

Diet in Inflammatory Bowel Disease (IBD)

Introduction

The term inflammatory bowel disease (IBD) is used to describe chronic conditions that cause inflammation of the digestive system. The two major types of IBD are **Crohn's Disease** and **Ulcerative Colitis**. The cause of these conditions is still unknown; however the environment, genes and the gut bacteria are thought to be involved.

Ulcerative Colitis is a chronic inflammatory condition that can affect any part of the large bowel. The inflammation only involves the lining of the bowel.

Crohn's disease involves chronic inflammation of any part of the digestive system from the mouth to the anus. It can involve the full thickness of the bowel wall.

Both conditions can cause pain, nausea, fever and diarrhoea. These symptoms can cause loss of appetite, reduced dietary intake and poor nutrition.

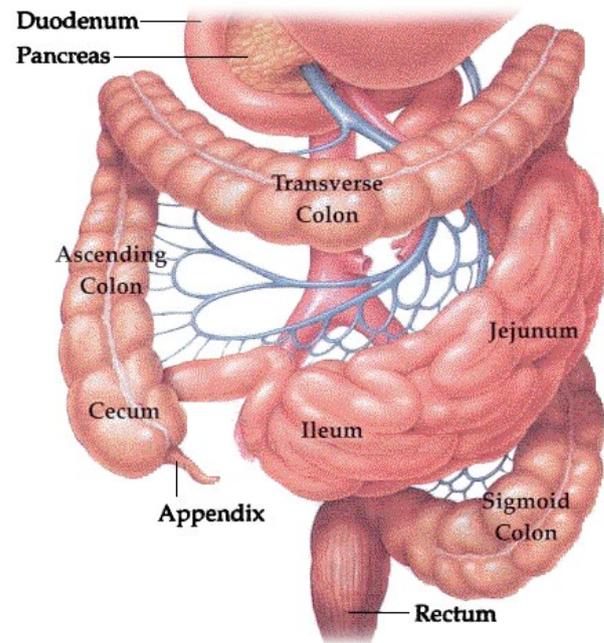
Symptoms and severity vary from person to person and may flare or improve over time (remission).

Nutrition plays an important role in the management of IBD and referral to a specialist Dietitian may be recommended to ensure your diet is nutritionally adequate during periods of flare and remission.

1. What are general dietary recommendations for people with IBD?

It is recommended that patients with IBD follow a healthy and balanced diet to:

- Maintain weight¹ being careful not to become overweight or obese



- Promote normal growth and development in children
- Periods of remission are good times to make up for inadequate nutrient intake during flares. Low nutrient intake during a flare may result from increased nutritional needs or symptoms that reduce oral intake (poor appetite, abdominal pain, nausea and/or vomiting).

Excluding certain foods can cause deficiencies in energy, protein, vitamins and minerals.

There is no reason to restrict any specific food group or nutrient unless advised to do so by your dietitian or doctor.

1. If you have had significant weight loss or are underweight and trying to regain weight, you should be on a high energy, high protein diet.

Australian Guide to Healthy Eating

Enjoy a wide variety of nutritious foods from these five food groups every day.

Drink plenty of water.

Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties



Use small amounts



Only sometimes and in small amounts



The Australian Guide to Healthy Eating (AGHE)

To follow a healthy and balanced diet, make sure you include foods from each of the food groups. Eating a variety of foods across all food groups will help you get adequate nutrients.

Please see following information for healthy eating advice or refer to the website:

<https://www.eatforhealth.gov.au/guidelines/australian-guide-healthy-eating>

Information based on material provided by the National Health and Medical Research Council.

Grain (cereal) foods, mostly wholegrain and/or high cereal fibre

- Bread, rice, pasta, noodles, breakfast cereals, couscous, polenta, porridge, cracker biscuits, muffins and crumpets.
- Rich in carbohydrate, B-vitamins, iron, zinc and folate
- Choose wholegrain varieties unless told otherwise by your Dietitian or Doctor.

Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans

- Red meat, poultry, fish, eggs, tofu, nuts and legumes.
- Provide protein, iron, zinc, niacin and vitamin B12.

Milk, yoghurt, cheese and/or alternatives

- Milk (fresh, powder, evaporated, long-life), yoghurt, custard and cheese.
- Provide calcium, protein, zinc, riboflavin and vitamin B12.
- Choose low fat varieties unless you need to gain weight.

Fruit

- Fresh fruit, dried fruit, canned fruit and fruit juice.
- Rich in carbohydrate, fibre, vitamin A, C & B6, folate and magnesium.

Vegetables and legumes/beans

- Fresh, frozen or tinned vegetables, beans, lentils, dried peas, chick peas.
- Rich in vitamin A, C & K, folate, fibre and anti-oxidants.

Unsaturated fats & oils

- You should include small amounts of poly- and mono-unsaturated fats such as oils and margarines in small amounts.
- These foods are rich in essential fatty acids and vitamin E.
- They also improve absorption of fat soluble vitamins (vitamins A, D, K).

Water

- Drink plenty of water.

Only sometimes and in small amounts

- This food group also includes other foods high in sugar and/or fat, e.g. butter, dripping, ghee, soft drinks, lollies, honey, jam, biscuits, cakes, crisps, pies, pasties and chocolate. These foods are helpful if you need to gain weight, but should otherwise be eaten in moderation.

Serve Sizes

Vegetables and legumes/beans

	Serves per day		
	19-50 years	51-70 years	70+ years
Men	6	5½	5
Women	5	5	5

Fruit

	Serves per day		
	19-50 years	51-70 years	70+ years
Men	2	2	2
Women	2	2	2

Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties

	Serves per day		
	19-50 years	51-70 years	70+ years
Men	6	6	4½
Women	6	4	3

Lean meat and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans

	Serves per day		
	19-50 years	51-70 years	70+ years
Men	3	2½	2½
Women	2½	2	2

Milk, yoghurt, cheese and/or alternatives, mostly reduced fat

	Serves per day		
	19-50 years	51-70 years	70+ years
Men	2½	2½	3½
Women	2½	4	4

Source: National Health and Medical Research Council
https://www.eatforhealth.gov.au/sites/default/files/files/the_guidelines/n55g_adult_brochure.pdf

1. What dietary recommendations are useful during a flare of IBD?

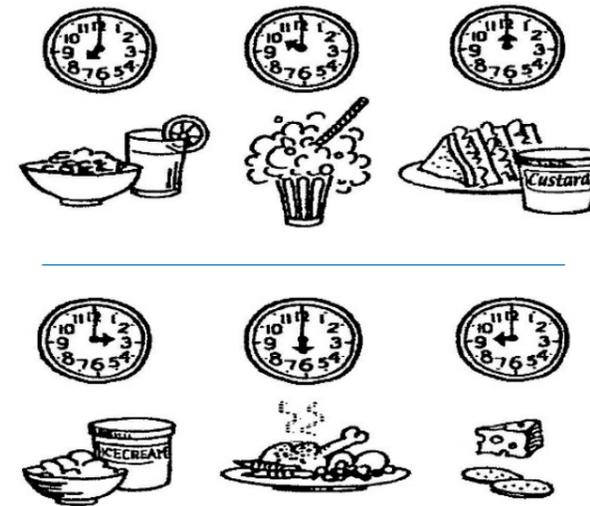
During your life you will have times when your IBD may flare (e.g. causing diarrhoea and pain) and times when you stay in remission (i.e. no symptoms).

During flares of disease activity weight loss is common due to decreased appetite and increased nutrient needs. Weight loss can be reduced or avoided by eating a diet higher in protein and energy (calories or kilojoules).

a). High energy high protein diet

During a flare of IBD you need extra energy, protein, vitamins and minerals in your diet. Protein is especially important as protein can be lost through the wall of your gut.

To ensure that you stay well-nourished, you may find it easier to manage 6 smaller frequent meals or snacks during the day.



How to make your food more nourishing

Eat high protein foods:

- Protein-rich foods include **meat, fish, chicken, eggs, and dairy foods.**
- Add **diced/minced meat** to soup, pasta sauces, shepherd's pie, rice and noodle dishes.
- Make mornays with tuna/salmon, full cream milk and add cheese and/or egg.

- Use **eggs** for a simple nourishing meal as an omelette, scrambled, poached, fried or boiled.
- Use **full cream milk** in soups, with cereals or as a nourishing drink.
- Add grated **cheese** to baked beans, mornays, sauces, vegetables, grilled cheese on toast.
- Add **skim milk powder** to full cream milk (two tablespoons of powder in 200mls milk). This makes high protein milk that can be used on cereal or to make custard.
- Use **condensed milk** to make desserts.

Have nourishing drinks

Getting enough fluid is important. Aim for about 2000mls each day.

Whenever possible, try to make these drinks nourishing (e.g. milk or fruit juice). Avoid filling up on low calorie drinks such as tea, coffee, diet drinks, and water.

Milk can be fortified with skim milk powder to boost its energy and protein content. A jug can be made up and stored in the fridge, so it is ready to be used at any time when you would normally use milk.

Fortified milk recipes

- 1 Litre Full Cream Milk
- 1 cup Skim Milk Powder
- Whisk ingredients together and store in fridge.

Other nourishing drink ideas:

Milkshake

- 1 cup fortified milk
- 1 scoop ice-cream
- Topping of choice
- Blend ingredients together.
- Add cream if desired.

Banana Smoothie

- 1 cup fortified milk
- 1 small banana (or other soft fruit)
- 1 scoop ice-cream
- Honey or sugar to taste
- Blend together.

Fruit Lassi

½ cup fruit juice
½ cup yoghurt
2 teaspoons honey
Blend together.

High Energy Milo/Coffee

1 cup fortified milk
2 teaspoons Milo or 1 tsp coffee
2 scoops powdered supplement
1 scoop ice-cream
Blend together. Serve hot or cold.

Fruit Flip

½ cup fruit juice
¼ cup tinned fruit
2 teaspoons sugar
Blend together.

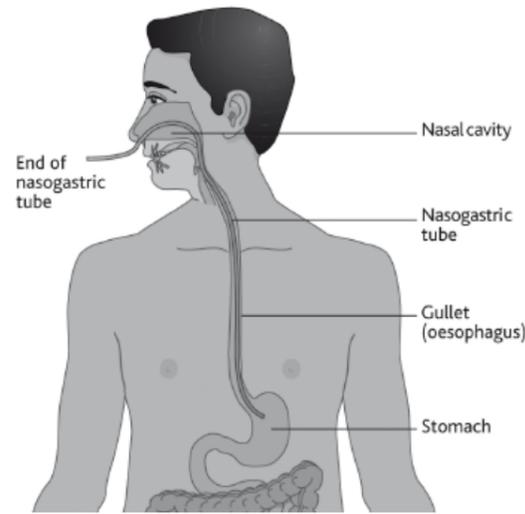
b). Oral Nutritional Supplements

During a flare you may eat less because of nausea, pain, diarrhoea, bloating or poor appetite. Because of these symptoms, plus your increased nutritional needs, your dietitian may suggest the use of oral nutritional supplements. These include a range of drinks based on milk, soy, or juice (e.g. Sustagen, Ensure, Fortisip, and Resource). These supplements are high in protein, energy and have added vitamins and minerals. It is important that you discuss the use of these products with your dietitian. They can help you use them correctly.

In some cases, a trial of avoiding solid food may be recommended, to reduce inflammation and avoid the need for large doses of steroids. These types of oral nutritional supplements can play an important role during such times.

c). Enteral Feeding

If your IBD is severe, you may need to be fed via a feeding tube (enteral feeding). This might happen if you have had surgery, if you are underweight or your nutrition needs to be improved before surgery or if the inflammation is so severe that you are unable to eat enough. Your doctor will insert a fine tube through your nose into your gut. Specialised liquid formula is then given to you through the tube. The formula used in enteral feeding is easier for your gut to digest and absorb, compared to solid food. This is less likely to aggravate your bowel and may promote recovery.



d). What about fibre intake during an IBD flare?

In some instances, particularly during active disease, the bowel can become narrowed due to a stricture or active inflammation. When the bowel is narrowed, foods that are high in fibre have the potential to cause bowel 'blockage' or obstruction. Your doctor or dietitian may tell you to consume a low fibre or 'low residue' diet in this case. Below is a food guide that provides a useful list of low and high fibre foods for guidance.

Some doctors and dietitians advise all patients to consume a low fibre diet during an IBD flare, whether they have a bowel narrowing or not. The rationale is that foods that are high in fibre have the potential to cause pain and worsen symptoms during a flare of IBD, although there is no hard evidence to support this approach.

It is important to seek advice from your dietitian or doctor as to whether a low fibre diet may be beneficial for you during a flare. There is no evidence to suggest that consuming a low-fibre diet in the long term is good for patients with IBD.

Low-fibre foods

Breads and Cereals (5 serves/day)

White bread, white crumpets
Plain muffins (e.g. white English)
Refined breakfast cereals e.g. Rice Bubbles, Cornflakes
Semolina
Plain biscuits e.g. Jatz, Milk arrowroot
White rice, sago, tapioca
White pasta/noodles, tinned spaghetti
Corn flour, white flour

Fruit (1-2 serves/day)

Tinned and peeled fruit (no pineapple or prunes)
Apple, avocado, banana, mango, pear, honeydew melon, rockmelon
Watermelon (seedless, fresh)

Vegetables (No more than 4 serves/day) WELL COOKED

Asparagus (tips only), beetroot, carrots (peeled)
Cauliflower (flower/tip only)
Onion (small amounts in recipes)
Boiled/mashed potato/sweet potato (no skin)
Pumpkin, swede, squash, trombone
Tomato tinned/fresh/puree (if peeled and skins removed)

Meat/fish/poultry/eggs (1-2 serves/day)

Beef, veal, lamb, pork, fish, chicken, turkey, eggs, tofu

Dairy products (3 serves/day)

Milk, yoghurt, cheese, custard, ice cream, cream

Fats and oils (in moderation)

Butter, margarine, oil, cream, salad dressing, mayonnaise

Beverages

Milk/ soy milk/Actavite/ Milo
Strained fruit juice
Cordial, soft drinks, water, tea, coffee

Miscellaneous

Honey, golden syrup, Vegemite
Sugar, boiled sweets, toffees, caramels, marshmallows, plain chocolate
Plain sauces /gravies, mayonnaise
Pretzels, potato chips
Milk puddings/ jelly or gelatine desserts
Plain cakes/scones/ puddings, donuts, sweet biscuits

Supplements

Sustagen (without fibre), Ensure, Enlive, Resource, Polyjoule, Promod

High-fibre foods to avoid

Whole grains and seeds

Wholegrain/wholemeal/fruit bread/muffins
Wholegrain cereals e.g. Weetbix, muesli, Just Right, All Bran, Sultana Bran
Porridge, bran
Wholemeal/wholegrain/fruit biscuits
Brown rice, barley
Wholemeal pasta
Wholemeal flour/polenta flour

Skins, stalks, seeds, stones, piths

Dried fruit
Citrus (mandarin, orange, lemon, grapefruit)
Berry (raspberry, strawberry, cherries)
Stone fruit (apricots, plums, peach, nectarine)
Pineapple, grapes, figs, kiwifruit, passionfruit, rhubarb

All stalks, skin and stones

Raw/salad vegetables- capsicum, celery, cucumber, tomatoes (whole)
Cooked vegetables - beans, broccoli, brussel sprouts, cabbage, mushrooms, lentils, pulses, parsnip, peas (including green/dried), radish silverbeet, spinach, sweetcorn, turnip, cabbage, broccoli, eggplant, zucchini
Olives

Pies, pasties, pizza, quiche, spinach rolls

Gristle, rind or skin on meat products

Yoghurt/cheese containing fruit or nuts/seeds

None specifically excluded.

Vegetable juices

Unstrained fruit juices

Jam, marmalade

Licorice, chocolate, cakes, biscuits with dried fruit/nuts/coconut

Nuts, coconut, peanut paste, plain jubes,

Popcorn, corn chips, seeds (e.g. pumpkin, sunflower/ sesame)

Any fibre supplements e.g. Metamucil, Fibrogel, Benefibre, Ezy-fibre, psyllium and wheat germ

3. Are there any other useful dietary therapies for IBD?

Beyond a healthy and balanced diet, there is only a small amount of evidence on the role of dietary therapy in IBD. People with IBD may be at risk of nutritional deficiencies, especially when their disease is active.

Iron deficiency is common amongst people with IBD and can lead to anaemia, fatigue, and a diminished sense of general well-being. It is important to eat iron-rich foods at least 3-4 times per week. Foods that are excellent sources of iron are lean red meat (beef, lamb, kangaroo, and liver), and to a lesser extent green leafy vegetables (spinach), nuts and beans. Iron is best absorbed from food when eaten with vitamin C rich foods such as berries, citrus fruits, tomatoes, capsicum and broccoli.

The role of diet as a specific form of therapy in IBD is an active area of research and it is expected that more interesting information is on the horizon. We do not recommend that alternative or internet-based dietary advice be followed without the input of your doctor or dietitian, as many of these diets may put you at risk of nutritional deficiencies.

Are there any useful supplements for IBD?

a). Prebiotics & Probiotics

Gut microbes seem to play an important role in triggering & maintaining IBD. There are changes in the diversity and composition of the gut microbiota in the setting of IBD, with a potential abundance of harmful microbes and a lack of protective microbes.

Prebiotics are non-digestible food ingredients that stimulate growth and activity of bacteria in the colon. Food sources include partly milled grains and seeds, potatoes, bananas, cornflakes, inulin, psyllium and bran.

Probiotics are living microorganisms that are taken orally and will enter the colon and maintain or increase numbers of healthy bacteria.

Pre- and probiotics have been proposed as a valuable addition to traditional treatments for IBD to modulate gut microbiota. There is a small amount of evidence to support the use of probiotics to maintain remission in mild ulcerative colitis. There is also some evidence to suggest

that a particular probiotic, called VSL#3, may be useful to prevent against pouchitis in people who have undergone ileo-anal pouch surgery. There is no evidence for either pre- or probiotic therapy in Crohn's disease.

The routine use of pre- or probiotics in IBD is not recommended at present. There is insufficient evidence to justify the expense of this therapy, and the preparations vary widely which makes appropriate choices difficult. There is further research underway in this area and we expect the development of complex supplements to modulate the gut microbiota in the future.

b). Fish oil (omega-3 fatty acids)

There is a small amount of evidence to suggest a benefit to using Omega-3 (fish oil) supplements in both treating active IBD as well as maintaining remission of IBD. However, the available data is weak and there are other trials showing no benefit to fish oil supplements. Nonetheless, as some studies have shown favourable outcomes using omega-3 fats, and no studies have shown any adverse outcomes, there seems to be no harm in trialling fish oil in addition to standard therapies as a treatment or preventative agent. Doses used in clinical trials have generally been between 3-4g/day of EPA & DHA. This is equal to 10-15 standard 1000mg fish oil capsules per day or 5-15ml of fish oil liquid (check labels for EPA & DHA content).

c). Vitamin D therapy

There is some evidence to suggest that patients with adequate serum levels of vitamin D may have better IBD disease control and fewer complications of their disease. Adequate levels of vitamin D (along with calcium) are also essential for bone health. Many foods contain vitamin D including oily fish, eggs, and vitamin D fortified products (margarine, dairy). However, the main source of Vitamin D is produced by the body when the skin is exposed to sunlight, and vitamin D levels are therefore likely to be lower during the winter months. A blood test to check vitamin D levels is part of routine care of people with IBD and you should follow-up this up with your doctor to ensure that your levels have been checked and are adequate.

d). Curcumin

Curcumin, a substance in turmeric, has anti-inflammatory and antioxidant properties, and has been used to treat joint pain and inflammation. There is some evidence to suggest that curcumin supplementation, in addition to standard therapy, may have some benefit in treating active inflammation in ulcerative colitis. The dose of curcumin used in studies has been around 3g per day. There are no reported side-effects reported with the use of curcumin supplements. If you are considering taking curcumin then it is worth speaking to your doctor to check whether this is a worthwhile in your particular case.

4. Can dietary therapies be used for irritable bowel syndrome (IBS) symptoms in people with IBD?

IBS is a functional gastrointestinal disorder (FGID) that is characterised by gastrointestinal symptoms that are not explained by active inflammation or other disorders. It is thought to be due to overly sensitive gut nerves, which sometimes occurs as a consequence of prior infection or inflammation. The symptoms can include; abdominal pain or discomfort, bloating and distension, an altered bowel habit (constipation/diarrhoea), and/or flatulence.

IBS therefore can occur in people with IBD, and can be a cause for symptoms when IBD is not active and the inflammation is healed. If you are getting worsening symptoms, it is worth letting your doctor know as it is important to ensure that the symptoms are not due to inflammation or a blockage of the bowel. If these explanations are excluded then it may be appropriate for you to trial a low FODMAP diet as it is one of the best treatments for IBS.

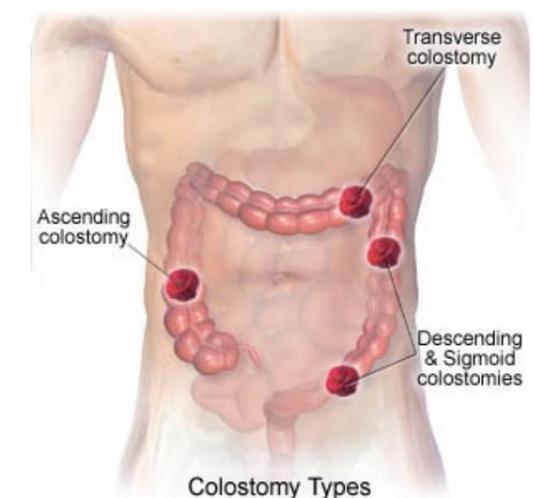
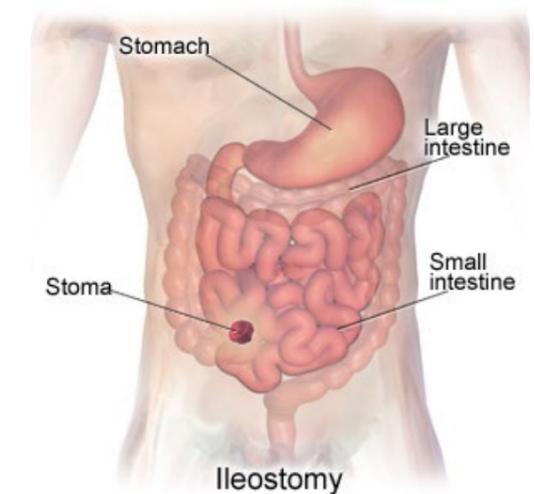
FODMAP's are a group of dietary sugars (Fermentable Oligo-saccharides, Di-saccharides, Mono-saccharides, and Polyols) which are poorly absorbed in the intestine, leading to rapid fermentation and gas production by gut microbes, thereby contributing to the symptoms of IBS. Implementing a low FODMAP diet must be guided by an experienced and accredited dietitian, as the diet can be restrictive and is not designed to be followed long term.

More information on IBS and the low FODMAP diet can be found on the Gastroenterological Society of Australia (GESA) website.

5. Are there particular dietary recommendations for people with a stoma?

Some people with IBD need surgery to remove the affected part of their bowel. This surgery commonly results in a stoma. A stoma is an opening that connects part of the bowel to the outside of the body. This means that the bowel content is "re-routed" to exit through the stoma on the outside of the abdomen. Colostomies and ileostomies are the most common types of stomas.

Apart from maintaining a healthy weight and eating a balanced diet, there is no special diet for people with a colostomy or ileostomy. Your Dietitian or Stomal Therapist can give you written information on diet and stomas.



Further information:

- Gastroenterological Society of Australia (GESA) (www.gesa.org.au)
- Crohn's and Colitis Australia (www.crohnsandcolitis.com.au)
- Dietetics Association of Australia (DAA) (<http://daa.asn.au/>)

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