

Food Allergen Exposure in the School Setting: Evidence, Challenges, and Interventions

Type of Exposure	Relevant Facts	Practical Challenges	Practical Interventions*
Oral Exposure	<ul style="list-style-type: none"> • There can be “hidden ingredients” in foods. • Labels and ingredients can change without warning. • Items with advisory labels may still contain allergens. • Trace amounts of allergens can cause severe allergic reactions. • Allergens can be detectable in saliva. • All children are protected by law to have a right to a free and appropriate education in the least restrictive environment. • Cross contact is the presence of unintended allergen on another surface. <ul style="list-style-type: none"> ○ Allergen contact with surfaces, food, and saliva are common sources. ○ Exposure by mouth or mucus membranes is a common cause of reactions. 	<ul style="list-style-type: none"> • Monitoring food is difficult, especially if not labeled. • Reading labels takes training, pre-planning, assigned personnel, and time allowances. • Celebrations are common source of unlabeled food and cross-contact risk. • A majority of allergic reactions in school start in classrooms. • A student with allergies can be targeted for being the cause of potentially unpopular accommodations. • A student with allergies is at increased risk of bullying/teasing. <p>Pre-School/Early Elementary Issues:</p> <ul style="list-style-type: none"> • Young children can pass saliva to each other via age appropriate exploration. • Some schools allow children to eat in their classrooms/ learning environments increasing risk of exposure/cross contamination. • Adequate level of supervision during meal/snack time is dependent availability of resources and staff. <p>Adolescent/Teenage Student Issues:</p> <ul style="list-style-type: none"> • Older students are under less supervision and more reliant on self-management. • There is an increased level of risk-taking, sense of “invincibility”, peer pressure, bullying. 	<ul style="list-style-type: none"> • Promote non-food celebrations, activities, and rewards. • Limit and pre-screen food projects in classrooms so they do not contain the allergen; parent notification of all food projects or activities. • Review food labels of chosen foods before use. • Create a safe snack stash in classrooms that allow food. • Provide fresh fruits/vegetable snack alternatives. • Provide adult assistance for food allergic children in selection of safe foods from cafeteria lines. • Restrict sharing or trading of food, drinks, or personal items. • Provide appropriate cleaning of high-touch surfaces and hands. • Encourage parents of allergic children to send in all foods for child. • Provide parent and student community education to create supportive environment. • Encourage reporting of bullying/harassment. • Restrict eating on school bus by students and staff. (exception for children medical conditions). • Restrict non- curricular use of foods in the classroom. • Periodic check-ins to ensure understanding and appropriate self-management. • Encourage students and staff to report any bullying/harassment. • Support and continued education by school nurse.

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Skin Exposure	<ul style="list-style-type: none"> Isolated skin contact on intact skin did not cause severe or systemic reactions when studied, although skin reactions can occur. Soap and water, and commercial hand wipes are effective for cleaning hands or surfaces, e.g., table tops. Hand sanitizers are NOT effective in removing allergen protein residue. Children frequently place their hands and objects in their mouth. Adults touch their eyes, nose, and mouth regularly. 	<ul style="list-style-type: none"> Limited resources and manpower to clean allergens and prevent cross-contact. Some non-edible items contain food allergens; e.g., finger paint, play dough, shaving cream, paste, bean bags, furniture, pet food, bird feed. Skin exposure that can result in mucosal exposure in adults and children (eyes/nose/mouth). <p>Pre-School/Early Elementary Issues</p> <ul style="list-style-type: none"> Skin exposure that can quickly turn into mucosal exposure or oral ingestion due to putting hands on face and in mouth. Young children have less effective cleaning skills (hands or eating surfaces). 	<ul style="list-style-type: none"> Same avoidance strategies as oral exposure. Provide opportunities for frequent hand washing with soap/water or cleaning wipes before and after food handling or whenever hands are dirty. (Hand sanitizers may not be substituted.) Provide appropriate cleaning of eating areas using school approved cleaning products. <p>Pre-School/Early Elementary Interventions</p> <ul style="list-style-type: none"> Provide adult supervision of hand cleaning. Provide adult responsibility for cleaning surfaces, toys, bus seats, etc.
Inhalation Exposure	<ul style="list-style-type: none"> Volatile organic compounds, not proteins, cause odor. Proteins cause most allergic reactions. Inhaling vaporized proteins from active cooking can cause severe allergic reactions and death. Most inhalation is not fatal. 	<ul style="list-style-type: none"> Projects/experiments involving burning/heating of allergens. Field trips, volunteering, or internships in areas where foods are actively cooking or aerosolized if known or at risk for food allergy. Activities involve using food powders or grinding/crushing fresh foods. 	<ul style="list-style-type: none"> Restrict activities that involve cooking foods, or using flours, powders and other small particles of food that can go up in the air. Restrict food-related science experiments or classroom activities involving allergen. Require prior approval from principal and inclusion of the school nurse in planning for field trips, especially in classes with known food allergic children.



*See National School Boards Association (NSBA) and/or state guidelines for comprehensive recommendations. Additional resources and the references for this information can be found at <http://www.allergyhome.org/AllergyExposureReferences>. Reference: Pistiner M., Devore C., The Role of Pediatricians in School Food Allergy Management. Pediatric Annals, 2013 42(8):334-340.

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