

**Q. What are the precautions that should be taken while giving ATS?**

**Ans.** ATS may cause a generalized anaphylaxis because it is prepared from horse's serum, which is foreign to the human body. To counter the effects of the same, we should keep the following medicines ready:

- *Adrenaline solution 1 in 1000*: 0.5–1 ml IM
- *Hydrocortisone 100 mg*: IV injection

Also a test dose of ATS (0.1 ml) should be given *subcutaneously* (not intradermally) and the patient should be observed carefully for any local or systemic reactions such as fall in pulse rate/ blood pressure, shock, dyspnea, etc. If there is a reaction, the rest of the ATS should be given in gradually increasing fractions after treatment with adrenaline. If the reactions persist, ATS should not be given.

**Q. What are the other adjuncts to the treatment of a wound for prevention of tetanus?**

**Ans.** Passive immunization by ATS provides immediate protection but has its side effects. Tetanus toxoid does not provide immediate protection. Antibiotics such as penicillin or erythromycin are effective against the vegetative forms of *Clostridium tetani* but are ineffective against spores. Also, antibiotics are effective only when given within 6 hrs of injury. However, it is not certain whether the antibiotic will reach the bacilli especially if there is a dead tissue in the wound. Antibiotics are an adjunct to vaccination, not a substitute.

**Q. After how much time of administration of tetanus toxoid does the immunity develop?**

**Ans.** A minimum of 2 weeks is required for development of antibodies after active immunization with tetanus toxoid. Therefore, if there is a need for immediate protection such as in case of an injury in unvaccinated child or an elective or emergency surgery, the child may be afforded protection by passive immunization, i.e. ATS/human tetanus immunoglobulin.

**Q. Can active and passive immunization against tetanus be carried out simultaneously?**

**Ans.** Yes, both tetanus toxoid and ATS/human tetanus Immunoglobulin may be given simultaneously but they should be given on separate arms/sites and by separate syringes.

**Q. What are the adverse reactions following tetanus vaccination?**

**Ans.** Common minor vaccine reactions following tetanus toxoid immunization include local reaction such as pain, swelling and redness (10%) and malaise and non-specific symptoms at the rate of 25%. The rare reactions include brachial neuritis ( $5-10/10^6$  cases) within 2-28 days and anaphylaxis ( $1-6/10^6$  cases) with an onset within one hour of administration of vaccine.

- **A very severe side effect: Toxic shock syndrome (TSS)** can occur if the vaccine gets contaminated or it is used beyond 1 hr of reconstitution at 37°C and 6 hrs at 2–8°C. Toxic shock syndrome is characterized by watery diarrhea, vomiting, high fever within a few hours of immunization. The case fatality rate of TSS is high. It often leads to death within 24–48 hours and is an indicator of programme error. The management consists of early recognition and prompt treatment in hospital by antibiotics and fluids.
- No person to person transmission of vaccine strain has been reported
- **Immunity:** Develops 11–12 days after vaccination
- At 9 m—90% seroconversion
- At 11–12 m: 99% seroconversion
- **Contacts** can be protected if vaccine is given within 3 days of exposure since the incubation period of vaccine induced measles is 7 days as compared to 10 days for naturally acquired measles.
- **C/I:** Pregnancy, acute illness, deficient CMI, high fever, allergy to vaccine contents intake of steroids and immunosuppressants. Early stage of HIV infection is not a contraindication.
- **Immune response:** Both cellular and humoral
- Can cause a depression of cell mediated immunity. However, it can be given to those with early HIV infection or latent/unrecognized tuberculosis.
- Can be given with all childhood vaccines except BCG.

### **Immunoglobulin**

- Effective if administered early in incubation period within 3-4 days of exposure
- **Dose:** 0.25 ml/kg body weight
- Vaccine to be given after 8–12 weeks.

### **FAQs**

**Q. Why is measles vaccine recommended to be administered at completion of 9 months of age only? Can we give it earlier than 9 months?**

**Ans.** Measles is recommended specifically at 9 months of age group because maternal antibodies persist in infants up to 7–8 months of age which interfere with the vaccine antigen.

**Q. Can we administer measles vaccine along with OPV or BCG vaccine?**

**Ans.** We can offer the measles vaccine with OPV but BCG vaccine should not be offered along with measles vaccine since measles vaccine can interfere with immunity, especially T cell-mediated immunity for 4–6 weeks which can reduce the successful uptake of BCG vaccine or may lead to tuberculosis infection.

**Q. Is there any harm if measles vaccine is given intramuscularly?**

**Ans.** If measles is given intramuscularly no harm will occur, but it should preferably be given subcutaneously.

**Q. Can the vaccine cause measles?**

**Ans.** Since measles vaccine is live, it can cause measles-like symptoms, however, it does not cause measles disease.

**Q. Does appearance of measles like symptoms after measles vaccine indicate effective development of immunity as compared to those who do not develop it?**

**Ans.** No, measles-like symptoms after measles vaccine only indicates adverse reactions of the vaccine. It is not an indicator of development of immunity.

**Q. If we have applied spirit on the site of injection before injecting the measles vaccine what precaution should we take?**

**Ans.** Spirit should be allowed to evaporate completely before vaccine is administered, so that it does not inactivate the live attenuated components of the vaccine.

**Q. Why is neomycin added in the measles vaccine?**

**Ans.** Neomycin helps in preventing the bacterial contamination of the vaccine.

**Q. What is the strategy for measles elimination and rubella control?**

**Ans.** Measles elimination and rubella control strategy includes: