



POSITION PAPER

ASCIA guidelines for prevention of anaphylaxis in schools, pre-schools and childcare: 2012 updateSandra Vale,¹ Jill Smith,¹ Maria Said,^{2,3} Geraldine Dunne,^{2,4} Raymond Mullins^{2,5,6} and Richard Loh^{1,2,7}

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Abstract: Appropriate management and prevention of anaphylaxis in the school, pre-school and childcare settings requires advanced planning and communication. The Australasian Society of Clinical Immunology and Allergy has developed Guidelines for Prevention of Anaphylaxis in Schools, Pre-schools and Childcare to assist school, pre-school and childcare staff in appropriate implementation of risk-minimisation strategies. Risk-minimisation strategies recommended take into consideration the needs of the allergic child; effectiveness of measures; stresses on parents and staff, the allergic child and their peers; and the implications of the recommended risk-minimisation strategies. These Guidelines address risk-minimisation strategies for food, insect and medication allergies; however, the majority of strategies relate to food allergy due to the higher risk of exposure in these settings. Training in recognition of allergic symptoms (including anaphylaxis), appropriate response and treatment, as well as how to prevent exposure to known allergens are essential for effective anaphylaxis management in the school, pre-school and childcare settings.

Key words: anaphylaxis; ASCIA; guideline; prevention.

Introduction

Anaphylaxis is a severe allergic reaction which is potentially life threatening. It should always be treated as a medical emergency, requiring immediate treatment. Most cases of anaphylaxis occur after a person with a severe allergy is exposed to the allergen to which they are allergic, usually a food, insect sting or medication.

The intent of these guidelines is to assist in preventing anaphylaxis and to provide advice for minimising the risk of anaphylaxis in schools, pre-schools and childcare services, including before and after school care. In developing these guidelines, the Australasian Society of Clinical Immunology and Allergy (ASCIA) Anaphylaxis Working Party has taken into account established guidelines¹ and has been mindful of the:

- Needs of the allergic child
- Difficulties in advocating measures that are not proven to be effective
- Stresses on parents,² teachers and carers, and the allergic child and their peers
- Available epidemiological information on anaphylaxis in pre-school and school-age children

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- Implications of the recommendations throughout Australia and New Zealand

Although mild, moderate and even severe allergic reactions to foods, stings and bites are common in children, deaths are rare.

- 1 The majority of food allergic reactions, even to highly allergenic foods such as peanuts, are not anaphylactic.³
- 2 In Australia, the prevalence of food-induced anaphylaxis in pre-school age children was 1 in 170 and in school-age children was 1 in 1900.⁴
- 3 The majority of food allergic and anaphylactic reactions occur in pre-school age children. A South Australian survey in 2000 of over 4000 children indicated that 13 in 14 anaphylactic food reactions occurred in pre-school age children and only 1 in 14 occurred in a school-age child.⁴ However, more than 9 in 10 fatal anaphylactic food reactions have occurred in children aged 5 years and older.⁵ This indicates the importance of food avoidance for those school-age children considered to be at risk of anaphylaxis.
- 4 A Western Australian survey of schools and childcare services in 2008 indicated that 1 in 7 schools and 1 in 30 childcare services had at least 1 child who had a severe allergic reaction (anaphylaxis) in the 12 months prior to the survey date.^{6,7}
- 5 The risk of anaphylaxis in an individual case depends on several factors including the age of the child (the greater the age, the greater the risk of fatality), the particular food involved, the amount of the food ingested, if a food-allergic child exercises soon after eating a specific food and the presence of asthma.
- 6 While egg, peanut and milk are the most common food allergies, peanuts and tree nuts are the most likely foods to cause

fatal anaphylaxis. As a result, schools, pre-schools and childcare services may implement specific risk-minimisation strategies for nut products, but not other allergens (e.g. removal of nut products from the school canteen).

- 7 Anaphylaxis is very unlikely to occur from skin contact to foods or exposure to food odours.⁸
- 8 While adverse reactions to medications are common, allergic reactions to medications are rare, and most often occur in hospitals.

The Four Steps in the Prevention of Anaphylaxis in Children at Risk in Schools, Pre-schools and Childcare Services

- 1 Obtaining medical information about children at risk of anaphylaxis by the school, pre-school or childcare personnel.
- 2 Staff training about how to recognise and respond to a mild, moderate or severe allergic reaction, including training in the use of adrenaline autoinjector devices.
- 3 Implementation of practical strategies to avoid exposure to medically confirmed allergens.
- 4 Age-appropriate education of children with severe allergies and their peers.

Obtaining medical information about children at risk of anaphylaxis by the school, pre-school or childcare personnel

The initial step is for schools, pre-schools and childcare services to request medical information at the time of enrolment.

The next step is the provision of documentation by parents, including an ASCIA Action Plan for Allergic Reactions or an ASCIA Action Plan for Anaphylaxis, completed and signed by a registered medical practitioner. The ASCIA Action Plan for Anaphylaxis includes:

- Identification of the child (photo)
- Documentation of confirmed allergens
- Documentation of the first aid response including any prescribed medication
- Name and contact details of the medical practitioner who has completed and signed the ASCIA Action Plan
- Contact details of the parents or guardians

A signed ASCIA Action Plan for Anaphylaxis containing photo identification of the child is considered sufficient medical confirmation for schools, pre-schools and childcare services. The identification of children by medical identification jewellery (e.g. MedicAlert), badges or clothing is not considered mandatory but may be helpful, especially in the case of medication allergy or in early years when children are learning to care for themselves and the staff have large numbers of children to supervise. Patients should be under regular review by general practitioners for updating ASCIA Action Plans, renewal of adrenaline autoinjector prescriptions and retraining on use of adrenaline autoinjector device. Updated information should be provided to schools by parents and it is important that schools, pre-schools or childcare services ensure that the medical information is updated.

Following identification of children with allergies, staff should have a face-to-face meeting with the parents or guardians of

each child at risk of anaphylaxis to discuss appropriate risk-minimisation strategies. In high schools, this meeting may also include the allergic child, particularly in upper high school.

Staff training about how to recognise and respond to a mild, moderate or severe allergic reaction, including training in the use of adrenaline autoinjector devices

Recognition of the risk and understanding the steps that can be taken to minimise food anaphylaxis by all those responsible for the care of children in schools, pre-schools or childcare services, is the basis of prevention. Important topics that need to be addressed in the educational process include:

- What is allergy?
- What is anaphylaxis?
- What are the common causes of allergic reactions and anaphylaxis?
- How is anaphylaxis recognised?
- How can an allergic reaction (including anaphylaxis) be prevented?
- What should be done in the event of a child having a severe allergic reaction (anaphylaxis)?
- Instruction on how to use adrenaline autoinjectors (EpiPen or Anapen) using the child's ASCIA Action Plan for Anaphylaxis as the emergency guide

If a child is known to be at risk of anaphylaxis and also has asthma, it is important that asthma management is optimised. If the staff are unsure whether the child is experiencing anaphylaxis or severe asthma, they should be educated to administer the adrenaline autoinjector first, followed by asthma reliever medication and an ambulance should be called.

Ideally, training of all staff on these topics should be provided by appropriately qualified professionals (e.g. allergy nurse educators) and reinforced every 1 to 2 years.

Where access to face-to-face anaphylaxis training is unavailable or if staff require interim or refresher training, ASCIA anaphylaxis e-training for schools and childcare services is available from the ASCIA website (<http://www.allergy.org.au>). This online training is free of charge and each course takes approximately 1 h to complete. A certificate can be printed upon successful completion. The courses provide education on the recognition, emergency treatment and risk minimisation of anaphylaxis, which is consistent (throughout Australia and New Zealand), accurate (evidence based and expert reviewed), flexible, accessible and sustainable.

ASCIA anaphylaxis e-training should be completed in conjunction with regular practice using adrenaline autoinjector training devices (with no needle and no adrenaline). To order EpiPen trainers, email alphapharmss@alphapharm.com.au, and to order Anapen trainers email info@analert.com.

Implementation of practical strategies to avoid exposure to medically confirmed allergens

Avoidance of confirmed allergens is the basis of anaphylaxis prevention. Appropriate avoidance measures are critically dependant on education of the child, their peers and all school/childcare staff.

The measures that are appropriate will depend on the nature of the institution, the possible routes of exposure to known allergens and the age of the child. Blanket food bans, for example, are generally unnecessary and are not recommended in late primary or high school, although some childcare services, pre-schools and early primary schools implement such measures to reduce the risk of exposure in very young children.

As a general principle, it is not recommended that food allergic children in schools, pre-schools or childcare services are physically isolated from other children.

Age-appropriate education of children with severe allergies and their peers

While it is primarily the responsibility of parents to teach their allergic child to care for himself/herself, the school also has a role to implement a health-care plan and reinforce appropriate avoidance and management strategies. Health-care plans can vary in terminology and content between regions.

They usually include information regarding risk of exposure and prevention strategies for minimising exposure to known allergens.

In childcare services and pre-schools, children are dependant on carers for providing a safe environment. As children mature, they are able to take more responsibility for their own care. Education of the allergic individual and their peers is an important risk-minimisation strategy. It is important for all children to be educated about allergies and anaphylaxis and the risk-minimisation strategies applicable to them (e.g. handwashing after eating, not sharing food, etc.).

General Policy Measures to Minimise Exposure to Confirmed Allergens

Food allergens

- 1 There should be no trading and sharing of food, food utensils and food containers.
- 2 It is ideal that children with severe food allergies should only eat lunches and snacks that have been prepared at home. If lunches are to be purchased from the school canteen, parents should check the appropriateness of foods by contacting the canteen manager.
- 3 Bottles, other drinks and lunch boxes provided by the parents for their children should be clearly labelled with the name of the child for whom they are intended.
- 4 The use of food in crafts, cooking classes, science experiments and special events may need to be restricted depending on the allergies of particular children. Often, an appropriate alternative ingredient can be substituted (e.g. wheat-free flour for playdough or cooking).
- 5 Food preparation personnel should be instructed about measures necessary to prevent cross-contamination during the handling, preparation and serving of food. Examples include preparing food for allergic individuals first, careful cleaning of food preparation areas after use and cleaning of utensils when preparing allergenic foods.
- 6 The risk of a life-threatening anaphylaxis from casual skin contact, even with highly allergenic foods such as peanuts,

appears to be very low.⁸ In some children, casual skin contact will provoke local urticarial reactions (hives) at the site of contact. Simple hygiene measures such as hand washing and bench-top cleaning are considered appropriate.⁹

- 7 Food removal from pre-schools or childcare services should only occur following recommendation by the child's medical specialist and the provision of documentation supporting this recommendation. However, in young children, some risk-minimisation strategies (e.g. requesting that foods containing nuts not be sent to school in lunchboxes) in a class where there is a child with severe nut allergy may be considered.

Stings and bites

- 1 Specify play areas that are lowest risk and encourage the student and their peers to play in this area.
- 2 Reasonable measures should be taken to decrease number of plants that are known to attract stinging insects or ticks and remove bee/wasp nests.
- 3 Ensure students wear appropriate clothing and shoes when outdoors.
- 4 Be aware of bees in pools, around water, and in grassed or garden areas.
- 5 Educate children to avoid drinking from open drink containers, particularly those that contain sweet drinks.
- 6 To help prevent tick bites, cover skin and brush clothing before coming indoors.

Food Policy Measures to Minimise Exposure to Confirmed Allergens in School-Age Children

Implementing risk-minimisation strategies with regard to particular foods (peanuts and tree nuts) is recommended; however, the implementation of blanket food bans or attempts to prohibit the entry of food substances into schools are not recommended in schools. Issues considered in not recommending blanket food bans include:

- Practicalities of such measures
- The issue that for school-age children an essential step is to develop strategies for avoidance in the wider community as well as at school
- Lack of evidence of the effectiveness of such measures
- Other guidelines and position statements^{1,10} and experts do not recommend such measures^{11,12}
- Some guidelines state that such a policy may be 'considered' for a specific foodstuff such as peanut¹³ rather than recommended
- Food bans at schools are not recommended by allergy consumer organisations
- The risk of complacency about avoidance strategies if a food is banned

While we do not recommend blanket food bans, we do encourage staff to consider children with severe allergy in school activity planning (e.g. staff not having nuts in the classroom, consideration of sites for excursions, consideration of foods for special food/cultural days).

For schools where there are children with severe allergies to nuts (peanuts and tree nuts), a risk-minimisation policy for

school canteens should be implemented. This involves removal of items with the relevant nut/s as an ingredient, but does not apply to those foods labelled 'may contain traces of nuts'.

Risk minimisation in schools may also include asking parents of classmates not to send nut spreads (e.g. peanut butter) on sandwiches if a class member in early primary years (Kindergarten to 7 years old) has peanut allergy. This is due to the higher risk of person-to-person contact in younger children.

On school camps, themed days or other special events where there are children with severe nut allergy, it should be requested that foods containing nuts are not taken or supplied, consistent with the nut minimisation policy in the school canteen. School excursions to food processing factories or restaurants, for example, may require careful planning prior to minimise the risk of accidental exposure.

Bullying by provoking food allergic children with the food to which they are allergic, should be recognised as a risk factor and addressed by anti-bullying policies.

Food Policy Measures to Minimise Exposure to Confirmed Allergens in Pre-school Age Children

Where meals are brought from home

- 1 Measures should be taken to remove highly allergenic foods where transfer from one child to another is likely (such as whole eggs or egg containing foods and nut products). Parents of all children should be asked not to send meals containing highly allergenic foods such as egg and nut products to pre-schools or childcare services if there is a child at risk of anaphylaxis to these foods. Cow's milk is an important food in helping children to meet their dietary requirements and should not be removed from the food service; however, careful supervision is required for milk allergic children at times when other children are consuming cow's milk, other dairy products or goat milk products (which contain similar allergens).
- 2 It is impractical to eliminate all food products such as milk products in bread or margarines from the foods brought to pre-schools or childcare services.
- 3 In some circumstances it may be appropriate that a child with severe allergy does not sit at tables where the food to which they are allergic is being served, preferably without isolating the child.

Where meal preparation is undertaken at childcare services and pre-schools

- 1 For severely allergic children, the best option may be for parents to provide meals prepared from home.
- 2 If it is decided to provide a child with food allergy with meals prepared at the pre-school or childcare service, then the meal prepared for that child should not contain the ingredients (e.g. milk, egg and nut products) to which the child is allergic.
- 3 Meals prepared at pre-schools or childcare services which contain ingredients with 'May contain traces of nuts' on a label should not be given to nut allergic children but can be served to other children at the same institution. This principle

applies for all allergens (e.g. products that may contain traces of egg should not be given to an egg allergic child). Exceptions to this may be applicable, only in consultation with the allergic child's parent who has sought advice from their child's medical specialist and this information may be included in the student's individual health-care plan.

- 4 Food removal from pre-schools or childcare services should only occur following recommendation by the child's medical specialist and provision of documentation to support this recommendation.

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References

- 1 Anaphylaxis in schools and other childcare settings. AAAAI Board of Directors. American Academy of Allergy, Asthma and Immunology. *J. Allergy Clin. Immunol.* 1998; **102**: 173–6.
- 2 Avery NJ, King RM, Knight S, Hourihane JO. Assessment of quality of life in children with peanut allergy. *Pediatr. Allergy Immunol.* 2003; **14**: 378–82.
- 3 Lack G, Fox D, Northstone K, Golding J. Factors associated with the development of peanut allergy in childhood. *N. Engl. J. Med.* 2003; **348**: 977–85.
- 4 Boros CA, Kay D, Gold MS. Parent reported allergy and anaphylaxis in 4173 South Australian children. *J. Paediatr. Child Health* 2000; **36**: 36–40.
- 5 Kemp AS. EpiPen epidemic: suggestions for rational prescribing in childhood food allergy. *J. Paediatr. Child Health* 2003; **39**: 372–5.
- 6 Western Australian Department of Health, Western Australian Anaphylaxis School Survey: Analysis Report, 2008.
- 7 Western Australian Department of Health, Western Australian Anaphylaxis Child Care Survey: Analysis Report, 2008.
- 8 Simonte SJ, Ma S, Mofidi S, Sicherer SH. Relevance of casual contact with peanut butter in children with peanut allergy. *J. Allergy Clin. Immunol.* 2003; **112**: 180–2.
- 9 Perry TT, Conover-Walker MK, Pomes A, Chapman MD, Wood RA. Distribution of peanut allergen in the environment. *J. Allergy Clin. Immunol.* 2004; **113**: 973–6.
- 10 Lieberman P, Nicklas RA, Oppenheimer J, Kemp SF, Lang DM. The diagnosis and management of anaphylaxis. Joint Task Force on Practice Parameters, American Academy of Allergy, Asthma and Immunology, American College of Allergy, Asthma and Immunology, and the Joint Council of Allergy, Asthma and Immunology. *J. Allergy Clin. Immunol.* 1998; **101**: S465–S528.
- 11 Rhim GS, McMorris MS. School readiness for children with food allergies. *Ann. Allergy Asthma Immunol.* 2001; **86**: 172–6.
- 12 Munoz-Furlong A. Daily coping strategies for patients and their families. *Pediatrics* 2003; **111**: 1654–61.
- 13 Vickers DW, Maynard L, Ewan PW. Management of children with potential anaphylactic reactions in the community: a training package and proposal for good practice. *Clin. Exp. Allergy* 1997; **27**: 898–903.