

# Spacing of Tdap after a Td vaccine



## FactSheet For Health Professionals

### In the past

Historically it was recommended that at least two years elapse between administration of a tetanus/diphtheria vaccine (Td) and a tetanus/diphtheria/pertussis-booster vaccine (Tdap), unless the risk of pertussis disease was high, in order to minimise the risk of local reactions.<sup>1</sup>

A review of literature about Tdap being administered within a short interval of another tetanus/diphtheria vaccine<sup>2,3</sup> and of adverse events reported after immunisation with Tdap post-licensure<sup>4,5</sup> by the American Academy of Pediatrics and the Centres for Disease Control and Prevention identified that subsequent Tdap immunisation was generally well tolerated. The U.S. recommendations for spacing between a Td and subsequent Tdap immunisation were changed in 2011.<sup>6</sup>

**The New Zealand recommendations for spacing between a Td and subsequent Tdap immunisation have changed.<sup>7</sup>**

### Current New Zealand recommendations

- There is no minimum time between a previous Td immunisation and a subsequent Tdap immunisation.<sup>6</sup>
- Tdap should be administered when indicated irrespective of when the previous Td immunisation was given.<sup>6</sup>
- Do not delay administration of Tdap because of an earlier Td immunisation.<sup>6</sup>

### Arthus reaction

Arthus reactions have been reported after vaccination against tetanus and diphtheria.<sup>1,8,9</sup> They were typically associated with the practice of frequent and repetitive administration of tetanus toxoid vaccine in the 1950s, when doses were administered at least annually for prophylaxis or more frequently as part of wound management.<sup>9</sup>

An Arthus reaction is a type III hypersensitivity reaction involving the deposition of antigen/antibody complexes in various tissues including vascular walls.<sup>1</sup> Arthus reactions are characterised by severe pain, swelling, oedema, induration, haemorrhage and occasionally vascular necrosis. Onset is usually 4-12 hours after vaccination. They usually resolve without sequelae.<sup>1</sup>

**An Arthus reaction is different to the extensive swelling reactions often associated with acellular pertussis vaccines which are generally painless and have no complications.**

In persons who have experienced an Arthus reaction after a dose of tetanus toxoid-containing vaccine a minimum of 10 years should elapse between toxoid vaccine doses, including vaccines administered for tetanus prophylaxis in management of tetanus prone wounds.<sup>1</sup>

### References

1. Centres for Disease Control and Prevention. Preventing tetanus, diphtheria, and pertussis among adolescents: Use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccines. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2006;55(RR-03):1-43.
2. Halperin SA, Sweet L, Baxendale D, Neatby A, Rykers P, Smith B, et al. How soon after a prior tetanus-diphtheria vaccination can one give adult formulation tetanus-diphtheria-acellular pertussis vaccine? *Pediatr Infect Dis J.* 2006;25(3):195-200.
3. Beytout J, Launay O, Guiso N, Fiquet A, Baudin M, Richard P, et al. Safety of Tdap-IPV given one month after Td-IPV booster in healthy young adults: A placebo-controlled trial. *Hum Vaccin.* 2009;5(5):315-21.
4. Jackson LA, Yu O, Nelson J, Belongia EA, Hambidge SJ, Baxter R, et al. Risk of medically attended local reactions following diphtheria toxoid containing vaccines in adolescents and young adults: A Vaccine Safety Datalink study. *Vaccine.* 2009;27(36):4912-6.
5. Yih WK, Nordin JD, Kulldorff M, Lewis E, Lieu TA, Shi P, et al. An assessment of the safety of adolescent and adult tetanus-diphtheria-acellular pertussis (Tdap) vaccine, using active surveillance for adverse events in the Vaccine Safety Datalink. *Vaccine.* 2009;27(32):4257-62.
6. American Academy of Pediatrics. Policy statement: Additional recommendations for use of tetanus toxoid, reduced-content diphtheria toxoid, and acellular pertussis vaccine (Tdap). *Pediatrics.* 2011;128(4):809-12.
7. Wansbrough D. Outbreaks, tetanus vaccination, Act-HIB, BCG and pneumococcal vaccines update, 2012 influenza programme, HPV immunisation catch up programme ends, green paper feedback wanted, immunisation decline rate falls [fascimile 2011 December 19]. Wellington: Ministry of Health; 2011.
8. Relyveld EH, Bizzini B, Gupta RK. Rational approaches to reduce adverse reactions in man to vaccines containing tetanus and diphtheria toxoids. *Vaccine.* 1998;16(9-10):1016-23.
9. Edsall G, Elliott MW, Peebles TC, Levine L, Eldred MC. Excessive Use of Tetanus Toxoid Boosters. *JAMA.* 1967;202(1):17-9.

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