

The Allergic Reaction - Some Triumphs, Some Failures, and Some Cell Signaling.

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AN allergic reaction begins with an immune response to a site on a nonpathogenic substance (an allergen) that results in the production of IgE. On the surface of basophils and mast cells are receptors that bind IgE with high affinity. These cells are packed with preformed granules containing histamine and other mediators of anaphylaxis. When exposed to the allergen, the IgE-receptor complexes aggregate and this initiates a set of events that results in granule release and the onset of allergic symptoms. I review how it was shown in 1921 that sensitivity to an allergen could be transferred from an allergic individual to a non-allergic individual through a soluble factor in the allergic individual's serum. In 1968 this soluble factor was shown to be a new class of antibodies, IgE. I also review two papers that left lasting impressions on me, primarily because of how wrong they were. Finally, I discuss some of the things that seem to be right that we have learned about cell signaling from studying allergic reactions.