



**Microbiome
Center**

Autism (ASD)



Anja Pietzsch and Dennis Zeilstra

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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



800+

Doctors /
practitioners

10+

Countries

12000+

Patients

72+

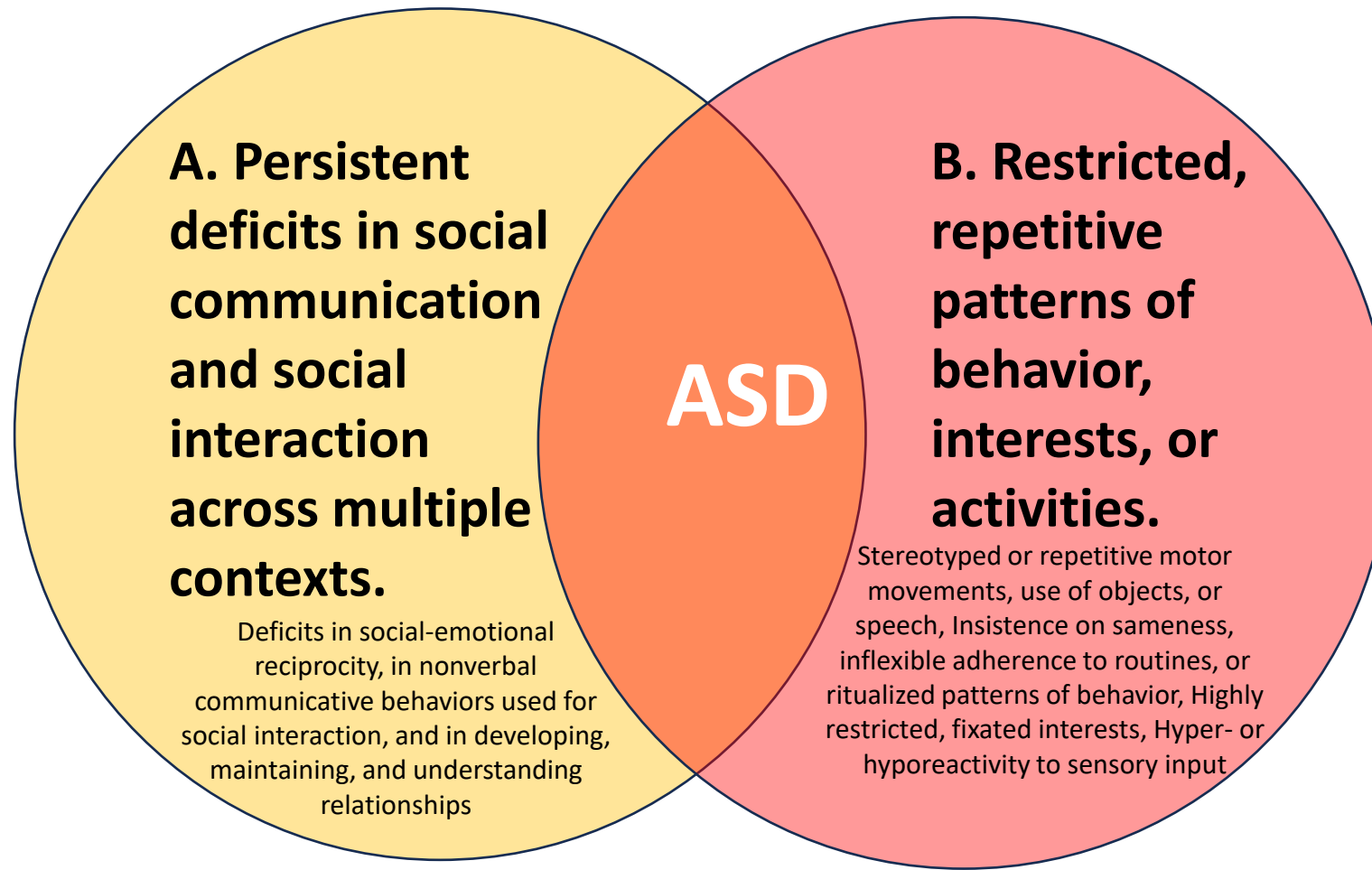
Good or
excellent effect

Autism and the gut microbiome

What does the science say?

What is autism?

DSM-5 diagnostic criteria¹



- 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

COMMON AUTISTIC TRAITS

Difficulty initiating and maintaining conversations



Differences in gestures, facial expressions, and eye contact



Intense focus on specific topics or objects



Repeated motor movements, speech, or routines



Over- or under-responsiveness to sensory input



Struggles with transitions or changes in routine



Challenges with understanding social norms



Differences in support needs



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

What is autism?^{1,2}

AUTISTIC STRENGTHS



VISUAL SKILLS
visual learning,
detailed focus



ATTENTION TO DETAIL
thorough &
accurate



CREATIVITY
unique way of
thinking, novel
solutions to problems



INTEGRITY
honest &
trustworthy



DEEP FOCUS
concentration &
responsiveness to
structure



CRITICAL THINKING
may question
normative
behaviour



EXPERTISE
in-depth knowledge,
high level skills



MEMORY
excellent recall and
memory



OBSERVATIONAL SKILLS
learn by
looking/doing &
self-evaluate



ANALYTICAL
problem-solve,
identify patterns



TENACITY & RESILIENCE
strength &
determination, self-
motivated



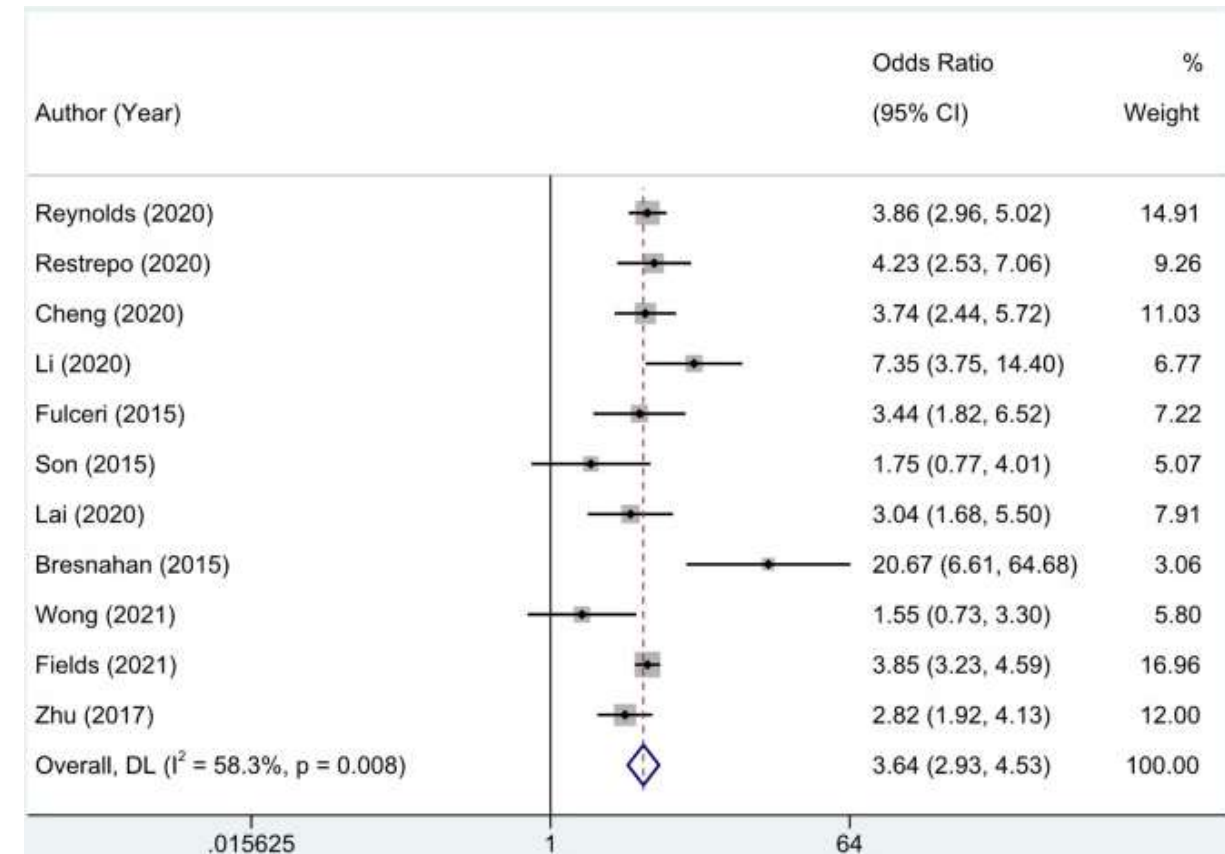
KINDNESS
kind to others,
acceptance of
difference

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Autism and GI problems

Multiple meta-analyses show that GI-problems occur much more often in children with ASD than 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)

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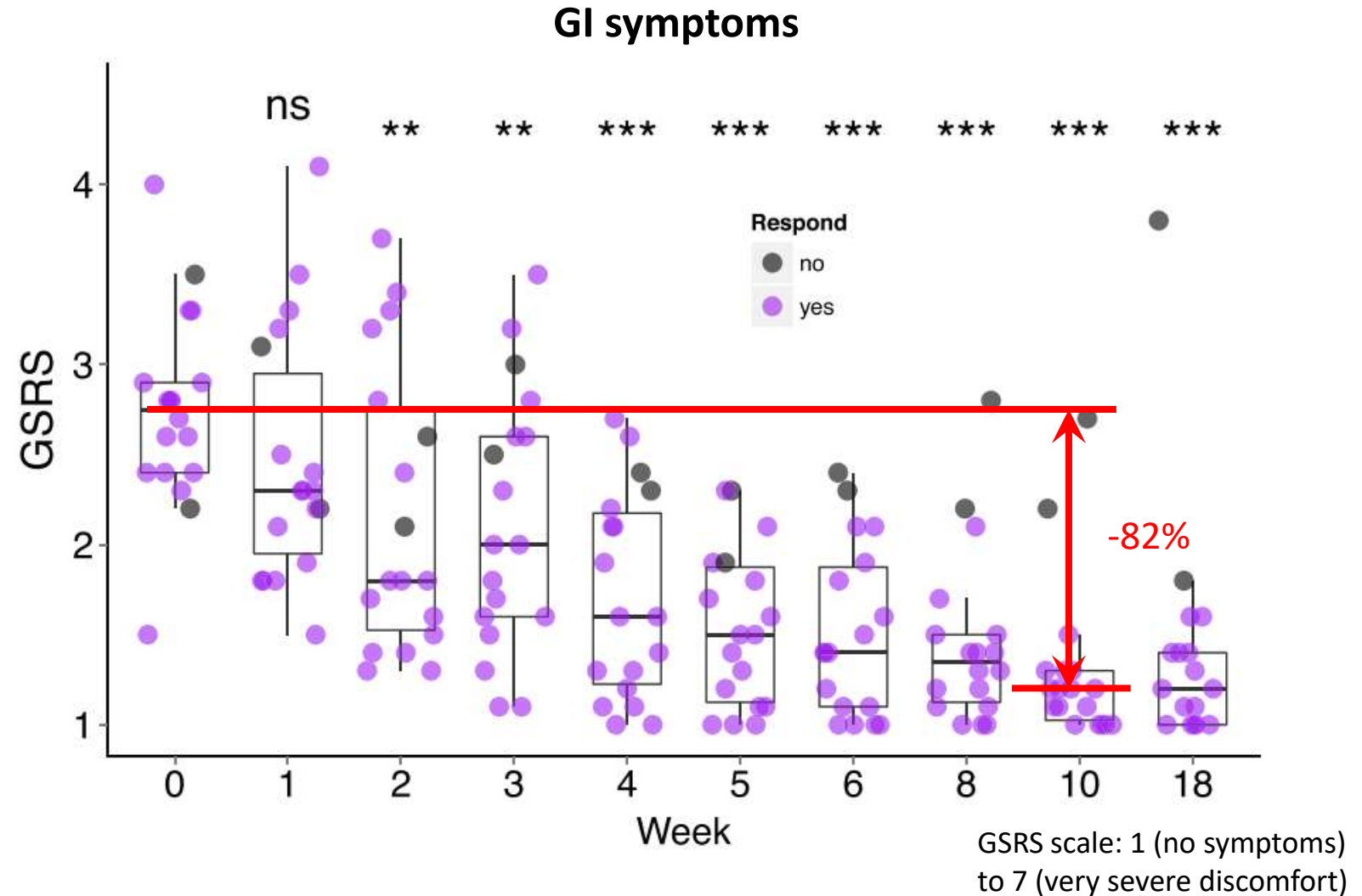
Image credits:
<https://tacanow.org/family-resources/picky-eating-and-autism/>

Evidence for involvement of microbiome



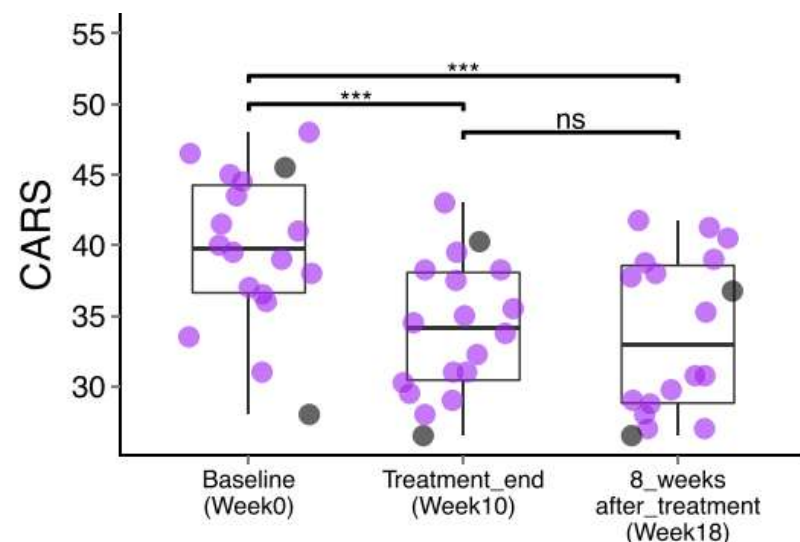
Strong causal evidence:

- Fecal transplantation study¹
- 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-up²

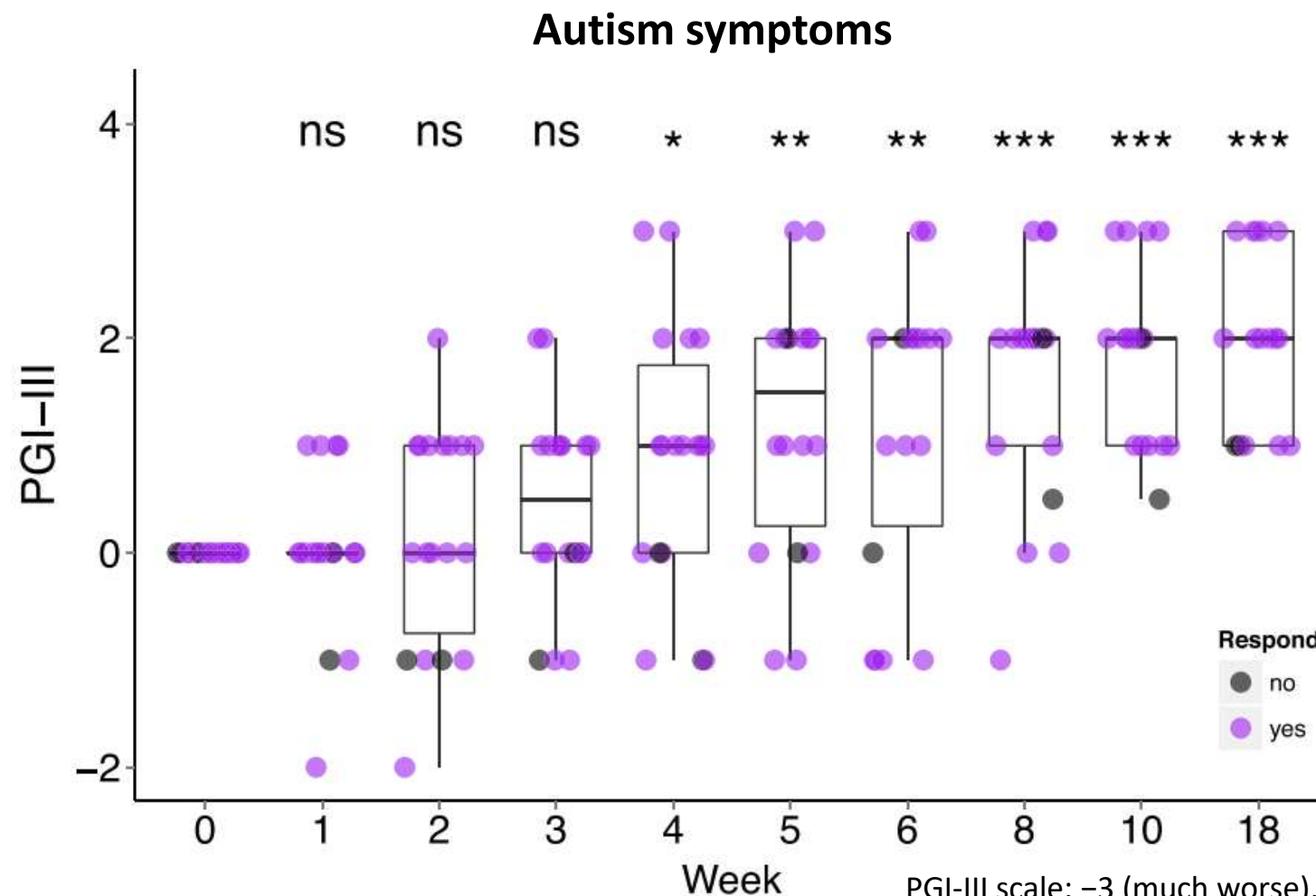


1. Kang, D.-W. et al. *Microbiome*.5.,(2017)
2. Kang, D.-W. et al. *Sci Rep*.9.,(2019)

Evidence for involvement of microbiome



- 10w microbiota transfer therapy, 8w follow-up
- Two-year follow-up²

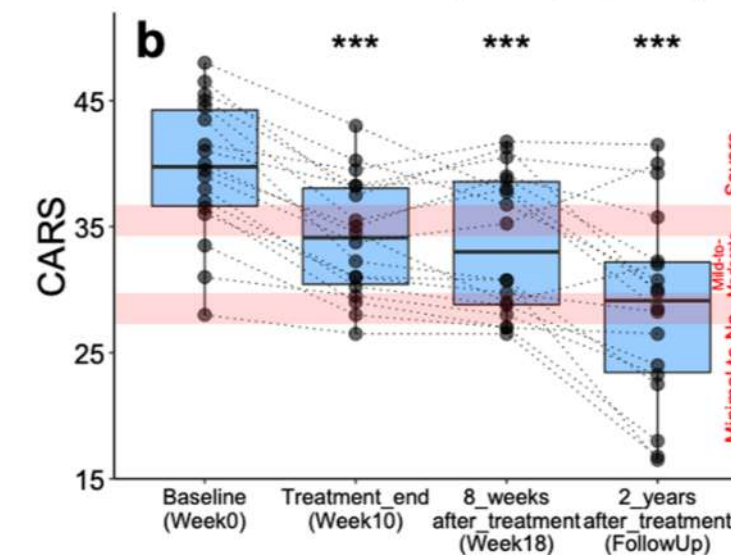
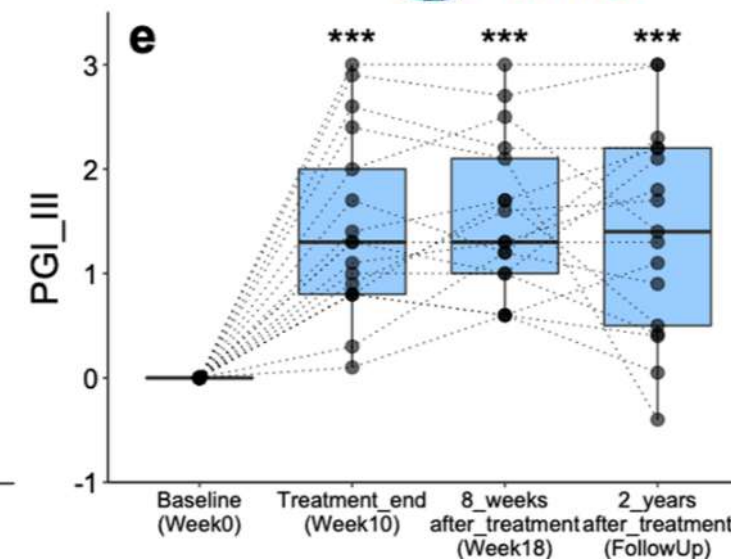
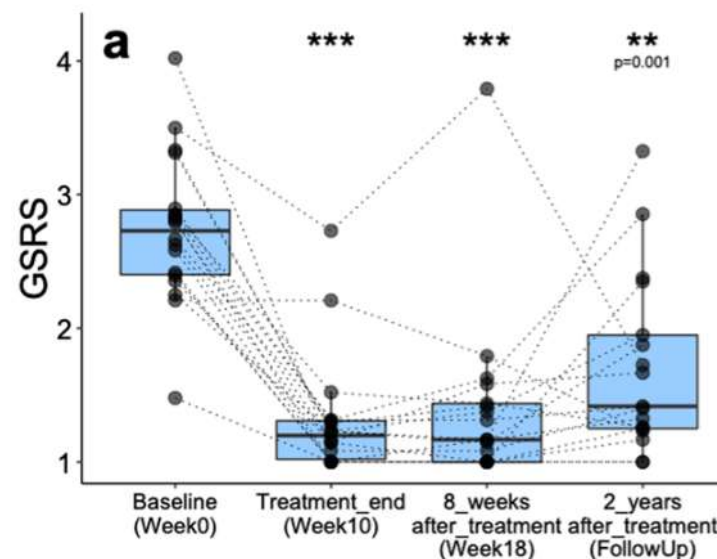


PGI-III scale: -3 (much worse), -2 (worse), -1 (slightly worse), 0 (no change), 1 (slightly better), 2 (better) to 3 (much better)¹¹

Evidence for involvement of microbiome

Strong causal evidence:

- Fecal transplantation study¹
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- 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-up²**



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

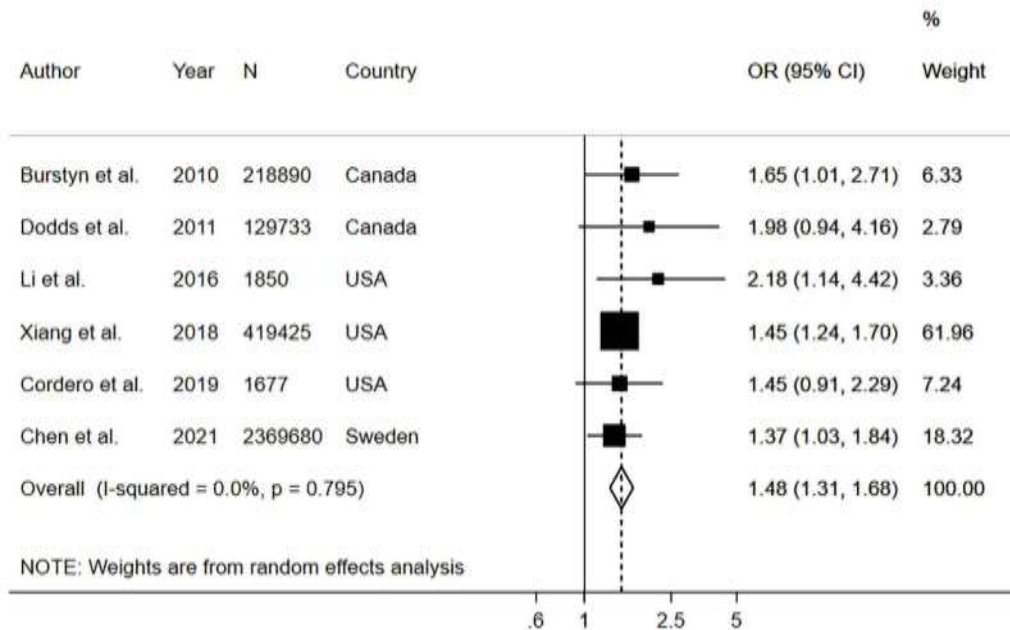
Associative evidence: correlation of ASD with C-section

Meta-analysis of >2 million births¹

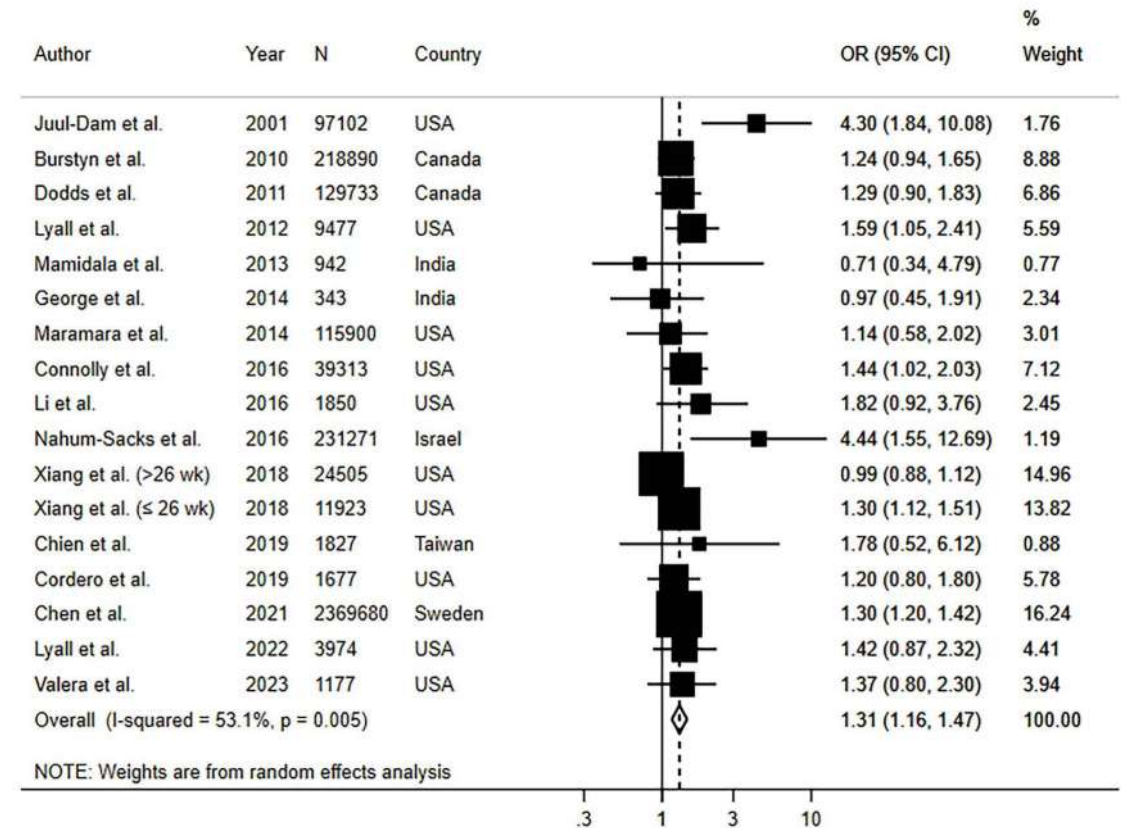
Study	Outcome	No. of Cases/No. of Deliveries		OR (95% CI)	Decreased Risk Increased Risk	Weight, %
		Cesarean Delivery	Vaginal Delivery			
ASD						
Matsuishi et al, ³¹ 1999	ASD	1/18	25/205	0.42 (0.05-3.32)		0.08
Mrozek-Budzyn et al, ³² 2013	ASD	21/74	67/204	0.81 (0.45-1.45)		0.92
Hamadé et al, ⁸³ 2013	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
Klissin 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 ASD¹



Maternal type 2 diabetes

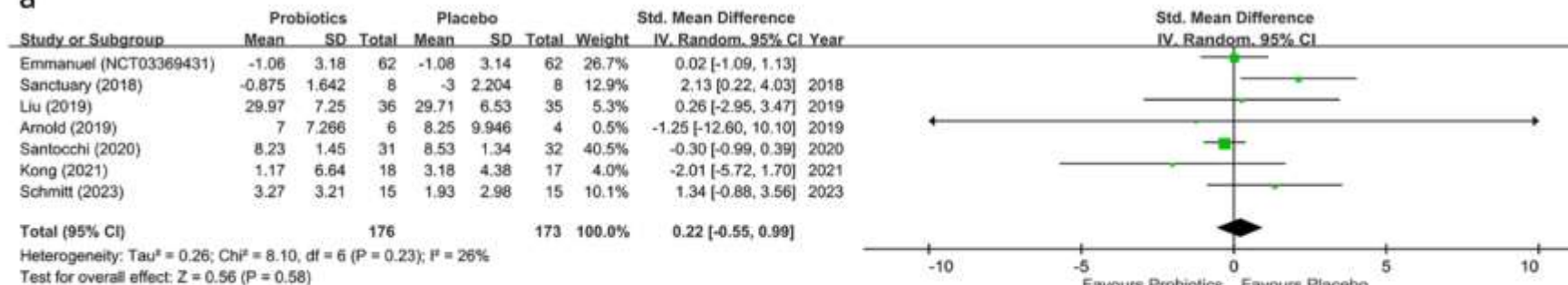


Gestational diabetes

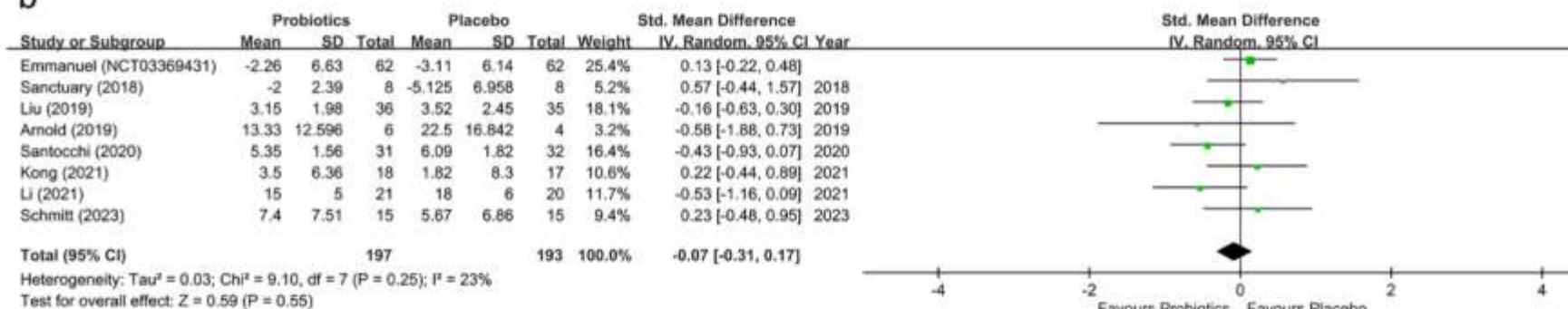
1. Garza-Martínez, M. J. et al. *Journal of Psychiatric Research*.182,.100–115.(2025)

Potential of probiotic interventions

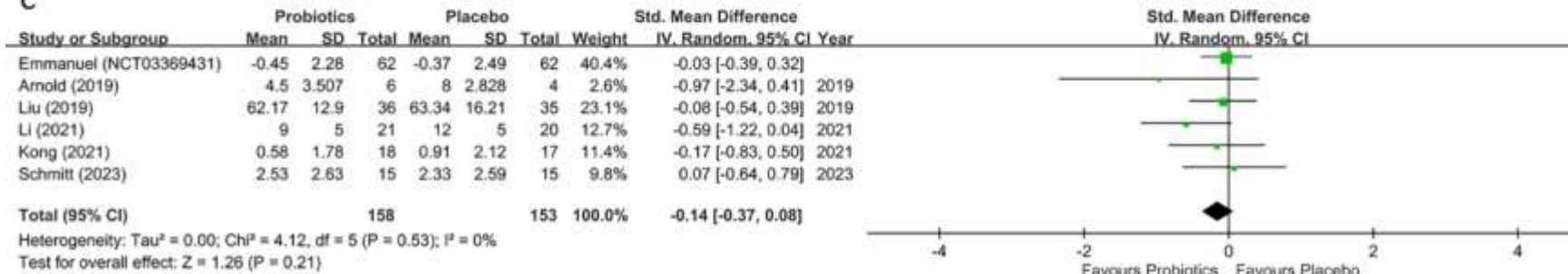
a



b



c



Meta-analysis of RCTs¹:

- restricted repetitive behaviors
- Social behaviors
- 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)

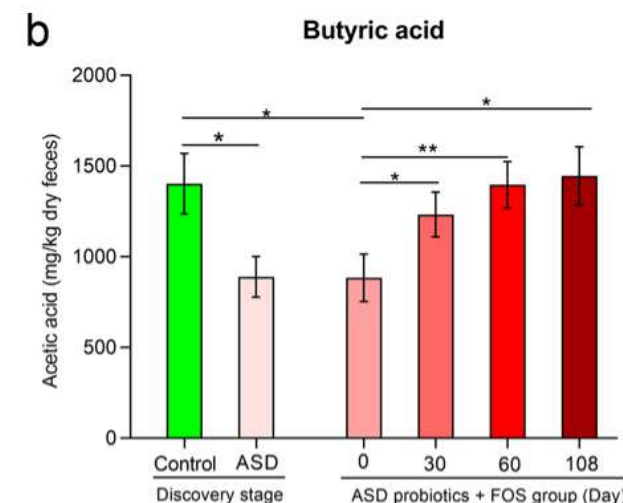
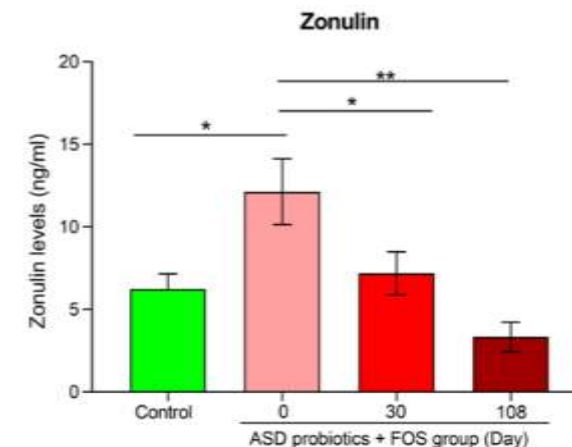
Study including *L. paracasei* Lpc-37¹

	ASD group probiotic supplementation (Baseline or 0 day)	ASD group after probiotic supplementation (<i>P</i> 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

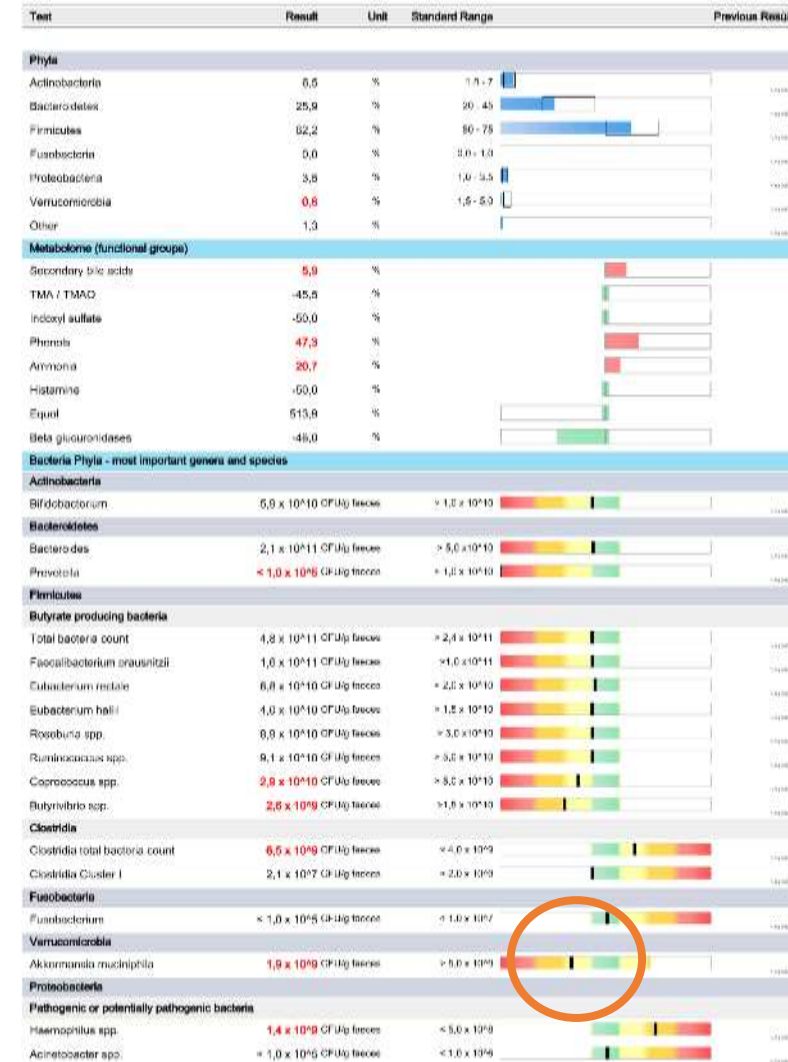
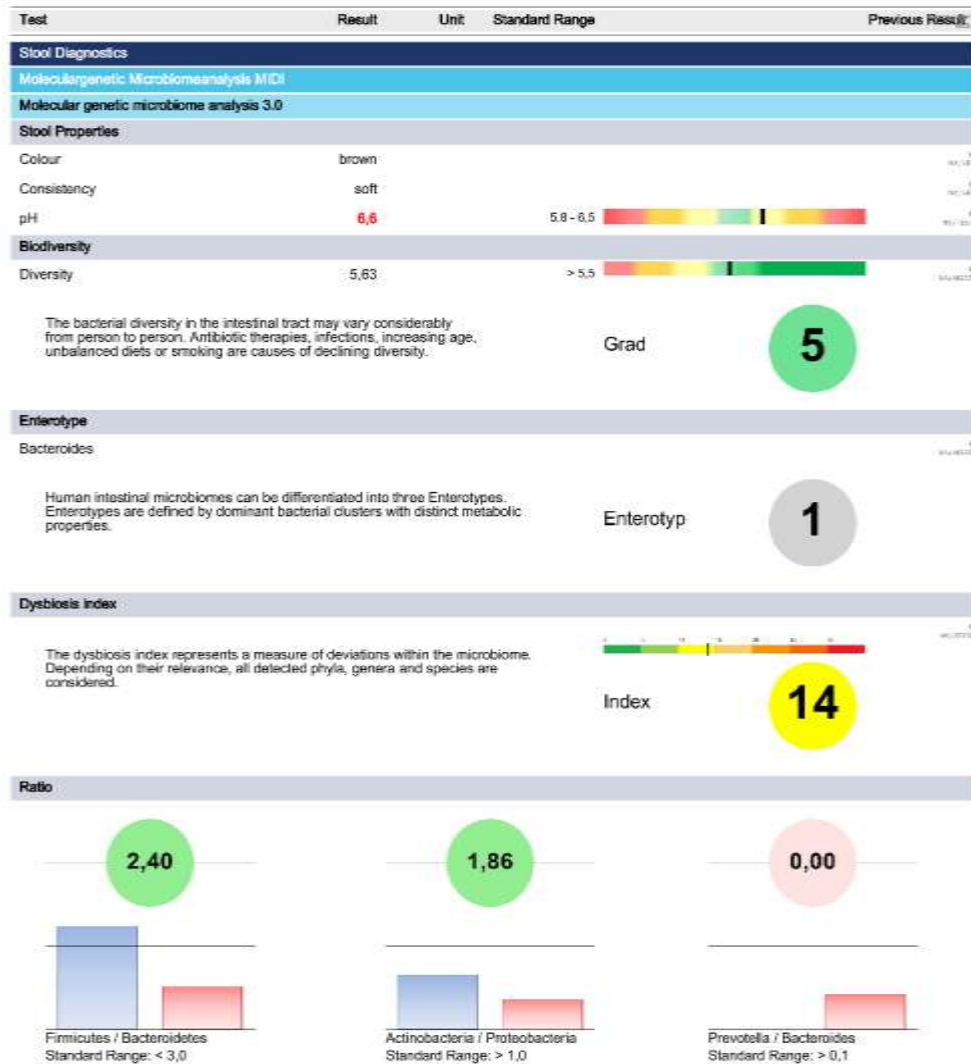


Case report 1

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)



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 ⁵	FA
Klebsiella spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁵	FA
Enterobacter spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁵	FA
Serratia spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁵	FA
Haflnia spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁵	FA
Morganella spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁵	FA
Citrobacter spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 5,0 x 10 ⁴	FA
Pseudomonas spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 5,0 x 10 ⁴	FA
Providencia spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 5,0 x 10 ⁴	FA
H2S production				
Sulphate reducing bacteria	1,8 x 10 ⁶ CFU/g faeces		< 2,0 x 10 ⁶	FA
Desulfovibrio piger	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁵	FA
Desulfohalobium pigra	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁵	FA
Blifophia wadsworthia	< 1,0 x 10 ⁵ CFU/g faeces		< 2,0 x 10 ⁵	FA
Immunogenicity / Mucus production				
Immunogenically effective bacteria				
Escherichia coli	7,6 x 10 ⁶ CFU/g faeces		10 ⁶ - 10 ⁷	FA
Enterococcus spp.	1,28 x 10 ⁷ CFU/g faeces		10 ⁶ - 10 ⁷	FA
Lactobacillus spp.	1,1 x 10 ⁵ CFU/g faeces		10 ⁵ - 10 ⁶	FA
Mucin production / Mucosal barrier				
Akkermansia muciniphila	1,8 x 10 ⁹ CFU/g faeces		> 5,0 x 10 ⁹	FA
Faecalibacterium prausnitzii	1,6 x 10 ¹¹ CFU/g faeces		> 1,0 x 10 ¹¹	FA
Archaea				
Methanogens				
Methanobrevibacter spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 5,0 x 10 ⁵	FA
Mycoflora: relevant yeasts				
Candida albicans (CA)	< 1,0 x 10 ³ CFU/g faeces		< 1,0 x 10 ³	FA
Candida krusei (CK)	< 1,0 x 10 ³ CFU/g faeces		< 1,0 x 10 ³	FA
Candida glabrata (CG)	< 1,0 x 10 ³ CFU/g faeces		< 1,0 x 10 ³	FA
Candida dubliniensis (CD)	< 1,0 x 10 ³ CFU/g faeces		< 1,0 x 10 ³	FA
Candida parapsilosis (CP)	< 1,0 x 10 ³ CFU/g faeces		< 1,0 x 10 ³	FA
Candida tropicalis (CTp)	< 1,0 x 10 ³ CFU/g faeces		< 1,0 x 10 ³	FA
Candida lusitanae (CL)	< 1,0 x 10 ³ CFU/g faeces		< 1,0 x 10 ³	FA
Parasites				
Pathobionts				
Blasocystis hominis	negative		negative	FA
Dientamoeba fragilis	borderline		negative	FA
Pathogenic intestinal protozoa				
Giardia lamblia	negative		negative	FA
Entamoeba histolytica	negative		negative	FA
Cryptosporidium species	negative		negative	FA
Cyclospora cayentanensis	negative		negative	FA

ATTENTION: The new OncoSnap 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.

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

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-Preparat 2 Monaten (oral)	
PHGG	4
Bacillus coagulans Unique IS-2	2
Lactiplantibacillus plantarum DR7	2
S. Boulardii	1
DJ repair	3
Bifidobacterium lactis HNO 19	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

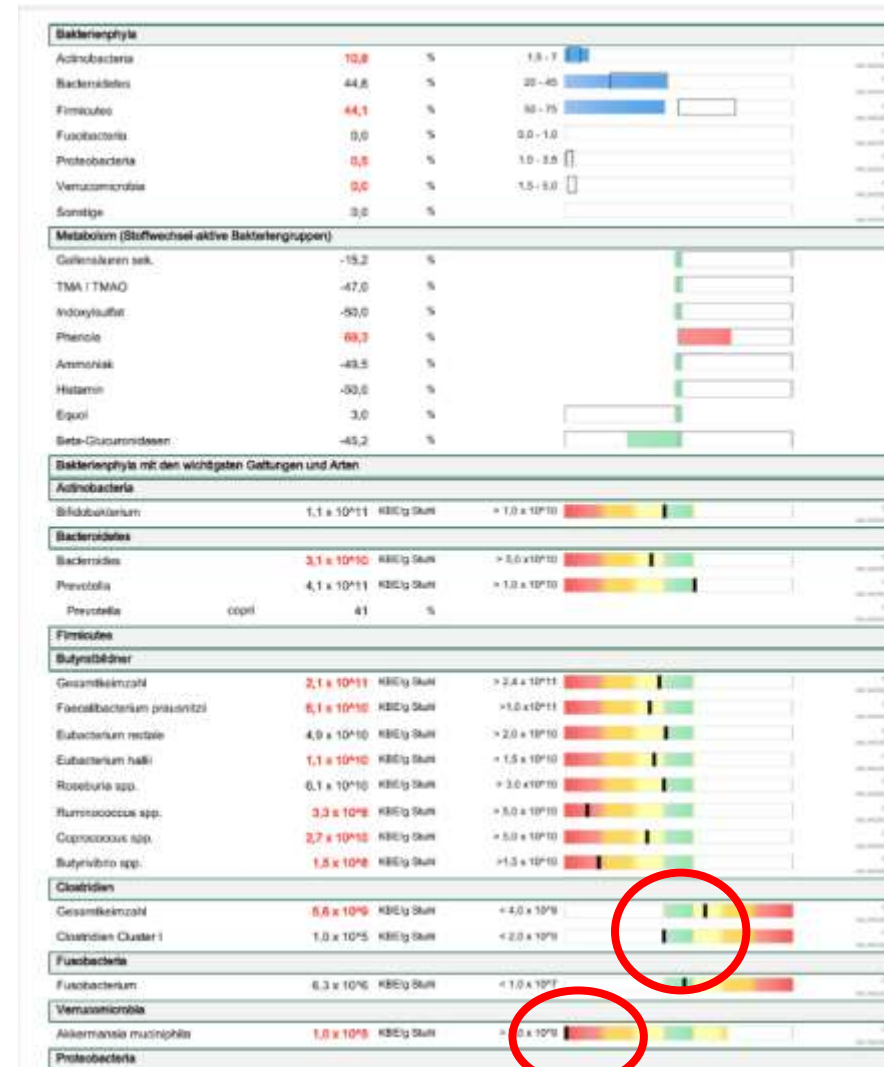
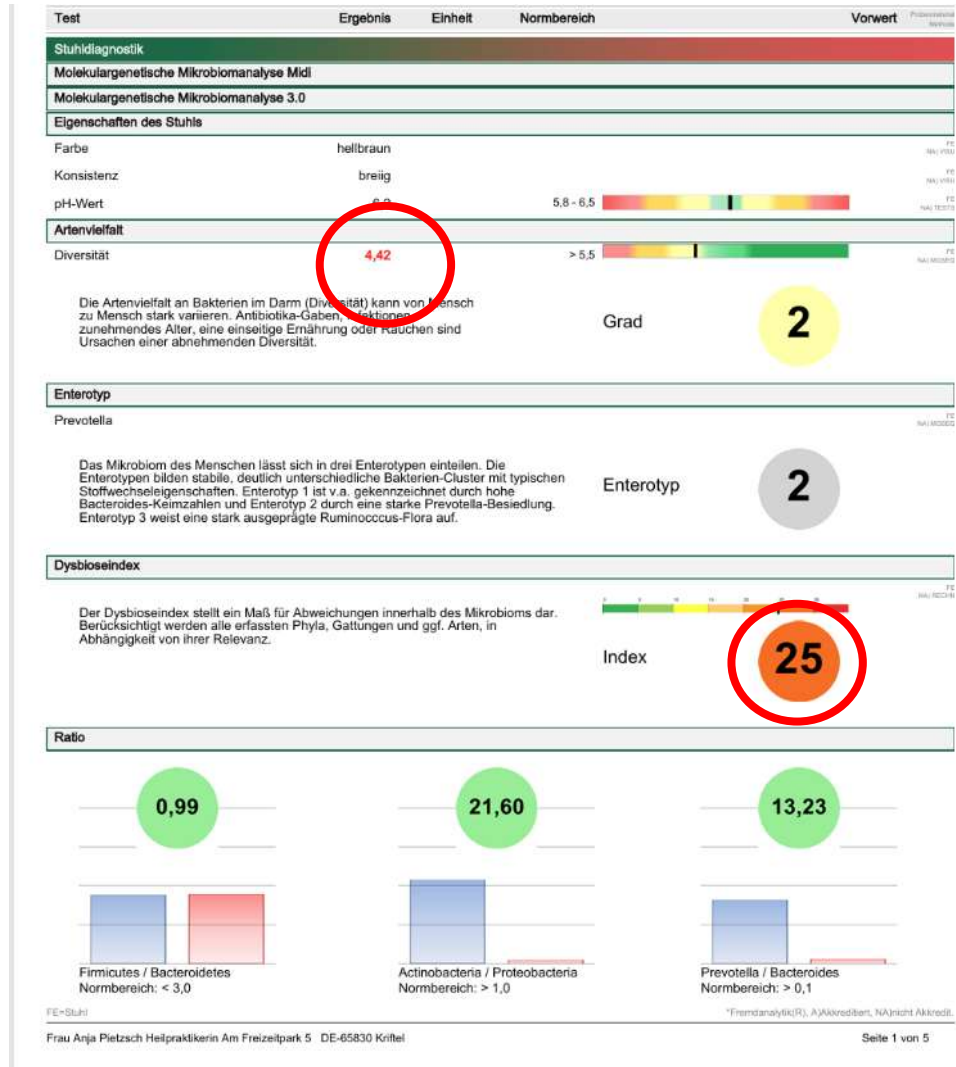
Clinic and Autism Spectrum

- 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)



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

Proteobacteria				
Pathogene oder potentiell pathogene Bakterien				
Haemophilus spp.	$3,2 \times 10^{19}$	KBE/g Stuhl	$< 5,0 \times 10^6$	
Acinetobacter spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^6$	
Proteus spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^6$	
Klebsiella spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^7$	
Enterobacter spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^6$	
Serratia spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^7$	
Halma spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^6$	
Morganella spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^6$	
Citrobacter spp.	$6,3 \times 10^6$	KBE/g Stuhl	$< 5,0 \times 10^8$	
Pseudomonas spp.	$6,3 \times 10^7$	KBE/g Stuhl	$< 5,0 \times 10^7$	
Providencia spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 5,0 \times 10^7$	
H2S-Bildung				
Sulfid reduzierende Bakterien	$2,4 \times 10^8$	KBE/g Stuhl	$< 2,5 \times 10^9$	
Desulfovibrio piger	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^9$	
Desulfomonas pigra	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 1,0 \times 10^9$	
Blautia wadsworthii	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 2,0 \times 10^9$	
Immunogenität/Mucusbildung				
Immunogen wirkende Bakterien				
Escherichia coli	$9,4 \times 10^6$	KBE/g Stuhl	$10^6 - 10^7$	
Enterococcus spp.	$1,40 \times 10^6$	KBE/g Stuhl	$10^6 - 10^7$	
Lactobacillus spp.	$9,4 \times 10^6$	KBE/g Stuhl	$10^6 - 10^7$	
Mucusbildung/Schleimhautbarriere				
Akkermansia muciniphila	$1,0 \times 10^5$	KBE/g Stuhl	$> 5,0 \times 10^9$	
Fascolibacterium prausnitzii	$6,1 \times 10^{10}$	KBE/g Stuhl	$> 1,0 \times 10^{11}$	
Archaea				
Methanogene				
Methanobrevibacter spp.	$< 1,0 \times 10^5$	KBE/g Stuhl	$< 5,0 \times 10^8$	
ACHTUNG: Das neue Covid-19-Richtlinien und die darin enthaltene Messung ermöglichen einen noch effektiveren Probenaufschluss, vor allem bei den grampositiven Bakterien. Dadurch ergeben sich leichte Verschiebungen in den Niveauebenen. Wir bitten dies zu berücksichtigen.				
Mykobium: relevante Arten				
Candida albicans (CA)	$< 1,0 \times 10^3$	KBE/g Stuhl	$< 1,0 \times 10^3$	
Candida krusei (CK)	$< 1,0 \times 10^3$	KBE/g Stuhl	$< 1,0 \times 10^3$	
Candida glabrata (CG)	$< 1,0 \times 10^3$	KBE/g Stuhl	$< 1,0 \times 10^3$	
Candida dubliniensis (CD)	$< 1,0 \times 10^3$	KBE/g Stuhl	$< 1,0 \times 10^3$	
Candida parapsilosis (CP)	$< 1,0 \times 10^3$	KBE/g Stuhl	$< 1,0 \times 10^3$	
Candida tropicalis (CT)	$< 1,0 \times 10^3$	KBE/g Stuhl	$< 1,0 \times 10^3$	
Candida lusitanae (CL)	$< 1,0 \times 10^3$	KBE/g Stuhl	$< 1,0 \times 10^3$	

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

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

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

Grenzwertiger Alpha-1-Antitrypsin 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	Problemmatrix Methode
Spezielle Analytik					
Kryptopyrrol					
Kryptopyrrol im Urin	3,28	mg/g Krea	< 5		RU ALPHAC
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		RU ALPHAC

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 oder 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: überliefender 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 HN019	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



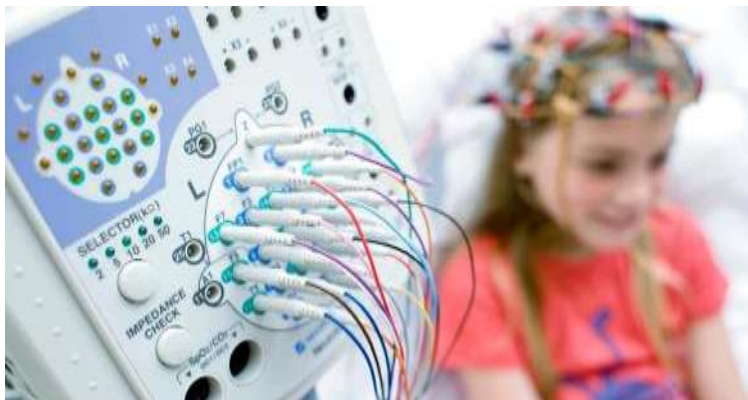
Mother's Feedback - Mid-September

- 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.

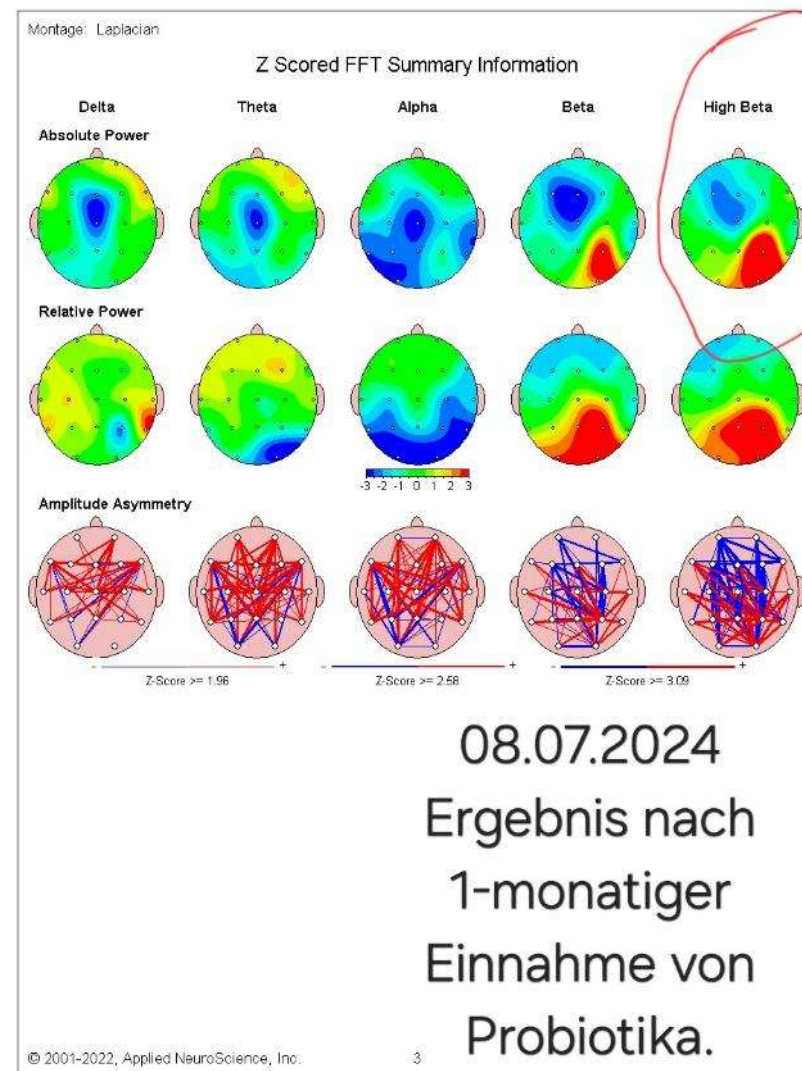
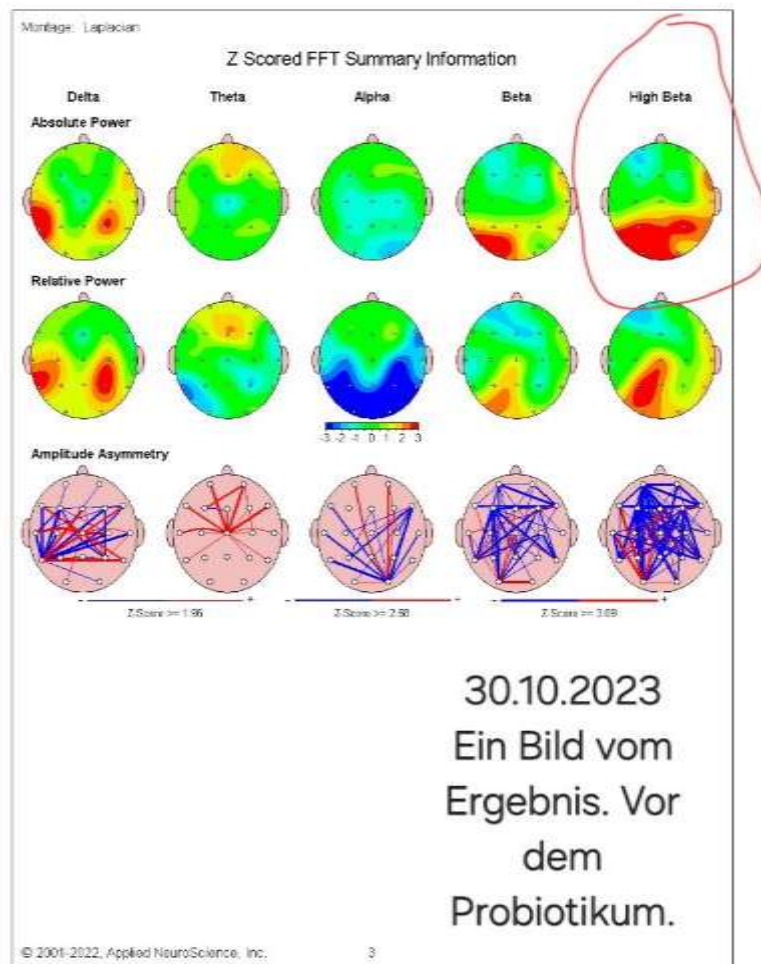
Case Study Fila – Therapy Progress – End of August 2024

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

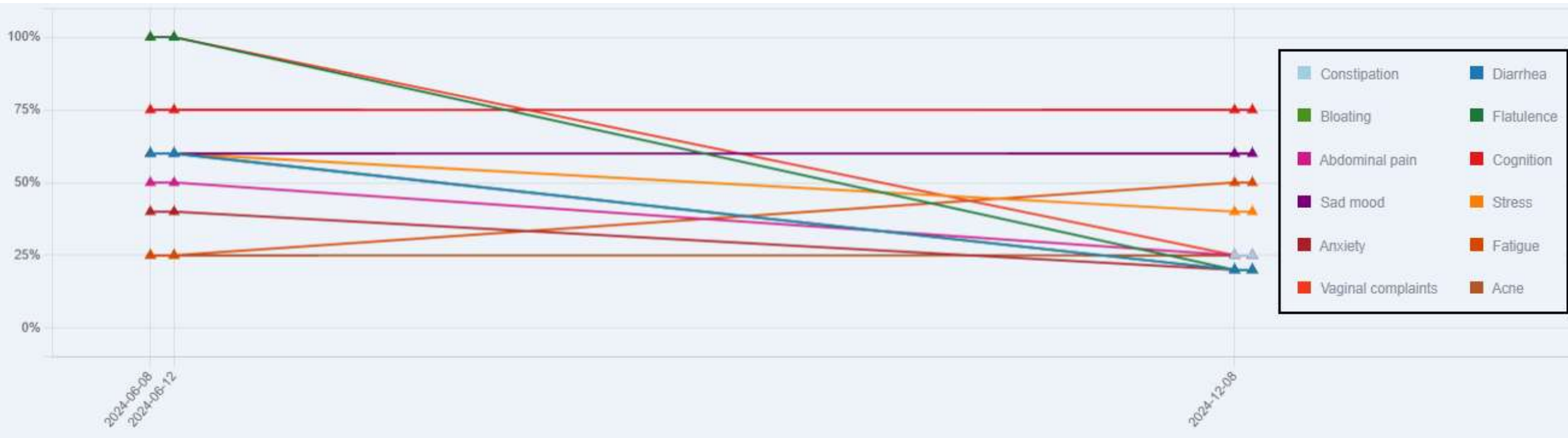
Fall 2024

- 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

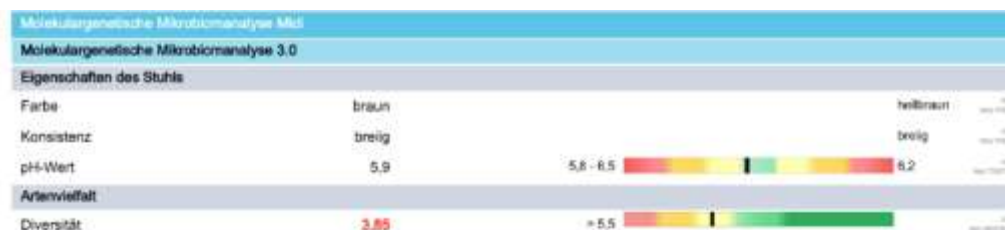
Winter 2024

- 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)



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



Das Mikrobiom des Menschen lässt sich in drei Enterotypen einteilen. Die Enterotypen bilden stabile, deutlich unterschiedliche Bakterien-Cluster mit typischen Stoffwechselseigenschaften. 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

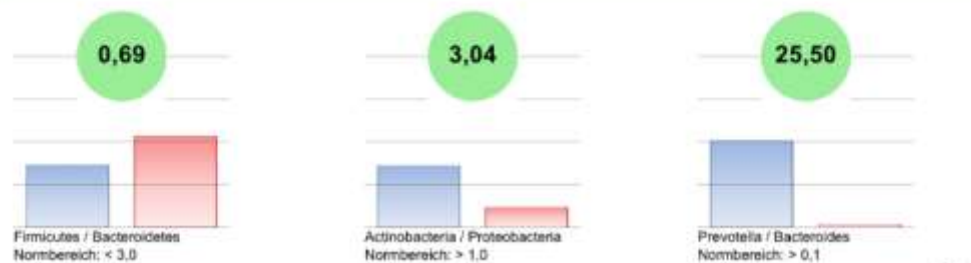
2



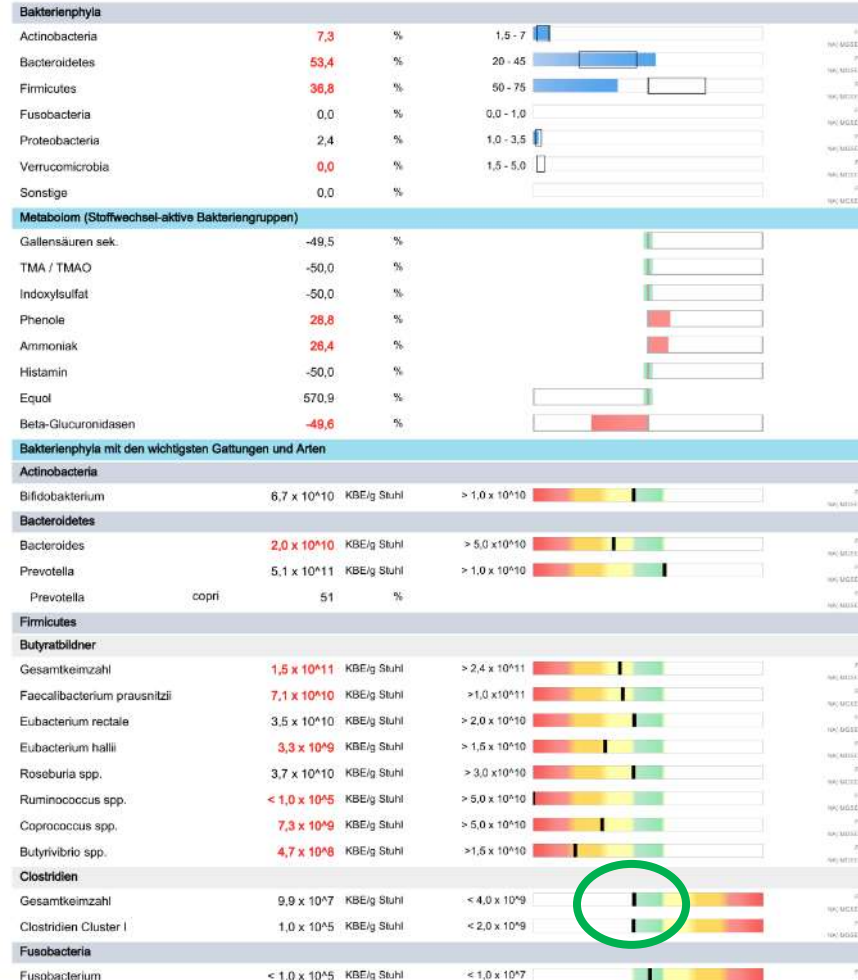
Der Dysbioseindex stellt ein Maß für Abweichungen innerhalb des Mikrobioms dar. Berücksichtigt werden alle erfassten Phyla, Gattungen und ggf. Arten, in Abhängigkeit von ihrer Relevanz.



30



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



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

*Fremdstoffe(R), A(Aktiviert), NA(nicht Aktiviert), weitere Informationen zu den Abkürzungen entnehmen Sie unserem Leistungsumfang-Dokument

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/l	< 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					
Glutenunintoleranz / 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-Preparat 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



Thank you for your attention!