

## WING WASTING, SYMPTOMS AND TREATMENT

### CLINICAL SIGNS:

Wing wasting syndrome was previously of unknown etiology in *T. brasiliensis*, however, it has now been confirmed being caused by *pseudomonas aeruginosa*. The bacteria is found widely in soil, water, and plants and especially in damp, poorly ventilated areas such as attics and crawlspaces where crevice-dwelling bats frequently roost.

The condition leaves the bat unable to fly and they are often found grounded with no visible injury. The condition also appears to be painful at the onset.

The initial signs may or may not include a slight to moderate swelling of the wrists where fluid is accumulating (see Figure 1). When wrist swelling does occur, it rapidly progresses and may quickly become extreme. An additional early sign may include a decrease of elasticity of the wing membrane (Figure 2).

As the condition progresses, small wet areas will be noticed in the folds of the wing membrane. Petechial hemorrhaging may also occur, and the outer edge of the membrane will begin to dry, blacken and necrotize (see Figure 3).

Within two or three days of the initial signs, the wing membrane will degrade, weep and slough away. In extreme cases, painful blisters will also appear on the membrane (Figures 4 and 5).



Figure 1. Swelling of the wrists is sometimes an early sign of wing wasting. When this sign presents itself the condition progresses rapidly.



Figure 2: Left -Normal elasticity of the wing membrane. Right -Membrane showing a significant decrease of elasticity.



Left—Figure 3: Small wet areas appear in places inside the folds of the wing membrane. Petechial hemorrhaging may also occur, and dried areas of membrane will appear along the outer edges of the membrane (see circles).  
Center—Figure 4: The wing membrane will begin to degrade, weep and slough away.  
Right—Figure 5: Painful blisters may appear on the membrane, particularly if the bat is kept in a humid environment.

In the final stage of wing wasting, the membrane will become necrotic and break away (Figure 6). Finally, after all necrotic tissue is gone, healing will begin (Figures 7, 8, 9 and 10).

**TREATMENT:**

This condition is painful to the bat. Metacam, dosed at 0.002mg/g, PO, BID) should be provided until inflammation is alleviated and healing has begun. To treat wing wasting, administer Veraflox, 0.05ml PO, QD, until all necrotic tissue is gone. In severe cases, drain the excess fluid from the wrists and blisters with a 25 gauge needle and apply topical Polysporin (Polymyxin B Sulfate) twice daily.

The condition does not appear to be contagious so affected bats may be housed with other bats receiving rehabilitation. Keep the bat well hydrated during treatment with SQ injections of LRS, if needed, but **do not** house the bat in a humid environment as that appears to greatly increase the rate of infection.\*



Figure 6: Final stages of infection.



Above Left—Figure 7: The remainder of the wing membrane after most of the necrotic tissue has dried and fallen away or was removed. Above Right—Figure 8: Regeneration of the wing membrane at approximately one month.



Above Left— Figure 9: Further healing of wing membrane at approximately two months. Above Right—Figure 10: An almost healed wing membrane at approximately four months. NOTE: These photos are not from the same bat, they are different individuals rescued over the course of four months. Of particular interest is the fourth metacarpal in each individual is healing at an angle (circled), however, this digit may straighten and the bat may be releasable as the membrane further regenerates.

\*In a final case, a bat was kept on dry heat only with Veraflox administered daily. Only a few very small blisters appeared, which were drained and topical Polysporin applied. The infection completely cleared within five days with no wing damage occurring and the bat was released 5 days later. The only difference in this final bat case and the bats pictured here is that the final bat was housed in a dry heat only environment (i.e. heat was provided with a heating pad on an outside wall of the enclosure and no humidity was provided other than water dishes).