

## TETANUS POST EXPOSURE PROPHYLAXIS

Tetanus is an acute disease characterised by muscle rigidity and agonising contractions induced by the toxin tetanus bacilli, the spores of which are present in soil. Between 1984 and 2004 there were 198 cases of tetanus in England and Wales. 74% occurred in individuals over 45 years old.

### A TETANUS PRONE WOUND IS:

- Any wound or burn that requires surgical intervention or that is delayed for > 6 hours.
- Any wound or burn at any interval after injury that shows one or more of the following characteristics:
  - A significant degree of devitalised tissue.
  - Puncture-type wound particularly where there has been contact with soil or manure likely to harbour tetanus organisms.
- Compound fractures.
- Any wound containing foreign bodies.
- Wounds or burns in patients who have systemic sepsis.

**Intravenous drug abusers** are at greater risk of tetanus. Every opportunity should be taken to ensure that they are fully protected against tetanus. Booster doses should be given if there is any doubt about their immunisation status.

**Immunosuppressed patients** may not be adequately protected against tetanus, despite having been fully immunised. They should be managed as if they were incompletely immunised.

### TETANUS IMMUNISATION FOLLOWING INJURIES IN ADULTS AND CHILDREN

Immunisation status	Clean Wound	Tetanus Prone Wound (see above)	
	Vaccine	Vaccine	Human Tetanus Immunoglobulin #
Fully immunised (see table overleaf)	None required	None required	Only if high risk *
Primary immunisation complete, boosters incomplete but up-to-date	None required (unless next dose due v. soon)	None required (unless next dose due v. soon)	Only if high risk *
Primary immunisation incomplete or booster not up-to-date	A reinforcing dose of vaccine and further doses as required to complete schedule (ensure future immunity)	A reinforcing dose of vaccine and further doses as required to complete schedule (ensure future immunity)	Yes. One dose of human tetanus immunoglobulin in a different site
Not immunised or immunisation status unknown or uncertain	Immediate dose of vaccine followed by completion of full 5 dose course (if records confirm it is necessary)	Immediate dose of vaccine followed by completion of full 5 dose course (if records confirm it is necessary)	Yes. One dose of human tetanus immunoglobulin in a different site

# For prevention, the dose of human tetanus immunoglobulin is:

- For most uses: 250IU by IM injection
- If more than 24 hours have elapsed since injury or there is a risk of heavy contamination or following burns: 500IU by IM injection

\* High risk tetanus prone wound:

- Heavy contamination with material likely to contain tetanus spores e.g. Stable manure
- Extensive devitalised tissue

## ROUTINE TETANUS and DIPHTHERIA IMMUNISATION SCHEDULES

A full course consists of 5 doses. Once complete these are considered to give lifelong immunity. Routine tetanus immunisation was introduced to the UK in 1961. Older adults may not be immunised and at particular risk.

SCHEDULE	CHILDREN (routine)	Children <10 yrs old (missed routine schedule)	ADULTS + Children >10 yrs
Primary Course	3 doses of vaccine (usually as DTaP/IPV/Hib) at 2,3 and 4 months, or start at any age between 2 months to 10 years	3 doses of vaccine (usually as DTaP/IPV/Hib) with an interval of one month between each dose	3 doses of vaccine (as Td/IPV) each one month apart
4 <sup>th</sup> dose (1 <sup>st</sup> booster)	Ideally 3 years after primary course, usually pre-school (as DTaP/IPV). If primary vaccination delayed, 1 <sup>st</sup> booster may be given providing 1 year has elapsed since primary course.	Ideally at pre-school entry (as DTaP/IPV) providing at least 1 year has elapsed since primary course. This re-establishes child on routine schedule. Otherwise give 3 years after primary course.	At least 5 years after primary course (as Td/IPV). Often given after 10 years.
5 <sup>th</sup> dose (2 <sup>nd</sup> booster)	Aged 13-18 years, before leaving school (as Td/IPV). Minimum of 5 years after 1 <sup>st</sup> booster.	Ideally 10 years after 4 <sup>th</sup> dose (as Td/IPV).	10 Years after 4 <sup>th</sup> dose (as Td/IPV)

DTaP/IPV/Hib: diphtheria, tetanus, acellular pertussis, inactivated polio vaccine, haemophilus influenzae type b (Pediaceel® - discuss with paed's ward)

DTaP/IPV: diphtheria, tetanus, acellular pertussis, inactivated polio vaccine (Repevax® - discuss with paed's ward)

Td/IPV: diphtheria, tetanus, inactivated polio vaccine (Revaxis® kept in the ED)

### Circumstances where a patient should have more than 5 doses:

- Following a tetanus prone wound if the tetanus status is unknown (especially IV drug users).
- For travellers to areas where medical attention may not be accessible should a tetanus prone injury occur, and the last dose was more than 10 years previously. This is a precautionary measure in case the immunoglobulin is not available to the individual should a tetanus prone injury occur. If the last dose was given more than 10 years ago, use Td/IPV.

### CONTRAINDICATIONS to Td/IPV:

- The vaccine should be postponed in an individual suffering an acute febrile illness except in the presence of a tetanus prone wound.
- Immunisation should not proceed in individuals who have had a confirmed anaphylactic reaction to a previous dose of a tetanus-containing vaccine, to neomycin, streptomycin or polymixin B.

Inactivated vaccines cannot replicate nor cause disease and so can be administered to individuals with Immunosuppression and HIV infection in accordance with the recommendations above. These individuals may not make a full antibody response. Specialist advice may be required.

### Administration:

- IM injection into the upper arm or anterolateral thigh.

Condensed from NICE guidance (Clinical Knowledge Summaries, Feb 2013).