# Immunisation for adults with HIV infection

The Immunisation Advisory Centre

Human immunodeficiency virus (HIV) infects CD4+T cells leading to a progressive decline in CD4 cell count, increasing immunodeficiency and vulnerability to infection, and suboptimal responses to vaccines. Use of antiretroviral therapy (ART) to reduce virus replication and improve CD4counts to 200 cells/mm$^3$ or higher, preferably above 400 cells/mm$^3$, is recommended to improve the response to all vaccines.

For children aged under 18 years, please refer to the current *Immunisation Handbook*.

| Vaccine | Notes | Additional notes | Recommended schedule | Eligibility |
|---|---|---|---|---|
| **Influenza** | · Increased risk of complications | **Administration notes**<br>· Annually, during the Influenza Immunisation Programme | · Administer one dose annually | FUNDED |
| **SARS-CoV-2 (COVID-19)** | · Increased risk of complications | **Administration notes**<br>· TheCOVID-19vaccinebeingadministered determines the number of doses and minimum interval between multiple doses<br>· The vaccination schedule for individuals with HIV infection is the same as the schedule for those who are immunocompetent | · Administer vaccine doses following the recommended schedule for the available COVID-19 vaccine | FUNDED |
| **Hepatitis B** (Engerix-B) | · Increased risk of chronic disease<br>· Reduced vaccine seroconversion rates, particularly in individuals who are aged over 45 years, smoke tobacco products or who are not on ART | **Recommended for**<br>· Hepatitis B non-immune individuals<br>**Evidence of immunity**<br>· Check serology 4–6 weeks after final dose<br>· If antiHBs <10 IU/L, seek advice from HIV specialist<br>**Non-responders**<br>· A course of double-dose adult strength Engerix-B or Twinrix may be considered | · Administer four doses at 0, 1, 2 and 12 months | FUNDED Engerix-B<br>NOT funded Twinrix |
| **Pneumococcal PCV13** (Prevenar 13) | · Protection lasts longer than that from Pneumovax 23<br>· Generates long term memory cells that can produce additional protection following disease exposure | **Administration notes**<br>· Administer Prevenar 13 **before** Pneumovax 23<br>· If Pneumovax 23 has been administered before Prevenar 13, wait one year to give Prevenar 13 | · Administer one dose of Prevenar 13 | FUNDED |
| **Pneumococcal 23PPV** (Pneumovax 23) | · Broadens protection against an additional 12 pneumococcal serotypes not covered by Prevenar13<br>· Protection is shorter than that from Prevenar 13<br>· Does not generate memory cells<br>· Blunts/reduces the immune response to subsequent pneumococcal vaccinations | **Administration notes**<br>· Administer Pneumovax 23 minimum of 8 weeks **after** Prevenar 13 | **If aged 18 years to under 60 years**<br>· Administer one dose<br>· Schedule a precall for the second dose n 5 years<br>· Schedule a precall for the third/final dose 5 years after second dose or at age 65 years, whichever is later<br>**If aged 60 years or older**<br>· Administer one dose<br>· Schedule a precall for the second/final dose in 5 years | FUNDED |

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| Vaccine | Notes | Additional notes | Recommended schedule | Eligibility |
|---|---|---|---|---|
| **Human papillomavirus**<br>**HPV (Gardasil 9)** | · Increased risk of HPV related malignancy but less frequently serotypes 16 & 18 | **Recommended for:**<br>· Males and females 18–45 years of age inclusively<br>**Administration notes**<br>· Gardasil 9 is prescribed off-label for males aged 27–45 years inclusively. No safety concerns are expected. Vaccine efficacy is not expected to be significantly different to efficacy in females in the same age group. | · Administer three doses at 0, 2 and 6 months | FUNDED *up to 27 years of age*<br>Recommended NOT funded *27 years or older* |
| **Meningococcal**<br>**MenACYW-D**<br>**(MenQuadfi)** | · Increased risk of infection but not as high as for pneumococcal disease<br>· Disease may be more severe | **Administration notes**<br>· Prescription required for second primary dose<br>· A booster dose is recommended every five years | · Administer two doses at least 8 weeks apart<br>· Schedule a precall for a booster dose every 5 years | FUNDED |
| **Meningococcal B**<br>**4CMenB (Bexsero)** | · Increased risk of infection but not as high as for pneumococcal disease<br>· Disease may be more severe | **Administration notes**<br>· Can be co-administered with any other vaccine | · Administer two doses 8 weeks apart<br>· Schedule a precall for a booster dose every 5 years† | FUNDED |
| **Hepatitis A**<br>**(Havrix)** | · Disease is not worse unless the individual also has hepatitis B or hepatitis C infection | **Highest risk groups**<br>· MSM<br>· Those travelling to hepatitis A risk countries<br>· Illicit injection drug users<br>· Coinfection with hepatitis B or hepatitis C | · Administer two doses 6 months apart<br>· Administer a booster dose every 10 years | Recommended NOT funded |
| **Polio**<br>**IPV (Ipol)** | | · Check immunisation history for a primary course of three polio containing vaccines | **If unsure of polio immunisation history**<br>· Administer three doses with a minimum of 4 weeks between each dose | FUNDED |
| **Tetanus/diphtheria/ pertussis**<br>**Tdap (Boostrix)** | · Duration of protection against tetanus/diphtheria and/ or pertussis may be shorter compared with healthy vaccinees | · Check immunisation history for a primary course of three tetanus/diphtheria containing vaccines | **If unsure of tetanus/diphtheria immunisation history**<br>· Administer three doses with a minimum of 4 weeks between each dose<br>**If confident recollection of completed tetanus/ diphtheria immunisation**<br>· Administer one Tdap at age 45 years if less than four documented tetanus containing vaccine doses<br>· Administer one Tdap at age 65 years | FUNDED |

† Although the need for a booster dose after this vaccination schedule has not been established, it is recommended and funded for certain special groups (refer to Immunisation Handbook – Section 13.5)

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Use of antiretroviral therapy (ART) to reduce virus replication and improve CD4 counts to 200 cells/mm$^3$ or higher, live viral vaccines are contraindicated with a CD4+ lymphocyte count under 200 cells/mm$^3$.

| Vaccine | Notes | Additional notes | Recommended schedule | Eligibility |
|---|---|---|---|---|
| **Measles/mumps/rubella**<br>**MMR (Priorix)** | · Disease may be more severe | **Highest risk group**<br>· Individuals born in 1969 or later who do not have two documented doses of MMR vaccine | **If CD4+ lymphocyte count is ≥200 cells/mm$^3$ (a,b,c,d),** and<br>· If less than two documented doses<br>· Complete a documented course of two MMR doses<br>· Administer up to two doses at least 4 weeks apart | FUNDED for individuals who meet the eligibility criteria<br><br>CONTRAINDICATED if CD4 count is <200 cells/mm$^3$ |
| **Varicella (chickenpox)**<br>**VV (Varivax)** | · Disease may be more severe | **Highest risk groups**<br>· Individual who do not have a reliable history of chickenpox disease<br>· Individuals raised overseas, especially in subtropical countries<br>**Evidence of immunity**<br>· Individuals with a positive past history of chickenpox disease are considered immune to varicella zostervirus<br>· If no reliable history of chickenpox disease<br>· Check varicella zoster virus serology<br>· If varicella zostervirus serology is negative (i.e. non- immune) administer funded varicella vaccine | **If CD4+ lymphocyte count is ≥200 cells/mm$^3$ (a,b,c,d,e)** and<br>· The individual is varicella zoster virus seronegative (i.e. non-immune)<br>· Administer two doses at least 4 weeks apart | |
| **Herpes zoster**<br>**Recombinant rZV (Shingrix)** | · Increased risk of recurrent zoster episodes | **Administration notes**<br>Recommended for:<br>· Adults from the age of 50 years and above<br>· Adults from the age of 18 years and above who are at increased risk of shingles<br><br>· Funded aged 65 years | · Administer two doses at least 2–6 months apart | Recommended NOT FUNDED *50–64 years*<br><br>FUNDED *Aged 65 years* |

**Foot notes**

a. Live viral vaccines are contraindicated with a CD4+ lymphocyte count under 200 cells/mm$^3$
b. Patients who have received immunoglobulin or other blood products may require time for passive antibodies to decrease prior to administration of live varicella and MMR vaccines. Refer to Table A 6.1 in the Immunisation Handbook
c. Only a single live vaccine is recommended at each visit for individuals with HIV infection. A minimum interval of 4 weeks is required between live vaccine dose administered at different visits.
d. Consider normal immunoglobulin or zoster immunoglobulin for post-exposure measles or varicella prophylaxis respectively in non-immune individuals.
e. Two doses of varicella vaccine are funded for a household contact of an individual who is not immune to varicella and is severely immunocompromised, where the household contact has no clinical history of varicella infection or immunisation.