

Universal Immunisation Programme

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Immunization Programme in India was introduced in 1978 as 'Expanded Programme of Immunization' (EPI) by the Ministry of Health and Family Welfare, Government of India. In 1985, the programme was modified as 'Universal Immunization Programme' (UIP) to be implemented in phased manner to cover all districts in the country by 1989-90 with the one of largest health programme in the world.

Ministry of Health and Family Welfare, Government of India provides several vaccines to infants, children and pregnant women through the **Universal Immunisation Programme**.

About immunization

Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines are substances that stimulate the body's own immune system to protect the person against subsequent infection or disease.

Vaccines provided under UIP:

BCG

- **About-BCG** stands for Bacillus Calmette-Guerin vaccine. It is given to infants to protect them from tubercular meningitis and disseminated TB.

- **When to give** – BCG vaccine is given at birth or as early as possible till 1 year of
- **Route and site**- BCG is given as intradermal injection in left upper arm.

OPV

- **About**-OPV stands for Oral Polio Vaccine. It protects children from poliomyelitis.
- **When to give**- OPV is given at birth called zero dose and three doses are given at 6, 10 and 14 weeks. A booster dose is given at 16-24 months of age.
- **Route and site** - OPV is given orally in the form of two drops.

Hepatitis B vaccine

- **About** – Hepatitis B vaccine protects from Hepatitis B virus infection.
- **When to give**- Hepatitis B vaccine is given at birth or as early as possible within 24 hours. Subsequently 3 dose are given at 6, 10 and 14 weeks in combination with DPT and Hib in the form of pentavalent vaccine.
- **Route and site**- Intramuscular injection is given at anterolateral side of mid thigh

Pentavalent Vaccine

- **About**-Pentavalent vaccine is a combined vaccine to protect children from five diseases Diphtheria, Tetanus, Pertusis, Haemophilis influenza type b infection and Hepatitis B.
- **When to give** - Three doses are given at 6, 10 and 14 weeks of age (can be given till one year of age).
- **Route and site**-Pentavalent vaccine is given intramuscularly on anterolateral side of mid thigh

Rotavirus Vaccine

- **About** -RVV stands for Rotavirus vaccine. It gives protection to infants and children against rotavirus diarrhoea. It is given in select states.
- **When to give** - Three doses of vaccine are given at 6, 10, 14 weeks of age (can be given at one year of age).
- **Route and site**-5 drops of liquid vaccine or 2.5 ml (lyophilized vaccine) are given orally.

PCV

- **About**- PCV stands for Pneumococcal Conjugate Vaccine. It protects infants and young children against disease caused by the bacterium Streptococcus pneumoniae.
- **When to give** - The vaccine is given as two primary doses at 6 & 14 weeks of age followed by a booster dose at 9-12 months of age
- **Route and site**- PCV is given as intramuscular (IM) injection in anterolateral side of mid- thigh. It should be noted that pentavalent vaccine and PCV are given as two separate injections into opposite thighs.

fIPV

- **About-** fIPV stands for Fractional Inactivated Poliomylitis Vaccine. It is used to boost the protection against poliomyelitis.
- **When to give-** Two fractional doses of IVP are given intradermally at 6 and 14 weeks of age.
- **Route and site-** It is given as intradermal injection at right upper arm.

Measles/ MR vaccine

- **About-**Measles vaccine is used to protect children from measles. In few states Measles and Rubella a combined vaccine is given to protect from Measles and Rubella infection.
- **When to give-**First dose of Measles or MR vaccine is given at 9 completed months to 12 months (vaccine can be given up to 5 years if not given at 9-12 months age) and second dose is given at 16-24 months.
- **Route and site –** Measles Vaccine is given as subcutaneous injection in right upper arm.

JE vaccine

- **About-** JE stands for Japanese encephalitis vaccine. It gives protection against Japanese Encephalitis disease. JE vaccine is given in select districts endemic for JE after the campaign.
- **When to given-** JE vaccine is given in two doses first dose is given at 9 completed months-12 months of age and second dose at 16-24 months of age.
- **Route and site-** Live attenuated vaccine is given as subcutaneous injection in left upper arm and killed vaccine is given as intramuscular injection in anterolateral aspect of mid- thigh.

DPT booster

- **About-**DPT is a combined vaccine; it protects children from Diphtheria, Tetanus and Pertussis.
- **When to give -**DPT vaccine is given at 16-24 months of age is called as DPT first booster and DPT 2nd booster is given at 5-6 years of age.
- **Route and site-** DPT first booster is given as intramuscular injection in antero-lateral side of mid-thigh in left leg. DPT second booster is given as intramuscular injection in left upper arm.

Tetanus and adult diphtheria (Td) vaccine:

- **About-**TT vaccine has been replaced with Td vaccine in UIP to limit the waning immunity against diphtheria in older age groups.
- **When to give-** Td vaccine is administered to adolescents at 10 and 16 years of age and to pregnant women.
- **Pregnant women-** Td-1 is given early in pregnancy as first dose and 4 weeks after Td1, second dose of Td as Td-2 is given. Td- Booster is given, if pregnant woman has received 2 TT/Td doses in a pregnancy within the last 3 years.* Intra-muscular Upper Arm
- **Route and site-** Td is given as intramuscular injection in upper arm.

National Immunization Schedule

Age	Vaccines given
Birth	Bacillus Calmette Guerin (BCG), Oral Polio Vaccine (OPV)-0 dose, Hepatitis B birth dose
6 Weeks	OPV-1, Pentavalent-1, Rotavirus Vaccine (RVV)-1, Fractional dose of Inactivated Polio Vaccine (IPV)-1, Pneumococcal Conjugate Vaccine (PCV) -1*
10 weeks	OPV-2, Pentavalent-2, RVV-2
14 weeks	OPV-3, Pentavalent-3, IPV-2, RVV-3, PCV-2*
9-12 months	Measles & Rubella (MR)-1, JE-1** , PCV-Booster*
16-24 months	MR-2, JE-2** , Diphtheria, Pertussis & Tetanus (DPT)-Booster-1, OPV – Booster
5-6 years	DPT-Booster-2
10 years	Tetanus & adult Diphtheria (Td)
16 years	Td
Pregnant Mother	Td-1, Td-2 or Td-Booster***

* PCV in selected states/districts: Bihar, Himachal Pradesh, Madhya Pradesh, Uttar Pradesh (selected districts) and Rajasthan; in Haryana as state initiative

** JE in endemic districts only

*** One dose if previously vaccinated within 3 years

ThePharmapedia

National Immunization Schedule (NIS) for Infants, Children and Pregnant Women (Vaccine-wise)

Vaccine	When to give	Dose	Route	Site
For Pregnant Women				
Tetanus & adult Diphtheria (Td)-1	Early in pregnancy	0.5 ml	Intra-muscular	Upper Arm
Td-2	4 weeks after Td-1	0.5 ml	Intra-muscular	Upper Arm
Td- Booster	If received 2 TT/Td doses in a pregnancy within the last 3 years*	0.5 ml	Intra-muscular	Upper Arm
For Infants				
Bacillus Calmette Guerin (BCG)	At birth or as early as possible till one year of age	0.1ml (0.05ml until 1 month age)	Intra-dermal	Left Upper Arm
Hepatitis B - Birth dose	At birth or as early as possible within 24 hours	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Oral Polio Vaccine (OPV)-0	At birth or as early as possible within the first 15 days	2 drops	Oral	Oral
OPV 1, 2 & 3	At 6 weeks, 10 weeks & 14 weeks (OPV can be given till 5 years of age)	2 drops	Oral	Oral
Pentavalent 1, 2 & 3	At 6 weeks, 10 weeks & 14 weeks (can be given till one year of age)	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Pneumococcal Conjugate Vaccine(PCV)	Two primary doses at 6 and 14 weeks followed by Booster dose at 9-12 months	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Rotavirus (RVV)	At 6 weeks, 10 weeks & 14 weeks (can be given till one year of age)	5 drops (liquid vaccine) 2.5 ml (lyophilized vaccine)	Oral	Oral
Inactivated Polio Vaccine (IPV)	Two fractional dose at 6 and 14 weeks of age	0.1 ml	Intra dermal two fractional dose	Intra-dermal: Right upper arm
Measles Rubella (MR) 1st dose	9 completed months-12 months. (Measles can be given till 5 years of age)	0.5 ml	Sub-cutaneous	Right upper Arm

Vaccine	When to give	Dose	Route	Site
Japanese Encephalitis (JE) - 1	9 completed months-12 months.	0.5 ml	Sub-cutaneous (Live attenuated vaccine) Intramuscular(Killed vaccine)	Left upper Arm (Live attenuated vaccine) Anterolateral aspect of mid thigh (Killed vaccine)
Vitamin A (1st dose)	At 9 completed months with measles-Rubella	1 ml (1 lakh IU)	Oral	Oral
For Children				
Diphtheria, Pertussis & Tetanus (DPT) booster-1	16-24 months	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
MR 2nd dose	16-24 months	0.5 ml	Sub-cutaneous	Right upper Arm
OPV Booster	16-24 months	2 drops	Oral	Oral
JE-2	16-24 months	0.5 ml	Sub-cutaneous (Live attenuated vaccine) Intramuscular(Killed vaccine)	Left upper Arm (Live attenuated vaccine) Anterolateral aspect of mid thigh (Killed vaccine)
Vitamin A (2nd to 9th dose)	16-18 months. Then one dose every 6 months up to the age of 5 years.	2 ml (2 lakh IU)	Oral	Oral
DPT Booster-2	5-6 years	0.5 ml.	Intra-muscular	Upper Arm
Td	10 years & 16 years	0.5 ml	Intra-muscular	Upper Arm

*One dose if previously vaccinated within 3 years

Note:

- JE Vaccine is introduced in select endemic districts after the campaign.
- The 2nd to 9th doses of Vitamin A can be administered to children 1-5 years old during biannual rounds, in collaboration with ICDS.
- PCV in selected states/districts: Bihar, Himachal Pradesh, Madhya Pradesh, Rajasthan & Uttar Pradesh (selected districts), and in Haryana as state initiative