



## COVID-19 Update

10:10

Prof Gary Grohmann

Virologist, University of Sydney, Director of IC and an independent consultant with Environmental Pathogens, Canberra

# Disclosures



- Board member/Director; Immunisation Coalition
  - Scientific Advisory Committee: Immunisation Coalition
  - Adj Prof University of Sydney
- 
- Consultant; WHO 2015 -
  - Director and Principal Consultant; Environmental pathogens P/L

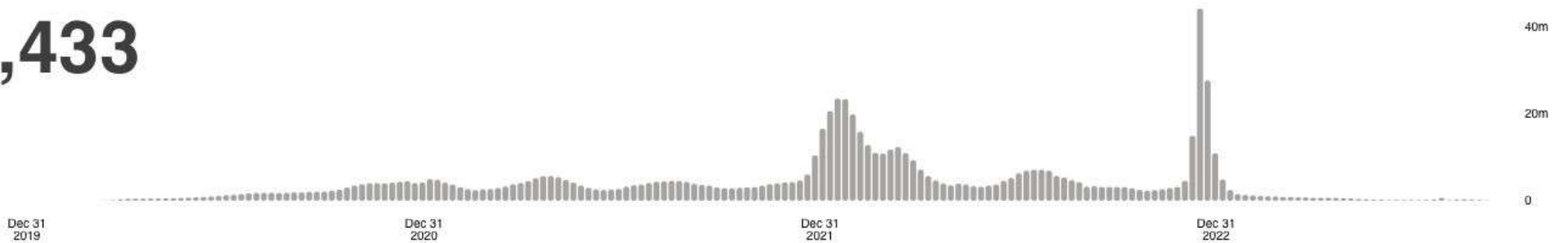
# SARS CoV 2 / COVID-19 cases and deaths



Global situation: As of **18 September 2023** (<https://covid19.who.int>)

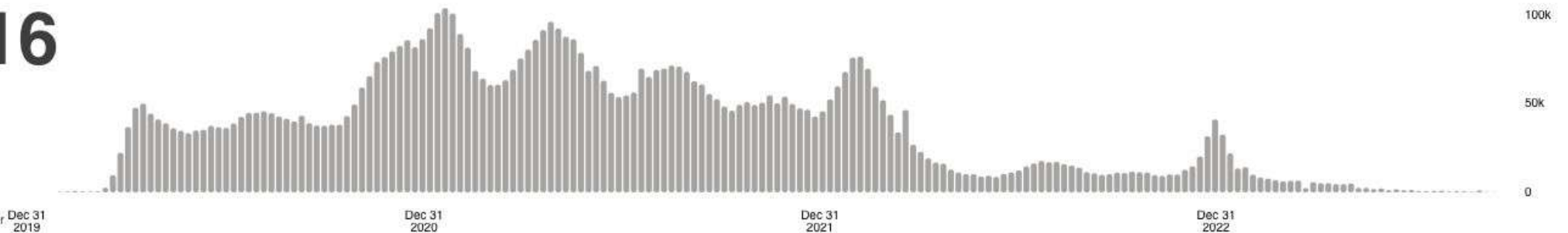
## 770,875,433

confirmed cases



## 6,959,316

deaths



Source: World Health Organization

Data may be incomplete for the current day or week

**13.5B vaccine doses given**

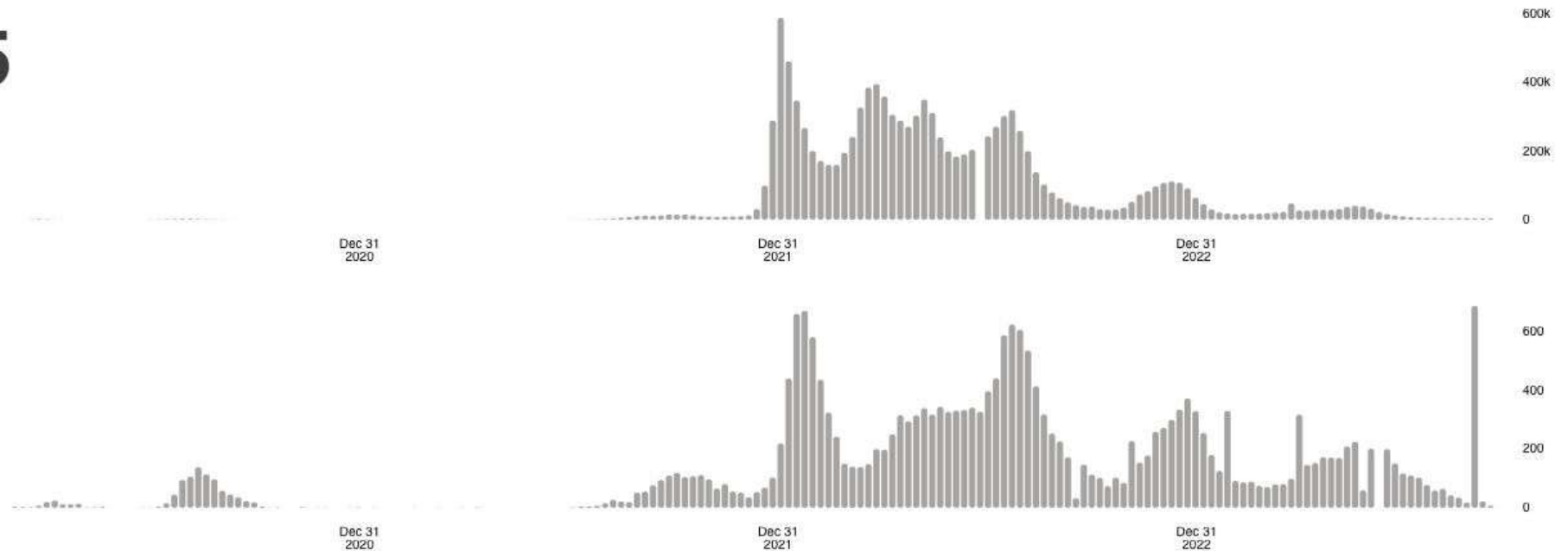
# SARS CoV 2 / COVID-19 cases and deaths

**Australian situation: As of 18 September 2023 (<https://covid19.who.int>)**

**11,600,795**  
confirmed cases

**23,601**  
deaths

Source: World Health Organization.  
Data may be incomplete for the current day or week.

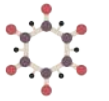


**68.5M vaccine doses given**

## Seroprevalence studies

- 77.7% in England
- 79.5% in Wales
- 74.5% in Northern Ireland
- 79.8% in Scotland
- **98% Australia**
- Australia: At least 64% of 0–19 year-olds have been infected with COVID-19

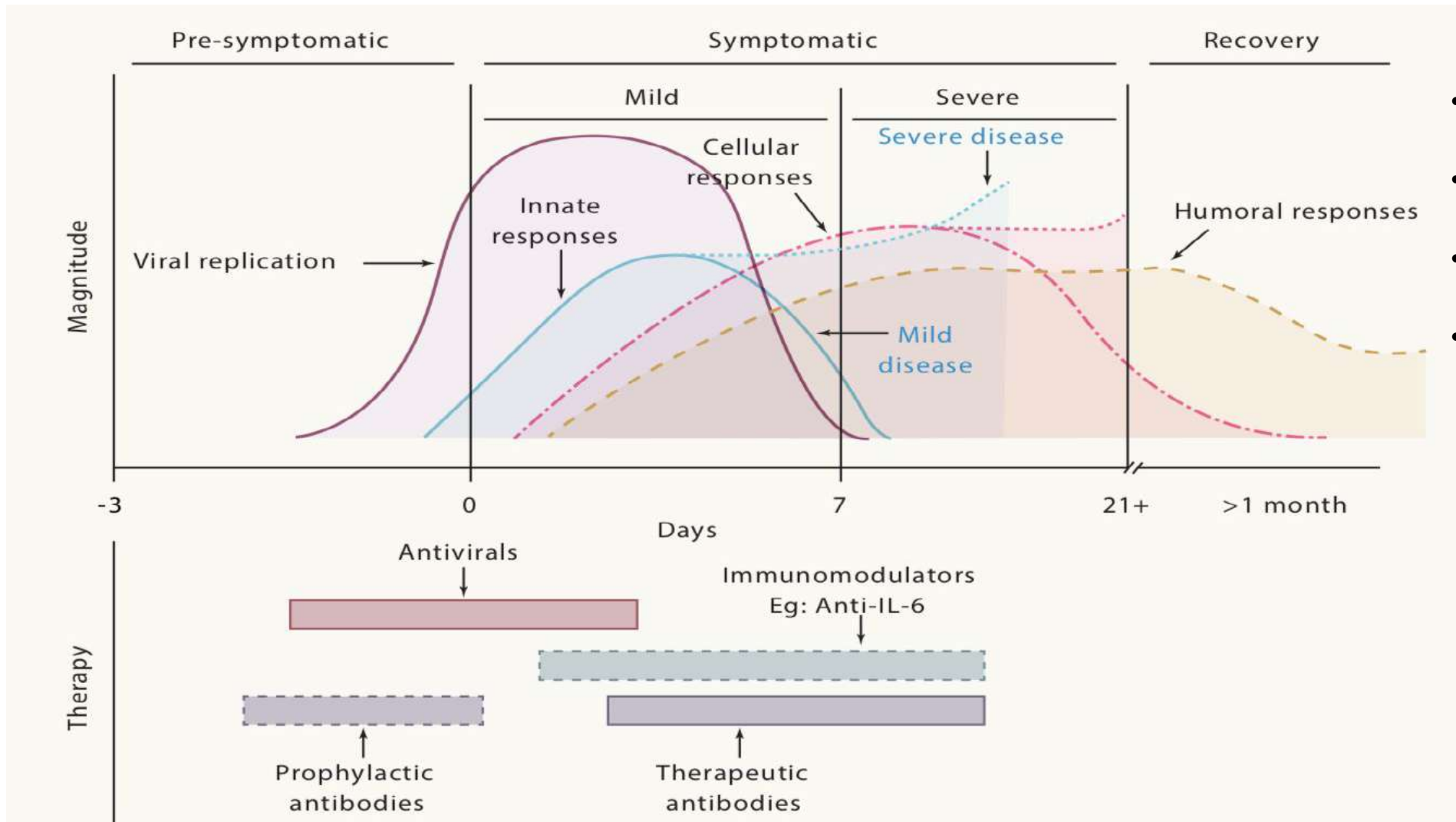
# The clinical course



IMMUNISATION  
COALITION

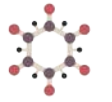
PCR TEST

RAT TEST

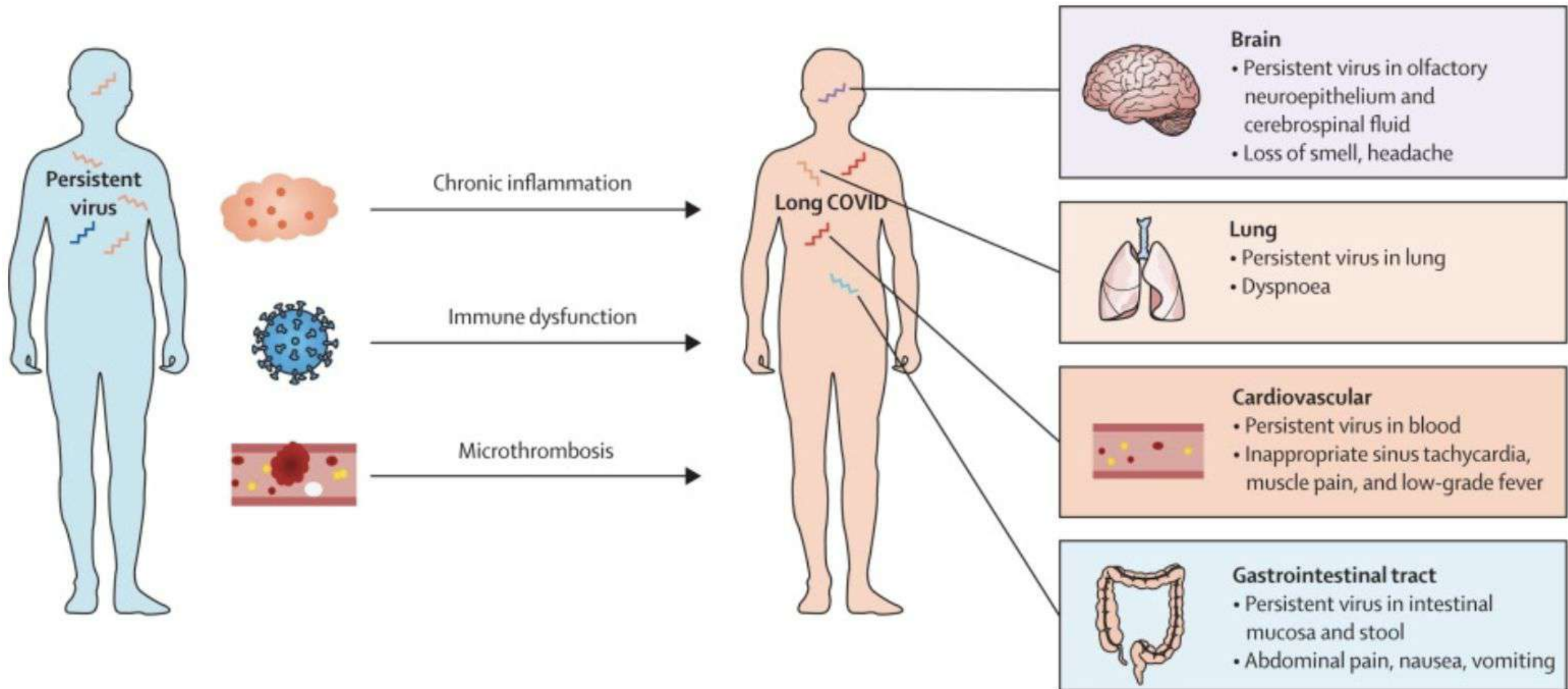


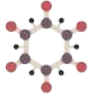
- Some have significant sequelae
- Many have poor neutralizing antibody.
- Antibody wanes leading to reinfection
- Post-COVID19-syndrome

# Long Covid (Post Covid syndrome)



IMMUNISATION  
COALITION

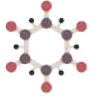




IMMUNISATION  
COALITION

Treatments: (<https://www.health.gov.au/health-alerts/covid-19/treatments/about>)

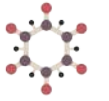




## Recent WHO Recommendations

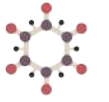
- *Two recent recommendations from the World Health Organization (WHO) will have a significant impact on Australia's response to the COVID-19 pandemic for our next Winter season*

## WHO recommendation 1: The end of the global health emergency



IMMUNISATION  
COALITION

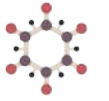
- The good news is that the WHO has declared that the COVID-19 global health emergency is over.
  - The WHO pointed to the dramatic drop in the global death rate of COVID-19 from 100,000 per week in January 2021 to 3,500 per week in April 2023 as one of the reasons for its decision.
- Omicron subvariants are causing less severe disease than previous subvariants.
- There is no need to catastrophise every appearance of each new subvariant.
  - The rise of hybrid immunity.
- However, the WHO has made it clear that while the emergency designation has ended, the pandemic still exists. We should not let down our guard .....
- The pandemic will not end soon.



## WHO recommendation 2: The shift back to monovalent vaccines

- Monovalent COVID-19 vaccines target a single variant of SARS-CoV-2, while bivalent vaccines provide protection against two different variants in a single vaccine formulation.
- ATAGI recommends bivalent vaccines to provide broader protection
- WHO has issued a new recommendation that future vaccination programs use monovalent vaccines only
- The WHO provides several reasons for this new direction.
  - data shows that the pre-Omicron variants no longer circulate,
  - immune imprinting - where the immune system's response towards previously encountered antigens (ancestral variant) reduces the response to new antigens.

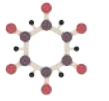
## Australia's vaccination program



IMMUNISATION  
COALITION

- It's important that everyone over 75 and those in high-risk groups get vaccinated and take boosters around every 6 months, and that vulnerable people and those with complex needs, take sensible precautions, especially in closed or poorly ventilated spaces.
  - High-risk groups will gain the most from receiving a COVID-19 booster.
- Vaccines for the vulnerable, masks, sensible social distancing, hygiene measures, as well as continuing education programs, are still important in our post-pandemic response.
- However, it is still very important for people in high-risk groups including older adults and people with immune problems get regular booster vaccines every 6 months.

## ATAGI recommendations <https://www.health.gov.au/news/atagi-update-on-the-covid-19-vaccination-program>

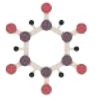


IMMUNISATION  
COALITION

<b>Age</b>	<b>At risk<sup>#</sup></b>	<b>No risk factors</b>
<b>&lt;5 years</b>	Not recommended	Not recommended
<b>5-17 years</b>	Not recommended	Not recommended
<b>18-64 years</b>	Consider if <b>severe immunocompromise<sup>^</sup></b>	Not recommended
<b>65-74 years</b>	Consider	Consider
<b>≥ 75 years</b>	Recommended	Recommended

Timing: 2023 vaccine doses should be given from 6 months after a person's last dose.

VE against mortality 70-78%. Wanes after 8-12 weeks.



## Vaccination platform

- mRNA vaccines, viral vectored vaccines, and recombinant protein vaccines have demonstrated impressive efficacy and safety
- The necessity and risk-benefit balance of administering continuous booster doses of mRNA vaccines to healthy individuals under 50 years old are uncertain
  - [The WHO has stated](#) that, "data to support an additional dose for healthy younger populations are limited; preliminary data suggest that in younger people, the benefit is uncertain."
- Protein-based vaccines options offer advantages and can be used as a booster if preferred by the patient.

## Vaccination platform : Protein

- TGA-approved recombinant protein technology has a strong safety record, consistent high efficacy across high-risk populations and severe disease, and the ability to withstand varying temperatures which facilitates its distribution
- Protein-based vaccines have also exhibited low rates of myocarditis/pericarditis compared to background cases globally
- Anecdotal reports indicate that protein vaccines may result in fewer work days missed compared to mRNA vaccines
- Enhanced protection is provided by heterologous vaccination

# Concluding remarks

- 2<sup>nd</sup> generation vaccines are needed
- **Ideally Vaccines must stop transmission**
- mRNA, Self amplifying RNA, and recombinant proteins vaccines are currently the most successful platforms
  - Mild to severe adverse reactions
  - Those under 30 should know the risks of myocarditis
- **COVID vaccines must gain acceptance**
  - Combination COVID/Flu rather than concomitant
  - Annual vaccination
  - Biannual for those at higher risk
- **Use of MoAbs**
- **Better AV drugs**
- Threat of multiple respiratory threats. e.g. Influenza Covid hMPV and RSV