

Anaphylaxis is a severe systemic allergic reaction based upon an allergen specific to a person's reaction to the allergen. These allergens will react with the mast cells and basophil cells of a patient body called a anaphylactoid reaction. Your body will cause inflammatory responses throughout the patient's body in almost every organ system. Some signs and symptoms of anaphylaxis show as: swelling of the conjunctiva, runny nose, lightheadedness, loss of consciousness, confusion, headache, various swelling of the airway, lips, and neck. The serious ones we as a nurse that we have to worry about are the airway, level of consciousness, blood pressure, heart rate, and respiratory function. These untreated can lead to complications/ death if we do not act fast. They can reappear within 72 hours without exposure to the allergen. The allergic response begins with exposure to an allergen common from foods, insect bites, or medication. The allergen binds to the IgE antibody which are bound to mast and basophil cells. The antibodies bind to the allergen then to the patient's cell starting the response in a "cascade" of events. It starts off with a release of a series of enzymes. This starts degranulation with the release of histamine and other chemical mediators into the bloodstream. They travel to other receptor sites at target organs producing physiological effects such as beta dilation and increased vascular permeability. These effects cause smooth muscle contractions in the respiratory system. This shows itself as wheezing and shortness of breath indicating obstruction. The further leads down a rabbit hole, the next step is myocardial depression. Epinephrine MUST be administered right away to prevent death. Epinephrine works rapidly to constrict blood vessels and reduce vascular permeability as a counter effect to reverse said process. This also stimulates the heart rate as well as relaxes the contracted smooth muscles of the compromised airway. Now that the dangerous effects are treated, we can now transport patient to a medical center or hospital to follow up for full professional care. Sometimes the patient needs two doses of epinephrine to avoid relapsing back into the death causing symptoms and deeper into the rabbit hole. Must administer second dose within 5 minutes IF symptoms do not improve. Most of this time it is necessary to fully counter act the reaction enough to bring the patient to an emergency center. If it goes untreated people can die within minutes of reaction depending on severity of allergies. Yearly 2% of the U.S. is expected to go through an anaphylactic shock. Majority of people carry epipens to stop this shock. Allergies and severity are genetic so at least a 1/3 chance of inheriting allergies, this can increase if both parents carry same allergies. Most common food allergy is shellfish 2% adults in the U.S. Over 31 million people in the U.S. are allergic to common household pets. Many factors can change how humans can react to allergens and probably never go away with evolution due to the chance of passing down said allergies and the human body always changing and can eventually acquire new uninherited allergies.