PATIENT	**Harm Klumpjes**
AGE	**45**
DATE OF BIRTH	**15-04-1980**
GENDER	**Male**
TEST REPORT	**Microbiome with food and supplements advice**
TEST DATE	**15-01-2025**

With the Easly test you get to know the bacteria that reside in your intestine, collectively known as the gut microbiome. Via the personal dashboard, you are able to access your data en be introduced to the universe inside you. Hence, creating an intimate connection with them.

There are different ways of healthy nutrition, but taking care of your bacteria is always a good choice.

Let's give you a few reasons:

- Your bacteria compete against the colonization of pathogens
- Your bacteria can produce substances essential to the human health

You see? It is a wise decision to take care of them!

Now you may be wondering how you can actually nourish your gut to create a good environment for your little companions. I bet you already know the answer. Yes, indeed, through food recommendations based on your current bacterial status.

At Easly, nutritional advice means that we use your individual information, such as your bacteria diversity and your bacteria levels, to boost your health through an evidence-based diet.

1. BACTERIA DIVERSITY

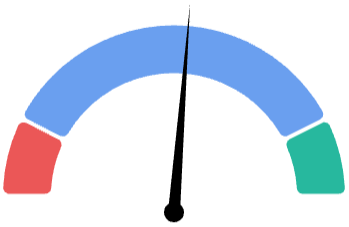
Your bacteria diversity shows how diverse your gut microbiome is based on three calculations (Shannon's index, Observed OTUs, and Pielou's evenness). It describes the variety and comprises species richness and species evenness. The pointer indicates your results for that particular calculation and the text below contains a brief explanation.

- The left pink edge indicates a low diversity.
- The centre portion illustrates an average diversity.
- The right green edge denotes a high diversity.

So the more your arrow points to the right side, the better your bacteria diversity is.

1.1 SHANNON'S INDEX

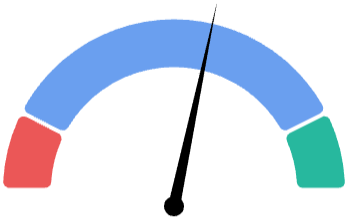
The Shannon's index is the most commonly used indicator to represent diversity. The more different bacteria are evenly distributed in your gut, the greater the diversity and the more resilient the microbiome. Furthermore, many studies have shown that a low degree of diversity could be associated with multiple diseases.



Low Average High

1.2 OBSERVED OTUS

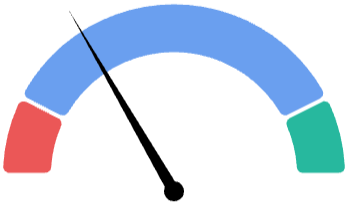
Species richness shows the number of different bacteria in your gut. In a diverse microbiome, the large number of distinct species can contribute to multiple functions being carried out. As a consequence, the body utilizes nutrients better, as well as handles pathogens more easily.



Low Average High

1.3 PIELOU'S EVENNESS

Species evenness describes how often one bacteria occurs in your gut compared to other species. The higher the equitability, the more balanced the spread of different bacteria is between species. The calculation goes from 0 (no evenness) to 1 (complete evenness)



Low Average High

2. BACTERIA LEVELS

Your bacteria levels show how diverse your gut microbiome is based on three groups (Good bacteria, Bad bacteria, and Other relevant bacteria). It describes the counts and comprises the ranges 'be aware', 'normal', and 'great'. The pointer indicates your results for that particular bacteria and the information icon contains a brief explanation.

Good bacteria are species that can have a positive effect on your health, while bad bacteria can have a negative effect on your health. For other relevant bacteria, the literature does not yet clearly describe whether they have a positive or negative effect on your health. This is why we can only show whether you are 'lower than normal' or 'higher than normal'.

Bacteria levels

Bacteria levels provide a snapshot for personalized dietary practices that are based on the bacteria counts and organized in distinct ranges. Following healthy and diverse eating patterns may help your current bacteria levels decrease (for bad bacteria) or increase (for good bacteria) to 'normal' and 'great'. On the other hand, not following healthy and diverse eating patterns may decrease (for good bacteria) or increase (for bad bacteria) your current bacteria levels to 'be aware'. Besides, for other relevant bacteria we currently know the 'normal' range, hence we only indicate whether you are 'lower than normal' or 'higher than normal'.

Your current bacteria level

Good and bad bacteria

• Be aware	Your bacteria need your attention
• Normal	Your bacteria are fine
• Great	You are the biggest supporter of your bacteria

Other relevant bacteria

• Lower / higher than normal	Your bacteria are below / above normal
• Normal	Your bacteria are fine

About bacteria

There are several bacteria that can be found in virtually all individuals and these can be seen as a kind of the 'core' in your gut microbiome. On the basis of this, we selected the top 35 bacteria and divided them according to their functionality into the following seven categories:

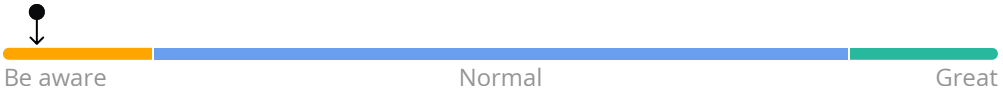
- Immune strength
- Gut wall strength
- Weight reduction support
- Gas production
- Potential colon problems

- Infection alarm
- Fat alarm

Their names are meant to be indicative and should, by no means, be interpreted as a medical condition.

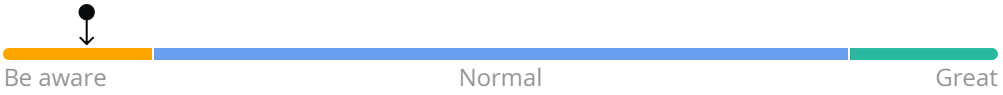
2.1 Good Bacteria

Ruminococcaceae



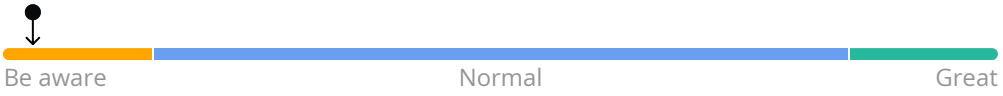
Ruminococcaceae is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement. This bacteria is present in 50.8% of the population.

Akkermansia



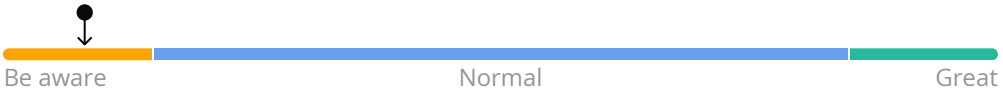
Akkermansia is associated with weight reduction support, as it has been linked to a decrease in cholesterol and obesity risk. It can be induced by legumes (such as soybeans, chickpeas, and lupin) and nuts or seeds (like cashew nuts or flax seeds). This bacteria is present in 64.8% of the population.

Anaerostipes



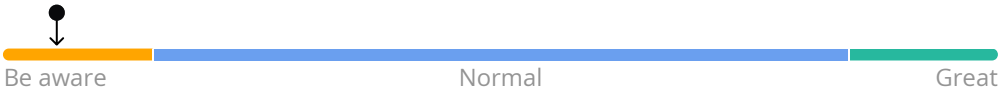
Anaerostipes is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement. This bacteria is present in 88.2% of the population.

Coprococcus



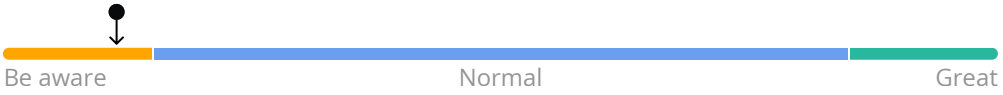
Coprococcus is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement. This bacteria is present in 73.8% of the population.

Barnesiella



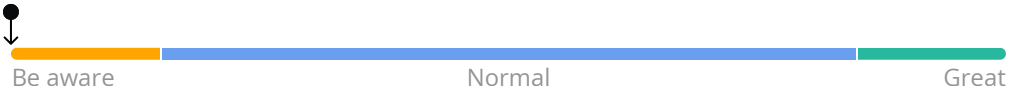
Barnesiella is associated with infection alarm, as it has been linked to a decrease in lipids. This bacteria is present in 81.4% of the population.

Hafnia-Obesumbacterium



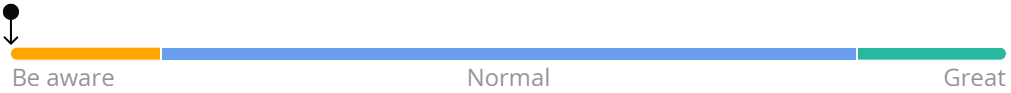
Hafnia-Obesumbacterium is associated with weight reduction support, as it has been linked to a decrease in cholesterol and obesity risk. It can be induced by legumes (such as soybeans, chickpeas, and lupin) and nuts or seeds (like cashew nuts or flax seeds). This bacteria is present in 6.8% of the population.

Bifidobacterium



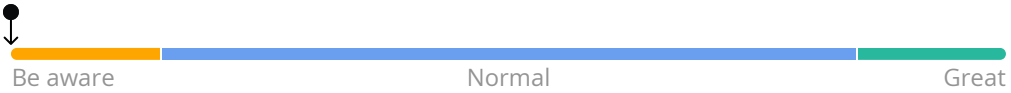
Bifidobacterium is associated with immune strength, as it has been linked to an increase in bowel movement and microbial richness, and a decrease in inflammation. It can be induced by vegetables (such as artichoke, leek, and cabbage), fruits (like cantaloupe, nectarine, and apple), and fermented products (for example miso, tempeh, and kefir). This bacteria is present in 76.2% of the population.

Blautia



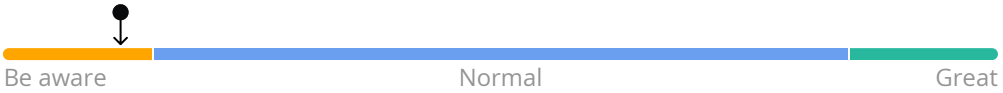
Blautia is associated with weight reduction support, as it has been linked to a decrease in cholesterol and obesity risk. This bacteria is present in 98.1% of the population.

Butyricicoccus



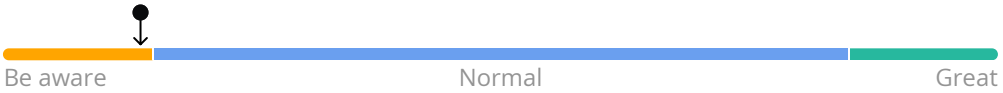
Butyricicoccus is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement. This bacteria is present in 86.1% of the population.

Christensenellaceae _R-7_group



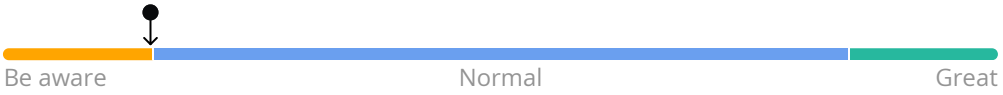
Christensenellaceae R-7 group is associated with weight reduction support, as it has been linked to a decrease in cholesterol and obesity risk. This bacteria is present in 88.6% of the population.

Eubacterium



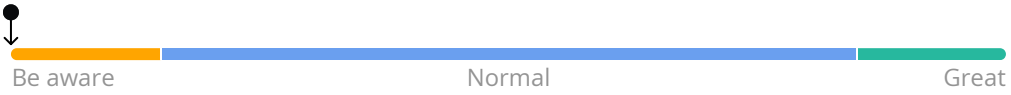
Eubacterium is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement, and a decrease in insulin production. It can be induced by vegetables (such as cauliflower, eggplant, and lettuce) and cereals (like quinoa, bulgur, and sorghum). This bacteria is present in 52.7% of the population.

Faecalibacterium



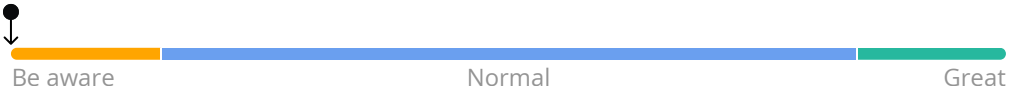
Faecalibacterium is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement, and a decrease in insulin production. It can be induced by vegetables (such as cauliflower, eggplant, and lettuce) and cereals (like quinoa, bulgur, and sorghum). This bacteria is present in 98.7% of the population.

Holdemanella



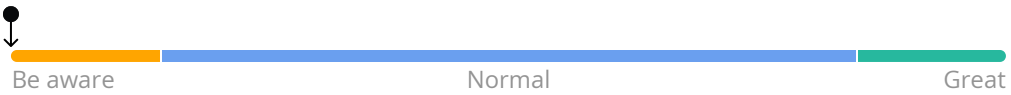
Holdemanella is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement, and a decrease in insulin production. This bacteria is present in 43.7% of the population.

Parabacteroides



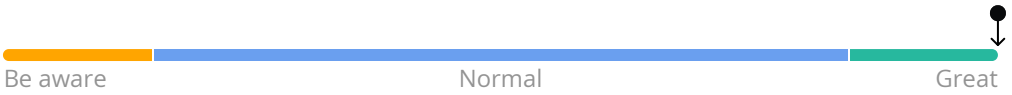
Parabacteroides is associated with weight reduction support, as it has been linked to a decrease in cholesterol and obesity risk. This bacteria is present in 95.4% of the population.

Roseburia



Roseburia is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement, and a decrease in insulin production. This bacteria is present in 92.4% of the population.

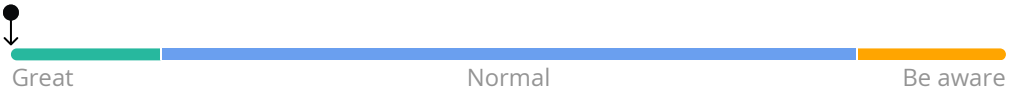
Lactobacillus



Lactobacillus is associated with immune strength, as it has been linked to an increase in bowel movement and microbial richness, and a decrease in inflammation. It can be induced by vegetables (such as artichoke, leek, and cabbage), fruits (like cantaloupe, nectarine, and apple), and fermented products (for example miso, tempeh, and kefir). This bacteria is present in 42.6% of the population.

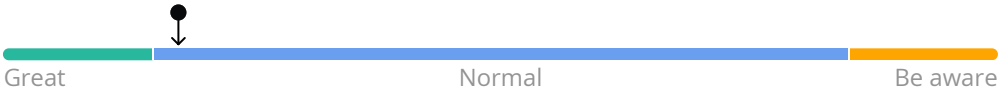
2.2 Bad Bacteria

Bacteroides



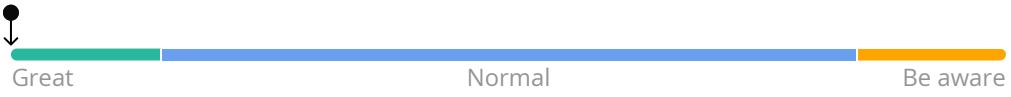
Bacteroides is associated with infection alarm, as it has been linked to an increase in lipids. It can be induced by animal (such as butter, cream, and lard) or vegetable condiments (like margarine, coconut oil, and corn syrup) and can be reduced by seafood (for example cod and bass). This bacteria is present in 99.8% of the population.

Sutterella



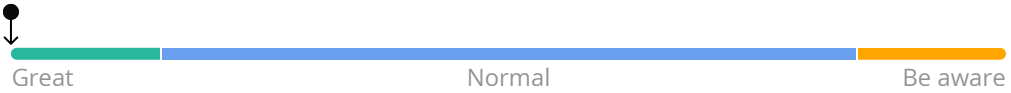
Sutterella is associated with infection alarm, as it has been linked to an increase in lipids and inflammation. This bacteria is present in 73.8% of the population.

Bilophila



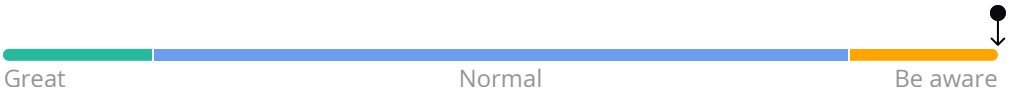
Bilophila is associated with fat alarm, as it has been linked to an increase in hydrogen sulphide production and cholesterol. It can be induced by organs (such as liver, heart, and kidney) and can be reduced by cereals (like oat, amaranth, and muesli). This bacteria is present in 60.5% of the population.

Desulfovibrio



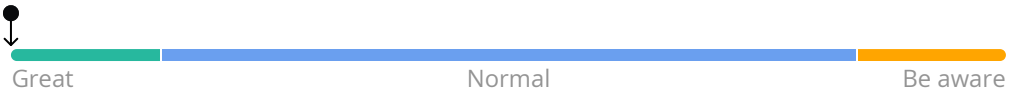
Desulfovibrio is associated with fat alarm, as it has been linked to an increase in cholesterol. It can be induced by organ meat (such as liver, heart, and kidney) and can be reduced by cereals (like oat, amaranth, and muesli). This bacteria is present in 42.6% of the population.

Escherichia-Shigella



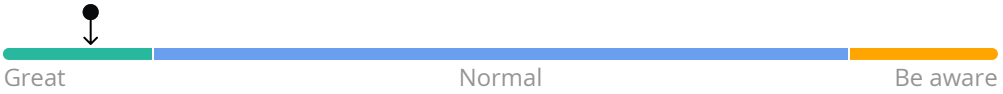
Escherichia-Shigella is associated with infection alarm, as it has been linked to an increase in lipids and inflammation. This bacteria is present in 62.0% of the population.

Fusobacterium



Fusobacterium is associated with potential colon problems, as it has been linked to an increase in cancer risk. It can be induced by red (such as pork, beef, and lamb) and processed meat (like sausage, burger, and pate) and reduced by fruits (for example pear, kiwi, and grape). This bacteria is present in 2.3% of the population.

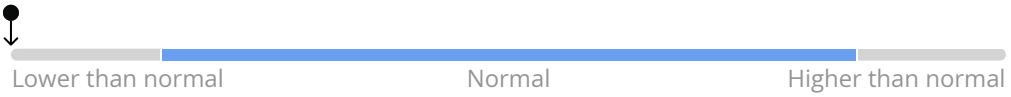
Klebsiella



Klebsiella is associated with infection alarm, as it has been linked to an increase in lipids and inflammation. This bacteria is present in 2.7% of the population.

2.3 Other relevant bacteria

Lachnospiraceae

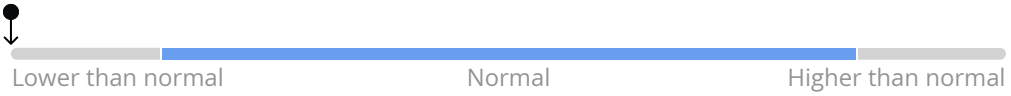


Lachnospiraceae is not yet associated with a category of Easly, but some literature linked it to an increase in butyrate production, and a decrease in cholesterol and obesity risk. This bacteria is present in 32.7% of the population.

Ruminiclostridium

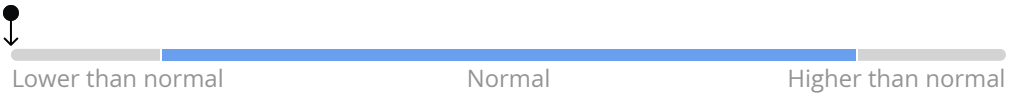
Ruminiclostridium is not yet associated with a category of Easly, but some literature linked it to an increase in butyrate production and a decrease in cholesterol and obesity risk. This bacteria is present in 49.9% of the population.

Subdoligranulum



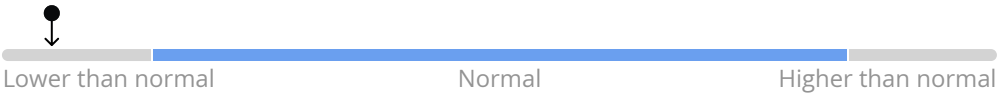
Subdoligranulum is not yet associated with a category of Easly, but some literature linked it to a decrease in cholesterol and obesity risk, and an increase in lipids. This bacteria is present in 81.0% of the population.

Dorea



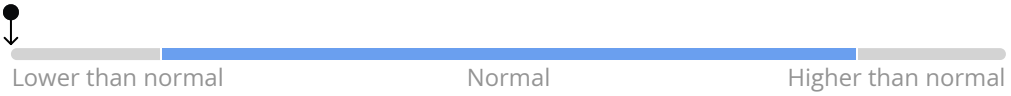
Dorea is not yet associated with a category of Easly, but some literature linked it to an increase in butyrate production and bowel movement. This bacteria is present in 94.1% of the population.

Fusicatenibacter



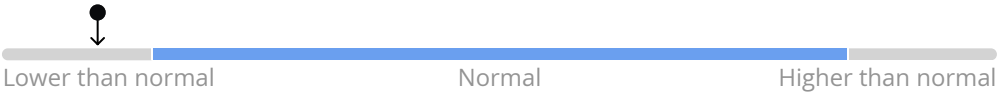
Fusicatenibacter is not yet associated with a category of Easly, but some literature linked it to an increase in butyrate production and bowel movement. This bacteria is present in 89.0% of the population.

Lachnoclostridium



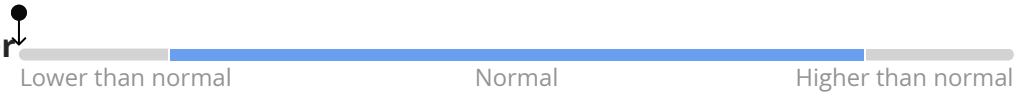
Lachnoclostridium is not yet associated with a category of Easly, but some literature linked it to a decrease in cancer risk. This bacteria is present in 89.9% of the population.

Lachnospira



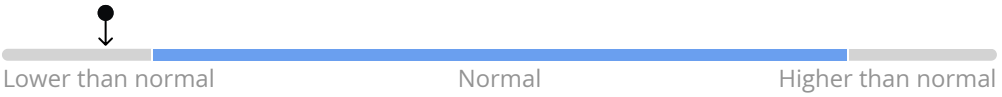
Lachnospira is not yet associated with a category of Easly, but some literature linked it to a decrease in cholesterol and obesity risk. This bacteria is present in 74.3% of the population.

Methanobrevibacter



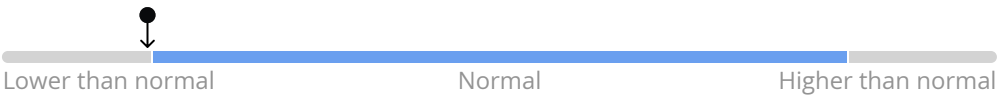
Methanobrevibacter is associated with fibre degradation, as it can be linked to an increase in methane production and constipation. This bacteria is present in 26.2% of the population.

Methanosphaera



Methanosphaera is associated with fibre degradation, as it can be linked to an increase in methane production and constipation. This bacteria is present in 5.9% of the population.

Prevotella



Prevotella is not yet associated with a category of Easly, but some literature linked it to a decrease in lipids. This bacteria is present in 16.3% of the population.

3. BODY MASS INDEX

The body mass index (BMI) is a value derived from the weight and height that you filled in after taking a stool sample. The BMI is defined as the weight divided by the square of the height and is expressed in kg/m^2, resulting from weight in kilograms and height in meters.

If your BMI is less than 18.5, it falls within the underweight range. If your BMI is 18.5 to 24.9, it falls within the normal range. If your BMI is 25.0 to 29.9, it falls within the overweight range. If your BMI is 30.0 or higher, it falls within the obesity range.

Your BMI is: 23.96

4. GUT HEALTH

The three subcategories under Gut health (Immune strength, Gut wall strength, and Weight reduction support) can be seen as the good categories, as they can have a positive effect on your health. The food items that are mentioned in the dietary advice can be consumed more to potentially increase your bacteria.

Bacteria ranges

Bacteria levels provide a snapshot for dietary advice that is based on bacteria counts and organized into bacteria ranges. Following healthy and diverse eating patterns may help your current bacteria levels increase to 'normal' and 'great'. On the other hand, not following healthy and diverse eating patterns may decrease your current bacteria levels to 'be aware'.

Your current bacteria level

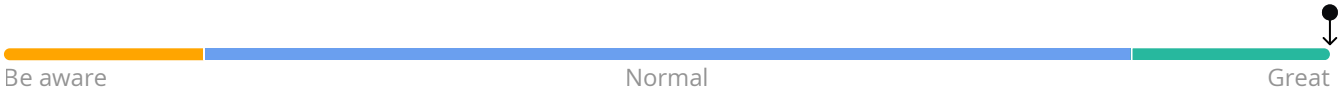
• Be aware	Your bacteria need your attention
• Normal	Your bacteria are fine
• Great	You are the biggest supporter of your bacteria

About gut health

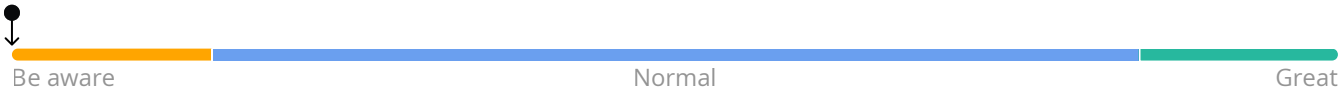
We have split Gut health into relevant subcategories. For sake of simplicity, we have focused on characteristic bacteria for these subcategories, but please be aware that some of these species serve several functions. For example, bacteria that improve your immune system can also strengthen your gut wall lining or support your weight reduction. Please see explanations of bacteria functions in Your bacteria levels.

4.1 IMMUNE STRENGTH

Lactobacillus



Bifidobacterium



An important task of our gut is to shield us from all the outside dangers. The gut microbiome plays a vital role in our immune system, the ability to fight off pathogens. For example, good bacteria may protect us against diseases by creating compounds that hinder their growth and activating or training the immune system to defend us. Such bacteria can also play an important part in the strength of your defence by breaking down indigestible foods into digestible nutrients and beneficial substances, namely Short Chain Fatty Acids (SCFAs). SCFAs can then serve as valuable food for other helpful bacteria.

On the other hand, stress is associated with adverse implications for the immune system. Over time, the number and the frequency of stress-related disorders, such as anxiety and depression, have grown, owing in part to the diet. Stress can affect the intestinal barrier and has been associated with an increase in gut permeability and a decrease in immune function. In contrast, a decrease in the stress hormone – cortisol – and an increase in the happy hormone – serotonin – can improve your immune strength.

Your sample results for Immune strength are in 'be aware'. This means that your bacteria need attention. Start introducing the dietary advice below to improve your immune strength.

Dietary advice

You have Irritable Bowel Syndrome (IBS). It is recommended to limit IBS-triggering foods in your diet.

Foods to encourage

Vegetables

Food	Portion size, g

Artichoke	125	
Asparagus, green	125	
Asparagus, white	125	
Beetroot	125	
Broccoli	125	
Broccolini	125	
Brussels sprout	125	
Cabbage, red	125	
Savoy cabbage	125	
Cabbage, white	125	
Chicory	125	
Fennel	125	
Kale	125	
Leek	125	
Okra	125	
Onion, red	50	
Onion, green	50	

Parsnip	125	
Shallot	50	
Yam	125	
Kimchi	150	
Sauerkraut	125	
Fermented fava	150	

Condiments and seasonings

Food	Portion size, g
Pepper	5
Cocoa powder	5
Seed, cardamom	5
Cinnamon	5
Curry powder	5
Oregano	5
Thyme	5
Turmeric	5
Basil	5
Chilli, green	5

Chilli, red	5
Coriander	5
Garlic	5
Parsley	5
Rosemary	5
Cajun seasoning	5
Peppermint	5
Agave powder	5
Vinegar, apple	15
Cayenne pepper	5

Beverages

Food	Portion size, ml
Coffee, espresso	30
Tea, green	150
Tea, black	150
Kombucha	150
Tea, rooibos	150
Tea, ginger	150

Ginseng	150	
Tea, herbs	150	
Tea, chamomile	150	
microbiomeDietaryFoods.items.2049	150	

Fruits, fruit juices

Food	Portion size, ml	
Cranberry juice	100	
Apple	100	
Apricot	100	
Raspberry, black	100	
Lingonberry	100	
Chokeberry	100	
Raspberry, red	100	
Blackberry	100	
Blueberry	100	
Cherry	100	
Gooseberry	100	

Fig	100	≈
Grape	100	≈
Grapefruit	100	≈
Kiwi, green	100	
Kiwi, gold	100	
Mandarin	100	
Mango	100	≈
Watermelon	100	≈
Mulberry	100	≈
Nectarine	100	≈
Orange	100	
Pawpaw (papaya)	100	
Peach	100	≈
Pear	100	≈
Pineapple	100	
Pomegranate	100	≈
Strawberry	100	≈
Tangelo	100	

Tangerine	100	
Melon	100	
Currant, black	100	
Currant, red	100	
Cantaloupe	100	
Shot, ginger	100	
Khaki	100	

Plant-based alternatives

Food	Portion size, g
Tempeh	100
Yoghurt, plant-based	185

Sweets, confectionery and pastries

Food	Portion size, g
Liquorice	10

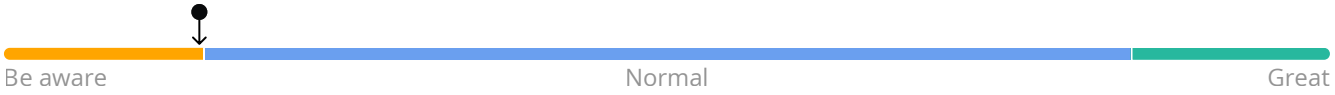
Legumes

Food	Portion size, g	
Miso	30	

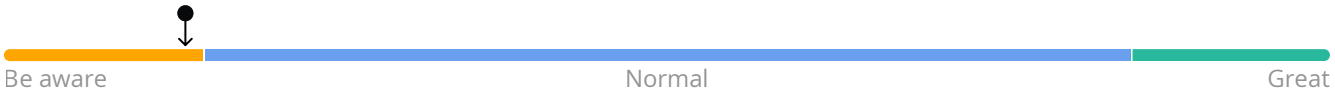
Natto	30	

4.2 GUT WALL STRENGTH

Faecalibacterium



Eubacterium



Your intestinal wall and slime are protective layers that prevent pathogens from entering the bloodstream. But it does not only serve as a barrier, to the contrary, all compounds produced by our bacteria must also pass through it to enter different body systems (blood, neural, lymphatic, etc.). Therefore, its strength and its ability to function well, is so relevant. One of the positive effects on the strength of our gut wall is based on the fact that certain bacteria producing butyrate, an essential substance that is created by digesting dietary fibre. Butyrate is particularly important because it is a primary source of energy for certain cells (colonocytes), thereby ensuring the strength of its intestinal barrier function.

Your sample results for Gut wall strength are in 'be aware'. This means that your bacteria need attention. Start introducing the dietary advice below to improve your gut wall strength.

Dietary advice

You have Irritable Bowel Syndrome (IBS). It is recommended to limit IBS-triggering foods in your diet.

Foods to encourage

Cereals

Food	Portion size, g	
Amaranth	120	

Sorghum	120
Bread, buckwheat	120
Rice	120
Cracker, rice	40
Bread, gluten free	105
Quinoa	120
Tapioca	120
Flour, corn	120
Flour, gluten free	120
Pasta, gluten free	120
Couscous, gluten free	120
Flour, buckwheat	120

Condiments and seasonings

Food	Portion size, g
Clove	5
Chives	5
Vinegar, apple	15
Nutritional yeast	5

Plant-based alternatives

Food	Portion size, g
Tempeh	100
Yoghurt, plant-based	185

Vegetables

Food	Portion size, g	
Cauliflower	125	₴
Celeriac	125	₴
Celery	125	₴
Chard	125	
Eggplant	125	₴
Lettuce	125	₴
Pumpkin, butternut	125	₴
Pumpkin	125	₴
Radish	125	
Rocket	125	
Spinach	125	
Swede	125	

Sweet potato	125	
Tomato, cherry	125	
Tomato	125	
Zucchini	125	
Kimchi	150	
Sauerkraut	125	
Fermented fava	150	
Daikon	125	
Capsicum, red	125	

Beverages

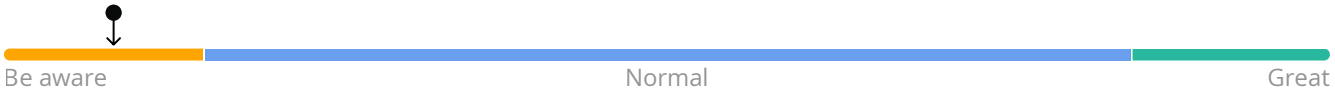
Food	Portion size, ml	
Kombucha	150	

Legumes

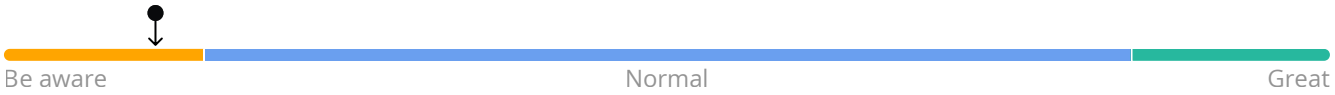
Food	Portion size, g	
Miso	30	
Natto	30	

4.3 WEIGHT REDUCTION SUPPORT

Akkermansia



Hafnia-Obesumbacterium



The gut microbiome has an influence on our metabolism (the way we break down, absorb, and use food). As a result of digesting certain types of food, bacteria produce beneficial substances like butyrate. Butyrate provides protection against obesity by being a nutrient for good bacteria that can help prevent and/or delay weight gain. Recent research suggests that the gut microbiome has an influence on our ability to lose weight. The more we host bacteria in the gut, that help us to break down complex carbohydrates (starches) into simple sugars, the better.

In addition, the gut microbiome also has an impact on our sleep quality. For instance, good bacteria can (directly or indirectly) produce the sleep molecule – melatonin – and send out different signals involved in better relaxation. A diverse gut microbiome promotes longer and deeper sleep. On the contrary, an unhealthy gut microbiome may produce fewer sleep molecules and butyrate which may lead to a higher risk of obesity. Obesity, in turn, has been associated with a negative sleep quality.

Your sample results for Weight reduction support are in 'be aware'. This means that your bacteria need attention. Start introducing the dietary advice below to improve your weight reduction support.

Dietary advice

You have Irritable Bowel Syndrome (IBS). It is recommended to limit IBS-triggering foods in your diet.

Foods to encourage

Legumes

Food	Portion size, g	
Lupin	45	

Pea, yellow	45	
Lentils	45	
Flour, chickpea	45	
Chickpea	45	
Pea, split	45	
Bean, broad	45	
Bean, white	45	
Bean, black	45	
Bean, red	45	
Bean, butter	45	
Bean, green	45	
Pea, snow	45	
Hummus	30	
Bean, edamame	45	
Soybean	45	
Bean, brown	45	
Bean, pinto	45	

Vegetables

Food	Portion size, g	
Artichoke	125	
Asparagus, green	125	
Asparagus, white	125	
Beetroot	125	
Broccoli	125	
Broccolini	125	
Brussels sprout	125	
Cabbage, red	125	
Savoy cabbage	125	
Cabbage, white	125	
Cauliflower	125	
Celeriac	125	
Celery	125	
Chicory	125	
Chard	125	

Corn	125	
Eggplant	125	≥
Fennel	125	≥
Kale	125	≥
Leek	125	≥
Lettuce	125	≥
Okra	125	≥
Onion, red	50	≥
Onion, green	50	≥
Parsnip	125	
Pumpkin, butternut	125	≥
Pumpkin	125	≥
Radish	125	
Shallot	50	≥
Spinach	125	
Swede	125	
Sweet potato	125	≥

Tomato	125	
Yam	125	
Zucchini	125	
Daikon	125	
Capsicum, red	125	
Bean sprouts	125	

Cereals

Food	Portion size, g	
Amaranth	120	
Sorghum	120	
Bread, buckwheat	120	
Rice	120	
Cracker, rice	40	
Bread, gluten free	105	
Quinoa	120	
Tapioca	120	
Flour, corn	120	
Flour, gluten free	120	

Pasta, gluten free	120
Couscous, gluten free	120
Flour, almond	100
Flour, buckwheat	120

Condiments and seasonings

Food	Portion size, g
Pepper	5
Cocoa powder	5
Oil, canola	30
Oil, olive	30
Oil, peanut	30
Oil, soybean	30
Oil, sunflower	30
Oil, salad	30
Seed, cardamom	5
Cinnamon	5
Clove	5
Curry powder	5

Oregano	5	
Thyme	5	
Turmeric	5	
Oil, sesame	30	
Basil	5	
Chilli, green	5	
Chilli, red	5	
Chives	5	
Coriander	5	
Garlic	5	
Parsley	5	
Rosemary	5	
Cajun seasoning	5	
Peppermint	5	
Agave powder	5	
Oil, safflower	30	
Cayenne pepper	5	

Nuts and seeds

Food	Portion size, g	
Seed, linseed or flaxseed	25	
Peanut butter	25	
Nut, almond	25	
Nut, cashew	25	
Nut, chestnut	25	
Nut, hazelnut	25	
Nut, macadamia	25	
Nut, pecan	25	
Nut, pistachio	25	
Nut, walnut	25	
Seed, chia	25	
Seed, pumpkin	25	
Seed, sesame	25	
Nut, mixed	25	

Beverages

Food	Portion size, ml
Coffee, espresso	30

Tea, green	150
Tea, black	150
Tea, rooibos	150
Tea, ginger	150
Ginseng	150
Tea, herbs	150
Tea, chamomile	150
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Fruits, fruit juices

Food	Portion size, ml
Cranberry juice	100
Apple	100
Apricot	100
Raspberry, black	100
Lingonberry	100
Chokeberry	100
Raspberry, red	100

Blackberry	100	
Blueberry	100	
Cherry	100	
Gooseberry	100	
Fig	100	
Grape	100	
Grapefruit	100	
Kiwi, green	100	
Kiwi, gold	100	
Mandarin	100	
Mango	100	
Watermelon	100	
Mulberry	100	
Nectarine	100	
Orange	100	
Pawpaw (papaya)	100	
Peach	100	
Pear	100	

Pineapple	100	
Pomegranate	100	
Strawberry	100	
Tangelo	100	
Tangerine	100	
Melon	100	
Currant, black	100	
Currant, red	100	
Cantaloupe	100	
Shot, ginger	100	
Khaki	100	

Animal-derived alternatives, cheese

Food	Portion size, g	
Cheese, plant-based	40	
Soy drink	185	
Tofu	100	
Lentil burger	100	

Fish, crustacea and molluscs

Food	Portion size, g
Prawn	100

Sweets, confectionery and pastries

Food	Portion size, g
Liquorice	10

5. FIBRE DEGRADATION

The one subcategory under Fibre degradation (Gas production) can be seen as the other relevant category, as it is not yet clear whether it has a positive or negative effect on your health. That is why we can only show whether you are ‘lower than normal’ or ‘higher than normal’.

Bacteria ranges

Bacteria levels provide a snapshot for dietary advice that is based on bacteria counts and organized into bacteria ranges. Following healthy and diverse eating patterns may help your current bacteria levels increase to 'normal' and 'great'. On the other hand, not following healthy and diverse eating patterns may decrease your current bacteria levels to 'be aware'.

Your current bacteria level

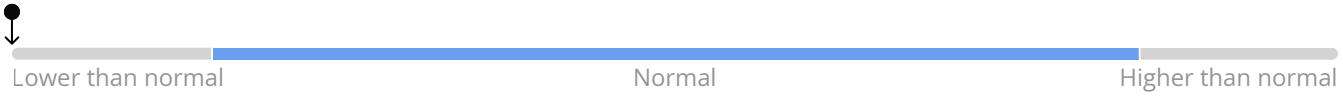
• Lower / higher than normal	Your bacteria are below / above normal
• Normal	Your bacteria are fine

About fibre degradation

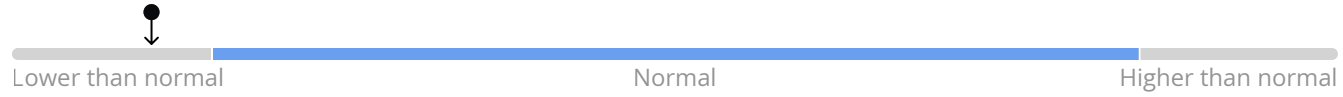
We have listed these bacteria under Fibre degradation. However, please be aware of the fact that they produce gases and therefore may cause constipation. Please see explanations of bacteria function in Your bacteria levels.

5.1 GAS PRODUCTION

Methanobrevibacter



Methanosphaera



The bacteria in our gut produce about 80 litres of gas a day. Excessive or rapid gas production can lead to intestinal cramps. Fortunately, most of this is absorbed into the bloodstream and exhaled through the lungs. However, a small portion leaves our bodies 'through the backdoor'. Methane is one of those gasses, produced by certain gut bacteria selected for this category. Nevertheless, they are beneficial because of their ability to convert 2 gasses - hydrogen and carbon dioxide - into 1 gas – methane - reducing gas pressure and thus intestinal cramps.

Although there are no science-based guidelines to get rid of bloating, here are a few tips and tricks that might help you manage your symptoms:

- Gradually increase high-fibre foods. Gas and bloating are normal when you consume fibre - you are feeding your inner bacteria! The trick is not to reduce your fibre intake, but to give your body time to adjust. Start slowly and make sure that as your fibre intake increases, so does your water intake. This 'keeps things moving' down there.
- Try a cup of peppermint tea or a capsule of peppermint oil after your meal. It helps relax the gut and reduces gas and bloating.
- Gently move for 10-15 minutes after your meal (walking and yoga are great options).
- Replace salt with herbs and spices such as cumin, paprika, curry, turmeric, ginger, etc. Diets high in salt can contribute to water retention and abdominal pain.
- Keep an eye on any 'trigger foods'. Everyone is different - what works for one may not work for another. If you know something can cause cramps, give your body time to adjust before completely eliminating it from your diet.
- The following foods can exacerbate gas and bloating, so keep these in mind as possible 'trigger foods': unripe and large amounts of fruit; sweeteners in 'light' products such as cola; products containing a lot of air such as whipped cream or mousse; spicy foods; and certain vegetables such as leeks, bell peppers, onions, and garlic.
- In addition, certain foods are more difficult to digest than others, such as lentils, beans, cabbage, broccoli, Brussels sprouts etc. Slowly increase consumption or swap them for another plant-based alternative if your symptoms don't improve over time.
- It may help to cook all your vegetables properly so that they are easier to digest.
- Soak your legumes overnight to get rid of some of the sugar that causes stomach pain.
- Pay attention to your bowel movements - constipation is a key contributor to bloating.
- Eat slower (and with your mouth closed) so that you swallow less air. Also, focus on chewing food thoroughly – depending on the product you should aim to chew 10-30 times before swallowing.
- Reduce your consumption of carbonated drinks - their bubbles can get trapped in your gastrointestinal tract and cause cramps.
- In most cases, gas and bloating is not a sign of a medical condition. However, if you notice that you often suffer from this, it is important to consult your doctor.

Your fiber degradation results are either 'lower than normal' or 'higher than normal,' indicating your levels are below or above the usual range.

6. GUT CHALLENGES

The three subcategories under Gut challenges (Potential colon problems, Infection alarm, and Fat alarm) can be seen as the bad categories, as they can have a negative effect on your health. The food items that are mentioned in the dietary advice can be consumed more or less to potentially decrease your bacteria.

Bacteria ranges

Bacteria levels provide a snapshot for dietary advice that is based on bacteria counts and organized into bacteria ranges. Following healthy and diverse eating patterns may help your current bacteria levels decrease to "normal" and "great". On the other hand, not following healthy and diverse eating patterns may increase your bacteria levels to "be aware".

Your current bacteria level

Good and bad bacteria

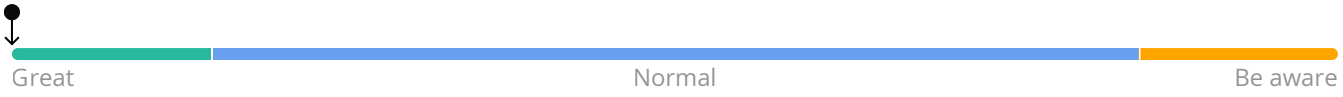
• Be aware	Your bacteria need your attention
• Normal	Your bacteria are fine
• Great	You are the biggest supporter of your bacteria

About gut challenges

We have split Gut challenges into relevant subcategories. For sake of simplicity, we have focused on characteristic bacteria for these subcategories, but please beaware that some of these species serve several functions across subcategories. For example, bacteria that impair your immune system can also weaken your gut wall lining or support your potential colon problems. Please see explanations of bacteria functions in Your bacteria levels.

6.1 POTENTIAL COLON PROBLEMS

Fusobacterium

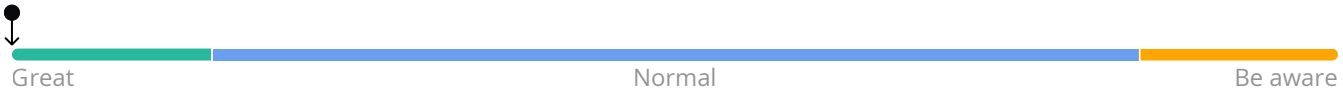


The gut microbiome promotes various physiological functions, which are related to the natural growth of cells, the renewal of blood vessels in the gut, and the programmed death of cells. Several studies have found that certain bacteria - including Fusobacterium – may be associated with the development of disorders in the colon. In these studies, a shift in the composition of the gut microbiome was observed in patients with such a condition. Although scientists have not determined whether Fusobacterium causes these diseases or that it simply thrives in the environment of these diseases, its presence can indicate a potential colon problem.

Your sample results for Potential colon problems are in 'great'. This means that you are the biggest supporter of your bacteria. Keep maintaining a healthy and diverse eating pattern to improve your potential colon problems.

6.2 INFECTION ALARM

Bacteroides

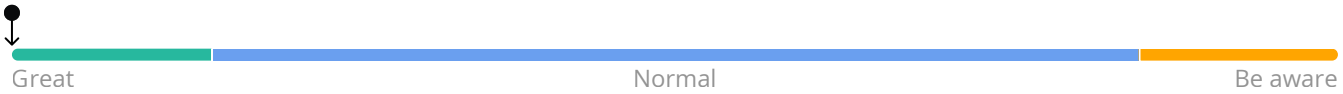


Bad bacteria can cause inflammation in the gut. Acute intestinal infections, often leading to diarrhoea and very noticeable by the host, are usually caused by infectious bacteria. However, there are also other bacteria that cause conditions which are more subtle and much less noticeable by the host, but nevertheless undesired. Such bacteria, for example, produce substances that can lead to inflammation when they enter the bloodstream or reduce antibodies that are an important part of the immune system and therefore lower our ability to fight of infections.

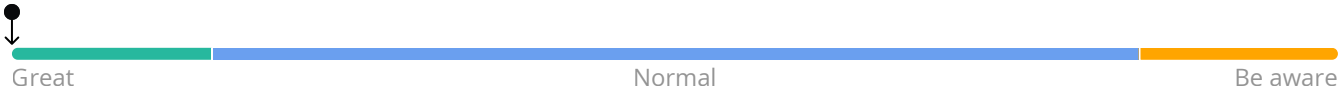
Your sample results for Infection alarm are in 'great'. This means that you are the biggest supporter of your bacteria. Keep maintaining a healthy and diverse eating pattern to improve your infection alarm.

6.3 FAT ALARM

Bilophila



Desulfovibrio



A high-fat diet with a low fibre intake has a detrimental effect on the gut microbiome. Such a diet promotes the growth of unwanted bacteria on the intestinal wall, which can lead to inflammatory reactions and intestinal permeability. Usually, a high prevalence of the bacteria in this category is associated with a higher fat intake. However, it may also be the case that the balance of macronutrients (carbohydrates, fats, and proteins) is disturbed, so that the amount of fat is not exceptionally high, but rather high in relation to the amount of carbohydrates and proteins.

Your sample results for Fat alarm are in ‘great’. This means that you are the biggest supporter of your bacteria. Keep maintaining a healthy and diverse eating pattern to improve your fat alarm.

7. PROBIOTICS

7.1 Results

Your personalised probiotic recommendations are based on your microbiome analysis and survey responses, as probiotics should be selected for their studied effects (e.g., stress, constipation, etc.).

These are your survey responses which were used to determine your unique probiotic recommendations.

#	Question	Answer
1	Which gastrointestinal issues or complaints do you have?	Lactose intolerance or sensitivity
2	Which gastrointestinal issues or complaints do you have?	Irritable bowel syndrome (IBS)
3	Which gastrointestinal issues or complaints do you have?	Gluten intolerance or sensitivity
4	Which gastrointestinal issues or complaints do you have?	Histamine intolerance or sensitivity
5	Do you follow an antibiotic treatment?	No
6	How would you rate your stress level?	8
7	How often do you exercise?	1-2 times a month
8	Which dietary target do you have?	Be sustainable
9	Which food allergies do you have?	Fish
10	Which food allergies do you have?	Milk
11	Which diet do you follow?	Vegetarian
12	Which medical condition do you have?	Depression
13	What is your gender?	Male
14	Which areas would you like additional support in?	Skin health

7.2 Recommendations

What are probiotics?

The International Scientific Association for Probiotics and Prebiotics defines probiotics as ‘live microorganisms that, when administered in adequate amounts, confer a health benefit on the host’, meaning live microbes that are good for your health.

Which probiotics are best for you?

It's important to choose a probiotic strain or a blend of strains that is backed up by scientific evidence for the specific benefit you're seeking. Not all commercially available probiotic strains have been shown to benefit the human body. However, do not worry, as we will only recommend evidence-based probiotic strains specific to the benefit that you are looking for.

You can simply find these by searching for the below mentioned probiotic strains online. As we are an independent and science-based company we cannot recommend any specific brands, so Page 3 of 28 we refer to our guidelines and considerations when choosing a probiotic supplement.

Customer guide

Additional information

This section lists alternate names the strain may be known by.	Other names
This section tells you exactly how the probiotic might help. If it's more than just a general benefit for your condition, we'll describe the specific effects here.	Effect
This section tells you important details to know before taking the probiotic — things to keep in mind for your health and safety.	Remark
This section tells you with which strains the probiotic was tested when showing the effect. If there is no information, it means it showed the effect without other strains.	Strains

Evidence level

We use different levels to describe how confidently we can say a probiotic supplement might work. These levels don't tell you how strong the effect will be for you, but how certain we are that it works based on research. In fact, a probiotic with a lower evidence level could be more effective for you then one with a higher evidence level. Here's what each level means:

Strong evidence that this probiotic works.	Level A
Good evidence that this probiotic works.	Level B
Some evidence that this probiotic works.	Level C
There's a good chance this probiotic works, but the research was either done in a group without the condition or wasn't as rigorous.	Level D

BRAIN HEALTH

Depression, anxiety and/or stress

Bifidobacterium bifidum Rosell-71

Level C

Remark: Improvement in stressed Individuals (study done in students)

Strains: Multispecies containing: Lactobacillus helveticus Rosell-0052, Bifidobacterium bifidum Rosell-71, and Bifidobacterium infantis Rosell-0033

Bifidobacterium bifidum W23

Level B

Effect: Memory improvement under stress

Level C

Effect: Mood improvement especially in mild depressive individuals

Effect: Anxiety and depression improvement for people with chronic gastrointestinal disorders and anxiety or depression symptoms

Strains: Multispecies containing: Bifidobacterium bifidum W23, Bifidobacterium lactis W51, Bifidobacterium lactis W52, Lactobacillus acidophilus W37, Lactobacillus brevis W63, Lactobacillus casei W56, Lactobacillus salivarius W24, Lactococcus lactis W58, and Lactococcus lactis W19

Bifidobacterium lactis W51

Level B

Effect: Memory improvement under stress

Level C

Effect: Mood improvement especially in mild depressive individuals

Effect: Anxiety and depression improvement for people with chronic gastrointestinal disorders and anxiety or depression symptoms

Strains: Multispecies containing: Bifidobacterium bifidum W23, Bifidobacterium lactis W51, Bifidobacterium lactis W52, Lactobacillus acidophilus W37, Lactobacillus brevis W63, Lactobacillus casei W56, Lactobacillus salivarius W24, Lactococcus lactis W58, and Lactococcus lactis W19

Bifidobacterium lactis W52

Level B

Effect: Memory improvement under stress

Level C

Effect: Mood improvement especially in mild depressive individuals

Effect: Anxiety and depression improvement for people with chronic gastrointestinal disorders and anxiety or depression symptoms

Strains: Multispecies containing: Bifidobacterium bifidum W23, Bifidobacterium lactis W51, Bifidobacterium lactis W52, Lactobacillus acidophilus W37, Lactobacillus brevis W63, Lactobacillus casei W56, Lactobacillus salivarius W24, Lactococcus lactis W58, and Lactococcus lactis W19

Bifidobacterium longum Rosell-175

Level B

Remark: Improvement in stressed Individuals (study done in students)

Strains: Multispecies containing: Lactobacillus helveticus Rosell-0052, Bifidobacterium bifidum Rosell-71, and Bifidobacterium infantis Rosell-0033

Lactococcus lactis W19

Level B

Effect: Memory improvement under stress

Level C

Effect: Mood improvement especially in mild depressive individuals

Effect: Anxiety and depression improvement for people with chronic gastrointestinal disorders and anxiety or depression symptoms

Strains: Multispecies containing: Bifidobacterium bifidum W23, Bifidobacterium lactis W51, Bifidobacterium lactis W52, Lactobacillus acidophilus W37, Lactobacillus brevis W63, Lactobacillus casei W56, Lactobacillus salivarius W24, Lactococcus lactis W58, and Lactococcus lactis W19

Lactococcus lactis W58

Level B

Effect: Memory improvement under stress

Level C

Effect: Mood improvement especially in mild depressive individuals

Effect: Anxiety and depression improvement for people with chronic gastrointestinal disorders and anxiety or depression symptoms

Strains: Multispecies containing: Bifidobacterium bifidum W23, Bifidobacterium lactis W51, Bifidobacterium lactis W52, Lactobacillus acidophilus W37, Lactobacillus brevis W63, Lactobacillus casei W56, Lactobacillus salivarius W24, Lactococcus lactis W58, and Lactococcus lactis W19

GASTROINTESTINAL HEALTH

Irritable bowel syndrome (IBS-C)

Bifidobacterium animalis subsp. lactis CNCM I-2494

Level B

Bifidobacterium animalis subsp. lactis CUL-34

Level C

Strains: Multispecies containing: Lactobacillus acidophilus CUL-60, Lactobacillus acidophilus CUL-21, Bifidobacterium animalis subsp. lactis CUL-34, and Bifidobacterium bifidum CUL-20

Bifidobacterium animalis subsp. lactis UABla-12

Level C

Remark: Among the most effective in improving symptoms of individuals with irritable bowel syndrome

Bifidobacterium bifidum CUL-20

Level C

Strains: Multispecies containing: Lactobacillus acidophilus CUL-60, Lactobacillus acidophilus CUL-21, Bifidobacterium animalis subsp. lactis CUL-34, and Bifidobacterium bifidum CUL-20

Bifidobacterium bifidum MIMBb75

Level B

Saccharomyces boulardii CNCM I-745

Level C

Irritable bowel syndrome (IBS-D)

Bifidobacterium animalis subsp. lactis CUL-34

Level C

Strains: Multispecies containing: Lactobacillus acidophilus CUL-60, Lactobacillus acidophilus CUL-21, Bifidobacterium animalis subsp. lactis CUL-34, and Bifidobacterium bifidum CUL-20

Bifidobacterium animalis subsp. lactis UABla-12

Level C

Remark: Among the most effective in improving symptoms of individuals with irritable bowel syndrome

Bifidobacterium bifidum CUL-20

Level C

Strains: Multispecies containing: Lactobacillus acidophilus CUL-60, Lactobacillus acidophilus CUL-21, Bifidobacterium animalis subsp. lactis CUL-34, and Bifidobacterium bifidum CUL-20

Bifidobacterium bifidum MIMBb75

Level B

Bifidobacterium longum Rosell-175

Level C

Strains: Multispecies containing: Lactobacillus paracasei HA-196 and Bifidobacterium longum Rosell-175

Saccharomyces boulardii CNCM I-745

Level C

OTHERS

Lactose intolerance and/or sensitivity

Bifidobacterium animalis subsp. lactis Bb-12

Level C

Strains: Multispecies containing: Lactobacillus acidophilus La-5 and Bifidobacterium animalis subsp. lactis Bb-12

7.3 Guidelines and considerations

7.3.1 Quality

The FDA or EFSA does not regulate most commercially available probiotic strains, so choose a supplement that has undergone third party testing and that is transparent about the research of their product. To ensure probiotics provide health benefits, they must be consumed alive. Since they can die during their shelf life, consumers should choose products that specify the number of CFUs (colony-forming units) at the end of the product's shelf life, rather than at the time of manufacture.

7.3.2 Labelling

Look at how probiotics should be stored (cooled, dried, etc.) on the product label. Check the label of the probiotics and only choose products that mention genus, species, and strain information - example:

Genus: Bifidobacterium
Species: animalis; subspecies*: longum
Strain: AB#1
* Not all probiotics require a subspecies designation.

Look for the contact information of the company to request more information about the product.

Dosage

The Colony Forming Units (CFU) tells you how many live microorganisms are in each serving or dose. It is essential to check that the CFUs in your probiotic are guaranteed until the product's expiration date, as this indicates the bacteria will still be alive and effective when you use them. Avoid products that only specify the CFUs 'at the time of manufacture'.

7.3.3 Consumption

Dosage

A daily dosage of a billion live bacteria is usually sufficient. The intake should be with a meal and not on an empty stomach, as the gastric compartment is very acidic which will destroy all bacterial cells. The meal (which can be breakfast, lunch, dinner or simply a glass of milk (not water) helps to buffer this acidity.

Period of supplementation

Try the probiotic supplement for about two months and if you don't see any improvements then the product might not be right for you.

7.3.4 Safety considerations

Always consult with your healthcare provider when deciding to add supplements to your diet, especially if you have a health condition. Some probiotics may interact with certain medications, such as immunosuppressants or antibiotics. Common probiotic species such as Lactobacillus and Bifidobacterium are unlikely to cause harm in healthy adults. Pregnant women, infants, people with compromised immune systems, or people with short bowel syndrome should talk to a healthcare professional and the

manufacturer before consuming. Some mild side effects like gas and bloating may occur, especially in the first week. If so, persevere! They will diminish again. The benefit of probiotics is much larger than these shortly experienced mild unpleasantness. In the unlikely event that severe side effects occur, such as allergic reactions, rashes, or severe digestive issues, you should stop taking the probiotic and consult a healthcare provider immediately. Probiotic supplements do not replace a healthy lifestyle!

7.4 FAQs

7.4.1 Are more bacteria better?

A higher number of colony-forming units (CFU) does not always guarantee greater effectiveness. The ideal dosage is one that has been tested in humans and proven to deliver positive results. These dosages can vary widely, from 100 million to over a trillion CFU per day. Most probiotics have been studied at levels ranging from 1 to 10 billion CFU per day.

7.4.2 Are more strains better?

It depends on the scientific evidence. Some studies support the benefits of single-strain probiotic products, while others demonstrate positive outcomes with specific blends of probiotic strains. However, simply including multiple strains does not guarantee a more beneficial product.

7.4.3 Aren't all probiotics the same?

Scientists agree that not all probiotics are the same. It's important to choose a strain or blend of strains that are backed by scientific evidence for the specific benefit you're seeking because not all probiotic strains that are commercially available have been shown to have a benefit for the human body. But there is nothing to worry about! At InnerBuddies, we will only recommend probiotic strains that are backed by science!

7.4.4 Is the sugar in my probiotic drink or yoghurt bad?

Most studies on the health benefits of probiotics in yoghurt have focused on sweetened yoghurts or drinks, and the sugar does not seem to diminish the effectiveness of the probiotics. However, it's possible to overconsume sugar, so it's important to keep added sugar intake within recommended limits as part of a healthy and balanced diet.

7.4.5 Do probiotics have to alter my microbiome to be effective?

A common misconception is that probiotics must alter the composition of your gut microbiota to be effective. In reality, probiotics usually do not establish themselves in your gut and may not cause any noticeable changes in the existing microbes. As they move through the gut, probiotics (and the substances they produce) interact with immune cells, gut cells, dietary components, and the existing gut microbes, and this is how they exert their benefits.

7.4.6 Do probiotics only help if I have a disease?

Probiotics can help people with particular health issues but given its broad mechanism of action of the gut microbiome, it can also help to maintain a healthy and balanced gut.

7.4.7 Are all fermented foods also probiotics?

Many fermented foods contain live bacteria, but not all meet the required evidence level for being classified as a 'probiotic' (live microorganisms that, when administered in adequate amounts, confer a health benefit on the host). Even if a fermented food contains live microorganisms, it may not have been tested for health benefits. Additionally, commercially available fermented products are often further processed (e.g. pasteurisation) which decreases or completely kills the amount of viable bacteria. Therefore, while fermented foods can be healthy and may contain live microbes, they might not meet the criteria to be classified as probiotic.

8. PREBIOTICS

8.1 Results

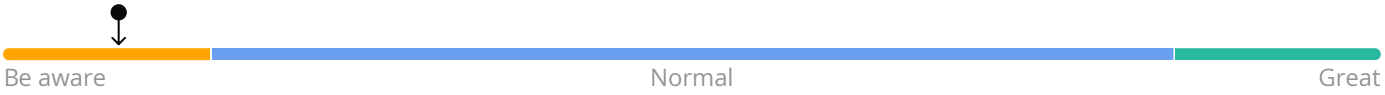
Your personalised prebiotic recommendations are based on your survey responses, food diary, and microbiome analysis. Recommendations are based on the following:

Bacteria levels:

These graphs display the levels of four key bacteria that can be stimulated with prebiotics. The prebiotic compounds provided in your recommendations have been shown to increase the abundance of these four bacteria (compound-specific).

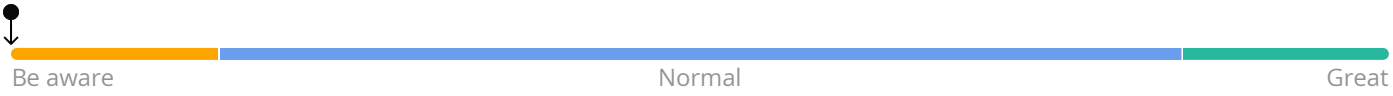
- **If you are in the 'be aware' range for a specific bacteria:**
  You will receive recommendations for prebiotic supplements to help increase the abundance of that bacteria.
- **If you are in the 'normal' range but close to 'be aware':**
  You will also receive prebiotic supplement recommendations. While not necessary, they may still be beneficial.
- **If you are in the 'normal' range but close to 'be aware':**
  You will also receive prebiotic supplement recommendations. While not necessary, they may still be beneficial.

Akkermansia



Akkermansia is associated with weight reduction support, as it has been linked to a decrease in cholesterol and obesity risk. It can be induced by legumes (such as soybeans, chickpeas, and lupin) and nuts or seeds (like cashew nuts or flax seeds). This bacteria is present in 64.8% of the population.

Bifidobacterium



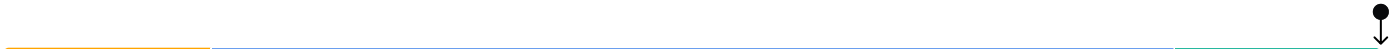
Bifidobacterium is associated with immune strength, as it has been linked to an increase in bowel movement and microbial richness, and a decrease in inflammation. It can be induced by vegetables (such as artichoke, leek, and cabbage), fruits (like cantaloupe, nectarine, and apple), and fermented products (for example miso, tempeh, and kefir). This bacteria is present in 76.2% of the population.

Faecalibacterium

Be aware Normal Great

Faecalibacterium is associated with gut wall strength, as it has been linked to an increase in butyrate production and bowel movement, and a decrease in insulin production. It can be induced by vegetables (such as cauliflower, eggplant, and lettuce) and cereals (like quinoa, bulgur, and sorghum). This bacteria is present in 98.7% of the population.

Lactobacillus



Be aware Normal Great

Lactobacillus is associated with immune strength, as it has been linked to an increase in bowel movement and microbial richness, and a decrease in inflammation. It can be induced by vegetables (such as artichoke, leek, and cabbage), fruits (like cantaloupe, nectarine, and apple), and fermented products (for example miso, tempeh, and kefir). This bacteria is present in 42.6%.

8.2 Recommendations

Your personalised prebiotic recommendations are based on your survey responses, food diary, and microbiome analysis. Recommendations are based on the following:

What are prebiotics?

Prebiotics are nutrients (generally different types of fibre) that help your 'good' gut bacteria grow. Your body cannot digest prebiotics, so they nourish the beneficial microbes in your gut and thus support the health of your gut microbiome.

Which prebiotics are best for you?

You can find prebiotics in various foods and/or as a supplement (tablet, powder, etc.). We recommend a Food First approach. First focus on adding more prebiotic-rich foods to your diet, and then complement these with a supplement if needed. Keep in mind that prebiotics in food are generally found at a lower level, so it might be necessary to add a prebiotic supplement. approach. First focus on adding more prebiotic-rich foods to your diet, and then complement these with a supplement if needed. Keep in mind that prebiotics in food are generally found at a lower level, so it might be necessary to add a prebiotic supplement.

Based on your results, we compiled a list of prebiotic compounds (found in food and supplements) that may be beneficial to consume.

Various scientific organizations around the world recommend consuming 5g to 20g of prebiotic fibres daily to maximize their health benefits. To support the growth of beneficial bacteria, incorporate a variety of prebiotic-rich foods into your diet, using the list below to select foods that contain the prebiotic compounds you need. Mix things up and enjoy discovering new options - the more the merrier!

Food	Portion size, g	Complaints

Shiitake	50	1 cup, raw	
Maitake	50	1 cup, raw	
Wheat, whole grain	90	Depends on chosen item (bread, cereal, etc.)	
Rye, whole grain	90	Depends on chosen item (bread, cereal, etc.)	
Barley	90	0.5 cup, cooked	
Oatmeal	45	0.5 cup, dry	
Chicory root	50	1-2 tablespoons, fresh or dried	
Jerusalem artichoke	125	1 cup, cooked	
Leek	125	1 cup, cooked	
Garlic	5	1 clove	
Onions	50	0.5 piece, raw	
Asparagus	125	6 spears	
Jicama	125	1 cup, cooked	
Yacon root	125	1 piece, cooked or raw	
Agave powder	5	1 teaspoon	
Burdock root	125	1 piece, cooked	
Radicchio	50	0.5 cup, raw	
Chives	5	1 tablespoon, raw	
Endive	50	1 cup, raw	
Dandelion greens	50	1 cup, raw	
Pasta, cooked and cooled	90	1 cup, cooked	
Potatoes, cooked and cooled	150	1 piece, cooked	
Rice, cooked and cooled	90	0.5 cup, cooked	
Green bananas	100	1 piece	
Chickpea	45	0.25 cup, cooked	
Lentils	45	0.25 cup, cooked	H
Beans (kidney, black, etc.)	45	0.25 cup, cooked	
Cornflakes	45	1 cup	
Wheat bran	30	0.5 cup, dry	
Corn	125	1 piece	

- **Irritable bowel syndrome.**
- **Gluten intolerance or gluten sensitivity.**
- **Histamine intolerance or histamine sensitivity.**
- **Lactose intolerance or lactose sensitivity**

Prebiotic supplements

You can find various prebiotic dietary supplements by simply searching online for any of the prebiotic compounds listed below. As we are an independent science-based company we cannot recommend any specific brands. Refer to our guidelines and considerations when choosing a prebiotic supplement.

The green bar highlights the prebiotic compound that most effectively promotes the growth of the respective bacteria. The other compounds can also support the growth of the respective bacteria, but their effects are not as strong.

Note: Many commercially available probiotic supplements also contain prebiotics in their formula. Read the ingredient list on the back of the bottle.

Akkermansia — Prebiotic supplements

Resistant starch	**Galactooligosaccharides**
Inulin	**Polydextrose**

Bifidobacterium — Prebiotic supplements

Galactooligosaccharides	**Fructooligosaccharides**
Inulin	**Resistant starch**
Xylo-oligosaccharide	

Faecalibacterium — Prebiotic supplements

Resistant starch	**Fructooligosaccharides**
Galactooligosaccharides	**Inulin**
Polydextrose	

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8.3 Guidelines and considerations

8.3.1 Dosage

Take note that there are no official dietary recommendations for prebiotics with regards to 'adequate intake' or 'recommended daily allowance' in healthy individuals. Most prebiotics for the gut require an oral dosage of at least 3 grams per day to confer a benefit. Typically, around 5 grams is the target for FOS and GOS in the daily diet and this includes dietary sources of prebiotics. If you choose to consume a prebiotic supplement then check the details for dosage guidelines as these vary per product. You can also follow these guidelines:

- 1 daily dose spread over 3 meals to minimize undesired gastrointestinal symptoms.
- Start slow with 1g (or less) per day and slowly increase to 5-10g per day depending on the prebiotic supplement.

8.3.2 Side effects

It's important to be aware that high doses of prebiotic supplements (or foods) can initially cause gastrointestinal symptoms like bloating, gas, and diarrhoea. To avoid these adverse effects, it is advisable to start with a low dose and gradually increase it until the desired effect is reached.

8.3.3 Safety considerations

Speak to your healthcare provider before adding supplements to your diet, especially if you have a health condition or if you take medication.

Individuals with a FODMAP intolerance, small intestinal bacterial overgrowth (SIBO), inflammatory bowel disease (IBD), and irritable bowel syndrome (IBS) should consult their doctor and/or dietitian before consuming prebiotic foods and/or supplements.

Many foods that are rich in prebiotics also contain FODMAPs, meaning that they could trigger IBS symptoms in some people with the condition. Some individuals with IBS could benefit from taking a psyllium husk supplement. Psyllium husk is a soluble fibre that has been shown to improve IBS symptoms such as constipation and diarrhoea.

8.4 FAQs

8.4.1 Do only people who have health issues need prebiotics?

Most people can gain benefits from adding more prebiotics to their diet. Most people following a 'Western diet' often lack sufficient prebiotic intake, especially due to the consumption of highly processed foods that don't offer many of these beneficial compounds. Incorporating foods rich in prebiotics, functional foods, beverages, or a daily prebiotic supplement can boost your prebiotic intake and offer various health benefits. The definition of a prebiotic itself is "a substrate that is selectively utilised by host microorganisms conferring a health benefit and must confer a beneficial physiological effect on the host which should derive at least in part from the utilisation of the compound by resident microbes."

8.4.2 Do I have to take prebiotics forever?

Yes, prebiotics should be a regular part of your daily diet. However, this doesn't mean you need an arsenal of prebiotic supplements on your kitchen shelf. Instead, choose foods that naturally contain prebiotics, and consider supplements only as a secondary option.

8.4.3 Should I consume just one prebiotic?

For optimal benefit, you should consume a variety of prebiotics daily, preferably through foods that already contain prebiotics (fruits and vegetables) rather than supplements. As already mentioned, prebiotic supplements can be beneficial in combination with prebiotic foods.

8.4.4 Aren't prebiotics and dietary fibre just food waste because our bodies cannot absorb these food compounds?

It is true that our body cannot directly absorb substances like dietary fibres because we lack certain enzymes to break the food down. However, this is a good thing! We leave some of the nutrients to our inner buddies (gut microbes) which digest the food and produce important substances for us like short-chain fatty acids. These, and other substances induced by prebiotics, can lead to multiple health benefits like improving mineral absorption, immune system support, improving bowel movement, reducing occasional constipation and diarrhoea, promoting metabolic health, reducing allergy and helping with symptoms of IBS.

8.4.5 Can prebiotic supplements replace natural food sources?

Although prebiotic supplements can help boost your intake of prebiotics, they should never completely replace natural food sources. Natural food sources offer numerous additional benefits. Foods rich in prebiotics, such as fruits and vegetables, also contain a high amount of important vitamins, minerals and antioxidants that are crucial for our health.

8.4.6 Is it better to use a pure prebiotic supplement instead of those with added ingredients like chicory root or Jerusalem artichoke?

Chicory root and Jerusalem Artichoke are often used in prebiotic supplements. These are both high in the prebiotic 'inulin', and therefore it would be best to use the pure supplement (inulin) rather than the impure supplements (chicory root and Jerusalem artichoke) as these could have a mixture of other things that have not been proven to have the same health effect as Inulin.

8.4.7 What is the difference between dietary fibre and prebiotics?

Dietary fibre:
According to the International Scientific Association for Probiotic and Prebiotics (ISAPP): "Fibres are non-digestible plant-derived carbohydrates comprising at least 3 units of individual sugars. Most fibres are components of plants. Depending on regulations where you live, if fibre is isolated from whole plants or synthesized from sugars, a demonstration of physiological benefits is needed to be able to call them 'fibre' on a food label."

Prebiotic:
According to the International Scientific Association for Probiotic and Prebiotics (ISAPP): "In simple terms, a prebiotic is food for beneficial members of your resident microbial community – we can't digest

prebiotics, but certain beneficial microbes can. Your resident microbes can produce a variety of beneficial compounds (for example, short-chain fatty acids) from the utilization of prebiotics. These can promote a healthy gut – and beyond. In more technical terms, a prebiotic is a substance that is selectively utilised by host microorganisms conferring a health benefit."

Most prebiotics are dietary fibers but not all dietary fibers are prebiotics!

8.4.8 Why have I never seen a product which claims to have prebiotics?

The word 'prebiotic' is seldom used on the label. Look for the specific compounds we listed in our recommendations like Fructooligosaccharides (FOS), Galactooligosaccharides (GOS), Inulin etc.

8.4.9 Aren't all prebiotics the same?

No, certain prebiotics can only be utilized by specific microbes. While some bacteria may share the same substrate (prebiotic) for growth, it's impossible to have a prebiotic that promotes the growth of all bacteria. It's similar to how cats may occasionally eat the same food as humans, but that doesn't mean everything we eat will be suitable for cats, and vice versa.

8.4.10 Is more always better?

No, various studies have tested different amounts of prebiotics, and higher doses did not always lead to an increased abundance of bacteria.