



# Poison Centre<sup>®</sup>

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## Centre Anti-Poison

### MANAGEMENT OF ANAPHYLACTOID REACTIONS TO N-ACETYLCYSTEINE (NAC)

There is considerable evidence that NAC infusions can cause histamine release, most often related to the rate of the infusion. (This is not a true antigen-antibody interaction.) From the literature, the patients considered to be most at risk are those with a history of asthma, those with low acetaminophen concentrations, and those receiving the loading dose.

Current recommendations are based on an extrapolation from Guidelines for anaphylaxis care. A toxicologist consultation is available at any time.

#### Flushing

Verify need for NAC. Continue NAC if indicated. No specific therapy.

#### Urticaria

Verify need for NAC. Diphenhydramine 1 mg/kg (max 50 mg) IV/IM x 1 dose OR cetirizine 10-20 mg po.  
Continue NAC if indicated.

#### Angioedema, Stridor, Wheeze, Hypotension

Stop NAC infusion. Verify need for NAC.

Epinephrine 0.15 mg IM (child < 30kg) OR 0.3 mg IM (weight > 30kg). May repeat in 5-10 min.

Fluids 10 mL/kg bolus NS or Ringers' Lactate.

Oxygen as needed.

IF Stridor: nebulized epinephrine 1 mg in 4 mL NS in addition to IM epinephrine.

IF Wheeze: nebulized  $\beta$  agonist.

If symptoms and signs resolve, and NAC still indicated, restart NAC after one hour at half the original infusion rate. Consider switching to oral protocol if symptoms severe or persistent.

#### NOTE:

There is evidence that anti-histamines are useful for skin reactions only.

There is controversial evidence that steroids *might* help prevent biphasic reactions in anaphylaxis. The routine use for NAC reactions (anaphylactoid) is not indicated.

REFERENCE: Muraro A, Worm M, Alviani C, et al; European Academy of Allergy and Clinical Immunology, Food Allergy, Anaphylaxis Guidelines Group. EAACI guidelines: Anaphylaxis (2021 update). *Allergy*. 2022; 77: 357-377. <https://doi.org/10.1111/all.15032>



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