

antitoxin injected in the event of injury—is well worth all the inconvenience.

Duration of Immunity and Reinforcing Doses

When primary immunization has been done in infancy reinforcement of immunity is begun with the DTP dose at 15 to 18 months and continued by doses of DT/Vac at school-entry and 8 to 10 years. A further dose of Tet/Vac at school-leaving age will maintain protection for many years, if not for life.

When primary immunization is not done until during school-life or adolescence reinforcing doses (at least two or three) of tetanus toxoid are necessary at roughly five-year intervals. Thereafter a dose of toxoid in the event of injury will suffice to raise effectively the level of protection.

Passive Immunization

This is effected by the subcutaneous or intramuscular injection of 1,500 units of tetanus antitoxin.

This prophylactic measure (giving protection for one to two weeks) should be used *only* on non-immune persons. A person is non-immune:

1. When he has never received an injection of tetanus toxoid.
2. When he has received only one injection of tetanus toxoid.
3. When more than six months has elapsed after two injections of tetanus toxoid, or more than five years after three injections or a reinforcing dose of tetanus toxoid.
4. When more than one week has elapsed since a previous injection of tetanus antitoxin.

The dose of antitoxin may be repeated at weekly intervals if the risk of tetanus continues. There is, however, the risk of rapid elimination of antitoxin. Also, antitoxin is antigenic and an anaphylactic reaction could result.

Every person given tetanus antitoxin should be actively immunized as soon as possible. The primary course may be commenced by giving the first dose of tetanus toxoid at the same time as the antitoxin—provided that the toxoid is of the adsorbed type; if fluid toxoid is used, there should be an interval of at least six weeks between the antitoxin and the first dose of toxoid.

Storage and Stability

These are as described for A.P.T.

WHOOPIING COUGH

After several setbacks, the Whooping Cough Immunization Committee of the Medical Research Council³ showed that prophylactic vaccination against whooping cough can be highly effective.

1. Pertussis Vaccine (Per/Vac)

This is a suspension of killed *Bordetella pertussis* in a buffered isotonic solution containing a preservative, thiomersal (0.01%). When diluted with an equal volume of saline solution it has a potency not less than that of a Reference Preparation of pertussis vaccine reconstituted to contain 20,000 million organisms per ml.

Dosage and Intervals between Injections

A primary course of immunization consists of three doses, each of 0.5 ml., injected by the subcutaneous or

intramuscular route at monthly intervals. Since whooping cough is most serious in infants, especially those under 6 months of age, active immunization should be commenced in the second or third month of life. In recent years it has become more usual to give the vaccine in the form of diphtheria, tetanus, and pertussis vaccine (DTP/Vac) or as diphtheria and pertussis vaccine (DP/Vac).

Reactions

Reactions to whooping cough vaccine may be troublesome, especially in infants with an allergic diathesis. They range from a painful, swollen arm to uncontrollable screaming fits and collapse. More severe reactions are fortunately rare. Complications are “**febrile convulsions**” and **encephalopathy**—both rare.⁴ Both reactions and complications can be avoided if whooping cough vaccine (either alone, or in combination with other vaccines) is *not* given if:

- (a) The infant (or any near relative) has a history of fits or convulsions, or evidence of a disease of the central nervous system;
- (b) The infant (or any near relative) has a history of eczema, asthma, hay fever, or other allergic manifestation;
- (c) The infant has recently had an infectious disease, or has recently been in contact with such a case;
- (d) The infant has experienced any reaction to a first or second injection of pertussis vaccine;
- (e) The infant is not completely fit and well;
- (f) The vaccine is not matured.

Duration of Immunity and Reinforcing Doses

Reinforcing doses of whooping cough vaccine need not be numerous. One dose at 15 to 18 months is necessary, but the dose at school-entry (4 to 5 years) is hardly necessary unless there are younger siblings at home (or expected) to whom the school-going child may bring home the infection.

Storage and Stability

The vaccine should be stored between 2° and 10° C., when it has a “life” of two to three years. At cool room temperature (not above 15° C.) the life is six months.

REFERENCES

- ¹ Medical Research Council Committee on Diphtheria Toxoid, *Brit. med. J.*, 1962, 2, 149.
- ² Smith, J. W. G., Evans, D. G., Jones, D. A., Gear, M. W. L., Cunliffe, A. C., and Barr, M., *ibid.*, 1963, 1, 237.
- ³ Medical Research Council Whooping Cough Immunization Committee, *ibid.*, 1959, 1, 994.
- ⁴ Cockburn, W. C., in *Proceedings of the Symposium on Immunization in Children*, 1960, p. 18. E. & S. Livingstone, Edinburgh.

(To be continued.)

Correction.—In “To-day's Drugs” (August 17, p. 434) the trade names for chlorquinaldol were given as “dequadin” and “steroxin.” This is incorrect. Steroxin is chlorquinaldol but dequadin is dequalinium chloride.

The Hospital Libraries and Handicapped Readers Group of the Library Association recently held its first conference and week-end school at Nottingham University. The aim of the group is to provide a library service of professional standards for all those in hospital and outside whose handicap, temporarily or permanently, prevents them from visiting public libraries themselves. The conference programme included talks on “The Library in the Hospital,” “Care in the Community,” and “Literature in Healing.”