

Reactions

Anaphylaxis is a severe systemic allergic reaction. It will occur when a person who is allergic comes into contact with the allergen that they are sensitized to. Allergens are harmless substances that the immune system recognizes as a threat. After an initial exposure to the allergen, activation of special cells occurs. These cells will create large amounts of proteins called antibodies that are specific to the allergen. The antibodies attach to other immune cells and they become sensitive to the allergen. Therefore, the next time the allergen enters the body those newly formed antibody cells will be ready to attack. Exposure to antigen molecules create an interaction with the IgE antibodies that are bound to mast cells and basophils. This connection stimulates a signal from the IgE antibodies to the inside of the cell, causing the release of enzymes that result in the influx of calcium into the cell. The calcium stimulates a process called degranulation. This is the release of granules to the external cell membrane that causes the release compounds such as histamine and other inflammatory mediators. Once traveling through the body, the mediators will bind to the receptor sites of the organs and create physiologic effects including vasodilation and vascular permeability. Histamines can cause smooth muscle contractions in the lungs, leading to obstruction, wheezing, and shortness of breath. Other common effects may include: hives, itching, low blood pressure, and dizziness. Anaphylaxis is a medical emergency that requires immediate medical attention. Epinephrine can be self-administered. This injection will rapidly oppose the effects of the mediators to constrict blood vessels, reduce vascular permeability, relax airway smooth muscles, and increase heart rate. However, seeking professional care after an anaphylactic reaction is still advised. Symptoms can reappear within the next 72 hours, even if the body is not re-exposed to the allergen.