

Online supplement to the article:

Efficacy of Omega-3/Omega-6 fatty acids in preschool children at risk for ADHD:

A randomized placebo-controlled trial

The first table (**Table S1**) of this online supplement displays the baseline demographic and clinical characteristics of the verum group and the placebo group as well as their comparison between the groups. The analyses showed significant group differences with regard to age and, accordingly, height and weight of the children. As a result, we controlled for age in the analyses on group differences in our outcome measures. **Table S2** contains the results of intention-to-treat univariate analyses of covariance on group differences regarding the subscales of the parent- and teacher-rated outcome measures presented in the article. **Table S3** shows the results of univariate analyses of covariance (ANCOVAs) in a subsample of children with available baseline and post-assessment data. These analyses were performed in addition to the intention-to-treat analyses, which were considered as the primary analytical approach. **Table S4** presents analyses on the clinical significance of our results, that is, it shows the percentage of children with “clinical” and “reliable” improvement in the verum group and in the placebo group and their comparison.

**Table S1***Comparison of baseline demographic and clinical characteristics between verum group and placebo group*

Variable	Verum group			Placebo group			<i>t</i>	<i>df</i>	<i>p</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>			
Child age	20	5.55	0.61	20	4.97	0.93	-2.36*	32.75	.025
Child height <sup>a</sup> (cm)	17	117.20	5.09	19	110.83	8.05	-2.80*	34	.008
Child weight <sup>a</sup> (kg)	17	22.92	4.51	19	19.70	4.48	-2.15*	34	.039
FBB-ADHS-V – parent rating									
Inattention	20	1.25	0.69	20	1.57	0.66	-1.51	38	.14
Hyperactivity/Impulsivity	20	1.59	0.67	20	1.90	0.52	-1.61	38	.12
Total score	20	1.43	0.62	20	1.75	0.56	-1.70	38	.10
FBB-ADHS-V – teacher rating									
Inattention (teacher)	20	1.80	0.53	20	1.96	0.84	0.48	38	.64
Hyperactivity/Impulsivity	20	1.78	0.79	20	1.84	0.65	-0.70	38	.49
Total score	20	1.79	0.61	20	1.84	0.65	-0.28	38	.79
CBCL									
Emotionally Reactive	20	3.56	2.78	20	4.45	3.09	-0.96	38	.34
Anxious/Depressed	20	3.65	2.60	20	3.95	2.98	-0.34	38	.73
Somatic Complaints	20	1.90	1.97	20	2.10	1.89	-0.32	38	.75
Withdrawn	20	2.33	2.56	20	2.75	2.34	-0.54	38	.59
Sleep Problems	20	1.87	2.44	20	2.85	3.36	-1.06	38	.30
Attention Problems	20	4.55	1.61	20	5.20	2.07	-1.11	38	.27
Aggressive Behavior	20	14.47	6.95	20	18.05	7.40	-1.58	38	.12
Internalizing Problems	20	11.44	7.38	20	13.25	7.78	-0.76	38	.46
Externalizing Problems	20	19.02	7.95	20	23.25	8.69	-1.61	38	.12
Total Problems	20	42.20	20.70	20	51.70	23.85	-1.35	38	.19

<b>C-TRF</b>									
Emotionally Reactive	18	2.83	2.94	20	3.55	1.99	-0.89	36	.38
Anxious/Depressed	18	4.17	3.15	20	3.30	2.52	0.94	36	.35
Somatic Complaints	18	0.78	1.93	20	0.80	1.28	-0.04	36	.97
Withdrawn	18	3.44	3.31	20	3.90	3.39	-0.42	36	.68
Attention Problems	18	9.44	3.87	20	10.45	3.09	-0.89	36	.38
Aggressive Behavior	18	19.78	10.79	20	23.00	11.13	-0.90	36	.37
Internalizing Problems <sup>b</sup>	18	11.22	8.30	20	11.55	6.71	-0.13	36	.89
Externalizing Problems <sup>b</sup>	18	29.22	13.81	20	33.45	13.04	-0.97	36	.34
Total Problems <sup>b</sup>	18	52.33	26.62	20	58.30	22.91	-0.74	36	.46
<b>K-ABC</b>									
Sequential Processing	19	98.95	12.00	17	94.82	16.04	0.88	34	.39
Simultaneous Processing	19	100.26	15.07	18	95.67	18.82	0.82	35	.42
Mental Processing	19	98.79	11.31	18	94.11	13.92	1.13	35	.27
Achievement	13	97.08	12.61	12	102.67	13.29	-1.08	23	.29

*Note.* FBB-ADHS-V = ADHD Parent and Teacher Rating Scale for Preschool Children; CBCL = Child Behavior Checklist; C-TRF = Caregiver-Teacher Report Form; K-ABC = Kaufman Assessment Battery for Children;  $n$  = sample size;  $M$  = mean,  $SD$  = standard deviation,  $t$  = empirical  $t$ -value,  $df$  = degrees of freedom,  $p$  = significance value.

<sup>a</sup>Three missing values in the verum group and one missing value in the placebo group.

<sup>b</sup>Two missing values in the verum group.

\*  $p < .05$ .

**Table S2**

*Mean FBB-ADHS-V, CBCL and C-TRF subscale scores at baseline and post-assessment and ANCOVA results for comparisons between groups at post-assessment (intention-to-treat sample; covariates: age and outcome at baseline)*

Measure	<i>n</i>	Verum group		<i>n</i>	Placebo group		<i>F(1)</i>	<i>p</i>	<i>d</i>	1- $\beta$
		Baseline	Post-Assessment		Baseline	Post-Assessment				
		<i>M (SD)</i>	<i>M (SD)</i>		<i>M (SD)</i>	<i>M (SD)</i>				
FBB-ADHS-V – Inattention (parent)	20	1.25 (0.69)	0.97 (0.43)	20	1.57 (0.66)	1.38 (0.92)	1.56	.22	0.39	0.23
FBB-ADHS-V – Hyperactivity/Impulsivity (parent)	20	1.59 (0.67)	1.21 (0.47)	20	1.90 (0.52)	1.76 (0.63)	6.41*	.02	0.72	0.60
FBB-ADHS-V – Inattention (teacher)	20	1.80 (0.53)	0.99 (0.71)	20	1.71 (0.67)	1.62 (0.67)	8.89*	< .01	1.03	0.89
FBB-ADHS-V – Hyperactivity/Impulsivity (teacher)	20	1.78 (0.79)	1.10 (0.69)	20	1.96 (0.84)	1.58 (0.86)	1.84	.18	0.38	0.22
CBCL – Emotionally Reactive	20	3.56 (2.78)	1.66 (1.56)	20	4.45 (3.09)	4.48 (3.74)	8.72*	< .01	0.83	0.73
CBCL – Anxious/Depressed	20	3.65 (2.60)	1.90 (1.25)	20	3.95 (2.98)	3.21 (3.06)	5.10*	.03	0.53	0.38
CBCL – Somatic Complaints	20	1.90 (1.97)	1.57 (1.78)	20	2.10 (1.89)	1.24 (1.50)	1.47	.23	0.21	0.10
CBCL – Withdrawn	20	2.33 (2.56)	1.39 (1.46)	20	2.75 (2.34)	2.99 (2.33)	5.86*	.02	0.55	0.41
CBCL – Sleep Problems	20	1.87 (2.44)	1.68 (2.63)	20	2.85 (3.36)	2.53 (2.80)	0.13	.72	0.07	0.06
CBCL – Attention Problems	20	4.55 (1.61)	3.36 (1.47)	20	5.20 (2.07)	4.57 (2.45)	2.47	.13	0.46	0.29
CBCL – Aggressive Behavior	20	14.47 (6.95)	9.92 (6.10)	20	18.05 (7.40)	15.73 (7.10)	4.90*	.03	0.52	0.36
C-TRF – Emotionally Reactive	20	2.67 (2.87)	2.85 (3.28)	20	3.55 (1.99)	4.76 (2.73)	3.38	.07	0.66	0.53
C-TRF – Anxious/Depressed	20	4.07 (3.15)	3.16 (3.32)	20	3.30 (2.52)	3.99 (3.25)	1.42	.24	0.45	0.29

C-TRF – Somatic Complaints	20	0.77 (1.83)	0.96 (1.96)	20	0.80 (1.28)	1.11 (1.30)	0.03	.86	0.04	0.05
C-TRF – Withdrawn	20	3.45 (3.18)	2.41 (3.07)	20	3.90 (3.39)	5.66 (6.17)	3.20	.08	0.77	0.67
C-TRF – Attention Problems	20	9.64 (3.71)	6.17 (4.08)	20	10.45 (3.09)	10.37 (4.64)	6.53*	.02	0.86	0.75
C-TRF – Aggressive Behavior	20	19.12 (10.60)	14.57 (10.82)	20	23.00 (11.13)	25.51 (14.61)	5.43*	.03	0.70	0.58

*Note.* ANCOVAs controlled for age and outcome at baseline. The baseline assessment was conducted prior to the intervention, the post-assessment was performed after the 4-month treatment period. FBB-ADHS-V = ADHD Parent and Teacher Rating Scale for Preschool Children; CBCL = Child Behavior Checklist; C-TRF = Caregiver-Teacher Report Form;  $n$  = sample size;  $M$  = mean;  $SD$  = standard deviation;  $F$  = empirical F-value;  $p$  = significance value;  $d$  = Cohen's  $d$  (effect size) corrected for baseline data, calculated as the difference between adjusted mean scores at ~~12~~4 months divided by the pooled  $SD$  at baseline;  $1-\beta$  = achieved power.

\*  $p < .05$ .

**Table S3**

*Mean scores at baseline and post-assessment and ANCOVA results for comparisons between groups at post-assessment including available data (covariates: age and outcome at baseline)*

Measure	Verum group			Placebo group			$F(1)$	$p$	$d$	$1-\beta$
	$n$	Baseline	Post-Assessment	$n$	Baseline	Post-Assessment				
		$M (SD)$	$M (SD)$		$M (SD)$	$M (SD)$				
FBB-ADHS-V – Inattention (parent)	15	1.31 (0.69)	1.03 (0.47)	15	1.42 (0.59)	1.28 (0.67)	2.03	.166	0.39	0.18
FBB-ADHS-V – Hyperactivity/Impulsivity (parent)	15	1.75 (0.63)	1.31 (0.49)	15	1.76 (0.49)	1.64 (0.58)	4.10	.053	0.62	0.37
FBB-ADHS-V – total score (parent)	15	1.54 (0.58)	1.18 (0.40)	15	1.60 (0.49)	1.47 (0.57)	3.99	.056	0.58	0.33
FBB-ADHS-V – Inattention (teacher)	14	1.60 (0.50)	1.17 (0.74)	13	1.71 (0.66)	1.73 (0.69)	4.60*	.043	0.79	0.51
FBB-ADHS-V – Hyperactivity/Impulsivity (teacher)	14	1.64 (0.83)	1.25 (0.68)	13	1.98 (0.72)	1.80 (0.62)	3.06	.094	0.49	0.24
FBB-ADHS-V – total score (teacher)	14	1.62 (0.61)	1.21 (0.66)	13	1.86 (0.62)	1.77 (0.64)	3.65	.068	0.65	0.37
CBCL – Emotionally Reactive	16	3.82 (2.76)	1.81 (1.60)	15	3.93 (2.71)	3.87 (3.52)	7.08*	.013	0.74	0.51
CBCL – Anxious/Depressed	16	3.87 (2.55)	1.94 (1.29)	15	3.67 (2.94)	3.20 (3.08)	4.44*	.044	0.55	0.32
CBCL – Somatic Complaints	16	2.07 (2.11)	1.69 (1.82)	15	1.87 (1.60)	1.07 (1.10)	1.38	.250	0.22	0.09
CBCL – Withdrawn	16	2.10 (2.57)	1.44 (1.59)	15	2.60 (2.23)	2.73 (1.83)	3.89	.059	0.44	0.22
CBCL – Sleep Problems	16	1.84 (2.29)	1.81 (2.74)	15	2.13 (3.02)	2.00 (2.85)	0.01	.941	0.02	0.05
CBCL – Attention Problems	16	4.62 (1.31)	3.50 (1.59)	15	4.87 (2.07)	4.20 (1.97)	1.40	.248	0.36	0.16
CBCL – Aggressive Behavior	16	15.21 (6.25)	10.88 (6.12)	15	16.47 (7.57)	14.60 (6.95)	3.13	.088	0.43	0.22

CBCL – Internalizing Problems	16	11.86 (7.30)	6.88 (4.72)	15	12.07 (6.94)	10.87 (6.92)	6.04*	.021	0.57	0.34
CBCL – Externalizing Problems	16	19.84 (7.04)	14.38 (7.40)	15	21.33 (8.79)	18.80 (8.21)	3.03	.093	0.44	0.22
CBCL – Total Problems	16	43.94 (19.39)	31.06 (18.77)	15	46.47 (21.29)	42.27 (23.98)	3.60	.069	0.58	0.34
C-TRF – Emotionally Reactive	13	2.54 (2.18)	2.62 (2.84)	14	4.21 (1.85)	4.21 (2.55)	0.97	.335	0.54	0.27
C-TRF – Anxious/Depressed	13	3.54 (2.85)	2.77 (2.59)	14	4.07 (2.56)	3.29 (2.27)	0.38	.542	0.20	0.08
C-TRF – Somatic Complaints	13	0.92 (2.22)	0.77 (2.20)	14	0.86 (1.46)	0.86 (1.35)	0.05	.831	0.04	0.05
C-TRF – Withdrawn	13	3.08 (3.30)	2.62 (3.62)	14	4.21 (3.07)	4.50 (4.07)	0.51	.483	0.29	0.12
C-TRF – Attention Problems	13	8.46 (3.91)	6.31 (4.55)	14	10.29 (3.38)	9.43 (4.24)	1.07	.311	0.36	0.15
C-TRF – Aggressive Behavior	13	16.38 (8.55)	15.77 (10.35)	14	24.29 (11.74)	23.43 (12.00)	0.15	.705	0.11	0.06
C-TRF – Internalizing Problems	13	10.08 (6.85)	8.77 (8.55)	14	13.36 (7.11)	12.86 (8.07)	0.39	.539	0.28	0.11
C-TRF – Externalizing Problems	13	24.85 (11.55)	22.08 (14.63)	14	34.57 (13.84)	32.86 (15.36)	0.21	.648	0.15	0.07
C-TRF – Total Problems	13	43.85 (16.51)	39.08 (27.62)	14	62.43 (24.64)	59.43 (29.23)	0.05	.831	0.09	0.06
K-ABC – Sequential Processing	15	102.13 (11.04)	104.80 (11.31)	10	96.20 (18.30)	93.70 (11.77)	3.55	.074	0.60	0.30
K-ABC – Simultaneous Processing	15	104.93 (12.90)	108.27 (14.97)	11	100.09 (18.27)	108.45 (10.63)	0.24	.630	0.14	0.06
K-ABC – Mental Processing	15	102.67 (8.73)	106.20 (10.96)	9	98.89 (12.94)	104.56 (5.41)	< 0.01	.951	0.02	0.05
K-ABC – Achievement	10	102.00 (8.00)	104.30 (10.40)	8	99.00 (13.44)	102.88 (12.33)	< 0.01	.956	0.02	0.05

*Note.* ANCOVAs controlled for age and outcome at baseline. The baseline assessment was conducted prior to the intervention, the post-assessment was performed after the 4-month treatment period. FBB-ADHS-V = ADHD Parent and Teacher Rating Scale for Preschool Children; CBCL = Child Behavior Checklist; C-TRF = Caregiver-Teacher Report Form; K-ABC = Kaufman Assessment Battery for Children; *n* = sample size; *M* = mean; *SD* = standard deviation; *F* = empirical F-value; *p* = significance value; *d* = Cohen's *d* (effect size) corrected for baseline data, calculated as the difference between adjusted mean scores at ~~12~~4 months divided by the pooled *SD* at baseline; 1- $\beta$  = achieved power.

\*  $p < .05$ .



**Table S4***Clinical and Reliable Change at Post-Assessment*

Measure		Verum group <i>n/n</i> (%)		Placebo group <i>n/n</i> (%)		Clinical change		Reliable change	
		Clinically improved	Reliably improved	Clinically improved	Reliably improved	$\chi^2$	<i>p</i>	$\chi^2$	<i>p</i>
Intention-to-treat	FBB-ADHS-V (parent)	6/9 (67)	7/20 (35)	4/11 (37)	5/20 (25)	1.82	0.37	0.48	.73
	FBB-ADHS-V (teacher)	10/15 (67)	12/20 (60)	3/16 (19)	3/20 (25)	7.30	.01	8.64	< .01
Available data	FBB-ADHS-V (parent)	5/8 (63)	7/15 (47)	2/7 (29)	4/15 (27)	1.73	0.32	1.29	.45
	FBB-ADHS-V (teacher)	5/9 (56)	6/14 (43)	2/11 (18)	1/13 (8)	3.04	0.16	4.34	.08

*Note.* FBB-ADHS-V = ADHD Parent and Teacher Rating Scale for Preschool Children; clinically improved = shift from clinical to nonclinical range from baseline to ~~12~~4

months; reliably improved = Reliable Change Index < -1.96; *n* = sample size;  $\chi^2$  = Pearson's chi-square; *p* = significance value; \**p* < .05.

The sample sizes differ between the analyses on clinical improvement and reliable improvement as the analyses on clinical improvement included only data of children with parent- or teacher-rated baseline FBB-ADHS-V scores in the clinically significant range, that is > 90th percentile.