Hereditary Fructose Intolerance (HFI) Recommended Diet Guide

The current and only treatment for HFI is the strict exclusion of fructose, sucrose and sorbitol from the diet. Abdominal pain and vomiting may occur if accidentally exposed to fructose. Hypoglycaemia (low blood sugars) may also develop after exposure to fructose.

Sources of Fructose

Fructose in the diet comes from fructose, sucrose and sorbitol. Another potential source of fructose is from industrially manufactured polyols. Polyols are sugar free, low energy bulk sweeteners which are used in many foods and medicines. The most widely used are sorbitol, mannitol and malitol which may be found in foods and medicines. The final source of fructose in the diet is oligofructose (found in some syrups) which should also be avoided.

Fructose is the natural sugar present in fruit, vegetables and honey. Sucrose is found in fruit and vegetables but a much greater source is from sugar cane or beet (used to produce table sugar). Sugar is a major ingredient in cakes, ice creams, lollies but is also found in less obvious manufactured foods such as sauces, tinned meats, stock cubes, savoury snack biscuits etc. Sorbitol is a sweetener commonly used in sugar free products and in some sugar free medications. Please also remember to check toothpastes and chewing gum for sources of sorbitol.

Sugars that can be used in the Diet

Starch, glucose and lactose can be included in the diet. Glucose may be used as an alternative sweetener to table sugar. Although, most people with HFI have a strong aversion to sweet foods so adding a sweetener is normally not necessary.

Possible Nutritional Problems

When cutting out sources of fruit and vegetables from the diet you may be at risk of vitamin C and possibly folic acid deficiency. Lack of dietary fibre may also become problematic and this may be addressed by including some pulses and oats in the diet, or introducing ¼ teaspoon of Psyllium husks added to e.g. milk or yoghurt, daily

FOODS ALLOWED	FOODS TO AVOID
SUGARS, SWEETENERS, PRESERVES	**SUGARS, SWEETENERS, PRESERVES TO AVOID**
Glucose, glucose polymers, glucose syrup Dextrose, lactose, starch, maltose, Maltodextrin, malt extract, glycerol, saccharin, aspartame, acesulfame K, sucralose (E955) Polyols: erythritol, xylitol, lactitol	Sugar or sucrose (cane or beet) - including white, brown, caster, icing sugars. Fruit sugar, fructose, laevulose, honey, treacle, molasses. Polyols: sorbitol, maltitol, mannitol, lycasin, isomalt. Golden syrup, corn syrup, invert syrup, high fructose or isoglucose syrups, honey, hydrogenated glucose syrup, maple syrup, jam, marmalade, Lemon curd
FRUIT ALLOWED	**FRUIT TO AVOID**
Avocado, olives, rhubarb (occasionally)	All other fruit
VEGETABLES ALLOWED **** Cooked veg preferred over raw**	**VEGETABLES TO AVOID**
Total daily fructose intake from vegetables should not exceed 1.0-1.5g/day Seaweed, vine leaves allowed freely **Group 1 – Potatoes (old) *1 portion = approximately 0.3g fructose* Boiled – 2 small egg size (100g) Packet (flesh only) – 1 medium (100g) Mashed – 2 tablespoons (100g) Roast potatoes – 2 small (100g) Chips – medium portion (120g) Plain crisps – 2 small packets	Beans (green, French, runner beans), Beetroot, Brussels sprouts, capsicum, carrots, cauliflower, gherkins, okra, onion, garlic (can be tolerated by some HFI'ers in small amounts), kohl rabi, parsnip, peas, pepper, plantain, pumpkin, shallots, spring onion, squash, swede, sweet corn, sweet potato, tomato, tomato puree Baked beans, tinned vegetables with added sugar, Mayonnaise or salad cream, coleslaw. Or any pre made salads eg pasta or potato salads

• Potato waffles (1) • Potato croquettes (2) (Check to ensure does not contain sugar) **Group 2 – Veg containing <0.5g fructose/100g** *1 portion = approx. 0.15g fructose where a small portion is 1 tablespoon (30g) unless indicated otherwise* Celery Globe artichokes (1 globe, 50g)** Mushrooms Sauerkraut Spinach* Watercress (1/2 bunch) Beans: haricot, mung, red kidney Dried split peas Lentils ** *Some HFI'ers have reported experiencing issues after ingesting artichokes* **Remove stems. Eat leaves only.* **Group 3 – veg containing 0.5-1g fructose/100g** *1 portion = approximately 0.3g fructose where a small portion is 1 tablespoon (30g) unless indicated otherwise)* Eggplant – 1 slice (30g) Asparagus – 2 spears (50g) Bean sprouts Broccoli – 1 spear (50g)* Cabbage Cucumber – 8 thin slices (40g) Fennel – (45g) Jerusalem artichoke – (40g) ** Celeriac (35g) Leeks – ¼ medium (30g) Lettuce – 4 small leaves (25g) New potato – 1 small (50g) Radish (red) x 4 (40g) Spring greens Turnip	Flavoured crisps / chips Pickles, chutney

Beans- black eye, broad, butterbean, soya Chickpeas *** Some HFI'ers have reported experiencing issues after ingesting artichokes* **Remove the stalks. Eat the floret only.*	
MILK & MILK PRODUCTS ALLOWED	**MILK & MILK PRODUCTS TO AVOID**
Infant formula and follow-on milk (check there is no added sucrose, fructose or honey) Cow's milk, unsweetened evaporated milk Coffee mate, dried milk powder (unsweetened) Cream Cheese, plain cottage cheese Natural yoghurt	Flavoured milk, condensed milk milkshake powders and syrups Liquid soya milk Aerosol cream Cheese with added ingredients, e.g., fruit, nuts Fruit and flavoured yoghurt, fromage frais Ice cream, sorbet
EGGS	**EGGS TO AVOID**
Allowed freely	Meringue Egg cooked into cakes, pancakes with sugar etc.
MEAT & POULTRY ALLOWED	**MEAT & POULTRY TO AVOID**
All fresh meat and poultry Processed meat products (check there is no added sucrose, fructose or honey)* *Check that any processed meats or fish haven't been 'cured' in sugar. Eg bacon, prosciutto or smoked salmon	Processed meats with added sucrose, e.g., meat pasties, meat pastes, pate, sausages/frankfurts, salami, tinned meat Tender sweet meats, e.g. ham, honey cured meats Ready-made meat meals (possible sources of fructose are gravies, sauces, vegetables, breadcrumbs, batter, pastry)
MEAT SUBSTITUTES ALLOWED	**MEAT SUBSTITUTES TO AVOID**

Soya products, tofu, Quorn	Ready-made meals with these products may contain sucrose
FISH ALLOWED	**FISH TO AVOID**
Fresh and frozen fish Shellfish Fish tinned in brine, oil or water	Fish tinned in tomato paste Fish paste Fish cakes, fish fingers Ready-made fish meals (possible fructose sources are vegetables, breadcrumbs, batter, pastry)
FLOUR & CEREALS ALLOWED	**FLOUR & CEREALS TO AVOID**
Flour (white in preference to wholemeal) Buckwheat, cornflour, custard powder, Sago, semolina, tapioca, oatmeal, barley Flaky pastry, filo pastry, shortcrust pastry (not sweetened)	Bran, wheat germ Dessert pastry
PASTA & RICE ALLOWED	**PASTA & RICE TO AVOID**
Spaghetti, macaroni, other pasta (white preferable over wholemeal) Noodles, egg noodles Rice (white in preference to brown)* **Sushi rice is often cooked with added sugar. Ask your local supplier before consuming*.	Pasta tinned in tomato sauce Pot/Minute Noodles, Tri-colour pasta

BREAKFAST CEREALS	**BREAKFAST CEREALS TO AVOID**
Porridge, puffed wheat, puffed rice, shredded wheat, 100% corn cornflakes.	Most manufactured breakfast cereals
BREAD & CRACKERS	**BREAD & CRACKERS TO AVOID**
White bread (prepacked), tortilla wraps Bakery bread (check if sugar added) Cream crackers, water crackers, matzo crackers, original ryvita, plain rice cakes, crumpets (check ingredients, not all suitable) **Grains and high carb products – can be sensitive for some HFI'ers. Ingesting these foods can sometimes result in a hypoglycaemic reaction afterwards. There are currently further investigations being undertaken in regard to polyol pathways.*	Wholemeal/grain bread, Fruit bread, sweetened bread eg malt bread, soda bread, brioche, pain au chocolat & croissants Savoury snack biscuits, corn bread
CAKES, BISCUITS & PASTRIES ALLOWED	**CAKES, BISCUITS & PASTRIES TO AVOID**
Home-made using permitted ingredients and sweeteners	All cakes, muffins, pancakes, waffles, biscuits and pastries
DESERTS ALLOWED	**DESERTS TO AVOID**
Home-made using permitted ingredients e.g. custard sweetened with glucose, choux pastry	Most desserts, e.g. jelly, meringue, mousse, gateaux, fruit pie or crumble, yoghurt, ice cream, sorbet, ice blocks, sweeties or lollies
FATS & OILS ALLOWED	**FATS & OILS TO AVOID**

Butter, margarine, vegetable oils (including olive oil), lard, suet	
DRINKS ALLOWED	**DRINKS TO AVOID**
Soda water, mineral water (not fruit flavoured) Squashes and fizzy drinks flavoured with saccharin or aspartame only (free from sugar, sorbitol, fruit flavourings or concentrate fruits) Tea, coffee, cocoa, herbal teas (no sugar) Lucozade Original (not fruit flavoured)	Fruit juices, vegetable juices, fruit squash, fizzy drinks, diabetic squash containing sorbitol or fructose, tonic water, fruit ice, slush puppies Drinking chocolate, malted drinks Instant tea mixes, coffee essence Fruit teas
CONFECTIONARY ALLOWED	**CONFECTIONARY TO AVOID**
Lucozade Sport Glucose Energy tablets – original Dextro energy – dextrose and maltodextrin Glucotabs (BBI healthcare) **Some sweets are available that are only made with Glucose OR maltodextrin. Eg Rockets (Smarties in the US) but are **NOT** safe in the UK*	Sweets, chocolate, toffee, jelly, ice blocks, chewing gum, diabetic sweets (sweetened with fructose or sorbitol) Flavoured glucose tablets
GRAVIES, SAUCES & SOUPS ALLOWED	**GRAVIES, SAUCES & SOUPS TO AVOID**
Vegemite (Marmite, Bovril) White or cheese sauce made with milk, flour, fat and cheese only Homemade gravies made without sugar or vegetables	Gravy granules, stock cubes Bottled sauces and dressings e.g. tomato ketchup, horseradish sauce, mint sauce, soy sauce, Sauce mixes, e.g. sweet and sour, curry Mayonnaise, salad cream or bottled dressings eg Caesar All soups (packet, tinned or fresh)
HERBS, SPICES, NUTS & SEEDS ALLOWED	**HERBS, SPICES, NUTS & SEEDS TO AVOID**

Pure herbs, mustard and spices, salt, pepper Sesame seeds Pumpkin and sunflower seeds (maximum 10g/day)	Nuts, peanut butter, marzipan
BAKING PRODUCTS ALLOWED	**BAKING PRODUCTS TO AVOID**
Baking powder, bicarbonate of soda, yeast, arrowroot, food colourings, food essences, gelatine	Check ingredients of food essences.
ALCOHOL ALLOWED (ADULTS ONLY)	**ALCOHOL TO AVOID (ADULTS ONLY)**
Beer – bitter, lager, mild, pale ale, stout (Guinness), strong ale/barley wine *Note: sucrose or fructose may be added to bottled, canned or keg beers to adjust the sweetness of the final product* **Sucrose is usually added to cask conditioned beers (sometimes referred to as 'real' beers) to generate secondary fermentation within the container* Wine – red only Spirits **Although lime/lemon is low in fructose, adding too much to a drink can result in a hypoglycaemic reaction for some sensitive HFI'ers*	Low alcohol bitter, alcohol free/low alcohol lager, shandy, fruit beers Cider Wine – champagne, mulled wine, rose, white fortified wines – port, sherry, tonic wine, vermouth Liqueurs Alcopops

DISCLAIMER - The information provided in this guide is for general educational and supportive purposes only and is not intended to replace professional medical advice, diagnosis, or treatment. Hereditary Fructose Intolerance (HFI) is a rare metabolic condition that involves the strict exclusion of Fructose, Sucrose and Sorbitol from the diet. This guide has been compiled by people diagnosed and living with HFI, along with Endocrinologists and Dieticians. Always seek the guidance of your chosen healthcare professional, such as a metabolic specialist, endocrinologist or dietitian, before making any changes to your or your child's diet. HFI Support UK, www.hfisupport.org.uk and its contributors do not accept liability for any loss, damage, or injury caused by reliance on the information provided.