Keeping Track of Allergic Reactions

Background: When is the last time you had an allergic reaction to something?
What was the thing that caused the allergic reaction?
Some people don't seem to be allergic to anything !?!?

Allergic reactions usually occur only when a person is mildly immunized against an antigen. (Do you remember what immunization is and what antigens are? Write the definition for these terms, below:)

Most allergic reactions result from antigen reaction with IgE antibodies produced by B cells. These travel through the body and bind to mast cells. The mast cells begin to swell and rupture releasing toxins (like histamine) which produce the undesirable effects one sees.

When a person is strongly immunized, allergic reactions don't usually occur. For example, a person may be really allergic to pollen and get "hay fever" very badly. The doctor will give an allergy shot full of the allergen (pollen). The body will then develop immunity to the allergen and not give an allergic response (hay fever) when exposed to it. This seems odd at first?!?! Can you think of how or why you body reacts differently to a small amount of allergen versus a lot of allergen?

Purpose: What are the allergic reactions exhibited by members of the class during a one-week period? What allergen caused the allergic reaction?

Materials: life-size tracing of a human body (on butcher paper), one per class
different colored "sticky" dots

Procedures:

1. With the class, brainstorm a list of allergens and allergic reactions that they have ever experienced. They can also add friends' or family members' allergies to the list.

2. Each student should make a data table to record the allergic reactions exhibited by members of their family during a one-week period. The type of reactions, the proposed allergen, and the family member should be recorded.

3. Each day upon return to class, the class is surveyed and each person with an allergic reaction to report places a dot on the "class body" where the allergic reaction occurred.

4. Dots of different color represent allergen from different sources, including:

blue = food allergens red = plant pollen

green = plant parts orange = animal parts

yellow = other

Conclusion: Discuss the relative prevalence of allergens and allergic reactions during the time period studied. What factors affect the results the class obtained?

Ellyn Daugherty, 1992