Recommendations for vaccination of patients (>18 years) with autoimmune inflammatory rheumatic diseases (AIIRD) in Australia

Inactivated (non-live) vaccines: Can be given safely while on medications used for AIIRD				
Vaccine	**Recommendation**	**Dosing and Frequency**	**Cost covered by NIP**	**Approximate cost if not NIP covered (prices correct as of 13/11/2020)**
COVID-19 (Astra Zeneca, Pfizer - Comirnaty)	Recommended for all patients with AIIRD[a] - Vaccine used depends on age and current Government advice	• Astra Zeneca – 2 doses, 12 weeks apart • Pfizer – 2 doses, 3 weeks apart	Yes	NA
Influenza	Recommended for all patients with AIIRD	• First year: 2 vaccine doses, at least 4 weeks apart • Subsequent years: 1 dose annually	Yes – one dose only per year	$20
Pneumococcal (Pneumovax-23, Prevenar-13)	13vPCV and 23vPPV vaccines are recommended for immunosuppressed patients – dosing regimen depends on previous vaccination status	• No previous pneumococcal vaccination: administer 13vPCV at diagnosis (>2 months after any previous dose of 13vPCV) then 23vPPV after >2 months followed by a second 23vPPV ≥5 yrs later. • Previous 23vPPV: administer 13vPCV 12 months after the last 23vPPV dose. If already received ≥2 doses of 23vPPV, no further 23vPPV doses recommended.	For adults ≥70 years For patients with acquired immunodeficiency, such as those on immunosuppressants	Pneumovax 23: Standard co-payment of $41.00 or $6.60 for concession card holders. Prevenar 13: $180 per dose
Hepatitis B (Engerix B)	Recommended for immunosuppressed patients and other higher risk groups[b]	• 3 doses over 6 months: first dose at day 0, second dose at 1 month and third dose at 6 months	Not adult formulation (paed formula in <20 years only)	$25 each vaccine x 3 = $75 for the course
Combination Hep A/B (Twinrix 720/20)	Recommended for higher risk groups[c]	• 3 doses over 6 months: first dose at day 0, second dose at 1 month and third dose at 6 months	No	$70 each vaccine x 3 = $210 for the course
Hepatitis A (Avaxim, Havrix 1440)	Pre-travel vaccination should be considered in immunosuppressed patients	• 2 doses, 6 months apart	No	Avaxim and Havrix $50 each vaccine x 2 = $100 for the course
Human papilloma virus (Gardasil 9)	Recommended for immunosuppressed patients	• 3 doses: first dose at day 0, second dose 2 months after the first and third dose 6 months after the second	Yes, in adolescence	$180 each vaccine x 3 = $540 for the course
Diphtheria, tetanus, pertussis (dTpa) (Boostrix)	Recommendations as per the general population	• No previous history of dT vaccination; 3 doses of dT vaccine, at least 4 weeks between doses. 1st dose preferably dTpa. Booster doses at 10 and 20 years after primary course. • 1 dose every 10 years in adults aged >50 years	Yes	$35

Poliomyelitis (Ipol)	Recommendations as per the general population	• Previously vaccinated: 1 booster dose in adulthood • Never vaccinated: 3 doses, 4 weeks apart	NIP funded for >20 years	$40
Meningococcal B	Pre-travel vaccination should be considered in highly immunosuppressed patients and travellers	• 2 doses either 8 weeks apart (Bexsero) or 6 months apart (Trumenba) + booster doses	No	Trumenba $100 each vaccine x 2 = $200 for the course Bexsero $140 dose
Cholera (Dukoral)	Pre-travel vaccination should be considered in immunosuppressed patients	• Primary immunisation: adults and children >6 years, 2 doses, children 2-6 years, 3 doses. Administer each dose ≥1 week but ≤ 6 weeks apart. • Booster: adults after 2 years and children 2-6 years after 6 months.	No	$60 each vaccine
Typhoid (Typhim Vi)	Pre-travel vaccination should be considered in immunosuppressed patients travelling to endemic areas.	• 1 dose ≥ 2 weeks prior to possible exposure. Re-vaccinate every 3 years as necessary.	No	$60
Live vaccines: Should NOT be given to patients with AIIRD on bDMARDs, tsDMARDs or other significant immunosuppression. Certain live vaccines such as Zostavax CAN be administered to patients on glucocorticoids equivalent to prednisolone ≤20mg/day, methotrexate ≤0.4 mg/kg/week, azathioprine ≤3mg/kg/day, leflunomide, sulfasalazine and hydroxychloroquine after an individual risk assessment. Seek specialist advice if unsure.				
Vaccine	**Recommendation**	**Dosing and Frequency**	**Cost covered by NIP**	**Approximate cost if not NIP covered**
Herpes zoster (Zostavax)	Consider in those aged ≥50 years with AIIRD in whom live vaccines are not contraindicated	• 1 dose (re-vaccination interval unclear)	Yes, for adults 70-79 years	$200
Varicella (Varilix, Varivax)	Consider if no serological evidence of previous varicella zoster infection and live vaccines not contraindicated	• 2 doses at least 4 weeks apart	Only one dose funded	$55 each vaccine x 2 = $110 for the course
Measles, mumps and rubella (MMR II, Priorix)	Consider in patients with AIIRD on low dose immunosuppressive therapy	• 2 doses given 4 weeks apart	Yes, in all people born > 1966	Priorix $30 each vaccine x 2 = $60 for the course
Bacillus-Calmette-Guerin (BCG)	Not recommended in immunosuppressed patients	• 1 dose	Yes, if eligible	NA
Yellow Fever (Stamaril)	Not recommended in immunosuppressed patients	• 1 dose	No	$81

Abbreviations: AIIRD – autoimmune inflammatory rheumatic diseases; NA – not applicable; NIP – National Immunisation Programme; tsDMARD – targeted synthetic disease modifying anti-rheumatic drug, bDMARD – biologic disease modifying anti-rheumatic drug

a. For detailed information on the use of COVID-19 vaccines in patients with AIIRD refer to the ARA advice here.
b. Higher risk patients include, immunosuppressed patients, patients travelling to or residing in countries endemic for HBV, increased risk of exposure e.g. healthcare professionals, infected family member or contacts, when protective HBV antibodies are absent.

c. As above, plus persons whose lifestyle puts them at risk of Hepatitis A and B, those who attend or work at facilities for people with developmental disabilities, occupational risk for exposure to Hepatitis A and B, those with chronic liver disease and/or Hepatitis C

Note: Travel-specific vaccinations should be assessed on an individual basis, and advice from a rheumatologist or infectious disease specialist is recommended.

Useful references:

https://www.health.gov.au/initiatives-and-programs/national-immunisation-program
https://www.health.gov.au/health-topics/immunisation
https://immunisationhandbook.health.gov.au
Wong PKK, Young L, Johnson DF. Vaccination of patients with autoimmune inflammatory rheumatic disease. Medicine Today 2019;20(7):50-53
Wong PKK and Johnson DF. Live vaccinations and immunocompromised patients. How can GPs ensure this cohort is safely protected against disease? Medical Observer, 14th August 2019.
Furer et al. 2019 update of EULAR recommendations for vaccination in adult patients with autoimmune inflammatory rheumatic diseases. Ann Rheum Dis 2020;79:39-52
An Australian Living Guideline on the Pharmacological Management of Inflammatory Arthritis; https://app.magicapp.org/#/guideline/LqRV3n/rec/EZ6z8E