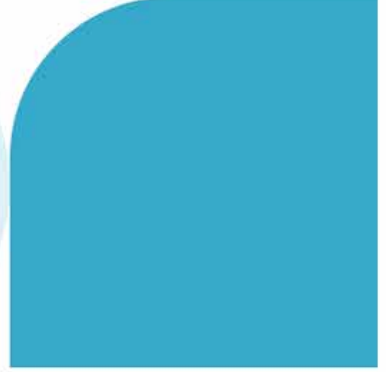
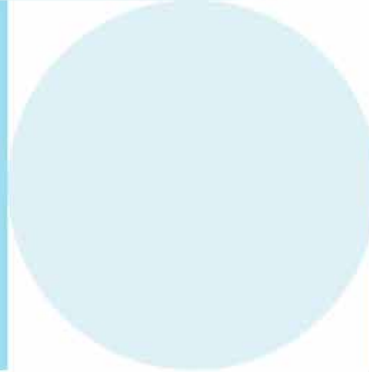
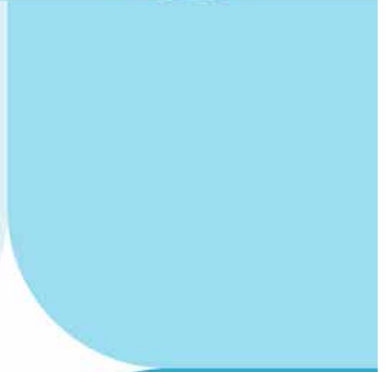
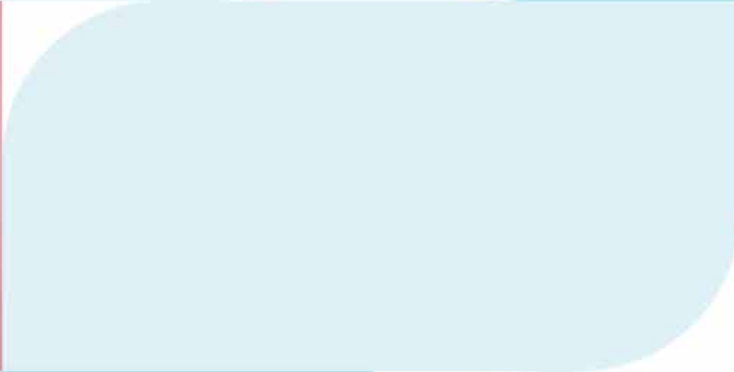




Test report



At-home test



# Gut Microbiome Test Small

Lab test

Stool

Name: **Sample Report**    Date of test: **09/13/2023**    Analysis-ID: **DUMMY-32**

## Table of contents

Determination of aerobic bacteria

Determination of anaerobic bacteria

Mycological stool examination


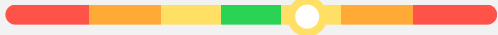



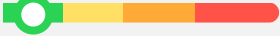












pH-value

## Your test results







### How to interpret your results



If the circle on the scale is within the green area, your value is good. If the circle is within the yellow, orange or red area, it indicates deviation. Some parameters can not be set too high or too low, in which case the scale starts or ends on the green area, this is completely normal. For an explanation of the various parameters, please see Part 2 entitled Extended information.

### Determination of aerobic bacteria


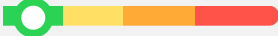




Name	Your value	Unit	Reference value	Scale
Escherichia coli	 $4,0 \times 10^8$	CFU/g stool	$10^6 - 10^7$	
Escherichia coli Biovare	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	
Proteus spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	
Klebsiella spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	
Pseudomonas spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	
Enterobacter spp.	 $1,0 \times 10^7$	CFU/g stool	$< 1,0 \times 10^4$	
Serratia spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	
Hafnia spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	
Enterococcus spp.	 $< 1,0 \times 10^4$	CFU/g stool	$10^6 - 10^7$	

### Determination of anaerobic bacteria


Name	Your value	Unit	Reference value	Scale
Bifidobacterium spp.	 $3,0 \times 10^8$	CFU/g stool	$10^9 - 10^{11}$	
Bacteroides spp.	 $5,0 \times 10^8$	CFU/g stool	$10^9 - 10^{11}$	
Lactobacillus spp.	 $8,0 \times 10^5$	CFU/g stool	$10^5 - 10^7$	

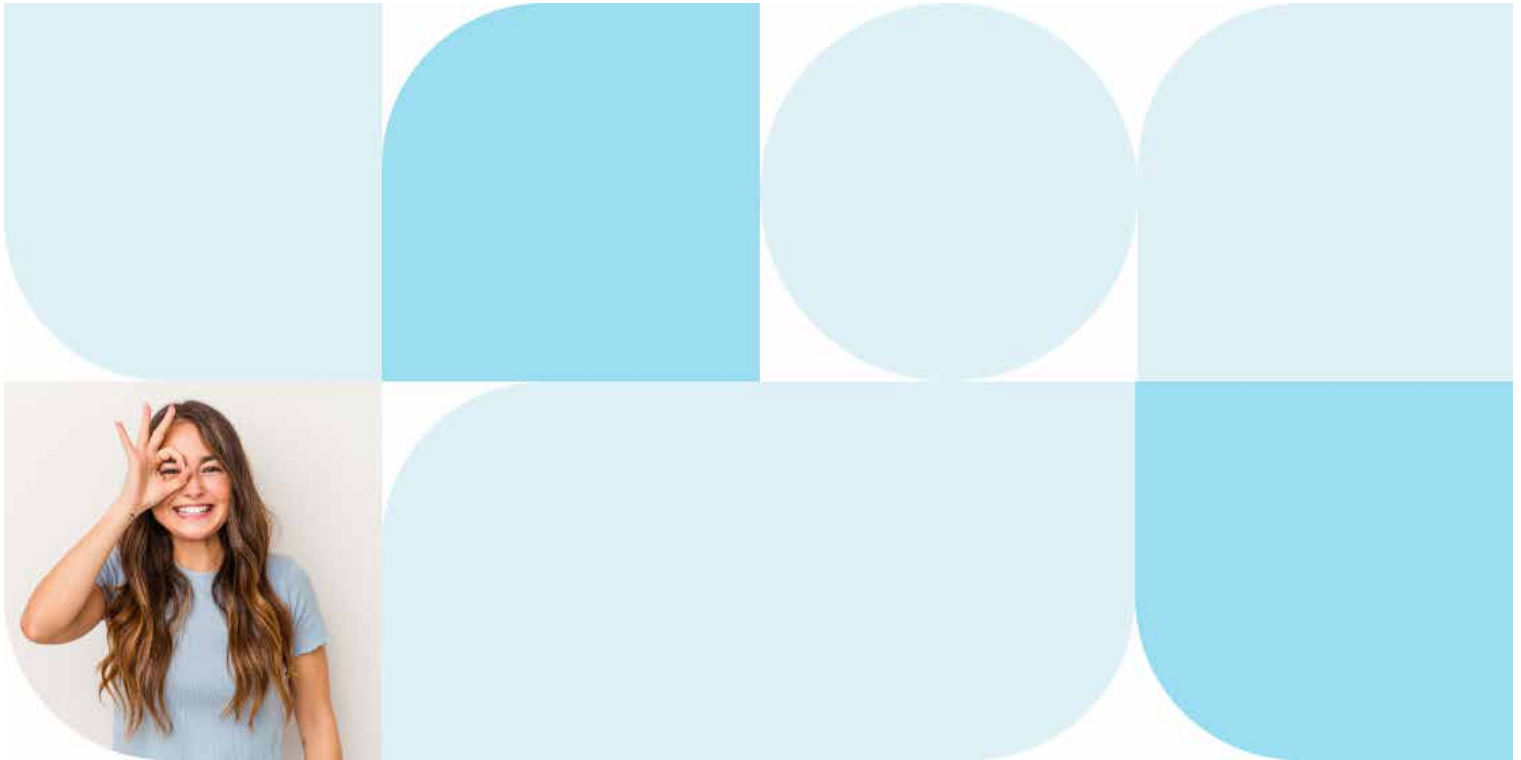
Name	Your value	Unit	Reference value	Scale
Clostridium spp.	 < 1,0 x 10 <sup>5</sup>	CFU/g stool	< 1,0 x 10 <sup>5</sup>	

## Mycological stool examination

Name	Your value	Unit	Reference value	Scale
Candida spp.	 < 1,0 x 10 <sup>3</sup>	CFU/g stool	< 1,0 x 10 <sup>3</sup>	
Candida albicans	 1,0 x 10 <sup>4</sup>	CFU/g stool	< 1,0 x 10 <sup>3</sup>	
Yeast	negativ	Negative		
Geotrichum candidum	 < 1,0 x 10 <sup>3</sup>	CFU/g stool	< 1,0 x 10 <sup>3</sup>	

## pH value

Name	Your value	Unit	Reference value	Scale
pH value	 6.50		5,8 - 6,5	




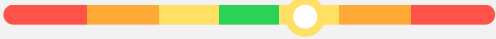
# Specialization

## Explanation of your test results

The **microbiome** includes the bacteria and other microorganisms that are naturally present in the intestine. Our **microbiome** has a broad influence on human health and disease. It modulates the immune system, provides the organism with vitamins, participates in the digestion of food components, supplies intestinal epithelium with energy by producing short-chain fatty acids and stimulates intestinal peristalsis.

## Determination of aerobic bacteria

### Escherichia coli



Name	Your value	Unit	Reference value	Scale
Escherichia coli	 4,0 x 10 <sup>8</sup>	CFU/g stool	10 <sup>6</sup> - 10 <sup>7</sup>	

*Escherichia coli* belongs to the putrefactive bacteria. Putrefactive bacteria are bacteria that thrive in an alkaline environment and produce ammonia. At high pH, they grow and outcompete with other good bacteria.

Putrefactive bacteria primarily metabolize protein and fat, which produces toxic metabolites such as ammonia, indole, skatole and hydrogen sulfide. This can damage the intestinal mucosa and may lead to an increase in the pH of the colon (> 8.5) in the long term.

Disturbed balance is often caused by insufficient activity in the mucosal immune system. If the **microbiome** is characterized by an increased amount of putrefactive bacteria, one can try to reduce the pH value in the intestinal lumen by supplementing with pre- or probiotics. This promotes the reconstruction of the **microbiome** and inhibits the growth of putrefactive bacteria. Less toxic metabolites are produced, which also reverse the damage on the intestine and other vital organs such as the liver and kidneys.


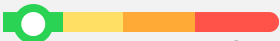
### Escherichia coli Biovare

Name	Your value	Unit	Reference value	Scale
Escherichia coli Biovare	 < 1,0 x 10 <sup>4</sup>	CFU/g stool	< 1,0 x 10 <sup>4</sup>	

*Escherichia coli* Biovare are a subgroup of *Escherichia coli* that does not normally occur in the intestine. There are several types such as hemolytic, mucoid and lactose negative E. coli. It is not uncommon to find hemolytic or mucoid E. coli while looking for *Escherichia coli* and other pathogens.



Disturbed balance can also be caused by insufficient mucosal immunity. This is mainly due to too low production of antibodies IgA.

### Proteus spp.

Name	Your value	Unit	Reference value	Scale
Proteus spp.	 < 1,0 x 10 <sup>4</sup>	CFU/g stool	< 1,0 x 10 <sup>4</sup>	



Elevated levels of Proteus species often occur in Crohn's disease and primary biliary cirrhosis.

## Klebsiella spp.

Name	Your value	Unit	Reference value	Scale
Klebsiella spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	



High levels indicate increased inflammatory activity in the intestine. Klebsiella can release toxins and may cause abdominal pain, bloating, gas and diarrhea. Elevated levels of Klebsiella is common after prolonged use of antibiotics.

## Pseudomonas spp.

Name	Your value	Unit	Reference value	Scale
Pseudomonas spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	

Elevated levels of Pseudomonas species may occur in inflammation of the intestine. Elevated levels can lead to diarrhea and loose stool.

## Enterobacter spp.

Name	Your value	Unit	Reference value	Scale
Enterobacter spp.	 $1,0 \times 10^7$	CFU/g stool	$< 1,0 \times 10^4$	


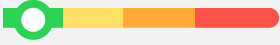
Enterobacter species belong to the putrefactive bacteria. Putrefactive bacteria are bacteria that thrive in an anaerobic environment and produce ammonia. At high pH, they grow and outcompete with other good bacteria. Putrefactive bacteria primarily metabolize protein and fat, which produce toxic metabolites such as ammonia, indole, skatole and hydrogen sulfide. This can damage the intestinal mucosa and may lead to an increase in the pH of the colon (7-8.5) in the long term.

Enterobacter species are common bacteria in soil and water and are often found in the intestinal tract of humans and animals. High levels are often associated with an inflammatory process in the intestinal mucosa. Enterobacter are opportunists that can occur as pathogens in hospitals where they cause infections in people with weakened immune systems.

If the intestine is characterized by an increased amount of putrefactive bacteria, one can try to reduce the pH value in the intestinal lumen by supplementing with pre- or probiotics. This promotes the repopulation of the intestinal ecosystem and inhibits the growth of putrefactive bacteria. Less toxic metabolites byproducts are produced, which alleviates the damage on the intestine and other vital organs such as the liver and kidneys.


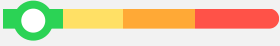


## Serratia spp.

Name	Your value	Unit	Reference value	Scale
Serratia spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	


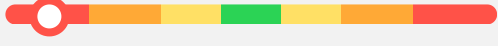
Serratia species cause the variety of infections. Elevated levels also often occur in people with diarrhea.

## Hafnia spp.

Name	Your value	Unit	Reference value	Scale
Hafnia spp.	 $< 1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^4$	

Elevated levels of Hafnia species can occur in people with diarrhea and can cause illness in people with weakened immune systems.



## Enterococcus spp.

Name	Your value	Unit	Reference value	Scale
Enterococcus spp.	 $< 1,0 \times 10^4$	CFU/g stool	$10^6 - 10^7$	

Enterococcus produce wide metabolic products and antibiotics resistance that prevent foreign bacteria colonization in the small intestine (translocate to small intestine colonization).  
 Low levels promote the occurrence of endogenous infections by disrupting microbial barrier function.

## Determination of anaerobic bacteria

### Bifidobacterium spp.

Name	Your value	Unit	Reference value	Scale
Bifidobacterium spp.	 $3,0 \times 10^8$	CFU/g stool	$10^9 - 10^{11}$	


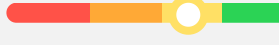
Bifidobacteria are needed among other things to protect against potentially pathogenic microbes for the synthesis of short-chain fatty acids and to stimulate IgA2<sup>+</sup> (gut-associated lymphoid tissue), as well as to break down complex carbohydrates and indigestible fiber. They are part of the acidifying flora and mainly use carbohydrates as their fuel substrate. They produce short-chain fatty acids (acetate and butyrate), which lower the pH value in the intestinal lumen and therefore inhibit the growth and spread of pathogenic bacteria.

High bifidobacterial flora leads to detoxification of colonization resistance in the colon. Bifidobacteria develop microbial barrier against infection by occupying mucosal receptors. These counteract the colonization and spread of pathogenic bacteria, yeast or parasites.



Low levels can be due to a weakened immune system, or too low fiber intake. Excessive levels are more likely to be associated with a dysbiosis bacterial structure used in probiotics. Bacteroides is also well supported by probiotics.

## Bacteroides spp.



Name	Your value	Unit	Reference value	Scale
Bacteroides spp.	 5,0 x 10 <sup>8</sup>	CFU/g stool	10 <sup>9</sup> - 10 <sup>11</sup>	

Bacteroides species belong to the genus Bacteroidetes. Their task is to break down indigestible fiber and produce butyrate/butyric acid.

As with Bifidobacteria, each Bacteroides species leads to the production of colonization resistance in the colon. Bifidobacteria develop a microbial barrier against infection by occupying mucosal receptors. These counteract the colonization and spread of pathogenic bacteria, yeast or parasites.


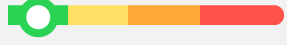
Too low levels of Bacteroides species indicate a disturbance in the microbial ecosystem and can lead to overgrowth of other microbes. Too low levels can also reduce the production of short-chain fatty acids. A diet rich in fiber and probiotics is recommended at low levels.

## Lactobacillus spp.

Name	Your value	Unit	Reference value	Scale
Lactobacillus spp.	 8,0 x 10 <sup>5</sup>	CFU/g stool	10 <sup>5</sup> - 10 <sup>7</sup>	

Lactobacillus is a bacterial species that occur in the small intestine and forms a microbial barrier and metabolically products that prevent foreign bacteria from colonizing in the small intestine. Too low levels can occur in, among other things, neurodegenerative, food allergies or food intolerances. Excessive levels can occur with impaired digestive capacity.

## Clostridium spp.



Name	Your value	Unit	Reference value	Scale
Clostridium spp.	 < 1,0 x 10 <sup>5</sup>	CFU/g stool	< 1,0 x 10 <sup>5</sup>	

Clostridium species consist over one hundred different subspecies. Most species are not virulent and can have positive effects on gastrointestinal health. Elevated levels may occur in people with autism, as well as in IBS. Even too low levels can occur in people with IBS.

## Mycological stool examination



The mycological stool examination is used to detect any overgrowth of yeast and fungi. A possible fungal overgrowth is a result of unfavorable conditions in the intestine, which in turn is often due to a weakening of the immune system.

### Candida spp.

Name	Your value	Unit	Reference value	Scale
Candida spp.	 $< 1,0 \times 10^3$	CFU/g stool	$< 1,0 \times 10^3$	

Candida species are typically part of the commensal fungal flora, but can become pathogens in people with weakened immune systems and may cause vaginal fungal infections.

### Candida albicans

Name	Your value	Unit	Reference value	Scale
Candida albicans	 $1,0 \times 10^4$	CFU/g stool	$< 1,0 \times 10^3$	

Candida albicans belongs to the group of facultative pathogens yeast which - under certain circumstances - intensively multiplies and can cause mycoses/mycoses. Candida albicans accounts for 90-95% of all Candida mycoses.

Organisms that come in contact with human mucous membranes are often contaminated with yeast. To prevent recurrence of infections, toothbrushes, artificial dentures or braces should be disinfected regularly.


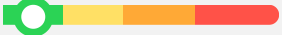
If the intestine flora is characterized by an increased amount of putrefactive bacteria, one can try to reduce the pH value in the intestine/lumen by supplementing with pre- or probiotics. This promotes the reformation of the intestinal acidification flora and inhibits the growth of putrefactive bacteria. Low pH values inhibit the production of toxins, which reduces the damage on the intestine and other vital organs such as the liver and kidneys.

### Yeast

Name	Your value	Reference value
Yeast	negativ	negative

Yeast is a type of fungus that naturally occurs in the digestive system, but can cause diseases if they overgrow. Negative = no overgrowth. Positive = overgrowth. Your result should be negative.


## Geotrichum candidum

Name	Your value	Unit	Reference value	Scale
Geotrichum candidum	 < 1,0 x 10 <sup>3</sup>	CFU/g stool	< 1,0 x 10 <sup>3</sup>	

Geotrichum candidum is a saprophyte that can be isolated from soil, waste, unwashed vegetables, fruits and dairy products. The fungus is less often detected in saliva and stool.

Geotrichum can cause disease in the case of a weakened immune system, long-term antibiotic treatment or immunosuppressive treatment. This affects the oral cavity, nose and throat in addition to the effect on the intestine.

## The properties of the stool

Name	Your value	Unit	Reference value	Scale
pH value	 6.50		5,8 - 6,5	

The pH value of the stool can indicate if there are any conditions of excess decay or fermentation in the intestine. A low pH value often occurs in combination with a dysbiotic (acid) intestine. Here, so-called sugars are metabolized to fatty acids, which can contribute to an acidified stool. A too high pH value can be due to excessive inputs of protein, which can stimulate certain intestinal bacteria to produce ammonia and other metabolic products, thus raising the pH value of the stool.

An environment that is too alkaline (elevated pH) can be stabilized by the addition of pre- and probiotics, in combination with a diet rich in fiber and low in proteins or fat and protein.

## How can you use the results

5R is a treatment protocol developed by the Institute for Functional Medicine in the United States to restore gastrointestinal health and other problems that originate therefrom. If you have any imbalances, we recommend that you follow the program as described below. The program usually takes between 3-6 months to complete.

### 1. Remove

Find and exclude any microbes, foods or toxins that may interfere with optimal immune function and exclude them. Examples of antimicrobial herbs are Adonis, garlic extract, berberine, oregano and grape seed extract, olive leaf extract and wild oregano. If you suspect food intolerances as a main issue, we offer food intolerance tests and have a recipe book.

### 2. Replace

Support the digestive system with suitable digestive support. For example, betaine HCl with pepsin, digestive enzymes or herbs such as cardamom, cinnamon, fennel, garlic, ginger and turmeric.

### 3. Reinoculate

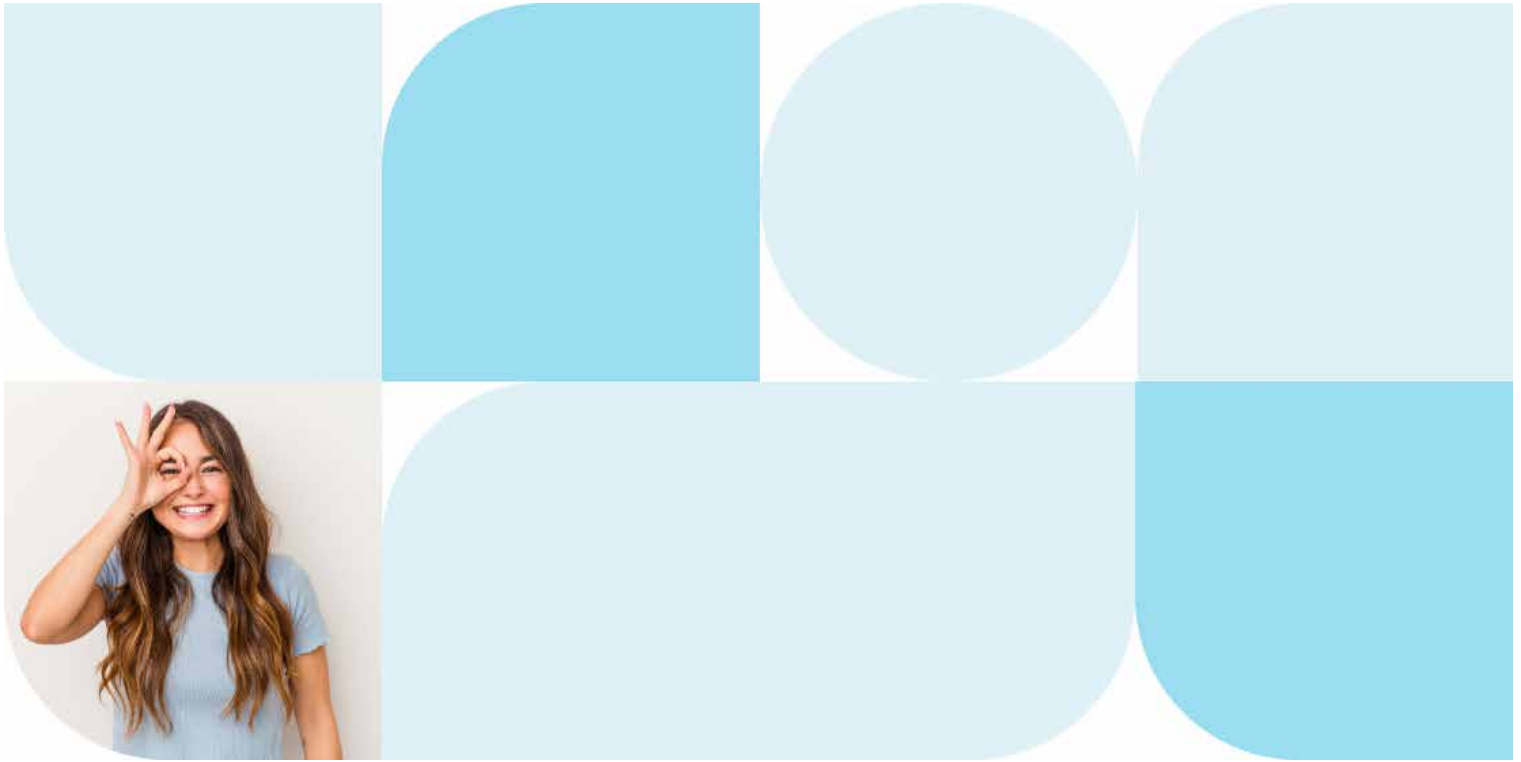
Rebalance the immune **flora** with dietary **flora**, probiotic foods and probiotic supplements. Choose probiotics according to the immune **flora** issues you are facing according to the test results.

### 4. Repair

Support the intestinal mucosa. Examples of substances to support the intestinal mucosa are olive leaf, B-vitamins, essential fatty acids, L-glutamine, mucinase, low-carb and vitamin A.

### 5. Rebalance

Rebalance your lifestyle diet, exercise, sleep and stress.



## Other information



## Milder intestinal inflammation

Mild intestinal inflammation can be a consequence of different disease states and can occur in different parts of the intestine. Most often, the lower part of the small intestine or the upper part of the large intestine is affected, which limits nutrient uptake. Undigested food has a tendency to remain in the intestine, which can cause irritation.

In case of irritation in the stomach/intestine, it is good to take into account and avoid foods that you are intolerant to. A well-balanced diet should be developed to reduce the strain on the gut. This can be accomplished by eating several smaller meals a day instead of large, heavy meals, as well as avoiding certain foods that can sometimes interfere with proper gastrointestinal function:

- Gas-producing vegetables (cabbages, leafy greens, peppers, mushrooms, legumes)
- Hot spices (hot pepper, cayenne powder)
- Foods high in fat (fried food, fatty fish, hard cheeses, mayonnaise)
- Foods high in sugar (sweets, products containing natural and artificial sweeteners)
- Beverage: Alcohol, coffee, carbonated beverages and drinks that are too hot or cold

It can be beneficial to test for food intolerances and avoid foods that may further irritate. Different cooking methods can also facilitate or make the food on the intestine more digestible.

During symptomatic periods, a diet rich in fiber is recommended to reduce inflammation. If you change your diet, remember to do it gradually.

### Foods that are usually well tolerated:

- Apples with skin, banana, kiwifruit, milk and yogurt
- Eggs, lean meat and poultry
- Cooked vegetables
- Potatoes and other tubers
- Pan-fry
- Applesauce

## Nutritional deficiencies

Intolerance in the intestine can lead to impaired nutrient uptake. If you have any digestive issues, it can be good for you to test yourself for any deficiency of vitamins B12, iron, magnesium and zinc.

### MCT oil

MCT oils composed of medium-chain triglycerides, which are used in the body for energy and can be used as a readily available energy source. They can be more easily absorbed and digested independently of bile acids and digestive enzymes. Adding these oils should be done gradually to allow the intestine to adapt.

### Fiber-rich food

Dietary fiber is a substance that the body can only use to a certain extent. Normally, fibers are not digested, but can also be processed by the intestine. Fibers and provide beneficial products such as butyrate that are very valuable for the body.

- Fibers have a structure that requires them to be chewed more and longer. Chewing leads to the release of saliva, which in turn counteracts nausea and tooth decay. Chewing a lot also leads to a faster feeling of satiety.
- Dietary fiber swells and binds water. This prolongs the feeling of satiety. It also increases the weight of the stool and stretches the intestinal walls, which triggers the muscles in the intestine to work and stimulates intestinal emptying. Improved bowel movements make it easier for toxic substances not to be absorbed from the body and reduce the risk of diseases linked to excessive toxin exposure.
- Fibers do not just bind water in the intestine. Bile acids produced from cholesterol are also bound up and excreted in the stool. The body is thus forced to form new bile acids from cholesterol and the cholesterol level is lowered.
- Dietary fiber is important for people with diabetes, as it has a positive effect on blood sugar.
- Dietary fiber stimulates the growth of beneficial bacteria and strengthens our natural intestinal flora, while reducing the growth of unfavorable bacteria and harmful metabolic substances.

The general dietary recommendation for fiber intake is 25-35 grams of fiber per day for adults. In the table below you can see how much fiber different foods contain.

Type of food	Food	Fiber in g/100 g
Legumes (not washed)	Broad beans	16.4
	Brown beans	16.4
	Mung beans	16.0
	Black beans	15.0
	White beans	15.0
Fruit	Pomegranate	10.0
	Pear (raw fruit)	10.0
	Raspberries	8.7
	Dried apricots	10.0
	Dried figs	10.0
Vegetables	Asparagus	4.0
	Brussels sprouts	4.0
	Artichoke	5.0
	Raw dried mushrooms	10.7
	Whole asparagus	14.0
Grains	Oatmeal	10.0
	Barley	10.0
	Hard bread (wholegrain)	24.0
	Whole grain	27.0
	Puffed	28.0



## Support your intestinal flora through the right diet and beverage

We have a large number of bacteria in our gut. They support our immune system and intestinal mucosa by producing important metabolic products and other nutrients. Which substrate the bacteria produce depends on the substrate in the intestine, i.e. food components that can not be broken down by the body. Based on their metabolic products, they support either the acid **flora** or the putrefactive process in the intestine **flora**. If the relationship between these two groups is in balance, the intestinal acid content is slightly acidic. Lactic acid cultures thrive best in acidic environments, while putrefactive bacteria prefer an alkaline environment.

Undigested food residues after consuming high protein and fatty foods are used by the putrefactive bacteria in the intestine **flora**. The metabolic products produced by a dominant putrefactive intestine **flora** can stress the host, cause bloating and gas and in part have carcinogenic effects in the long term. Fiber-rich diets, on the other hand, support an acidic intestine **flora**, which supports probiotics and protects against pathogenesis, as well as carcinogenesis.

A well-balanced diet can largely balance the relationship between acid **flora** and putrefactive **flora**. The intake of fat and protein should therefore be kept at a balanced and moderate healthy level.

### Some ways to reduce fat and protein intake

- Eat lots of fruits and vegetables
- Avoid excessive intake of high fat foods
- Eat lean fish, red meat and poultry
- Replace white **flour** products with whole grains
- Prepare the food carefully by, for example, steaming or baking in the oven rather than broiling, grilling or frying
- Make sure the fats you eat are good fats

This test does not replace medical consultation. Always seek medical attention if you experience severe symptoms.

