

If complications in the  
nervous system and



**ASSIGN  
BUSTER**

If this membrane spreads to the air passage, it may block entry of air and cause difficulty in breathing. Besides this membrane, the bacteria produce toxin, which if untreated, is absorbed into the blood causing serious complications in the nervous system and heart. It is widely distributed disease and affects persons of all ages but children in the age of 3-5 years are more affected. Newborn infants are not affected due to immunity received from the mother.

**Causative Organism:**

The disease is caused by the exotoxin produced by corynebacterium diphtheria. It is a gram positive rod shaped bacteria which grows mainly in the throat, larynx and other portions of the upper respiratory tract. It is found in the secretions of the mouth, nose and throat. It secretes exotoxin which is highly poisonous to man giving rise to toxæmia symptoms.

The bacillus is killed by direct exposure to sunlight and heat. It is comparatively a hardy micro-organism.

**Mode of Spread:**

It is spread by droplet infection and through carriers whether sick or healthy.

Handling of fomites recently contaminated by nasal or throat secretions also transmits the disease. The droplets containing the bacilli are expelled from the mouth and nose by coughing, sneezing, spitting, speaking or kissing.

**Incubation Period:**

Incubation period varies from 2-5 days but occasionally it may be longer.

**Signs and Symptoms:**

The patient suffers from fever and toxæmia which makes the child miserable. There is difficulty in swallowing and patches of greyish- yellow membrane appear over tonsils and throat. Swabs from this membrane show the presence of the organism.

**Prevention and Control:**

(i) Efforts should be made for early detection of diphtheria carriers. This can be done by taking swabs from nose and throat and examining for the presence of diphtheria bacilli.

(ii) Isolate the patient in a well ventilated room. (iii) The articles of the patient should be disinfected and good hygienic conditions should be maintained. (iv) All infants should be immunised with DPT (triple vaccine) i. e.

diphtheria, pertussis and tetanus vaccine starting from the age of 6 weeks. Three doses of DPT are recommended, each consisting of 0.5 ml of vaccine administered intramuscularly at the age of 11/2 months, 2Vi months and 31/2 months.

A first booster dose of 0.5 ml of DPT is given at the age of IV2 to 2 years followed by a second booster dose (DT only) of 0.5 ml at the age of 5-6 years. DPT vaccine protects not only against diphtheria but also against pertussis and tetanus.

**Schick test:**

Schick test is used to find out whether the person is susceptible or immune to diphtheria. This test is carried out by using two diagnostic agents i. e.

(i) Schick test toxin, and (ii) Schick control. A test dose of 0.2 ml of Schick test toxin is injected intra-cutaneously into the left forearm and an equal volume of Schick control is injected into the right forearm of the individual. The site of each injection is examined on the fourth day. If the left forearm into which toxin has been injected shows redness or inflammation, it indicates that the toxin is not neutralised and the individual is susceptible but if there is no redness or inflammation it indicates that the person is immune. If the redness or inflammation appears it may be due to substances other than toxin which is confirmed from right forearm. If reaction is observed on the right forearm it is confirmed that the person is susceptible to diphtheria but if there is no reaction then the person is immune to diphtheria. Various types of vaccines used for prophylactic treatment include Alum precipitated toxoid (A.

P. T.), Toxin anti-toxin floccules (T. A. F.) and Purified toxoid aluminium phosphate precipitated (P. T A P.

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**Treatment:**

(i) Advise complete bed rest to the patient to prevent cardiac and other complications. (ii) As soon as the case is detected diphtheria antitoxin must

be given immediately in doses ranging from 10, 000 to 80, 000 units according to the severity of the case.

(iii) Antibiotics like penicillin or erythromycin may be given to eliminate the infection and prevent production of further toxin. (iv) Fluid diet should be given to the patient till his throat is clear. (v) Tracheostomy or laryngeal incubation may be needed if there is respiratory obstruction. (vi) The household and other contacts may be given a prophylactic dose of 500 to 1000 units of diphtheria antitoxin.