What Can Clinicians and Patients Expect from Healthpath Gut Health Testing?

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The Healthpath Gut Test shows you what's going on in your gut. By looking at imbalances in bacteria, yeasts, parasites and other intestinal health biomarkers, you find out what's contributing to your symptoms. You also receive targeted diet, supplement and lifestyle recommendations to help you take back control.

The biomarkers provide clinical information on three key areas:

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1 | Digestion/Absorption

- pH
- Pancreatic elastase
- Zonulin



2 | Immune activity/Inflammation

- Calprotectin
- Haemoglobin
- Secretory IgA
- H. Pylori
- Archaea/methanogens
- E. Coli, Lactobacillus species, Enterococcus species
- · Akkermansia muciniphila, Faecalibacterium prausnitzii



3 | Gut Microbiome/Mycobiome

- Microbiome diversity
- Enterotype
- Dysbiosis index
- Actinobacteria
- Bacteroidetes
- Firmicutes
- Proteobacteria
- Fusobacteria
- Verrucomicrobia
- Hydrogen-sulphide production
- Oxalate-degrading bacteria
- Yeasts/moulds
- Parasites
- Helminths



	Gut Health Test	Advanced Gut Health Test Pro
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Stool properties		
Colour	/	✓
Consistency	✓	✓
рН	✓	✓

Diversity:

Your diversity is key, which is why our microbiome analysis covers hundreds of parameters. High bacterial diversity is known to protect against intestinal infections. But low bacterial diversity is common, especially in disease states or after a course of antibiotics. When diversity is low, opportunistic bacteria like pathogens, fungi and viruses can proliferate.

Rather than focusing on individual species, it's more important to investigate how the different bacteria interact. Together, they're responsible for a host of intestinal functions.

Biodiversity

Diversity	✓	✓
Dysbiosis index	✓	✓

There are four large phyla (groups) of bacteria: Bacteroidetes, Firmicutes, Actinobacteria and Proteobacteria. We also report on two smaller, clinically relevant phyla: Verrucomicrobia and Fusobacteria.

Bacterial distribution

Actinobacteria	/	✓
Bacteroidetes	/	✓
Firmicutes	/	✓
Fusobacteria	V	✓
Proteobacteria	/	✓
Verrucomicrobia	/	\checkmark
Other	/	✓
Firmicutes/ Bacteroidetes Ratio	✓	/

Enterotype:

Recent research suggests there are three different types of gut microbiomes, known as 'enterotypes'. Not only do the different enterotypes influence the absorption of minerals, but they also have different metabolic properties.

Enterotype 1 has high levels of Bacteroides species, which use fat and protein effectively. Enterotype 2 has a strong Prevotella population, which is better at metabolising carbohydrates. Enterotype 3 is the rarest enterotype. It has high levels of Ruminococcus flora, though we don't yet know which macronutrients it prefers.

Enterotypes aren't affected by a person's age or gender and they remain stable for years. They can be influenced, however, by a long-term change of diet and by taking prebiotics.

Enterotype

1, 2 or 3	/	/
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Actinobacteria			
Bi	fidobacteria	/	✓
Ec	quol-producing bacteria	/	✓
	Adlercreutzia species		/
	Eggerthella lenta		✓
	Slackia species		/

Bacteroidetes		
Bacteroides	/	✓
Prevotella	✓	✓
Prevotella copri	✓	✓

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Firmicutes:

Butyrate is a short-chain fatty acid that's produced by bacteria in the colon. It's quickly absorbed by the intestinal mucosa, which means the only reliable way to measure it is to look at the number of butyrate-producing bacteria.

Firmicutes bacteria are key butyrate producers. One of these, Faecalibacterium prausnitzii, typically makes up 5–15% of human intestinal bacteria. This important butyrate-producing species has anti-inflammatory properties—so much so that an absence of Faecalibacterium prausnitzii typically correlates with higher levels of inflammation.

Firmicutes

Butyrate-producing bacteria		/	\checkmark
	Faecalibacterium prausnitzii	/	/
	Eubacterium rectale	/	/
	Eubacterium hallii	/	/
	Roseburia species	\checkmark	\checkmark
	Ruminococcus species	/	\checkmark
	Coprococcus	/	\checkmark
	Butyrivibrio species		/
	Cl. butyricum		✓
	Total bacterial count	\checkmark	/
Clostridia		/	/
	Clostridia total bacterial count	/	/
	Clostridia cluster 1	/	\checkmark
	Clostridia histolytium		\checkmark
	Clostridium perfringens		/
	Clostridium sporenges		/
Other			/
	Christensenellaceae		✓
	Dialister invisus		/

Fusobacterium species

Verrucomicrobia		
Akkermansia muciniphila	/	/

Proteobacteria

Po	Potentially pathogenic bacteria					
	Haemophilus	/	/			
	Acinetobacter	/	/			
	Escherichia coli biovare	/	/			
	Proteus species	\checkmark	\checkmark			
	Proteus mirabilis		\checkmark			
	Klebsiella species	\checkmark	/			
	Klebsiella pneumoniae		\checkmark			
	Enterobacter species	\checkmark	\checkmark			
	Serratia species	\checkmark	\checkmark			
	Hafnia species	/	\checkmark			
	Morganella species	\checkmark	\checkmark			
	Campylobacter species		\checkmark			
	Providencia species		/			
	Citrobacter species		/			
Histamine-producing bacteria		/	/			
H2S production						

Hydrogen-sulphide production:

Bacterial metabolism isn't always a good thing. Some bacteria reduce sulphate to create hydrogen sulphide—a toxic metabolic by-product that can damage the gut lining. The species Bilophila wadsworthii, Desulfomonas pigra and Desulfovibrio piger are thought to be potent hydrogen-sulphide developers.

	Sulphate-reducing bacteria	/	\checkmark
	Desulfovibrio piger		✓
	Desulfomonas pigra		✓
	Bilophila wadsworthii		/
0	xalate-degrading bacteria		✓
	Oxalobacter formigenes		✓

Archaea:

Archaea have been overlooked in microbiome studies until recently. New research suggests that 1) archaea are part of the microbiome in plants, animals and humans, 2) they form biofilms and 3) they interact with the human immune system. Some archaea are also methanogens, which may play a role in chronic constipation.

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Methanobrevibacter	/	/

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Immunogenically effective bacteria		
Escherichia coli	/	✓
Enterococcus species	/	/
Lactobacillus species	/	/

Mucin production/mucosal barrier:

A healthy colon has a protective mucous layer. If this layer is damaged—or only small amounts of mucous are produced—pathogens, pollutants and allergens can come into direct contact with the mucosa. This leads to inflammation.

The bacterium Akkermansia muciniphila is important because it encourages goblet cells to produce this protective mucous. Parts of this mucous also provide a special type of carbohydrate called oligosaccharides, which feed the bacteria that make gut-healing butyrate. With the right bacteria, it becomes a virtuous circle!

Mucin production/ mucosal barrier Akkermansia muciniphila Faecalibacterium prausnitzii

Yeasts/moulds		
Candida albicans	✓	✓
Candida species	/	✓
Geotrichum candidum	✓	✓
Moulds	/	/

Functional markers			
Calprotectin	/	✓	
Haemoglobin in faeces immunologically	/	✓	
Secretory IgA	/	✓	
Pancreatic elastase	/	✓	
Zonulin		✓	

Gut Health Test

Advanced Gut Health Test Pro

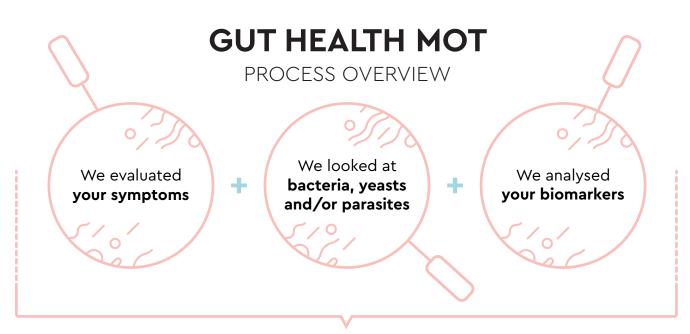
Parasites:

The Multiplex Real-time PCR (Multiplex quantitative real-time PCR) is a faster and more effective method for detecting parasites. This new test:

- provides reliable analysis, even with minimal levels
- gives no false positives with non-pathogens
- also gives reliable results in symptom-free patients and also after treatment

Parasites		
Pathobionts	/	/
Blastocystis hominis	/	/
Dientamoeba fragilis		/
Helicobacter AG	/	✓
Pathogenic intestinal protoz	oa 🗸	✓
Giardia lamblia	/	✓
Entamoeba histolytica	/	✓
Cryptosporidium species	/	V
Cyclospora cayetanensis	/	/
Helminths COMING SOON		✓
Taenia species		/
Taenia solium		
Taenia saginata		/
Ascaris species		/
Enterobius vermicularis		/
Ancylostoma species		/
Ancylostoma duodenale		/
Hymenolepsis species		/
Hymenolepsis nana		/
Hymenolepsis diminuta		/
Trichuris trichiura		/
Necator americanus		/
Strongyloides species		/
Strongyloides stercoralis		/
Microsporidia		/
Enterocytozoon species		
Encephalitozoon species		/









GUT HEALTH MOT

TEST REPORT

Thank you for taking the Gut Health MOT Test. We're delighted to provide your personalised report.

The report is divided into four sections:

Your microbiome This provides insig

This provides insight into the consistency of your poop, the diversity of your bacteria, your 'enterotype' and your dysbiosis index. These are all important and interconnected components that shed light on the health of your digestive system.

II.

Bacteria, yeasts and/or parasites

This section gives details of organisms that have been detected in your digestive system.

III.

Biomarkers

These assess both your ability to break down and absorb your food, and any immune system activity. This helps us understand whether food sensitivities or gut infections are contributing to your symptoms.



Recommendations

Finally, this section provides your lifestyle and supplement recommendations.

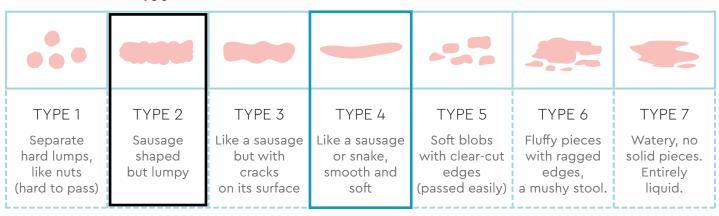


I. YOUR MICROBIOME



Consistency

YOU

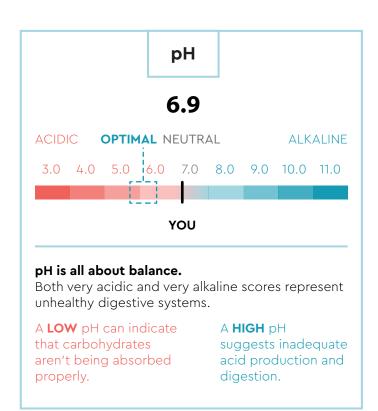


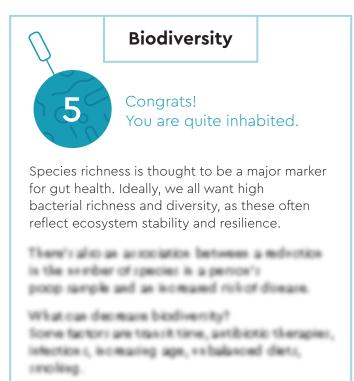
OPTIMAL

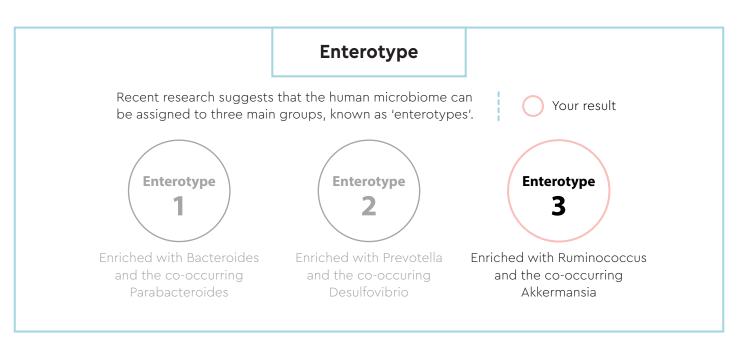
Decreased water activity, associated with harder stools and prolonged transit time, is thought to limit bacterial growth by reducing nutrient mobility and enzyme activity.

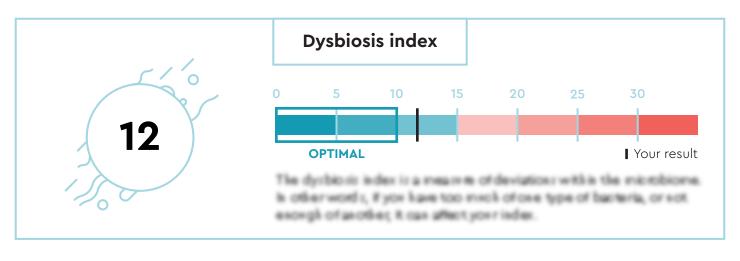
Species richness (the number and types of bacteria in the gut) is known to decline with higher BSS scores, reaching its minimum in those with loose stools (type 7).















II. BACTERIA, FUNGI AND PARASITES

bacteria, it's an important one. A low level of Lactobacillys has been linked to an increased risk for

and + benetive colitis. However, it's also possible for people with low Lastobacilles to have so symptoms.



Lactobacilli

LOW

What is it? A type of bacteria

What does it do?

What does this level mean?

certain direases and of toxic conditions.

Bacteriodetes

help +1 to break down tood, thereby exabling +1 to hanest now exergy from it.

HIGH

What is it? Bacteroidetes are a family of bacteria. Along with Firmicutes, they are one of two dominant families of bacteria in the gut. In fact, Bacteroidetes bacteria generally make up half of the gut microbiome.

metabolic diseases is certain people. Bacteroidetes also have a molecule on their surface called LPS, which is very inflammatory. When LPS crosses the gut wall (i.e. in cases of leaky gut), it can contribute

on their own. They also help to train the immine system. Supplementing with billidobacteria has been shown to reduce inflammation, improve allergic risk his and intermittent authma, and enhance immine cell fraction. It can also help to improve cardiovacoular risk markers and the production of 8 vitamins.

What does it do?

What does this level mean?

to body-wide inflammation and obroxio divegre.

Bifidobacterium spp

LOW

What is it? A type of bacteria that's a normal component of a healthy microbiome.

What does it do? Indicharteria play as important role is because does the that because on t digest

What does this level mean?





III. BIOMARKERS



Secretory IgA

HIGH

What is it? Secretory IgA is an antibody (an immune cell) that is released into the gastrointestinal tract to fight infection.

which means it can be need to measure how well the girt and pances are fractioning together. It's important our pances is working well, as its enzymes allow is to digest our bod properly.

overgrowth (SBC); inflamination in the small intentine; type-1, type-2 or gentational diabetes;

coefig: diregre, inflammatory bowel diregre, chroxic interio, eccess glockol intale.

What does it do?

What does this level mean?

also leows to fight inflammation.

Elastase-1

LOW

What is it? An enzyme.

What does it do?

What causes low levels?





leeks, barley, oats and apples.



Based on your results, we recommend the following:

Eat 2th-op fermested tood or dirisk 200 mill fermested drisk daily. Fermested toods is clinde sprentrant and

Eat at least two prebiotic toods daily. Choose from garlic, oxions, asparagivs, bananas, Jernsalem artichole,

Fill up on 6 bm. We should all aim to eat 30g of 6 bre-daily. Good sources of 6 bm are finits and vegetables, whole grains, exts, pelicer and legismes. A good starting point is to fill half your plate with vegetables at

Be mindful of your saturated fait in take. We do need some saturated fait, but your get bacteria don't life too much dispecially if you're not eating enough 6bm). A good starting point is to out back on processed foods.

Keep a gratite de diany. Treat yourself to a notebook and write down 3 things that you feel grateful for every

kincki, while good fermes ted drink choice; are letir and lombsoka.

both leach and dieser, and mack on their and entrifyou're keepry.

day. Yor can also download The Five Minste Jornal app.











Take the following supplements:

PRODUCT NAME	DOSE	HOW TO TAKE	DURATION
Sacchraomyces Boulardii by Seeking Health	2 capsules	Take whenever is most convenient.	6-8 weeks
Culturelle	2 capsules	Take 1 with breakfast and 1 with dinner.	6-8 weeks
Pro Digestion Intensive by Seeking Health	6 capsules	Take 2 with each meal.	6-8 weeks
AD Pro by Apex Energetics	1 capsule	Take whenever is most convenient.	6-8 weeks
GI Synergy by Apex Energetics	1 packet per day	Take whenever is most convenient.	6-8 weeks



These supplements can be bought individually.

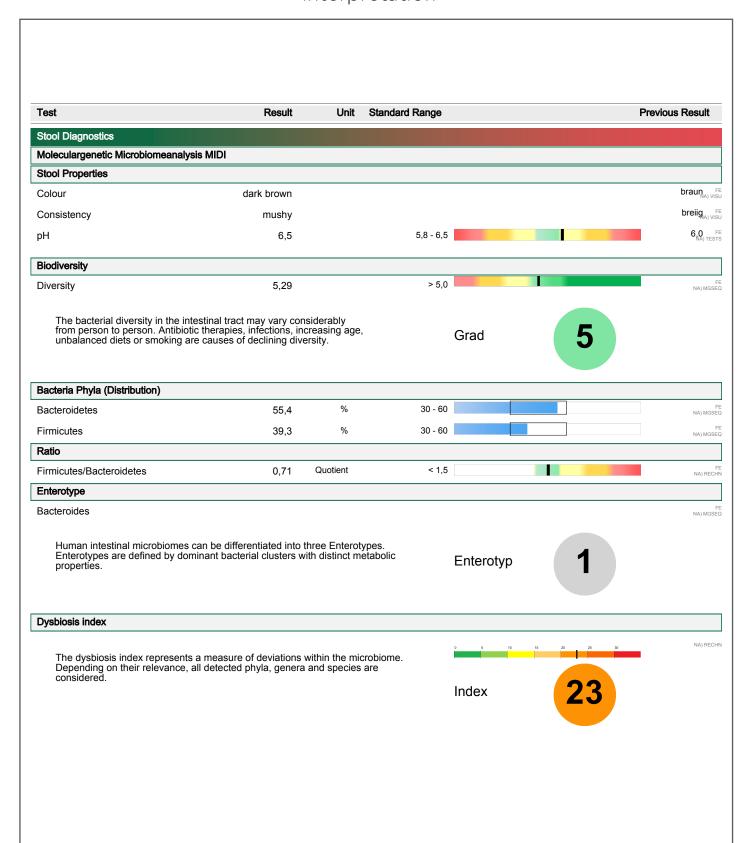
Many of the nutrients can also be found in the Healthpath Gut Repair supplement bundle.





ANNEX Original Test Report Before Healthpath interpretation











Test	Result Unit	Standard Range	Previous Result
Bacteria Phyla - most important genera a	and species	-	
Actinobacteria			
Bifidobacteria	9,8 x 10^8 CFU/g faeces	> 5,0 x 10^9	NA) MGS
Bifidobacterium longum	79 %		NA) MGS
Equol producing bacteria	4,1 x 10^9 CFU/g faeces	> 5,0 x 10^9	NA) MGS
Bacteroidetes			
Bacteroides	5,0 x 10^11 CFU/g faeces	> 1,5 x 10^11	NA) MGS
Prevotella	< 1,0 x 10^6 CFU/g faeces	> 1,0 x 10^10	NA) MGS
Firmicutes			
Butyrate producing bacteria			
Faecalibacterium prausnitzii	5,4 x 10^10 CFU/g faeces	> 5,0 x 10^10	NA) MGS
Eubacterium rectale	6,5 x 10^9 CFU/g faeces	> 1,0 x 10^10	NA) MGS
Eubacterium hallii	2,4 x 10^9 CFU/g faeces	> 5,0 x 10^9	NA) MGS
Roseburia spp.	3,4 x 10^10 CFU/g faeces	> 2,0 x 10^10	NA) MGS
Ruminococcus spp.	6,2 x 10^10 CFU/g faeces	> 3,0 x 10^10	NA) MGS
Coprococcus	4,6 x 10^9 CFU/g faeces	> 2,0 x 10^10	NA) MGS
Total bacterial count	1,9 x 10^11 CFU/g faeces	> 1,3 x 10^11	NA) MGS
Clostridia			,
Clostridia total bacterial count	1,2 x 10^10 CFU/g faeces	< 4,0 x 10^9	NA) MGS
Clostridia cluster I	1,5 x 10^9 CFU/g faeces	< 2,0 x 10^9	NA) MGS
Fusobacteria			
Fusobacterium spp.	< 1,0 x 10^6 CFU/g faeces	< 1,0 x 10^7	NA) MGS
Verrucomicrobia			
Akkermansia muciniphila	3,6 x 10^7 CFU/g faeces	> 5,0 x 10^9	NA) MGS
Proteobacteria			
Pathogenic or potentially pathogenic bac	teria		
Haemophilus	8,9 x 10^8 CFU/g faeces	< 1,0 x 10^9	NA) MGS
Acinetobacter	< 1,0 x 10^6 CFU/g faeces	< 1,0 x 10^6	NA) MGS
Escherichia coli Biovare	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10^4
Proteus species	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10 ⁴
Klebsiella species	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10 ⁴
Enterobacter species	4,0 x 10^8 CFU/g faeces	< 1,0 x 10^4	4,0 x 10 ⁸
Serratia species	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10^4
Hafnia species	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10 ⁴
Morganella spp.	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	NA) N
Histamin Developing Bacteria			
Histaminbildende Bakterien	1,6 x 10^8 CFU/g faeces	< 5,0 x 10^8	NA) MGS
H2S production			







Test	Result Unit	Standard Range	Previous Result
Immunogenicity / Mucus production			
Immunogenically effective bacteria			
Escherichia coli	4,0 x 10^8 CFU/g faeces	10^6 - 10^7	2,0 x 10 ⁸
Enterococcus species	1,0 x 10^8 CFU/g faeces	10^6 - 10^7	< 1,0 x 10 ⁴
Lactobacillus species	1,0 x 10^5 CFU/g faeces	10^5 - 10^7	4,0 x 10 ⁴
Mucin production / Mucosa barrier			
Akkermansia muciniphila	3,6 x 10^7 CFU/g faeces	> 5,0 x 10^9	NA) M
Faecalibacterium prausnitzii	5,4 x 10^10 CFU/g faeces	> 5,0 x 10^10	NA) M
Yeasts / Molds			
Candida albicans	< 1,0 x 10^3 CFU/g faeces	< 1,0 x 10^3	< 1,0 x 10 ³
Candida species	2,0 x 10^4 CFU/g faeces	< 1,0 x 10^3	4,0 x 10 ⁴ 3
Geotrichum candidum	< 1,0 x 10^3 CFU/g faeces	< 1,0 x 10^3	< 1,0 x 10 ³
Moulds	negative	negative	negativ A) K
Parasites			
Giardia lamblia	negative	negative	negativ
Entamoeba histolytica	negative	negative	negativ
Cryptosporidium spp.	negative	negative	negativ
Blastocystis hominis	positive	negative	positiv
Dientamoeba fragilis	negative	negative	negativ
Cyclospora cayetanensis	negative	negative	negativ







Test	Result Unit	Standard Range	Previous Result
Bacteria Phyla - most important genera ai			
Actinobacteria			
Bifidobacteria	9,8 x 10^8 CFU/g faeces	> 5,0 x 10^9	NA) MG
Bifidobacterium longum	79 %		NA) MG
Equol producing bacteria	4,1 x 10^9 CFU/g faeces	> 5,0 x 10^9	NA) MG
Bacteroidetes			INA) MG
Bacteroides	5,0 x 10^11 CFU/g faeces	> 1,5 x 10^11	NA) MG
Prevotella	< 1,0 x 10^6 CFU/g faeces	> 1,0 x 10^10	NA) MG
Firmicutes			NA) MG
Butyrate producing bacteria			
Faecalibacterium prausnitzii	5,4 x 10^10 CFU/g faeces	> 5,0 x 10^10	NA) MG
Eubacterium rectale	6,5 x 10^9 CFU/g faeces	> 1,0 x 10^10	NA) MG
Eubacterium hallii	2,4 x 10^9 CFU/g faeces	> 5,0 x 10^9	NA) MG
Roseburia spp.	3,4 x 10^10 CFU/g faeces	> 2,0 x 10^10	NA) MG
Ruminococcus spp.	6,2 x 10^10 CFU/g faeces	> 3,0 x 10^10	NA) MG
Coprococcus	4,6 x 10^9 CFU/g faeces	> 2,0 x 10^10	NA) MG
Total bacterial count	1,9 x 10^11 CFU/g faeces	> 1,3 x 10^11	
Clostridia			NA) MG
Clostridia total bacterial count	1,2 x 10^10 CFU/g faeces	< 4,0 x 10^9	NA) MG
Clostridia cluster I	1,5 x 10^9 CFU/g faeces	< 2,0 x 10^9	NA) MG
Fusobacteria			,
Fusobacterium spp.	< 1,0 x 10^6 CFU/g faeces	< 1,0 x 10^7	NA) MG
Verrucomicrobia			
Akkermansia muciniphila	3,6 x 10^7 CFU/g faeces	> 5,0 x 10^9	NA) MG
Proteobacteria			
Pathogenic or potentially pathogenic bact	eria		
Haemophilus	8,9 x 10^8 CFU/g faeces	< 1,0 x 10^9	NA) MG
Acinetobacter	< 1,0 x 10^6 CFU/g faeces	< 1,0 x 10^6	NA) MG
Escherichia coli Biovare	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10^4
Proteus species	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10^4
Klebsiella species	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10^4
Enterobacter species	4,0 x 10^8 CFU/g faeces	< 1,0 x 10^4	4,0 x 10 ⁸
Serratia species	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10 ⁴
Hafnia species	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	< 1,0 x 10 ⁴
Morganella spp.	< 1,0 x 10^4 CFU/g faeces	< 1,0 x 10^4	NA)
Histamin Developing Bacteria			1924
Histaminbildende Bakterien	1,6 x 10^8 CFU/g faeces	< 5,0 x 10^8	NA) MG
H2S production			Wy ma
Sulphate reducing bacteria	5,2 x 10^8 CFU/g faeces	< 2,0 x 10^9	