Microbiome Center

Autism (ASD)

Anja Pietzsch

01.04.2025

Specialized Practice for Diagnostics and **Mitochondrial Therapy** in the **Rhine-Main Area**

Heilpraktikerin | Cellsymbiosis® Therapist |
Author and Lecturer | Certified Business Economist

Main Treatment Areas:

- Neurological conditions
- Chronic diseases and pain
- Exhaustion/Burnout
- Post/Long-COVID
- Skin diseases, rashes, wound healing disorders
- Allergies, intolerances
- Digestive disorders, IBD

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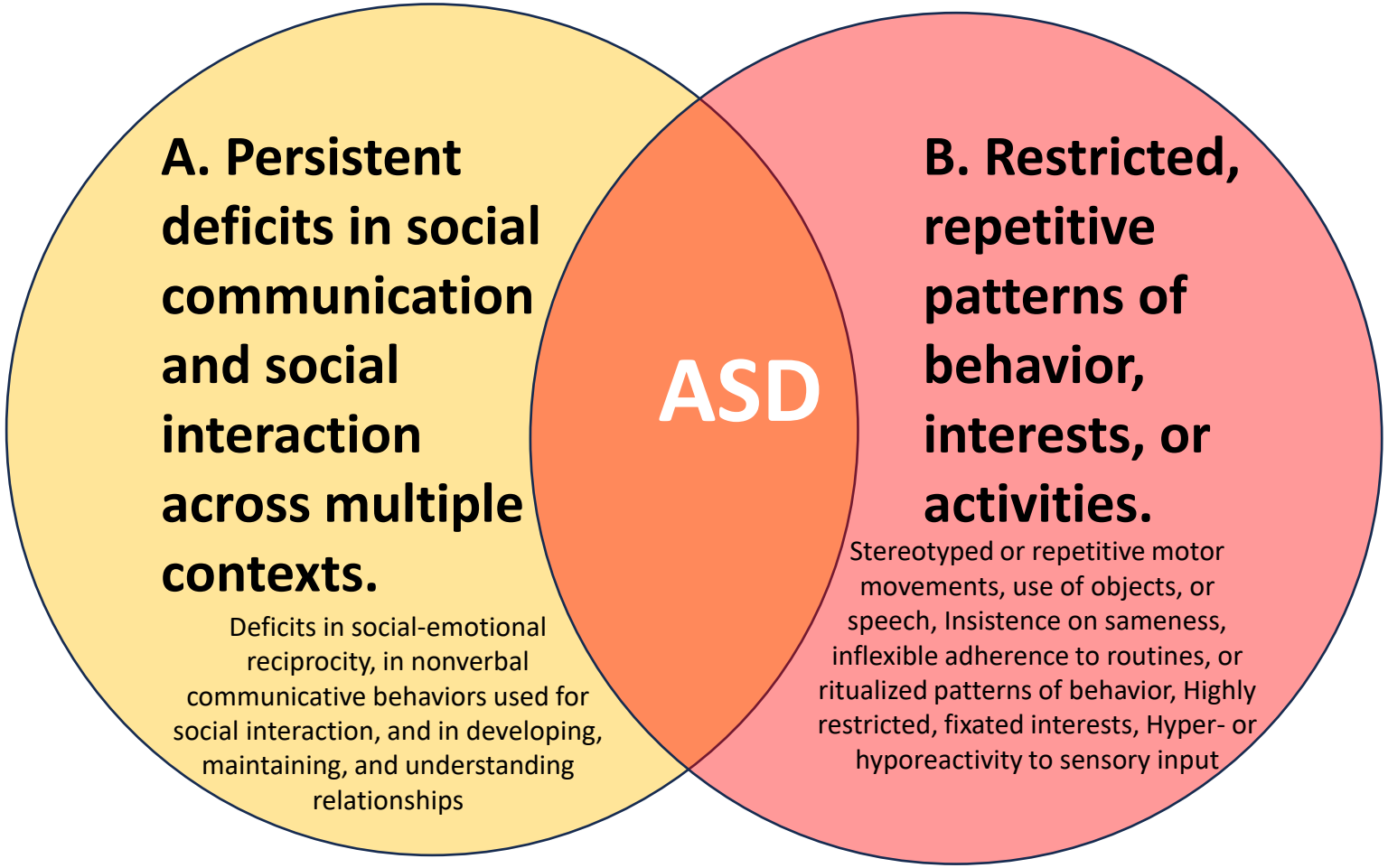
Microbiome Center

- Founded in **2018**
- Microbiome Center **supports practitioners** in chronic treatment of sick patients through **evidence-based personalized microbiome therapy** based on a patient's medical history and laboratory findings.
- **World-wide unique** in providing truly personalized treatments
- Network of **more than 800 doctors and practitioners** in the Netherlands, Germany, Italy, Austria, Switzerland, etc.

- **Cooperations:**
  - BIOVIS Diagnostics
  - Blumenau Pharmacy (Munich, Germany)
  - Van den Bergh pharmacy (Hilversum, The Netherlands)
  - Scientists, universities and patient associations

Autism and the gut microbiome
What does the science say?

What is autism?
DSM-5 diagnostic criteria[1]



C. Symptoms must be present in the early developmental period.

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability or global developmental delay.

1. DSM-5 (American Psychiatric Association, 2013)

What is autism?[1]

1. https://www.simplypsychology.org/what-is-autism.html

What is autism?[1,2]

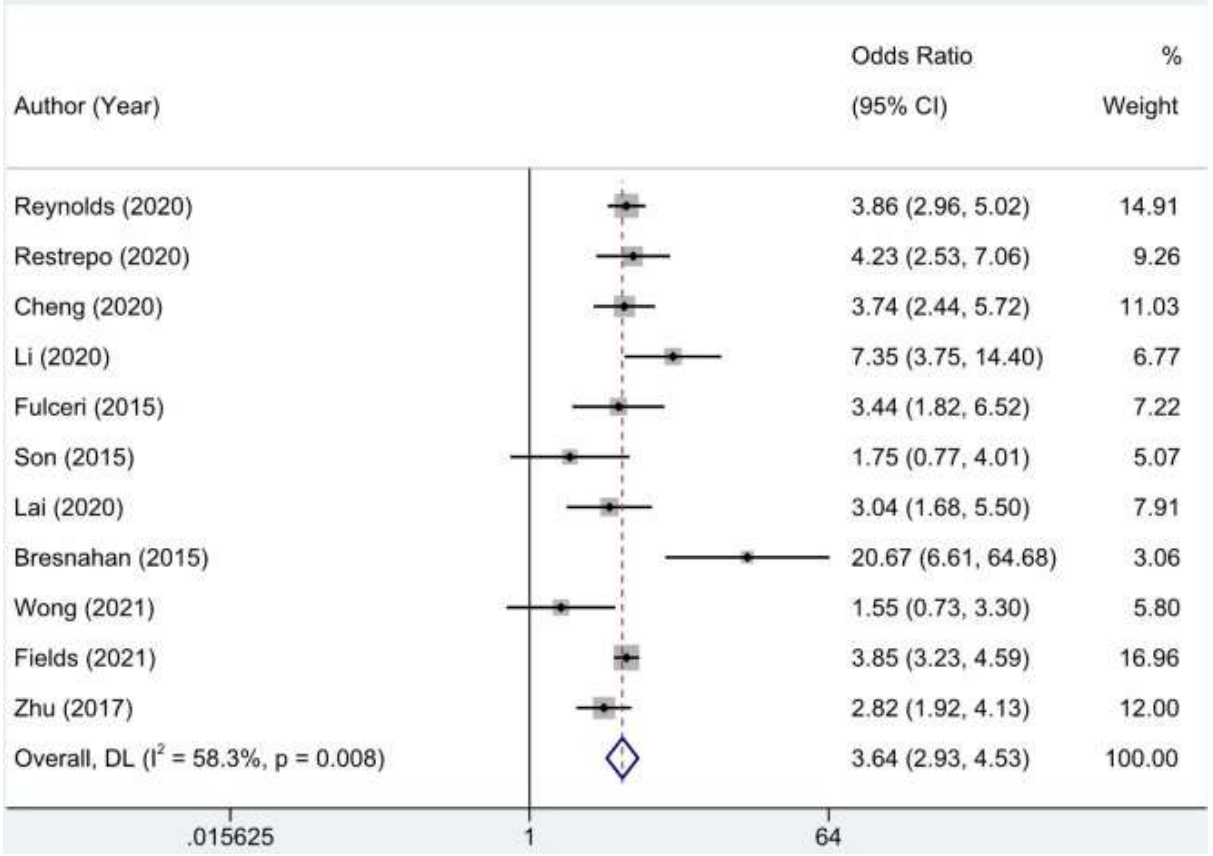
1. Kapp, S. K. et al.Developmental Psychology.49,.59–71.(2013)
2. https://www.ebtc.ie/wp-content/uploads/2019/06/ASD-strengths.pdf

Autism and GI problems

Multiple meta-analyses show that GI-problems occur much more often in children with ASD then in typical developing children[1,2]:

- Odds ratio of any GI problem: 3.64
  - Prevalence: 55% of all autistic kids

- Constipation, OR: 2.83, prevalence 37%
- Abdominal pain, OR: 2.60, prevalence 21%
- Diarrhea, OR: 3.27, prevalence 19%
- Vomiting, OR: 3.18, prevalence 8%
- Food allergy, OR: 1.76



1. Gan, H. et al.Front Pediatr.11,.1120728.(2023)
2. McElhanon, B. O. et al.Pediatrics.133,.872–883.(2014)

Many autistic children are picky eaters[1,2]

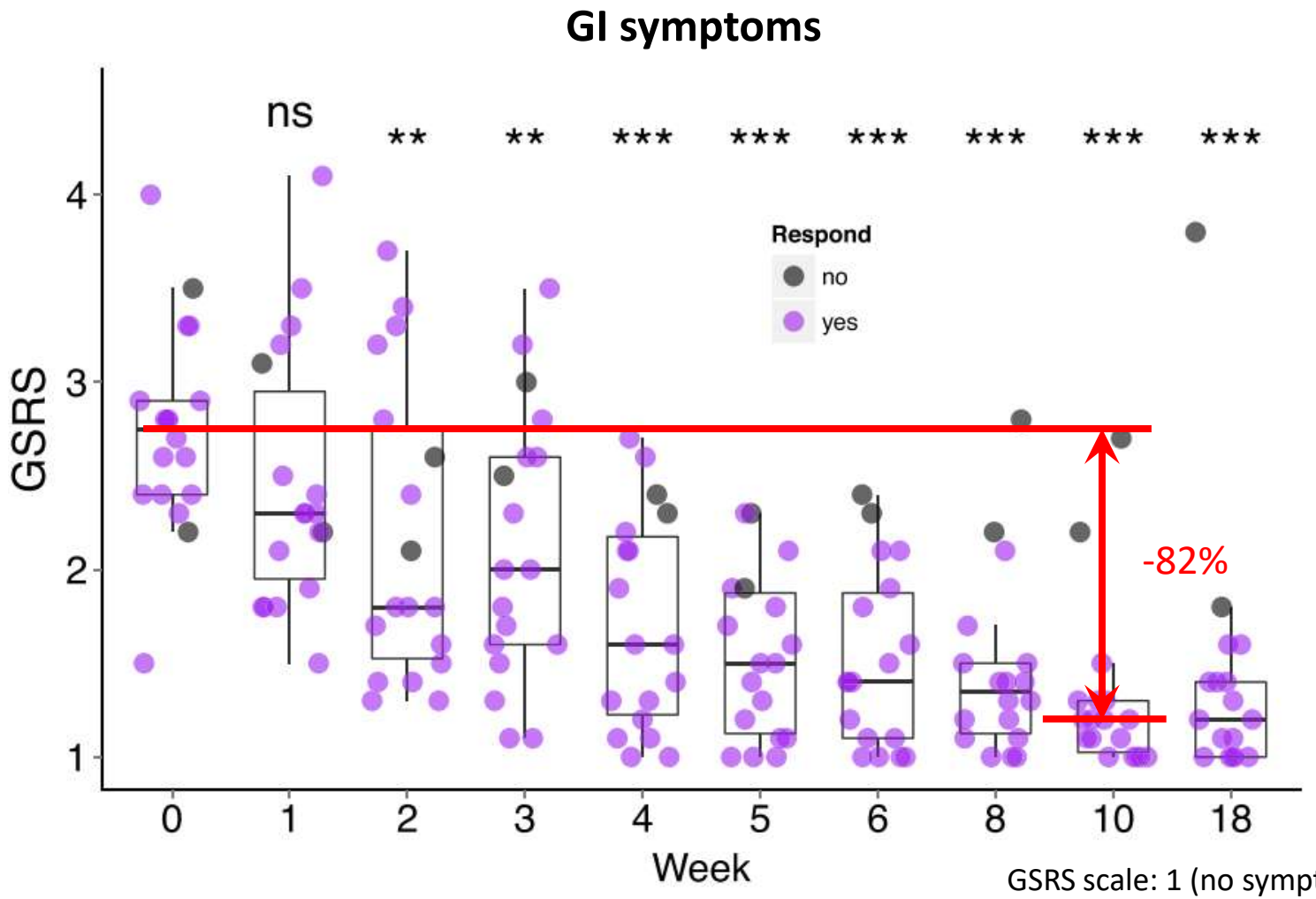
1. Koomar, T. et al.Front. Psychiatry.12,.(2021)
2. Sharp, W. G. et al.J Autism Dev Disord.43,.2159–2173.(2013)

Image credits: https://tacanow.org/family-resources/picky-eating-and-autism/

Evidence for involvement of microbiome

Strong causal evidence:

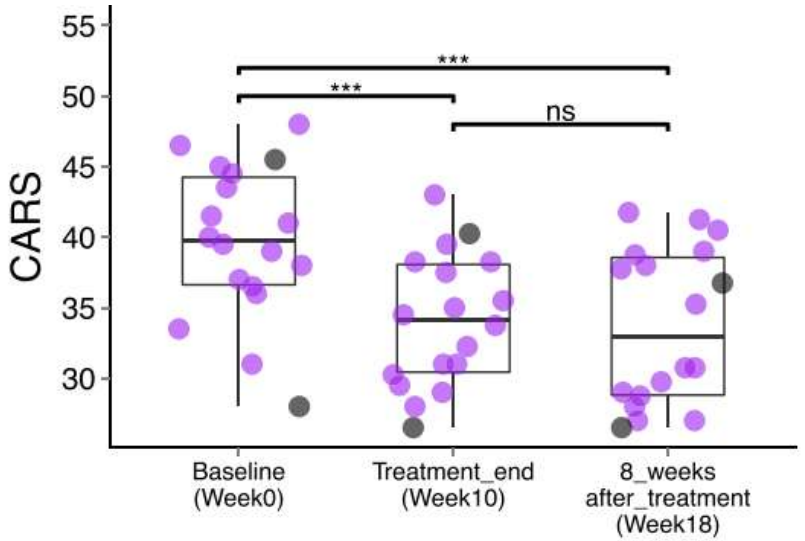
- Fecal transplantation study[1]
- N=18
- Includes:
  - Measures of GI problems: GSRS and DSS
  - Autistic behavior score: ADI-R, PGI-III, CARS, ABC, etc…
- 10w microbiota transfer therapy, 8w follow-up
- Two-year follow-up[2]



GSRS scale: 1 (no symptoms) to 7 (very severe discomfort)

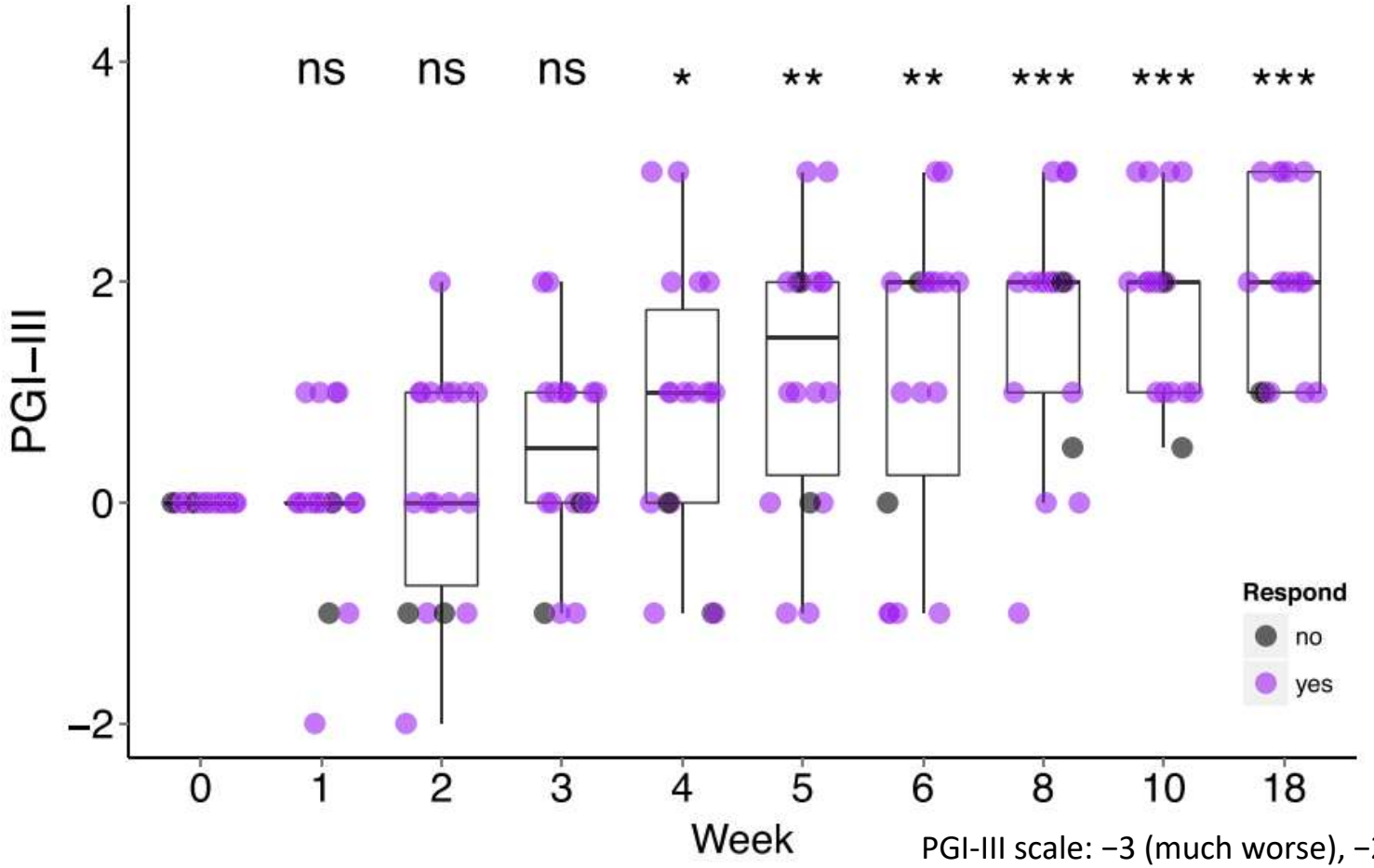
1. Kang, D.-W. et al.Microbiome.5,.(2017)
2. Kang, D.-W. et al.Sci Rep.9,.(2019)

Evidence for involvement of microbiome



- 10w microbiota transfer therapy, 8w follow-up
- Two-year follow-up[2]

Autism symptoms



PGI-III scale: −3 (much worse), −2 (worse), −1 (slightly worse), 0 (no change), 1 (slightly better), 2 (better) to 3 (much better)

1. Kang, D.-W. et al.Microbiome.5,.(2017)
2. Kang, D.-W. et al.Sci Rep.9,.(2019)

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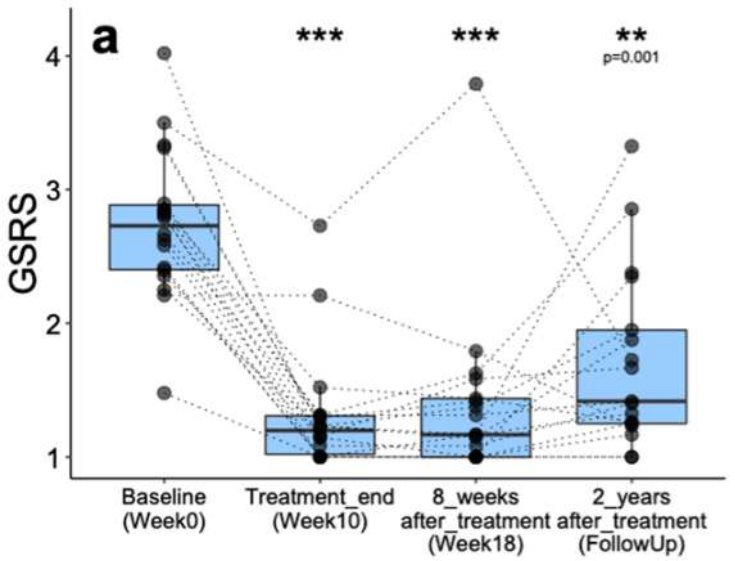
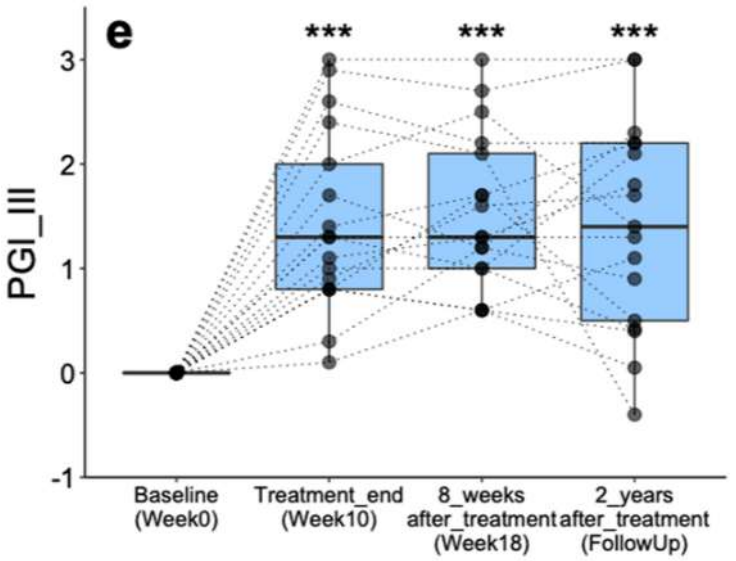
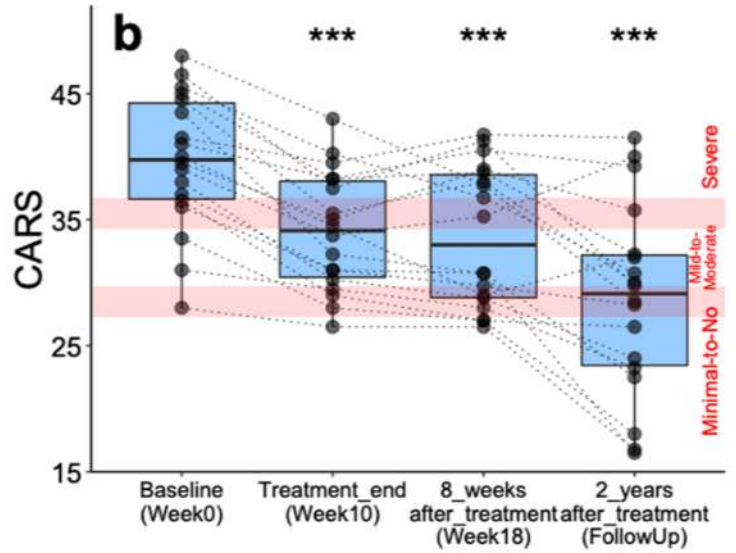
- **Two-year follow-up[2]**



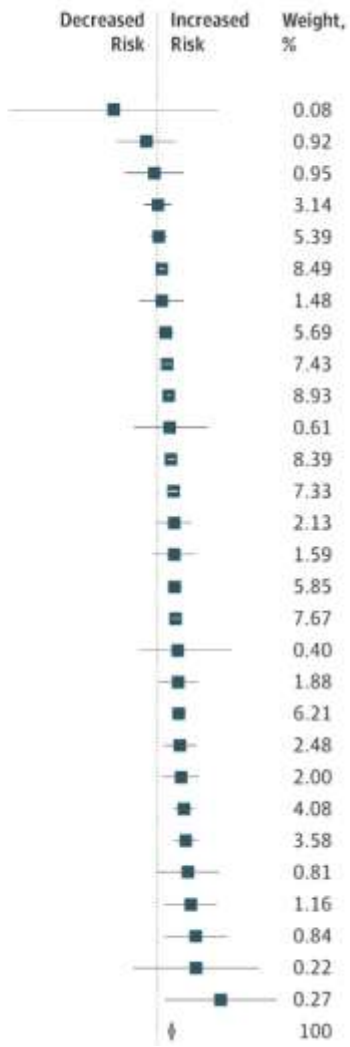




1. Kang, D.-W. et al.Microbiome.5,.(2017)
2. Kang, D.-W. et al.Sci Rep.9,.(2019)

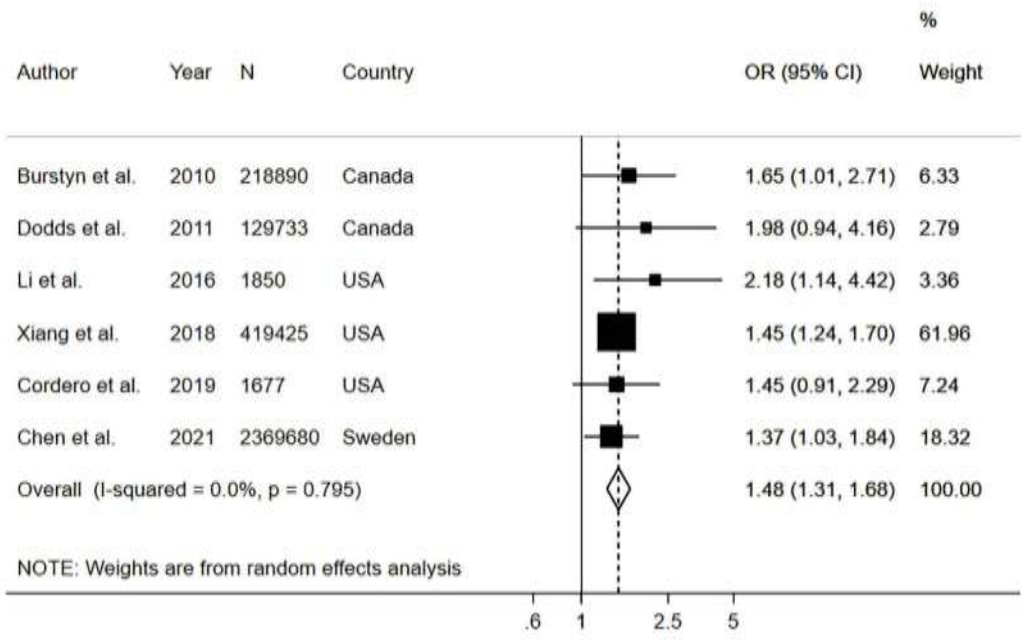
Associative evidence: correlation of ASD with C-section Meta-analysis of >2 million births[1]

Study	Outcome	No. of Cases/No. of Deliveries: Cesarean Delivery	Vaginal Delivery	OR (95% CI)	Weight, %
ASD					
Matsuishi et al,[31] 1999	ASD	1/18	25/205	0.42 (0.05-3.32)	0.08
Mrozek-Budzyn et al,[32] 2013	ASD	21/74	67/204	0.81 (0.45-1.45)	0.92
Hamadé et al,[83] 2013	ASD	24/74	62/184	0.94 (0.53-1.68)	0.95
Maramara et al,[33] 2014	ASD	73/31872	190/84023	1.01 (0.77-1.33)	3.14
Burstyn et al,[34] 2010	ASD	304/49456	834/170572	1.04 (0.88-1.22)	5.39
Axelsson et al,[20] 2019	ASD	1564/119433	6703/560440	1.10 (1.04-1.16)	8.49
Maimburg et al,[35] 2006	ASD	76/633	371/4099	1.10 (0.70-1.70)	1.48
Dodds et al,[36] 2011	ASD	218/26754	706/102948	1.19 (1.02-1.39)	5.69
Chien et al,[37] 2015	ASD	684/174376	1166/362297	1.22 (1.11-1.34)	7.43
Curran et al,[24] 2015	ASD	4330/340108	23960/2357206	1.26 (1.22-1.30)	8.93
Guisso et al,[38] 2018	ASD	64/125	72/189	1.28 (0.63-2.70)	0.61
Yip et al,[39] 2017 (Finland)	ASD	1331/156863	5753/891684	1.32 (1.24-1.40)	8.39
Schieve et al,[40] 2014	ASD	NA	NA	1.38 (1.25-1.52)	7.33
Haglund et al,[41] 2011	ASD	36/7434	214/61530	1.39 (0.98-1.99)	2.13
Chen et al,[42] 2017	ASD	36/6285	52/12698	1.40 (0.91-2.15)	1.59
Yip et al,[39] 2017 (Norway)	ASD	213/127922	1090/924475	1.41 (1.22-1.64)	5.85
Polo-Kantola et al,[43] 2014	ASD	860/3349	3328/17117	1.43 (1.31-1.56)	7.67
Duan et al,[44] 2014	ASD	152/287	134/285	1.50 (0.70-4.30)	0.40
Durkin et al,[45] 2015	ASD	33/4624	127/26843	1.51 (1.03-2.22)	1.88
Yip et al,[39] 2017 (Western Australia)	ASD	289/65953	802/279228	1.53 (1.34-1.75)	6.21
Eriksson et al,[46] 2012	ASD	52/23286	134/94242	1.57 (1.14-2.17)	2.48
Hultman et al,[47] 2002	ASD	87/352	321/2096	1.60 (1.10-2.30)	2.00
Kissin et al,[48] 2015	ASD	328/27152	109/15231	1.70 (1.36-2.11)	4.08
Glasson et al,[49] 2004	ASD	134/380	331/1398	1.76 (1.38-2.24)	3.58
Zhang et al,[50] 2010	ASD	43/77	43/104	1.83 (0.98-3.43)	0.81
El-Baz et al,[51] 2011	ASD	39/89	61/213	1.94 (1.16-3.25)	1.16
Ji et al,[52] 2018	ASD	22/214	22/434	2.15 (1.16-3.97)	0.84
Winkler-Schwartz et al,[53] 2014	ASD	7/35	5/48	2.15 (0.62-7.45)	0.22
Al-Jammas et al,[54] 2012	ASD	14/19	36/81	3.50 (1.15-10.63)	0.27
Subtotal I^2=69.5%, P<.001				1.33 (1.25-1.41)	100

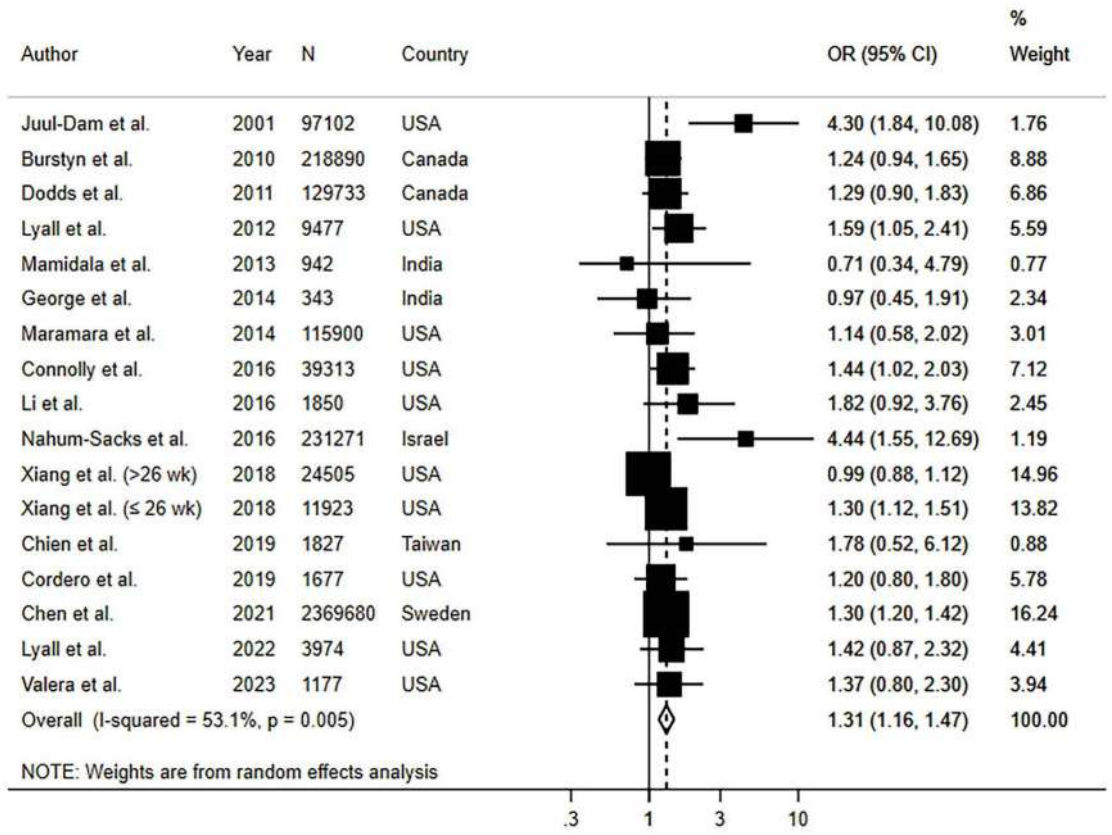


1. Zhang, T. et al.JAMA Network Open.2,.e1910236.(2019)

Associative evidence: correlation between maternal diabetes and ASD[1]



Maternal type 2 diabetes



Gestational diabetes

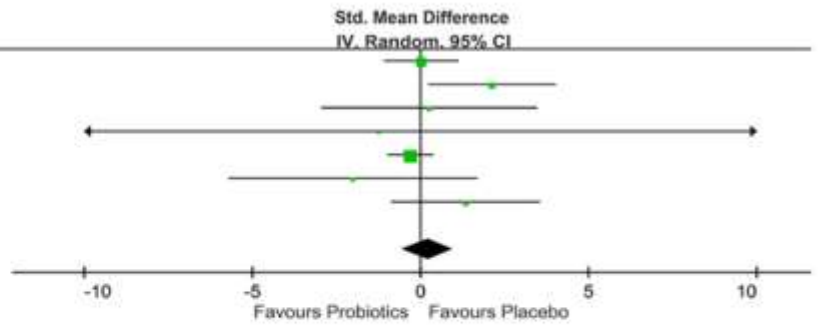
1. Garza-Martínez, M. J. et al.Journal of Psychiatric Research.182,.100–115.(2025)

Potential of probiotic interventions

a

Study or Subgroup	Probiotics Mean	SD	Total	Placebo Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI	Year
Emmanuel (NCT03369431)	-1.06	3.18	62	-1.08	3.14	62	26.7%	0.02 [-1.09, 1.13]	
Sanctuary (2018)	-0.875	1.642	8	-3	2.204	8	12.9%	2.13 [0.22, 4.03]	2018
Liu (2019)	29.97	7.25	36	29.71	6.53	35	5.3%	0.26 [-2.95, 3.47]	2019
Arnold (2019)	7	7.266	6	8.25	9.946	4	0.5%	-1.25 [-12.60, 10.10]	2019
Santocchi (2020)	8.23	1.45	31	8.53	1.34	32	40.5%	-0.30 [-0.99, 0.39]	2020
Kong (2021)	1.17	6.64	18	3.18	4.38	17	4.0%	-2.01 [-5.72, 1.70]	2021
Schmitt (2023)	3.27	3.21	15	1.93	2.98	15	10.1%	1.34 [-0.88, 3.56]	2023
Total (95% CI)			**176**			**173**	**100.0%**	**0.22 [-0.55, 0.99]**	

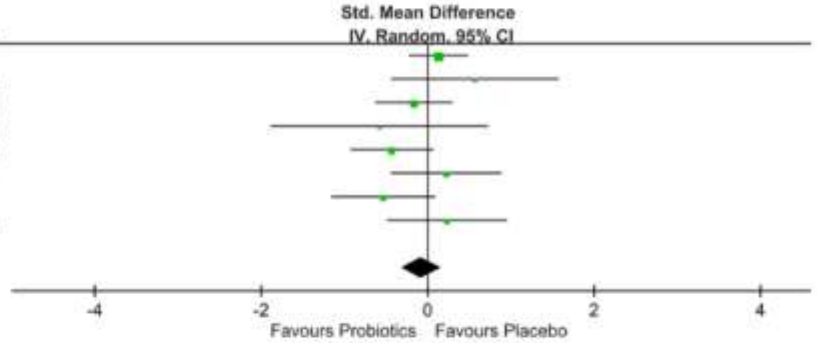
Heterogeneity: Tau² = 0.26; Chi² = 8.10, df = 6 (P = 0.23); I² = 26%
Test for overall effect: Z = 0.56 (P = 0.58)



b

Study or Subgroup	Probiotics Mean	SD	Total	Placebo Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI	Year
Emmanuel (NCT03369431)	-2.26	6.63	62	-3.11	6.14	62	25.4%	0.13 [-0.22, 0.48]	
Sanctuary (2018)	-2	2.39	8	-5.125	6.958	8	5.2%	0.57 [-0.44, 1.57]	2018
Liu (2019)	3.15	1.98	36	3.52	2.45	35	18.1%	-0.16 [-0.63, 0.30]	2019
Arnold (2019)	13.33	12.596	6	22.5	16.842	4	3.2%	-0.58 [-1.88, 0.73]	2019
Santocchi (2020)	5.35	1.56	31	6.09	1.82	32	16.4%	-0.43 [-0.93, 0.07]	2020
Kong (2021)	3.5	6.36	18	1.82	8.3	17	10.6%	0.22 [-0.44, 0.89]	2021
Li (2021)	15	5	21	18	6	20	11.7%	-0.53 [-1.16, 0.09]	2021
Schmitt (2023)	7.4	7.51	15	5.67	6.86	15	9.4%	0.23 [-0.48, 0.95]	2023
Total (95% CI)			**197**			**193**	**100.0%**	**-0.07 [-0.31, 0.17]**	

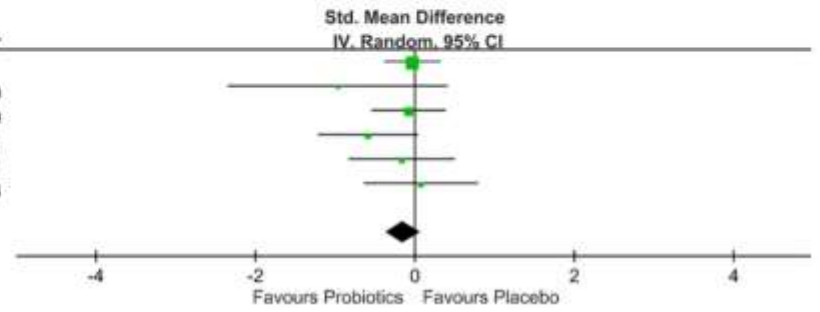
Heterogeneity: Tau² = 0.03; Chi² = 9.10, df = 7 (P = 0.25); I² = 23%
Test for overall effect: Z = 0.59 (P = 0.55)



c

Study or Subgroup	Probiotics Mean	SD	Total	Placebo Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI	Year
Emmanuel (NCT03369431)	-0.45	2.28	62	-0.37	2.49	62	40.4%	-0.03 [-0.39, 0.32]	
Arnold (2019)	4.5	3.507	6	8	2.828	4	2.6%	-0.97 [-2.34, 0.41]	2019
Liu (2019)	62.17	12.9	36	63.34	16.21	35	23.1%	-0.08 [-0.54, 0.39]	2019
Li (2021)	9	5	21	12	5	20	12.7%	-0.59 [-1.22, 0.04]	2021
Kong (2021)	0.58	1.78	18	0.91	2.12	17	11.4%	-0.17 [-0.83, 0.50]	2021
Schmitt (2023)	2.53	2.63	15	2.33	2.59	15	9.8%	0.07 [-0.64, 0.79]	2023
Total (95% CI)			**158**			**153**	**100.0%**	**-0.14 [-0.37, 0.08]**	

Heterogeneity: Tau² = 0.00; Chi² = 4.12, df = 5 (P = 0.53); I² = 0%
Test for overall effect: Z = 1.26 (P = 0.21)



Meta-analysis of RCTs[1]:

a. restricted repetitive behaviors

b. Social behaviors

c. Communication

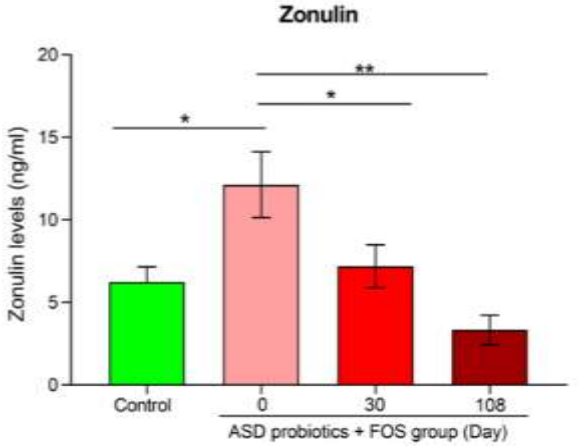
Notes:

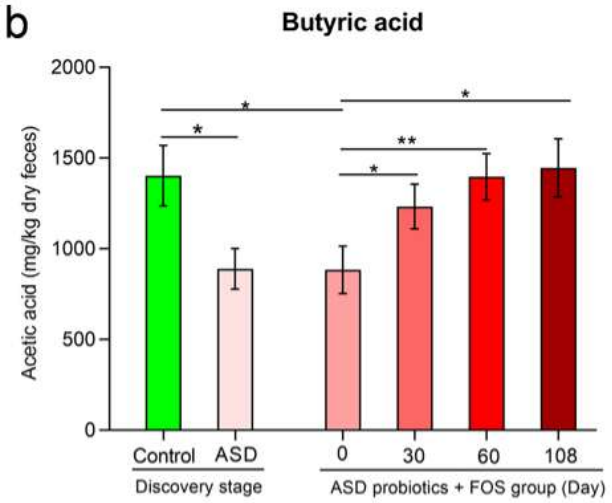
- Large variation between studies
- Effects are strain-specific
- No strong effects found

1. Lee, J.-C. et al.Child and Adolescent Psychiatry and Mental Health.18,.161.(2024)

Study including *L. paracasei* Lpc-37[1]

	ASD group probiotic supplementation (Baseline or 0 day)	ASD group after probiotic supplementation (*P* value)		
		30 days	60 days	108 days
ATEC subscales				
Speech/language/communication	19.45 ± 1.26	17.25 ± 1.24 (0.23)	13.38 ± 1.41 **(0.003)**	10.78 ± 1.07(< **0.001**)
Sociability	22.75 ± 1.96	19.0 ± 1.79 (0.17)	15.92 ± 1.67 **(0.016)**	15.33 ± 1.80 **(0.019)**
Sensory/cognitive awareness	21.25 ± 1.67	19.82 ± 1.61 (0.54)	17.54 ± 1.76 (0.14)	17.0 ± 2.26 (0.14)
Healthy/physical/behavior	21.63 ± 2.72	17.63 ± 2.29 (0.27)	20.85 ± 2.62 (0.84)	17.33 ± 2.91(0.32)
Total ATEC score	85.06 ± 5.72	73.70 ± 5.54 (0.16)	67.69 ± 5.51 **(0.04)**	59.33 ± 6.52 **(0.009)**
6-GSI score items				
Constipation	1.25 ± 0.25	0.50 ± 0.16**(0.017)**	0.38 ± 0.14**(0.008)**	0.22 ± 0.15 **(0.008)**
Diarrhea	0.50 ± 0.16	0.25 ± 0.11(0.21)	0.08 ± 0.08 **(0.03)**	0.00 ± 0.0**(0.03)**
Stool consistency	0.37 ± 0.20	0.13 ± 0.09 (0.26)	0.00 ± 0.0 (0.11)	0.0 ± 0.0 (0.18)
Stool smell	1.18 ± 0.16	0.56 ± 0.18**(0.01)**	0.54 ± 0.14**(0.007)**	0.44 ± 0.18 **(0.01)**
Flatulence	1.18 ± 0.21	0.68 ± 0.22 (0.11)	0.62 ± 0.21(0.07)	0.67 ± 0.17 (0.10)
Abdominal pain	0.44 ± 0.16	0.18 ± 0.10 (0.19)	0.15 ± 0.10 (0.16)	0.11 ± 0.11 (0.16)
Total 6-GSI score	4.88 ± 0.43	2.31 ± 0.44 **(0.002)**	2.39 ± 0.56**(0.001)**	1.44 ± 0.38(< **0.001**)





Study size: n=26
Design: RCT
Intervention: *B. infantis* Bi-26, *L. rhamnosus* HN001, *B. lactis* BL-04, *L. paracasei* LPC-37, FOS

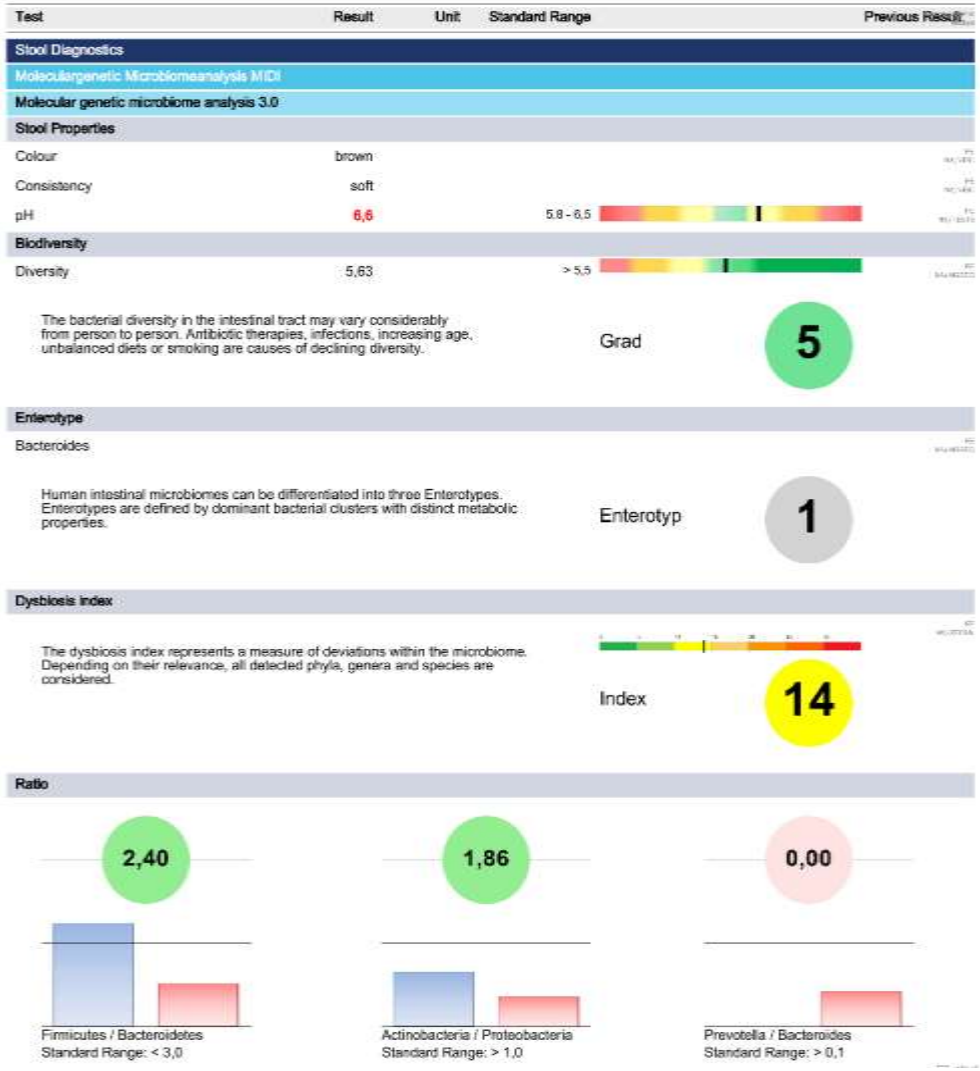
1. Wang, Y. et al.Pharmacological Research.157,.104784.(2020)

Case report 1

Case report 1: girl with ASD

- **Marie, born in 2018**, 6 years old at the start of therapy (November 2024)
- No bowel movement after birth, at some point it was said: **chronic constipation**
- Psychiatric treatment was of no use.
- Autism spectrum:
  - Social anxiety
  - Very quiet in unfamiliar surroundings
  - Eating behavior disorder: mini portions throughout the day, cravings for sugar and sweets

Case Study Marie – Microbiome 11/2024 (1/3)



Test	Result	Unit	Standard Range	Previous Result
Stool Diagnostics				
Molekulargenetic Microbiomeanalysis MDI				
Molecular genetic microbiome analysis 3.0				
Stool Properties				
Colour	brown			
Consistency	soft			
pH	6,6		5,8 - 6,5	
Biodiversity				
Diversity	5,63		> 5,5	

The bacterial diversity in the intestinal tract may vary considerably from person to person. Antibiotic therapies, infections, increasing age, unbalanced diets or smoking are causes of declining diversity.

Grad **5**

Enterotype				
Bacteroides				

Human intestinal microbiomes can be differentiated into three Enterotypes. Enterotypes are defined by dominant bacterial clusters with distinct metabolic properties.

Enterotyp **1**

Dysbiosis index

The dysbiosis index represents a measure of deviations within the microbiome. Depending on their relevance, all detected phyla, genera and species are considered.

Index **14**

Ratio

2,40

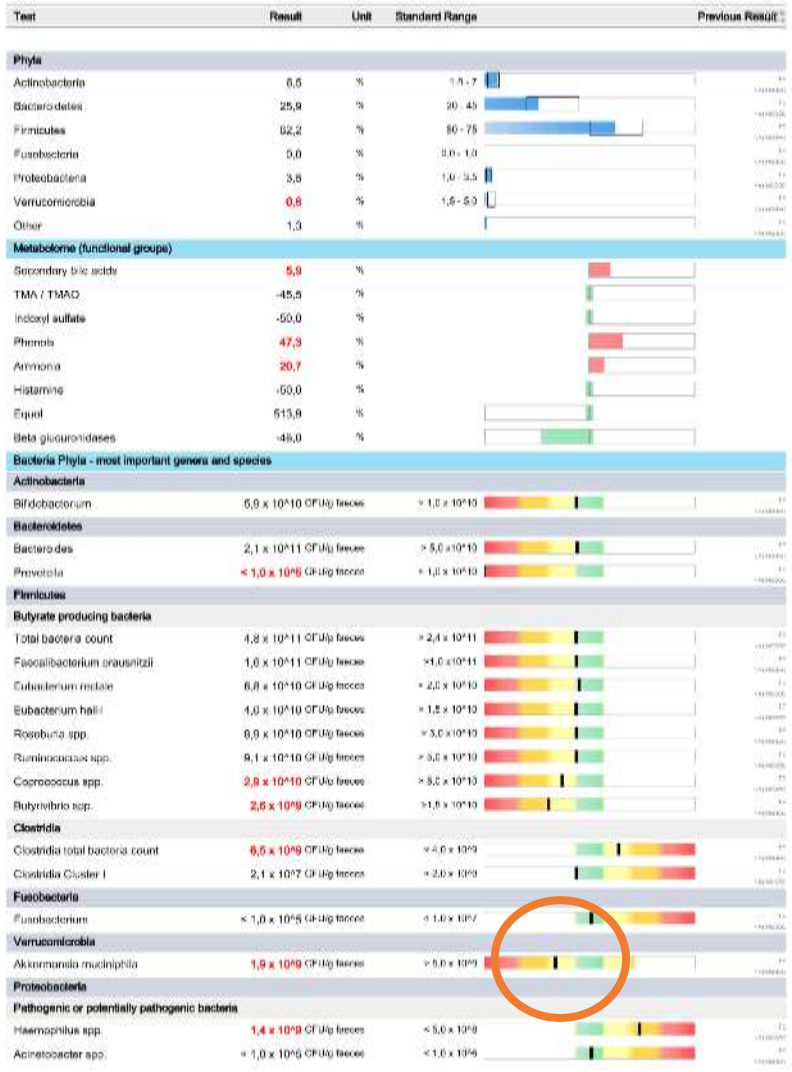
Firmicutes / Bacteroidetes
Standard Range: < 3,0

1,86

Actinobacteria / Proteobacteria
Standard Range: > 1,0

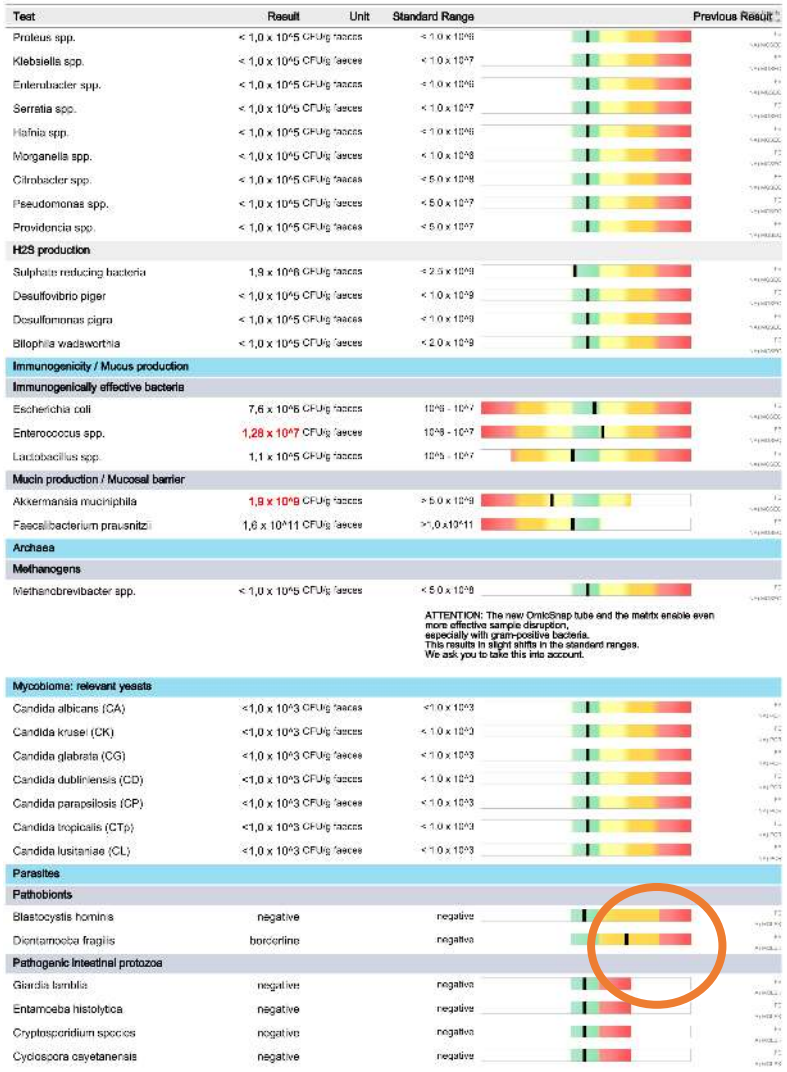
0,00

Prevotella / Bacteroides
Standard Range: > 0,1



Test	Result	Unit	Standard Range	Previous Result
Phyla				
Actinobacteria	6,5	%	1,5 - 7	
Bacteroidetes	25,9	%	20 - 45	
Firmicutes	62,2	%	50 - 75	
Fusobacteria	0,0	%	0,0 - 1,0	
Proteobacteria	3,8	%	1,0 - 5,5	
Verrucomicrobia	0,6	%	1,5 - 5,0	
Other	1,3	%		
Metabolome (functional groups)				
Secondary bile acids	5,9	%		
TMA / TMAO	45,5	%		
Indoxyl sulfate	50,0	%		
Phenols	47,3	%		
Ammonia	20,7	%		
Histamine	50,0	%		
Equol	513,9	%		
Beta glucuronidases	46,0	%		
Bacteria Phyla - most important genera and species				
Actinobacteria				
Bifidobacterium	5,9 x 10^10 CFU/g feces		> 1,0 x 10^10	
Bacteroidetes				
Bacteroides	2,1 x 10^11 CFU/g feces		> 5,0 x10^10	
Prevotella	< 1,0 x 10^6 CFU/g feces		> 1,0 x 10^10	
Firmicutes				
Butyrate producing bacteria				
Total bacteria count	4,8 x 10^11 CFU/g feces		> 2,4 x 10^11	
Faecalibacterium prausnitzii	1,0 x 10^11 CFU/g feces		>1,0 x10^11	
Eubacterium rectale	6,8 x 10^10 CFU/g feces		> 2,0 x 10^10	
Eubacterium hallii	1,0 x 10^10 CFU/g feces		> 1,5 x 10^10	
Roseburia spp.	0,9 x 10^10 CFU/g feces		> 3,0 x10^10	
Ruminococcus spp.	9,1 x 10^10 CFU/g feces		> 5,0 x 10^10	
Coprococcus spp.	2,9 x 10^10 CFU/g feces		> 5,0 x 10^10	
Butyrivibrio spp.	2,6 x 10^9 CFU/g feces		>1,0 x 10^10	
Clostridia				
Clostridia total bacteria count	6,5 x 10^9 CFU/g feces		> 4,0 x 10^9	
Clostridia Cluster I	2,1 x 10^7 CFU/g feces		> 2,0 x 10^9	
Fusobacteria				
Fusobacterium	< 1,0 x 10^6 CFU/g feces		< 1,0 x 10^7	
Verrucomicrobia				
Akkermansia muciniphila	1,9 x 10^9 CFU/g feces		> 5,0 x 10^9	
Proteobacteria				
Pathogenic or potentially pathogenic bacteria				
Haemophilus spp.	1,4 x 10^9 CFU/g feces		< 5,0 x 10^9	
Acinetobacter spp.	< 1,0 x 10^6 CFU/g feces		< 1,0 x 10^6	

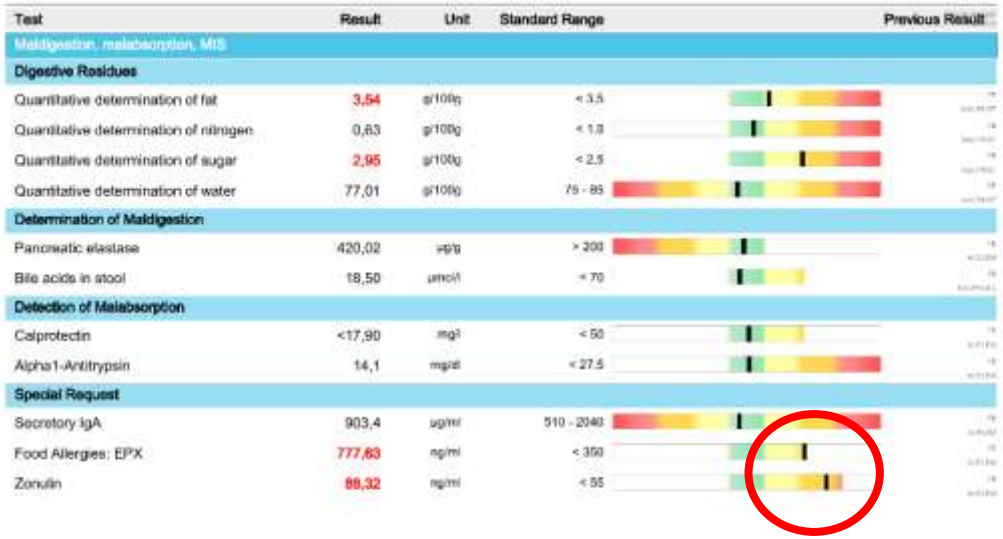
Case Study Marie – Microbiome 11/2024 (2/3)



Test	Result	Unit	Standard Range	Previous Result
Proteus spp.	< 1,0 x 10^5	CFU/g faeces	< 1,0 x 10^8	
Klebsiella spp.	< 1,0 x 10^5	CFU/g faeces	< 1,0 x 10^7	
Enterobacter spp.	< 1,0 x 10^5	CFU/g faeces	< 1,0 x 10^8	
Serratia spp.	< 1,0 x 10^5	CFU/g faeces	< 1,0 x 10^7	
Hafnia spp.	< 1,0 x 10^5	CFU/g faeces	< 1,0 x 10^8	
Morganella spp.	< 1,0 x 10^5	CFU/g faeces	< 1,0 x 10^8	
Citrobacter spp.	< 1,0 x 10^5	CFU/g faeces	< 5,0 x 10^8	
Pseudomonas spp.	< 1,0 x 10^5	CFU/g faeces	< 5,0 x 10^7	
Providencia spp.	< 1,0 x 10^5	CFU/g faeces	< 5,0 x 10^7	
H2S production				
Sulphate reducing bacteria	1,9 x 10^8	CFU/g faeces	< 2,5 x 10^9	
Desulfovibrio piger	< 1,0 x 10^5	CFU/g faeces	< 1,0 x 10^9	
Desulfomonas pigra	< 1,0 x 10^5	CFU/g faeces	< 1,0 x 10^9	
Bilophila wadsworthia	< 1,0 x 10^5	CFU/g faeces	< 2,0 x 10^9	
Immunogenicity / Mucus production				
Immunogenically effective bacteria				
Escherichia coli	7,6 x 10^6	CFU/g faeces	10^8 - 10^7	
Enterococcus spp.	1,28 x 10^7	CFU/g faeces	10^8 - 10^7	
Lactobacillus spp.	1,1 x 10^5	CFU/g faeces	10^5 - 10^7	
Mucin production / Mucosal barrier				
Akkermansia muciniphila	1,9 x 10^9	CFU/g faeces	> 5,0 x 10^8	
Faecalibacterium prausnitzii	1,6 x 10^11	CFU/g faeces	>1,0 x10^11	
Archaea				
Methanogens				
Methanobrevibacter spp.	< 1,0 x 10^5	CFU/g faeces	< 5,0 x 10^8	

ATTENTION: The new OmicSnap tube and the matrix enable even more effective sample disruption, especially with gram-positive bacteria. This results in slight shifts in the standard ranges. We ask you to take this into account.

Mycobiome: relevant yeasts				
Candida albicans (CA)	<1,0 x 10^3	CFU/g faeces	<1,0 x 10^3	
Candida krusei (CK)	<1,0 x 10^3	CFU/g faeces	< 1,0 x 10^3	
Candida glabrata (CG)	<1,0 x 10^3	CFU/g faeces	< 1,0 x 10^3	
Candida dubliniensis (CD)	<1,0 x 10^3	CFU/g faeces	< 1,0 x 10^3	
Candida parapsilosis (CP)	<1,0 x 10^3	CFU/g faeces	< 1,0 x 10^3	
Candida tropicalis (CTp)	<1,0 x 10^3	CFU/g faeces	< 1,0 x 10^3	
Candida lusitaniae (CL)	<1,0 x 10^3	CFU/g faeces	< 1,0 x 10^3	
Parasites				
Pathobionts				
Blastocystis hominis	negative		negative	
Dientamoeba fragilis	borderline		negative	
Pathogenic intestinal protozoa				
Giardia lamblia	negative		negative	
Entamoeba histolytica	negative		negative	
Cryptosporidium species	negative		negative	
Cyclospora cayetanensis	negative		negative	



Test	Result	Unit	Standard Range	Previous Result
Maldigestion, malabsorption, MIS				
Digestive Residues				
Quantitative determination of fat	3,54	g/100g	< 3,5	
Quantitative determination of nitrogen	0,63	g/100g	< 1,0	
Quantitative determination of sugar	2,95	g/100g	< 2,5	
Quantitative determination of water	77,01	g/100g	75 - 85	
Determination of Maldigestion				
Pancreatic elastase	420,02	µg/g	> 200	
Bile acids in stool	18,50	µmol/l	< 70	
Detection of Malabsorption				
Calprotectin	<17,90	mg/l	< 50	
Alpha1-Antitrypsin	14,1	mg/dl	< 27,5	
Special Request				
Secretory IgA	903,4	µg/ml	510 - 2040	
Food Allergies: EPX	777,63	ng/ml	< 350	
Zonulin	88,32	ng/ml	< 55	

Case Study Marie: treatment approach & early results

Treatment approach:

- December 2024: MyOwnBlend
  - Low dose: 2x half spoon per day
- Gluten-free diet

Early results, Mid-February (i.e. 2 months after start):

- Bowel movement is much better, she has to go to the toilet, that wasn't the case before!
- No longer has the extreme cravings for sweets.
- Success: digestion is regular and much better, cravings gone.

Patient is still on MyOwnBlend, further results to follow

Element	Tagesdosis
MyOwnBlend, Magistral-Präparat 2 Monaten (oral)	
PHGG	4
Bacillus coagulans Unique IS-2	2
Lactiplantibacillus plantarum DR7	2
S. Boulardii	1
DJ repair	3
Bifidobacterium lactis HN019	2
L. plantarum P-8	1

Case report 2

Case Study 2: Young Girl with ASD

- **Born in 2017**, 6 years old at the start of therapy (April 2024)
- Fila is a child from a **Bulgarian family**
- **Autism diagnosis** made by **University Hospital Frankfurt**
- Also monitored by **neurologists in Bulgaria**
- **Medications at the time of anamnesis:**
  - Omni-Biotic 9
  - Glialia 400 + 40 mg

Anamnesis of Fila in April 2024

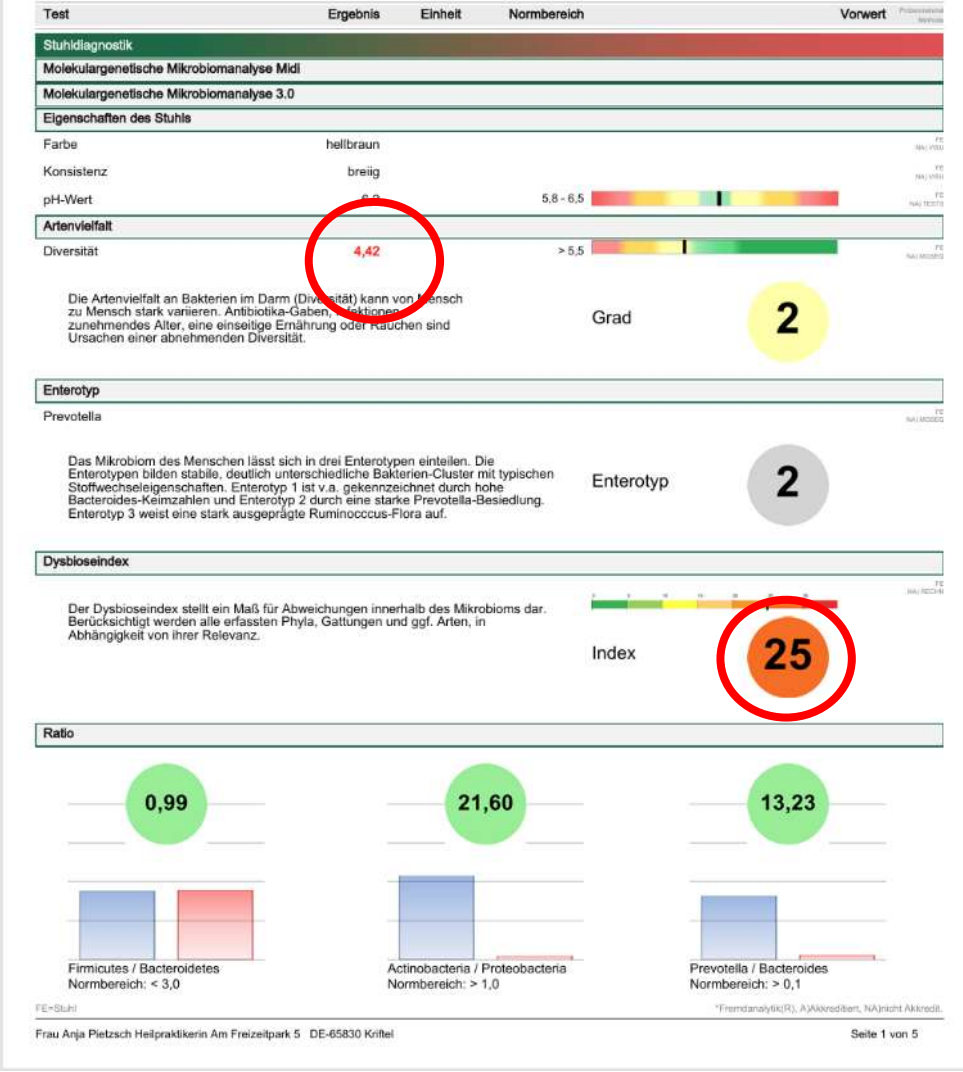
Clinic and Autism Spectrum

- Constantly **bloated abdomen**
- **Uncontrolled eating**, craving for carbohydrates or sugar
- **No feeling of satiety**, can eat all day
- **Unbalanced, restless**
- Frequent toilet visits with **little stool output**
- **Constantly changing stool consistency**
- **Cannot speak properly**, only makes sounds

Diagnostics

- **Microbiome analysis**

Case Study Fila – Microbiome 04/2024 (1/3)



Test	Ergebnis	Einheit	Normbereich	Vorwert
Stuhldiagnostik				
Molekulargenetische Mikrobiomanalyse Midi				
Molekulargenetische Mikrobiomanalyse 3.0				
Eigenschaften des Stuhls				
Farbe	hellbraun			
Konsistenz	breiig			
pH-Wert			5,8 - 6,5	
Artenvielfalt				
Diversität	4,42		> 5,5	

Die Artenvielfalt an Bakterien im Darm (Diversität) kann von Mensch zu Mensch stark variieren. Antibiotika-Gaben, Infektionen, zunehmendes Alter, eine einseitige Ernährung oder Rauchen sind Ursachen einer abnehmenden Diversität.

Grad **2**

Enterotyp

Prevotella

Das Mikrobiom des Menschen lässt sich in drei Enterotypen einteilen. Die Enterotypen bilden stabile, deutlich unterschiedliche Bakterien-Cluster mit typischen Stoffwechseleigenschaften. Enterotyp 1 ist v.a. gekennzeichnet durch hohe Bacteroides-Keimzahlen und Enterotyp 2 durch eine starke Prevotella-Besiedlung. Enterotyp 3 weist eine stark ausgeprägte Ruminococcus-Flora auf.

Enterotyp **2**

Dysbioseindex

Der Dysbioseindex stellt ein Maß für Abweichungen innerhalb des Mikrobioms dar. Berücksichtigt werden alle erfassten Phyla, Gattungen und ggf. Arten, in Abhängigkeit von ihrer Relevanz.

Index **25**

Ratio

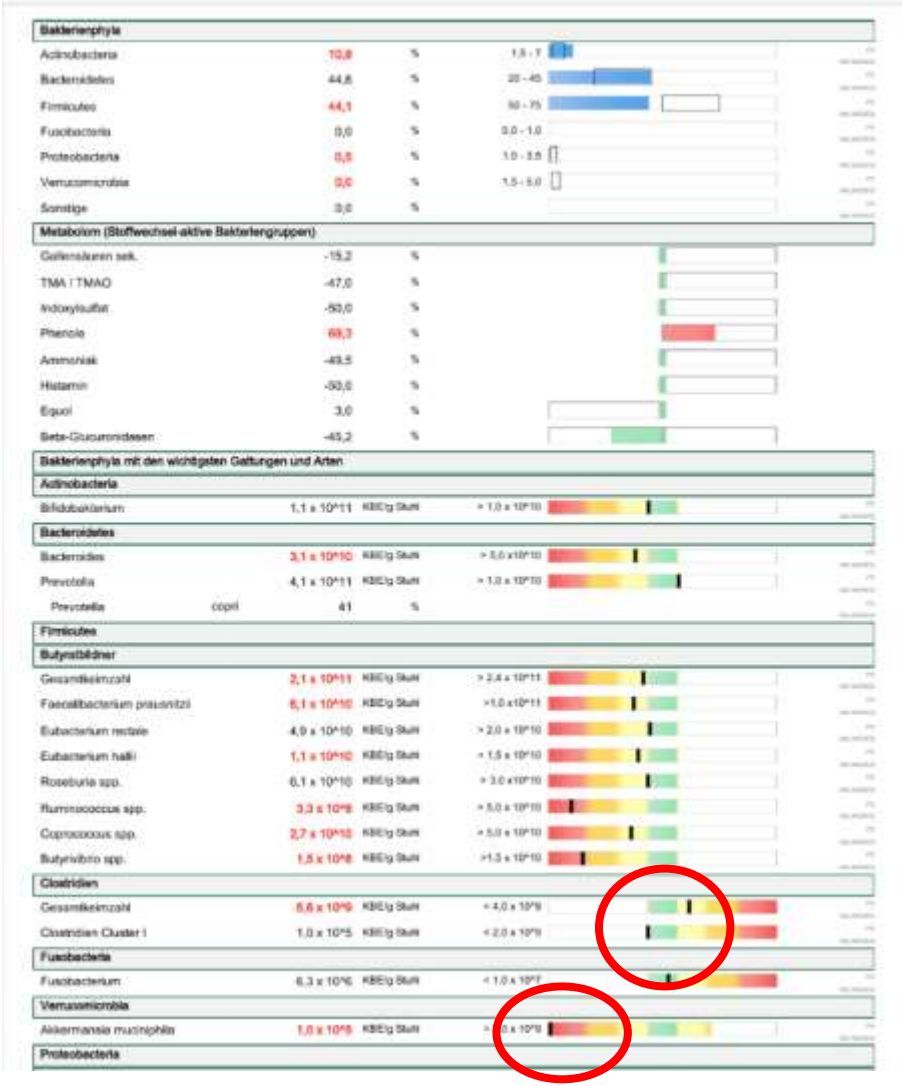
0,99	21,60	13,23
Firmicutes / Bacteroidetes	Actinobacteria / Proteobacteria	Prevotella / Bacteroides
Normbereich: < 3,0	Normbereich: > 1,0	Normbereich: > 0,1

FE=Stuhl

*Fremdanalytik(R), A/Akkreditiert, NA/nicht Akkredit.

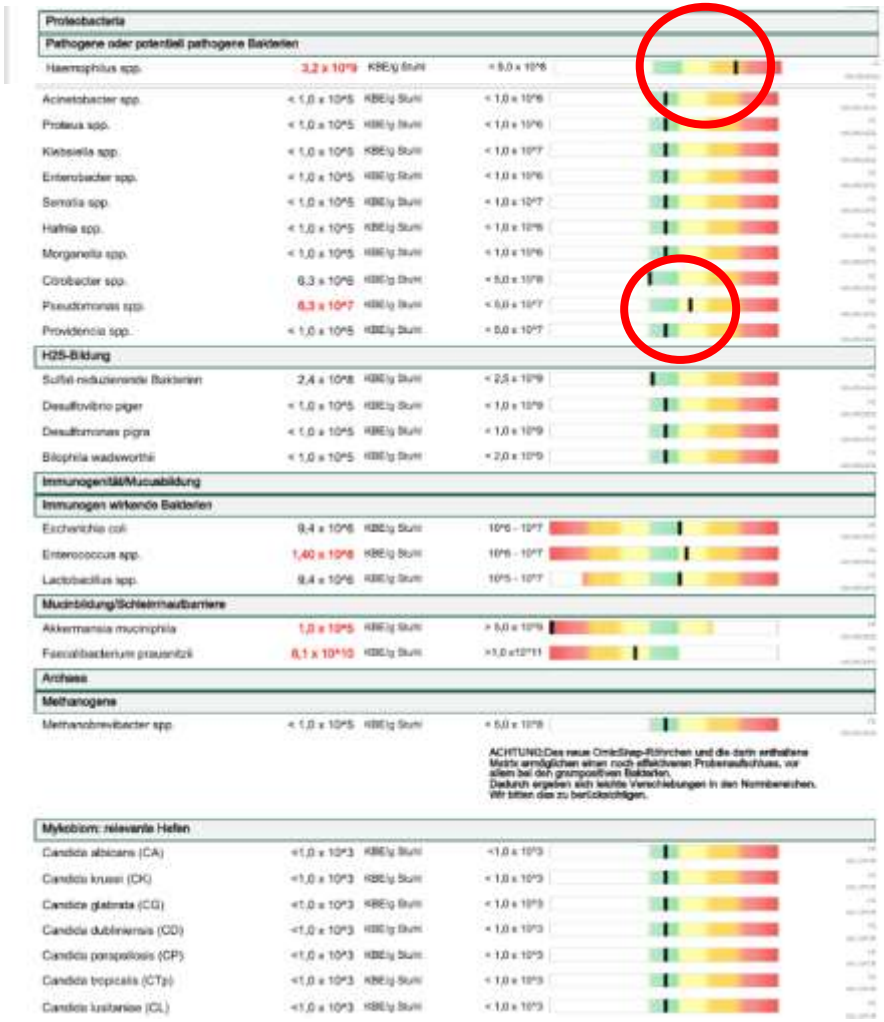
Frau Anja Pietzsch Heilpraktikerin Am Freizeitpark 5 DE-65830 Kriftel

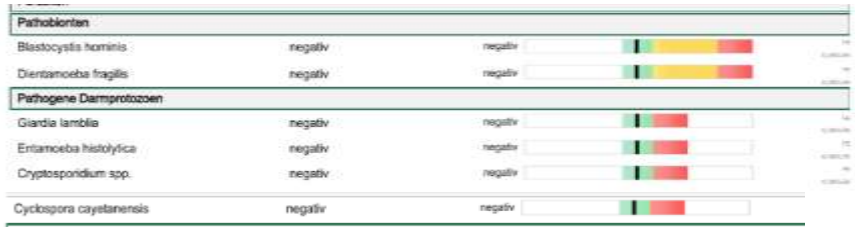
Seite 1 von 5



Bakterienphyla			
Actinobacteria	10,8	%	1,8 - 7
Bacteroidetes	44,8	%	20 - 45
Firmicutes	44,1	%	50 - 75
Fusobacteria	0,0	%	0,0 - 1,0
Proteobacteria	0,1	%	1,0 - 3,5
Verrucomicrobia	0,0	%	1,5 - 5,0
Sonstige	0,0	%	
Metabolism (Stoffwechsel-aktive Bakteriengruppen)			
Gallensäuren sek.	-15,2	%	
TMA / TMAO	-47,0	%	
Indoxylsulfat	-50,0	%	
Phenole	69,3	%	
Ammoniak	-49,5	%	
Histamin	-50,0	%	
Equol	3,0	%	
Beta-Glucuronidasen	-45,2	%	
Bakterienphyla mit den wichtigsten Gattungen und Arten			
Actinobacteria			
Bifidobakterium	1,1 x 10^11	KBE/g Stuhl	> 1,0 x 10^10
Bacteroidetes			
Bacteroides	3,1 x 10^10	KBE/g Stuhl	> 3,0 x 10^10
Prevotella	4,1 x 10^11	KBE/g Stuhl	> 1,0 x 10^10
Prevotella copri	41	%	
Firmicutes			
Butyratbildner			
Gesamtkeimzahl	2,1 x 10^11	KBE/g Stuhl	> 2,4 x 10^11
Faecalibacterium prausnitzii	6,1 x 10^10	KBE/g Stuhl	>1,0 x 10^11
Eubacterium rectale	4,9 x 10^10	KBE/g Stuhl	> 2,0 x 10^10
Eubacterium hallii	1,1 x 10^10	KBE/g Stuhl	> 1,5 x 10^10
Roseburia spp.	6,1 x 10^10	KBE/g Stuhl	> 3,0 x 10^10
Ruminococcus spp.	3,3 x 10^9	KBE/g Stuhl	> 5,0 x 10^10
Coprococcus spp.	2,7 x 10^10	KBE/g Stuhl	> 5,0 x 10^10
Butyrivibrio spp.	1,5 x 10^8	KBE/g Stuhl	>1,3 x 10^10
Clostridien			
Gesamtkeimzahl	6,6 x 10^9	KBE/g Stuhl	< 4,0 x 10^9
Clostridien Cluster I	1,0 x 10^5	KBE/g Stuhl	< 2,0 x 10^9
Fusobacteria			
Fusobacterium	6,3 x 10^6	KBE/g Stuhl	< 1,0 x 10^7
Verrucomicrobia			
Akkermansia muciniphila	1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^9
Proteobacteria			

Case Study Fila – Microbiome 04/2024 (2/3)





Case Study Fila – Microbiome 04/2024 (3/3)

Maldigestion, Malabsorption, MIS				
Verdauungsrückstände				
Quant. Nachweis von Fett	4,30	g/100g	< 3,5	
Quant. Nachweis von Stickstoff	0,40	g/100g	< 1,0	
Quant. Nachweis von Zucker	4,40	g/100g	< 2,5	
Quant. Nachweis von Wasser	81,10	g/100g	75 - 85	
Nachweis einer Maldigestion				
Pankreaselastase im Stuhl	699,07	µg/g	> 200	
Gallensäuren im Stuhl	27,47	µmol/l	< 70	
Nachweis einer Malabsorption				
Calprotectin	33,45	mg/l	< 50	
Alpha 1-Antitrypsin	25,6	mg/dl	< 27,5	
Einzelparameter				
Sekretorisches Immunglobulin A (sIgA)	3332,5	µg/ml	510 - 2040	
Zonulin	83,36	ng/ml	< 55	

Grenzwertiger Alpha-1-Antitryspin Wert

Case Study Fila — Start of Therapy May 2024

Recommendation

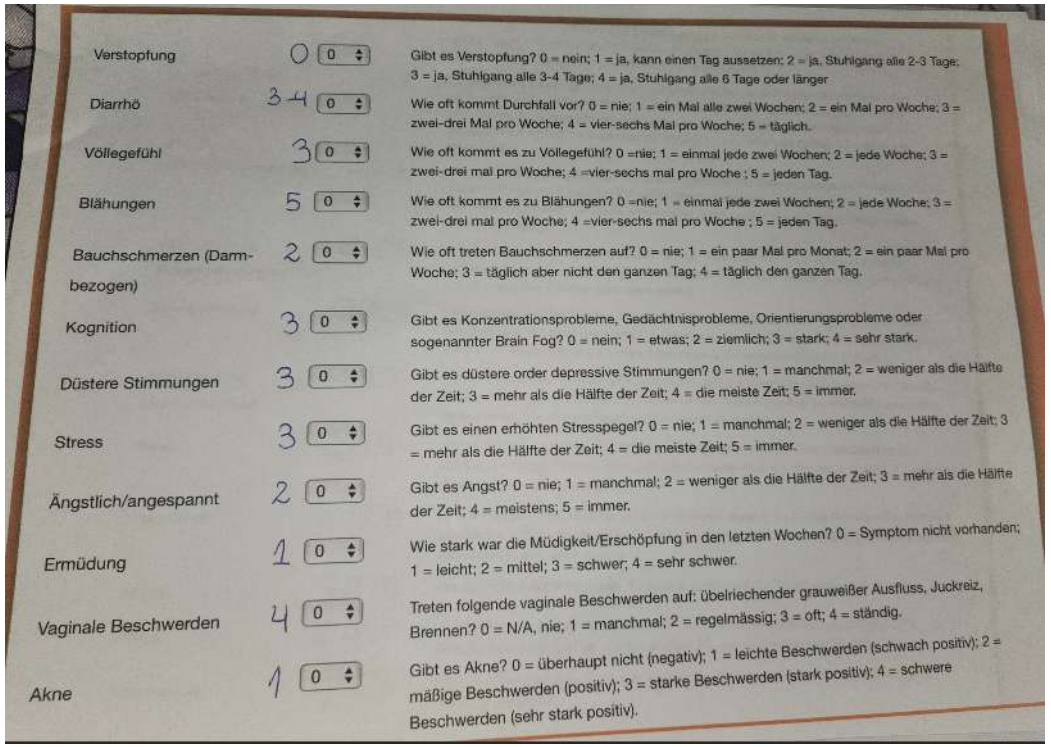
- **MyOwnBlend**
- but utilize the time until the preparation is available
  - **Pro Emsa Berry** 15 ml + **Omni Biotic 10** + **Pro Präbioma** 2 x ½ measuring spoon daily

Further Diagnostics

- **Test for Kryptopyrroluria** – unremarkable, no therapeutic consequence

Test	Ergebnis	Einheit	Normbereich	Vorwert
Spezielle Analytik				
Kryptopyrrol				
Kryptopyrrol im Urin	3,28	mg/g Krea	< 5	
			Kryptopyrrolwerte zwischen 5,0 und 6,0 stellen einen Graubereich dar. Sollten klinische Symptome, z.B. ein ADHS bestehen, kann eine Therapie mit Vitamin B6 und Zink bereits bei diesen Werten sinnvoll sein.	
Kreatinin (Urin)	445	mg/l	290 - 2260	

Case Study Fila – My Own Blend



Verstopfung	0	0	Gibt es Verstopfung? 0 = nein; 1 = ja, kann einen Tag aussetzen; 2 = ja, Stuhlgang alle 2-3 Tage; 3 = ja, Stuhlgang alle 3-4 Tage; 4 = ja, Stuhlgang alle 6 Tage oder länger
Diarrhö	3-4	0	Wie oft kommt Durchfall vor? 0 = nie; 1 = ein Mal alle zwei Wochen; 2 = ein Mal pro Woche; 3 = zwei-drei Mal pro Woche; 4 = vier-sechs Mal pro Woche; 5 = täglich.
Völlegefühl	3	0	Wie oft kommt es zu Völlegefühl? 0 =nie; 1 = einmal jede zwei Wochen; 2 = jede Woche; 3 = zwei-drei mal pro Woche; 4 =vier-sechs mal pro Woche ; 5 = jeden Tag.
Blähungen	5	0	Wie oft kommt es zu Blähungen? 0 =nie; 1 = einmal jede zwei Wochen; 2 = jede Woche; 3 = zwei-drei mal pro Woche; 4 =vier-sechs mal pro Woche ; 5 = jeden Tag.
Bauchschmerzen (Darm-bezogen)	2	0	Wie oft treten Bauchschmerzen auf? 0 = nie; 1 = ein paar Mal pro Monat; 2 = ein paar Mal pro Woche; 3 = täglich aber nicht den ganzen Tag; 4 = täglich den ganzen Tag.
Kognition	3	0	Gibt es Konzentrationsprobleme, Gedächtnisprobleme, Orientierungsprobleme oder sogenannter Brain Fog? 0 = nein; 1 = etwas; 2 = ziemlich; 3 = stark; 4 = sehr stark.
Düstere Stimmungen	3	0	Gibt es düstere order depressive Stimmungen? 0 = nie; 1 = manchmal; 2 = weniger als die Hälfte der Zeit; 3 = mehr als die Hälfte der Zeit; 4 = die meiste Zeit; 5 = immer.
Stress	3	0	Gibt es einen erhöhten Stresspegel? 0 = nie; 1 = manchmal; 2 = weniger als die Hälfte der Zeit; 3 = mehr als die Hälfte der Zeit; 4 = die meiste Zeit; 5 = immer.
Ängstlich/angespannt	2	0	Gibt es Angst? 0 = nie; 1 = manchmal; 2 = weniger als die Hälfte der Zeit; 3 = mehr als die Hälfte der Zeit; 4 = meistens; 5 = immer.
Ermüdung	1	0	Wie stark war die Müdigkeit/Erschöpfung in den letzten Wochen? 0 = Symptom nicht vorhanden; 1 = leicht; 2 = mittel; 3 = schwer; 4 = sehr schwer.
Vaginale Beschwerden	4	0	Treten folgende vaginale Beschwerden auf: übelriechender grauweißer Ausfluss, Juckreiz, Brennen? 0 = N/A, nie; 1 = manchmal; 2 = regelmässig; 3 = oft; 4 = ständig.
Akne	1	0	Gibt es Akne? 0 = überhaupt nicht (negativ); 1 = leichte Beschwerden (schwach positiv); 2 = mäßige Beschwerden (positiv); 3 = starke Beschwerden (stark positiv); 4 = schwere Beschwerden (sehr stark positiv).

Formulation MOB

Start of use at the beginning of June 2024

Element	Tagesdosis	Betrag	Typ
MyOwnBlend, Magistral-Preparat 2 Monaten (oral)		275,00 €	Persoonlijke Bereiding
PHGG	3		Magistral compound
S. Boulardii	2		Magistral compound
Bacillus coagulans Unique IS-2	2		Magistral compound
Bifidobacterium lactis HN0 19	3		Magistral compound
Akkermansia muciniphila, pasteurisiertes	1		Magistral compound
Gut enricher	1		Magistral compound
Akazien-Faser	3		Magistral compound

Case Study Fila – Therapy Progress – July / August 2024

Progress Evaluation After 4 Weeks:

- Fila's bloating has improved
- Bowel movements are less frequent, now 2-3 times daily
- She is very balanced
- It seems like there is progress in her speech – she is starting to talk

August 2024

- Fila is in Bulgaria with her parents
- Mother's email: "My daughter is doing very well, she is a bit nervous, but it's very hot here, I don't think it has anything to do with the probiotic."
- Neurological examination in Bulgaria

Case Study Fila – Therapy Progress – August/September 2024

Mother's Feedback via Email - End of August

- "Many of the symptoms and responses to the questions I filled out are currently in good condition."
- "The skin is soft, there are no small pimples. No yellow stains on the diaper."
- School enrollment in September, Fila is restless,
- Mother is afraid she might have to give medication.
- Recommendation: Lunafini by Heel

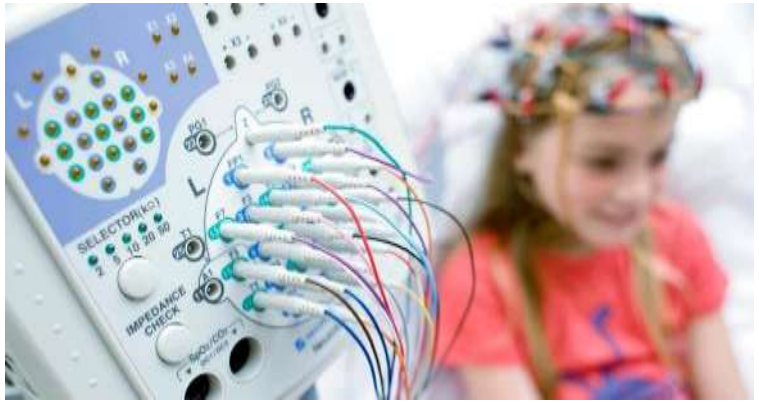
Mother's Feedback - Mid-September

- Fila enjoys going to school, but there are situations where she is somewhat aggressive.
- It also takes time to adjust to a new environment. In general, she is calm! She has calmed down a lot since I started giving her Lunafini.

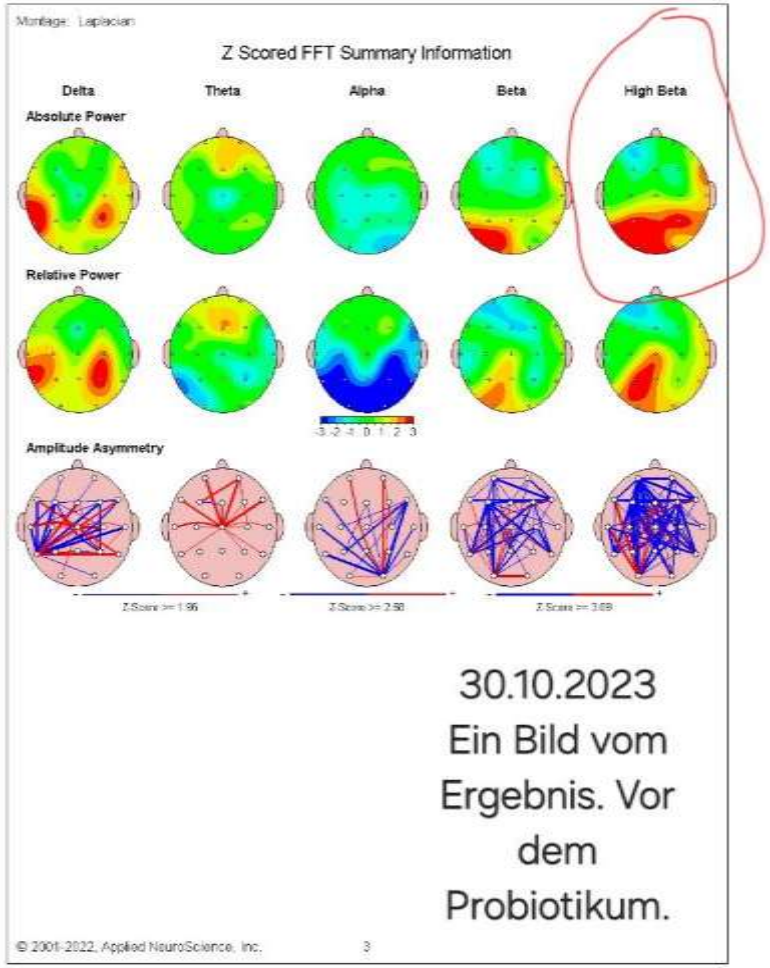
Case Study Fila – Therapy Progress – End of August 2024

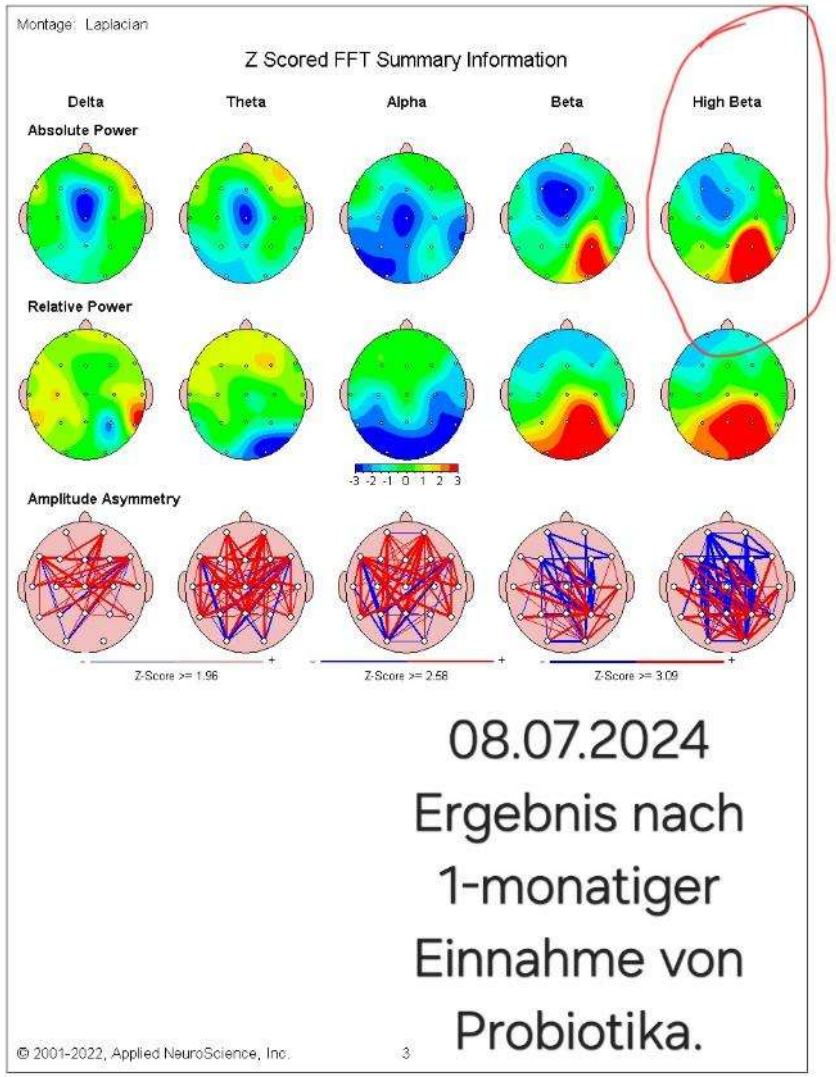
Neurological Examination of the Head in Bulgaria

- "The doctor and I were very positively surprised... He is very glad that I found you and that we started the treatment together."



Neurological Examination





Case Study Fila – Ongoing Therapy Progress

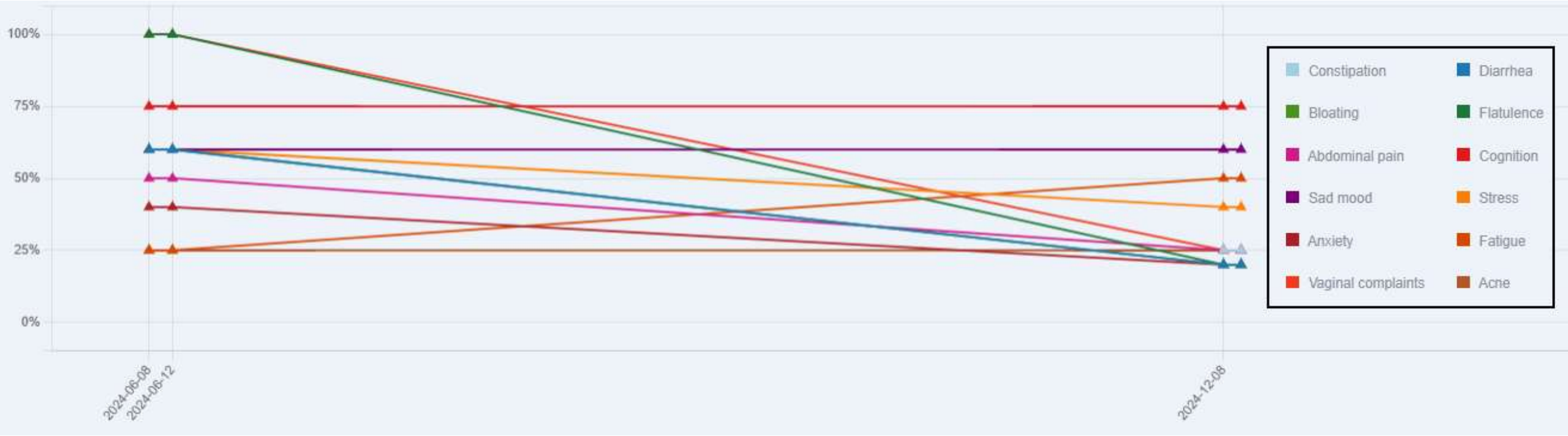
Fall 2024

- Eating and drinking behavior has continued to normalize – Fila "is no longer constantly looking for food," no longer overeating
- She drinks when she is thirsty
- Skin is softer
- No longer looks "bloated"
- Immune system is strong
- Sleep is trouble-free

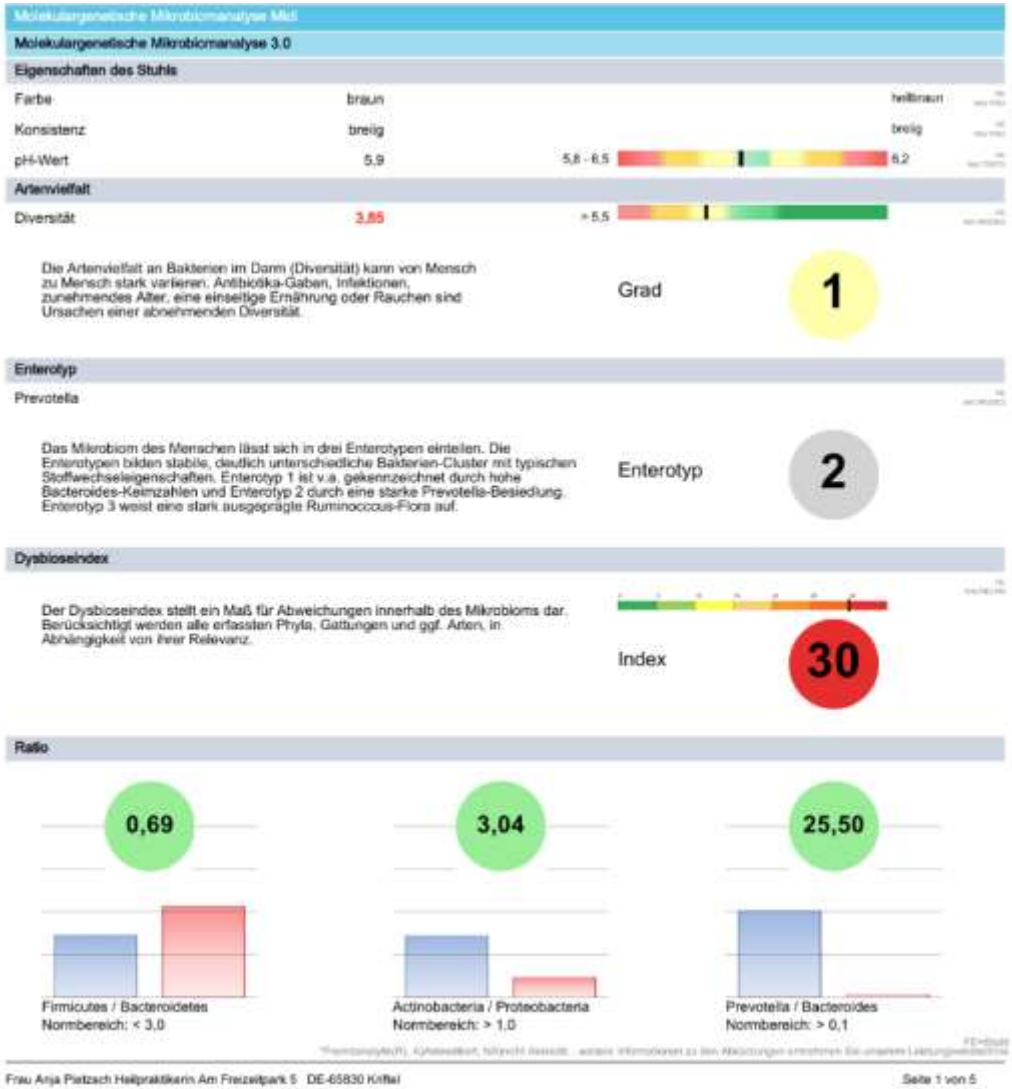
Winter 2024

- Positive change in language
- When the mother asks a question, Fila thinks about which answer to give
- She understands everything much better
- She is not forgetting what she has learned at the moment. Previously, she couldn't learn.

Case Study Fila – Ongoing Therapy Progress



Case Study Fila – Microbiome 11/2024 (1/3)



Molekulargenetische Mikrobiomanalyse Midi

Molekulargenetische Mikrobiomanalyse 3.0

Eigenschaften des Stuhls

Farbe	braun		hellbraun
Konsistenz	breiig		breiig
pH-Wert	5,9	5,8 - 6,5	6,2

Artenvielfalt

Diversität	3,85	> 5,5	

Die Artenvielfalt an Bakterien im Darm (Diversität) kann von Mensch zu Mensch stark variieren. Antibiotika-Gaben, Infektionen, zunehmendes Alter, eine einseitige Ernährung oder Rauchen sind Ursachen einer abnehmenden Diversität.

Grad **1**

Enterotyp

Prevotella

Das Mikrobiom des Menschen lässt sich in drei Enterotypen einteilen. Die Enterotypen bilden stabile, deutlich unterschiedliche Bakterien-Cluster mit typischen Stoffwechseleigenschaften. Enterotyp 1 ist v.a. gekennzeichnet durch hohe Bacteroides-Keimzahlen und Enterotyp 2 durch eine starke Prevotella-Besiedlung. Enterotyp 3 weist eine stark ausgeprägte Ruminoccous-Flora auf.

Enterotyp **2**

Dysbioseindex

Der Dysbioseindex stellt ein Maß für Abweichungen innerhalb des Mikrobioms dar. Berücksichtigt werden alle erfassten Phyla, Gattungen und ggf. Arten, in Abhängigkeit von ihrer Relevanz.

Index **30**

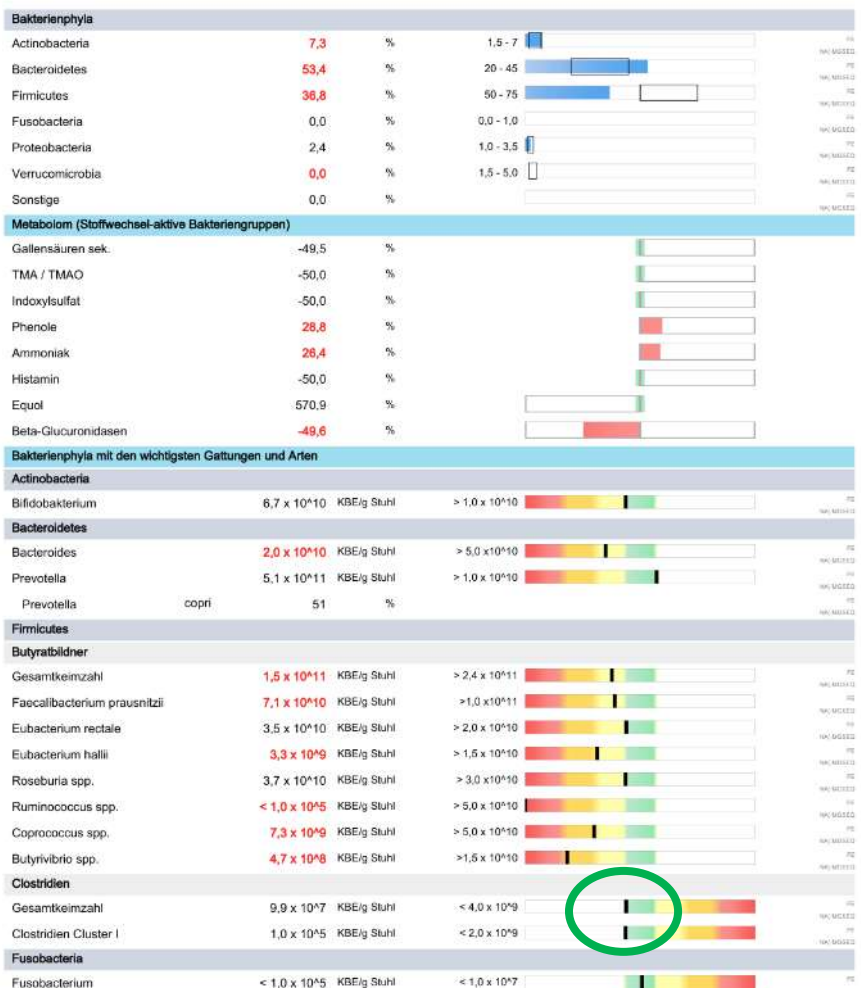
Ratio

0,69	3,04	25,50
Firmicutes / Bacteroidetes	Actinobacteria / Proteobacteria	Prevotella / Bacteroides
Normbereich: < 3,0	Normbereich: > 1,0	Normbereich: > 0,1

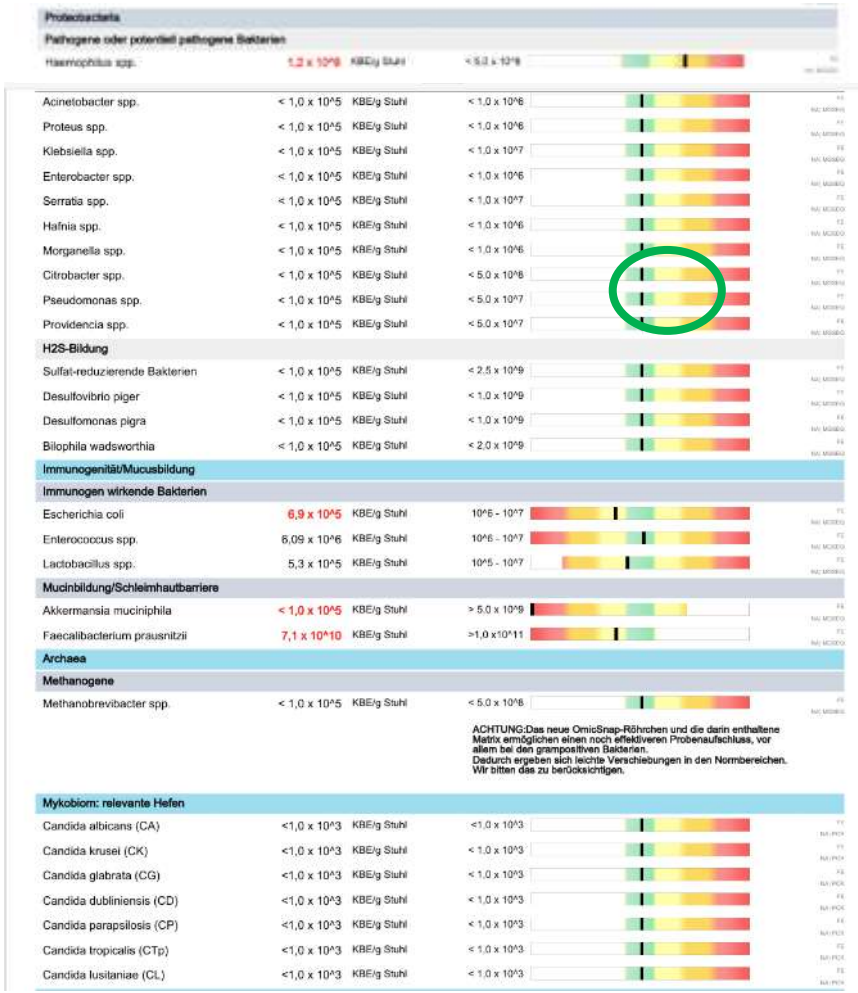
Frau Anja Pletzsch Heilpraktikerin Am Freizeitpark 5 DE-65830 Kriftel

Seite 1 von 5

Case Study Fila – Microbiome 11/2024 (2/3)



Bakterienphyla			
Actinobacteria	7,3	%	1,5 - 7
Bacteroidetes	53,4	%	20 - 45
Firmicutes	36,8	%	50 - 75
Fusobacteria	0,0	%	0,0 - 1,0
Proteobacteria	2,4	%	1,0 - 3,5
Verrucomicrobia	0,0	%	1,5 - 5,0
Sonstige	0,0	%	
Metabolom (Stoffwechsel-aktive Bakteriengruppen)			
Gallensäuren sek.	-49,5	%	
TMA / TMAO	-50,0	%	
Indoxylsulfat	-50,0	%	
Phenole	28,8	%	
Ammoniak	26,4	%	
Histamin	-50,0	%	
Equol	570,9	%	
Beta-Glucuronidasen	-49,6	%	
Bakterienphyla mit den wichtigsten Gattungen und Arten			
Actinobacteria			
Bifidobakterium	6,7 x 10^10	KBE/g Stuhl	> 1,0 x 10^10
Bacteroidetes			
Bacteroides	2,0 x 10^10	KBE/g Stuhl	> 5,0 x10^10
Prevotella	5,1 x 10^11	KBE/g Stuhl	> 1,0 x 10^10
Prevotella copri	51	%	
Firmicutes			
Butyratbildner			
Gesamtkeimzahl	1,5 x 10^11	KBE/g Stuhl	> 2,4 x 10^11
Faecalibacterium prausnitzii	7,1 x 10^10	KBE/g Stuhl	>1,0 x10^11
Eubacterium rectale	3,5 x 10^10	KBE/g Stuhl	> 2,0 x 10^10
Eubacterium hallii	3,3 x 10^9	KBE/g Stuhl	> 1,5 x 10^10
Roseburia spp.	3,7 x 10^10	KBE/g Stuhl	> 3,0 x10^10
Ruminococcus spp.	< 1,0 x 10^5	KBE/g Stuhl	> 5,0 x 10^10
Coprococcus spp.	7,3 x 10^9	KBE/g Stuhl	> 5,0 x 10^10
Butyrivibrio spp.	4,7 x 10^8	KBE/g Stuhl	>1,5 x 10^10
Clostridien			
Gesamtkeimzahl	9,9 x 10^7	KBE/g Stuhl	< 4,0 x 10^9
Clostridien Cluster I	1,0 x 10^5	KBE/g Stuhl	< 2,0 x 10^9
Fusobacteria			
Fusobacterium	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^7



Proteobacteria			
Pathogene oder potentiell pathogene Bakterien			
Haemophilus spp.	1,2 x 10^8	KBE/g Stuhl	< 5,0 x 10^8
Acinetobacter spp.	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^6
Proteus spp.	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^6
Klebsiella spp.	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^7
Enterobacter spp.	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^6
Serratia spp.	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^7
Hafnia spp.	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^6
Morganella spp.	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^6
Citrobacter spp.	< 1,0 x 10^5	KBE/g Stuhl	< 5,0 x 10^6
Pseudomonas spp.	< 1,0 x 10^5	KBE/g Stuhl	< 5,0 x 10^7
Providencia spp.	< 1,0 x 10^5	KBE/g Stuhl	< 5,0 x 10^7
H2S-Bildung			
Sulfat-reduzierende Bakterien	< 1,0 x 10^5	KBE/g Stuhl	< 2,5 x 10^9
Desulfovibrio piger	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^9
Desulfomonas pigra	< 1,0 x 10^5	KBE/g Stuhl	< 1,0 x 10^9
Bilophila wadsworthia	< 1,0 x 10^5	KBE/g Stuhl	< 2,0 x 10^9
Immunogenität/Mucusbildung			
Immunogen wirkende Bakterien			
Escherichia coli	6,9 x 10^5	KBE/g Stuhl	10^6 - 10^7
Enterococcus spp.	6,09 x 10^6	KBE/g Stuhl	10^6 - 10^7
Lactobacillus spp.	5,3 x 10^5	KBE/g Stuhl	10^5 - 10^7
Mucinbildung/Schleimhautbarriere			
Akkermansia muciniphila	< 1,0 x 10^5	KBE/g Stuhl	> 5,0 x 10^9
Faecalibacterium prausnitzii	7,1 x 10^10	KBE/g Stuhl	>1,0 x10^11
Archaea			
Methanogene			
Methanobrevibacter spp.	< 1,0 x 10^5	KBE/g Stuhl	< 5,0 x 10^8
Mykobiom: relevante Hefen			
Candida albicans (CA)	<1,0 x 10^3	KBE/g Stuhl	<1,0 x 10^3
Candida krusei (CK)	<1,0 x 10^3	KBE/g Stuhl	< 1,0 x 10^3
Candida glabrata (CG)	<1,0 x 10^3	KBE/g Stuhl	< 1,0 x 10^3
Candida dubliniensis (CD)	<1,0 x 10^3	KBE/g Stuhl	< 1,0 x 10^3
Candida parapsilosis (CP)	<1,0 x 10^3	KBE/g Stuhl	< 1,0 x 10^3
Candida tropicalis (CTp)	<1,0 x 10^3	KBE/g Stuhl	< 1,0 x 10^3
Candida lusitaniae (CL)	<1,0 x 10^3	KBE/g Stuhl	< 1,0 x 10^3

ACHTUNG:Das neue OmicSnap-Röhrchen und die darin enthaltene Matrix ermöglichen einen noch effektiveren Probenaufschluss, vor allem bei den grampositiven Bakterien. Dadurch ergeben sich leichte Verschiebungen in den Normbereichen. Wir bitten das zu berücksichtigen.

Case Study Fila – Microbiome 11/2024 (3/3)

Parasiten			
Pathobionten			
Blastocystis hominis	negativ	negativ	negativ
Dientamoeba fragilis	negativ	negativ	negativ
Pathogene Darmprotozoen			
Giardia lamblia	negativ	negativ	negativ
Entamoeba histolytica	negativ	negativ	negativ
Cryptosporidium spp.	negativ	negativ	negativ

Maldigestion, Malabsorption, MIS				
Verdauungsrückstände				
Quant. Nachweis von Fett	4,21	g/100g	< 3,5	4,30
Quant. Nachweis von Stickstoff	0,69	g/100g	< 1,0	0,40
Quant. Nachweis von Zucker	4,04	g/100g	< 2,5	4,40
Quant. Nachweis von Wasser	76,20	g/100g	75 - 85	81,10
Nachweis einer Maldigestion				
Pankreaselastase im Stuhl	668,24	µg/g	> 200	699,07
Gallensäuren im Stuhl	16,41	µmol/l	< 70	27,47
Nachweis einer Malabsorption				
Calprotectin	29,39	mg/l	< 50	33,45
Alpha 1-Antitrypsin	18,1	mg/dl	< 27,5	25,6
Einzelparameter				
Sekretorisches Immunglobulin A (sIgA)	2304,6	µg/ml	510 - 2040	3332,5
Zonulin	77,74	ng/ml	< 55	83,36
Spezielle gastroenterologische Diagnostik				
Glutensensitive Enteropathie / Zöliakie				
Anti-Gliadin-AK im Stuhl	31,95	U/l	< 100	
Anti-Transglutaminase AK i. Stuhl	<50,00	U/l	< 100	

Case Study Fila – New MOB Formula Dezember 2024

MOB Formula

- Start of intake: December 2024

Element	Tagesdosis
MyOwnBlend, Magistral-Präparat 2 Monaten (oral)	
Gut enricher	1
L. rhamnosus GG	3
2'-Fucosyllactose	4
PHGG	3
S. Boulardii	2
Akkermansia muciniphila, pasteurisiertes	2

Case Study Fila – Ongoing Therapy Progress

Between 1st and 2nd MyOwnBlend:

- Gap in intake: Immediate bowel problems (hard and very dark stools, constipation)
- Immediately prone to infections: had fever, cough, cold, sore throat

Winter 2024 / Early 2025

- Intake error with new MOB formula in the amount. 2 x 1 scoop
  - Reaction: frequent bowel movements, soft, unpleasant smell
  - Has become more restless
- Adjustment of dosage – overall condition improved again
- Susceptibility to infections immediately regulated: maybe 1 day, recovers quickly and doesn't need medication; mother was very sick, Fila didn’t catch it.

Case Study Fila – Ongoing Therapy Progress

January 2025

- Dietary change discussed, less gluten. Currently: often pizza, pretzels.
- Coverage of nutrient needs with La Vita (she loves it!) and Vitamin D3.

Mother’s Email from 09.02:

- "She feels very well. She is calm. Everything is fine at the moment."

Case Study Fila – Take home messages

Important observations:

- No treatment currently exists for autism
- Fila (and also Marie) had many GI problems
- This is in line with the scientific evidence

There are multiple indications that the MyOwnBlend positively influenced the autism symptoms:

- The first MyOwnBlend showed effect on speech already after 4 weeks
- The neurologist found improvements in the brain scan
- Later, Fila's cognitive functioning improved as well
- When the first MyOwnBlend was finished, problems started to return.
- When taking the wrong dose of the second MyOwnBlend, complaints got worse
- When taking the correct dose of the second MyOwnBlend, Fila improved even further

In conclusion:

- In autistic patients with GI problems, treating the microbiome may improve their symptoms


Microbiome
Center
Thank you for your attention!