CME Article

Academy of Medicine, Singapore-Ministry of Health Clinical Practice Guidelines: Management of Food Allergy

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ABSTRACT

The Academy of Medicine, Singapore (AMS) and the Ministry of Health (MOH) publish clinical practice guidelines to provide doctors and patients in Singapore with evidence-based guidance on managing important medical conditions. This article reproduces the introduction and executive summary (with recommendations from the guidelines) from the AMS-MOH clinical practice guidelines on the Management of Food Allergy, for the information of readers of the Singapore Medical Journal. Chapters and page numbers mentioned in the reproduced extract refer to the full text of the guidelines, which are available from the Academy of Medicine website: http://www.ams.edu.sg/guidelines.asp#foodallergy. The recommendations should be used with reference to the full text of the guidelines. Following this article are multiple choice questions based on the full text of the guidelines.

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INTRODUCTION

1.1 Objectives and scope of guideline

Food allergy, whether true or perceived, is a common clinical problem. The guidelines are not to be viewed as a protocol, but it aims to provide consensus on the diagnostic approach to food allergy as well as to debunk misconceptions that may lead to unnecessary use of disproven and invalidated tests.

1.2 Epidemiology

The prevalence of true food allergy tends to be overestimated due to over-reporting and subjective bias by patients. Other forms of food intolerances, which include lactose intolerance and pharmacological effects, such as palpitations induced by caffeine in beverages and migraine induced by tyramine in cheese, may be mistaken as food allergy.

Nonetheless, a global increase in the prevalence of IgE-mediated food allergy in children has been observed in recent years, and appears to follow the epidemics of childhood asthma and other allergic diseases. These increases have been greatest in populations with affluent and westernised lifestyle. Peanut allergy has increased dramatically in the western world, with more recent studies showing prevalence figures of more than 1% in children. In contrast, peanut allergy in a Singapore schoolchildren survey was estimated to be not more than 0.6%. The prevalence of true food allergy in Singapore is unknown. It has been reported to affect approximately 4%–5% of Singaporean schoolchildren.

1.3 Target group

The target groups of these guidelines are all medical practitioners and other healthcare professionals involved in the management of patients with food allergy. The layman's version is an educational resource for food allergy sufferers and parents with children with food allergy, as well as other professions such as teachers and food caterers, who are in contact with and care for or serve individuals with food allergy.

1.4 Guideline development

These guidelines have been produced by a committee comprising paediatricians and an internist, with an interest in either allergy, gastroenterology and developmental paediatrics; a general practitioner, dieticians and patient representatives appointed by the Ministry of Health Singapore and Academy of Medicine Singapore. They were developed using the best available current evidence and expert opinion.

1.5 Review of guidelines

Evidence-based clinical practice guidelines are only as current as the evidence that supports them. Users must keep in mind that new evidence could supersede

recommendations in these guidelines. The workgroup advises that these guidelines be scheduled for review five years after publication, or if new evidence appears that requires substantive changes to the recommendations.

EXECUTIVE SUMMARY OF RECOMMENDATIONS

Details of recommendations can be found in the full text of the guidelines at the pages indicated. Details of the system of levels of evidence and grades of recommendations are also in the full text of the guidelines.

IgE-mediated food allergy

D Patients with food-induced anaphylaxis should be observed in an appropriate medical facility (hospital, accident and emergency department, or clinic) for a minimum of six hours post onset of reaction (pg 19).

Grade D, Level 4

GPP Patients with food-induced anaphylaxis should be referred to a specialist experienced in treating food allergies so that a detailed evaluation can be carried out. This evaluation should include diagnostic confirmation, assessment of cross-reacting foods (especially in nut and fish allergy), education on prevention of further episodes, such as avoiding hidden sources of food allergens, and emergency treatment in case of accidental exposure (pg 19).

GPP

B Chronic urticaria and chronic angioedema are rare, if at all, manifestations of food allergy, but is commonly suspected by the patient. Food allergy evaluation is therefore rarely indicated in chronic urticaria and angioedema (pg 20).

Grade B, Level 2+

GPP Without associated gastrointestinal, dermatologic, or systemic symptoms, rhinitis is a very rare manifestation of food allergy. Therefore, there is no role for routine investigation for food allergy in patients with rhinitis (pg 20).

GPP

D To reduce the likelihood of a false negative result, patients have to stop using antihistamines before skin testing. The length of time of withdrawal depends on the nature of the antihistamine. For example, long-acting antihistamines like loratadine and cetirizine should be avoided for ten days and short-acting ones like chlorpheniramine and diphenhydramine for three days before the test (pg 21).

Grade D, Level 4

GPP The choice of the specific test to order for IgE-mediated food allergy must be directed by the clinical history (pg 24).

GPP

GPP The practitioner should not order a large number of specific IgE tests to screen for allergy when the diagnosis of IgE-mediated food allergy has not been established (pg 24).

GPP

GPP The attending medical practitioner must take into account the context in which he or she practices and the patient's condition when choosing between skin testing and *in vitro* specific IgE testing (pg 24).

GPP

B Children with moderate to severe atopic dermatitis may benefit from investigations to assess for food allergy. The investigations must be interpreted in context and confirmed with food challenges and, if necessary, food avoidance. In most situations, these tests should be carried out by specialists experienced in treating food allergies (see also Chapter 5) (pg 24).

Grade B, Level 2+

GPP After an IgE-mediated reaction, it is reasonable to wait 4–6 weeks before ordering the specific IgE test to reduce the chance of a false negative result (pg 25).

GPP

C Oral food challenges can be considered for the following purposes:

- To identify foods causing acute reactions for initial diagnosis of food allergy.
- To determine if the patient has outgrown his/her food allergy.
- To expand the diet in persons with multiple dietary restrictions, because of subjective complaints such as headaches or hyperactive behaviour.
- To assess the status of tolerance to cross-reactive foods.
- To determine whether food allergens associated with chronic conditions such as atopic dermatitis or allergic eosinophilic esophagitis will cause immediate reactions (pg 25).

Grade C, Level 2+

GPP Defer oral food challenges if there is a high likelihood of allergic reaction as predicted by food reaction history (pg 26).

GPP

D To prepare for the oral food challenges, suspected food allergens should be eliminated for one to two weeks prior to the food challenge for IgE-mediated allergies, and antihistamines stopped for the appropriate period of time to promote a normal histamine response (pg 28).

Grade D, Level 2+

D The total amount of challenge protein used for IgE-mediated allergies is 0.15 to 0.3 g protein per kg body weight with a maximum of 10 g of the dry food (double for wet foods such as meat and fish, or 200 ml milk). The total amount of challenge protein must be given in sequentially increasing doses with approximately 15 minutes interval for each dose as shown in Table 3 (pg 28).

Table 3. Example of incremental challenge protein doses with their serving time.

Time (minutes)	Dose/Percentage of total protein	Dry weight of challenge protein (g)	Cummulative dry weight of challenge protein (g)
0	1%	0.1	0.1
5	4%	0.4	0.5
20	10%	1	1.5
35	20%	2	3.5
50	20%	2	5.5
65	20%	2	7.5
80	25%	2.5	10

Grade D, Level 2+

D The medical practitioner or healthcare professional needs to record the dose of challenge protein given, the time of administration, vital signs and any subjective symptoms or objective sign that arise during the challenge. Assess frequently for symptoms or signs that affect the skin, gastrointestinal tract, and/or cardiovascular system (pg 29).

Grade D, Level 2+

C Significant reactions can occur with oral food challenges in high-risk patients. Therefore, oral food challenges for these patients are best performed by specialists experienced in treating food allergies and immunologists, and carried out in clinical settings equipped with resuscitation facilities and staffed with trained allied health personnel (pg 29).

Grade C, Level 2+

GPP A physician-supervised oral food challenge is recommended to confirm or refute allergy to this food in patients who present with histories of convincing immediate allergic reactions to a food (within two hours), or who present with histories of anaphylaxis to the food in question in isolation or in a mixed meal, even in the setting of negative laboratory and skin tests, provided the benefits of a food challenge outweigh the risks, and with the patient's/parent's informed consent (pg 29).

GPP

GPP Patients with negative skin tests, undetectable serum food-specific IgE levels, and no history of convincing symptoms of immediate food allergies (e.g. symptoms limited to behavioural changes or delayed/chronic gastrointestinal symptoms) can undergo gradual home introduction of the food in question (pg 29).

GPP

D Patients should be monitored for one to two hours before discharge for home if they tolerate the challenge. However, for those who have allergic reactions during the oral food challenges, they should be observed for two to four hours after symptoms have resolved with treatment (pg 30).

Grade D, Level 2+

B Patients who have undergone and passed their oral food challenges should be instructed to introduce the challenge foods into their diet (pg 30).

Grade B, Level 2++

B Patients who fail their oral food challenges should be provided emergency treatment plans for allergic reactions, education regarding food avoidance, dietary implications of food avoidance, and recommendations for follow-up visits and evaluations (pg 30).

Grade B, Level 2++

GPP Patients with food allergies should be advised on:

(1) Cross-reacting allergens in other foods (Refer to Table 4 on page 44).

(2) Hidden food allergens, and should be aware about the importance of reading food labels carefully and having a knowledge of some scientific names (e.g. casein, and whey for cow's milk and ovalbumin for chicken's egg).

(3) High risk situations, and therefore the need to enquire at restaurants or parties, etc (wherever cooked food is served or offered), and to take

other measures to prevent inadvertent exposure to known or suspected allergens or contamination in children with high risk of anaphylaxis (pg 32).

GPP

B In specific foods, re-evaluation of patients with food allergy may be important to determine if food allergy has been lost over time. A food challenge should be recommended when the skin prick test or the IgE specific test is negative or shows a decrease to low levels (guide in Figure 3) on follow up (pg 33).

Grade B, Level 2++

D If there is a history of suspected or proven IgE-mediated anaphylactic reactions to foods, injectable epinephrine should be given to patients and/or caregivers to carry with them and they should be instructed in its use (pg 35).

Grade D, Level 4

GPP A written Food Allergy Anaphylaxis Action Plan (see Annex A) should accompany each patient prescribed with an epinephrine auto-injector (pg 35).

GPP

B In the event of a life-threatening anaphylaxis event, the use of self injectable intramuscular epinephrine 0.01 mg/kg (maximum dose of 0.5 mg) is advised as the first-line treatment. Epinephrine can be administered every 5–15 minutes intramuscularly as necessary to maintain blood pressure and control symptoms (pg 35).

Grade B, Level 2+

B Intramuscular epinephrine should be administered to the anterior-lateral thigh as this has been shown in non-anaphylactic children to lead to peak plasma concentrations attained more quickly with more absorption as compared with subcutaneous administration (pg 35).

Grade B, Level 2+

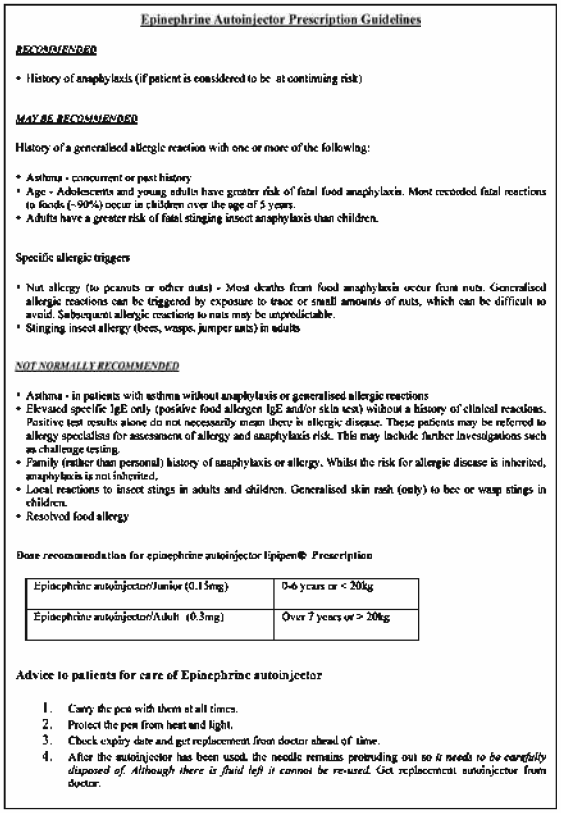
D Prophylactic medications have not been shown to be effective in managing life-threatening reactions to foods; therefore, oral antihistamines and steroids are used mainly for the cutaneous manifestations, but not as first-line medications in the event of anaphylaxis (pg 35).

Grade D, Level 4

D Corticosteroids may be used to alleviate late phase biphasic anaphylactic reactions in high-risk individuals (pg 35).

Grade D, Level 4

D There are no firm guidelines for the recommendation of an epinephrine autoinjector but the guidelines adapted from ASCIA (2009), outlined below, can be used (pg 36-37).



Epinephrine Autoinjector Prescription Guidelines

RECOMMENDED

- History of anaphylaxis (if patient is considered to be at continuing risk)

MAY BE RECOMMENDED

History of a generalised allergic reaction with one or more of the following:

- Asthma - concurrent or past history
- Age - Adolescents and young adults have greater risk of fatal food anaphylaxis. Most recorded fatal reactions to foods (~90%) occur in children over the age of 5 years.
- Adults have a greater risk of fatal stinging insect anaphylaxis than children.

Specific allergic triggers

- Nut allergy (to peanuts or other nuts) - Most deaths from food anaphylaxis occur from nuts. Generalised allergic reactions can be triggered by exposure to trace or small amounts of nuts, which can be difficult to avoid. Subsequent allergic reactions to nuts may be unpredictable.
- Stinging insect allergy (bees, wasps, jumper ants) in adults

NOT NORMALLY RECOMMENDED

- Asthma - in patients with asthma without anaphylaxis or generalised allergic reactions
- Elevated specific IgE only (positive food allergen IgE and/or skin test) without a history of clinical reactions. Positive test results alone do not necessarily mean there is allergic disease. These patients may be referred to allergy specialists for assessment of allergy and anaphylaxis risk. This may include further investigations such as challenge testing.
- Family (rather than personal) history of anaphylaxis or allergy. Whilst the risk for allergic disease is inherited, anaphylaxis is not inherited.
- Local reactions to insect stings in adults and children. Generalised skin rash (only) to bee or wasp stings in children.
- Resolved food allergy

Dose recommendation for epinephrine autoinjector Epipen® Prescription

Epinephrine autoinjector/Junior (0.15mg)	0-6 years or < 20kg
Epinephrine autoinjector/Adult (0.3mg)	Over 7 years or > 20kg

Advice to patients for care of Epinephrine autoinjector

1. Carry the pen with them at all times.
2. Protect the pen from heat and light.
3. Check expiry date and get replacement from doctor ahead of time.
4. After the autoinjector has been used, the needle remains protruding out so *it needs to be carefully disposed of. Although there is fluid left it cannot be re-used.* Get replacement autoinjector from doctor.

Grade D, Level 4

B Medical practitioners should not prescribe goat's or sheep's milk to cow's milk allergic individuals as these milks cross-react with cow's milk (pg 38).

Grade B, Level 2++

GPP Management of IgE-mediated cow's milk allergy with or without anaphylaxis in infants will generally involve formula replacement with a soy-based formula and if not tolerated, an extensively hydrolysed formula (eHF) or amino acid-based formula (pg 38).

GPP

B MMR vaccine is not contraindicated in egg allergy and can be safely given in the normal manner. Medical practitioners should be aware that anaphylaxis can happen after any vaccination, therefore all vaccinations

should be performed in a setting equipped to deal with such emergencies (pg 39).

Grade B, Level 2++

D Patients with egg allergy who need the influenza vaccine should be referred to a clinical facility experienced in the management of anaphylaxis. A two dose, split protocol (e.g. 1/10 dose followed by 9/10 30 minutes later) can be considered in those with a history of anaphylaxis to egg or uncontrolled asthma (pg 39).

Grade D, Level 4

D A severe reaction to egg is a contraindication to influenza immunisation. Individuals with reactions less than severe anaphylaxis can be immunised with the influenza vaccine if skin prick and intradermal tests with the vaccine are negative (pg 39).

Grade D, Level 3

C Patients with peanut allergy can generally tolerate other beans (95%), even soy. Avoidance of all legumes is unwarranted (pg 40).

Grade C, Level 2+

D It is appropriate to eliminate all other tree nuts from the diet if the child with tree nut allergy has never consumed other nuts (pg 41).

Grade D, Level 3

D Patients with fish allergy should avoiding eating all other species of fish. On the rare occasion that a fish-allergic patient has eaten another species of fish without reaction, he can continue eating that species (pg 41).

Grade D, Level 3

D Patients who are allergic to one type of crustacean should avoid eating other types of crustaceans. A referral to a specialist experienced in treating food allergies may be appropriate to define the precise types of crustacean to avoid (pg 42).

Grade D, Level 2+

Non-IgE and mixed-IgE/Non-IgE-mediated gastrointestinal food allergies

D Allergic eosinophilic esophagitis should be considered in infants and children with gastro-esophageal reflux-like symptoms and/or feeding problems who do not respond to gastric acid suppression, particularly if there are associated atopic manifestations (pg 48).

Grade D, Level 3

D Skin prick testing for food and environmental allergens could be considered in patients with allergic eosinophilic esophagitis so that potential allergens and the atopic status of these patients can be identified (pg 51).

Grade D, Level 3

D Endoscopy and biopsy of the lower esophagus (> 15 eosinophils/hpf) is diagnostic in the appropriate clinical setting, and should be performed to confirm the diagnosis of allergic eosinophilic esophagitis (pg 48).

Grade D, Level 3

D Gastric acid suppression should be considered as co-therapy for allergic eosinophilic esophagitis (pg 49).

Grade D, Level 3

D Elimination diet (exclusion of the five common allergenic foods: milk, soy, egg, wheat and peanut) should be considered in all children diagnosed with allergic eosinophilic esophagitis (pg 49).

Grade D, Level 3

D There is limited benefit for the use of other pharmacological agents in the treatment of allergic eosinophilic esophagitis. Systemic corticosteroids, topical corticosteroids, leukotriene-receptor antagonists and cromolyn sodium may be tried (pg 49).

Grade D, Level 3

D Biopsy of the gut to demonstrate the presence of eosinophils should be done for diagnosis of allergic eosinophilic gastroenterocolitis (pg 50).

Grade D, Level 3

D Skin prick testing and patch testing to food allergens may be done to identify IgE-mediated and cell-mediated food allergies (pg 51).

Grade D, Level 3

D In allergic eosinophilic gastroenterocolitis, the elimination of the implicated food and the use of an amino acid-based formula is recommended (pg 51).

Grade D, Level 3

D In the treatment of allergic eosinophilic gastroenterocolitis, corticosteroids, sodium cromoglycate and montelukast can be used as alternative treatments, but symptoms can recur on weaning the systemic corticosteroids (pg 51).

Grade D, Level 3

GPP Skin prick test and serum food-IgE levels may be used to delineate concomitant IgE-mediated food allergy but are not useful for diagnosis of food protein-induced enterocolitis syndrome (pg 52).

GPP

D Treat food protein-induced enterocolitis syndrome with food allergen elimination (pg 52).

Grade D, Level 3

D In patients with reactions to cow's milk and/or soy milk formulas in food protein-induced enterocolitis syndrome, which often coexist, an extensively hydrolysed milk formula is recommended. In those who do not tolerate these hydrolysates, an amino acid-based formula is recommended (pg 52).

Grade D, Level 3

D In food protein-induced enterocolitis syndrome, food challenges should be conducted under medical practitioner supervision in a hospital setting with resuscitation medications available (pg 53).

Grade D, Level 3

GPP Food patch testing is not recommended for the evaluation of allergic enteropathy (pg 53).

GPP

GPP Endoscopy and biopsy of the small bowel is recommended for the diagnosis of allergic enteropathy (pg 54).

GPP

GPP Eliminate the food allergen in patients with allergic enteropathy. This leads to the clearing of gastrointestinal symptoms within 3 –21 days (pg 54).

GPP

D In allergic enteropathy, a graded home food challenge can be tried following discussion with the patient. If still sensitised, symptoms may recur within days or up to several weeks. Most patients outgrow their hypersensitivity at the ages of 1–3 years (pg 54).

Grade D, Level 4

GPP For the diagnosis of allergic protocolitis, skin prick test and serum food-specific IgE levels are not required. Endoscopic examination is also not needed for diagnostic purposes. However, if symptoms fail to respond to elimination of suspected food allergen (cow's milk in most cases), then endoscopic examination with histological diagnosis is recommended (pg 55).

GPP

D In allergic proctocolitis, treatment by elimination of the food allergen is indicated if significant blood loss is present. Mild cases can resolve spontaneously (pg 55).

Grade D, Level 3

D In allergic proctocolitis, eliminate cow's milk from the mother's diet if the mother is breastfeeding (pg 55).

Grade D, Level 3

D In allergic proctocolitis, for cow's milk formula or soy milk-fed infants, an extensively hydrolysed milk formula is recommended, due to the high rates (up to 30%) of concomitant cow's milk protein and soy protein allergy. Only in rare instances is an amino acid-based formula required. Clearance of symptoms typically occurs within 48–72 hours (pg 56).

Grade D, Level 3

D In allergic proctocolitis, a gradual food introduction at home can be attempted after the age of one year as tolerance of the allergen is usually attained by that age (pg 56).

Grade D, Level 3

Atopic eczema dermatitis syndrome and food allergy

GPP Consider evaluating for food allergy in young children with moderate to severe atopic dermatitis eczema syndrome who do not respond to optimised topical treatment, and in those with a history suggestive of IgE-mediated reactions. Foods commonly involved are hen's egg, cow's milk and soy (the role of wheat is far less clear) (pg 59).

GPP

GPP In young children with moderate to severe atopic dermatitis eczema syndrome, a trial of limited food allergen (e.g. cow's milk and eggs) elimination for a limited period (up to one month to monitor for response) may

be considered as long as the nutrition is not affected (pg 59).

GPP

Unproven and disproved allergy tests

B Medical practitioners should not order unproven and disproved allergy tests because they do not have scientific basis and do not provide objective and reliable diagnosis of allergy (pg 63).

Grade B, Level 2++

B Patients who are found to have positive test results with one or more of the unproven or disproved tests should not be told that they have food allergy but they should be re-evaluated so that a precise diagnosis may be offered (pg 63).

Grade B, Level 2++

Primary prevention of food allergy

A Allergen avoidance during pregnancy to prevent allergy in the offspring is not recommended as it has not been shown to be effective, and more importantly, it may adversely affect maternal and/or foetal nutrition (pg 65).

Grade A, Level 1+

B Breast feeding is highly recommended for all infants irrespective of atopic heredity. The most striking results on primary prevention have been shown for exclusive breast feeding for at least 4–6 months (pg 65).

Grade B, Level 2++

B Maternal dietary modification while breastfeeding is not recommended for the prevention of food allergy in the offspring (pg 65).

Grade B, Level 2++

A Breastfeeding is also highly recommended for high-risk infants, as exclusive breastfeeding is more protective than hydrolysed formula. However, a hydrolysed formula can be recommended for high-risk infants who cannot be completely breastfed (pg 66).

Grade A, Level 1++

C Cow's milk-based formula should be avoided in the first five days of life as the administration of cow's milk-based formula during the first five days in the newborn nursery increases the risk of specific sensitisation (pg 66).

Grade C, Level 2+

B Weaning to semi-solid foods should be delayed for at least 4–6 months for all infants (pg 67).

Grade B, Level 1+

B It is unnecessary to delay introduction of solid food after 4–6 months of age as there is no evidence that it is useful to prevent food allergy. In fact, delayed introduction of solids beyond six months may increase the risk of food allergy (pg 67).

Grade B, Level 2++

SINGAPORE MEDICAL COUNCIL CATEGORY 3B CME PROGRAMME
Multiple Choice Questions (Code SMJ 201007C)

These questions are based on the full text of the guidelines which may be found at http://www.ams.edu.sg/guidelines.asp#foodallergy.

Question 1. IgE-mediated reaction to food:

	True	False
(a) Typically occurs days to weeks after exposure to the food.	☐	☐
(b) Is the mechanism through which anaphylaxis occurs.	☐	☐
(c) Can present as vomiting and abdominal pain.	☐	☐
(d) May play a role in childhood eczema.	☐	☐

Question 2. In anaphylaxis:

(a) Injectable epinephrine is the first-line treatment and should be administered first before anti-histamines and corticosteroids.	☐	☐
(b) This is diagnosed when a patient has life-threatening features of allergy such as cardiovascular collapse or breathing difficulties.	☐	☐
(c) Patients are usually stable after epinephrine and no further medical care is needed.	☐	☐
(d) Epinephrine should be administered via the IV route if possible.	☐	☐

Question 3. Regarding diagnostic tests in food allergy:

(a) Skin prick tests measure the presence of IgE antibodies.	☐	☐
(b) Skin prick tests and *in vitro* measurement of specific IgE antibodies are validated for certain food allergens and can both be used to assess the presence of sensitisation.	☐	☐
(c) Skin prick tests are preferred when the patient has dermatographism.	☐	☐
(d) Antihistamines affect skin prick tests and should be stopped for at least one month before that.	☐	☐

Question 4. Regarding food allergens:

(a) Goat's milk is safe in patients with cow's milk allergy as the level of cross-reactivity is low.	☐	☐
(b) Hen's egg allergy is rarely outgrown.	☐	☐
(c) Shellfish allergy tends to persist.	☐	☐
(d) Detectable levels of IgE antibodies or a positive skin prick test indicate definite clinical allergy.	☐	☐

Question 5. In infants with food allergy:

(a) Soy-based formula is recommended in infants with cow's milk allergy.	☐	☐
(b) MMR vaccination is contraindicated if the infant develops urticaria to egg.	☐	☐
(c) Peanut allergy is mild and outgrown in the majority.	☐	☐
(d) Injectable epinephrine should never be used in anaphylaxis as there is no appropriate dose for children who weigh < 10 kg.	☐	☐

Question 6. Please state if the following statements are true or false:

(a) Lethargy, arthritis, autism and hyperactivity are due to food allergy, and tests should be performed to identify the provoking allergen.	☐	☐
(b) No correlation has been found between the presence of food-specific IgG and food allergy.	☐	☐
(c) Intradermal tests are recommended in food allergy when skin prick tests are negative as they are more sensitive.	☐	☐
(d) Non-IgE based alternative allergy tests such as ALCAT, applied kinesiology and measurement of food-specific IgG must be scientifically sound since they are available commercially.	☐	☐

Question 7. The following should be done when treating a 12-month old infant suspected of having allergic eosinophilic esophagitis:

(a) Recommending a switch to total breastfeeding. ☐ ☐
(b) Eliminating cow's milk, soy, peanut, eggs and wheat from his diet. ☐ ☐
(c) Commencing the child on acid suppression (e.g. ranitidine). ☐ ☐
(d) Use of a leukotriene-receptor antagonist as first-line therapy if there is peripheral eosinophilia. ☐ ☐

Question 8. The following features are consistent with a diagnosis of cow's milk-induced protocolitis in an infant:

(a) Presence of blood specks and mucous in stool. ☐ ☐
(b) Presence of atopic eczema ☐ ☐
(c) Presence of poor weight gain. ☐ ☐
(d) Presence of anaemia. ☐ ☐

Question 9. On eczema in children:

(a) The best test for diagnosing food allergy in eczema is a skin prick test. ☐ ☐
(b) Food allergy is often involved in older children with eczema. ☐ ☐
(c) The most common food allergy in infants with eczema is egg. ☐ ☐
(d) The atopy patch test is useful in the assessment of eczema. ☐ ☐

Question 10. On primary prevention:

(a) HA-formulas containing probiotics are useful in the primary prevention of asthma. ☐ ☐
(b) Late introduction of solid foods (> one year) is advised to prevent allergy. ☐ ☐
(c) Allergen avoidance (diet) during pregnancy can prevent allergy. ☐ ☐
(d) Allergen avoidance during breast feeding can reduce the incidence of eczema. ☐ ☐

Doctor's particulars:

Name in full: _____

MCR number: _____ Specialty: _____

Email address: _____

SUBMISSION INSTRUCTIONS:
(1) Log on at the SMJ website: http://www.sma.org.sg/cme/smj and select the appropriate set of questions. (2) Select your answers and provide your name, email address and MCR number. Click on "Submit answers" to submit.

RESULTS:
(1) Answers will be published in the SMJ September 2010 issue. (2) The MCR numbers of successful candidates will be posted online at www.sma.org.sg/cme/smj by 20 September 2010. (3) All online submissions will receive an automatic email acknowledgment. (4) Passing mark is 60%. No mark will be deducted for incorrect answers. (5) The SMJ editorial office will submit the list of successful candidates to the Singapore Medical Council.

Deadline for submission: (July 2010 SMJ 3B CME programme): 12 noon, 13 September 2010.