

Unimmunised adults who are eligible to receive publicly funded health and disability services are recommended and funded to receive a primary course of tetanus, diphtheria, and polio vaccines, and if born in 1969 or later two doses of measles, mumps and rubella (MMR) vaccines. Some adults will also be eligible to receive other Schedule vaccines because of a medical condition. *Section 2.1.7 Adult vaccination (aged 18 years and older)* in the *Immunisation Handbook* outlines immunisation requirements for adults and funded vaccines for special groups.

- Funded routine and special groups Immunisation Schedule vaccines can be administered by a vaccinator authorised to administer National Immunisation Schedule vaccines without an individual prescription or standing order.

Certain occupations are associated with increased risk of contracting some vaccine-preventable diseases. Table 4.8 in the *Immunisation Handbook* provides vaccine recommendations by occupational group. Additional vaccines and/or booster doses of some vaccines may be recommended but not covered by the National Immunisation Schedule and must be purchased by the individual or their employer.

- If the vaccinator is not authorised to administer the vaccines under a local immunisation programme approved by the Medical Officer of Health, the vaccines **MUST** be prescribed individually or with a standing order from a registered medical practitioner or nurse practitioner with prescribing rights.

Available vaccines	Recommendations
<b>Hepatitis A</b> Avaxim <sup>®</sup> , Havrix <sup>®</sup>	<b>Evidence of immunity</b> <ul style="list-style-type: none"> <li>Serology is not routinely recommended.</li> <li>Administer two vaccine doses 6–12 months apart.</li> </ul> Only funded for adults who meet the eligibility criteria listed on the Pharmaceutical Schedule.
<b>Hepatitis B</b> Engerix <sup>®</sup> -B	<b>Evidence of immunity</b> Check immunisation records. <ul style="list-style-type: none"> <li>If a complete age-appropriate course of hepatitis B vaccines is documented, check anti-HBs serology.                             <ul style="list-style-type: none"> <li>An anti-HBs level of <math>\geq 10\text{IU/L}</math> at any time is evidence of long-term immunity, even if antibodies have subsequently waned.</li> </ul> </li> <li>If an incomplete age-appropriate course of hepatitis B is documented, administer the required number of doses to complete a primary course of three documented hepatitis B vaccine doses with a minimum of one month between each dose.<sup>#</sup> Check anti-HBs serology one month after the final vaccine dose.</li> <li>If documentation is not available, but individual is certain that they have previously received a course of hepatitis B vaccine, give one dose and perform serology 2 weeks later. If serology shows anti-HBs levels of <math>\geq 10\text{IU/L}</math>, this is evidence of previous receipt of hepatitis B vaccine and satisfies requirements. If not, give two further doses and repeat serology.</li> </ul> <p><b>#Note:</b> In some circumstances, protection ‘as soon as possible’ is important to reduce occupational risk. Administration of three hepatitis B vaccine doses at intervals of 0, 1, and 2 months, i.e. a one month interval between each dose, gives equivalent seroconversion to intervals of 0, 1, and 6 months.</p> <b>Interpretation of serology and responses</b> After completion of three documented hepatitis B vaccine doses: <ul style="list-style-type: none"> <li>Anti-HBs levels <math>\geq 10\text{IU/L}</math>: Evidence of long-term immunity, even if antibodies subsequently wane.</li> <li>Anti-HBs levels <math>&lt; 10\text{IU/L}</math>: Administer one dose of hepatitis B vaccine and repeat serology one month later.                             <ul style="list-style-type: none"> <li>If repeat serology is <math>&lt; 10\text{IU/L}</math>, administer two more doses of hepatitis B vaccine one month apart to complete a second course of three hepatitis B vaccine doses. Repeat serology one month after the final dose.                                     <ul style="list-style-type: none"> <li>If anti-HBs levels <math>&lt; 10\text{IU/L}</math> following a second full course of hepatitis B vaccine, the person should be considered a vaccine non-responder. Telephone 0800 IMMUNE to discuss further options.</li> </ul> </li> </ul> </li> </ul> Only funded for adults who meet the eligibility criteria listed on the Pharmaceutical Schedule.
<b>Hepatitis A &amp; B</b> Twinrix <sup>®</sup>	<ul style="list-style-type: none"> <li>Twinrix is an alternative to the monovalent hepatitis A and hepatitis B vaccines and can be considered when immunisation against both diseases is required.</li> <li>Completion of the primary course of Twinrix<sup>®</sup> and protection against hepatitis A and hepatitis B takes longer than when separate monovalent hepatitis A and hepatitis B vaccines are used.</li> <li>Administer three doses at 0, 1 and 6 months.                             <ul style="list-style-type: none"> <li>Twinrix<sup>®</sup> doses are NOT interchangeable with Avaxim<sup>®</sup>, Havrix<sup>®</sup>, or Engerix<sup>®</sup>-B doses. Neither one dose of Twinrix<sup>®</sup> and two doses of Engerix<sup>®</sup>-B, nor two doses of Twinrix<sup>®</sup> and one dose of Engerix<sup>®</sup>-B provide a complete primary course of hepatitis A vaccines.</li> </ul> </li> </ul> Not a funded vaccine on the Pharmaceutical Schedule.

Continued ...

Available vaccines continued...	Recommendations
<b>Influenza</b> Brands vary	<ul style="list-style-type: none"> <li>Annual influenza vaccine dose.</li> </ul> Only funded by the National Immunisation Programme for adults who meet the eligibility criteria listed on the Pharmaceutical Schedule, but may be funded by employers.
<b>Pertussis</b> Adacel <sup>®</sup> , Boostrix <sup>®</sup>	<ul style="list-style-type: none"> <li>Refer to the <i>Tetanus, diphtheria, and pertussis</i> vaccine information.</li> </ul> Only funded for adults who meet the eligibility criteria listed on the Pharmaceutical Schedule. Certain categories of healthcare workers may be required to receive a pertussis-containing booster at 10 yearly intervals.
<b>Polio</b> IPOL <sup>®</sup>	<ul style="list-style-type: none"> <li>Three documented doses are funded for unimmunised adults.</li> </ul> Only funded for adults who meet the eligibility criteria listed on the Pharmaceutical Schedule.
<b>Measles, mumps, and rubella</b> M-M-R <sup>®</sup> II, Priorix <sup>®</sup>	<ul style="list-style-type: none"> <li>Two documented doses are funded for eligible unimmunized or for adults shown to be non-immune despite receipt of two doses by serology.</li> </ul> <b>Evidence of immunity</b> <ul style="list-style-type: none"> <li>Serology is not usually required if documented administration of two doses of MMR vaccine<sup>‡</sup>, or</li> <li>Laboratory evidence of immunity or laboratory confirmation of disease.<sup>‡</sup></li> <li>Health care workers or students entering the health care workforce are required by educational institutions or workplaces to have serological confirmation of measles and mumps status; rubella status is not occupationally relevant. If known to have had two previous doses, only require a single dose with repeated serology one month later.</li> </ul> In the event of both documented administration of MMR vaccine and laboratory evidence of seronegative status for healthcare workers/occupational health purposes, a further dose of MMR may be given and serology repeated at least one month later. <p><b>‡Note:</b> Adults born in New Zealand before 1969 are considered immune to measles, mumps and rubella. They do not require any other evidence of immunity against these diseases.</p> Non immune adults meet the eligibility criteria for funded vaccine.
<b>Tetanus, diphtheria, and pertussis</b> Adacel <sup>®</sup> , Boostrix <sup>®</sup>	<ul style="list-style-type: none"> <li>Three documented doses of tetanus and diphtheria containing vaccines are funded for unimmunised adults.</li> <li>A booster dose is funded for adults who require a tetanus-booster immunisation as part of tetanus-prone wound management.</li> <li>A booster dose is funded for adults aged 45 years who do not have four documented doses of tetanus containing vaccine.</li> <li>A booster dose is funded for adults aged 65 years.</li> <li>A minimum interval of 10 years is recommended between booster doses.</li> </ul> Only funded for adults who meet the eligibility criteria listed on the Pharmaceutical Schedule, but may be required by some health sector employers every 10 years.
<b>Tuberculosis</b>	<ul style="list-style-type: none"> <li>BCG vaccination is not indicated for adults. The vaccine has a low efficacy in adults and makes the further use of TST/Mantoux tests as a diagnostic tool more difficult.</li> <li>Pre-employment screening should include a TB infection risk assessment questionnaire to identify those at higher risk of prior TB exposure, and an interferon gamma release assay (IGRA, QuantiFERON-TB Gold assay). IGA positive individuals require assessment for latent TB through an appropriate clinical service.</li> </ul>
<b>Typhoid</b>	<ul style="list-style-type: none"> <li>Immunisation against typhoid is not recommended for employees working only within New Zealand, including sewage workers, plumbers or other workers in regular contact with untreated sewage.</li> <li>Typhoid outbreaks are rare and risk of exposure in New Zealand is extremely low.</li> </ul>
<b>Varicella</b> Varilrix <sup>®</sup> , Varivax <sup>®</sup>	<b>Evidence of immunity</b> <ul style="list-style-type: none"> <li>A clinically typical history of previous varicella infection, or</li> <li>Diagnosis of herpes zoster by a health professional, or</li> <li>Documented administration of two doses of varicella vaccine, or</li> <li>Laboratory evidence of immunity or laboratory confirmation of disease.</li> </ul> Only funded for adults who meet the eligibility criteria listed on the Pharmaceutical Schedule.

## References

- Centers for Disease Control and Prevention. Immunization of health-care personnel. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Morb Mortal Wkly Rep. 2011;60(RR07):1-45.
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- Pharmaceutical Management Agency (PHARMAC). Pharmaceutical schedule [Internet]. Wellington: PHARMAC; 2020 [updated 2020 July 20; cited 2020 July 20]. Available from: <https://www.pharmac.govt.nz/tools-resources/pharmaceutical-schedule/community/>