

Elimination Diet – Food Challenge Protocols

Background – why do food challenges?

The food challenge protocol is for use by people who have been on an elimination test diet to investigate possible food chemical sensitivity. It is the second phase of the investigation process, and is used to identify which particular food chemicals are responsible for triggering reactions.

The elimination diet is only the first step in investigating food chemical sensitivity. It is a very restrictive diet meant for short term use only, and cuts down on a range of food chemicals that are known to cause symptoms in some people. If your symptoms have improved on the elimination diet, it indicates that at least one of these restricted chemicals can trigger your reactions, but not necessarily all of these chemicals will be a problem.

The next step is to identify which particular food chemicals are safe for you, and which ones are not. This will enable you to add more foods back into your diet (the ones that contain “safe” chemicals but not trigger chemicals). The challenge process involves testing each food chemical one by one, in a systematic way. This is usually done by eating foods that provide a high dose of each particular chemical, but occasionally challenges may be done using food chemicals enclosed in capsules. The process is outlined in more detail later.

Depending on how many challenges you need to undertake, this phase can take up to a few months to complete. Although the challenge process is necessary in order to identify trigger chemicals and safe chemicals, and enable you to expand your diet as much as possible, it can be rather unpleasant at times. You are likely to experience a reaction to at least one of the challenges, which may remind you how bad your symptoms used to be! The good news is that you have a safe baseline diet to return to as soon as you have a clear reaction, which will help you recover as quickly as possible and prepare you for the next challenge.

Once the challenge phase has been completed, your dietitian can assist you to reintroduce foods which are free of the chemicals to which you reacted.

If you have reacted to major chemicals such as salicylates or amines, you will be encouraged, after a period of time, to reintroduce small amounts of foods containing these chemicals, in a graded fashion, to find your actual tolerance level. This is the final step of the investigation process.

General instructions for the challenge process

When to start challenges

Start challenges after you've been on the elimination diet for at least 3 to 6 weeks and your symptoms have settled down for at least 5 days in a row.

If you also react to non-food triggers eg. environmental exposures, stress etc, you may not become entirely symptom-free on the elimination diet, but as long as there has been a significant improvement and you have a stable baseline, you are ready to start challenges.

Procedure for doing challenges

The details about which foods to use, how much to eat and for how long are outlined in the following pages. These guidelines give an overview of the process.

- Only test one suspect food chemical at a time. If you try to test several at once, and you have a reaction, you will not know which one(s) were the actual triggers.
- Make sure to eat at least the recommended amount of challenge foods each day - you need a sufficiently high dose to ensure that a reaction will be triggered if that chemical is a problem. Eating only a small amount may mean that you don't get a clear reaction, and the results can be misleading. Quantities and foods to use are outlined on the following pages.
- In order to check for delayed reactions and the effect of a dose build up over time, make sure to continue eating challenge foods for the recommended number of days, unless, of course, you have reaction. If you do react, stop doing that challenge! If you don't react after the recommended number of days, that food chemical is probably safe for you.
- Be patient - reactions can take days to develop. If you hurry your challenges, you're likely to end up getting confused and having to start again.
- After a reaction, go back to the baseline elimination diet and wait until symptoms have settled again for 3 days in a row, before starting the next challenge.
- Keep a detailed food record during the challenge process, note which foods were used as challenges, and any symptoms you experience. Also record any other factors that could have influenced symptoms, such as stress, illness, or environmental exposures.
- If you have done a challenge for the recommended number of days, and the response is unclear or very mild, continue with the challenge for up to one more week. If still unsure, stop the challenge, go back to the baseline diet, and challenge again later. Also, if any non-food triggers possibly affected you at the same time as a challenge, you should repeat the challenge again, maybe even a few times, to check if you react each time you test - it is important not to restrict your diet unnecessarily on the basis of just one test that is uncertain.

Safety concerns

If you tend to have very strong, distressing reactions, start each challenge with a very small amount of challenge foods on the first day, to check for any sign of a reaction to the small dose. Stop the challenge if you react to this small dose. If you don't react to the small dose, build up to the full recommended dose over the next day and continue until the challenge has been completed or until a reaction develops.

People with severe reactions that affect their breathing should be challenged under medical supervision, either in a hospital or doctor's surgery.

Take A Step-By-Step Approach

The following is just a suggested order in which to try food challenges, which works well for most people. However, you may have reasons to change the order, or you may wish to leave some challenges out altogether. Discuss this with your dietitian.

- If you have been avoiding wheat and milk, you may want to start by testing these first. If they don't cause a reaction, you can add them back to your daily diet before going on to the other challenges.
- The salicylate and amine challenges are very important and should be done early on, since they are found in a large range of nutritious foods such as fruits and vegetables.
- Individual additives can be tested according to the instructions on the next pages. However, there's not much point in testing an additive that is only found in foods that you don't normally eat. For example, if you never eat processed meats, there's not much point in testing nitrate preservatives.
- If you react to both salicylates and amines, and your symptoms are prolonged or severe, chances are you're highly sensitive. In this case you'll probably need to avoid most of the additives as well, and there's little benefit in testing them all one-by-one.
- If, from past experience, you are already very sure that you react badly to a particular food or additive, you may choose to avoid doing a challenge with that food or additive. For example, if you have bad reactions from chocolate, you may choose to test amines with other high amine foods but leave chocolate out of that challenge.
- If you react to wheat, it may be worth testing rye, barley and oats separately. Some people find that they tolerate these other grains, others do not.

Food challenges

Please note that the quantities outlined in the following tables are for adults and children over 8 years. Younger children should have at least half the adult dose if possible.

Milk and wheat challenges (only relevant if you have been avoiding milk and/or wheat)

<p>MILK</p> <p>Do this challenge for 6 days unless a reaction occurs.</p>	<p><u>For the first 3 days:</u> 2 to 3 cups of milk per day for 3 days</p> <p><u>For the next 3 days:</u> Keep using the milk but you could also add plain yoghurt, allowed brands of vanilla yoghurt and icecream, and block cream cheese or fresh cottage or ricotta cheese (unpreserved and uncoloured varieties - check with your dietitian)</p> <p><u>If you know or suspect that you have lactose intolerance</u> (which can cause gut symptoms such as bloating or diarrhoea), you can do the milk challenge with lactose-free milk e.g. Zymil, Liddell's or Harvey Fresh, and perhaps lactose-free plain yoghurt after 3 days</p> <p>Then, if you're not sure about lactose and want to test it out, switch to normal milk for another 3 days (stop if you react)</p> <p>If you are OK with this challenge, you can continue to use these milk products in your diet while you proceed with remaining challenges</p> <p>Outcome of milk challenge:</p>
<p>WHEAT (starting with simple wheat products and then progressing to unpreserved bread)</p> <p>Do this challenge for 6 days unless a reaction occurs.</p>	<p><u>For the first 3 days:</u> 1 cup plain cooked pasta (not coloured) per day Or 12 Carr's or Woolworth's home-brand water crackers per day (other brands may be OK but check for synthetic anti-oxidants)</p> <p><u>For the next 3 days:</u> If you are OK with the plain wheat challenge, progress by adding 4 slices of unpreserved bread (without vinegar or whey powder) e.g. Brumby's or Baker's Delight</p> <p>If you are ok with this challenge, you can continue to use unpreserved bread and other low chemical wheat products in your diet while you proceed with the rest of the challenges</p> <p>Outcome of wheat and bread challenge:</p>

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Salicylate and amine challenges

Children under 8 years should have at least half the adult dose if possible.

<p>SALICYLATE</p> <p>Do this challenge for 7 days unless a reaction occurs.</p> <p>Foods marked with an asterisk may not be suitable for people who malabsorb sugars such as fructose or sorbitol.</p>	<p>Each day, choose <u>at least 6 serves</u> from the list below. You can have more than 1 serve of the same food if desired.</p> <p>Fruit: 1 large granny smith or other sour apple* (with skin left on) 150g fresh or canned stone fruit* (eg. 3 apricots, 2 nectarines or 1 peach) ½ cup cooked rhubarb 1 very large slice watermelon* ¼ - ½ rockmelon 1 cup strawberries 150ml apple juice* (unpreserved - in pasteurised plastic bottles)</p> <p>Vegetables: 6 - 8 asparagus* 1 cup pumpkin ½ - 1 capsicum 1 large onion* 1 cup carrot 1 cup sweet potato ½ - 1 cucumber (with skin) 1 medium zucchini (with skin)</p> <p>Other: 1 tablespoon honey* 10 Lifesaver Pepp-o-mints or 20 Tic-Tac peppermints* (other brands may contain colouring) 1 teaspoon cinnamon or curry powder (or other herb or spice) 1 cup strong tea or peppermint tea</p> <p>Outcome of salicylate challenge: </p>
<p>AMINES</p> <p>Do this challenge for 7 days unless a reaction occurs.</p>	<p>2 or 3 large ripe bananas plus 60 - 120g milk-free chocolate e.g. Lindt or Whittaker's dark chocolate</p> <p><u>If you tolerate milk</u>, you could use milk chocolate instead of dark chocolate, and also include 60 -120 gm block cheddar cheese</p> <p><u>You can also include any of the following:</u> Cocoa powder or drinking chocolate Pawpaw Tinned sardines, tuna or salmon</p> <p>Outcome of amine challenge: </p>

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Food additive challenges

Discuss which additive challenges are appropriate for you with your dietitian.
 Figures in brackets refer to food additive code numbers found on food labels.
 Children under 8 years should have at least half the adult dose if possible.

**** After each challenge, wait another 3 days in case reactions are slow to develop. Only do the next challenge once you've had 3 consecutive symptom-free days (or back to baseline).**

<p>PROPIONATES (280-283)</p> <p>Do this challenge for 3 days unless a reaction occurs.</p> <p>Only do this challenge if you were OK with unpreserved bread.</p>	<p>4 crumpets that contain 282 (but not 200 or vinegar) e.g. Golden or Woolworths crumpets Or 4 slices plain bread/ rolls that contain 282 (but not 202 or vinegar) eg. Buttercup Country Split, Mighty Soft and Tip Top hot dog rolls, Bazaar yiros, pita and Lebanese breads</p> <p>Note: Bakery products may contain additive 234 (Nisin) - this is OK</p> <p><u>If you're on a gluten-free or wheat-free diet</u> Some brands of gluten-free bread contain added 282, so you may need or want to test these brands as a challenge</p> <p>Outcome of propionate challenge: </p>
<p>SORBATES (200-203)</p> <p>Do this challenge for 3 days unless a reaction occurs.</p>	<p><u>If you tolerate milk</u>, use: 2 Tbsp margarine preserved with sorbate e.g. Meadow-Lea lite, Weight watchers or Logicol (avoid brands that contain colour 160(b) Or 100g plain cottage, ricotta or cream cheese in tubs, containing 202 eg. Bulla, Dairy Farmers, Perfect Italiano, Philadelphia light Or 200gm Yoplait creamy original or creamy light vanilla yoghurt</p> <p><u>If you don't tolerate milk</u>, use Tablelands dairy-free spread or Sprite lemonade (check that it contains 202 and not another preservative)</p> <p>Outcome of sorbate challenge: </p>
<p>BENZOATES (210-213)</p> <p>Do this challenge for 3 days unless a reaction occurs.</p>	<p>1 litre of lemonade that contains 211 eg. Kirk's, Woodroffe's or Woolworth's home-brand</p> <p>Outcome of benzoate challenge: </p>

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<p>SULPHITES (220 - 228)</p> <p>Do this challenge for 3 days unless a reaction occurs.</p> <p>Foods marked with an asterisk may not be suitable for people who malabsorb sugars such as fructose or sorbitol.</p>	<p>100 gm preserved dried pears* or 100gm preserved dried apricots* or apples* (only if OK with salicylate) or Plain beef sausages with added sulphites but no herbs or spices</p> <p>Most high sulphite foods are also high in salicylate e.g. light-coloured dried fruit and wines</p> <p>Outcome of Sulphite challenge:</p>
<p>NITRITES / NITRATES (249 - 252)</p> <p>Do this challenge for 3 days unless a reaction occurs.</p> <p>If you react to amines, skip this challenge, as all processed meats are high in amines.</p> <p>Also skip this challenge if you never eat processed meats.</p>	<p>4 slices (120g) of ham or bacon preserved with nitrites/ nitrates e.g. Hans, Woolworth's and Primo bacon or Don, Hans or Primo ham.</p> <p>Notes: Some processed meats contain additive 316, sodium erythorbate (an ester of Vitamin C), which is usually O.K</p> <p>Be aware that many other brands or varieties contain other problem additives such as antioxidants, sorbates, sulphites, flavour enhancers, HVP, yeast extract, colours or spices</p> <p>Outcome of Nitrite/ Nitrate Challenge:</p>
<p>GLUTAMATES (620 – 625):</p> <p>Do this challenge for 3 days unless a reaction occurs</p> <p>Natural glutamate is mainly found in amine-rich foods. If you have reacted to Amines, you may want to skip this challenge</p> <p>Flavour enhancers 627, 631, 635 can also cause reactions</p>	<p><u>Option 1:</u> 1 tsp of pure MSG powder - mix ½ tsp into rice, soup or stew, twice a day</p> <p>Don't use MSG powder if you get severe reactions</p> <p><u>Option 2:</u> (if you tolerate milk and lactose) 50gm packet Thins or Smith's salt and vinegar crisps</p> <p><u>Option 3:</u> (if you tolerate amines): 4 tablespoons soy sauce, mixed into fried rice or meatballs</p> <p>Tamari soy sauce is a wheat-free soy sauce option</p> <p><u>Option 4:</u> To test glutamate and 635 (ribonucleotides) simultaneously, use Kettle or Tasty Jack's salt and vinegar crisps (contain traces of milk and gluten)</p> <p>Outcome of MSG challenge:</p>

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<p>SYNTHETIC ANTIOXIDANTS (310-312, 319, 320, 321)</p> <p>Do this challenge for 3 days unless a reaction occurs</p>	<p><u>Option 1:</u> 1 pkt Pataks ready-to-eat plain pappadums (contains 319)</p> <p><u>Option 2:</u> (if you tolerate milk): 3 Tbsp butter-blend with anti oxidant added e.g. Country Gold dairy blend/ softened butter (contains 320)</p> <p><u>Option 3:</u> (if you tolerate wheat): 12 Captain’s Table water crackers (contains 319)</p> <p>Outcome of antioxidant challenge:</p>
<p>ARTIFICIAL COLOURS (102, 107, 110, 122-129, 133, 142, 151, 155)</p> <p>Do this challenge for 3 days unless a reaction occurs</p>	<p><u>Option 1:</u> Queens assorted food colours (contain a trace of benzoate, which is probably insignificant)</p> <p>Add 10 drops to a glass of water and repeat 2 or 3 times per day, using a different colour each day (yellow contains 102 & 122, red contains 124 & 122 & blue contains 133)</p> <p><u>Option 2:</u> 1 - 2 Tbsp “100’s and 1,000s” cake toppings (these contain 102, 110, 122, 123, 124, and 133)</p> <p><u>Option 3:</u> (if you tolerate wheat) Custard powders that contain artificial yellow colours e.g. Foster Clark’s or Lion’s (contain 102 and 110)</p> <p>Outcome of colour challenge:</p>
<p>ANNATTO Natural colour 160b</p> <p>Do this challenge for 3 days unless a reaction occurs</p>	<p><u>If you tolerate milk,</u> use vanilla icecreams that contain 160 (b) e.g. Bulla, Cadbury, Golden North, or Peter’s Light & Creamy vanilla</p> <p><u>If you don’t tolerate milk,</u> use Soy Life vanilla crème yoghurt (contains inulin - may not be suitable for some people with bowel symptoms)</p> <p>Annatto can also be tested with some brands of oven-bake chips e.g. Birdseye (check with manufacturer about any unlisted antioxidants)</p> <p>Outcome of annatto challenge:</p>

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