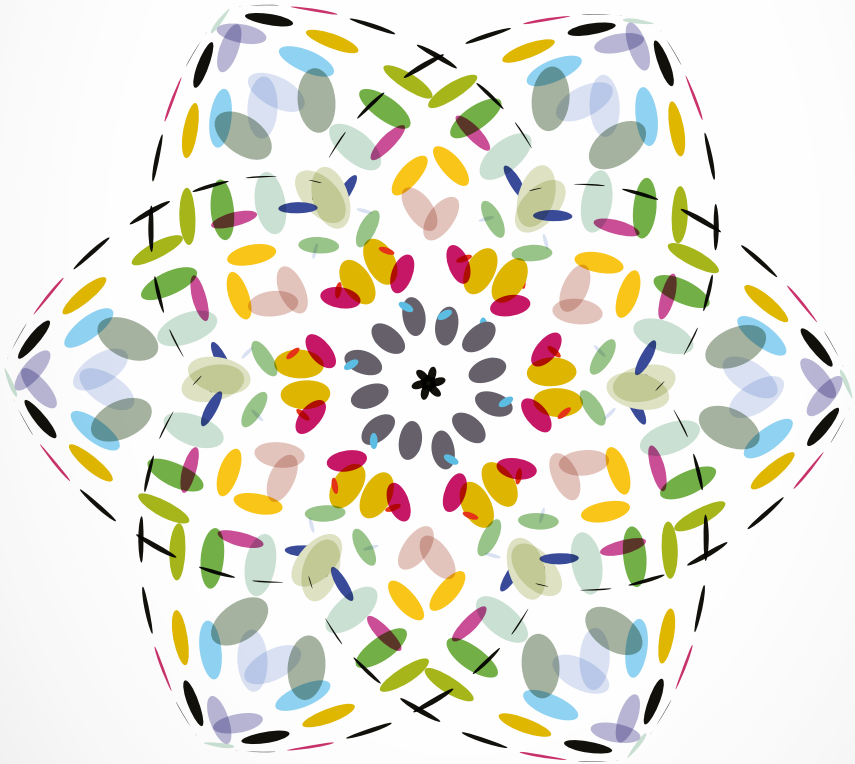




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# CYTOPLAN

THE HEALTH INFORMATION SERIES



# Irritable Bowel Syndrome

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## Irritable Bowel Syndrome

Irritable Bowel Syndrome (IBS) is a common condition, described as a functional disorder affecting a wide age range of men and women, including young adults. IBS is twice as common in women. The cause is unknown, although onset can sometimes be traced to infections of the gastro-intestinal tract. Many clients and practitioners also note that the onset of symptoms can be linked to life events or periods of stress; IBS symptoms are frequently seen to increase during periods of stress and anxiety.

The medical approach to the condition focuses on symptom relief, with prescription drugs to reduce pain and intestinal spasms, anti-diarrhoea preparations, laxatives for constipation, and anti-depressants. The latter is controversial, IBS sufferers confirm that the symptoms of their condition lead to low mood and an increase in anxiety, few appear to consider the IBS a result of depression, although medication seems to benefit symptoms for some.

IBS should not be confused with IBD, which refers to inflammatory bowel disease which includes conditions such as ulcerative colitis and Crohn's disease.

**Ulcerative colitis** - In this condition, small ulcers and inflammation develop on the inside lining of the colon and sometimes the rectum, with symptoms of urgent and bloody diarrhoea, pain and continual tiredness. When symptoms are located only in the rectum, this is referred to as proctitis.

**Crohn's disease** - Inflammation, deep ulcers and scarring to the wall of the intestine. This often occurs in patches, affecting anywhere along the gastro-intestinal tract from the mouth to the anus. The areas most commonly affected are the small intestine and colon. The main symptoms are abdominal pain, urgent diarrhoea, tiredness and weight loss.

The inflammatory nature of both of these conditions can, in some, cause symptoms of inflammation in the joints, skin and eyes. An additional condition included within IBD is the less familiar microscopic colitis, usually considered less severe than ulcerative colitis and Crohn's disease.

# Symptoms of Irritable Bowel Syndrome

## Intermittent pain

Frequently described as colicky, or spasms of pain, may occur in different parts of the abdomen, this pain may ease after the passage of wind or a stool. Bloating and general discomfort in the abdomen are common, which can unfortunately be aggravated by some medications used during treatment. Nausea and loss of appetite may also be present.

## Diarrhoea

For some, the symptoms of irritable bowel are diarrhoea requiring frequent, urgent visits to the toilet. This may be more severe in the mornings after waking, after eating or drinking, or during stressful and anxious moments.

## Constipation

Presents a different side to IBS. A frequent sensation is one of needing the toilet, yet unable to pass a stool, or a sense of incompleteness during a toilet visit.

## Alternation

IBS sufferers frequently experience alternate constipation and diarrhoea. Mucus may be mixed with the stool, and stools may become small and pellet like or watery.

## Diagnosis

Diagnosis is usually carried out from the symptoms demonstrated by the patient, or after other conditions have been excluded by tests and investigations. Blood samples are frequently taken to rule out conditions such as anaemia, inflammation and the presence of antibodies. It is possible that we may see blood tests for irritable bowel used in future diagnosis, as research reported in 2009 (which assessed serum biomarker patterns) demonstrated a 70% accuracy for test results<sup>1</sup>.

## **The following may all produce symptoms which can be confused with IBS:**

- Gastritis - an inflammation of the stomach lining which can be caused by a variety of factors, including excess alcohol, tea, coffee, fizzy drinks, prolonged excessive intake of NSAIDs (non-steroidal anti-inflammatory drugs) and the infection *Helicobacter pylori*
- Excessive use of laxatives
- Excessive use of antacid preparations
- Reduced presence of protective bacteria due to infections and antibiotic use
- Fungal infections eg *Candida*
- Parasitic infections

## **Conditions which may also produce similar symptoms are:**

- Lactose Intolerance
- Coeliac disease
- Pancreatic insufficiency
- Diverticular disease

Stool testing can be used to identify bacterial, fungal and parasitic infections or gut dysbiosis as a trigger. If fungal infections or parasites test positive, these will need to be eradicated with prescription medications or specific gastro-intestinal targeted products.

Clients will frequently have received their diagnosis of IBS from a GP or Consultant, if this has not taken place, or you have further concerns, clients should be referred back for further investigation and medical diagnosis.

## Self-prescribed medications

Many clients regularly take self-prescribed medication for their symptoms to control both diarrhoea and constipation. These are likely to be producing their own sets of symptoms: for example, anti-diarrhoea medication can produce strong cramping pains. Regular use of laxatives for constipation can eventually become a necessity by further increasing the sluggish tendency and dependence of the bowel. Overuse of laxatives can result in anal leakage, yet not resolve the issues of constipation. For those clients self-medicating, a gradual reduction may be possible once symptoms improve. Those taking prescribed medication should not amend their dose or frequency without consulting their prescribing medical practitioner.

## Additional Considerations

Digestive function may be poor due to low levels of hydrochloric acid which can result in a variety of symptoms. Overuse of antacid preparations or proton pump inhibitors can reduce hydrochloric acid levels.

Blood tests for iron deficiency may also be useful, as low hydrochloric acid levels are linked with iron deficiency impacting on iron absorption and other essential nutrients. Pancreatic insufficiency can also reduce the presence of digestive enzymes impacting on the breakdown and digestion of food.

## Gluten sensitivity, other food sensitivities and intolerances

Animal studies have shown the potential for IBS symptoms to be linked to gluten sensitivity<sup>2</sup>. Some people who have been diagnosed with irritable bowel syndrome (IBS) report a lessening of symptoms when they follow a gluten free diet; and although good quality studies are limited the American College of Gastroenterology concludes that a gluten-free diet holds promise for IBS sufferers<sup>3</sup>.

Laboratory tests demonstrated elevated IgG (Immunoglobulin) to wheat, beef, pork, lamb and soya bean in IBS patients, IgE response was low and found in only a small number of patients<sup>4</sup>. IgG antibodies are a delayed hypersensitivity reaction, and is the response frequently seen in food sensitivity reactions. IgE antibodies are referred to as a Type I immediate hypersensitivity reaction, the response found in allergies.

Intestinal permeability is considered an important factor in food intolerance, and allergy research has confirmed the presence of small intestinal permeability in diarrhoea-predominant IBS sufferers. Those included in the research whose IBS onset was not considered to be linked to infection, appeared to have an increased defect in permeability<sup>5</sup>. It has been established that gluten increases intestinal permeability even in healthy individuals, through increasing the expression of the protein zonulin<sup>6</sup>.

Colonic biopsies have also demonstrated increased permeability of the colon in IBS patients: the increased permeability correlated with the severity of abdominal pain<sup>7</sup>.

If you suspect allergies or intolerances are involved in the client's symptoms, then testing may be appropriate. If clients are excluding specific foods from their diets, this can potentially impact on test results, leading to inaccuracies. Excluded foods should always be considered when reviewing test results.

## Nutritional Approaches to Irritable Bowel Syndrome

Sugar, sweeteners, refined and processed foods that lack natural fibre may be responsible for symptoms of bloating, pain, flatulence, diarrhoea and constipation.

There can be no one nutritional approach for IBS as symptoms vary. An ideal start is for clients to record a diary of their food intake plus a detailed diary of symptoms and any lifestyle events that are noted to occur during periods of symptom aggravation. This information may provide evidence for food or stress triggers and assist in establishing the most suitable support.

### Fibre

Over the years the medical recommendation for increased fibre in the diet has changed from 'promoting' to 'avoiding' to 'may be suitable for some'. Some clients report medical advice to eat a 'junk diet' to combat symptoms, the lack of fibre in this diet may well improve some clients' symptoms in the short term; long term implications for health of the digestive system and general health of the client are a concern for this method.

Introducing large quantities of fibre (eg from grains, nuts/seeds and some vegetables) to clients with IBS is likely to cause problems, particularly if the diet previously contained highly refined foods.



A gradual change to the diet is essential, introducing those foods which are easier to digest in the initial changes and in small portions. Clients frequently perceive bran as the only source of fibre and a healthy option: bran can be an undesirable irritant on the bowel, is implicated in nutrient losses and will contain gluten so it is best avoided.

For those who experience constipation, adequate fibre, fluids and regular exercise can often result in improved transit time, therefore reducing bloating, flatulence and pain.

Soluble fibre is often the best fibre to introduce and is provided by fruit, vegetables, pulses and oats - although these also contain some insoluble fibre. Introducing these foods, cooked initially, may increase tolerance by providing them in an easier to digest form. A gradual increase in both variety and quantity is likely to achieve more successful results. For those who seem unable to tolerate these foods look at and compare those that are excluded on the FODMAP diet as this may be relevant.

Psyllium is classed as a soluble fibre which is frequently used as a laxative and may be beneficial in those with symptoms of constipation. Due to the ability of psyllium to absorb fluids, it is also considered relevant for those with symptoms of diarrhoea. It is important to take psyllium with adequate water – 200 to 250 ml of water for each heaped teaspoon.

Insoluble fibre is more likely to result in digestive symptoms. The skin and pips of fruit and vegetables can be considered as insoluble, so may be best removed in the initial stages. Legumes fall into both categories and are problematic for some and best avoided during the early stages. Grains such as wheat and rye and wholegrain foods such as rice, pasta, bread and nuts are high in insoluble fibre.

Remember when increasing dietary intake of fibre to ensure adequate intake of fluids, preferably water. Fluid intake is frequently low in patients who experience constipation, and those with excessive diarrhoea can also become dehydrated. Recommendations for the client to reduce their intake of fizzy drinks, alcohol, tea and coffee would be beneficial, ideal replacements are water and herb teas: peppermint, fennel and chamomile tea provide digestive calming benefits.

## Food Exclusions

If clients are excluding foods due to an actual or suspected intolerance it is important to ensure that suitable nutrient replacements are found particularly when dealing with the major food groups such as grains and dairy to ensure that nutritional deficiencies are not created.

Gluten grains are frequently noted as exacerbating symptoms and a trial elimination should be considered. Gluten grains include wheat, barley, rye and spelt so this means removing bread, pasta, cous cous, beer, tabbouleh, freekeh and flour products. Hidden less obvious sources of gluten include – some types of soy sauce (Tamari is gluten free), gravies, sauces, soups, sushi and fried foods in restaurants. It is therefore essential to check food labels and to ask in restaurants.

Lactose intolerance may give rise to diarrhoea. Dairy also contains a number of proteins eg casein which may also trigger gut symptoms (as well as non-gut related symptoms). Other foods can also trigger IBS symptoms.

## FODMAPS

FODMAP carbohydrates are particular types of carbohydrates and fibres found in certain grains, fruits, vegetables, dried peas and beans, milk products and processed foods and drinks. FODMAP stands for Fermentable Oligo-, Di-, Mono-saccharides and Polyols. Specifically, some of the dietary carbohydrates described by the term FODMAP are lactose, fructose, fructans, polyols and galactans. FODMAPs have several things in common:

- They are all carbohydrates
- They are sometimes poorly absorbed
- They are all rapidly fermented by the gut bacteria
- They can all disrupt the fluid balance in the gut

In some people FODMAP carbohydrates are not absorbed as they should be in the small intestine, instead they pass through the far end of the small intestine and into the large intestine. There FODMAPs act as fast food for the bacteria which give off a lot of gas as they ferment the food. The gas makes the large intestine swell and bloating may be experienced. Another problem is that FODMAPs can draw fluid into

the intestine ie they are osmotic. Pain and watery urgent diarrhoea can result. Indications are that for some sensitive to the effects of FODMAPs, reducing these foods can reduce symptoms such as bloating, wind, abdominal pain and altered bowel habits<sup>8</sup>.






Some FODMAPs may be tolerated. It is the total load from all sources that causes a problem for some people. This may be from a large quantity of a single food or smaller amounts of several different FODMAP foods added together over a period of time eg over a day or days.

Please note that a low FODMAP diet involves initially restricting a considerable number of foods which some people may find very difficult; however, it is not intended to be a long-term diet. Some examples of foods to be avoided on a low FODMAP diet include:

- Fructose found in fruits, honey, high fructose corn syrup etc
- Lactose found in milk products
- Fructans found in wheat, garlic, onion and chicory etc
- Galactans found in legumes including beans, peas and lentils
- Polyols found in sweeteners containing isomalt, mannitol, sorbitol, xylitol plus stone fruits such as avocado, apricots, cherries, nectarines, peaches and plums.



## Foods suitable on a low FODMAP diet

Fruit	Vegetables	Grain Foods	Milk Products	Other
<p>Bananas, blackberries, blueberry, grapes, grapefruit, honeydew, kiwifruit, lemons, limes, mandarin orange, melons, oranges, papaya, passion fruit, pineapples, raspberries, rhubarb, strawberries, tangelos</p> <p>Note: if fruit is dried, eat in very small quantities</p> 	<p>Bamboo shoots, bok choy, carrots, cauliflower (gas forming), celery, cucumber (gas forming), eggplant (gas forming), green beans (gas forming), green peppers (could be gas forming), leafy greens, parsnip, pumpkin, spinach, sweet potatoes, white potatoes (in small quantities), other root vegetables</p> 	<p><b>Cereals:</b> Gluten-free bread or cereal products (in small quantities only)</p> <p><b>Bread:</b> 100% spelt bread (unless avoiding gluten as well)</p> <p>Rice</p> <p>Oats</p> <p>Buckwheat</p> <p><b>Other:</b> Quinoa, arrowroot, millet, psyllium, sorghum, tapioca</p> 	<p><b>Milk:</b> lactose-free milk, oat milk, rice milk, soy milk, coconut milk, almond milk (Check for additives. These are all available in cartons in long-life sections of supermarkets. Coconut milk and almond milk are preferable; other milks have health drawbacks)</p> <p><b>Cheese:</b> hard cheeses, brie and camembert</p> <p><b>Yoghurt:</b> lactose-free varieties</p> <p><b>Ice-cream substitutes:</b> gelati, sorbet</p> <p><b>Butter substitutes:</b> olive oil</p> 	<p>Tofu</p> <p><b>Sweeteners:</b> maple syrup*, golden syrup*, molasses, treacle</p> <p>*small quantities</p> 

After excluding high FODMAP foods for a month, foods from each FODMAP group should be reintroduced, one at a time (eg foods containing fructose, then foods containing lactose etc). During the reintroduction symptoms should be monitored and if a FODMAP group of foods causes problems then continue to eliminate this group.

Wheat, barley and rye are FODMAPs so these are eliminated on a low FODMAP diet – could the improvements seen by some people be in fact due to the elimination of gluten from the diet? Spelt, which does contain gluten, is allowed but is less widely available so may not be chosen.

Diet should always be reviewed in those with digestive symptoms, not all will need to follow the more difficult FODMAP diet for improvements to be seen. For example, those with a highly refined and processed diet high in sugars and artificial sweeteners often have poor digestive function.

## The 4-Step Plan for IBS (developed by Dr Jeffrey Bland)

Functional medicine practitioners use a 4 step plan for IBS called the 4-R programme. This programme involves identifying and removing dietary and lifestyle factors that may be damaging the gut, replacing missing factors and adding in gut healing nutrients for repair.

**Remove** – sugar, alcohol, processed foods plus any foods that are already known to cause a reaction. Other foods which often contribute to IBS include gluten, dairy and FODMAPs so eliminating perhaps gluten and dairy to start with should be considered. Other factors to remove/reduce include stress and non-steroidal anti-inflammatories (unless these have been prescribed by a medical practitioner). If there is an overgrowth of undesirable bacteria or yeast this will also need to be addressed using appropriate anti-microbials.

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**Replace** – consider using digestive enzymes (and betaine hydrochloride if indicated) as natural production of digestive enzymes and stomach acid may be compromised in IBS. Ensuring adequate digestion of food will help with absorption and prevent undesirable bacteria from fermenting the food.

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**Repair** – with digestive tract healing nutrients such as L-glutamine, aloe vera, curcumin, essential fatty acids and vitamins A and D. It is important this step is not overlooked – if the gut is not healed then further food sensitivities may develop and you may not see a full resolution of symptoms.

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**Rebalance** – Live bacteria are needed to rebalance the gut flora. In addition, there may be a need for additional nutritional support – if digestion and absorption have been compromised for some time short-term additional nutrients will be needed to address any specific needs identified, along with a good quality multivitamin and mineral in both the short-term and for long-term maintenance.

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## Supplement Support

### Hydrochloric acid and Digestive Enzymes

It is essential that digestive function is optimal. As discussed, hydrochloric acid levels may be low (hypochlorhydria). Supplements providing hydrochloric acid in the form of betaine are available. Pancreatic enzymes released into the duodenum during digestion may also be inadequate, increasing digestive symptoms. Cytoplan's Cyto-Zyme combines betaine with plant based digestive enzymes to support digestion of protein, fat, fibre and carbohydrates.

Contra-indications: hydrochloric acid and digestive enzyme supplements would be contraindicated for those with a history of peptic ulcers, gastritis and hiatus hernia and may not be appropriate for those taking prescribed proton pump inhibitors.



### Native Live Bacteria

Research has demonstrated the benefits of probiotics<sup>9,10,11,12</sup> in reducing inflammation and permeability of the gut and in irritable bowel syndrome<sup>12</sup>. For those in whom an imbalance of bacteria or *Candida* is suspected or identified the use of *Saccharomyces boulardii* may be recommended. This beneficial yeast has been subject to much research with positive outcomes in relation to *Candida* infections, bacterial infections and antibiotic-associated diarrhoea, and small trials have shown positive results in the maintenance of Crohn's disease<sup>13,14,15,16,17,18</sup>. *Saccharomyces boulardii* is used ideally in combination with a Live Bacteria supplement.

## Cytoplan Live Bacteria supplements

(all dairy and soy free, grown on molasses):



### Acidophilus Plus

9 strains with activity throughout the whole GI tract. Small capsules. Most suited to people under 40 and ideal for long term use.



### Fos-a-Dophilus

6 strains, capsules. Ideal for those over 40. High in *Bifidobacteria* found in the large intestine. Levels of *Bifidobacteria* decrease with age. Suitable for daily long term use.



### Cyto-Biotic Active

Powder formula containing 9 strains. Ideal for all ages, from age 1.



### Saccharomyces Boulardii

Friendly yeast. This yeast species is often used when travelling, for antibiotic-associated diarrhoea and for *Candida* infections. It can be used alone or in conjunction with the above products.



## Antimicrobials

We have a range of antimicrobial products to support a healthy gut balance: **Caprylic Acid Plus** (caprylic acid, garlic, oregano, grapefruit seed extract and green tea extract), **Organic Garlic** and **CytoCleanse** (16 varieties of herbs specifically selected for their anti-microbial properties).



## Omega-3 fatty acids

We have a range of pure, clean oils – fish oils, krill oil, vegan DHA/EPA (from an algal source), flaxseed oil.



## Flavonoids

Dietary intake of fruit and vegetables is frequently low in those with bowel conditions. Flavonoids have well known health benefits including the reduction of inflammation<sup>13</sup>. For those unable to increase their dietary intake, Phytoshield provides both flavonoids and carotenoids and has high antioxidant capacity.



## Aloe Vera

The inner leaf gel of Aloe Vera is a product which may well be beneficial to IBS symptoms of both constipation and diarrhoea. The inner leaf fillet contains higher levels of salicylates, and is used for its anti-inflammatory action, assisting with the healing of the gut<sup>12</sup>. Aloe Vera XL Inner Leaf Gel is the most suitable for digestive support. This product is low in preservatives.





## L-Glutamine

The amino acid L-glutamine is classified as a non-essential amino acid. Severe nutritional depletion, trauma or stress may result in insufficient production of glutamine to meet the body's requirements: glutamine is then considered to become conditionally essential. Glutamine assists in the regulation of the acid base balance of the body, and systems such as the immune system and gut also require glutamine for energy production. Glutamine has been found to have a positive impact on the intestinal barrier, reducing permeability and preserving mucosal integrity<sup>21,22</sup>. Those taking aspirin and non-steroidal anti-inflammatory medication have a reduced turnover of the gut lining which predisposes to inflammation. Glutamine may be helpful here.



## Slippery Elm

A traditional remedy for digestive upsets, when mixed with water, slippery elm produces a thick mucilage coating the intestinal membranes and providing a soothing action on the digestive system.



## Vitamin D

Adequate levels are important for good gut health and repair and low levels are linked to increased inflammation and many health issues. Levels can be low in the UK population so taking a multivitamin and mineral with good levels is recommended. Additional may be needed for a period of time to boost low levels especially during the winter months. Vitamin D is available from sun exposure in the UK between the months of April to October, 10 am to 2 pm on sunny days (avoid allowing skin to redden). Dietary sources include eggs, butter and oily fish but diet alone will not provide sufficient vitamin D.

## Other vitamins and minerals

An all-round multivitamin and mineral will provide other nutrients useful for supporting the gut. For maximum benefit, ensure your multi contains adequate B vitamins as well as vitamins C, D, E, magnesium, zinc and selenium. For those who experience cramping type pains, consider additional magnesium, which may assist with symptoms. Additional zinc may be useful for gut repair.



## Natural Aids for Constipation

There are a wide range of plant-based treatments to assist with the symptoms of constipation. Undiagnosed conditions and those with faecal impaction should, however, not self-medicate with laxative-inducing products.

### Psyllium Husk

Frequently used as a remedy for constipation, derived from the seed of the *Plantago ovata*. Husks from the outer coat of the seeds are used, providing a source of soluble fibre. Psyllium has been used for a long time as a laxative, intestinal cleanser and for maintaining regular bowel function. Psyllium is considered beneficial for both constipation and diarrhoea, as the fibre absorbs both water and waste material in the bowel. Psyllium is either taken as a capsule or a powder: it is very important that sufficient water is taken when using this product.



### Whole linseeds

A gentle support for constipation, these require adequate water to allow the seeds to swell in the gut. The linseeds can be ground and sprinkled dry onto cereal or added to yogurt. Alternatively, they can be soaked overnight in water. Both the seeds and remaining fluid can be taken as a drink (frequently referred to as linseed tea). It is easier for many to add both seeds and fluid to breakfast, such as cooked porridge or natural yoghurt.



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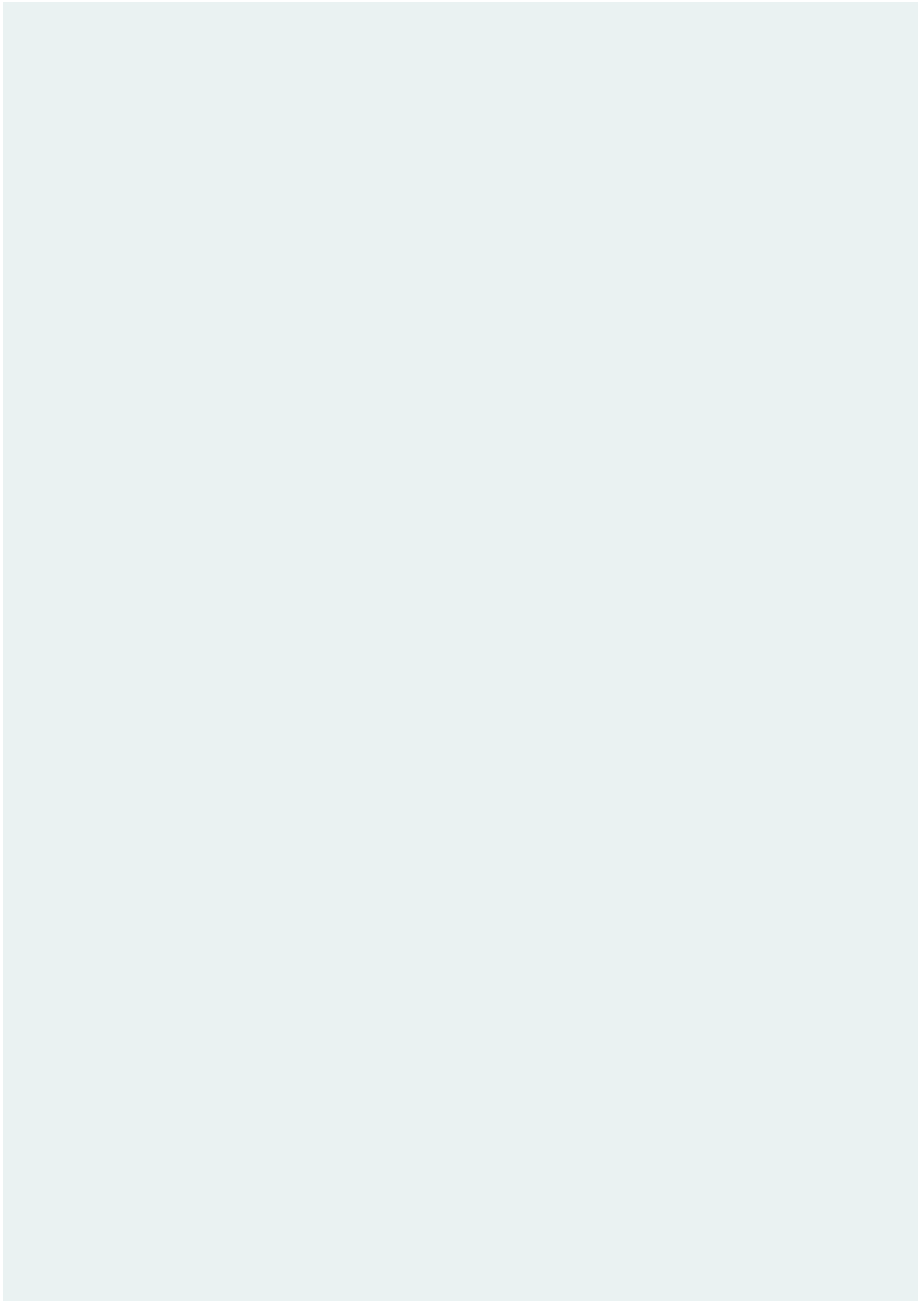
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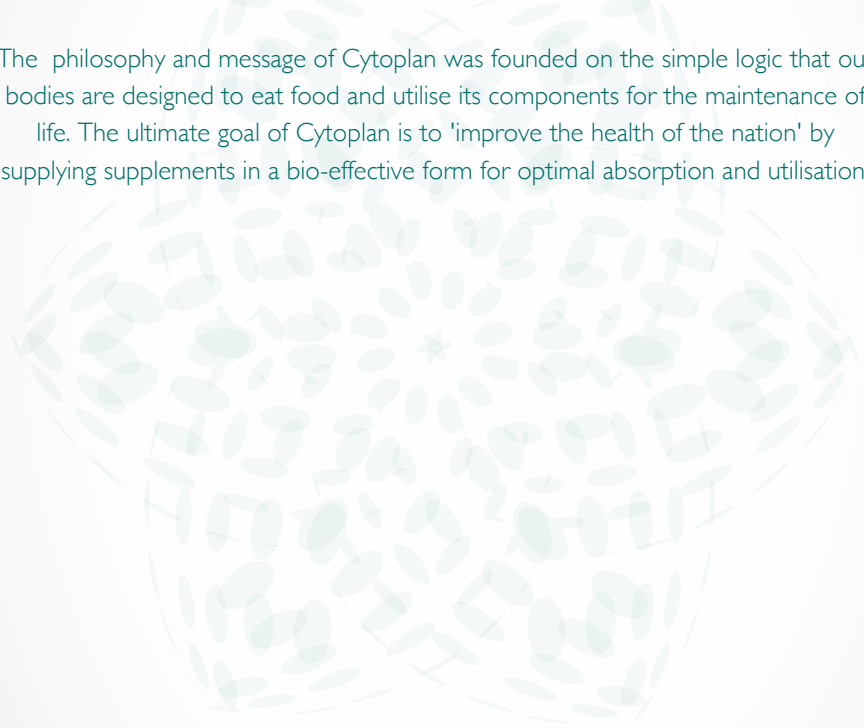
## Notes





Cytoplan celebrates 25 years in the field of food-based supplementation and from the moment of conception to the present day we have promoted the philosophy that nutrients are best delivered to the body "in the same form as food".

The philosophy and message of Cytoplan was founded on the simple logic that our bodies are designed to eat food and utilise its components for the maintenance of life. The ultimate goal of Cytoplan is to 'improve the health of the nation' by supplying supplements in a bio-effective form for optimal absorption and utilisation.



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