

## Bites (animal & human), Tetanus and Rabies

This clinical pathway is intended to supplement, rather than substitute for, professional judgment and may be changed depending upon a patient's individual needs. Failure to comply with this pathway does not represent a breach of the standard of care.

<p><b>Animal Bites</b> If rabies is a concern, <b>scrub the wound with soap and water for at least 15 minutes</b>, then rinse and apply a disinfectant (e.g. iodopovidone) as soon as possible after exposure. The use of antibiotics in patients with <b>animal bites</b> is <b>controversial</b>, and some studies have shown <b>little benefit</b>. However, pre-emptive early antimicrobial therapy for <b>3–5 days</b> is recommended for patients who:</p> <ul style="list-style-type: none"> <li>are immunocompromised;</li> <li>are asplenic;</li> <li>have advanced liver disease;</li> <li>have pre-existing or resultant oedema of the affected area;</li> <li>have moderate to severe injuries, especially to the hand or face; or</li> <li>have injuries that may have penetrated the periosteum or joint capsule</li> </ul> <p><b>ALL Human bites should receive:</b></p> <ul style="list-style-type: none"> <li><b>prophylactic antibiotics</b></li> <li><b>consider post-exposure prophylaxis for HIV within 72hrs.</b> The risk associated with bite injuries has <b>not been quantified</b>. The victim is usually at low risk <b>unless the biter's saliva is contaminated with blood</b>. The risk is greater to the biter if blood is drawn from the victim's wound because of exposure to mucous membranes.</li> <li><b>Hepatitis B vaccine</b> preferably ≤ 24 hours if not previously immunized</li> </ul> <p><b>Treatment:</b> <b>DO NOT SUTURE ANIMAL AND HUMAN BITES.</b> The above wounds should be irrigated copiously, dressed, left open to drain, and examined daily to detect signs of infection. During the first few days after injury, elevation of the injured body part, especially if swollen, accelerates healing. This should be accomplished using a passive method (a sling for outpatients or a tubular stockinet and an intravenous pole for inpatients). <b>ALL infected wounds should be treated.</b> If no signs of infection, delayed primary closure may be done <b>72 hours after the injury</b>.</p>	<p><b>Antibiotics</b> Amoxicillin/Clavulanate 1gm BD x 5-7 days <b>In Penicillin Allergic Patients:</b> Clindamycin 300 mg PO QID/600 mg IV TDS <b>OR</b> Azithromycin 500mg PO OD for 3 days</p> <p><b>PLUS</b> <b>Tetanus Toxoid 0.5mg IM</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Previous doses of Adsorbed Tetanus Toxoid</th> <th colspan="2">Clean and minor wounds</th> <th colspan="2">All other wounds</th> </tr> <tr> <th>Tetanus toxoid</th> <th>TIG</th> <th>Tetanus toxoid</th> <th>TIG</th> </tr> </thead> <tbody> <tr> <td>&lt; 3 doses or unknown</td> <td>Yes</td> <td>No</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>≥ 3 doses</td> <td>Only if last dose given ≥10 yrs ago</td> <td>No</td> <td>Only if last dose given ≥5 yrs ago</td> <td>No</td> </tr> </tbody> </table> <p><b>Rabies Post-Exposure Prophylaxis</b> The WHO rabies exposure categories are:</p> <p><b>Category I</b> Touching or feeding animals, licks on intact skin <b>Category II</b> Nibbling of uncovered skin, minor scratches or abrasions without bleeding Single or multiple transdermal bites or broken skin with saliva from animal <b>Category III</b> licks, exposure due to direct contact with bats.</p> <p><b>Rabies Post-Exposure Prophylaxis is recommended for WHO Category II and III</b></p> <table border="1"> <thead> <tr> <th><b>Rabies Immunoglobulin (RIG)</b></th> <th><b>No Pre-EP</b></th> <th><b>Pre-EP</b></th> </tr> </thead> <tbody> <tr> <td>RIG provides passive immunization and is administered in the wound site only once, as soon as possible after the initiation of PEP and not beyond day 7 after the first dose of vaccine</td> <td>Human Ig - 20U/Kg <b>OR</b> Equine Ig - 40U/Kg</td> <td>None</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th><b>Rabies Vaccine</b></th> <th><b>No Pre-EP</b></th> <th><b>Pre-EP</b></th> </tr> </thead> <tbody> <tr> <td><b>Intradermal (ID)</b> <b>Dose: 0.1ml</b> <b>Recommended sites: left and right deltoids, thigh or suprascapular areas</b></td> <td><b>Days 0, 3, and 7 (2–2–2):</b> injections of two 0.1 ml doses of vaccine at different intradermal sites</td> <td>One Booster dose (intramuscular or intradermal) at one site on both <b>Days 0 and 3.</b> <b>OR</b> One Booster intradermal dose at four sites in one visit. This consists of four injections of 0.1 ml equally distributed over the left and right deltoids, thigh, or suprascapular areas at a single visit</td> </tr> <tr> <td><b>Intramuscular (IM)</b> <b>Dose: 1 vial</b> <b>Recommended sites:</b> Deltoids, lateral thighs or suprascapular areas that drain into regional lymph glands <b>Recommended sites for children aged &lt;2 years:</b> the anterolateral thigh Rabies vaccine should not be administered in the gluteal area, as induction of an adequate immune response is less reliable.</td> <td>Reduced 'Essen' vaccine schedule (1–1–1–1) on <b>Days 0, 3, 7, and 14</b> in healthy patients. A fifth dose is recommended for immunocompromised persons, between days 21 and 28.  Zagreb Regimen (2–0–1–0–1) on <b>Days 0, 7, and 21.</b> On day 0, two doses of vaccines are to be injected into two of the deltoid or thigh sites.</td> <td></td> </tr> </tbody> </table> <p>Patients bitten by <b>healthy appearing domestic animals may delay rabies post exposure prophylaxis</b> if the animal is <b>quarantined</b>. These animals should be <b>observed for 10 days</b>, and if they show <b>no sign of infection</b> during the observation period they may be released, and the <b>patient does not need to be vaccinated</b>. Signs of infection in an animal include excessive salivation, aggression, paralysis, daytime activity in nocturnal animals, and impaired movement. If the animal shows any signs of infection, the patient should start the vaccination schedule and continue until the animal has been tested at an approved facility.</p>	Previous doses of Adsorbed Tetanus Toxoid	Clean and minor wounds		All other wounds		Tetanus toxoid	TIG	Tetanus toxoid	TIG	< 3 doses or unknown	Yes	No	Yes	Yes	≥ 3 doses	Only if last dose given ≥10 yrs ago	No	Only if last dose given ≥5 yrs ago	No	<b>Rabies Immunoglobulin (RIG)</b>	<b>No Pre-EP</b>	<b>Pre-EP</b>	RIG provides passive immunization and is administered in the wound site only once, as soon as possible after the initiation of PEP and not beyond day 7 after the first dose of vaccine	Human Ig - 20U/Kg <b>OR</b> Equine Ig - 40U/Kg	None	<b>Rabies Vaccine</b>	<b>No Pre-EP</b>	<b>Pre-EP</b>	<b>Intradermal (ID)</b> <b>Dose: 0.1ml</b> <b>Recommended sites: left and right deltoids, thigh or suprascapular areas</b>	<b>Days 0, 3, and 7 (2–2–2):</b> injections of two 0.1 ml doses of vaccine at different intradermal sites	One Booster dose (intramuscular or intradermal) at one site on both <b>Days 0 and 3.</b> <b>OR</b> One Booster intradermal dose at four sites in one visit. This consists of four injections of 0.1 ml equally distributed over the left and right deltoids, thigh, or suprascapular areas at a single visit	<b>Intramuscular (IM)</b> <b>Dose: 1 vial</b> <b>Recommended sites:</b> Deltoids, lateral thighs or suprascapular areas that drain into regional lymph glands <b>Recommended sites for children aged &lt;2 years:</b> the anterolateral thigh Rabies vaccine should not be administered in the gluteal area, as induction of an adequate immune response is less reliable.	Reduced 'Essen' vaccine schedule (1–1–1–1) on <b>Days 0, 3, 7, and 14</b> in healthy patients. A fifth dose is recommended for immunocompromised persons, between days 21 and 28.  Zagreb Regimen (2–0–1–0–1) on <b>Days 0, 7, and 21.</b> On day 0, two doses of vaccines are to be injected into two of the deltoid or thigh sites.	
Previous doses of Adsorbed Tetanus Toxoid	Clean and minor wounds		All other wounds																																
	Tetanus toxoid	TIG	Tetanus toxoid	TIG																															
< 3 doses or unknown	Yes	No	Yes	Yes																															
≥ 3 doses	Only if last dose given ≥10 yrs ago	No	Only if last dose given ≥5 yrs ago	No																															
<b>Rabies Immunoglobulin (RIG)</b>	<b>No Pre-EP</b>	<b>Pre-EP</b>																																	
RIG provides passive immunization and is administered in the wound site only once, as soon as possible after the initiation of PEP and not beyond day 7 after the first dose of vaccine	Human Ig - 20U/Kg <b>OR</b> Equine Ig - 40U/Kg	None																																	
<b>Rabies Vaccine</b>	<b>No Pre-EP</b>	<b>Pre-EP</b>																																	
<b>Intradermal (ID)</b> <b>Dose: 0.1ml</b> <b>Recommended sites: left and right deltoids, thigh or suprascapular areas</b>	<b>Days 0, 3, and 7 (2–2–2):</b> injections of two 0.1 ml doses of vaccine at different intradermal sites	One Booster dose (intramuscular or intradermal) at one site on both <b>Days 0 and 3.</b> <b>OR</b> One Booster intradermal dose at four sites in one visit. This consists of four injections of 0.1 ml equally distributed over the left and right deltoids, thigh, or suprascapular areas at a single visit																																	
<b>Intramuscular (IM)</b> <b>Dose: 1 vial</b> <b>Recommended sites:</b> Deltoids, lateral thighs or suprascapular areas that drain into regional lymph glands <b>Recommended sites for children aged &lt;2 years:</b> the anterolateral thigh Rabies vaccine should not be administered in the gluteal area, as induction of an adequate immune response is less reliable.	Reduced 'Essen' vaccine schedule (1–1–1–1) on <b>Days 0, 3, 7, and 14</b> in healthy patients. A fifth dose is recommended for immunocompromised persons, between days 21 and 28.  Zagreb Regimen (2–0–1–0–1) on <b>Days 0, 7, and 21.</b> On day 0, two doses of vaccines are to be injected into two of the deltoid or thigh sites.																																		

### References