

5706 Workshop: Oral Food Challenges in the Office

Tuesday, March 22, 2011, 3:30 pm - 4:45 pm

Panel Discussion Session

Moderator:

David Fleischer, MD

National Jewish Health

University of Colorado at Denver and Health Sciences Center

The Children's Hospital Denver

fleischerd@njhealth.org

Panelists:

Anna Nowak-Węgrzyn, MD

Jaffe Food Allergy Institute,

Mount Sinai School of Medicine, New York, NY

anna.nowak-wegrzyn@mssm.edu

Justin Skripak, MD

ENT and Allergy Associates, Hoboken, NJ

JSkripak@entandallergy.com

Contributor:

Kim Mudd, RN

Johns Hopkins Children's Medical Center, Baltimore, MD

kmudd2@jhmi.edu

Oral Food Challenge Parent Guide

Your child is scheduled to have a food challenge. A serving of the food will be given to your child over the course of an hour (approximately). We will be observing your child for any changes related to eating the food both during the challenge and for about 1-4 hours after the challenge.

Please bring a full serving of the food with you on the day of the challenge appointment. You may want to consider bring multiple options of the food in case your child refuses to eat something.

We do not have the capacity to do any "cooking" in clinic, but we do have a safe microwave available to reheat foods that are brought in from home.

Also bring safe snacks / drinks for your child to eat after the challenge, during the observation period.

Examples of foods for challenges:

Milk challenge-consider cheese or yogurt in addition to liquid milk. Be sure to check the labels for any other foods you may be avoiding. Bring bottles or "sippy" cups so your child can drink from something familiar. Also consider powdered milk which can be added to many foods.

Egg challenge- consider making French toast with an entire egg. If you soak the egg in the bread overnight, it's easier. Cook the French toast at home and bring it in with you on the morning of the challenge. We can warm it in the microwave. You may bring in syrup, jelly or any other safe condiment. Some kids will eat a scrambled egg. You may also consider home-made meringue cookies.

Soy challenge- consider soy yogurt in addition to soy milk. You may consider trying to get creative with tofu.

Wheat challenge-consider 2 slices of bread (check for milk and or / egg ingredients if you are avoiding those), a serving of whole wheat cereal such a Wheat Chex, Frosted Mini Wheat (again, check the label for other ingredients that you may be avoiding), or Cream of Wheat cereal

Peanut challenge-Reese's peanut butter cups or Reese's Pieces work well for kids who can tolerate milk. You can also use peanut butter. The "dose" is 2 tablespoons of peanut butter. Most of the major label peanut butter (examples: Jiff, Skippy) do not carry a "may contain nuts" label. The peanut butter can be spread on safe bread, crackers, celery or any other safe vehicle.

Nut challenges- You need a nut that is not contaminated with peanut or other nuts if you child is avoiding peanut or other tree nuts. The best way to assure there is no contamination is to purchase the nuts in the shell and crack them at home. Please be aware that you cannot buy cashews in the shell. The serving size will vary with the nuts. Please contact us for guidance. You can grind the nuts and put them into a safe home-made cookie, muffin or brownie. Nuts can be sprinkled on top of pudding or yogurt if either of those foods are safe for your child.

Note: manufacturer-guaranteed pure almond butter Barney Butter (www.barneybutter.com); also www.justalmonds.com

Meat or fish Challenges- a serving of meat or fish is usually about the size of a deck of cards. Make sure the meat/fish is not processed or packaged with foods such as soy or milk. Deli's can contaminate foods if they share equipment between cheese and meats. Fish can be cross-contaminated if it is packaged or stored with other seafood. Don't forget to bring condiments such as ketchup, mustard or BBQ sauce if those are foods that are safe for your child.

In addition, consider a fruit-based "smoothie" as the vehicle. The icy texture can hide the crunchiness of tree nuts or sesame seeds and the coldness decreases the taste associated with soy or cow's milk. To make home-made smoothies, use about a cup of fresh or frozen berries, peaches, banana or any other fruit that is "safe". Add crushed ice and blend in a food processor or blender until smooth. Freeze the smoothie in a plastic container with a tight fitting lid. Bring the smoothie and the challenge substance to the visit.

If your child tolerates milk or soy, you can add milk-based or soy-based yogurt to the smoothie to give it a better base.

If you are using the smoothie for a milk or egg challenge, consider using dried milk powder or dried egg powder to keep the volume as small as possible.

If you mix the challenge substance in the smoothie when you are making it, be aware of the total amount of smoothie that you make. We will need your child to eat the entire smoothie if you mix the challenge substance in as you go.

Pre-Food challenge Checklist

- Called 1 week prior to OFC.
 - Appointment confirmed.
 - Discontinue antihistamines (7 days for hydroxyzine / Claritin, 5 days for Zyrtec / Allegra, 2 days for Benadryl).
 - Discontinue Singulair 24 hours prior.
 - Discontinue SABAs, LABAs, nasal antihistamine sprays and H2 blockers the day prior.
 - History of:
 - Asthma y n If yes, current symptoms?
 - Eczema y n If yes, current symptoms?
 - Allergic rhinitis y n If yes, current symptoms?

 - Current URI, fever, gastrointestinal illness, or other health problems?
 - Informed patient/parent to contact us if any new health concerns / symptoms develop prior to the appointment.
 - Nothing to eat/drink for 4 hours prior to challenge. Small meal 2 hours prior ok for infants and young children.
 - Informed patient to bring prepared food.
 - Trial of food / meal in allergen-free form at home.
 - Informed patient of minimum duration of process (usu. 3 hours). They need to remain here under observation for 1-2 hours after completely eating the food.
-

ORAL FOOD CHALLENGE CONSENT

Date _____

Time _____

I give my consent and authorize Dr. _____ to perform an oral food challenge to the following food: _____.

What is an Oral Food Challenge?

If allergy test results and medical history do not show for certain whether or not your child has a food allergy to a specific food, we recommend that your child have an oral food challenge test.

The oral food challenge involves eating a serving of the allergic food in a slow, graded fashion under medical supervision. The food challenge procedure is the most accurate test to determine whether a food needs to be avoided or will no longer need to be avoided.

The food challenge is undertaken when your child is in generally good health and can discontinue antihistamines for a brief period (usually 3-10 days) before the test.

What will happen during the Oral Food Challenge?

During the food challenge, your child will be given very small amounts of the specific food being tested. If tolerated, increasing amounts of the challenge food will be given with close observation at each stage.

Your child will be observed for symptoms such as itching, rash, abdominal pain, or difficulty breathing. If any symptoms develop, your child will be treated immediately. In most cases, this will involve the use of Benadryl or epinephrine to prevent any allergic reactions from getting worse. In studies of food challenges, many children develop mild symptoms during a food challenge that require these treatments. Very rarely, other treatments are needed for more serious reactions.

In some cases, your doctor may decide to place an IV in your child's arm before the challenge starts. This would be used to give medicine if needed. (this could probably left out. This is not happening in office setting....thoughts???)

In some cases, the food challenge is performed by masking the food to hide the taste, and using food that looks/tastes the same but does not contain the food being tested (placebo). These procedures reduce the possibility that we would misjudge a reaction to the food that could occur from fear or distaste of the new food.

What are the risks or discomforts of an Oral Food Challenge?

The discomforts associated with the food challenge are generally no more than those encountered when eating the food. Symptoms usually are short-lived (less than 2 hours). Symptoms may include an itchy skin rash, nausea, abdominal discomfort, vomiting, diarrhea, stuffy "runny" nose, sneezing, or wheezing.

The major risks involved include severe breathing difficulties and rarely a drop in blood pressure. While a severe outcome such as death is theoretically possible, this has not occurred from medically supervised oral food challenges. The risk of a reaction is reduced by starting the challenge with very small amounts of food, administering the food over a prolonged time period and stopping the challenge at the first sign of a reaction, and by not giving any food suspected to cause a major reaction.

Medications, personnel and equipment will be immediately available to treat allergic reactions should they occur.

What are the alternatives to an Oral Food Challenge?

If you choose not to have the oral food challenge, the safest thing to do is to completely restrict the food in question from your child's diet.

The nature and purpose of the Oral Food Challenge, the risks involved and the alternatives have been explained to me and all of my questions, if any, have been answered to my satisfaction. I acknowledge that the practice of medicine is not an exact science and I acknowledge that no guarantee has been made as to the results that may be obtained.

Patient's Signature

Witness Signature

Signature of Physician Obtaining Consent

Physician ID number

If patient is a minor:

Signature of Parent or Guardian

Emergency Treatment Plan

Skin testing, Food Challenges and/or Immunotherapy Administration

Before beginning any procedure that has the potential to result in any allergic symptoms

1. Have prn medications available
 - a. Diphenhydramine liquid 12.5mg/5cc
 - b. Diphenhydramine for injection 50mg/ml (need a 1cc syringe)
 - c. Ephinephrine 1:1000 (need a 1 cc syringe)
 - d. Albuterol nebulizer (need neb set-up)

2. Establish medication dosages necessary depending on subject's weight
 - a. Diphenhydramine 1-2mg/kg
 - b. Epinephrine 0.01ml/kg

3. Check that Crash Cart is available and up to date
4. Have IV pump and tubing available

In the event of a reaction, notify the Physician who is monitoring the procedure

For symptoms involving lower respiratory system (wheezing, cough, stridor, difficulty breathing)

1. Administer epinephrine IM
2. Administer diphenhydramine
3. Assess for need for albuterol
4. Repeat epinephrine as needed

For cardiovascular symptoms (lightheadedness, fainting)

1. Administer epinephrine, IM
2. Start IV
3. Begin IV fluids (normal saline) at XXml/mg/hour

For symptoms involving upper respiratory (rhinitis, nasal congestion, itchy/watery eyes)

1. Administer diphenhydramine PO
2. Assess for increased symptoms

For symptoms involving throat (change in voice, sense of tightness, hoarseness)

1. Administer epinephrine, IM
2. Administer diphenhydramine PO/IM
3. Repeat epinephrine as needed

For oral symptoms (itchy and or swelling of lips, tongue or mouth)

1. Administer diphenhydramine PO
2. Assess for increased symptoms

Skin symptoms (urticaria, angioedema, eczema, rash)

1. Administer diphenhydramine PO
2. Assess for increased symptoms

Gut symptoms (nausea, abdominal cramping, vomiting and or diarrhea)

1. Administer diphenhydramine PO/IM
2. Assess for need for fluids

All subjects with symptoms will be observed until the symptoms resolve. Additional observation periods of 2-4 hours may be warranted.

All subjects will be discharged with clear instructions on follow up care

Food Challenge Data Collection Sheet

Review of systems

Constitutional: Fatigue, fever, sleeping problems

HEENT: chronic congestion, mouth breathing, runny nose, frequent sneezing, post-nasal drip, shortness of breath, eye swelling / itch / redness, itchy ear(s), ear pain, difficulty swallowing, hoarseness

Respiratory/ Thorax: cough, shortness of breath, wheezing.

Cardiovascular: chest pain, irregular heartbeat, blacking out

Gastrointestinal: abdominal pain, diarrhea, constipation, heartburn, nausea, vomiting,

Current medications

History of present illness

Complaints:

Recent exposure / reaction history:

Food-specific IgE results:

Skin test results:

Targeted physical exam

Weight:

Pre-challenge exam:

Post-challenge exam:

Food challenge data

Food name: _____ Target dose: _____

Medications doses for treating reactions:

Benadryl: _____ Epinephrine: _____ Prednisolone: _____

Dose percentage	Time Given	Symptoms	Treatment
5%			
10%			
15%			
20%			
25%			
25%			

Post challenge assessment and plan:

References

I. General:

Boyce J, Assa'ad AH, Burks A.W., Jones SM, Sampson HA, Wood RA et al. Guidelines for the Diagnosis and Management of Food Allergy in the United States: Summary of the NIAID-Sponsored Expert Panel Report. *J Allergy Clin Immunol* 2010; 126(6 Suppl):S1-S58.

<http://www.niaid.nih.gov/topics/foodallergy/clinical/pages/default.aspx>

Food Allergy Education Program on the **CoFAR** (Consortium for Food Allergy Research) website

<https://web.emmes.com/study/cofar/EducationProgram.htm>

Food Allergy: A Practice Parameter. *Ann Allergy Asthma Immunol* 2006; 96(3, Supplement 2).

Sicherer SH, Sampson HA. Food allergy: recent advances in pathophysiology and treatment. *Annu Rev Med* 2009; 60:261-77.

Bernstein IL, Li JT, Bernstein DI et al. Allergy diagnostic testing: an updated practice parameter. *Ann Allergy Asthma Immunol* 2008; 100(3 Suppl 3):S1-148.

II. Food allergy diagnosis:

Sampson HA, Ho DG. Relationship between food-specific IgE concentrations and the risk of positive food challenges in children and adolescents. *J Allergy Clin Immunol* 1997;444-451.

Sampson HA. Utility of food-specific IgE concentrations in predicting symptomatic food allergy. *J Allergy Clin Immunol* 2001; 107:891-896.

Sporik R, Hill DJ, Hosking CS. Specificity of allergen skin testing in predicting positive open food challenges to milk, egg, and peanut in children. *Clin Exp Allergy* 2000; 30:1540-1546.

Roberts G, Lack G. Diagnosing peanut allergy with skin prick and specific IgE testing. *J Allergy Clin Immunol* 2005; 115(6):1291-1296.

Niggemann B, Rolinck-Werninghaus C, Mehl A, Binder C, Ziegert M, Beyer K. Controlled oral food challenges in children--when indicated, when superfluous? *Allergy* 2005; 60(7):865-870.

Verstege A, Mehl A, Rolinck-Werninghaus C et al. The predictive value of the skin prick test weal size for the outcome of oral food challenges. *Clin Exp Allergy* 2005; 35(9):1220-1226.

Mehl A, Rolinck-Werninghaus C, Staden U et al. The atopy patch test in the diagnostic workup of suspected food-related symptoms in children. *J Allergy Clin Immunol* 2006; 118(4):923-929.

Perry TT, Matsui EC, Kay Conover-Walker M, Wood RA. The relationship of allergen-specific IgE levels and oral food challenge outcome. *J Allergy Clin Immunol* 2004; 114(1):144-149.

Knight AK, Shreffler WG, Sampson HA et al. Skin prick test to egg white provides additional diagnostic utility to serum egg white-specific IgE antibody concentration in children. *J Allergy Clin Immunol* 2006; 117(4):842-847.

III. Oral food challenges:

May CD. Objective clinical and laboratory studies of immediate hypersensitivity reactions to foods in asthmatic children. *J Allergy Clin Immunol* 1976; 58(4):500-515.

Bock SA, Sampson HA, Atkins FM, et al. Double-blind, placebo-controlled food challenge (DBPCFC) as an office procedure: A manual. *J Allergy Clin Immunol* 1988; 82:986-997.

Bindslev-Jensen C, Ballmer-Weber BK, Bengtsson U et al. Standardization of food challenges in patients with immediate reactions to foods--position paper from the European Academy of Allergology and Clinical Immunology. *Allergy* 2004; 59(7):690-697.

A health professional's guide to food challenges. Fairfax, Virginia: The Food Allergy and Anaphylaxis Network; 2004.

Nowak-Wegrzyn A, Assa'ad AH, Bahna SL, Bock SA, Sicherer SH, Teuber SS. Work Group report: oral food challenge testing. *J Allergy Clin Immunol* 2009; 123(6 Suppl):S365-S383.

Sicherer SH. Food allergy: when and how to perform oral food challenges. *Pediatr Allergy Immunol* 1999; 10(4):226-234.

IV. Challenges to food additives/dyes:

Wilson BG, Bahna SL. Adverse reactions to food additives. *Ann Allergy Asthma Immunol* 2005; 95(6):499-507.

Wuthrich B. Adverse reactions to food additives. *Ann Allergy* 1993; 71(4):379-384.

Simon RA. Sulfite challenge for the diagnosis of sensitivity. *Allergy Proc* 1989; 10(5):357-362.

Geha RS, Beiser A, Ren C et al. Multicenter, double-blind, placebo-controlled, multiple-challenge evaluation of reported reactions to monosodium glutamate. *J Allergy Clin Immunol* 2000; 106(5):973-980.

Stevenson DD, Simon RA, Lumry WR, Mathison DA. Adverse reactions to tartrazine. *J Allergy Clin Immunol* 1986; 78(1 Pt 2):182-191.