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**1) ANAPHYLAXIS**

Anaphylaxis is a serious, life-threatening [allergic reaction](https://www.aaaai.org/conditions-and-treatments/conditions-a-to-z-search/allergic-reaction.aspx). The most common anaphylactic reactions are to [foods](https://www.aaaai.org/conditions-and-treatments/allergies/food-allergies.aspx), [insect stings](https://www.aaaai.org/conditions-and-treatments/allergies/stinging-insect-allergy.aspx), [medications](https://www.aaaai.org/conditions-and-treatments/allergies/drug-allergy.aspx) and [latex](https://www.aaaai.org/conditions-and-treatments/allergies/latex-allergy).

If you are allergic to a substance, your [immune system](https://www.aaaai.org/conditions-and-treatments/conditions-a-to-z-search/immune-system.aspx) overreacts to this [allergen](https://www.aaaai.org/conditions-and-treatments/conditions-a-to-z-search/allergen.aspx) by releasing chemicals that cause allergy symptoms. Typically, these bothersome symptoms occur in one location of the body. However, some people are susceptible to a much more serious anaphylactic reaction. This reaction typically affects more than one part of the body at the same time.

Anaphylaxis requires immediate medical treatment, including a prompt injection of [epinephrine](https://www.aaaai.org/conditions-and-treatments/conditions-a-to-z-search/epinephrine.aspx) and a trip to a hospital emergency room. If it isn’t treated properly, anaphylaxis can be fatal.

Certain people are more at risk of anaphylaxis. If you have allergies or asthma and have a family history of anaphylaxis, your risk is higher. And, if you’ve experienced anaphylaxis your risk of having another anaphylactic reaction is increased.

Accurate diagnosis and successful management of allergies is essential. An [allergist / immunologist](https://www.aaaai.org/about-the-aaaai/allergist---immunologists--specialized-skills.aspx), often referred to as an allergist, has specialized training and experience to diagnose the problem and help you develop a plan to protect you in the future.

**MANAGEMENT**

A) Medical Management

Treatment of anaphylactic shock include:

1. Remove antigen. Removing the causative antigen such as discontinuing an antibiotic agent could stop the progression of shock.
2. Administer medications. Administer medications that restore vascular tone and provide emergency support of basic life functions.
3. Cardiopulmonary resuscitation. If cardiac arrest and respiratory arrest are imminent or have occurred, cardiopulmonary resuscitation is performed.
4. Endotracheal intubation. Endotracheal intubation or [tracheostomy](https://nurseslabs.com/6-mechanical-ventilation-nursing-care-plans/) may be necessary to establish an airway.
5. [Intravenous therapy](https://nurseslabs.com/50-intravenous-therapy-iv-tips-tricks/). IV lines are inserted to provide access for administering fluids and medications.
6. Pharmacologic Therapy
7. Medications used for a patient at risk or under anaphylactic shock are:
8. [Epinephrine](https://nurseslabs.com/adrenergic-agonists-sympathomimetics/). Epinephrine is given for its vasoconstrictive reaction; for emergency situations, an immediate injection of 1:1, 000 aqueous solution, 0.1 to 0.5 ml, repeated every 5 to 20 minutes is given.
9. [Diphenhydramine](https://nurseslabs.com/antiparkinsonism-drugs/). Diphenhydramine (Benadryl) is administered to reverse the effects of histamine, thereby reducing capillary permeability.
10. Albuterol. Albuterol (Proventil) may be given to reverse histamine-induced bronchospasm.

**B) Nursing Management**

The [nurse](https://nurseslabs.com/registered-nurse/) has an important role in preventing anaphylactic shock.

**Nursing Assessment**

1. Communication is an essential part of assessment.
2. Assess any kind of allergy. The nurse must assess all patients for allergies or previous reactions to antigens.
3. Assess patient’s knowledge. The nurse must also assess the patient’s understanding of previous reactions and steps taken by the patient and the family to prevent further exposure to antigens.
4. New allergies. When new allergies are identified, the nurse advises the patient to wear or carry identification that names the specific allergen or antigen.

[**Nursing Diagnosis**](https://nurseslabs.com/nursing-diagnosis/)

Based on the assessment data, the nursing diagnoses appropriate for the patient are:

1. [Impaired gas exchange](https://nurseslabs.com/impaired-gas-exchange/) related to ventilation perfusion imbalance.
2. Altered [tissue perfusion](https://nurseslabs.com/ineffective-tissue-perfusion/) related to decreased blood flow secondary to vascular disorders due to anaphylactic reactions.
3. [Ineffective breathing pattern](https://nurseslabs.com/ineffective-breathing-pattern/) related to the swelling of the nasal mucosa wall.
4. [Acute pain](https://nurseslabs.com/acute-pain/) related to gastric irritation.
5. [Impaired skin integrity](https://nurseslabs.com/risk-for-impaired-skin-integrity/) related to changes in circulation.

[**Nursing Care Planning**](https://nurseslabs.com/nursing-care-plans/) **and Goals**

The major goals for a patient with anaphylactic shock are:

1. Client will maintain an effective breathing pattern, as evidenced by relaxed breathing at normal rate and depth and absence of adventitious breath sounds.
2. Client will demonstrate improved ventilation as evidenced by an absence of shortness of breath and respiratory distress.
3. Client will display hemodynamic stability, as evidenced by strong peripheral pulses; HR 60 to 100 beats/min with regular rhythm; systolic BP within 20 mm Hg of baseline; [urine](https://nurseslabs.com/urinary-system/) output greater than 30 ml/hr; warm, dry skin; and alert, responsive mentation.
4. Client and significant others will verbalize understanding of allergic reaction, its prevention, and management.
5. Client and significant others will verbalize understanding of need to carry emergency components for intervention, need to inform health care providers of allergies, need to wear medical alert bracelet/necklace, and the importance of seeking emergency care.

**Nursing Interventions**

Nursing interventions for the patient are:

1. Monitor client’s airway. Assess the client for the sensation of a narrowed airway.
2. Monitor the oxygenation status. Monitor oxygen saturation and arterial blood gas values.
3. Focus breathing. Instruct the client to breathe slowly and deeply.
4. [Positioning](https://nurseslabs.com/patient-positioning/). Position the client upright as this position provides oxygenation by promoting maximum chest expansion and is the position of choice during respiratory distress.
5. Activity. Encourage adequate rest and limit activities to within client’s tolerance.
6. Hemodynamic parameters. Monitor the client’s central venous pressure (CVP), pulmonary artery diastolic pressure (PADP), pulmonary capillary wedge pressure, and cardiac output/cardiac index.
7. Monitor urine output. The renal system compensates for low [blood pressure](https://nurseslabs.com/cardiovascular-system-anatomy-physiology/) by retaining water, and oliguria is a classic sign of inadequate renal perfusion.

**Evaluation**

Expected patient outcomes include:

1. Client maintained an effective [breathing pattern.](https://nurseslabs.com/ineffective-breathing-pattern/)
2. Client demonstrated improved ventilation.
3. Client displayed hemodynamic stability.
4. Client and significant others verbalized understanding of allergic reaction, its prevention, and management.
5. Client and significant others verbalized understanding of need to carry emergency components for intervention, need to inform health care providers of allergies, need to wear medical alert bracelet/necklace, and the importance of seeking emergency care.

**2) DIABETIC COMA**

Diabetic coma is a life-threatening emergency that can affect you if you have diabetes. In a diabetic coma, you are unconscious and unable to respond to your environment. You are either suffering from high blood glucose (hyperglycemia) or low blood glucose (hypoglycemia). You need immediate medical attention if you go into a diabetic coma.

**MANAGEMENT**

Diabetic coma requires emergency medical treatment. The type of treatment depends on whether your blood sugar level is too high or too low.

**High blood sugar**

If your blood sugar level is too high, you may need:

1. Intravenous fluids to restore water to your tissues
2. Potassium, sodium or phosphate supplements to help your cells function correctly
3. Insulin to help your tissues absorb the glucose in your blood
4. Treatment for any underlying infections

**Low blood sugar**

If your blood sugar level is too low, you may be given a glucagon injection, which will cause your blood sugar level to quickly rise. Intravenous dextrose also may be given to raise blood glucose levels.

**3) MENINGITIS**

Meninges are delicate membranes surrounding the brain and the spinal cord. These membranes protect the brain by housing a fluid-filled space. In cases where the meninges are inflamed and infection took place either by viral, bacterial or fungal causes, [meningitis](https://www.rnspeak.com/medical-and-surgical-nursing/meningitis-types-causes-management/) takes place. Commonly, meningitis is bacterial or viral in nature and the infection started elsewhere in the body such as in the upper respiratory tract, the ears or in the sinuses.

**MANAGEMENT**

1. Antibiotic therapy. Before antibiotics are prescribed, cerebrospinal fluid and blood cultures are secured then antimicrobial therapy is started immediately. Some medications prescribed to diagnosed individuals are penicillin, ampicillin or chloramphenicol.
2. Fluid Volume Expanders. Dehydration or shock is treated with this.
3. Diazepam or Phenytoin. This is administered for seizures.
4. [Mannitol](https://rnspeak.com/drug-study/mannitol-drug-study/). May be used to manage cerebral edema.

**4) PNUEMONIA**

Most people have heard the term "pneumonia" and know it is a serious lung infection. In fact, "pneumonia" is not a very specific term and essentially means inflammation in the deep lung tissues where oxygen is absorbed into the body and waste gases are removed. Pneumonia has potential to be life-threatening regardless of its cause and there can be many possible causes. Usually there is an infectious disease at the root (virus, bacteria, fungus, even a worm) but not necessarily. Pneumonia can be caused by aspiration (inhalation) of vomited or regurgitated food, inhalation of smoke or chemicals or it could even be immune-mediated with no infection at all (eosinophilic infiltration). [Bronchitis](https://www.marvistavet.com/chronic-bronchitis-canine.pml) is a separate condition from pneumonia, and represents inflamed airways of the lung rather than inflammation in the deep lung tissue itself but pneumonia and bronchitis commonly go together to create what is called "bronchopneumonia."

**MANAGEMENT**

The pneumonia patient may be in one of three states:

Stable (in other words, eating well and active despite a nasty cough and/or abnormal chest radiographs. These patients can often be treated at home.)

Unstable (poor appetite, inactive, in need of hospitalization.)

Critical (unable to get enough oxygen into their systems. These patients require oxygen therapy and possibly 24 hour care.)

The goal is to get the patient stable enough for home treatment as several weeks are needed to fully clear pneumonia. When the patient is eating well, he or she may be discharged with oral antibiotics, a regimen of physical therapy, and a schedule for re-check radiographs (usually weekly).

The hospitalized patient has the following needs:

1. **Intravenous fluid therapy:**

Coughing may be annoying but it is therapeutic and, when it comes to pneumonia, we want to encourage it, not suppress it. Coughing brings up the pus, mucus, and inflammatory cell products that make our patient sick. If the secretions of the lung are allowed to dry up, the patient will never be able to cough them up. For this reason, IV fluids must be maintained to keep our patient hydrated and keep the respiratory secretions wet.

1. **Antibiotic therapy:**

Antibiotics are given to kill the bacteria, but which antibiotics should be chosen? We need something that will penetrate into the pus and mucus (which many antibiotics cannot do). Often a “four quadrant” approach is used that covers bacteria classified as Gram negative and Gram positive as well as those classified as aerobic and anaerobic. This typically involves two antibiotics used in combination to synergize one another and covers almost every possible bacterial organism.

Alternatively, the lungs may be cultured via a procedure called a tracheal wash. This process involves light sedation which the patient must be stable enough to withstand. Sample fluid from deep in the lung can be retrieved for culture. A culture identifies the organism and provides a list of antibiotics that can kill it. If possible, it is best to obtain a culture as a surprising number of resistant bacteria are in the environment and we not only want to confirm our antibiotic choice is appropriate but we do not want to needless encourage further development of resistant bacteria.

If the patient is sick enough for hospitalization, antibiotics are typically given as injections so as to maximize absorption into the body.

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| 1. **Nebulization:**   Nebulization is similar to vaporization and involves a piece of equipment called a nebulizer. The nebulizer creates a mist of fine fluid droplets which can be combined with antibiotics or airway dilators. Unlike vaporized droplets, though, these droplets are small enough to penetrate down into the lung. (Vaporizers make larger droplets which mostly penetrate to the sinuses only. They are used to moisten upper airway secretions while nebulizers moisten lower airway secretions). Nebulized saline or water may carry antibiotics with it thus providing an additional source of moisture and antibiotic for the sick lung thus deeply treating the infection. |

1. **Physical Therapy:**

A technique called coupage is helpful at mobilizing respiratory secretions. The therapist’s hand is cupped and gently but rapidly taps the patient’s chest wall repeatedly. This loosens some of the deeper secretions and helps them move into airways. Material in the airway generates coughing which removes these materials from the body. Coupage should be performed at least four times daily and should be continued at home as long as the patient has a cough.

Light exercise is also helpful in mobilizing the respiratory secretions. The patient should not be over-exerted as he/she does not have normal lung capacity but one can use one’s judgment as to what level of exercise is tolerated by the patient.

1. **Oxygen Therapy**

In most cases, oxygen therapy is not necessary but when a pneumonia patient simply cannot move enough air, there is no substitute for oxygen. Room air is 20% oxygen. An oxygen cage typically is set to deliver 40% oxygen (higher percentages over long term are actually toxic to lung cells), and special oxygen-delivery hoods are also popular. A patient who requires this level of support is extremely sick.