

Managing Children With Food Allergies in Childcare and School

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In the past decade the rise in life-threatening allergic reactions to foods in young children has necessitated increased interaction among personnel in the psychosocial, medical, and educational arenas regarding the multifaceted aspects of this concerning problem. Schools and childcare facilities are vital venues for the continued growth and development of children outside the home. However, these facilities offer unique challenges to caring for the food-allergic child, requiring that the medical, educational, and caretaking communities work in unison to provide the safest environment for all children. Despite the potential obstacles, these settings offer a tremendous opportunity for the development and implementation of strategies to provide for proper identification of children at risk, to increase awareness and prevention, and for the provision of optimal treatment of food-related anaphylactic reactions occurring outside the home.

Introduction

The rise in immunoglobulin (Ig) E-mediated food allergies in children has brought significant changes in both the understanding and management of allergic disease. Multiple studies have demonstrated that food allergies affect up to 6% of the general population [1–3]. In the United States, it is estimated that more than 2 million children have food allergies and a recent study suggested that at least 1% of school-aged children in Montreal had a peanut allergy [4]. With the majority of children enrolled in either a childcare facility or school, the potential risk of a life-threatening reaction occurring in these venues has become a significant public health concern. Sicherer et al. [5] demonstrated that over 60% of allergic children experience

reactions while in schools or childcare, with 25% having their first reaction as a result of a previously unrecognized food allergy while in the school setting. Most of these reactions are accidental and unexpected [6]. For parents, teachers, caretakers, and medical personnel who may be called on for help, these trends present new challenges in caring for children with food allergies.

The process of diagnosing food allergies in a child of any age can be an overwhelming experience for these children and their families. Families coping with the diagnosis of any chronic disease in a family member face multiple issues that need to be addressed. In the United States, many young children are placed in childcare and subsequently attend school. Most children will spend over half their lives in these facilities, which present unique obstacles for managing children with life-threatening food allergies. Recognition of the need to find solutions to these problems has stimulated a plethora of research and resulted in the investment by school systems in resources to attempt to address these issues. Until recently, most concerns about food allergy were dealt with on an individual basis by administrators and parents, and no uniform strategy was evident in an institution to care for these children. Food allergies, unlike other atopic diseases such as asthma and allergic rhinitis, can affect the daily interaction of children at school whether or not they have food allergies. Management of food allergies has a direct and significant impact not only the afflicted child and family, but on other members of the school community as well.

The Childcare and Preschool Setting

With the increasing number of families choosing to enroll their children in childcare or preschool, establishing an early accurate diagnosis of food allergy in a young child is important but can be a difficult situation for the caretakers and parents. Both home childcare providers and organized childcare centers are frequent sources of child care. In many circumstances, it is easier for these organizations to streamline and create uniform allergy management plans to provide for a quick response to an unexpected reaction. Many children, however, are cared for in small home childcare facilities, where food allergy management may vary greatly.

The prevalence of food allergies to different foods varies by age. The majority of children under the age of 4 years are more likely to have allergic reactions to milk and egg in addition to peanut or tree nuts [1,2]. Currently, strict food allergen avoidance is advocated by most specialists, which leaves parents and caretakers in a conundrum, given the ubiquitous nature of milk and egg in the diets of most young children. To further complicate matters, very young children are developmentally unable to communicate the initial signs of a reaction to their caretaker(s). Also of concern is that these children are more likely to have the poorest hygiene when compared to older children, who are able to understand the importance of hygienic measures such as hand washing or not placing toys in their mouths.

Young children are often inaccurately diagnosed with a food allergy solely on the basis of parental observation or by the use of unreliable methods. This can result in food intolerances being labeled as food allergies. Generally, this information is then relayed by parents to caretakers without an appropriate plan of treatment. Alternatively, the child with IgE-mediated food allergy may not have a Food Allergy Action Plan or prescribed epinephrine, placing the child at risk without appropriate treatment. Lack of effective communication and preparation often leads to confusion and underscores the importance of an evaluation by an allergist to help achieve consistency in parent and caretaker efforts and avoid unnecessary conflict. Supporting the uniform presence of a Food Allergy Action Plan and Medical Identification Bracelet policy for every childcare facility is essential to appropriate care of all food-allergic children [7].

Many childcare facilities have created “nut-free” centers and classrooms. This is an initial approach that does have some merit; however, it is not meant to replace the appropriate training in recognition and treatment of life-threatening anaphylactic reactions. A nut-free environment can never be guaranteed, and many children have their first anaphylactic reaction to an unknown food away from home [5]. A nut-free approach also fails to address milk and egg allergy, which are more prevalent at an early age. Moreover, many children rely on parents who prepare meals at home. Given the nutritional value of dairy products and egg-containing foods in young children, it is impractical to attempt to have egg- and milk-free childcare environments. In addition, expecting parents of non-food-allergic children to support such a choice is questionable [8].

Childcare facilities have addressed many of these issues by creating activities for smaller groups of children and providing more intense supervision. However, this approach can leave an individual caretaker, with a limited or no medical background, responsible for several children with differing degrees of food sensitivity. Very young children are also more likely to be fed on multiple occasions during the day, thus increasing the possibility of accidental exposure to the suspected food.

If a childcare facility has no uniform plan for management of an allergic reaction, they are likely to receive a wide variety of requests by families based on their child’s specific sensitivity. Individual training of caretakers to help them become more comfortable with a child’s special needs can be accomplished, and includes recognition of anaphylaxis, when and how to administer injected epinephrine, arrangements for rapid transport of the child to the appropriate facility, and speedy notification of the family.

Response plans developed with the help of a knowledgeable allergist working in conjunction with childcare staff and parents of both food-allergic and nonallergic children can be very beneficial. Education of all parties leads to better understanding and conflict resolution. Compromises can be reached, and a safer environment provided. Having a uniform plan that addresses common management problems while allowing for individual variability, in conjunction with frequent review at the administrative level, provides an excellent starting point for making childcare centers safer. Resources such as the Food Allergy and Anaphylaxis Network’s Childcare and Preschool Preparedness Kit offer an appropriate starting point for centers that do not have a food allergy expert readily available [9••].

The School Setting

School entry is a milestone for many children and a time of transition for both children and their parents [8]. If the child has not previously been in a childcare or preschool setting, this may be the first time the family is confronted with long periods when the child is away from direct parental supervision. Many kindergarten and elementary schools include lunchtime activities that pose problems for the food-allergic child and the family. School administrators are often confronted with families attempting to resolve their own personal concerns regarding their child’s needs academically, socially, and medically. By school age, most children have been diagnosed with their particular food allergy, although a significant cohort, upwards of 25%, may not experience their first reaction until their elementary school years [5].

Most parents of school-aged children will have developed individual plans with their primary physician to deal with the particular allergy. This has the potential to result in an expectation for the use of multiple different approaches to the same problem within an individual school. School administrators must try to juggle the needs of students with differing levels of sensitivity and disparate treatment plans. They are also confronted by parents with varying degrees of knowledge regarding the food allergy and must deal with the associated anxieties that this knowledge or the lack thereof may bring. The family’s socioeconomic circumstances may influence or limit awareness of a child’s risk [10]. For example, children may not have been given the proper diagnosis or treat-

ment plan, despite a history of previous reactions [11]. A uniform and systematic policy in schools and the school district allows for a minimum level of safety for all. A consistent policy, in many ways, is the most important tool for schools in implementing prevention and treatment plans to reduce the exposure to food allergens, improve the response and training of school personnel, and provide safety for children [12–14].

Because of the large number of children without allergies, in both public and private schools, declaring nut-free buildings can create conflict among families. It has been argued that widespread removal of peanut and tree nut products from a school infringes on the personal rights of other children. In some school systems, this view has led to conflicts between families regarding the choices made by school administrators. Furthermore, because of increased student diversity, there are more likely to be children with food allergies that have not been previously or easily addressed. A recent cohort study suggested that although peanut and tree nut allergies make up the bulk of offending foods, there are still many children with food allergies to seafood and milk [15]. There can also be cultural differences among families on what is considered an appropriate response or means of prevention, which can create tension and misunderstanding when schoolwide food allergy restrictions are implemented.

Similar to the childcare setting, many school personnel and educators are not required to have extensive training. Yet, many children will spend the bulk of their time with adult educators. Sicherer et al. [5] noted that almost 60% of reactions in schools are first noted by the teacher. This creates a difficult situation for an educator who may be the only adult available to treat the child until appropriate medical personnel arrives. If epinephrine is administered, immediate transfer to a medical facility must be initiated regardless of the child's improvement, due to the possibility of biphasic reactions. In several cohort studies, some children had a return of symptoms without warning several hours after the initial reaction [16].

Psychological and Developmental Considerations

As many educators understand, each child transitions from year to year through differing developmental and psychological stages. Although initially younger children need extensive parental involvement and intervention in choices, during the later years, especially adolescence, the child has greater independence and sometimes takes greater risks. Older children and adolescents are more prone to peer pressure, making poor decisions regarding personal health, or communicating poorly with authority figures [17]. Bullying and teasing can become problems for some food-allergic children. Increased independence allows older children to make more unsupervised decisions regarding their food choices. Many older children

still misinterpret their symptoms or fail to understand the subtleties of food avoidance diets. A study of adolescents by Sampson et al. [17] demonstrated that many older children feel embarrassed about their particular allergy and are not likely to tell classmates about their health issue. Bock et al. [15] demonstrated that many adolescent fatalities occurred in children who were not carrying their prescribed epinephrine despite knowing about their allergy. Other studies have repeatedly demonstrated that the majority of food allergy fatalities involved this older childhood cohort, presumably because of these and other issues [18–20]. Schools can provide a natural setting for guiding these children to make better decisions and allow for effective intervention.

School Interventions

Individual schools and many school districts have implemented schoolwide food allergy restrictions, such as nut-free classrooms and buildings. This can be effective, but should not excuse personnel from learning appropriate treatment methods, along with learning to recognize the signs and symptoms of anaphylaxis. A survey of school nurses revealed that school personnel see an effective response to an allergic reaction as part of their school's responsibility. It demonstrated that while many school nurses feel comfortable treating a life-threatening allergic reaction to a food, many schools lack a written medical response program for those instances in which a school nurse is not available [19–21]. A recent study of school children in Montreal documented a low level of reactions in schools after the implementation of nut-free lunchrooms [4]. In contrast, McIntyre et al. [14] demonstrated the majority of children had reactions outside the cafeteria setting (eg, on the playground or during a field trip), which indicates that appropriate plans need to take into consideration all facets of the school day, not just what happens in the cafeteria [22].

School nurses make up the bulk of medical personnel available within a school district. For many families and educators, the school nurse is the main resource for education and treatment options [19,20]. As the number of food-allergic children and other children with chronic diseases increases, the burden on the school nurse may become overwhelming. Many schools lack appropriate funding for a full-time school nurse, and there are many instances where schools do not have a nurse on campus while children are present. Many states have allowed for age-appropriate children to carry, and potentially self-administer, their own prescription at school (Table 1). For younger children, medications are often locked in a school office. In these situations, appropriate plans for timely retrieval must be a vital part of personnel training.

A good start to implementing a schoolwide food allergy policy requires involving families. Seeking counsel from an allergist knowledgeable about food allergy to aid the prin-

Table 1. States with legislation allowing students to carry epinephrine in school

Students allowed to carry epinephrine		
Alaska	Kansas	Nevada
Arizona	Maine	North Carolina
Arkansas	Maryland	North Dakota
California	Massachusetts	Ohio
Colorado	Michigan	Rhode Island
Delaware	Minnesota	South Carolina
Florida	Missouri	Tennessee
Hawaii	Montana	Texas
Illinois	Nebraska	West Virginia
Indiana	New Hampshire	
Iowa	New Mexico	
Legislation under consideration		
New Jersey	New York	

Table 2. States with guidelines regarding food allergy management in schools

Guidelines in place	Guidelines pending	Legislation under consideration
Connecticut	Tennessee	Michigan
Massachusetts	Vermont	New Jersey
		New York

principal, counselors, school nurse, and members of the Parent Teacher Association is a good way to begin. Families of food-allergic and non-food-allergic children, working with school personnel such as administrators, school nurses, teachers, food service personnel, and maintenance workers, can establish action committees. The Food Allergy and Anaphylaxis Network also has several policies and procedural guidelines specifically designed for school staff [9••]. The American Academy of Allergy, Asthma, and Immunology has several policy statements and guidelines regarding the creation of safe environments for school children [7,23]. Many state legislatures have begun acknowledging the food allergy crisis in schools, and released statewide guidance documents encouraging procedures throughout a district (Table 2). Massachusetts has led the way by creating a thorough template and model for other school districts and state legislatures to follow [12].

There are other strategies that can be implemented to make the school environment safer. Multiple studies have demonstrated efficacy in decreasing reactions with simple changes [9••,12,13,22,24••,25]. In an individual school, creation of nut-free classrooms and designated tables in the cafeteria allow children to have a safe environment with respect to that particular food allergy. School administrators have been encouraged to allow for other empathetic classmates and friends to be included at these

tables to avoid social isolation, which has been a valid criticism of this approach. Encouragement of healthy alternative snacks or the removal of certain snacks completely from the school has also been discussed. Art projects and craft lessons can be modified to eliminate the use of allergenic foods. Appropriate cleaning and food preparation techniques should be adopted by cafeteria and maintenance personnel. Encouragement of all in the school to undertake standard hygiene practices, such as hand washing after meals, is essential to reducing accidental contact. The sharing of food, snacks, and school supplies can be discouraged.

The 504 Plan and Individualized Health Care Plan

Section 504 of the Rehabilitation Act is a federal law that helps to ensure that children with certain health problems are given equal and appropriate educational opportunity, and are not discriminated against during the school day. For example, the 504 law prevents a child from being forced to eat lunch in the nurse's office, excluded from a field trip, or excluded from a classroom project on the basis of the child's food allergy. Section 504 is widely utilized by parents of food-allergic children to create a written management plan, or "504 plan," in collaboration with key school personnel and the child's allergist and/or primary care physician. Some 504 plans can be quite lengthy, and are generally tailored to the specific needs of the individual child. Written management plans can also take the form of Individualized Health Care Plans (IHCPs, or IHPs), which serve essentially the same function as a 504 plan, but often involve less formal paperwork. IHPs, in fact, are recommended by the National Association of School Nurses (NASN). Each physician seeing children with food allergies should be involved in the creation and implementation of a 504 plan or IHP with the family and educators by providing unbiased and accurate medical information.

Conclusions

Appropriate decisions regarding food allergy policy in childcare facilities and schools can have a significant medical and psychological impact on children. The rise in food allergies is unlikely to abate any time soon, and treatments for these conditions are still in the early phases of evaluation. Currently, improved awareness and an appropriate response by all key parties are the mainstays of effective intervention. For many children, childcare workers are their first nonfamily caretakers. As a result, a reliable, uniform strategy to address the needs of the food-allergic child is essential to create a safe and nurturing environment. Educators in schools are mandated to protect and enhance a child's personal well being and emotional development. Creating an understanding and responsive environment for learning for children with

food allergies, or other special needs, increases their level of comfort and safety. Communication and an ongoing dialogue between the children and their families, their physicians, caretakers, and educators are essential for creating this environment.

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