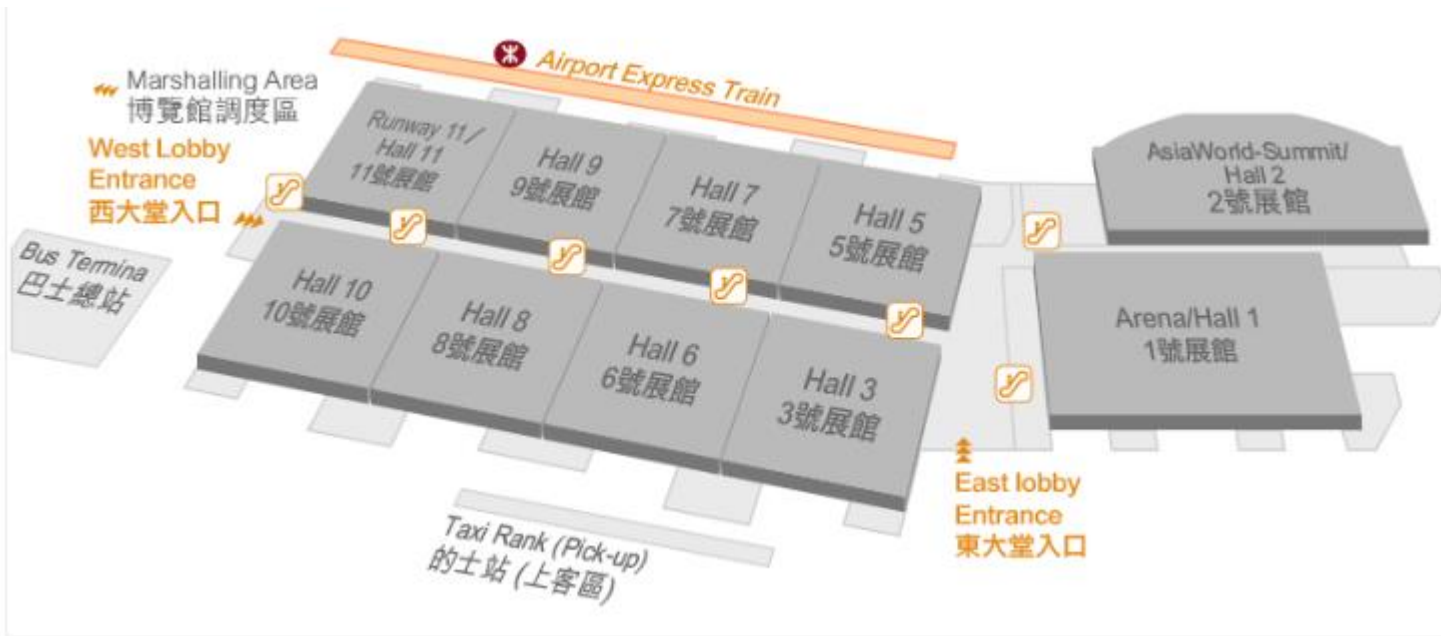


3. N95/N100口罩

梁宗存表示，N95口罩中的「95」，是指能隔離95%空氣中的懸浮粒子，因N95口罩的口和鼻位都有橡筋緊箍著，形成密封的狀態，故N95口罩可隔離大部分及較細的污染物。

但許樹昌認為，N100較N95更能阻擋懸浮粒子，但由於PM2.5的體積過於微小、難以完全隔離。由於N95與N100口罩過於密封，長期帶若半小時後，便容易出現頭痛的問題，不適宜在社區長期使用。

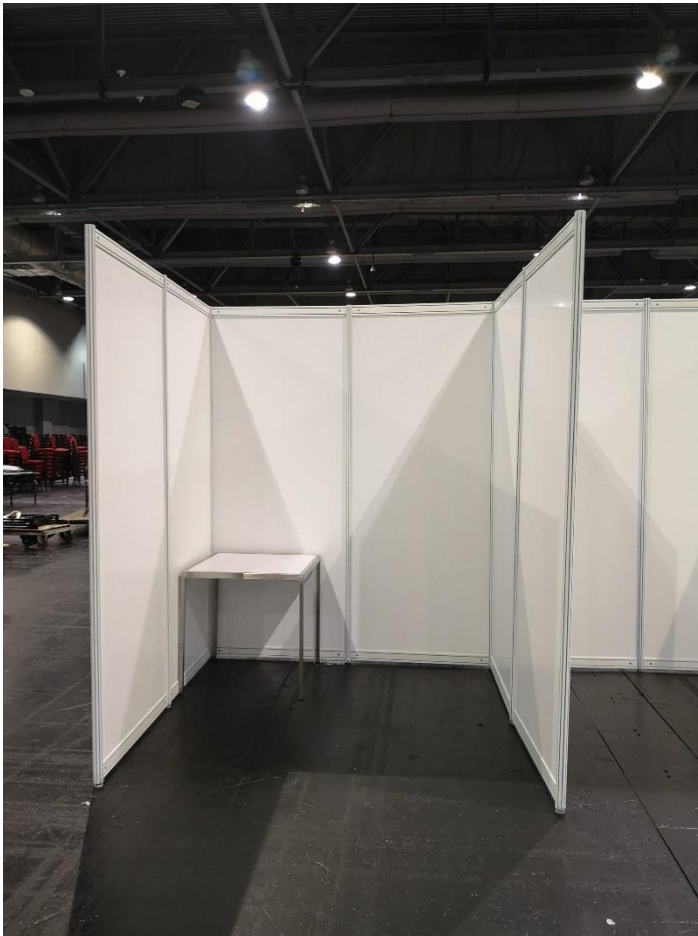
The Department Of Health Specimen Collection Centre Asia World Expo



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- Passenger zone
- Staff zone

- Saving Deep Throat Saliva is not an aerosol generating procedure

Summary

- The main mode of transmission of COVID-19 is through respiratory droplets
- To maintain at all times strict personal and environmental hygiene is key to personal protection against infection and prevention of the spread of the disease in the community
- Saving Deep Throat Saliva is not an aerosol generating procedure
- Strictly comply with IC recommendations, especially HH and appropriate use of PPE, can protect staff against the risk of COVID-19 while working in the clinic setting

Thank you