

Pulmonary Function Testing during SARS-CoV-2 Outbreaks: Preliminary Guidance from TSANZ/ANZSRS - January 2022

The joint TSANZ/ANZSRS working party for Pulmonary Function Testing (PFT) and COVID-19 is preparing a document for distribution in late January 2022 providing advice on the safe performance of pulmonary function testing as SARS-CoV-2 transitions from pandemic to endemic in Australia and New Zealand. The arrival of the highly infectious Omicron strain of SARS-CoV-2 has increased risk of COVID-19 infection. Hence, the working party felt it pertinent to provide preliminary advice prior to publication of the full document.

The advice is for providers of pulmonary function tests across all clinical, occupational and research settings. The advice is intended to supplement local infection prevention and State or Territory Government directives. Practices without access to local infection prevention support are encouraged to seek advice from relevant sources (e.g. TSANZ accredited [laboratories](#)).

The Working Group's key messages reflect a precautionary approach to protect the safety of both healthcare workers (HCW) and individuals being tested in a rapidly changing environment. The strategies employed may vary depending on local transmission and practice environment.

Key Messages:

1. SARS-CoV-2 is transmitted predominantly via both droplets and aerosols. Pulmonary function tests result in aerosol generation (via manoeuvres or induced cough). The HCW is in close proximity to patients for extended periods of time. These factors are critical in determining the risk mitigating strategies employed.
2. All individuals attending for pulmonary function tests should be screened for SARS-CoV-2 symptoms and exposures prior to testing. Pulmonary function testing should NOT be performed in patients who are febrile, who have new acute respiratory viral symptoms, or are known to be SARS-CoV-2 positive or suspected SARS-CoV-2 positive (symptomatic, awaiting test results, exposure or epidemiological risk factors).
3. Neither an individual's vaccination status nor recent negative COVID-19 test (PCR or RAT) eliminate the risk of viral transmission and should not be used to inform personal protective equipment (PPE) use.
4. Healthcare workers performing PFTs should wear at a minimum N95 masks and eyewear (face shields or goggles). Additional PPE (e.g. gowns, gloves) may be required where higher levels of aerosol generation or cough are expected (e.g. cardiopulmonary exercise tests, bronchial provocation tests) or inline filters cannot be used. Standard infection prevention laboratory practices such as hand hygiene and cleaning between tests are essential.
 - HCW should educate themselves regarding proper use and fit of N95 masks. Fit testing is ideal; individual fit-checking prior to each use is essential.
5. Inline filters reduce but do not eliminate aerosols and should be used where possible.
6. Surgical masks should be worn by individuals undergoing functional exercise assessments.
7. PFTs should be performed in single rooms, not shared spaces.
8. Room ventilation is essential to minimise persistent aerosol exposure. While a minimum of 6 air changes per hour is recommended for patient care areas, 12 air changes per hour are recommended for rooms where aerosol generating procedures occurⁱ. In the absence of adequate ventilation, strategies such as leaving rooms unoccupied between testsⁱⁱ or use of HEPA filtration systems to supplement room ventilation are strongly encouragedⁱ.
9. In regions with a high prevalence of SARS-CoV-2 infection and/or local logistic/workforce limitations, the number of PFTs performed should be minimised. Strategies such as triaging referrals or limiting test types to those essential for clinical decision making may be useful.

ⁱ [Roadmap to improve and ensure good indoor ventilation in the context of COVID-19 \(who.int\)](#)

ⁱⁱ Guidelines for Environmental Infection Control in Health-Care Facilities Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC) [RR5210 EIC front.pmd \(cdc.gov\)](#)