reduce the risk of congenital rubella. As it is a live vaccine, the only safe time during reproductive life is the immediate postpartum period.

Mumps is caused by the paramyxovirus. Paramyxovirus us a single stranded RNA virus. The mumps virus is spread by air-bourne droplets and infects the salivary glands. Parotitis (inflammation of the parotid gland) is the most clinical sign of mumps infection. Laboratory diagnosis is made; by detecting viral RNA in throat swabs, cerebrospinal fluid, or urine, by isolating the virus in cell culture, or by detecting mumps specific IgM antibody. Complications of mumps include; meningitis, encephalitis, pancreatitis, and orchitis. Mumps is prevented by using the live attenuated vaccine, which is safe and effective.

Measles is caused by the paramyxovirus. Measles is transmitted by respiratory droplets. Clinical features include; respiratory symptoms, Koplik's spots and a maculopapular rash. The disease is so characteristic that a clinical diagnosis can be made without laboratory tests. Nearly all infected individuals develop symptomatic disease. There is only one antigenic strain of measles virus. After infection there is lifelong resistance to reinfection. Measles is highly infectious, and nearly all susceptible children contract the disease on exposure. Complications of measles are particularly likely among children in resource-poor countries, due to malnutrition, starvation, and poor medical services. Complications of measles, due to the loss of memory B and T cells and a resulting generalized immune suppression, include; opportunistic bacterial superinfections, which are common esticially otitis media and pneumoniae, as a result of virus damage to respiratory subjects, a primary measles virus pneumoniae (giant cell pneumoniae) which is seen in patients with serious cell-mediated immune response defects; post infectious oncephalitis which occurs in 1 in 1000 patients; and very rarely, subacute sclerosing panencephalitis, this develop 1-10 years after apparent recovery from and election. Detection dasles virus RNA or carrying out a measles specific loves is helpful in continuing the diagnosis either on blood or saliva samples Conditionated measles in for ction can be treated with ribavirin. There is a live attenuated measles vaccine.

The measles, mumps and rubella (MMR) vaccine combines the live attenuated vaccines for measles, mumps and rubella in one vaccination. The MMR vaccine was introduced into the UK childhood vaccination programme in 1988. All children were immunised at 18 months of age. The MMR vaccine requires 90% vaccine cover to provide effective herd immunity. Between 2000-2015, there was an estimated 79% drop in measles deaths worldwide, with an estimated 20 million deaths from measles prevented by vaccination. Nevertheless, WHO has estimated that >134 000 people died from measles in 2015, most of whom were children under 5. Cases of measles increased in the UK after 2001. Following reduced vaccine uptake. This resulted from the suggestion that the MMR vaccine caused autism, as there was an apparent rise in autism in both California and the UK that seemed to coincide with the introduction of the vaccine. However, further studies have failed to show an increased risk of autism after MMR.

Rotavirus vaccine