Do Adults Need Vaccines?

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Why Is Vaccination Important

Vaccine-preventable diseases are still commonly encountered in Malaysia.

The Ministry of Health Malaysia data showed that the incidence rates for measles, hepatitis B and pertussis were 5.42, 4.32, 0.86 per 100,000 population respectively.

Proportion of influenza associated deaths was 11.3 times higher in persons aged 65 years and above.

In the United States, nearly 50,000 adults die from vaccine-preventable diseases each year.

Approximately 36,000 adults die from influenza, over 6,000 from invasive pneumococcal disease and 5,000 from hepatitis B.

Quick Guide[3]

	19-21 yrs	22-26 yrs	27-49 yrs	50-59 yrs	60-64 yrs	≥65 yrs
Influenza*	1 dose annually					
Tetanus, diphtheria, pertussis (Td/Tdap)*	Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs					
Varicella*	2 doses					
Human papillomavirus (HPV) Female*	3 doses					
Human papillomavirus (HPV) Male*	3 doses	3 doses				
Zoster*					1 dose	
Measles, mumps, rubella (MMR)*	1 or 2 doses					
Pneumococcal conjugate (PCV)*	1 dose					
Pneumococcal polysaccharide (PPV)*	1 or 2 doses					1 dose
Meningococcal*	1 or more doses					
Hepatitis A*	2 doses					
Hepatitis B*	3 doses					
Haemophilus influenzae type b (Hib)*	1 or 3 doses					

For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection; zoster vaccine recommended regardless of prior episode of zoster

Recommended if some other risk factor is present (eg, on the basis of medical, occupational, lifestyle, or other)

No recommendation

*Please refer to relevant section for more details

General Advice on Immunisation

- Contraindications and Special Considerations
- A confirmed anaphylactic reaction to:
- A previous dose of a vaccine containing the same antigens, or
- Another component contained in the relevant vaccine, eg neomycin,streptomycin or polymyxin B (which may be present in trace amounts in some vaccines).

Live vaccines may be temporarily contraindicated in individuals who are:

- Immunosuppressed
- Pregnant
- Egg allergy:
- Yellow fever vaccine and some influenza vaccines should not be given
- Severe latex allergy

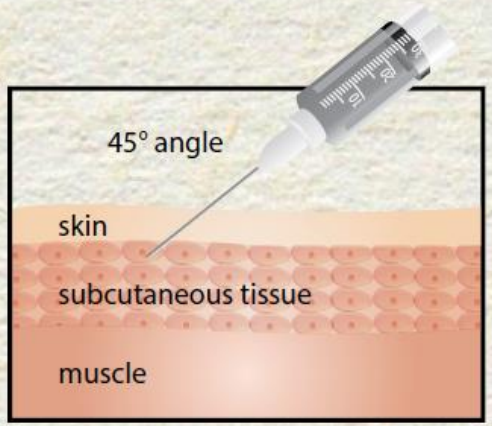
The following are NOT contraindications to routine vaccinations

- Minor self-limiting illness without fever.
- Asthma, eczema, or hay fever.
- Treatment with antibiotics or locally-acting (eg topical or inhaled)
- steroids.
- Contact with an infectious disease.
- Family history of any adverse reactions following immunisation.
- Previous history of the disease (with the exception of BCG for people who have evidence of past exposure to tuberculosis).

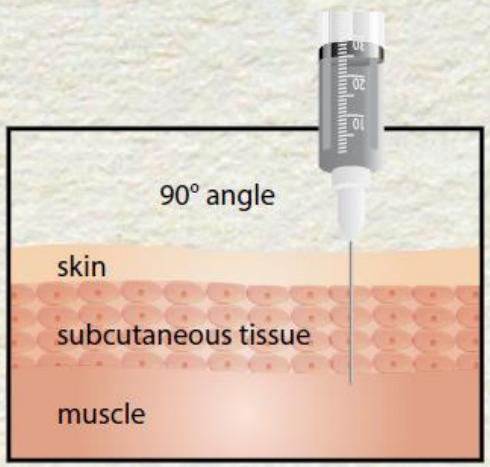
The following are NOT contraindications to routine vaccinations

- Someone in the household being pregnant.
- Personal or family history of febrile convulsions or epilepsy.
- Being a sibling or close contact of an immunosuppressed individual.
- Recent or imminent elective surgery.
- Imminent general anaesthesia.
- Unknown or inadequately documented immunisation history

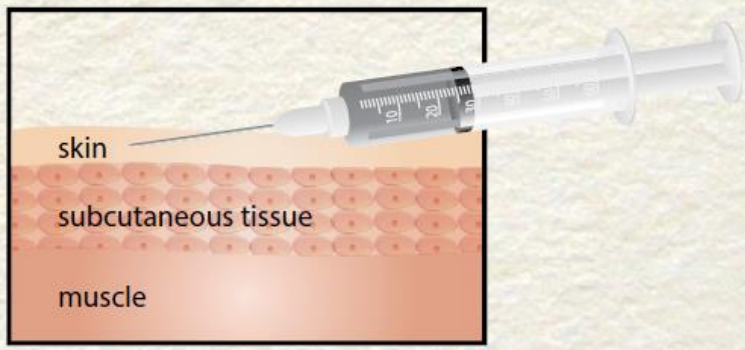
Techniques of Administration



a) Subcutaneous (SC) Injection



b) Intramuscular (IM) Injection



c) Intradermal (ID) Injection

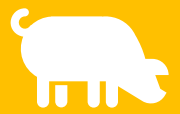
Injection Routes for Common Vaccines

Vaccines	Dose	Route
Diphtheria, tetanus, pertussis (DTaP, DT, Tdap, Td)	0.5mL	IM
Haemophilus influenzae type b (Hib)	0.5mL	IM
Hepatitis A (Hep A)	≤18 yrs: 0.5mL >18 yrs: 1.0mL	IM
Hepatitis B (Hep B)	<20 yrs: 0.5mL ≥20 yrs: 1.0mL	IM
Human papillomavirus (HPV)	0.5mL	IM
Influenza, trivalent inactivated (TIV)	0.5mL	Intranasal Spray
Measles, mumps, rubella (MMR)	0.5mL	SC
Meningococcal conjugate (MCV)	0.5mL	IM
Meningococcal polysaccharide (MPSV)	0.5mL	SC
Pneumococcal conjugate (PCV)	0.5mL	IM
Pneumococcal polysaccharide (PPSV)	0.5mL	IM or SC
Polio, inactivated (IPV)	0.5mL	IM or SC
Rotavirus (RV)	2.0mL	Oral
Varicella (Var)	0.5mL	SC
Zoster (Zos)	0.65mL	SC
Combination Vaccines		
DTaP + Hib + IPV	0.5mL	IM
DTaP + Hib		
DTaP + IPV		
HepA + HepB (**Twinrix®**)	≥18 yrs: 1.0mL	IM

Influenza

intramuscular and subcutaneous routes

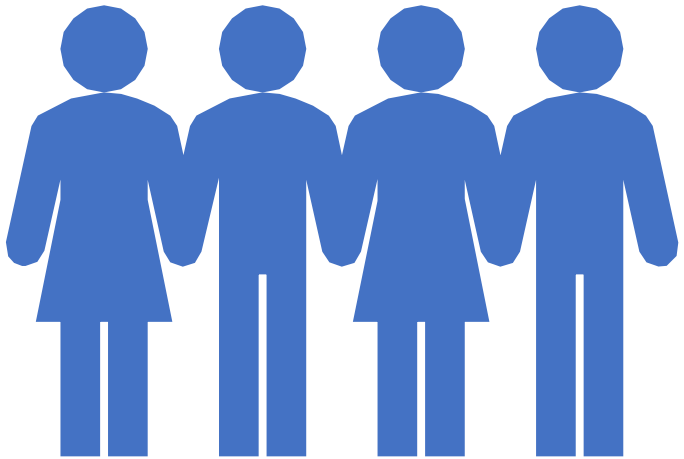
can be administered concurrently with other vaccines, including pneumococcal polysaccharide vaccine.



Anaphylactic hypersensitivity to eggs or egg antigens or to influenza vaccine

Target Groups

- Healthcare workers
- All persons 50 years or older
- All persons aged 18-49 years with 1 or more medical conditions
- Pregnant women
- Persons living in certain institutional settings
- Husehold members in close contact with persons with high-risk conditions, including out-of-home caregivers of children <6 months of age.
- Those performing religious pilgrimages, including the Hajj and Umrah.



- Meta-analyses generally find that vaccine effectiveness is in the range of 50-80% for older children and healthy adults
- Relative lack of data among other age and risk groups.
- Elderly subjects generally respond less effectively to influenza vaccines than young healthy adults.
- Those with chronic debilitating medical conditions generally do not respond as effectively than healthy subjects of similar age.

Pneumococcal Disease

Vaccination is recommended for the prevention of invasive pneumococcal disease (IPD) which includes bacteraemia, meningitis, or infection of other normally sterile sites.

Vaccines:

Pneumococcal conjugate vaccine (PCV)

Pneumococcal polysaccharide vaccine (PPV)

Vaccines Available in Malaysia

Polysaccharide vaccine (PPV)

Pneumo 23 Polyvalent Vaccine – Sanofi Pasteur*

Pneumovax 23 Vaccine® – Merck Sharp & Dohme

Conjugate vaccine (PCV)

— Prevenar 13® (PCV13) – Pfizer

Target Groups

- Immunocompromised
- Chronic Diseases
- Alcoholism
- Smoking
- Age >60 years old
- Pilgrimage (Haj)

Hepatitis B

Malaysia was an intermediate endemicity country with HBsAg prevalence of 5-7% before nationwide HBV vaccination for neonates was introduced in 1989 as part of the Expanded Programme for Immunisation.

Those born before 1989 should be immunized.

Target Group

- Healthcare workers
- Parenteral drug abusers.
- Close family contact of a case or those chronically infected.
- Haemophiliacs.
- Patients with chronic renal failure.
- Patients with chronic liver disease.
- Travellers to areas of high endemicity.
- Patients attending STD and HIV clinics.
- Men who have sex with men.
- Those with multiple sex partners.

Human Papillomavirus (HPV)

HPV infection is often sub-clinical and transient

Cutaneous warts, genital warts, respiratory papillomatosis (low-risk HPV types) and dysplasias

Cancers of the cervix, vulva, vagina, penis, anus, the oral cavity and oropharynx (highrisk HPV types). HPV types 16 and 18 cause 70% of cervical cancers.

HPV Risk

The low-risk HPV types 6 and 11 cause 90% of anogenital warts and almost all recurrent respiratory papillomatosis.

Most genital HPV infections are self-limiting with complete recovery but in 20% of infections, the virus persists. Persons with persistent HPV infection are at risk of developing HPV-associated cancers.

Vaccination with the bivalent (types 16 and 18) HPV vaccine is recommended for protection against cervical, vulvar and vaginal cancers

The quadrivalent (types 16, 18, 6 and 11) will also protect both females and males from anal cancers, precancers and genital warts.

It is important to get all 3 doses of HPV vaccine to get the full benefits

Time of Administration

HPV vaccines are routinely recommended for females and males aged 11 or 12 years.

The vaccine series can be started at 9 years of age. Vaccination is also recommended for females aged 13-26 yearsand males aged 9-26 years (for Gardasil® only) years who were not vaccinated previously or did not complete the vaccination series.

Vaccines Available in Malaysia

Cervarix® (Human papillomavirus vaccine types 16 & 18)

Gardasil® (Human papillomavirus vaccine types 6,11,16 & 18)

The HPV vaccination programme was introduced in the Malaysian EPI in 2010, targeting girls aged 13 years.

Vaccine is delivered through an on-going school based programme (Form 1, regardless of age) and to out-of-school girls aged 13 years.

The HPV immunisation programme has been extended in 2012 to the catch-up group, targeting 18-year old girls.

Rabies

Preexposure vaccination: IM: A total of **3 doses,** 1 mL each,

Days 0, 7, and 21 or 28.

Booster vaccination (for persons with continuous or frequent risk of infection): IM: 1 mL based on antibody titers

Note: Prolonging the interval between doses does not interfere with immunity achieved after the concluding dose of the basic series.

PEP (WHO 2017)

1. IPC regimen [new recommendation]

2 doses (0.1 ml) of ID route at each visit

Day 0, 3 & 7

All population

2. 4-dose Essen regimen [status quo]

1 dose (1 vial) of IM route at each visit

Day 0, 3, 7 & 14-28

All population

3. Zagred regimen [status quo]

IM route

2 doses (1 vial) on Day 0

1 dose (1 vial) on Day 7 & 21

Cautious use in immunocompromised

Current PEP on RIG use

- Given 1X only
- Not to whom previously have PEP or PrEP
- At or ASAP after PEP vaccination
- Not > D7 after 1st vaccine dose
- Maximum dosage by body weight
  - hRIG: 20 IU/kg
  - eRIG: 40 IU/kg
- All RIG or as much as possible is given to all wound site(s), dilute RIG if needed

The following vaccinations are **strongly recommended among HCWs**:

Category of HCW	Vaccines recommended	Schedule	Comments
All HCW Includes all workers and students directly involved in patient care or the handling of human tissue	Hepatitis B	Should be given as soon as feasible Give 3 dose series (For details refer to page 62)	Post vaccination serologic testing for antibodies recommended
	Measles, mumps and rubella	1 vaccination (2 doses) before onset of career MMR vaccine preferred Booster doses not necessary	Indicated for HCWs who do not have documented vaccination, physician diagnosed infection or serologic evidence of immunity Not indicated in pregnant women
	Influenza	Annual vaccination	
	Pertussis (Tdap)	HCWs should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap	Tdap can be administered regardless of interval since the last tetanus or diphtheria containing vaccine
	Varicella	Vaccination (Two 0.5mL S/C doses 4-8 weeks apart) should be given before posting to unit Booster doses not necessary	Pre vaccination serologic testing is cost effective in those who do not have a reliable history of varicella infection or serologic evidence of immunity

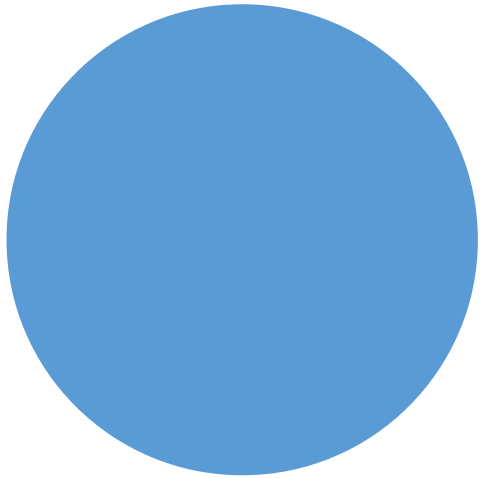
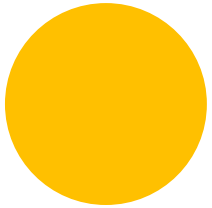
Vaccination for Immunocompromised Patients

Vaccine	HIV	Immuno-suppressed	Renal failure	Diabetes mellitus	Chronic alcoholism
BCG	C	C	UI	UI	UI
Hep A	UI	UI	UI	UI	UI
Hep B	R – double dose	UI – double dose	R – double dose	UI	UI
Hib	UI	R	UI	UI	UI
HPV	UI	UI	UI	UI	UI
Influenza (Inactivated)	R	R	R	R	R
MMR	UI*	C	UI	UI	UI
Meningococcus	UI	UI	UI	UI	UI
IPV	UI	UI	UI	UI	UI
Pneumococcus (PCV13 or PPSV23)	R	R	R	UI	UI
Rabies	UI	UI	UI	UI	UI
Td	UI	UI	UI	UI	UI
Inactivated typhoid and cholera	UI	UI	UI	UI	UI
Varicella	UI*	C	UI	UI	UI
Zoster	C	C	UI	UI	UI

C – Contraindicated
R – Recommended
UI – Use if indicated

Vaccination Summary for Travellers

Category	Vaccine	Comments
Mandatory vaccination	Yellow fever for all travellers traveling to or from yellow fever endemic countries See page 181 for advice for Hajj and Umrah pilgrims	These vaccines are legal requirements for travel Failure to obtain vaccines could result in non-entry/quarantine in destination as well as home country Countries requiring yellow fever vaccination for entry do so in accordance with the International Health Regulations Country requirements are subject to change at any time. Updates can be found at: www.who.int/ith
Routine vaccination	Diphtheria/tetanus/pertussis Hepatitis B Measles/mumps/rubella Poliomyelitis	Although not mandatory all travelers are generally advised to ensure that they have these necessary vaccination and boosters
Selective use for travelers	Cholera Influenza Hepatitis A Japanese encephalitis Lyme disease Meningococcal Pneumococcal Rabies Tick-borne encephalitis BCG Typhoid	Recommendations for these vaccines depend on the countries of destination, the current outbreak situation at the time of travel, the purpose for travel, the intended length of stay and the health status of the traveler As recommendations will change from time to time, it is prudent to access the latest advisories from the following sites maintained by the CDC and WHO wwwnc.cdc.gov/travel/ www.who.int/ith

Thank You