

## “You are Never Too Old to Overcome ADHD” - Case Report

Ralph Meyers<sup>1\*</sup>

### Abstract

Case study about a 57-year-old head of publishing house, who suffered from ADHD with much impulsivity and mood changes, depression and eating disorders as well as persisting primitive reflexes, that worked as catalyst to the above-mentioned symptoms. This case report shows, how it was able to overcome all these conditions in 13 months of combined treatment with LDX in decreasing dosage, Neurofeedback (z-score training) and Reflex Integration Program (RIP<sup>®</sup>), that have been developed and published in 2021. Treatment results have been continually monitored with the OPATUS CPTa, a test measuring attention, impulsivity, and hyperactivity. Two q-EEGs have been performed, one at baseline and other after conclusion of NFB and several clinical appointments monitoring neurological improvement and psychiatric evaluations in order to continue the decreasing dosage of medication, which was stopped after 10 months of the initial assessment.

This case report represents uniqueness, because such a quick improvement was not expected in this short time, which would be normal, when treating children with equal conditions.

**Keywords:** ADHD; LDX; NFB; OPATUS CPTa<sup>®</sup>; PPR; Persisting preborn reflexes; RIP<sup>®</sup>.

**Abbreviations:** ADD-Attention Deficit Disorder; ADHD-Attention Deficit Hyperactivity Disorder; CPTa-Continuous Performance Test (plus activity); LDX-Lisdexamfetamin; NFB-Neurofeedback; PPR-Primitive Preborn Reflexes; qEEG-Quantitative EEG; RIP<sup>®</sup>-Reflex Integrations Program; TAU-Treatment As Usual.

### Introduction

The clinics in Hamburg and Dorsten, Germany, provide assessment and treatment

for all kinds of mental health disorders including cooperation of different mental health professionals (e.g.-social psychiatric treatment).

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At an advanced training course at an international convention in late 2004 in San Diego, researchers presented an animal model of ADHD with brain scans to guide stimulants. Researchers illustrated, that after treatment there was an increase in the stimulus-processing structures in the brain, which is a learning process with direct restrictions on the brain structure. Today, these results are supported by Damatac, et al. [1].

Since then, the patients who were treated, have been checked for the signs of learning processes occurring during successful treatment. This could initially be read off indirectly only. However, today precise measurement and differential diagnostics are being used not only to determine subtypes of ADHD, offering a better primary selection of the appropriate treatment method but also to optimize treatment results and thus better support the desired learning process of the brain.

A holistic way of assessment has been established, that includes anamnesis, psychiatric, neurologic and general medical examination as well as regular screening for persistence of primitive preborn reflexes. The first assessment includes the OPATUS CPTa as well [2], when the question involves symptoms of ADHD (with or without hyperactivity). A q-EEG may give additional information, if neurofeedback z-score training is an option.

More of the procedure for diagnosis and differential diagnosis for patients with suspected ADHD has been published in “ADHD is curable” [3].

This book explains in extenso the proposed way of assessment and treatment control for ADD or ADHD. After confirmation of this disorder, a test for the subtype will be performed, and then the most promising way of treatment will be decided.

This case study depicts, how assessment is done and what treatment with different parallel therapy paths may be achieved.

### **Case study**

#### **Medical history**

The patient reported “chaos in the head”, disorganization, forgetfulness, unpunctuality, suspected ADHD, complained overweight, eating disorders (bulimia with overweight) and mood swings.

#### **Pre-treatment: Inpatient rehabilitation clinic**

ADHD suspected for the first time and adjusted to LDX70.

Reason for new assessment: The patient wanted a review of medication and asked for possible alternatives via NFB or other forms of concentration training and coaching for structured work (CBT).

#### **Neurological results**

No bradydysdiadochokinesis, no evidence of disturbance in the cranial nerves, and also regarding tone, trophicity and motility in the upper and lower extremities. No sensory disturbances and meningism. Strength was measured-balance in one-legged stance was very unsteady, increased when eyes were closed; extreme unsteadiness in noisy

surroundings. Crossed the midline regularly but cognitively controlled. FTO regular, residual reflexes: ATNR 50-75%, STNR 0%, SG 0%, TLR 50%, MORO 50% persisting.

### Psychiatric results

Affect sensitive, Contact: according to situation, Mood: unstable, Drive: slightly increased, Consciousness: clear, Orientation: good, Formal thinking: coherent, and Content

thinking: accusations of guilt and insufficiency.

### Test psychological findings

OPATUS CPTa under 70mg LDX: reaction time 645ms, pulse error 1.2%, outlet error 0.4%, total error: 0.8%, motor agitation: 0.8%, assessment: overdosed with LDX 70mg (Figure 1).

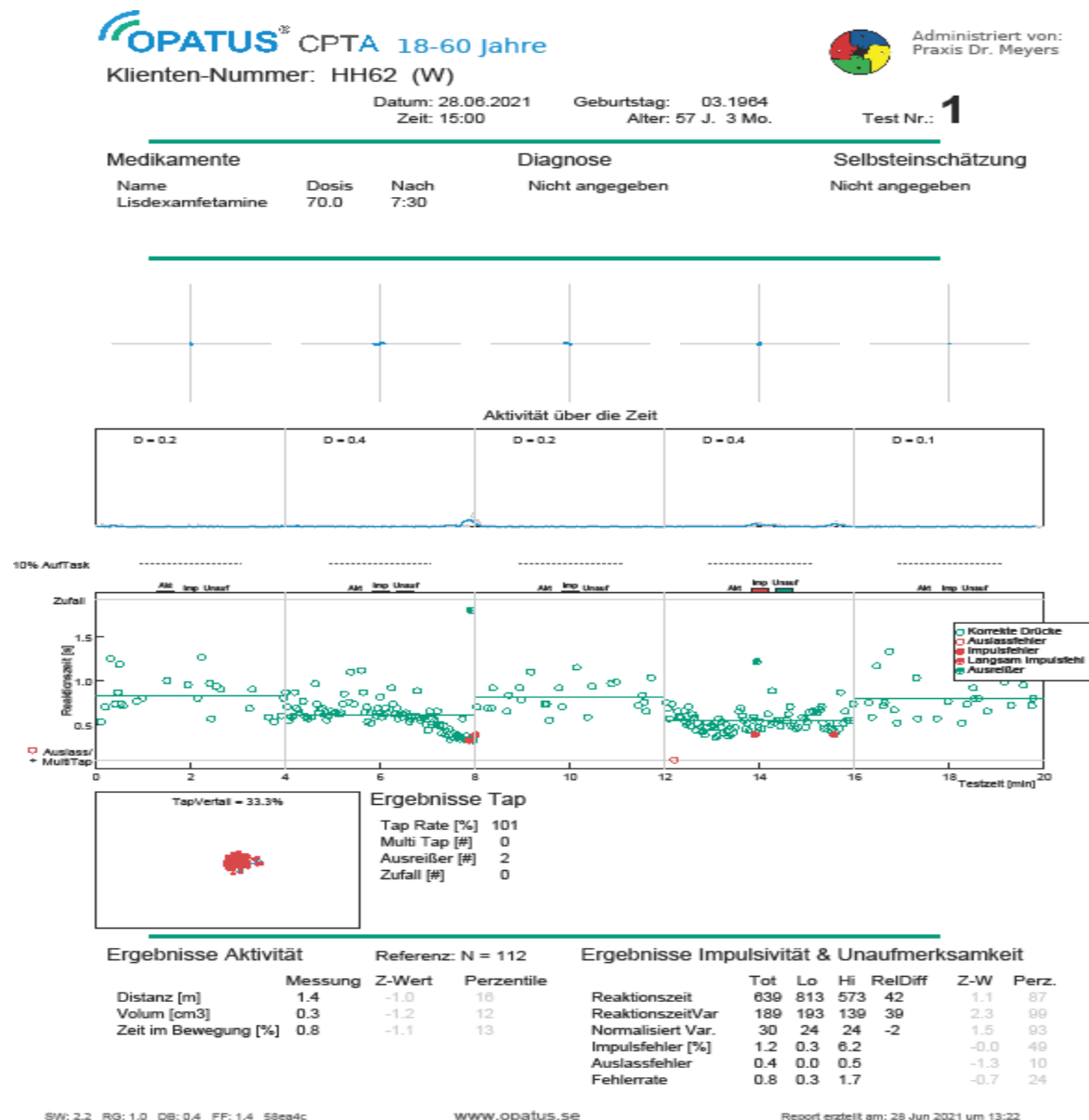


Figure 1: OPATUS CPTa results (at beginning of treatment, under 70mg LDX, overdosed).

## **Epicrisis and procedure**

According to the examinations carried out, ADHD showed under 70mg of lisdexamfetamine (LDX), which was thus slightly overdosed and too dampening, as well as affecting the patient's emotionality.

In the neurological examination, there was evidence of strong balance insecurities based on strongly persisting reflexes after postnatal stress (ATNR, TLR, MORO), which at least intensified the aforementioned affective lability and ADHD symptomatology and had previously also led to compulsions (bulimia) and addiction (nicotine).

Continuation of the medication with LDX in a gradually reduced dose was recommended, in parallel with a neurophysiological treatment for reflex integration (e.g., in an occupational therapy with a therapist with special additional training) as SI treatment. Yoga exercises would also provide further support (ATNR).

Therapy requirement of 2 years with daily 5-minute exercises at home was thought to be necessary.

Temporary CBT to learn self-structuring and work structuring techniques was recommended. Online therapy services would be available with cooperative partners.

Whether EEG-assisted neurofeedback (z-score training) would be useful as a further treatment approach was still to be clarified.

## **OPATUS CPTa under 60 LDX**

Response time 730ms, pulse error 0.9%, outlet

error 0.8%, total error rate 0.8%, assessment: well adjusted.

## **Psychiatric control**

Under LDX 60 the patient reported to feel better, a little more relaxed, no longer so "up to speed" (Figure 2).

## **Procedure**

A dose reduction to 50mg LDX and daily exercises for reflex integration and to start with EEG-assisted neurofeedback (Brainmaster® technology) as well as behavioural therapy were recommended.

## **Initial q-EEG**

(Figures 3-8).

## **Control**

After 50 sessions of neurofeedback, it was exciting to see what had changed for the better.

The patient wrote about the experiences so far: "Positive things happened mainly through the "Embryonal exercise" (MORO), which the patient did regularly, even if not daily. What was not so good is that the patient's liver was acting up. The patient could feel it, to be more precise. The patient did not drink alcohol at all any more. The patient was not sure if it was because of Elvanse® (Lisdexamfetamin).

The patient stopped taking Elvanse® three weeks ago. Unfortunately, the patient had a hard time getting going in the morning, despite the caffeine. The patient's body might had got used to the patient's "speed?"

## OPATUS CPTa without medication after 6ix NFB and with residual reflex treatment

Reaction time 507ms, pulse error 0.3%, outlet error 0.0%, total error rate 0.2%, assessment: unremarkable, ADHD could not be seen any more (Figure 9).

### Neurological control

ATNR 0%, MORO 0%, fully integrated primitive reflexes.

### qEEG

Significant improvement documented (Figures 10-13).

### Psychiatric control

The patient was still somewhat erratic, but clearly capable of oscillating, affect-stable, able to cope well even with currently difficult partnership situation and in a phase of professional reorientation.

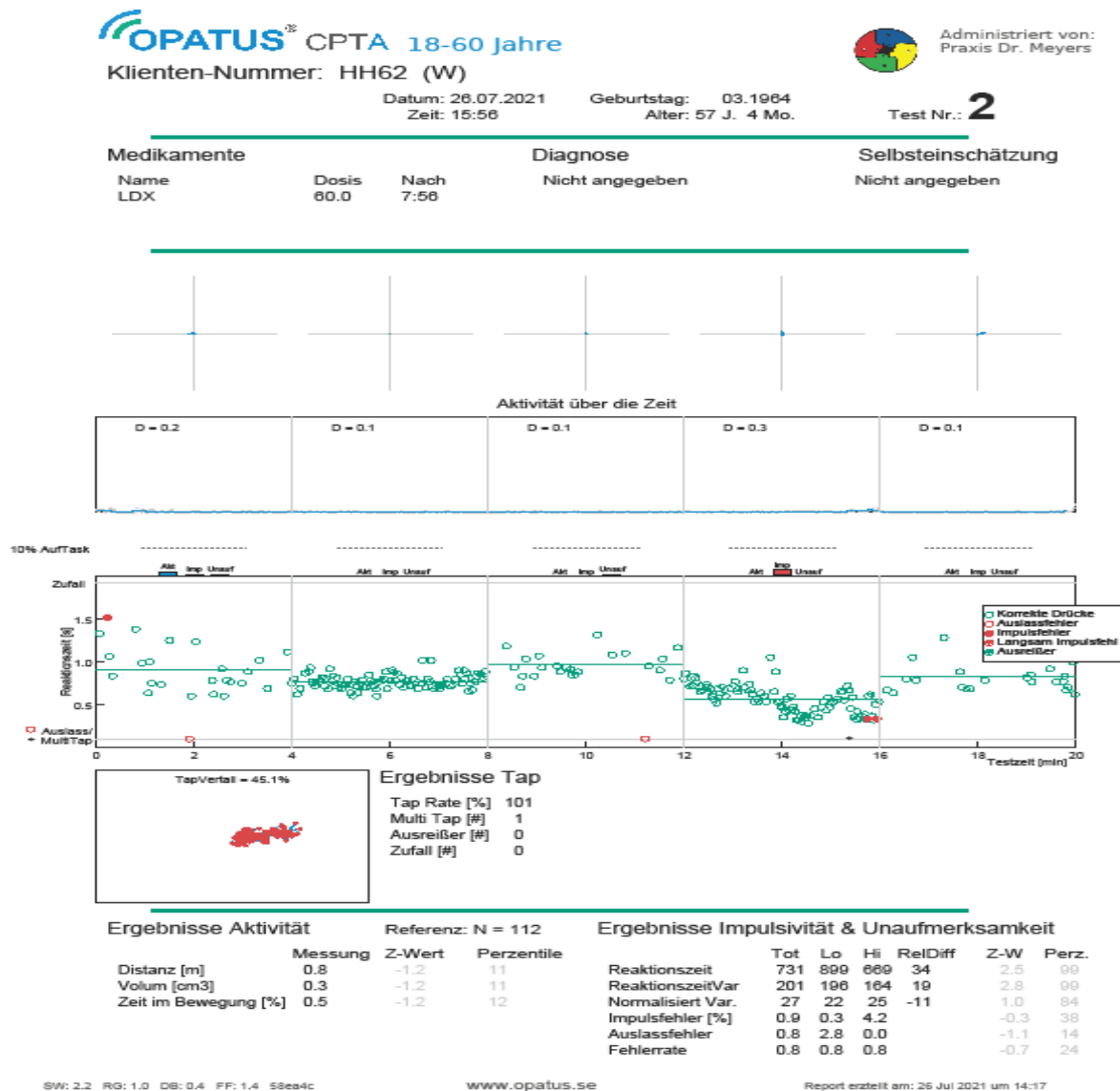


Figure 2: OPATUS CPTa results (at beginning of treatment, under 60mg LDX, reduced dosage).

EEG ID: 926751  
Test Date: 2021-11-08  
Age: 57.6  
Gender: Female  
Montage: Linked Ears  
Eyes Open



### Summary of the Z-score analyses

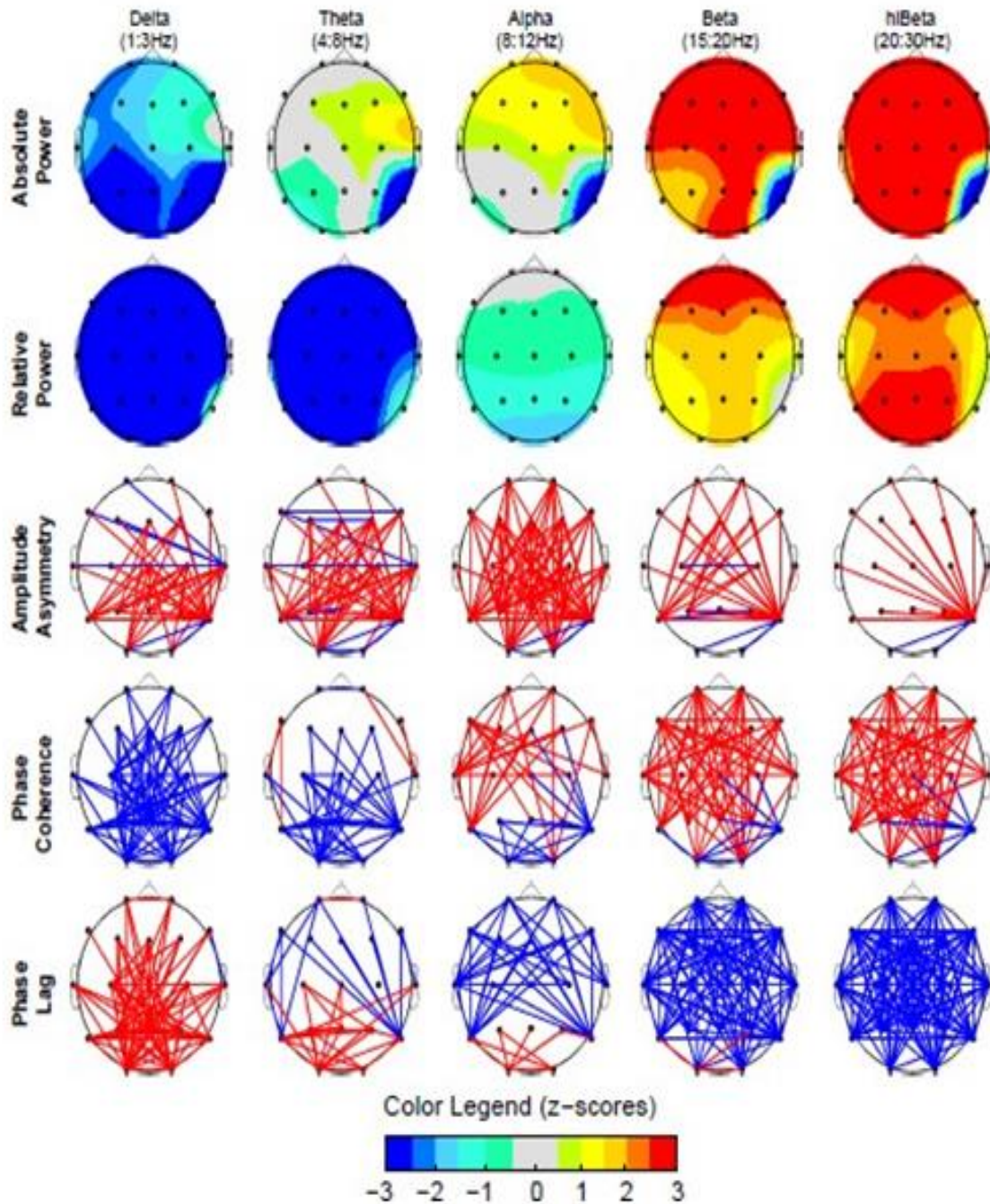


Figure 3: Summary of z-score analyses (at beginning of treatment).

EEG ID: 926751  
Test Date: 2021-11-08  
Age: 57.8  
Gender: Female  
Montage: Linked Ears  
Eyes Open



### FFT Absolute Power

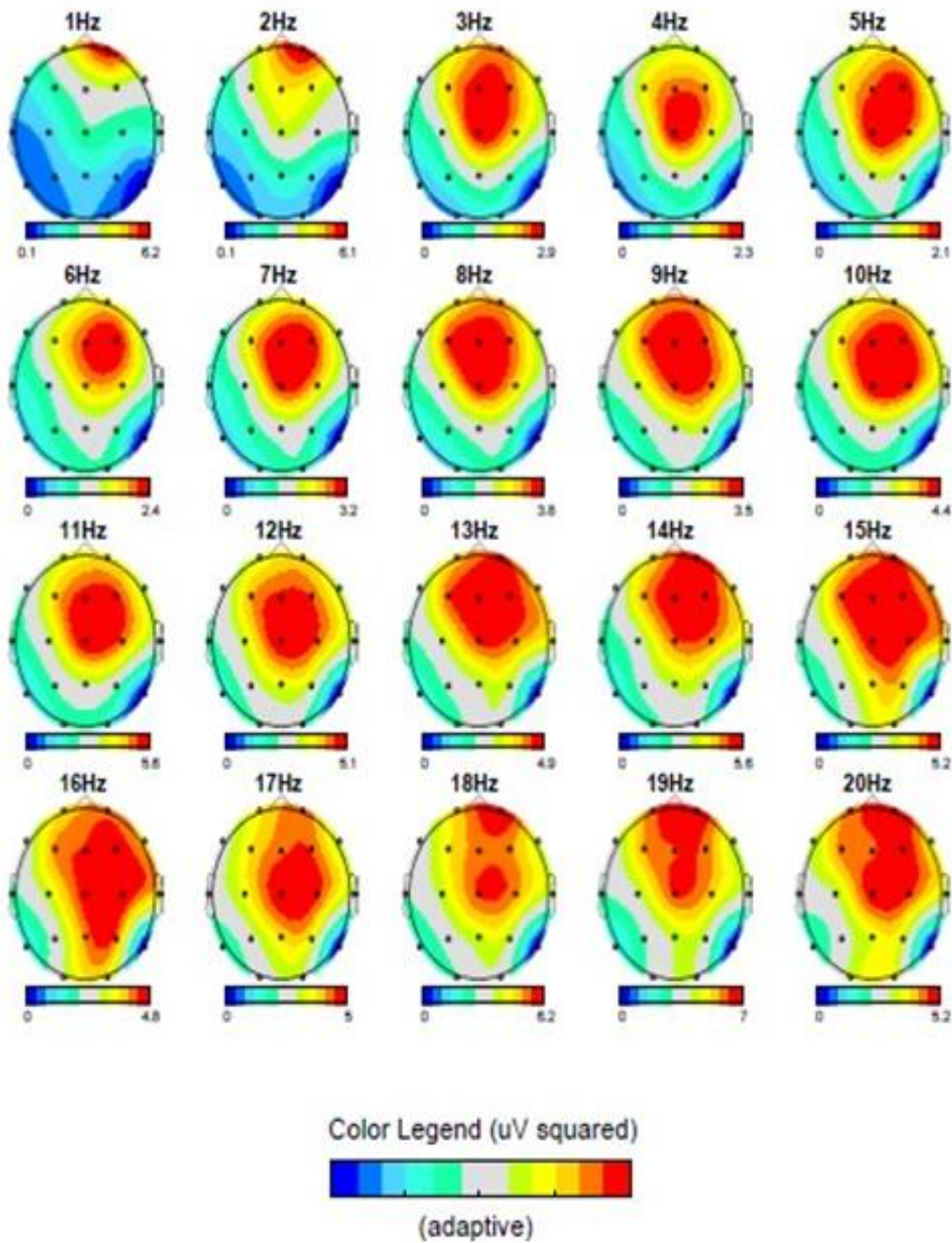
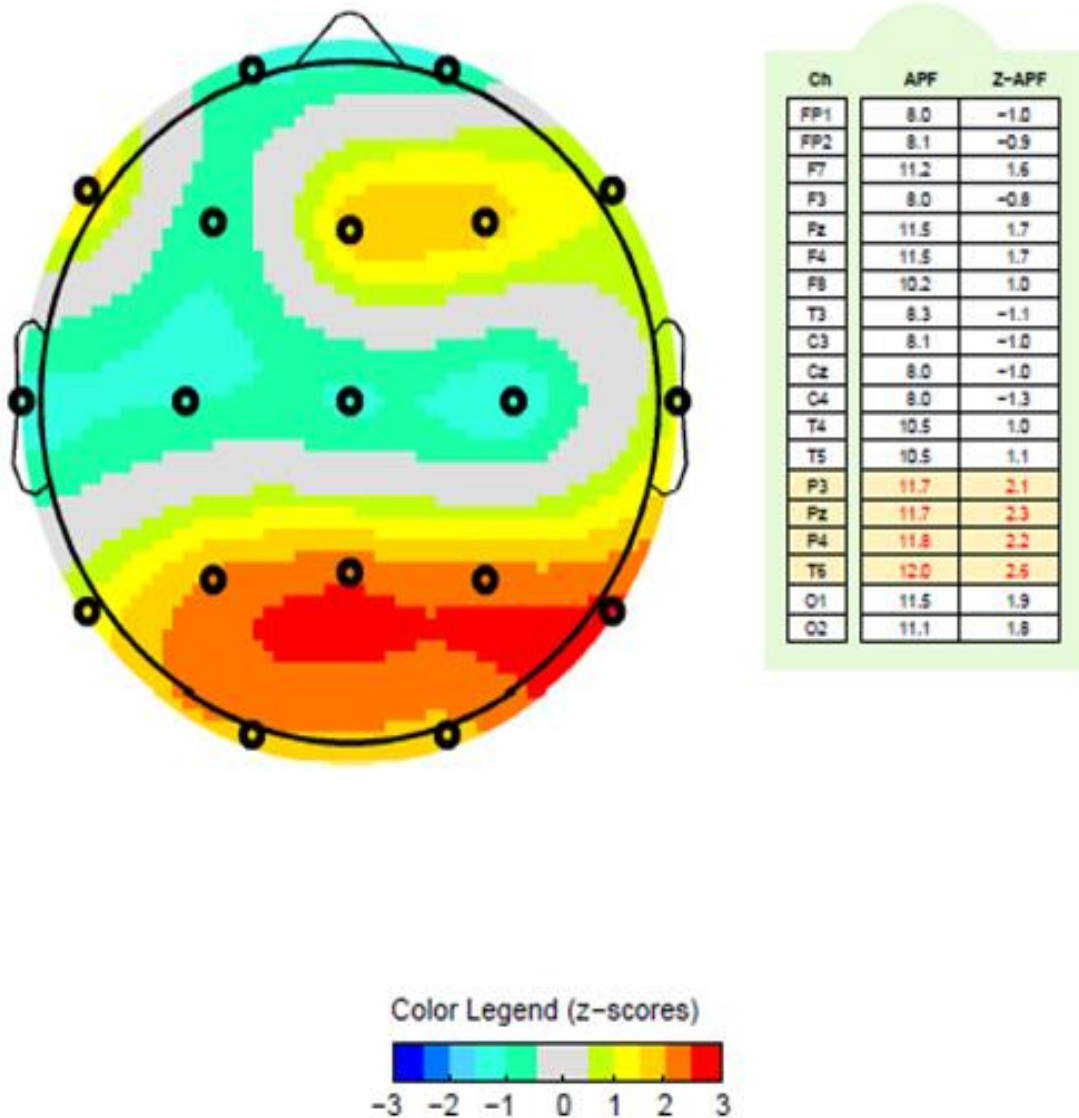


Figure 4: FFT absolute power (at beginning of treatment).

EEG ID: 926751  
 Test Date: 2021-11-08  
 Age: 57.8  
 Gender: Female  
 Montage: Linked Ears  
 Eyes Open



## Z-scored Alpha Peak



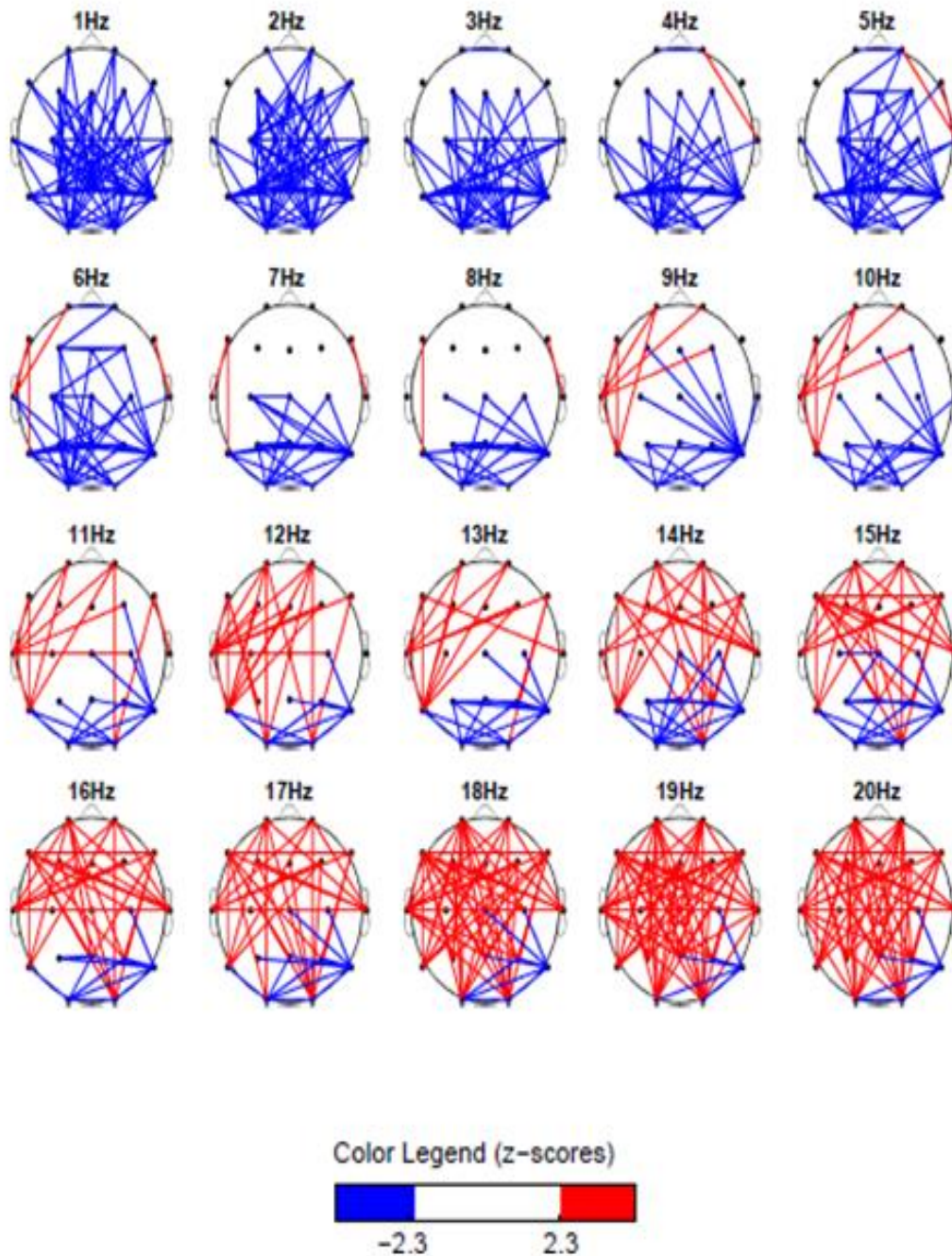
**Figure 5:** Z-scored alpha peak (at beginning of treatment).



EEG ID: 926751  
Test Date: 2021-11-08  
Age: 57.6  
Gender: Female  
Montage: Linked Ears  
Eyes Open



## Z-scored Phase Coherence



**Figure 6:** Z-scored phase coherence (at beginning of treatment).

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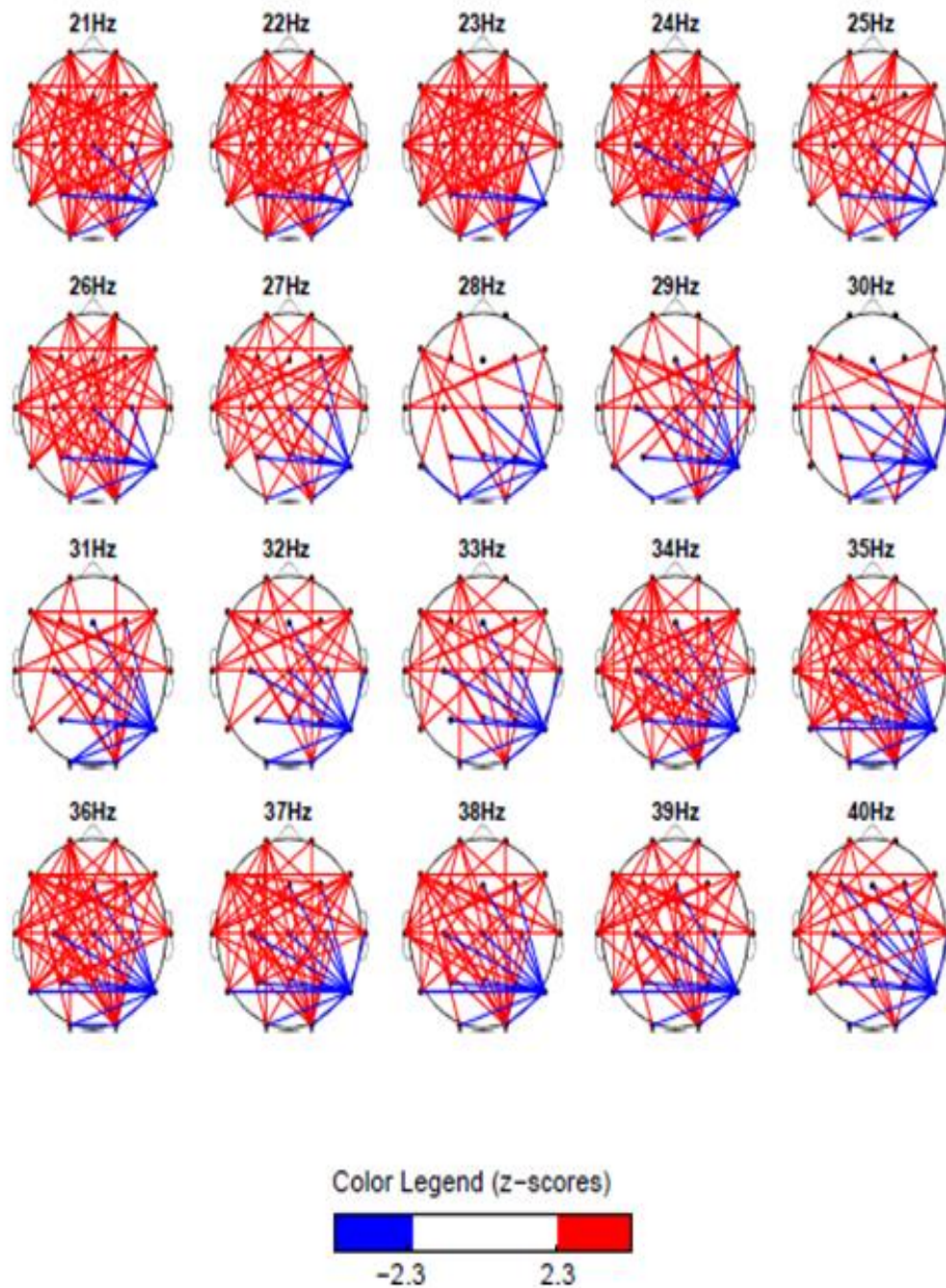
**Citation:** Meyers R. "You are Never Too Old to Overcome ADHD" - Case Report. J Psy Neurol. 2023;1(1):1-17.

**DOI:** [https://doi.org/10.37191/Mapsci-JPN-1\(1\)-001](https://doi.org/10.37191/Mapsci-JPN-1(1)-001)

EEG ID: 926751  
Test Date: 2021-11-08  
Age: 57.6  
Gender: Female  
Montage: Linked Ears  
Eyes Open



## Z-scored Phase Coherence



**Figure 7:** Z-scored phase coherence (at beginning of treatment).

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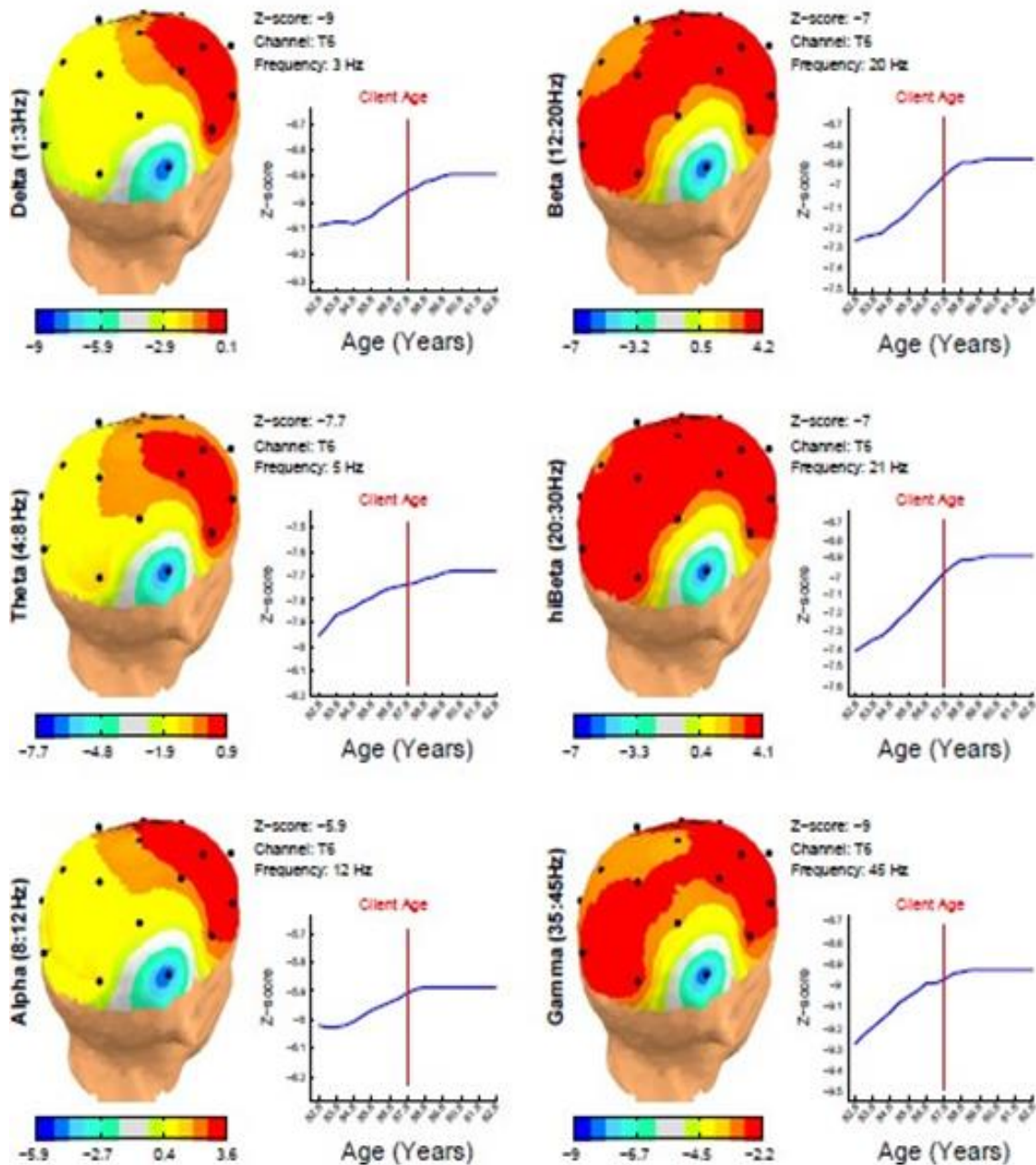
**Citation:** Meyers R. "You are Never Too Old to Overcome ADHD" - Case Report. J Psy Neurol. 2023;1(1):1-17.

**DOI:** [https://doi.org/10.37191/Mapsci-JPN-1\(1\)-001](https://doi.org/10.37191/Mapsci-JPN-1(1)-001)

EEG ID: 926751  
 Test Date: 2021-11-08  
 Age: 57.6  
 Gender: Female  
 Montage: Linked Ears  
 Eyes Open



## Extreme z-score development



**Figure 8:** Extreme z-score development (at beginning of treatment).



Datum: 20.09.2022  
Zeit: 10:22

Geburtstag: 03.1964  
Alter: 58 J. 6 Mo.

Test Nr.: **3**

Medikamente

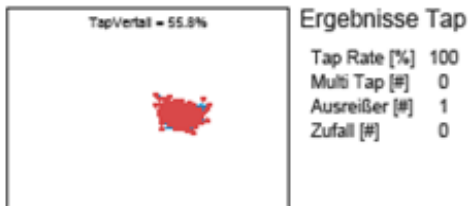
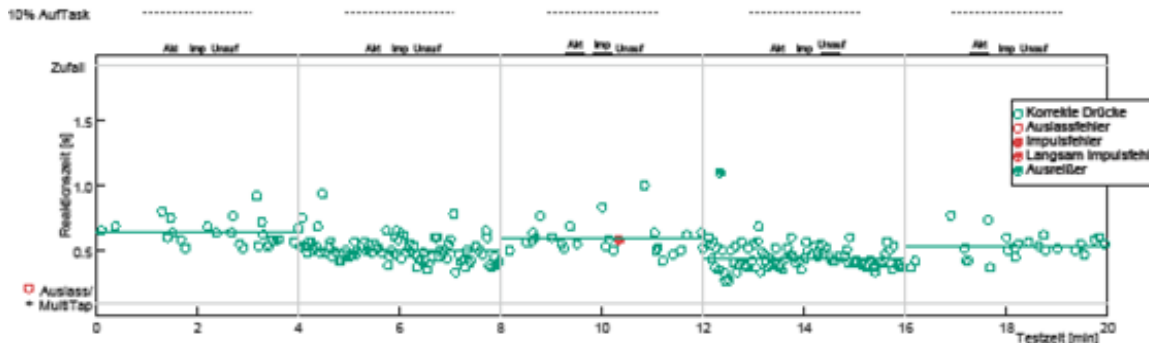
Keine medikamente

Diagnose

Nicht angegeben

Selbsteinschätzung

Nicht angegeben



Tap Rate [%] 100  
Multi Tap [#] 0  
Ausreißer [#] 1  
Zufall [#] 0

Ergebnisse Aktivität

Referenz: N = 112

Messung	Z-Wert	Perzentile
Distanz [m]	1.1	14
Volum [cm <sup>3</sup> ]	-1.2	11
Zeit im Bewegung [%]	-1.2	12

Ergebnisse Impulsivität & Unaufmerksamkeit

	Tot	Lo	Hi	RelDiff	Z-W	Perz.
Reaktionszeit	505	586	475	23	-1.0	16
ReaktionszeitVar	112	117	94	24	-1.0	15
Normalisiert Var.	22	20	20	1	-0.3	39
Impulsfehler [%]	0.3	0.3	0.0		-0.8	21
Auslassfehler	0.0	0.0	0.0		-1.5	7
Fehlerrate	0.2	0.3	0.0		-1.1	13

Figure 9: OPATUS CPTa results (after treatment without medication).

EEG ID: 361557  
Test Date: 2022-09-05  
Age: 58.5  
Gender: Female  
Montage: Linked Ears  
Eyes Open



## Summary of the Z-score analyses

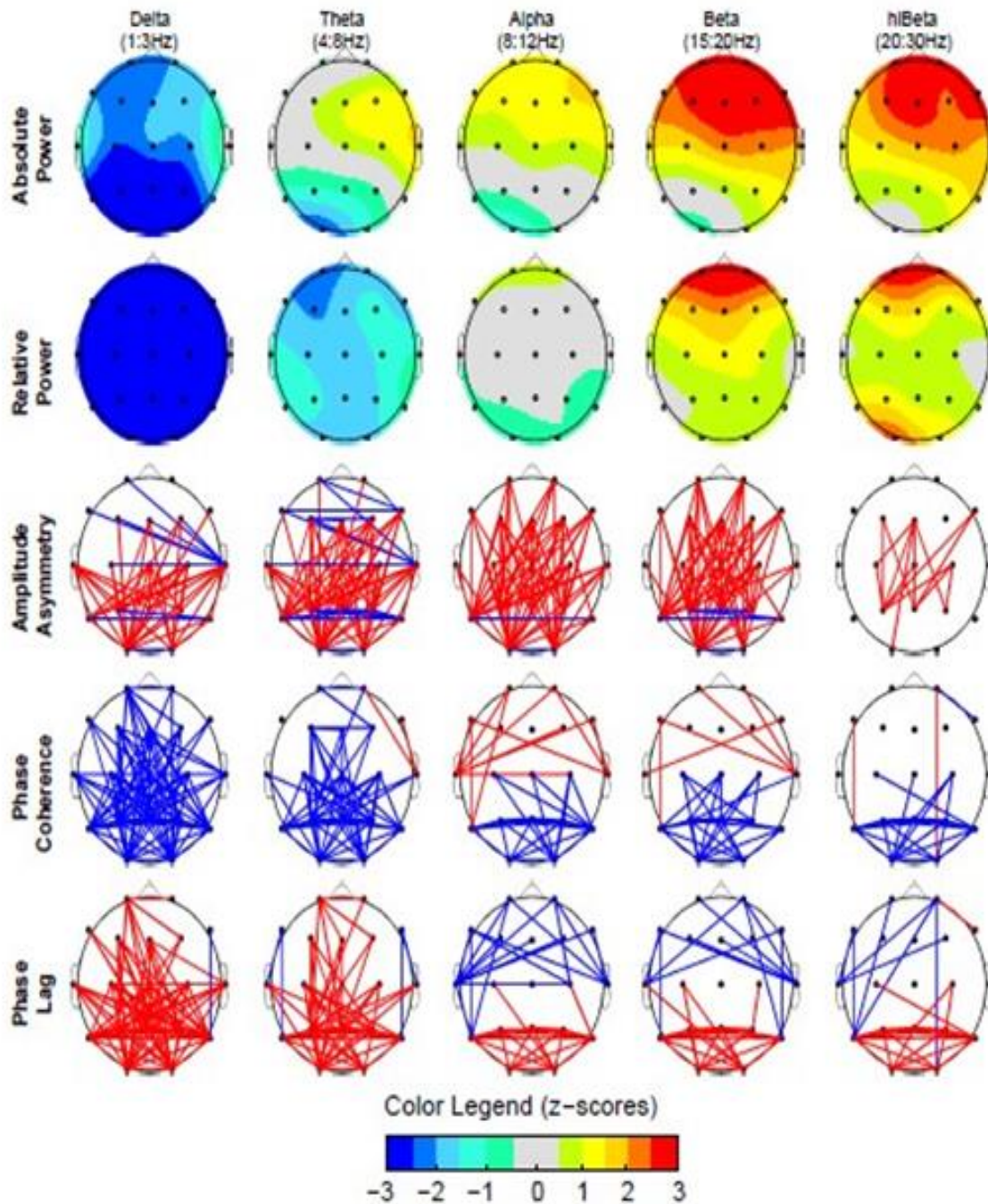
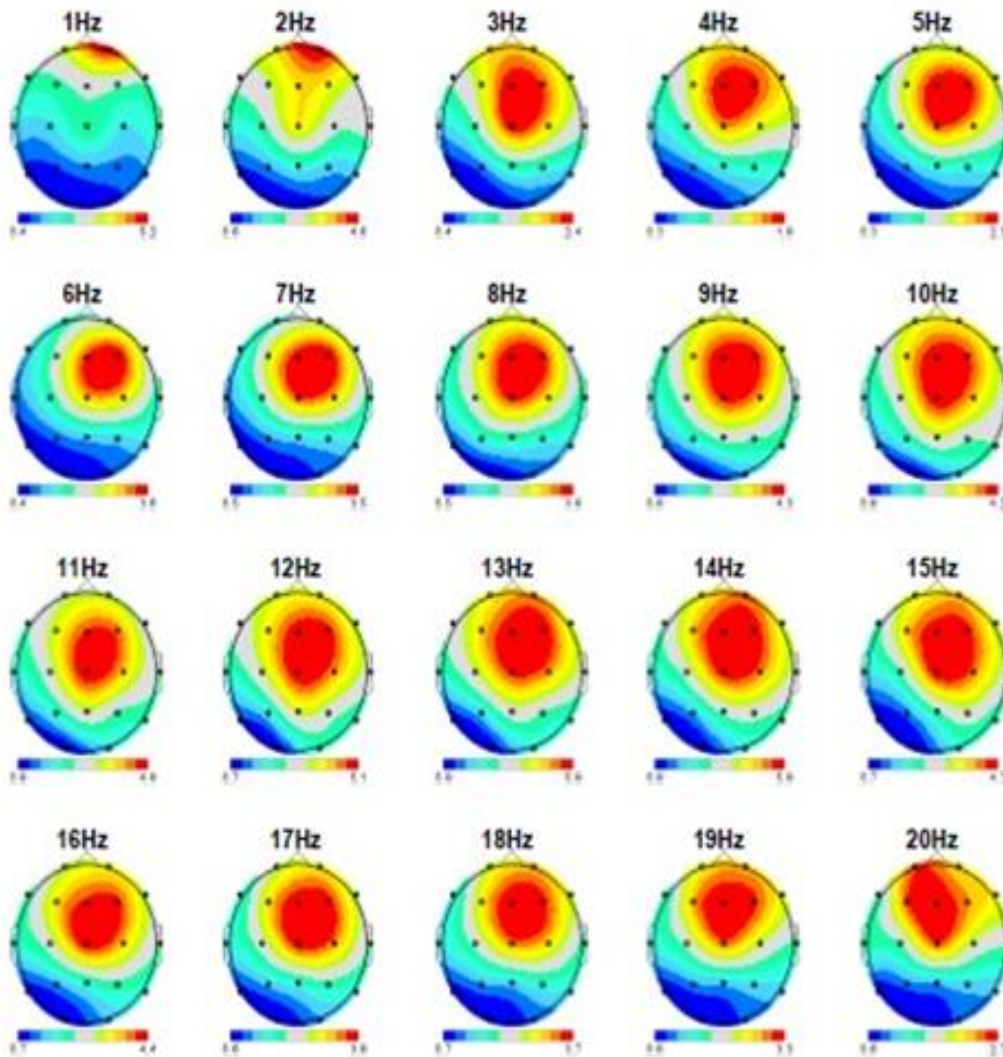


Figure 10: Summary of z-score analyses (after treatment).

EEG ID: 381557  
Test Date: 2022-09-05  
Age: 58.5  
Gender: Female  
Montage: Linked Ears  
Eyes Open



## FFT Absolute Power



Color Legend (uV squared)



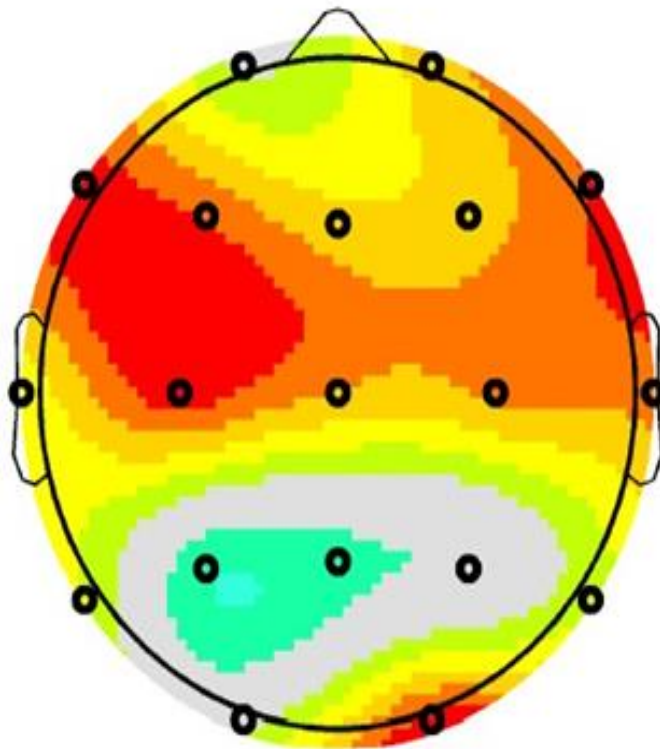
(adaptive)

Figure 11: FFT absolute power (after treatment).

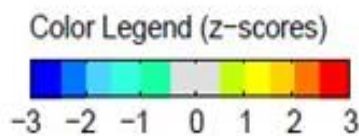
EEG ID: 361557  
 Test Date: 2022-09-05  
 Age: 58.5  
 Gender: Female  
 Montage: Linked Ears  
 Eyes Open



## Z-scored Alpha Peak



Ch	APF	Z-APF
FP1	9.8	0.5
FP2	11.5	1.7
F7	12.6	2.6
F3	12.7	2.4
Fz	11.5	1.7
F4	11.5	1.7
F8	12.0	2.5
T3	10.7	1.2
C3	12.6	2.8
Cz	11.5	2.0
C4	11.6	2.1
T4	11.9	2.2
T5	10.4	1.0
P3	8.5	-0.8
Pz	8.7	-0.6
P4	9.0	-0.3
T6	10.2	0.9
O1	9.7	0.4
O2	12.0	2.6

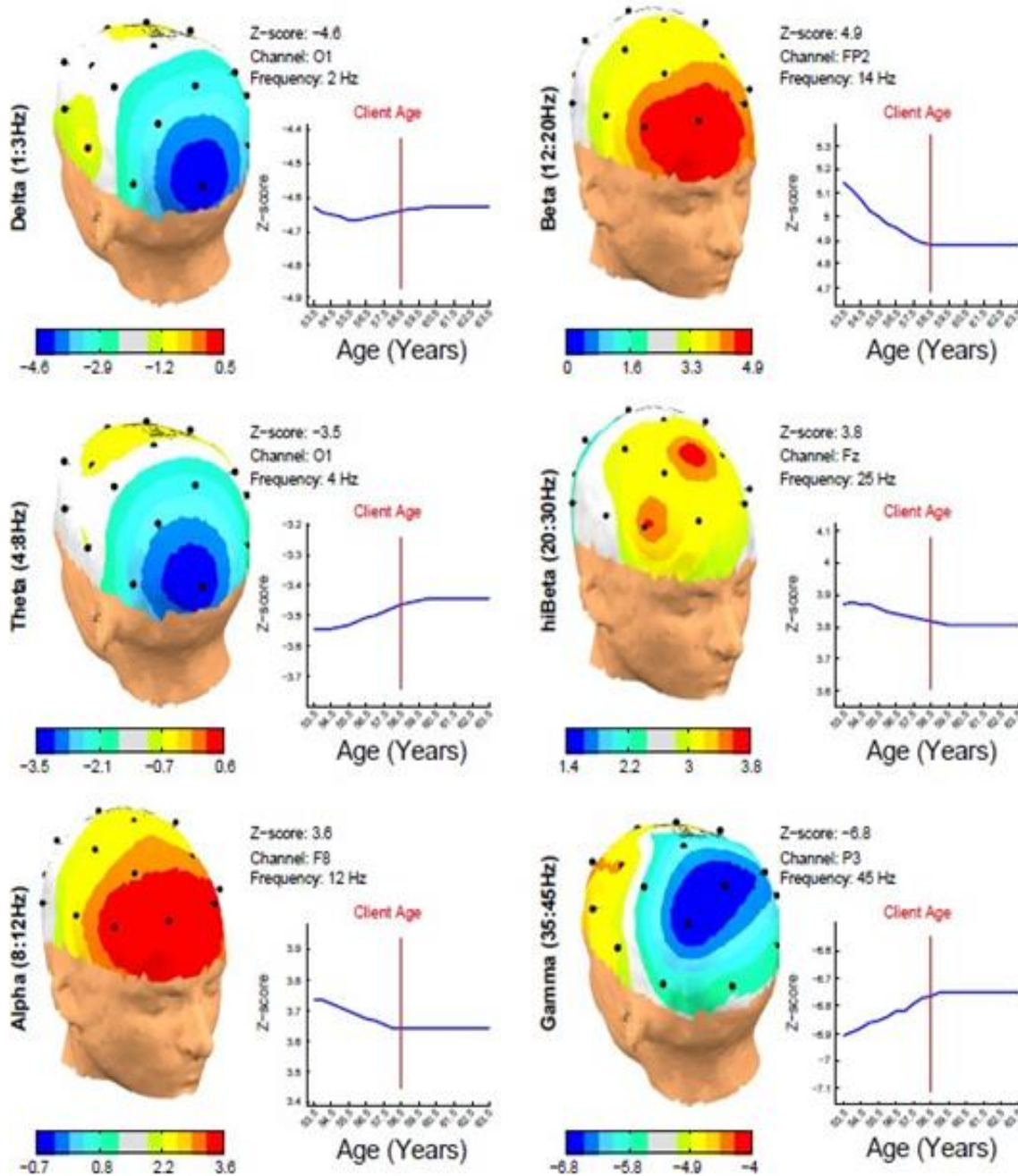


**Figure 12:** Z-scored alpha peak (after treatment).

EEG ID: 361557  
 Test Date: 2022-09-05  
 Age: 58.5  
 Gender: Female  
 Montage: Linked Ears  
 Eyes Open



## Extreme z-score development



**Figure 13:** Extreme s-core development (after treatment).



## Discussion

The combined treatment helped to achieve a treatment result in a uniquely short time. So, it is recommended, to screen all patients with a combination of mood and concentration disorders also for persisting primitive reflexes. This could prove to be the “door opener” for better and quicker treatment results.

Of course, this case report represents not the quality of a full study, but these results are consistent with the experience, which has been published in “Live or die” in 2021 [4] and (Über)Leben mit Reflexen Band-Reflex Integrations Program RIP® in 2021 (German Edition) [5]. Peter Blythe, et al. [6] first mentioned the effect of integrative therapy for persisting primitive reflexes in the 1970s, which he developed to the INPP® method

## References

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with Goddard-Blythe, S. RIP® Reflex Integrations Program is a modified approach, which focusses more on body sensitivity and thus may achieve better and faster results.

The z-score training may be an additional therapy to accelerate brain changes, but it is unusual, to have these results in such a short time, usually it will take more than 1.5 years of weekly training with adults.

So, it is hopeful that the future research will show, that a holistic approach will help better and faster than TAU.

## Conclusion

ADHD was cured after 14 months, the residual reflexes were extinguished, the patient was stabilized and the treatment could be completed.