

Vaccines

1. Live attenuated vaccines:

Measles, mumps, rubella (MMR) , varicella , BCG (the only live attenuated bacterial vaccine) , oral polio virus (OPV).

2. NON-live vaccines:

a) Whole pathogen:

Inactivated polio virus (IPV) , **whole cell** pertussis , rabies , hepatitis **A** vaccine.

b) Subunit vaccines:

Tetanus toxoid, influenza , Acellular pertussis , pneumococcal polysaccharide vaccine.

- **Purified:** **Acellular** pertussis vaccine.
- **Recombinant protein vaccine:** hepatitis **B** surface antigen (HBsAG) , malaria vaccine.

c) Toxoid vaccines:

Clostridium tetani, Clostridium difficile or Corynebacterium diphtheriae.

d) Polysaccharide and conjugated vaccines:

Streptococcus pneumoniae, Haemophilus influenzae type b and N. meningitidis. (All are encapsulated bacteria)

3. Reassortant live and mRNA vaccines:

Reassortant rotavirus vaccine.