

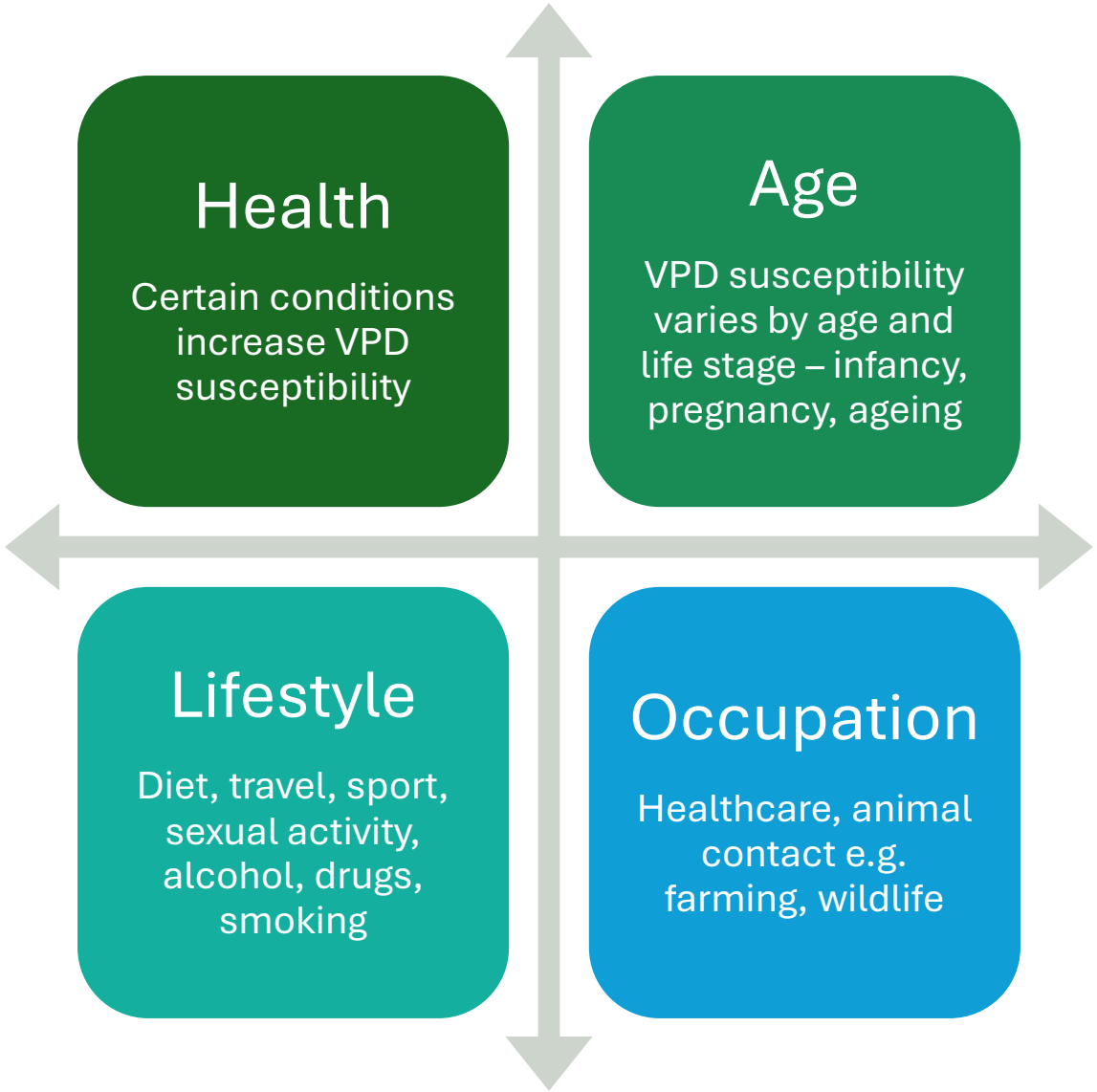



# Vaccination in the Elderly

Prof Katie Flanagan

# HALO Principal

Vaccination susceptibility and needs vary according to these factors




Other Factors:

- Sex
- Genetics
- Epigenetics
- Environment
  - urban vs rural
  - tropical vs temperate

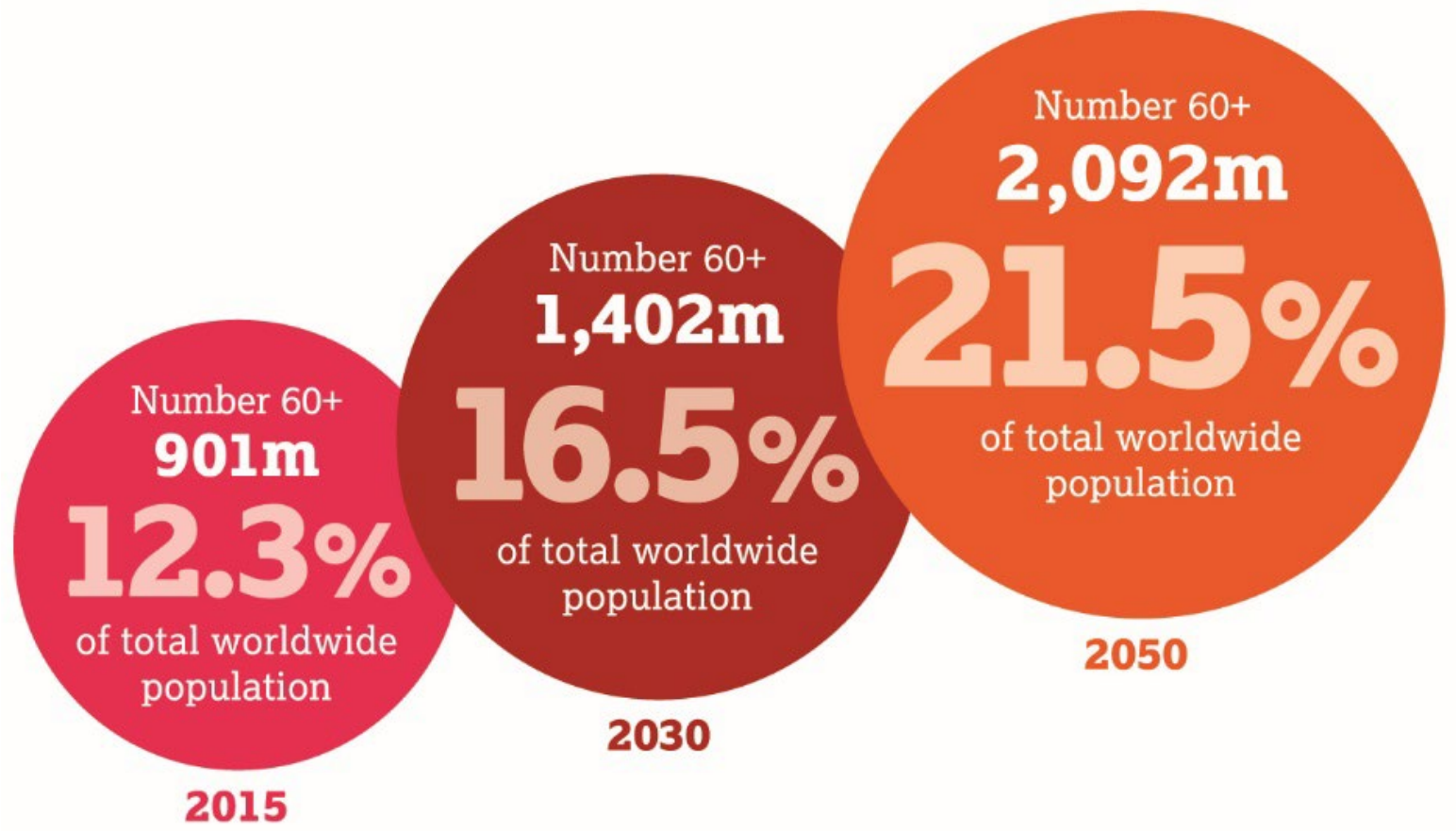
# Why Focus on the Elderly?

- The aging population of the world is increasing (1 in 4 Australians are ≥65 years)
- Healthy elderly people make a significant contribution to the economy:
  - Care of grandchildren
  - Voluntary work
  - International travel
  - Spending their pensions



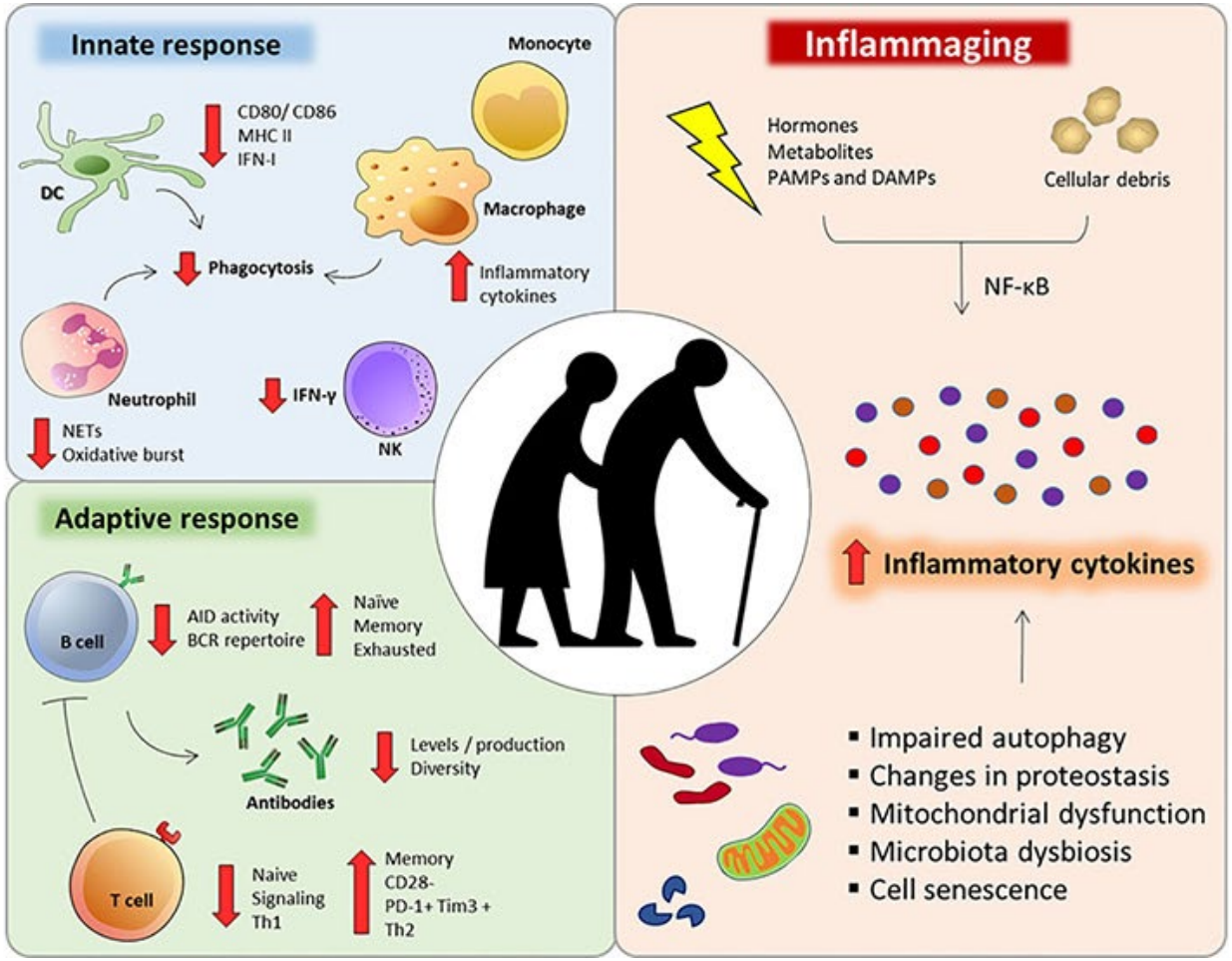
- Sick elderly people are a huge drain on resources
- Healthy aging is therefore a major public health priority





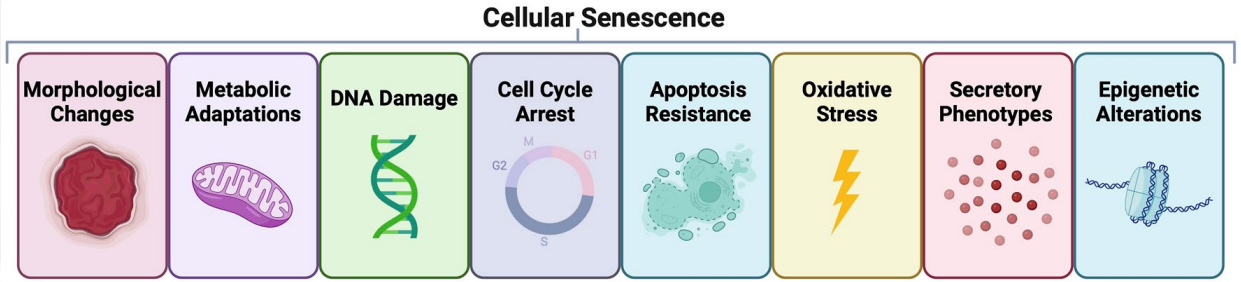

The number of people >60 years expected to double to >2 billion by 2050

# Immunosenescence



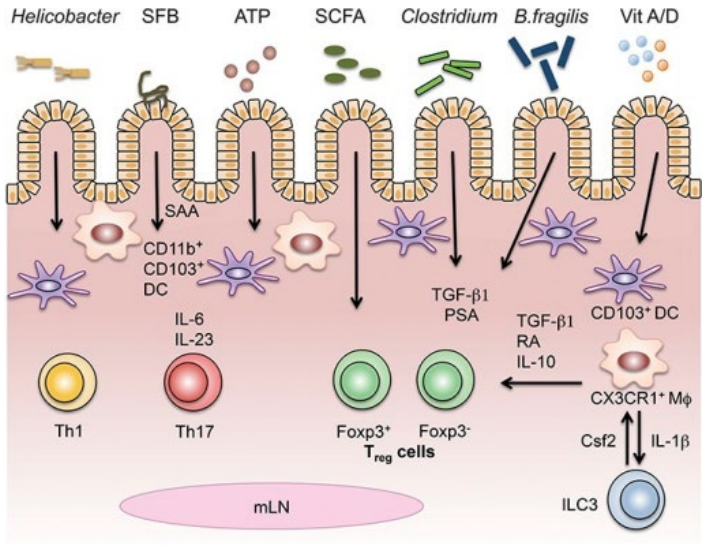

*Biointron 2024*

- Multiple arms of both the innate and adaptive arms of the immune system deteriorate with increasing age
- Inflammaging (chronic low-grade inflammation) also occurs, characterised by enhanced immune activation, DNA damage, dysfunctional autophagy
- CMV infection probably contributes to inflammaging
- Inflammaging predicts frailty, cognitive impairment, mortality



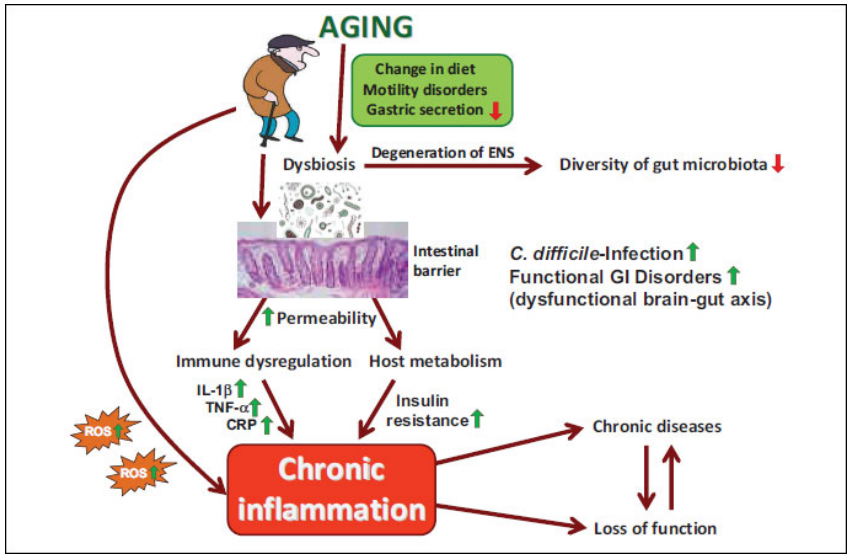

*Wrona et al. Front Aging 2024; 5: 1490302*

# The Role of the Gut Microbiota

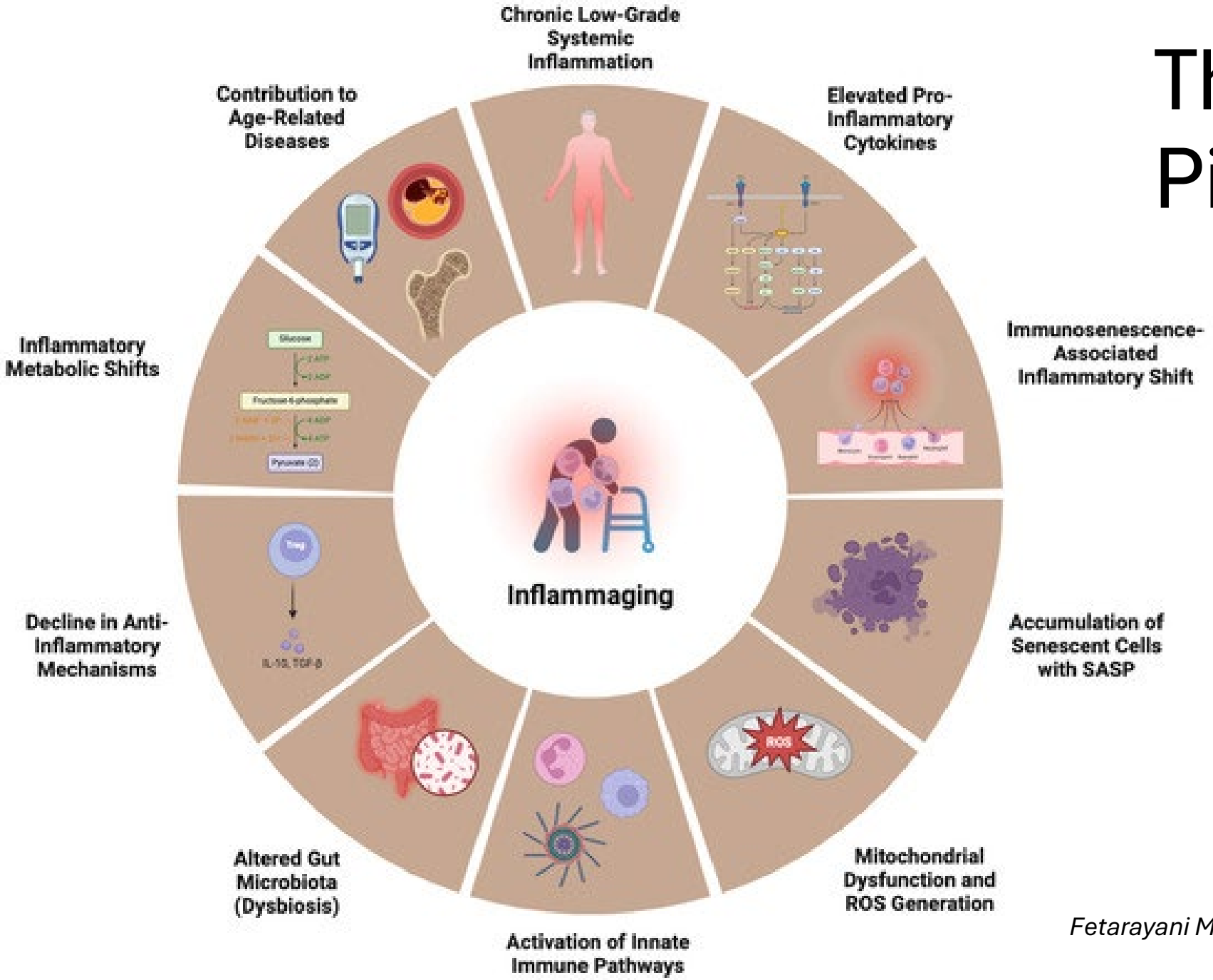



- The gut microbiota interact at multiple levels to influence both innate and adaptive immunity (locally and systemically)
- In particular there are high levels of regulatory factors to suppress inflammation

- Developing an abnormal microbiota is called **dysbiosis**
- Dysbiosis linked to systemic inflammation and many inflammatory diseases - IBD, autoimmune diseases, allergy, obesity, diabetes, anxiety, dementia
- Dysbiosis increases with age contributing to inflammaging



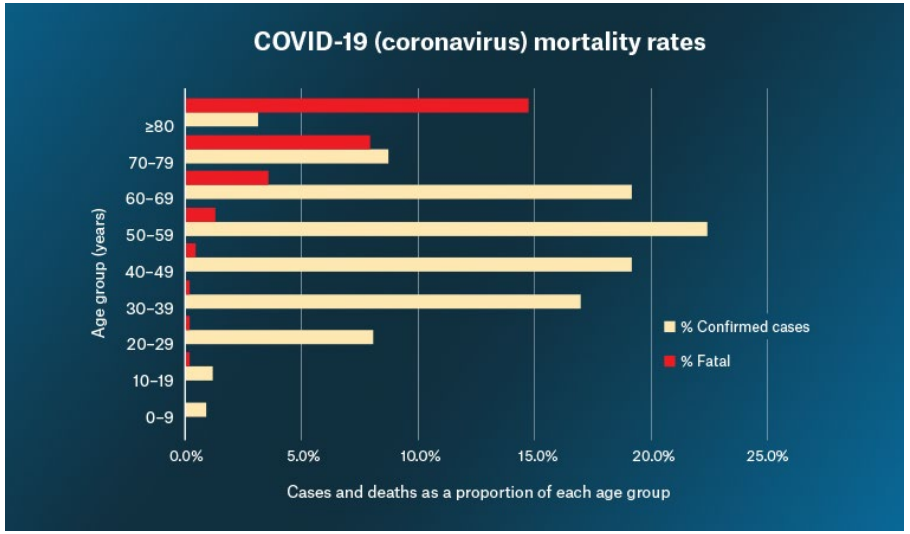
# The Overall Picture



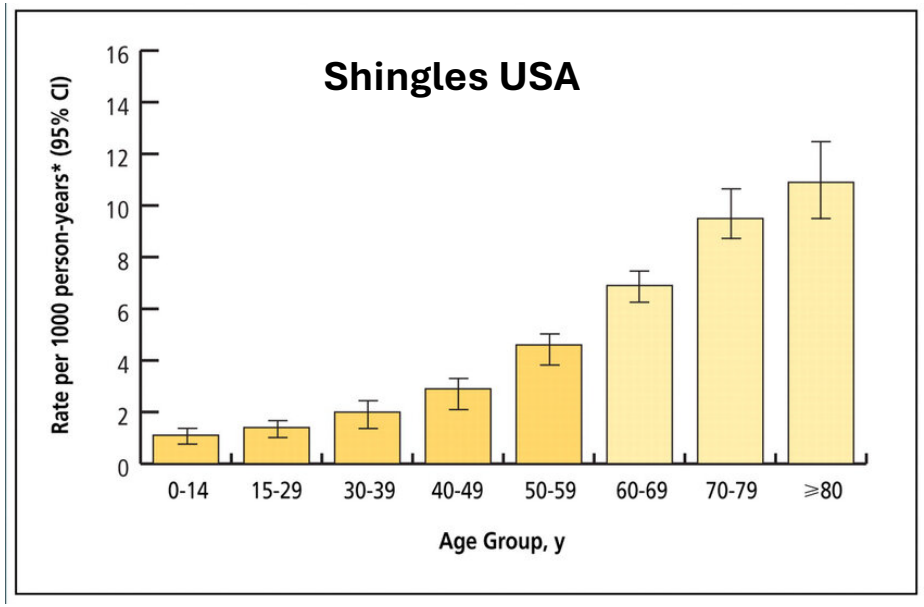

*Fetarayani Med Sci 2025; 13(3): 100*

# Impact of Immunosenescence

- Increased susceptibility to infections
- More severe, more complications, slower recovery from infections
- Prolonged hospital stay with infections
- Greater reactivation of latent / dormant infections  (TB, shingles)
- Increased age-related diseases e.g. cardiovascular, neurodegenerative, metabolic
- Increased malignancies

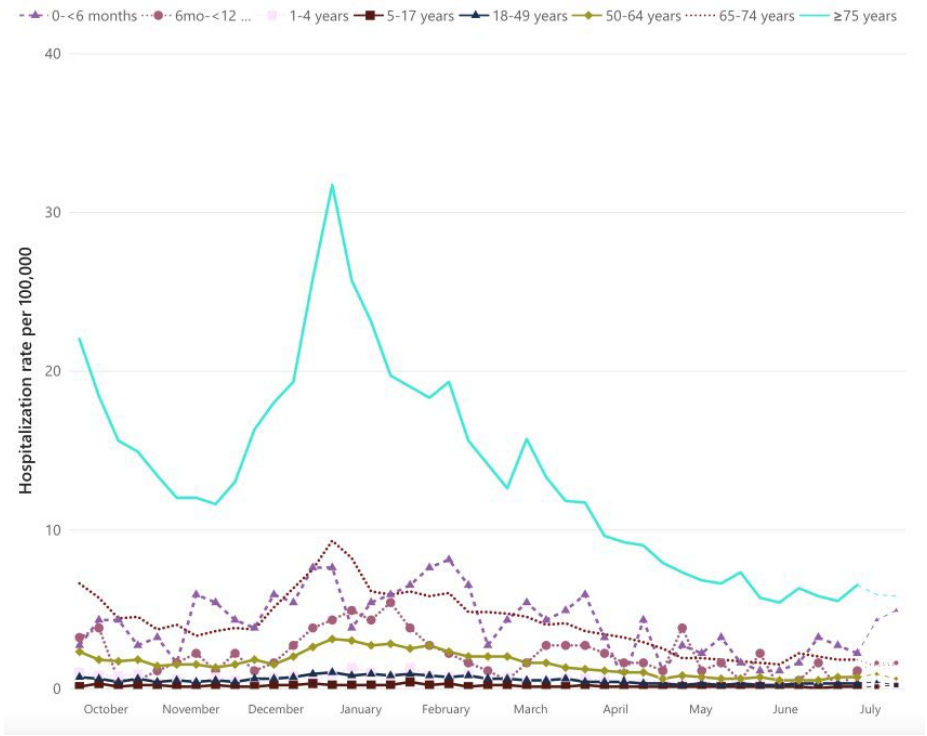



*China CDC Weekly*



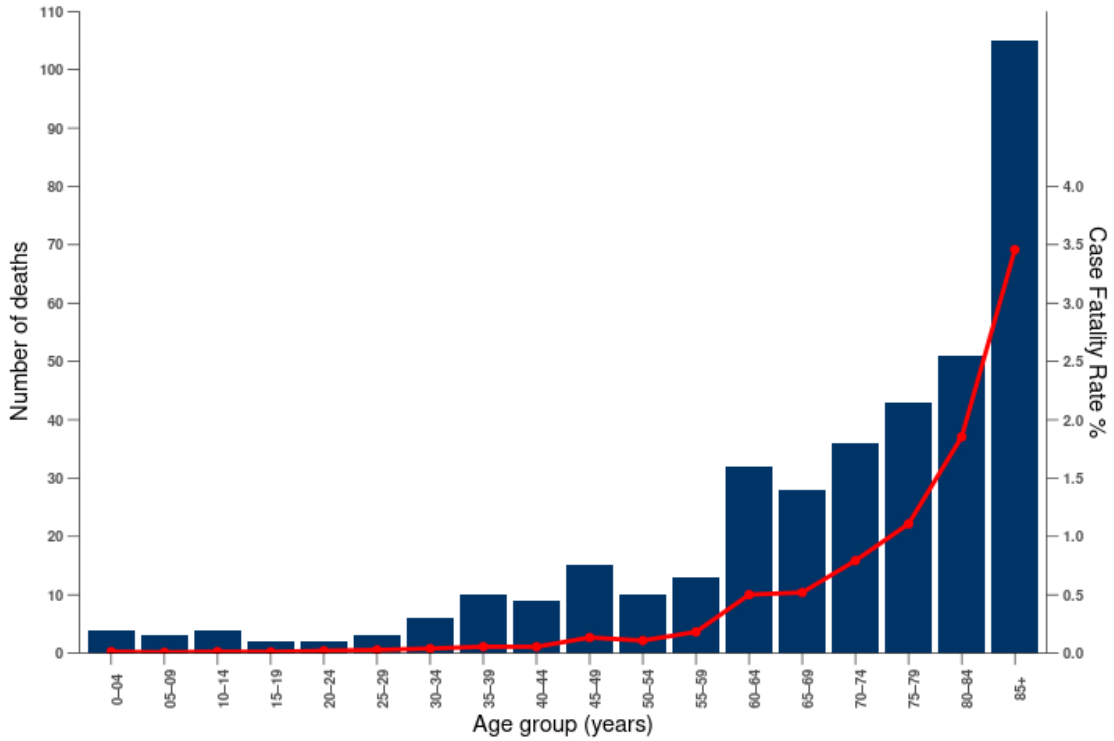

*Weaver J Gen Intern Med 2009*

## COVID-19 Hospitalisation Rates (USA 2024-25)



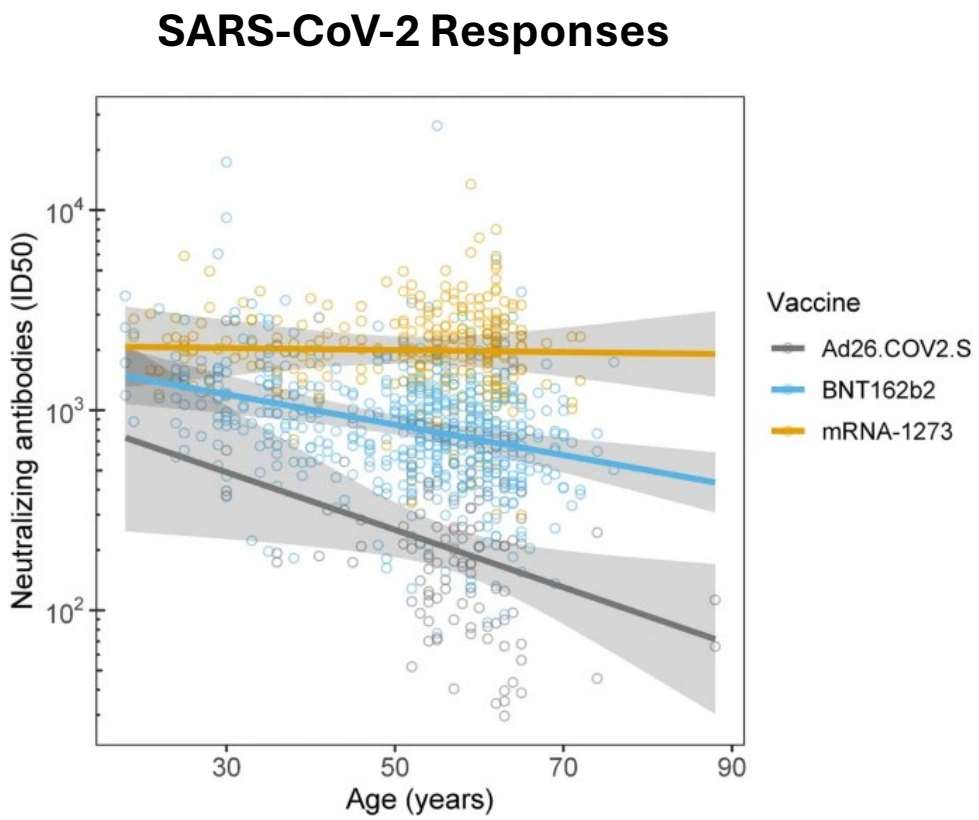

*COVID-NET Dashboard, CDC*

## Influenza-Associated Deaths by Age (Australia 2023)

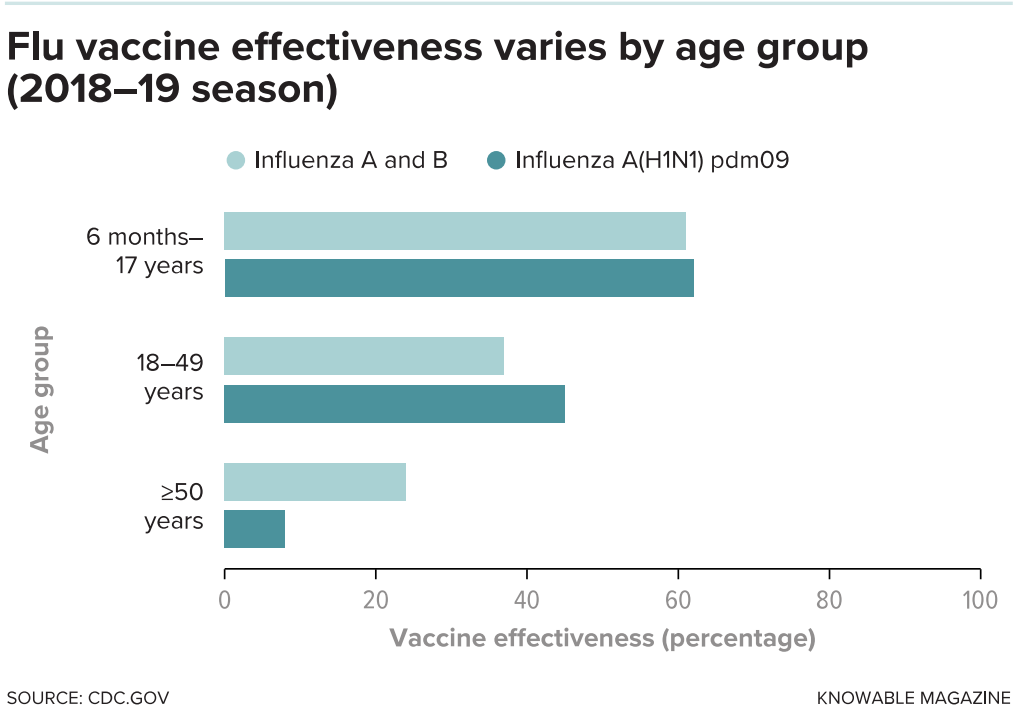



*NNDS 01 Jan to 15 Oct 2023*

# Vaccine Responses and Effectiveness Decline with Age

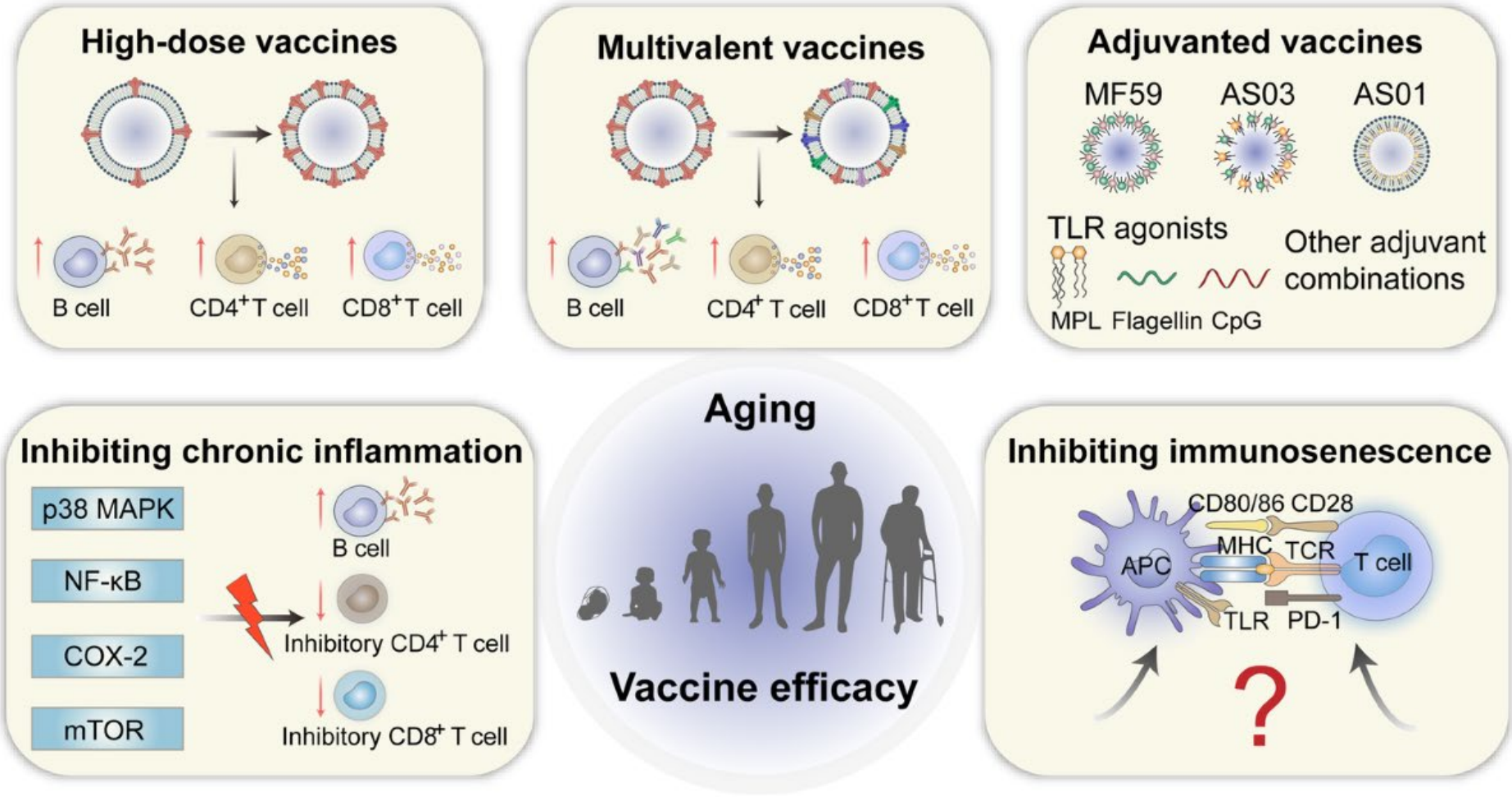



*Prather et al. Sci Reports 2023; 13: 6505*




*Wosen 2020*

# Overcoming Immunosenescence




*Hou et al. npj Vaccines 2024; 9: 77*

# Overcoming Immunosenescence

## Influenza Vaccine

- High Dose Vaccine – Fluzone with 4 x more antigen
- Adjuvanted Vaccine – Fluad with MF59  adjuvant







## Shingles

- Shingrix with ASO1 adjuvant

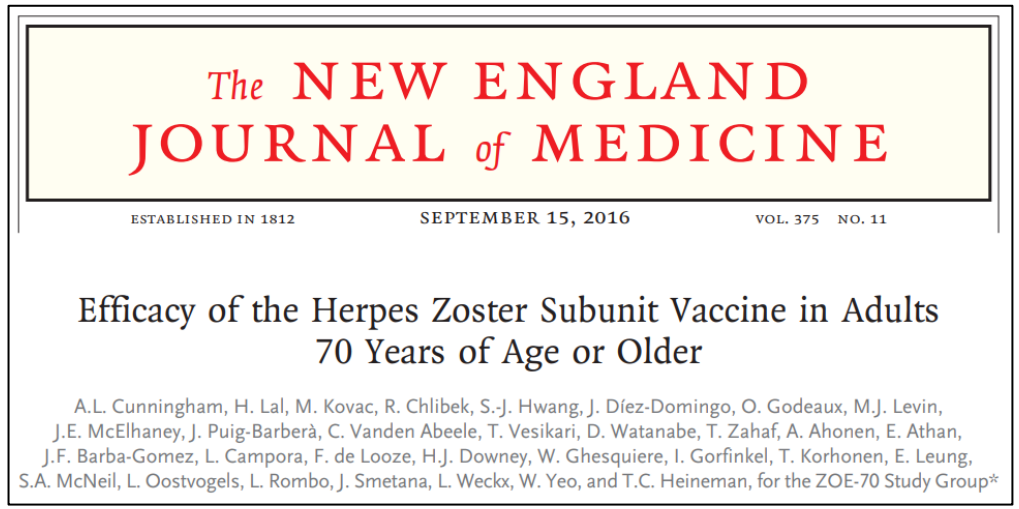



## RSV

- Arexvy with ASO1 adjuvant



# Efficacy of Shingrix at ≥70 years



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 15, 2016 VOL. 375 NO. 11

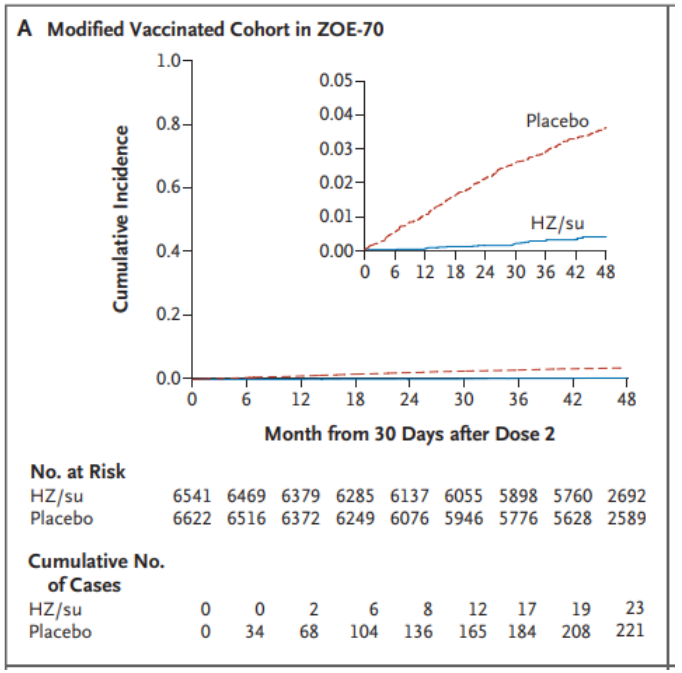
Efficacy of the Herpes Zoster Subunit Vaccine in Adults 70 Years of Age or Older

A.L. Cunningham, H. Lal, M. Kovac, R. Chlibek, S.-J. Hwang, J. Díez-Domingo, O. Godeaux, M.J. Levin, J.E. McElhaney, J. Puig-Barberà, C. Vanden Abeele, T. Vesikari, D. Watanabe, T. Zahaf, A. Ahonen, E. Athan, J.F. Barba-Gomez, L. Campora, F. de Looze, H.J. Downey, W. Ghesquiere, I. Gorfinkel, T. Korhonen, E. Leung, S.A. McNeil, L. Oostvogels, L. Rombo, J. Smetana, L. Weckx, W. Yeo, and T.C. Heineman, for the ZOE-70 Study Group*

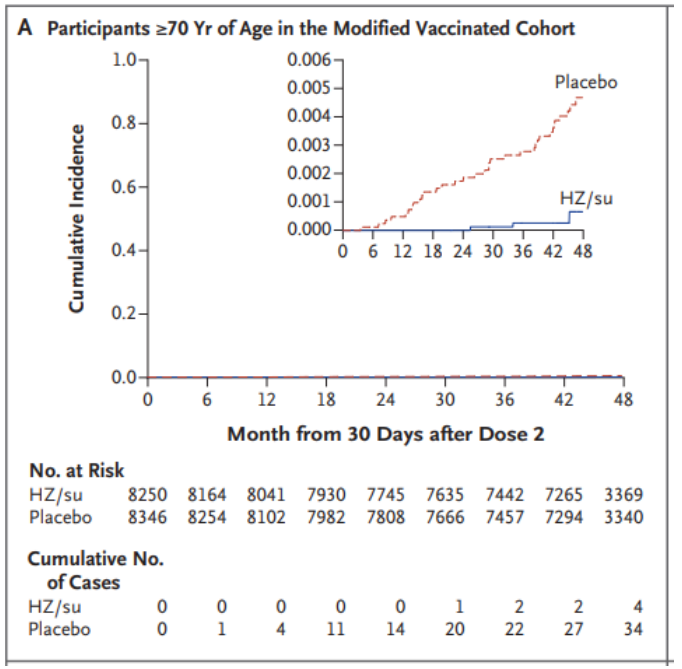
RCT in 18 countries of efficacy and safety in adults aged 50-59 yrs, 60-69 yrs and ≥70 yrs
N = 15,411, 2 doses i.m. 2 months apart

Efficacy against HZV: 89.8% (95% CI 84.2-93.7)
Efficacy against PHN: 88.8% (95% CI 68.7-97.1)

90% efficacy against shingles in 70-79 yrs and 89.1% in ≥80 yrs




HZV Infection




Post herpetic neuralgia

ASO1 is a powerful adjuvant and likely contributes to the impressive protection in older individuals

# Getting Older Adults Vaccinated

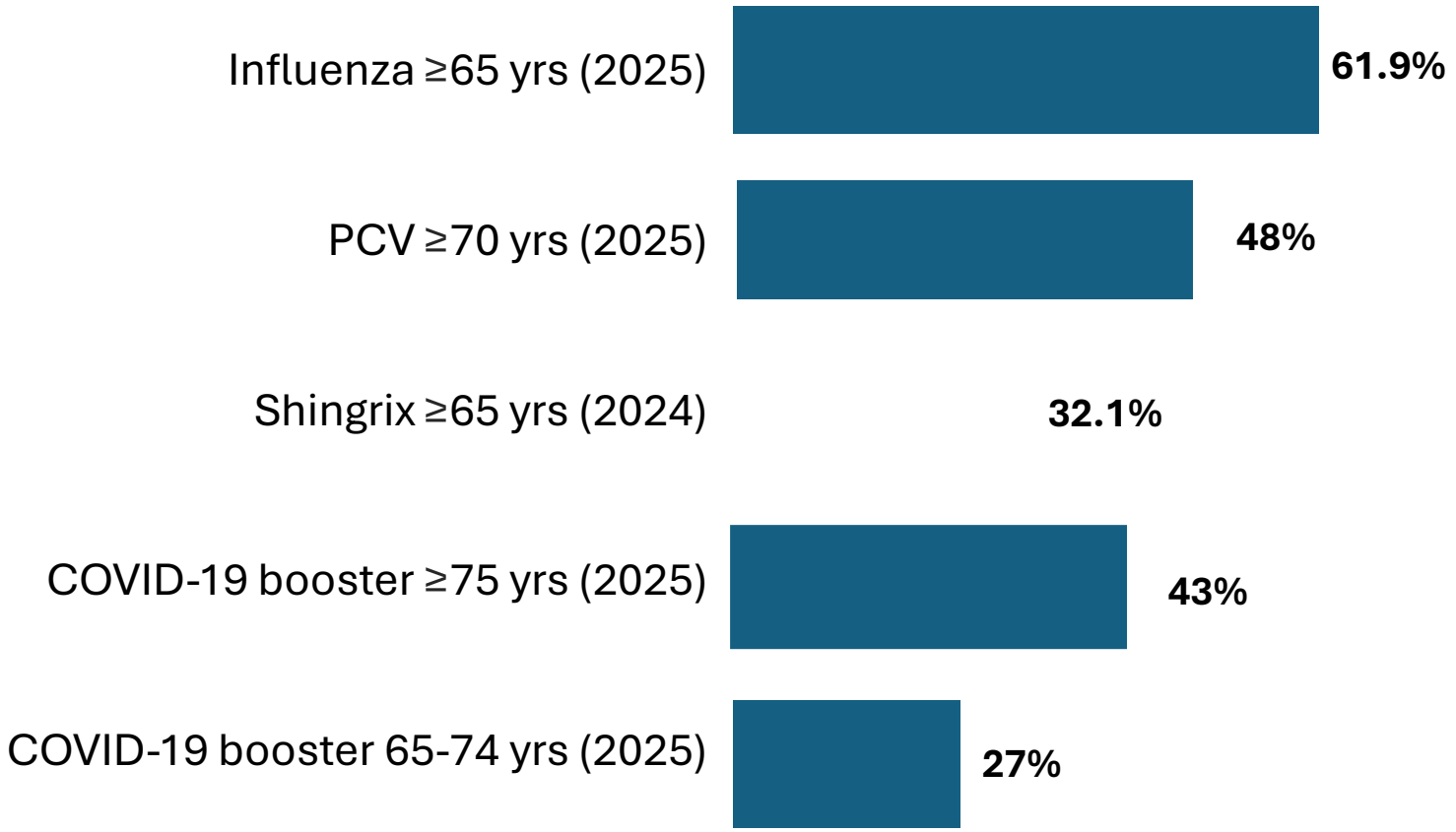
# What Older Australians Are Offered in 2026

| Vaccine | Recommended | Free on the NIP | Schedule |
|---|---|---|---|
| **Influenza** | All ≥65 yrs (annually) | All ≥65 yrs — adjuvanted Fluad® | 1 dose every year; adjuvanted or high-dose preferred over standard |
| **COVID-19** | All ≥65 yrs; First Nations ≥50 yrs | ≥75 yrs (2 doses/yr); 65–74 yrs (1 dose/yr) — from 1 Oct 2026 | ≥75: approx. every 6 months; 65–74: every 12 months |
| **RSV** | All ≥75 yrs; First Nations ≥60 yrs; ≥60 yrs with risk conditions | ≥75 yrs; First Nations ≥60 yrs — Arexvy® from 15 May 2026 | Single dose, ideally before RSV season (Apr–Sep) |
| **Shingles (Shingrix®)** | Adults ≥65 yrs; First Nations ≥50 yrs | ≥65 yrs; First Nations ≥50 yrs; selected immunocompromised ≥18 | 2 doses, 2–6 months apart (1–2 months if immunocompromised) |
| **Pneumococcal** | All ≥65 yrs; First Nations ≥25 yrs; ≥18 with risk conditions | All ≥65 yrs; First Nations ≥25 yrs; ≥18 yrs with risk conditions | Single PCV-21 dose at least 12 months after last pneumococcal vaccine dose |

- dTpa booster if >10 years since last tetanus-containing vaccine (not NIP-funded).
- Report every dose to the Australian Immunisation Register (AIR).

*Sources: Australian Immunisation Handbook; ATAGI statements (influenza 2026; COVID-19 NIP transition, Sept 2026); Dept of Health NIP program advice. Check health.gov.au for changes.*

# Funded But Not Delivered: The Coverage Gap




Influenza uptake in ≥65s is static: 64.3% in 2023 and 61.9% in 2025.

Less than half of people aged ≥70 yrs had previously received a PCV dose in 2025.

Shingrix coverage in 2024 in ≥65s who were NIP eligible was 32.1%.

COVID-19: less than half of those ≥75 yrs and 1 in 3 of those aged 65–74 yrs received a dose in the last 12 months.

*ATAGI 2026 influenza statement; NSW Health Immunisation Coverage 2024; NCIRS Annual Immunisation Coverage Report 2024; Dept of Health COVID-19 data (Apr 2025). Different years/denominators — not directly comparable.*

# Why Older Adults Miss Out: Barriers

## Patient & Carer

- Concerns about side effects
- “Too old / frail / not worth it”; ceiling-of-care worries
- Reluctance to receive several vaccines at once
- Preference to see own GP; mobility and transport
- Cognitive impairment — decision-maker hard to reach

## Provider

- Competing clinical priorities and workload
- Forgetting to check status
- Uncertainty about timing in acute illness
- Culture of paediatric-only immunisation; low confidence in adult schedules
- Fragmented care — multiple providers, GP unaware

## System

- Incomplete immunization records despite mandatory reporting to AIR
- Frequently changing schedules (COVID-19, RSV, influenza brands, pneumococcal recs)
- No vaccinator on the ward or in the facility
- Cold-chain, ordering and consent paperwork in RACFs
- Discharge before the vaccine is given

In a recent Sydney tertiary hospital study, workload and forgetting to vaccinate, or patient being too unwell were the top barriers for doctors; once a vaccinator removed them, patient refusal (53% of encounters) became the main barrier.

*Lean M et al. BMC Infect Dis 2026;26:729 (Prince of Wales Hospital); Dept of Health aged care vaccination guidance.*

# Where and Who: Vaccination Settings

| Setting | Who can vaccinate | Practical points |
|---|---|---|
| **General practice** | GP, practice nurse / authorised nurse immuniser | Main route for most; recall and reminder systems; check AIR first |
| **Community pharmacy** | Pharmacist immunisers (NIPVIP since 1 Jan 2024) | No appointment barrier; scope varies by vaccine and state |
| **Residential aged care** | Visiting GP, pharmacist (off-site NIPVIP since Apr 2024), on-site pharmacist (ACOP since Jul 2024), nurse practitioner | Facility organises consent, records and resident preparation |
| **Hospital (inpatient / outpatient)** | Prescriber + nurse; authorised nurse immuniser models | Opportunistic; best for single-dose vaccines; needs a named vaccinator |
| **Home / community nursing** | GP or nurse immuniser home visit | Housebound patients; cold chain for outreach (Strive for 5) |
| **Aboriginal Community Controlled Health Services** | Aboriginal health workers/practitioners and nurses | Earlier eligibility: pneumococcal ≥25, and zoster ≥50, RSV ≥60, COVID-19 ≥50 |

***Rule of thumb: vaccinate wherever the older person already is — then record it on AIR and tell the GP.***

*Sources: Australian Immunisation Handbook (Preparing for vaccination); NSW Health RCF immunisation guidance; Dept of Health NIPVIP / ACOP.*

# Logistics in Hospital: Making Admission Count

**1**

## Screen

Check AIR and the EMR on admission; confirm gaps with patient / GP

**2**

## Decide

Active infection or fever ≥38.5°C → defer; mild illness is not a barrier

**3**

## Consent

Patient, or person responsible if lacking capacity (verbal is valid)

**4**

## Prescribe & give

Standing order or nurse immuniser; single-dose vaccines first

**5**

## Record & hand on

Report to AIR; list in discharge summary; plan further doses (e.g. dose 2 Shingrix) with GP

### What works: Prince of Wales, Sydney

- 851 older inpatients screened; 649 eligible for 1,410 vaccines — only 5.2% given
- Education + weekly reminders: 2.7% uptake
- Part-time vaccine prescriber (1 h/weekday): 7.7% uptake (OR 3.0)
- Largest gains: pneumococcal (3.2→11.9%), COVID-19 (0.3→4.3%)

### Lessons for our wards

- Workforce time, not education alone, is the key modifiable barrier
- A nurse-immuniser model that screens, consents and administers achieved 47% uptake in another Australian programme
- Geriatric rehabilitation (4%→26%) and geriatric wards (2%→10%) showed large uptake gains
- Preference vaccines that need only one dose in short admissions

*Lean M et al. BMC Infect Dis 2026;26:729; Davies S et al. J Public Health 2025;47:e391 (as cited). Shingrix dose 2 usually completed after discharge.*

# Logistics in Residential Aged Care

## Who does what?

- **Aged care provider:** offers free annual flu and COVID-19 vaccination to residents and staff; prepares residents; discusses, organises and records consent; keeps vaccination records
- **Vaccine provider (GP / pharmacist / NP):** obtains consent, checks AIR, administers, records on AIR
- **Facility:** ongoing on-site IPC / immunization lead; outbreak management plan; monitors and reports serious reactions
- **Regulator:** the Aged Care Quality and Safety Commission regulates, monitors, and enforces immunisation responsibilities in RACFs
- **Primary Health Network:** can help secure a vaccinator if the home has no GP or pharmacist

## Vaccine supply and cold chain (NSW)

- RACFs can directly order routine vaccines from state vaccine hubs using a dedicated Vaccine Account Number
- Otherwise, a visiting provider can order and transport vaccines — pack and monitor per Strive for 5 (vaccine storage guidelines)

## Make the visit efficient

- Organise consent and check AIR status before vaccination day
- Bundle: flu + COVID-19 + RSV (once) ± pneumococcal / Shingrix at one visit
- Offer on admission and at each annual round; vaccinate new residents and staff too

*Sources: Dept of Health & Aged Care — responsibilities of residential aged care providers; NSW Health — influenza vaccinations in residential care facilities; AIR reporting mandatory since 2021.*

# Consent: What Makes It Valid

| Capacity | Voluntary | Specific | Informed |
|---|---|---|---|
| Given by a person with legal and intellectual capacity to understand the implications | No undue pressure, coercion or manipulation — including from facility or family | Covers the particular vaccine(s) to be given | Benefits, risks, risks of not vaccinating and alternatives explained; time to ask questions; interpreter if needed |

### Evidence of consent

- Verbal or written consent is acceptable — and must be documented
- Obtain consent before each vaccination, not once for all future doses
- In RACFs: the provider records consent in the resident's file (aged care record-keeping law) and shares it with the vaccinator

### In practice

- Use plain language and give written information (NCIRS / SKAI resources)
- Allow time — consent discussions with residents with dementia take longer
- A mandate or facility policy never replaces consent; a person can decline
- Complete pre-vaccination screening checklist at each encounter

*Sources: Australian Immunisation Handbook — Preparing for vaccination (updated 2025); NSW Health RCF immunisation guidance.*

# Consent When Capacity Is Impaired

| Assess capacity | Has capacity? | Lacks capacity | Document |
|---|---|---|---|
| Decision-specific and time-specific; support the person first (communication aids, time, family present) | Yes → the resident decides. Consent is theirs alone | Seek consent from the 'person responsible' (Guardianship Act 1987, s33A) | Capacity assessment, who consented, information given, the resident's views |

### Person responsible – Check Local Guardianship Legislation which can vary by region

1. Guardian with a medical-consent function (incl. enduring guardian)
2. Spouse or de facto partner
3. Unpaid carer
4. Relative or friend with a close personal relationship

The Public Guardian treats vaccination as minor treatment

### Key safeguards

- **A person responsible cannot consent to treatment the patient objects to**
- If the resident is distressed or resisting, stop, reassess, and seek advice — never sedate to enforce vaccination
- Check advance care directives; in palliative or end-of-life care, consider whether vaccination is still appropriate

*Sources: Australian Immunisation Handbook; NCAT Guardianship Division fact sheets; NSW Health Consent to Medical and Healthcare Treatment Manual. Legislation is under review — confirm current law. Not legal advice.*

# Concomitant Vaccination

**Principle:** an inactivated vaccine can be given before, after, or at the same time as any other vaccine registered in Australia. All the vaccines recommended in Australia for older adults are non-live, so none needs spacing from another.

- Benefits: reduced visits, lower healthcare costs, faster completion of required vaccine schedule
- Caveats: increased reactogenicity, adverse event causality hard to ascertain, potential vaccine interference
- Practical: deltoid is the preferred site, use separate limbs or sites ≥2.5 cm apart (deltoid first); use thigh for least reactogenic vaccine; label each syringe; record lot and site; record on AIR
- Frail, or worried about several injections? Stage them — e.g. RSV and influenza first before winter — rather than skip vaccines; benefits of one visit often outweigh the reactions

| Combination | What to know |
|---|---|
| **RSV + Influenza** | Slightly lower antibody responses (clinical significance unclear); more reactions: systemic 45% vs 34% with adjuvanted flu |
| **Influenza + COVID-19 + Pneumococcal + Shingrix** | Reactogenicity (myalgia, fatigue) is higher when combined |

*Sources: Australian Immunisation Handbook (Preparing for vaccination; RSV chapter); NIP shingles program advice; ATAGI COVID-19 and influenza statements. Reluctance to receive multiple vaccines accounted for 5% of refusals in the Sydney inpatient study.*

# Safety and Special Situations in Older Adults

## Contraindications

- **Only two absolute contraindications:** anaphylaxis to a previous dose, or to a vaccine component
- Defer if acutely unwell with fever ≥38.5°C; recover, then vaccinate

## NOT contraindications

- Mild illness without fever (<38.5°C)
- Antibiotic treatment
- Recent infection with the same pathogen is not a barrier (COVID-19: no minimum interval; RSV: vaccinate once recovered)
- Recent or imminent surgery
- Poorly documented vaccination history

## Take care with

- **Bleeding risk / anticoagulants:** IM is generally possible with a fine needle and firm pressure — screen and plan
- **Immunocompromised:** non-live vaccines are safe; give Shingrix 1–2 months apart
- **Guillain–Barré:** very rare after Flu, Shingrix and RSV vaccines (1-2, per illion, ~3 per million and ~5–10 per million doses); discuss if prior GBS
- **Palliative care:** individualise; check advance care plan
- Report adverse events following immunisation (state public health unit/TGA)

*Sources: Australian Immunisation Handbook (Preparing for vaccination; RSV; Zoster chapters); Shingrix Australian Product Information. Observe for 15 minutes after vaccination and have an anaphylaxis kit ready.*

# Talking With Older Adults and Families

## What helps

- **Make a clear, presumptive recommendation:** “You are due for your flu, COVID-19 and RSV vaccines today.”
- A recommendation from their own doctor or nurse is among the strongest drivers of uptake
- Explain benefits in terms older adults value: staying independent, avoiding hospital, protecting grandchildren
- Involve the enduring guardian, family and carers early — and the GP
- Use plain language, large-print handouts, interpreters; allow time
- Use NCIRS / SKAI conversation guides for adult vaccination

## Why older individuals decline

- Side-effect concerns
- Prefer to be vaccinated by their GP
- Reluctant to have several vaccines together
- Scepticism

## Common myths to address

- “The flu shot gives you flu” — it cannot
- “I had it last year / I had the infection” — protection wanes; reinfection is common
- “I am too old” — older age is the reason to vaccinate, not to skip

*Sources: Lean M et al. BMC Infect Dis 2026 (reasons for refusal, % of 63 refusals); NSW Health & NCIRS SKAI communication resources.*

# Vaccines Are Antimicrobial Stewardship

**22%**

reduction in global antibiotic use possible with vaccines against 24 pathogens (2.5 billion daily doses)

**106,000**

AMR-associated deaths a year that existing pneumococcal, Hib and typhoid vaccines could avert

**33 million**

antibiotic doses a year saved by pneumococcal vaccination of children and older adults to WHO targets

- Preventing infection is the first step in stewardship: every pneumonia, influenza complication or zoster-related infection averted is an antibiotic course not prescribed
- Influenza and RSV vaccination also reduces secondary bacterial pneumonia, a common trigger for empiric broad-spectrum antibiotics in older inpatients
- In RACFs, high vaccination coverage limits outbreaks — and the oseltamivir and antibiotic use that follows
- Link the two programs: the AMS round is a chance to check vaccination status at the bedside

*Source: WHO. Estimating the impact of vaccines in reducing antimicrobial resistance and antibiotic use. October 2024.*

# Practical Take-Home Messages

### 1 Know what's funded

Flu, COVID-19, RSV (≥75), Shingrix (≥65) and PCV (≥65) are free — and the schedule changed in 2026

### 2 Use every contact

Admission, clinic, RACF round and discharge are all vaccination opportunities

### 3 Provide a vaccinator

A person with protected time beats education and reminders alone

### 4 Get consent right

Capacity first; person responsible if needed; document every time; never override an objection

### 5 Bundle the visit

Inactivated vaccines can be given together — separate sites, plan for reactions

### 6 Close the loop

Check AIR, record on AIR, inform the GP, and book Shingrix dose 2

*Always check the current Australian Immunisation Handbook and NIP schedule — recommendations and funding change.*

# Questions?

