



<https://tenor.com/de/search/taz-gifs>



<https://tenor.com/search/taz-gifs>

ADHS – im Erwachsenenalter

PD Dr. med. Dr. rer. nat.
Pascal Burger

Disclosures

Type of potential conflict	Details of potential conflict in previous 24 months
Grant/research support	none
Consulting	OM Pharma, Salmon Pharma
Speaker	OM Pharma, Salmon Pharma, Takeda, Idorsia
Financial support	none
Other	Teaching and examinations for Universities of Zurich, Lucerne

- Anerkennung Kat. A (3 Jahre)
ambulant für Facharztaus-
bildung Psychiatrie und
Psychotherapie
- Anerkennung Kat. C (3 Jahre)
Kinder- und Jugendpsychiatrie
und -psychotherapie
- Klinische Weiterbildung für
psychologische Psychotherapie

ZADZ





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Agenda:

1. Basics
2. Kind vs. Erwachsene
3. Therapie Kindes-/Erwachsenenalter
4. ADHS - ein reines Defizitmodell?

5.

-
-

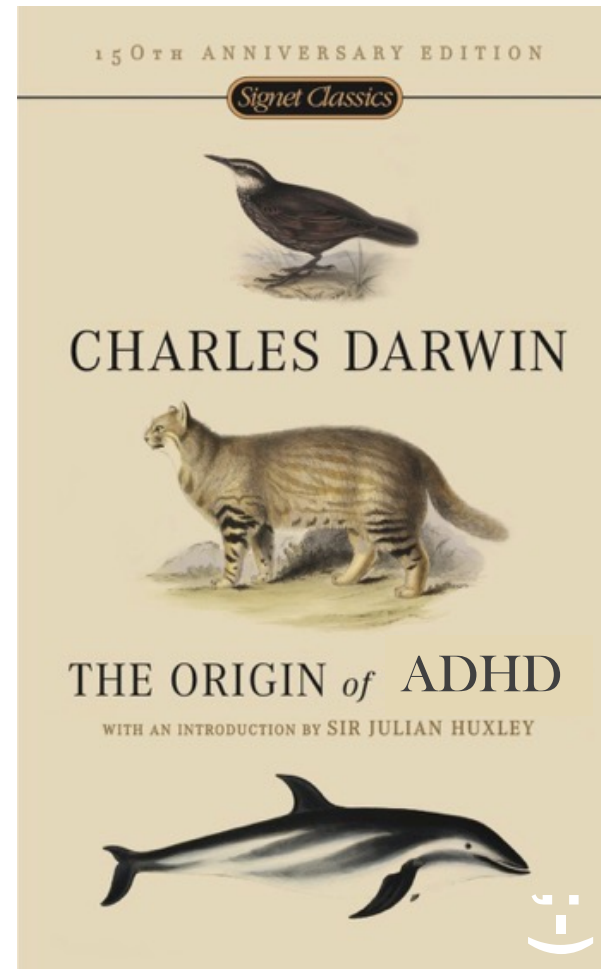


<https://www.istockphoto.com/de/grafiken/segway-fahren>

Perspektivenwechsel...



<https://www.pinterest.com/pin/garfield-airbrushed-artwork-checklist--140806225777088/>



Nomenklatur

Die verschiedenen Bezeichnungen für dieses Erscheinungsbild ("Störungsbild") meinen im Kern etwa dasselbe:

ADHS Aufmerksamkeits-Defizit-Störung mit Hyperaktivität oder engl. ADHD

ADS Aufmerksamkeits-Defizit-Störung oder engl. ADD Attention Deficit Disorder

HKS Hyperkinetisches Syndrom (über-aktiv)

MBD Minimal Brain Disfunction oder auf "neu-deutsch" MCD minimale cerebrale Dysfunktion

POS Psycho-Organisches Syndrom; dieser Begriff wird ausschliesslich in der Schweiz verwendet. POS ist keine veraltete Bezeichnung für ADS/ADHS: Es müssen verschiedene Voraussetzungen erfüllt sein, damit die IV ein POS als Geburtsgebrechen (GgV 404) anerkennt. Alle POS-Betroffenen haben ein ADS oder ADHS, aber umgekehrt ist das gar nicht immer der Fall.

<https://www.neuropsychologe.ch/informationen/ads-adhd-pos>



<https://www.pinterest.de/pin/829858668818365571/>

Keine Modediagnose



<https://freepngimg.com/png/112781-garfield-free-transparent-image-hq>

- Umschreibung 493 v.Chr. bei Hippokrates
 - M. Weikhard: 1775 Attentio Volubilis
 - Still (1902) „abnorme Unfähigkeit, die Aufmerksamkeit aufrecht zu erhalten“, „sofortige Befriedigung der eigenen Bedürfnisse“
 - 1937 Bradley – Benzedrin bei verhaltensauffälligen Kindern
- => **Symptomreduktion als Zufallsbefund**

Old school...



Lustige Geschichten und drollige Bilder für Kinder von 3-6 Jahren, „**Struwwelpeter**“, H. Hofmann 1847



tige: Unterbrochene Mahlzeit (1838)



https://en.wikipedia.org/wiki/Garfield_%28character%29

- keine geographischen o. ethnischen Unterschiede in der Prävalenz (Faraone 2005; Polanczyk 2014)
- Persistenz bis ins Erwachsenenalter in mehr als 60% der Fälle Prävalenz
- **76 % der phänotypischen Varianz** durch genetische Faktoren und Interaktion mit Umweltfaktoren erklärbar
- **Heritabilität:** je nach Autor **50-80%**
- **Familiäre Häufung:** erstgradige Verwandte **bis 8-faches Risiko**



<https://kr.pinterest.com/pin/tazmania-the-tasmanian-devils-overlooked-animated-family-sitcom--622411611018472470/>



<https://getyarn.io/yarn-clip/54471f3f-86e9-4be4-9b5e-f580e4d28612>



<https://giphy.com/gifs/TheGentlemen-yes-colin-farrell-the-gentlemen-QYunQyuMTVozcmH32T>

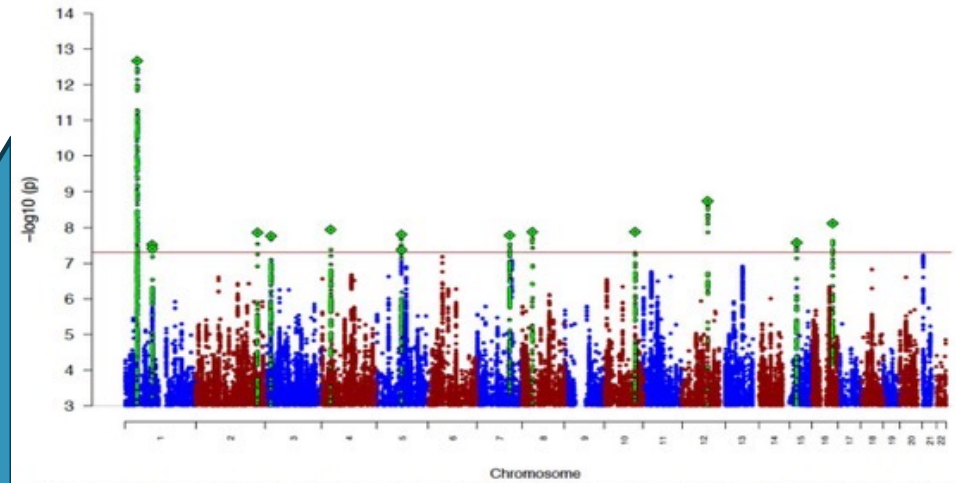


Figure 1. Manhattan plot of the results from the GWAS meta-analysis of ADHD. The index variants in the 12 genome-wide significant loci are highlighted as a green diamond. Index variants located with a distance less than 400kb are considered as one locus.

DeMontis et al. 2019



[https://garfield.fandom.com/wiki/Garfield_\(character\)](https://garfield.fandom.com/wiki/Garfield_(character))

„life-long-condition“ (WHO)

[nature](#) > [nature genetics](#) > [articles](#) > [article](#)

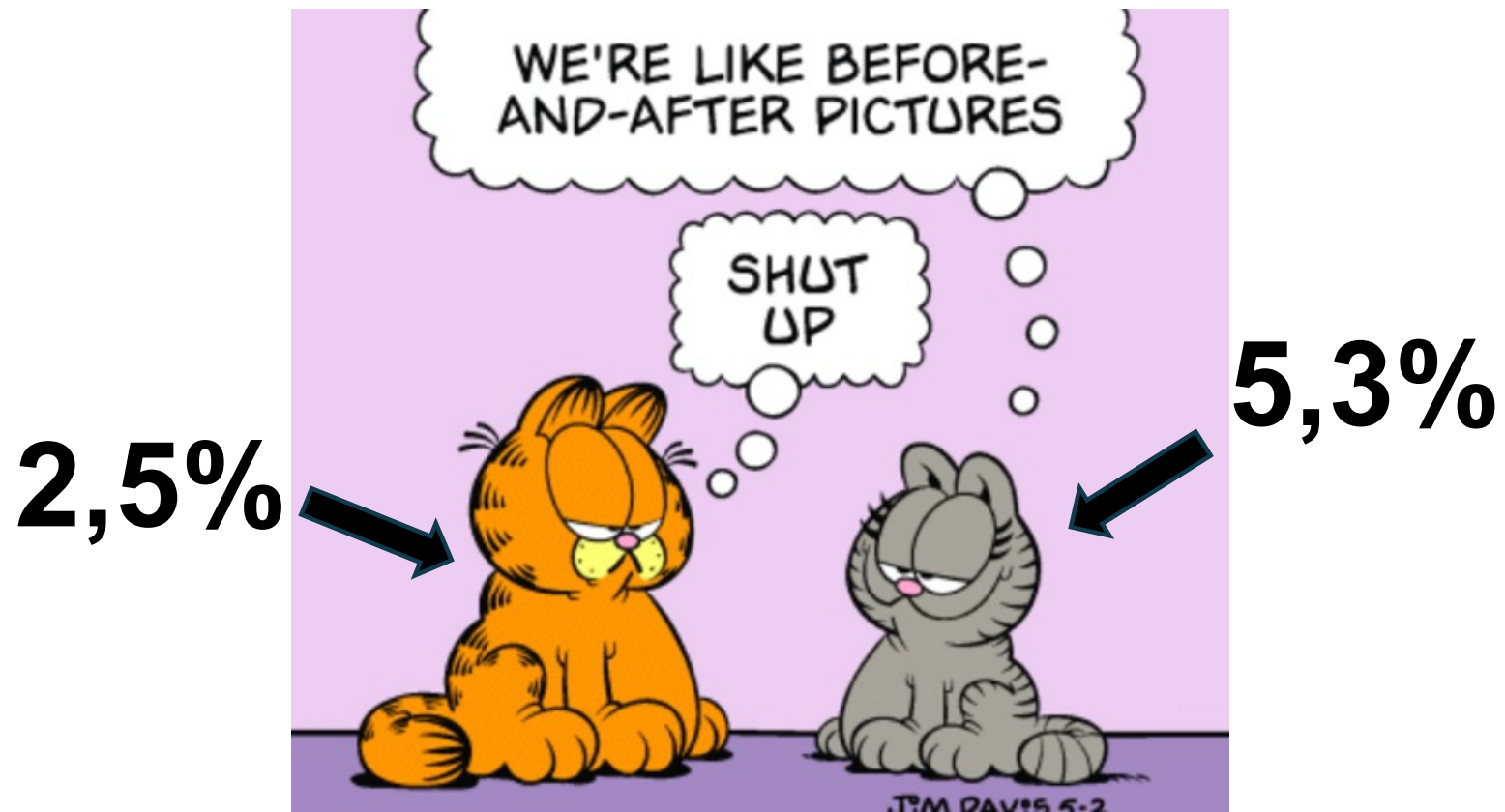
Article | [Published: 26 January 2023](#)

Genome-wide analyses of ADHD identify 27 risk loci, refine the genetic architecture and implicate several cognitive domains

[Ditte Demontis](#) , [G. Bragi Walters](#), [Georgios Athanasiadis](#), [Raymond Walters](#), [Karen Therrien](#), [Trine Tollerup Nielsen](#), [Leila Farajzadeh](#), [Georgios Voloudakis](#), [Jaroslav Bendl](#), [Biau Zeng](#), [Wen Zhang](#), [Jakob Grove](#), [Thomas D. Als](#), [Jinjie Duan](#), [F. Kyle Satterstrom](#), [Jonas Bybjerg-Grauholm](#), [Marie Bækved-Hansen](#), [Olafur O. Gudmundsson](#), [Sigurdur H. Magnusson](#), [Gisli Baldursson](#), [Katrín Davídsdóttir](#), [Gyda S. Haraldsdóttir](#), [Esben Agerbo](#), [Gabriel E. Hoffman](#), [ADHD Working Group of the Psychiatric Genomics Consortium](#), [iPSYCH-Broad Consortium](#), ... [Anders D. Børglum](#)  [+ Show authors](#)

[Nature Genetics](#) **55**, 198–208 (2023) | [Cite this article](#)

Kinder vs. Erwachsene



<https://twitter.com/Garfield/status/1248356300746108930>

Diagnostik



Anamnese

- **retrospektive** und **klinische** Beurteilung
- Längsschnittsbetrachtung (Lebensspanne)
- Umweltfaktoren (Geburtskomplikationen, pränatale Noxen etc.)
- Schulzeugnisse u.a. Dokumente
- aktuelle Anamnese / ggw. Probleme
- wenn möglich: Fremdanamnese
- Familienanamnese

Wie weiter...

- Ausführliche Anamnese incl. PPB
- ADHS-spezif. Testpsychologie (*nächste Folie*)
- Medikamenten- & Suchtanamnese (u.a. Koffein, Glucocorticoide, Thyroxin, adrenozeptorbez. Medikation etc.)
- Patientenhistorie / somatische Erkrankungen (u.a. Schilddrüsenfunktion, Eisen- & Vitaminstoffwechsel etc.)
- Neuropsychologische Untersuchung (ggf. + IQ)

Symptomatik im Erwachsenenalter

Teilbereiche Wender – Reimherr - Interview (1995)

1. Aufmerksamkeitsstörungen
 2. Überaktivität/Rastlosigkeit
 3. Temperament
 4. Affektlabilität
 5. Emotionale Überreagibilität
 6. Desorganisation
 7. Impulsivität
- 28 pathologische Merkmale in
 - 7 Teilbereichen
 - Skala von 0 – 2
 - Gesamt-Score:
0 – 56 Punkte

Neuropsychological Functioning in Adults With ADHD and Adults With Other Psychiatric Disorders: The Issue of Specificity

Journal of Attention Disorders
2017, Vol. 21(2) 137–148
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/1087054713506264
jad.sagepub.com


Ylva Holst^{1,2} and Lisa B. Thorell¹

Abstract

Objective: The aim was to investigate how well neuropsychological measures can discriminate between adults with ADHD and those with other psychiatric disorders. **Method:** Adults with ADHD and a clinical control group ($n = 110$) were included. Neuropsychological functioning was investigated using measures of inhibition, working memory, set shifting, planning, fluency, reaction-time variability, and delay aversion. **Results:** Adults with ADHD performed more poorly compared with clinical controls with regard to all constructs. The effects of verbal memory, inhibition, set shifting, fluency, and delay aversion remained significant when controlling for IQ. However, when controlling for basic cognitive functions, only the effects of inhibition, fluency, and delay aversion were significant. Sensitivity ranged between 64% and 75%, and specificity between 66% and 81%. **Conclusion:** Neuropsychological tests have a relatively poor ability to discriminate between adults with ADHD and clinical controls, but they may be used to identify individuals at particularly high risk for poor daily functioning. (*J. of Att. Dis.* 2017; 21(2) 137-148)

altersspezifische Besonderheiten bei der Diagnostik

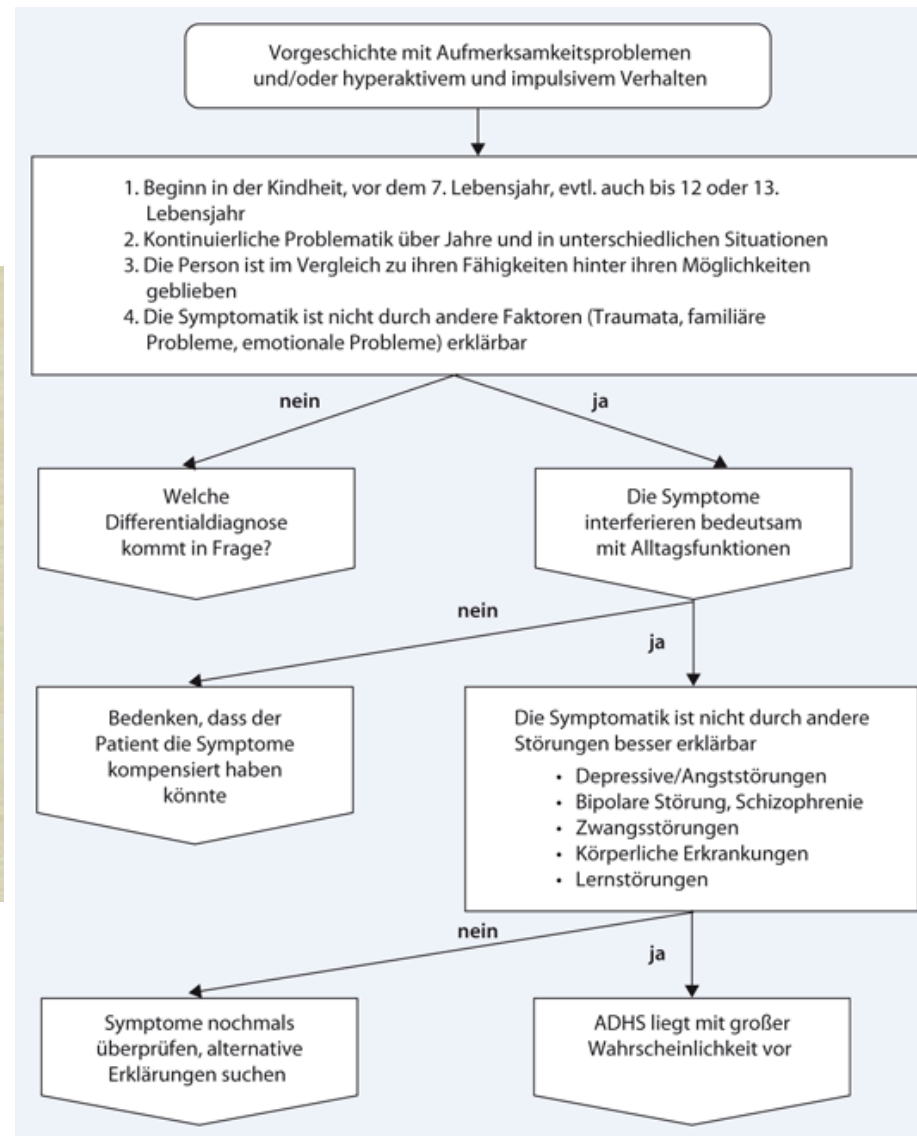
- Besonderheiten in untersch. Altersgruppen:
 - Diagnose **nicht vor** dem Alter von **3J** stellen
 - keine «hinreichende Sicherstellung» im Alter 3-4J
 - Vorschulalter: Diagnose nur bei sehr starker Ausprägung
 - Je jünger die Kinder, umso schwieriger die Abgrenzung zu Normvarianten
 - Jugend- / Erwachsenenalter: Berücksichtigung der oft im Verlauf der Pubertät einsetzenden Verminderung der Hyperaktivität
 - Abgrenzung anderer psychischer Störungen differenzialdiagnostisch / als koexistierende Störungen



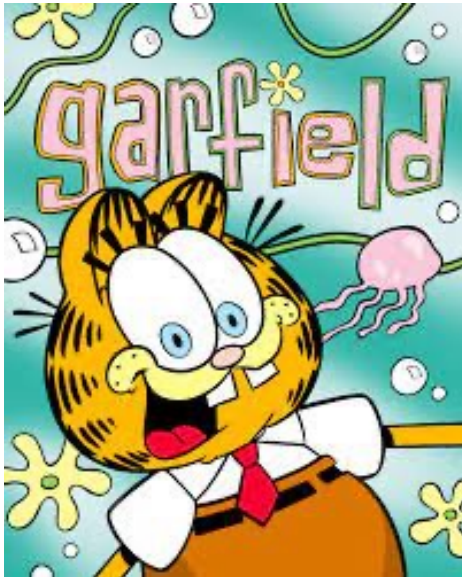
Erwachsene



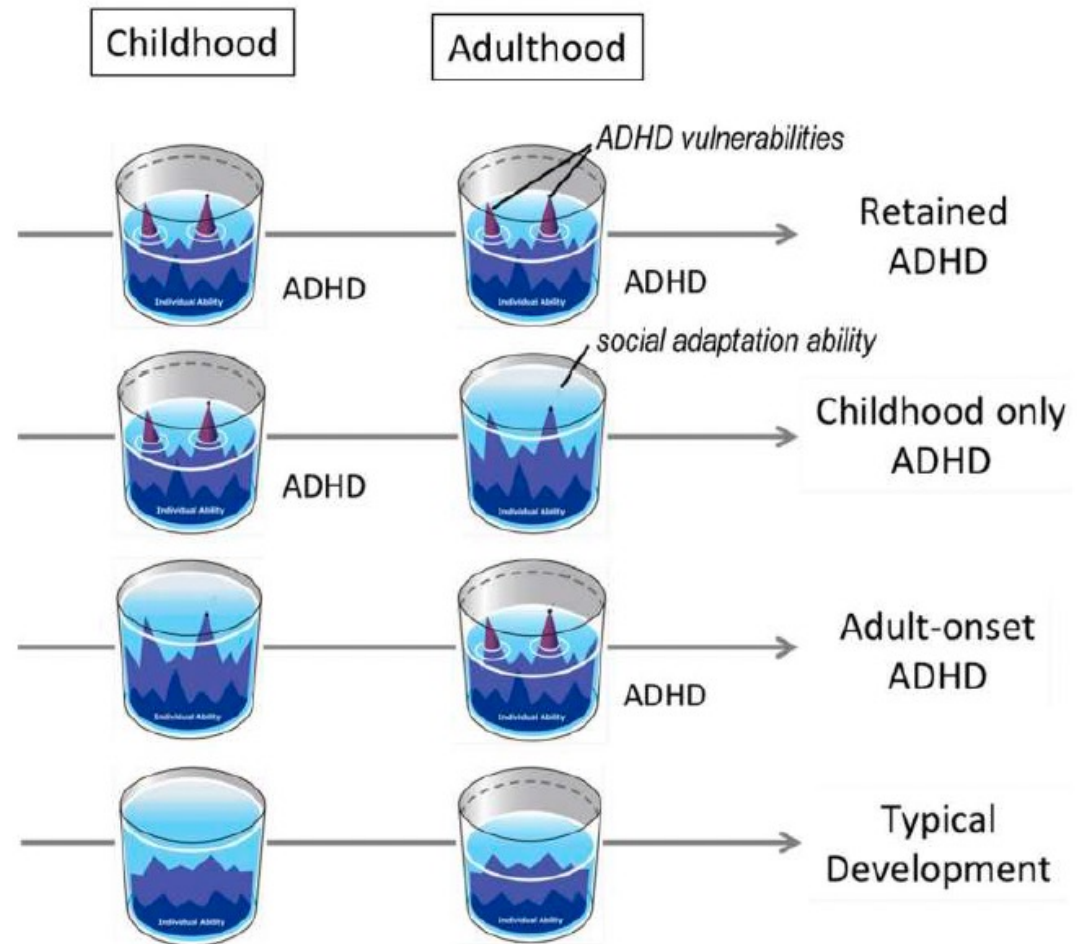
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Retz-Junginger et al. 2008



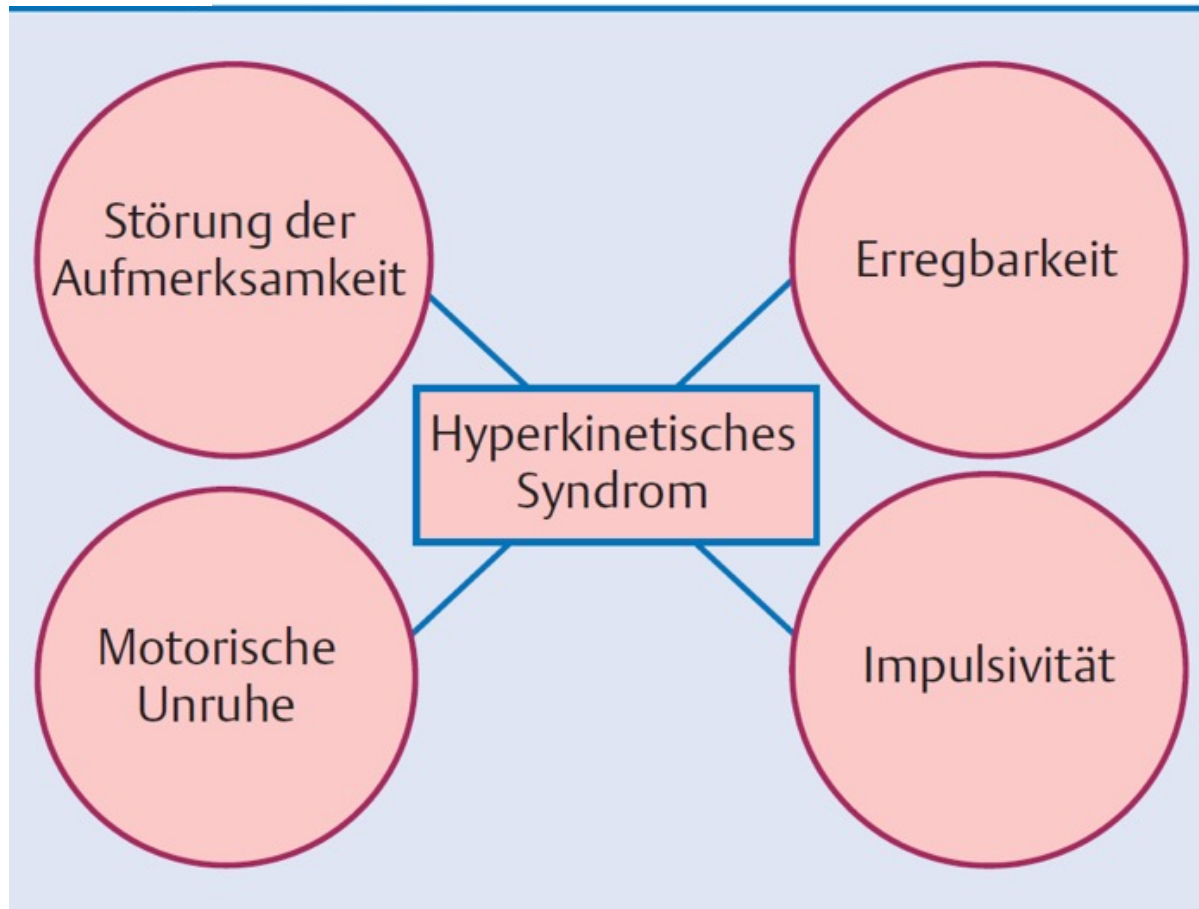
https://www.google.com/url?sa=i&url=https%3A%2F%2Fm.facebook.com%2Fstory.php%3Fstory_fbid%3D510367950454820%26id%3D100044448575764%26m_entstream_source%3Dpermalink&psig=AOvVaw3WU0p1C_2TiOYZX2ENI9e&ust=1710984942736000&source=images&cd=vfe&opi=89978449&ved=0CBIQjRxqFwoTCPCF2-LZgYUDFQAAAAAdAAAAABAD



Kosaka et al. (2018)

Symptome

Hauptsymptome des ADHS



Möller & Laux 2015



https://www.reddit.com/r/garfield/comments/13waj71/so_this_is_garfield_and_he_is_depressed_now_tell/

Es wächst sich nicht aus, aber...

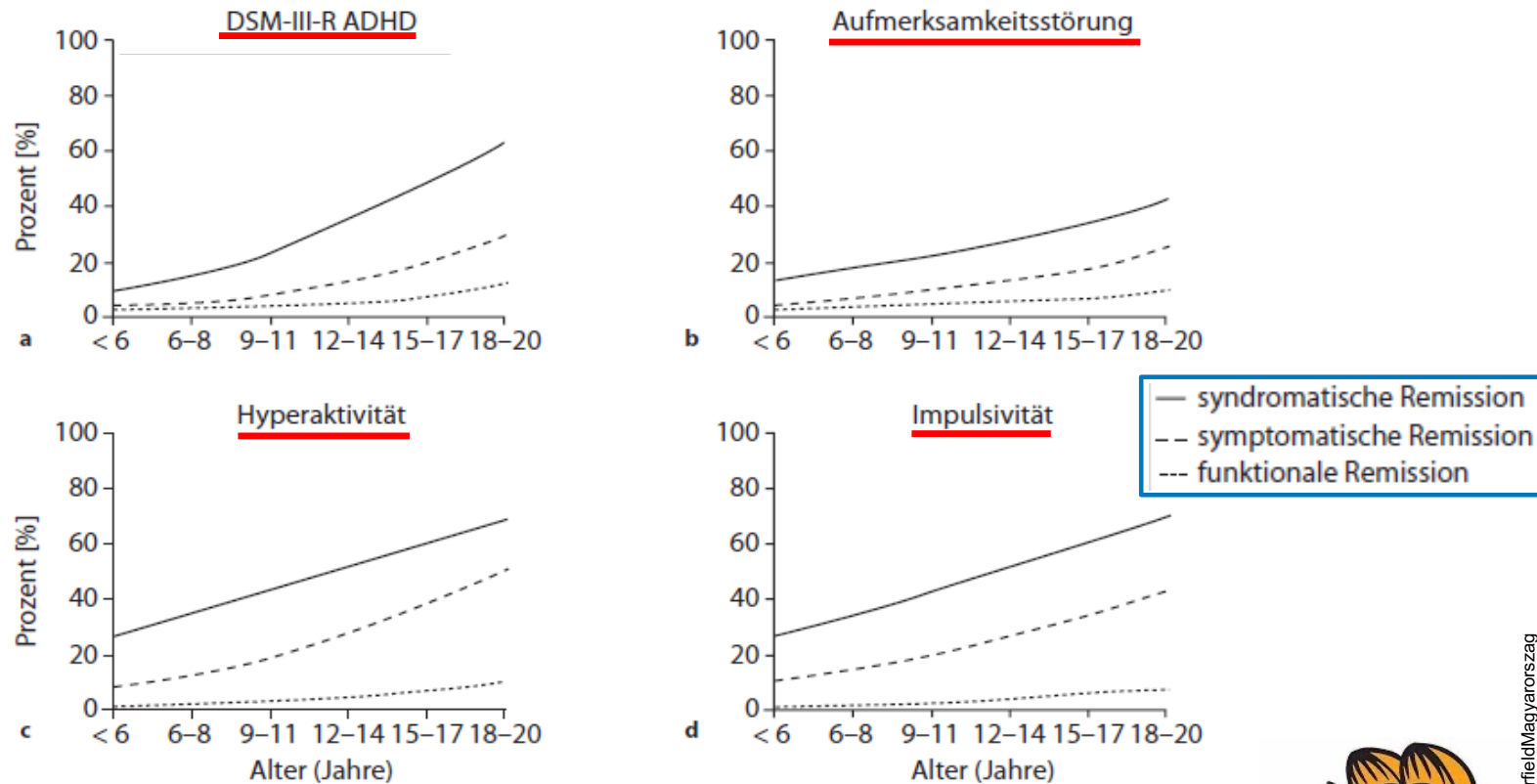


Abb. 4.1a–d. Alterstypischer Verlauf der Einzelsymptome der ADHS; a DSM-III-R AD-HD, b Aufmerksamkeitsstörung, c Hyperaktivität, d Impulsivität. (Aus Biederman et al. 2000)

Edel und Vollmoeller 2006



<https://m.facebook.com/GarfieldMagyarorszag>

"How do I know if I have ADHD?"



Careful!

- ✗ A comic or other online media can't confirm or diagnose your ADHD.
- ✗ These are commonly shared experiences, but aren't necessarily part of the diagnosis testing.
- ✗ A Diagnosis is a long, in-depth procedure, ruling out other possible causes!
- ✗ Many symptoms can overlap with other physical or mental health issues.

ADHD-Alien.com

ADHD-Alien.com



"If only you would apply yourself!"
You feel like you achieve less than your peers despite working just as much.

ADHD-Alien.com



You often get stuck and can't start anything, sometimes even fun things.



"What if I'm just lazy?"
You spend a lot of time trying to figure out why you're so different.



You only have two time settings: "Now" and "Not now". The latter meaning it's probably already 10 minutes past deadline.



You often catch yourself having spent an entire day concentrating, forgetting to even eat or drink.



"Why didn't you just [...]?"
You have heard this question more times than you can count but haven't found the answer yet.



You often feel like people are too slow to follow your thinking.



You often react more emotional than your peers and have a hard time calming yourself down.



Boredom gives you this torturous "itch" in your brain that nothing can satisfy.



You feel like you're playing life on the highest difficulty.



WHY DID I COME HERE
You can't rely on your memory and it feels like it's getting worse and worse.



You can concentrate and think better when you do something with your hands.



You have problems sticking to goals and routines even if they're important to you.



You often find yourself addicted to stimuli like snacking, scrolling on your phone and listening to music.



You have problems deciding what to do in which order or where to start and end up doing nothing.

ADHD-Alien.com

ADHD-Alien.com



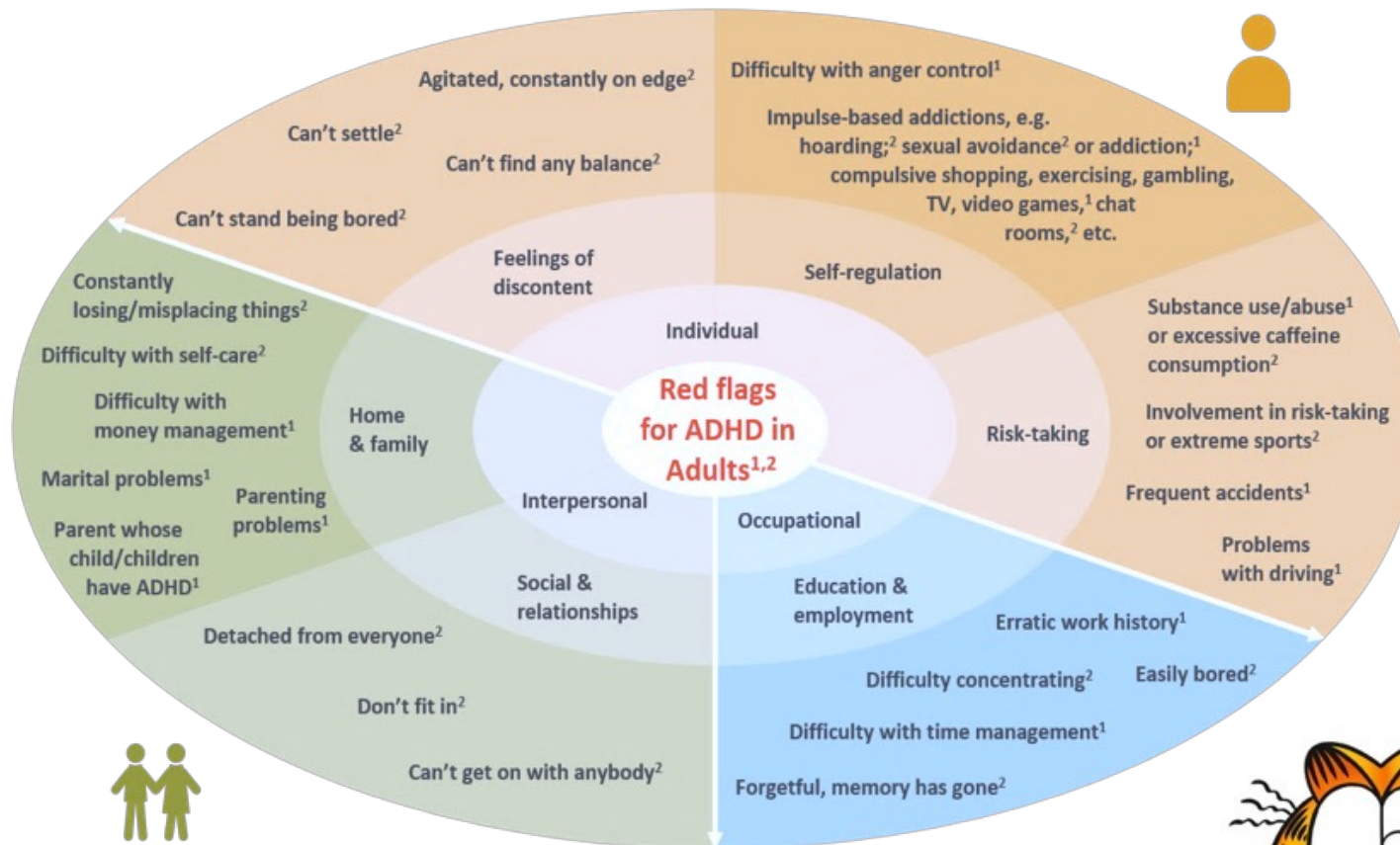
<https://www.baretreemedia.com/portfolio/garfield-line-emojis/>



Lustige Geschichten und drollige Bilder für Kinder von 3-6 Jahren,
„Struwwelpeter“, H. Hofmann 1847



As life goes on...



Canadian Attention Deficit Hyperactivity Disorder Resource Alliance (CADDRA).
Canadian ADHD Practice Guidelines, Fourth Edition. CADDRA, 2018



<https://www.pinterest.de/pin/468585536225969386/>

Table 1.3 Core symptoms of adult ADHD

Attention problems	Quickly distracted, quickly bored
	Difficulty finishing things
	Switching from one activity to another
	Having no overview of main issues and side issues
	Poor ability to plan, organize, and choose
	Inability to read for more than a short time, able to concentrate only if the topic is very interesting
	Difficulty listening, taking in information
	Getting lost in details or being excessively accurate
	Postponing things endlessly
	Difficulty filling in forms, understanding instructions, remembering things
	Doubting
	Forgetfulness
	Often losing things
	Chaotic
Hyperactivity	Temporary overconcentration or hyperfocus
	Difficulty sitting still
	Always busy
	Constantly having to go and pick something up
	A feeling of inner restlessness
	Fidgeting
	Inability to relax peacefully
Impulsivity	Excessive talking
	Blurting things out
	Interrupting others
	Impatience
	Acting without thinking (spending too much, gambling, stealing, impulsive binges, etc.)
	Impulsively starting or leaving relationship and jobs

Kooij 2013



Probleme im „echten Leben“

Table 2.3 Number of times **fired**

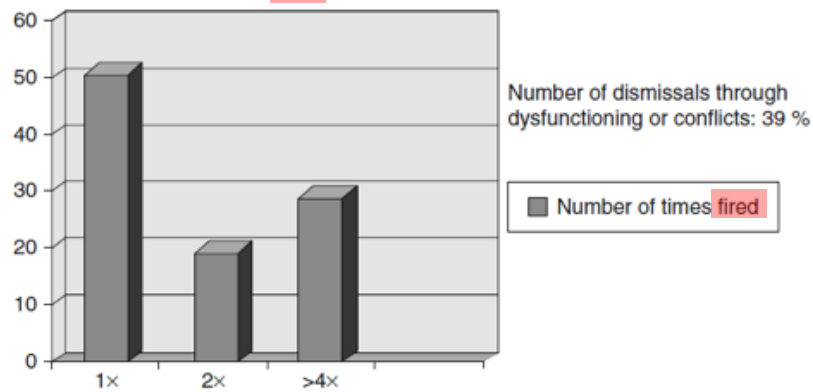


Table 2.4 Number of times **they quit**

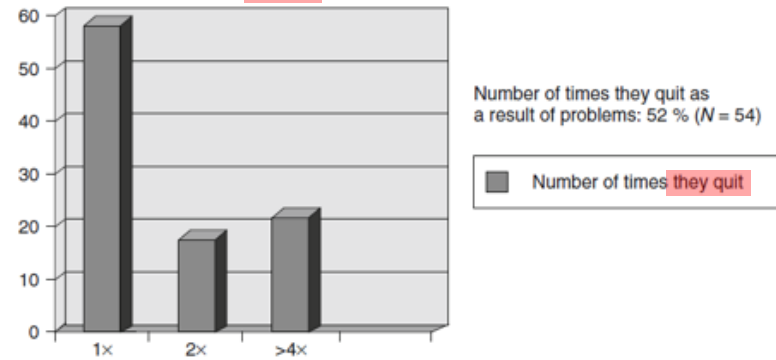
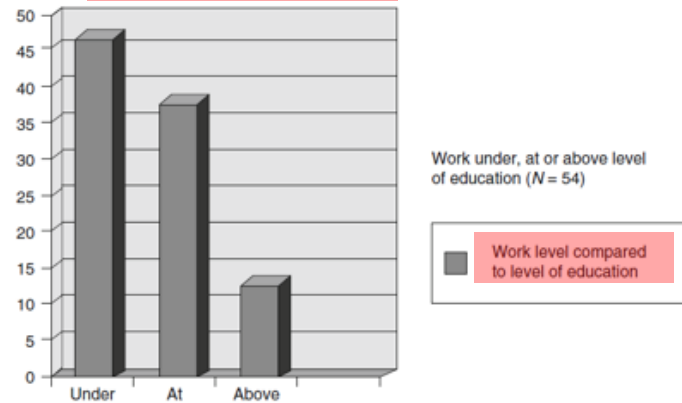
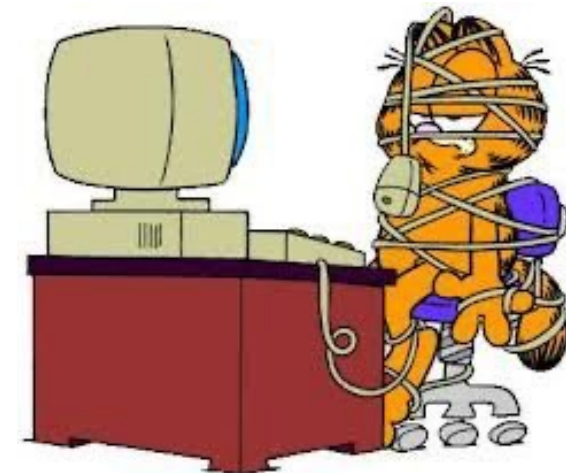


Table 2.5 **Work level compared to level of education**

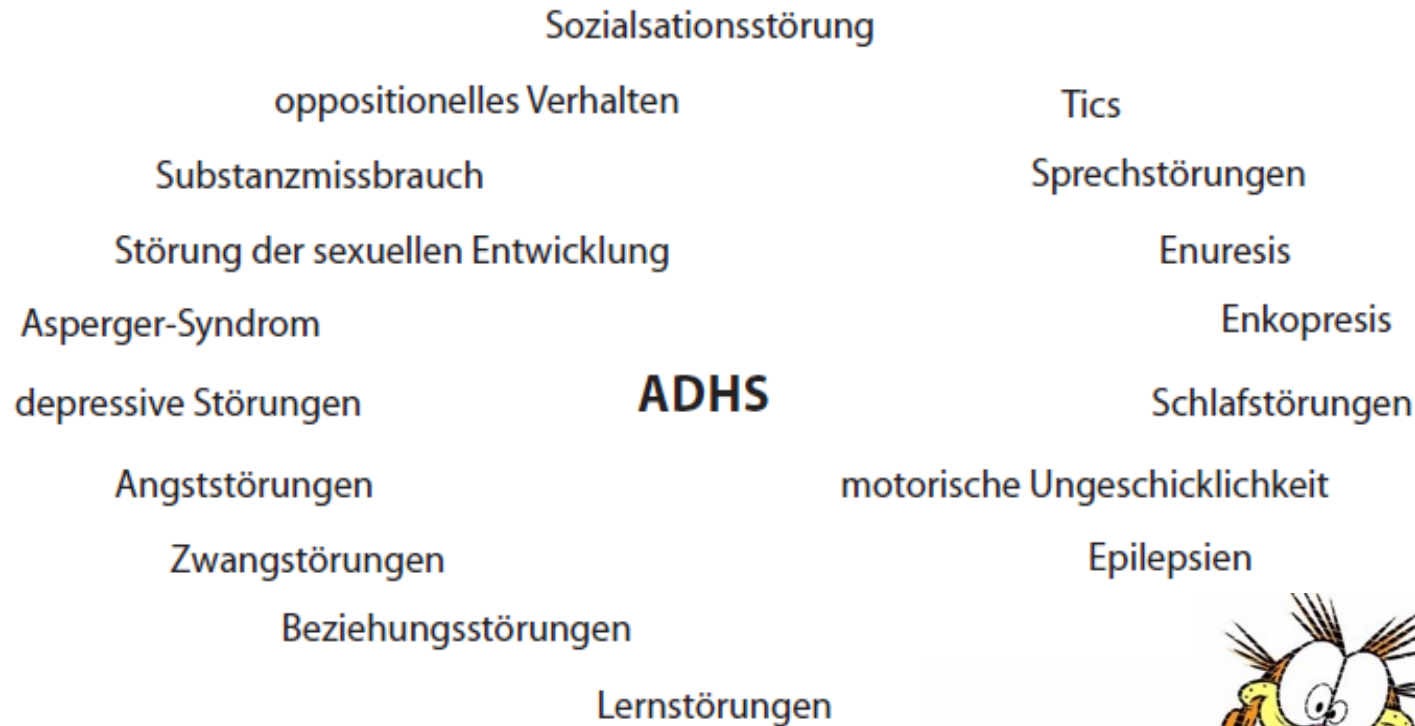


Kooij 2013



<https://www.pinterest.de/pin/527554543821207212/>

Comorbiditäten



■ Abb. 4.2. Komorbidität bei ADHS

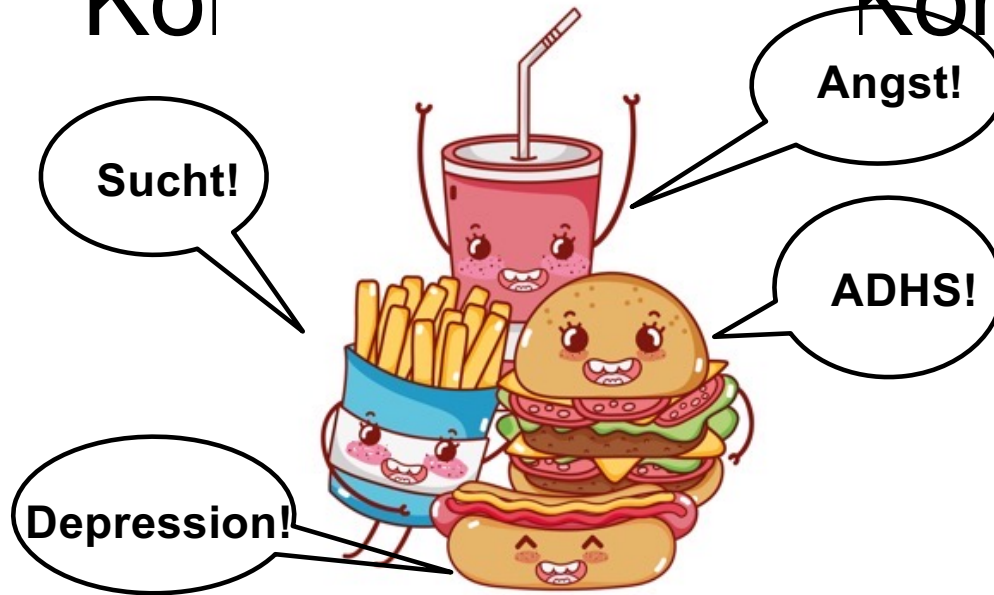
Edel und Vollmoeller 2006



ADHS bei Erwachsenen =>

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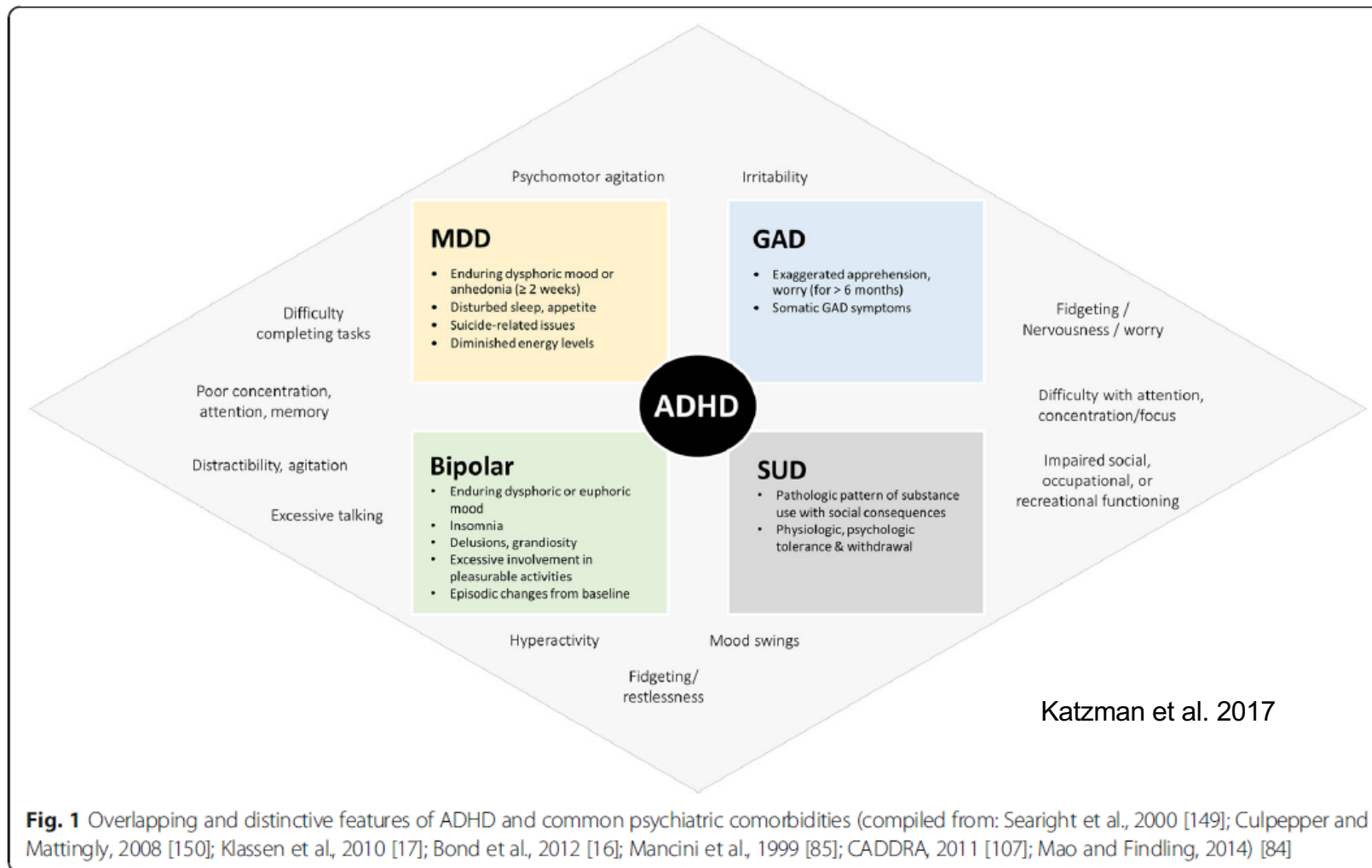
Komplikationen



<https://www.vectorstock.com/royalty-free-vector/fast-food-cute-burger-hot-dog-french-fries-vector-30309201>

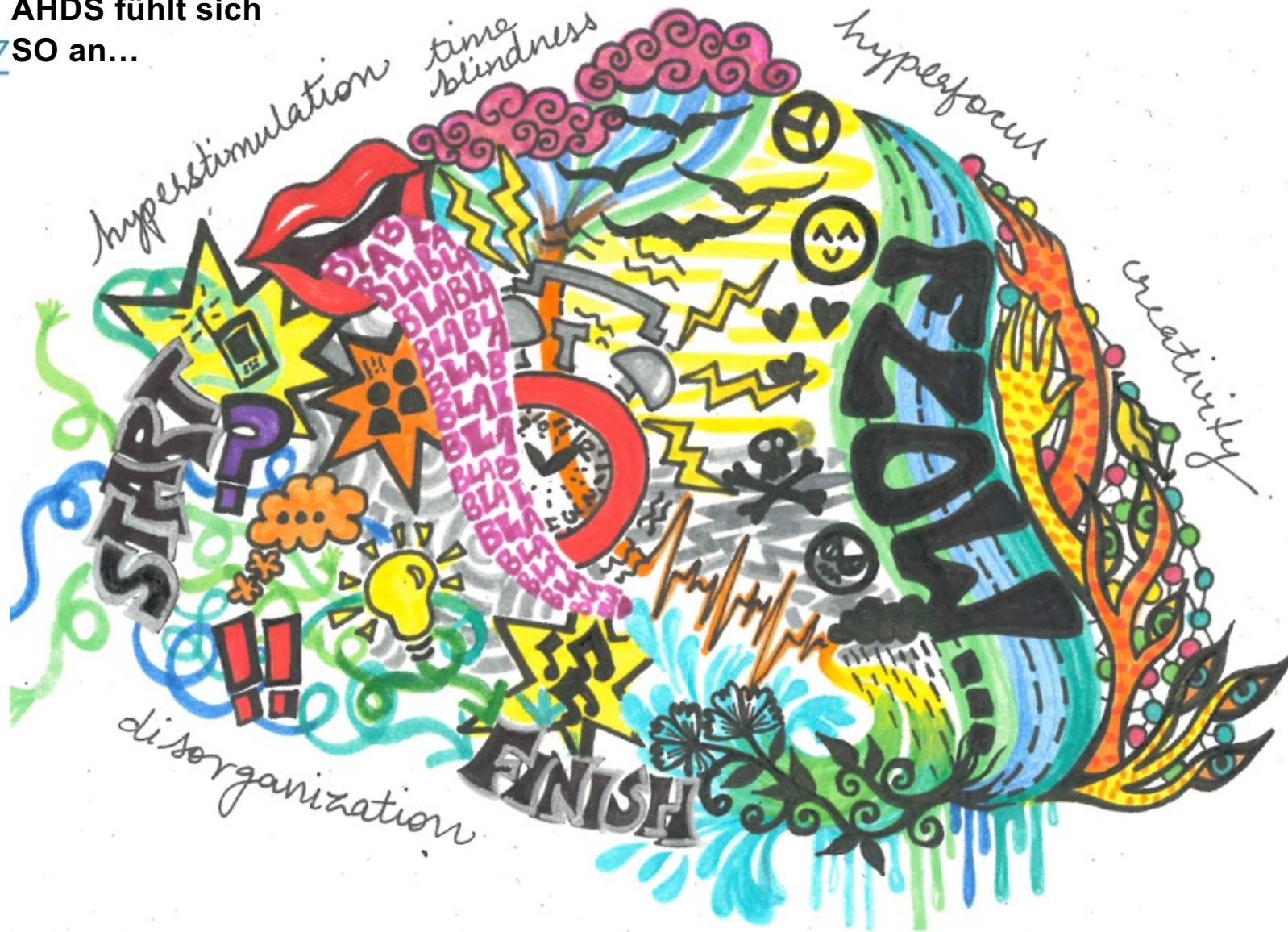


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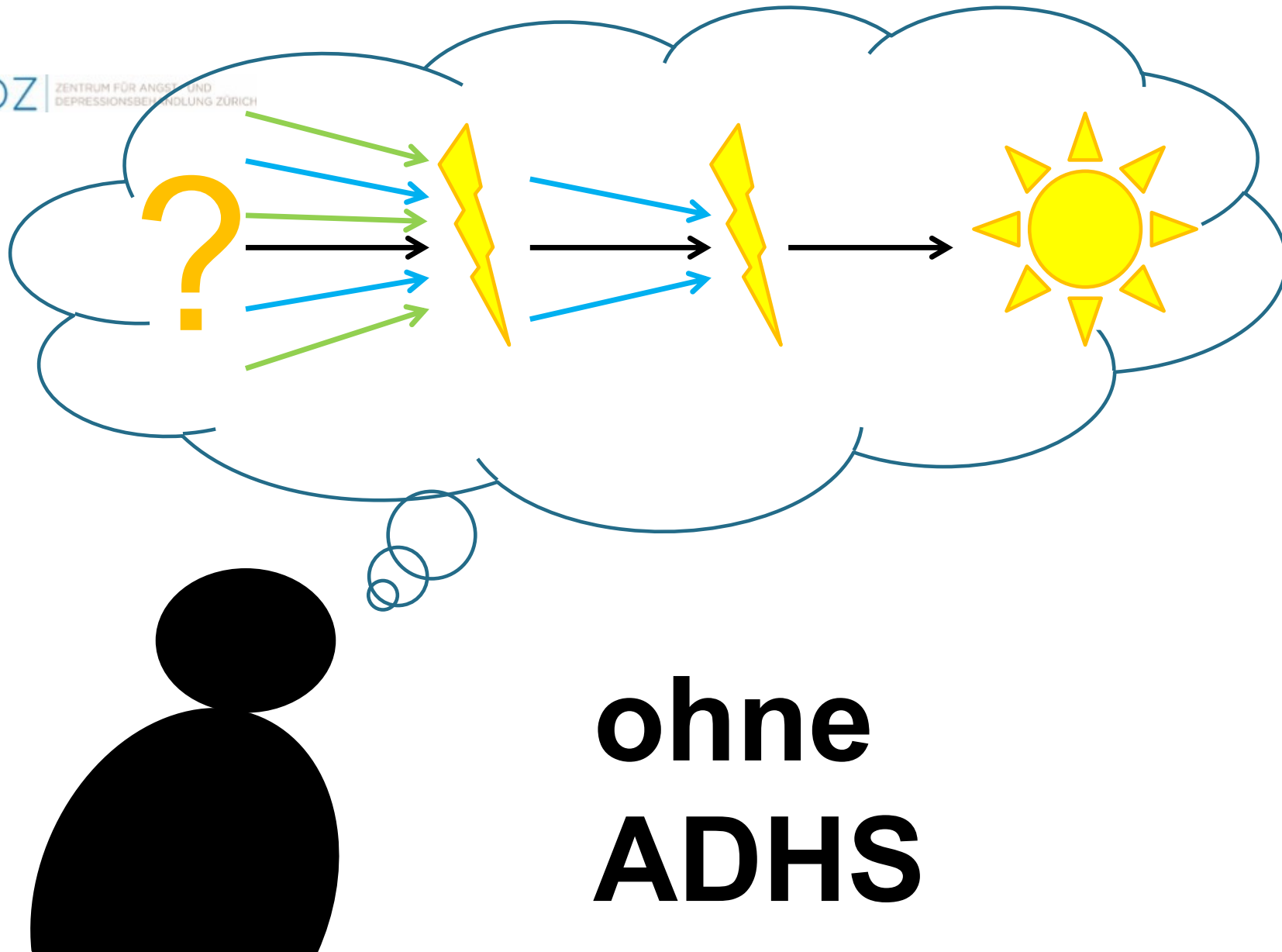
AHDS fühlt sich

 SO an...

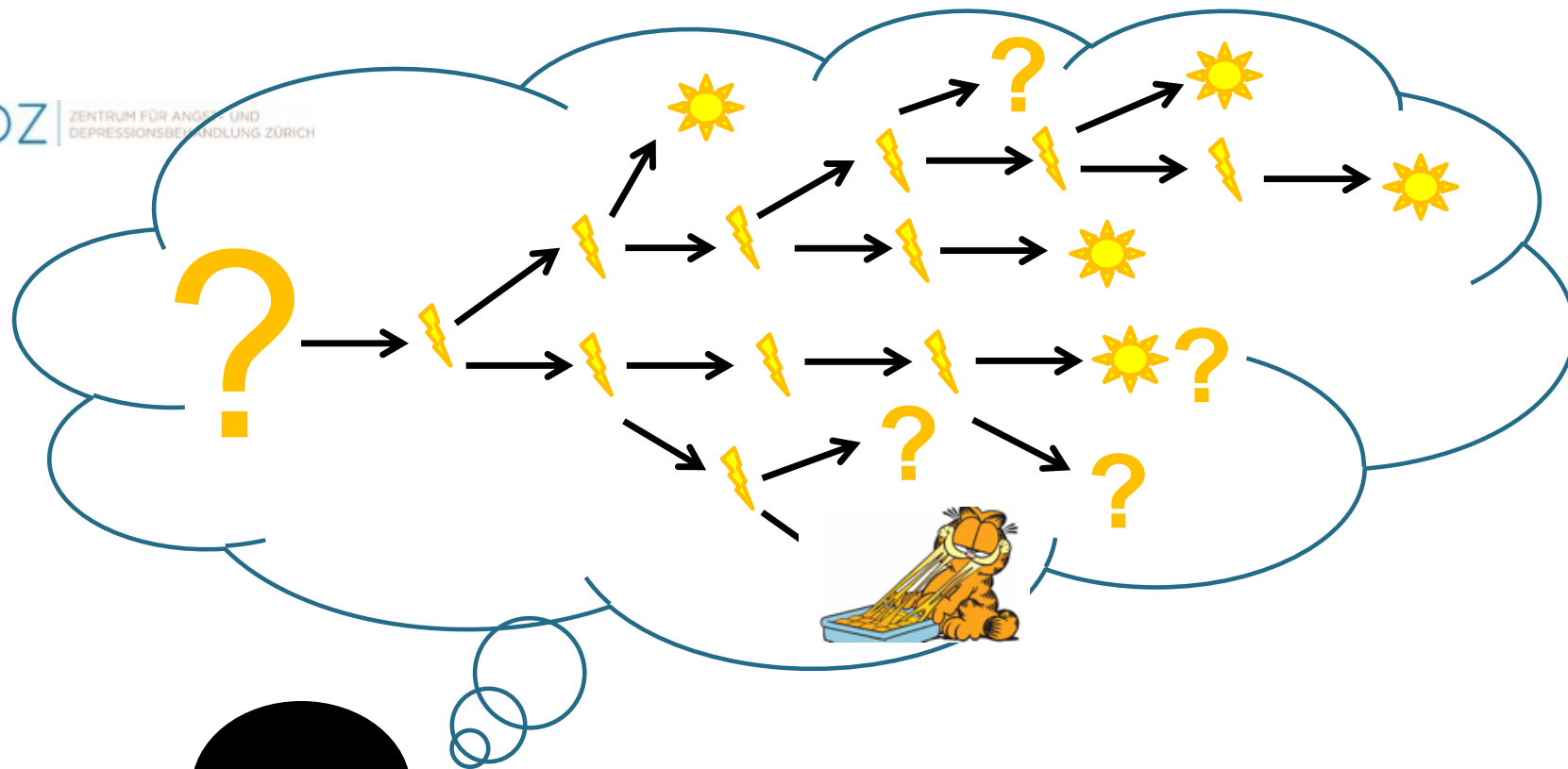


ADHS-illustrativ

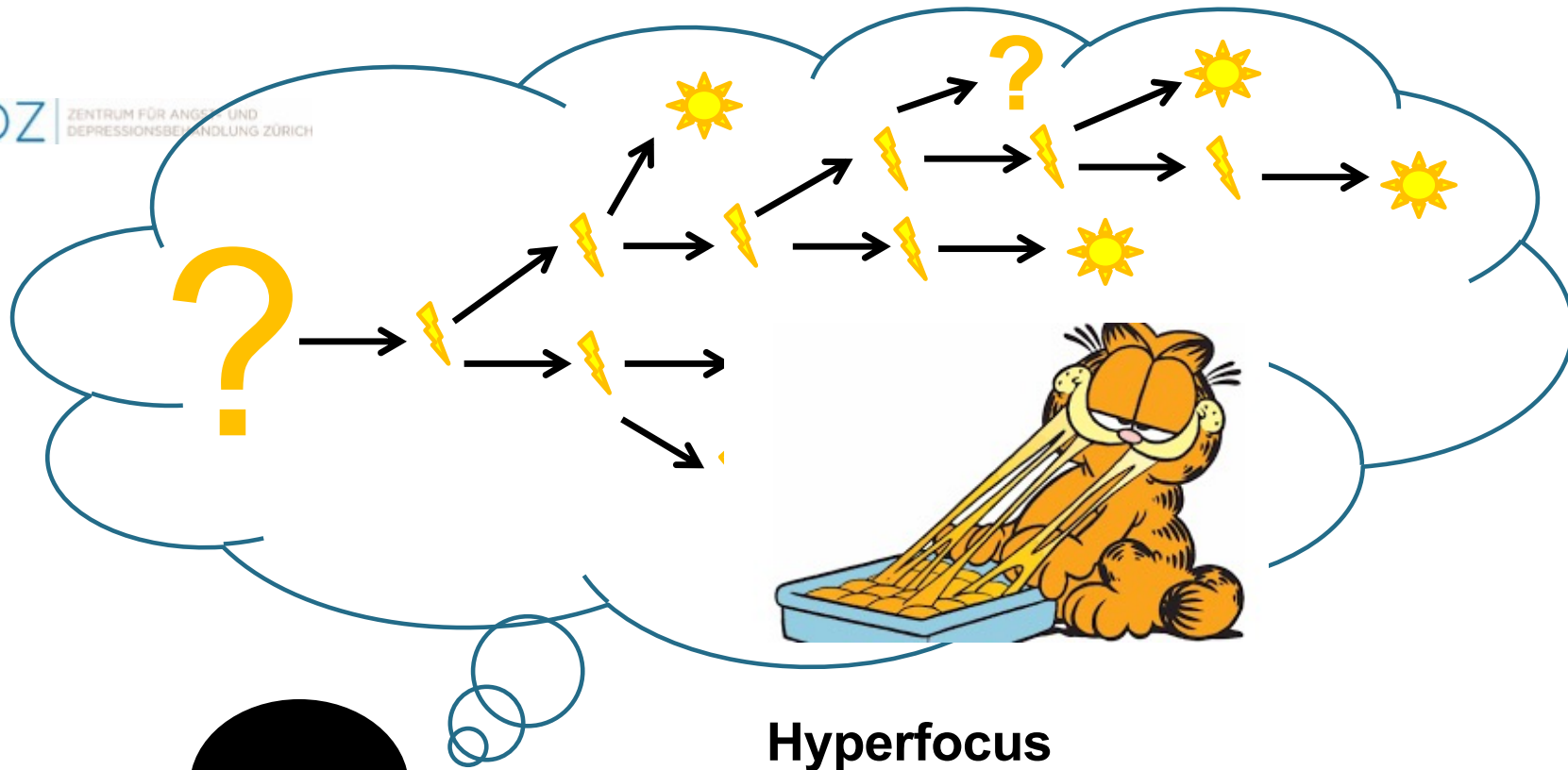
Exkurs: Denkvorgang bei ADHS

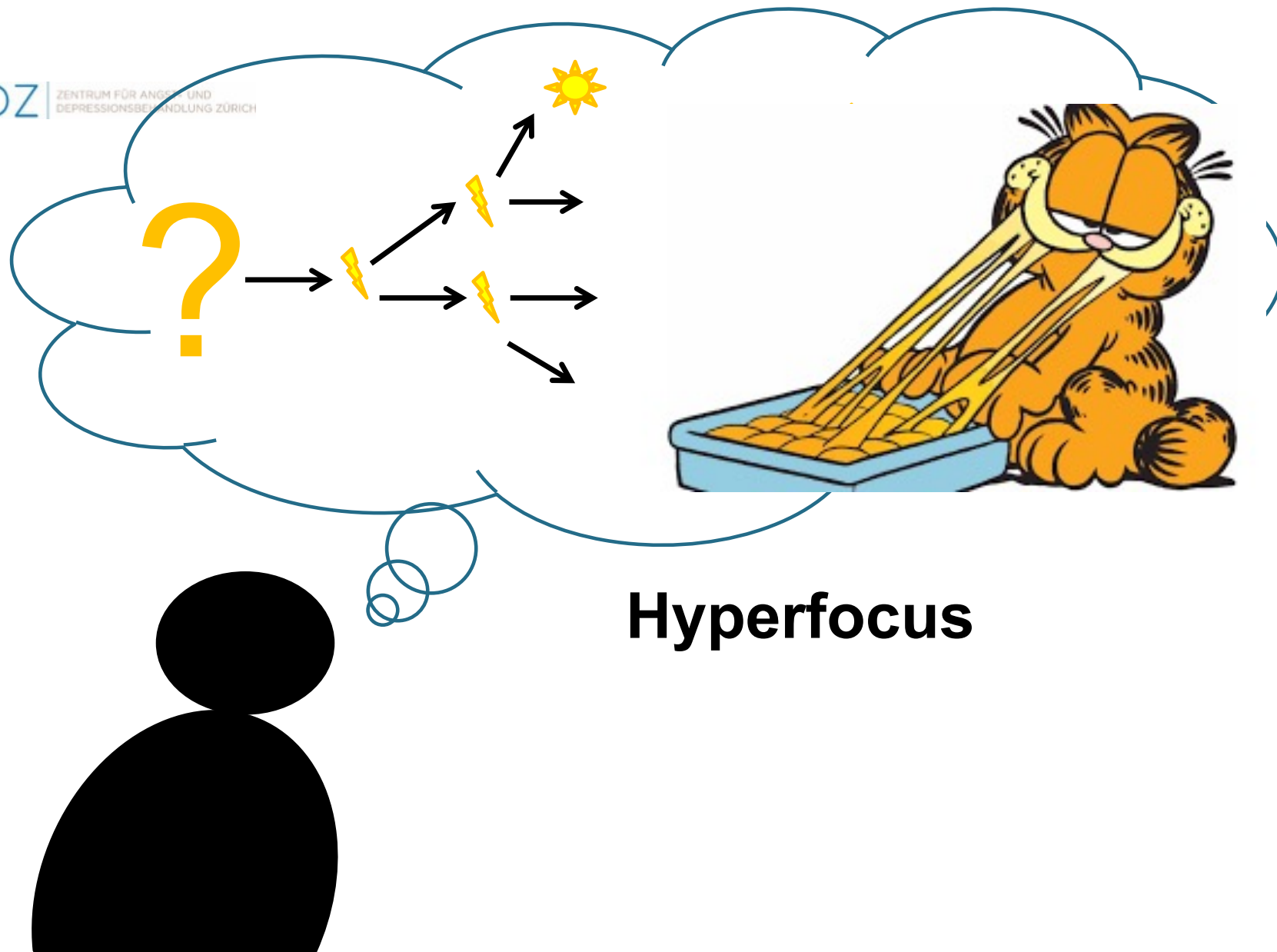


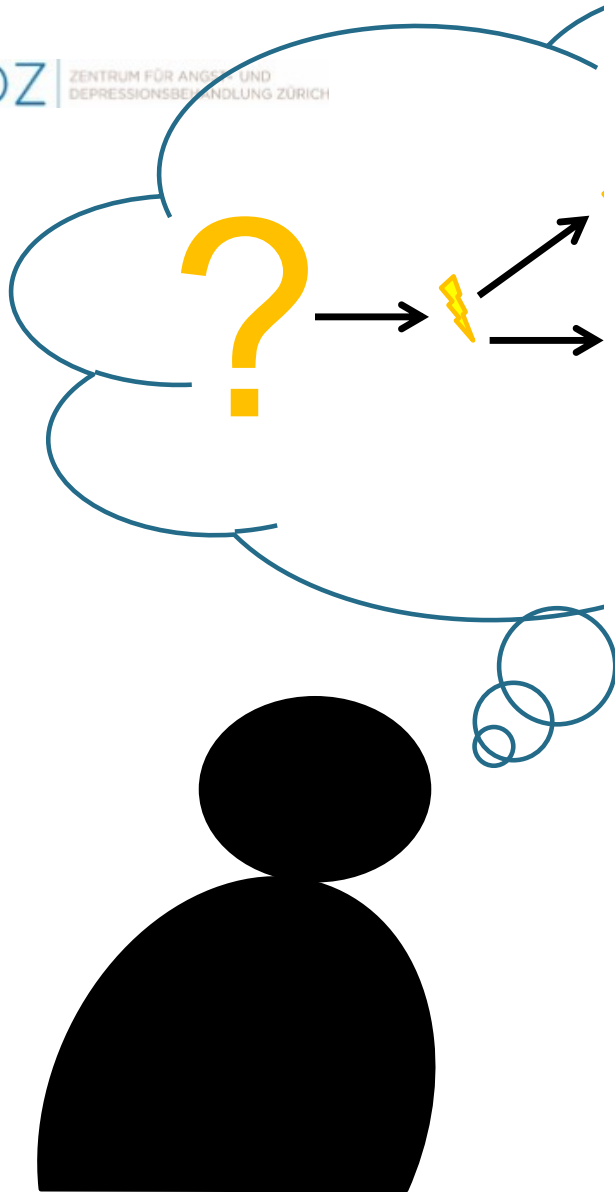




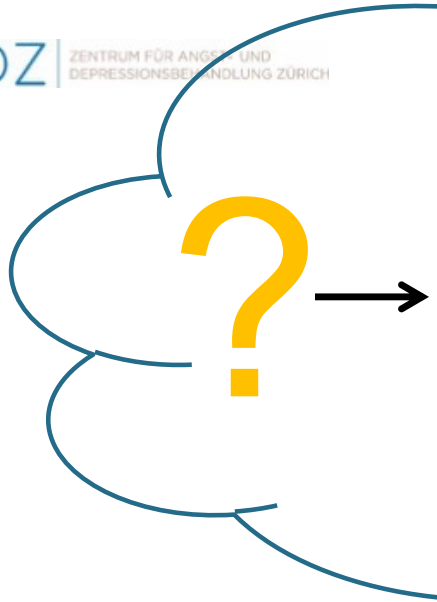
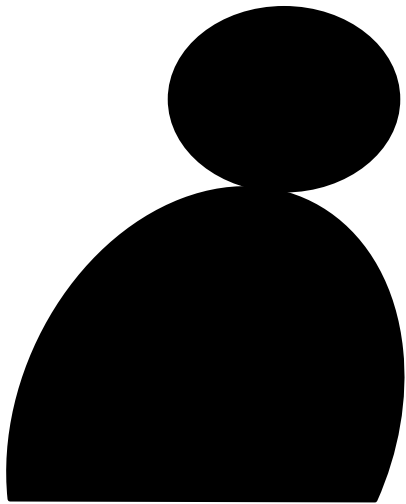
mit ADHS







Hyperfocus



Hyperfocus

Cave: geht auch **negativ**

Unruhig?

ARE YOU A RING TWIDDLER?

Check your nervous habits for signs of jangled nerves

Are you worried? Do you sometimes have trouble in getting to sleep? Have you any of those little nervous habits such as twisting your handkerchief—frowning—playing with your ring?

These may all be signs of jangled nerves. And jangled nerves can frequently make you look years older than you are.

So now is the time to check up. Get enough sleep—fresh air—recreation. And watch your smoking.

Remember, if you smoke Camels—you can smoke as much as you like—for Camel's costlier tobaccos never jangle your nerves.

COSTLIER TOBACCOS
Camels are made from finer, MORE EXPENSIVE TOBACCOS than are other popular brands of cigarettes!

CAMELS
SMOKE AS MANY AS YOU WANT
...THEY NEVER GET ON YOUR NERVES

ARE YOU A PENCIL CHEWER?

Watch out for the telltale signs of jangled nerves

Other people notice them—even when you don't—little nervous habits that are the danger signs for jangled nerves.

And remember, right or wrong, people put their own interpretations on them. So it pays to watch your nerves.

Get enough sleep—recreation—and Camels your smoke, surely if you are a smoker.

For remember, Costlier tobaccos never your nerves—no matter how many you smoke.

COSTLIER TOBACCOS
Camels are made from finer, MORE EXPENSIVE TOBACCOS than are other popular brands of cigarettes!

CAMELS
SMOKE AS MANY AS YOU WANT
...THEY NEVER GET ON YOUR NERVES

ARE YOU A KEY JUGGLER?

Watch out for the signs of jangled nerves

Have you noticed other people's nervous habits and wondered what they were? Or have you noticed your own nervous habits and wondered what they were? Or have you noticed your own nervous habits and wondered what they were?

These may all be signs of jangled nerves. And jangled nerves can frequently make you look years older than you are.

So now is the time to check up. Get enough sleep—fresh air—recreation. And watch your smoking.

Remember, if you smoke Camels—you can smoke as much as you like—for Camel's costlier tobaccos never jangle your nerves.

COSTLIER TOBACCOS
Camels are made from finer, MORE EXPENSIVE TOBACCOS than are other popular brands of cigarettes!

CAMELS
SMOKE AS MANY AS YOU WANT
...THEY NEVER GET ON YOUR NERVES

Who needs stimulant medication when there's tobacco, the leading cause of death, disease, and disability!

Gina Pera, ADHDRollerCoaster.org

Betroffene von SUD (Substance Use Disorder) mit komorbider ADHS zeigen

- Einen früheren Beginn des Substanzkonsums
- Einen schnelleren Übergang zu Substanzgebrauchstörung
- Ein höheres Risiko für Konsumrückfälle im Vergleich zu denen ohne ADHS

McCabe et al., 2016: Age of onset, duration, and type of medication therapy for attention-deficit/hyperactivity disorder and substance use during adolescence: a multi-cohort national study. J Am Acad Child Adolesc Psychiatry. 2016

Die Kombination von 27 allgemeinen Bevölkerungsstudien und klinischen Studien mit mehr als 4.000 ADHS-Teilnehmern und fast 7.000 Teilnehmern ohne ADHS ergab, dass Personen mit ADHS etwa zwei- bis dreimal häufiger eine Nikotin-, Alkohol-, Marihuana-, Kokain- und/oder andere Drogenkonsumstörung entwickeln als Personen ohne ADHS.

Lee et al. 2011: Prospective association of childhood attention-deficit/hyperactivity disorder (ADHD) and substance use and abuse/dependence: a meta-analytic review. Clin Psychol Rev. 2011;31(3):328–41.



https://www.etsy.com/de/market/smoking_garfield

andere Comorbiditäten...



https://www.pinterest.at/pin/436427020130104522/?amp_client_id=CLIENT_ID%28_%29&mweb_unauth_id=%7B%7Bdefault.session%7D%7D&amp_url=https%3A%2F%2Fwww.pinterest.at%2Famp%2Fpin%2F436427020130104522%2F&amp_expand=true

Somatic Disease Category	Common Conditions Linked to ADHD	Strength of Association
Metabolic	Obesity, type 2 diabetes, dyslipidemia, gout	High
Allergic/Autoimmune	Asthma, atopic dermatitis, allergies, psoriasis, rheumatoid arthritis, type 1 diabetes	Moderate to High
Neurological	Migraine, epilepsy, sleep disorders	Moderate
Cardiovascular	Hypertension, heart failure, vascular disease	Modest
Gastrointestinal	Constipation, serious stomach/bowel problems	Modest
Musculoskeletal	Bone fractures, juvenile arthritis	Modest
Oral/Visual	Dental caries, vision problems	Modest

Therapie



<https://www.pinterest.com/pin/garfield--37225134407318626/>

Noch keine Schweizer Leitlinie, aber...

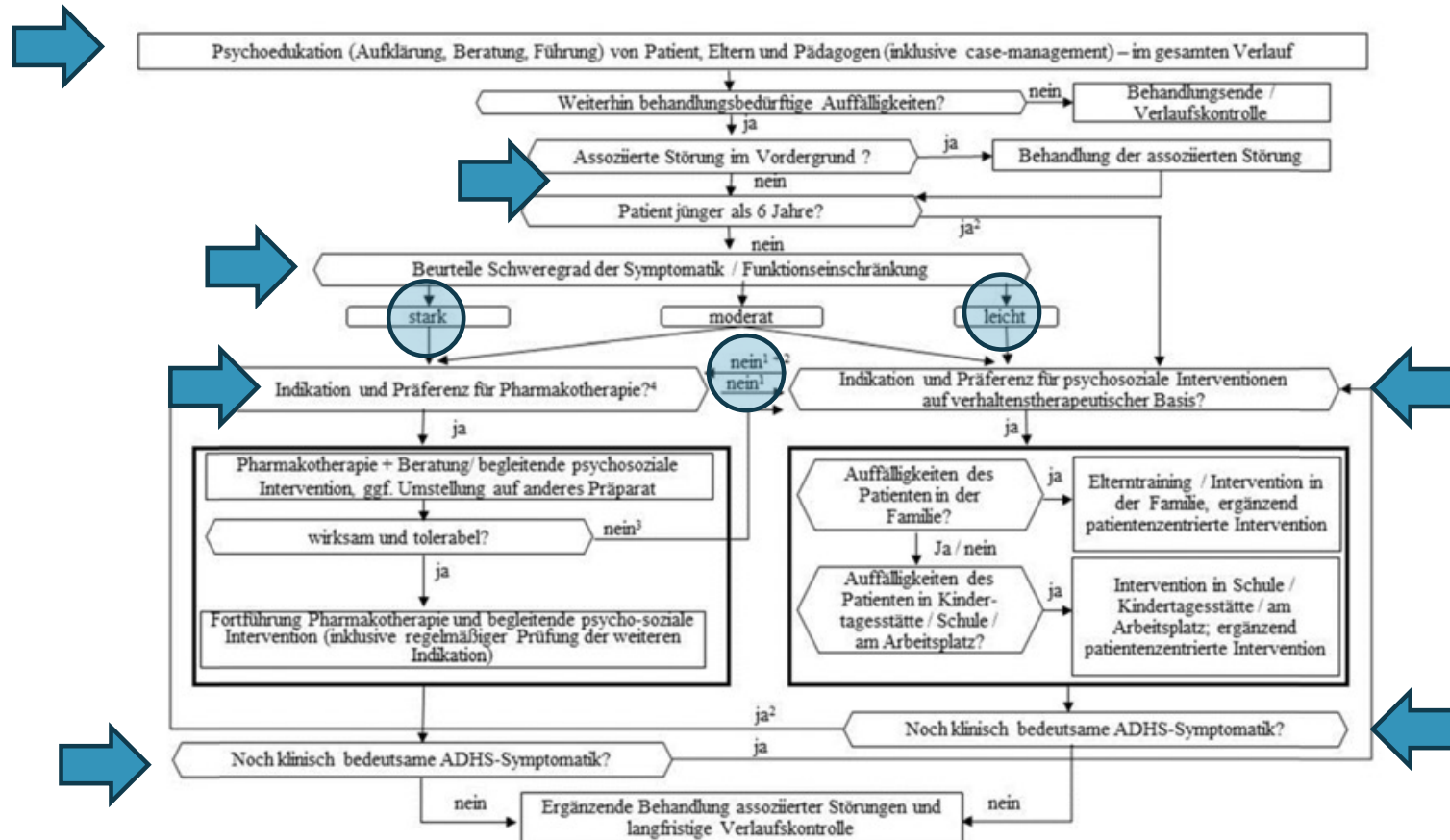
1.4.3.2. Die medikamentöse Behandlung von Patienten mit ADHS, bei denen zusätzlich ein Substanzmissbrauch oder eine Substanzabhängigkeit besteht, sollte durch einen Spezialisten mit Kenntnissen in der Behandlung von ADHS und Sucht erfolgen.

Hinweise zur Evidenz im Abschnitt II.2.4.2 und in der Evidenztabelle im Methodenreport Anhang 11.4.4.

Zustimmung zur Empfehlung: ohne COI 100% - alle 100%

Qualität der Evidenz: Expertenkonsens

Algorithmus für Kinder / Jugendliche



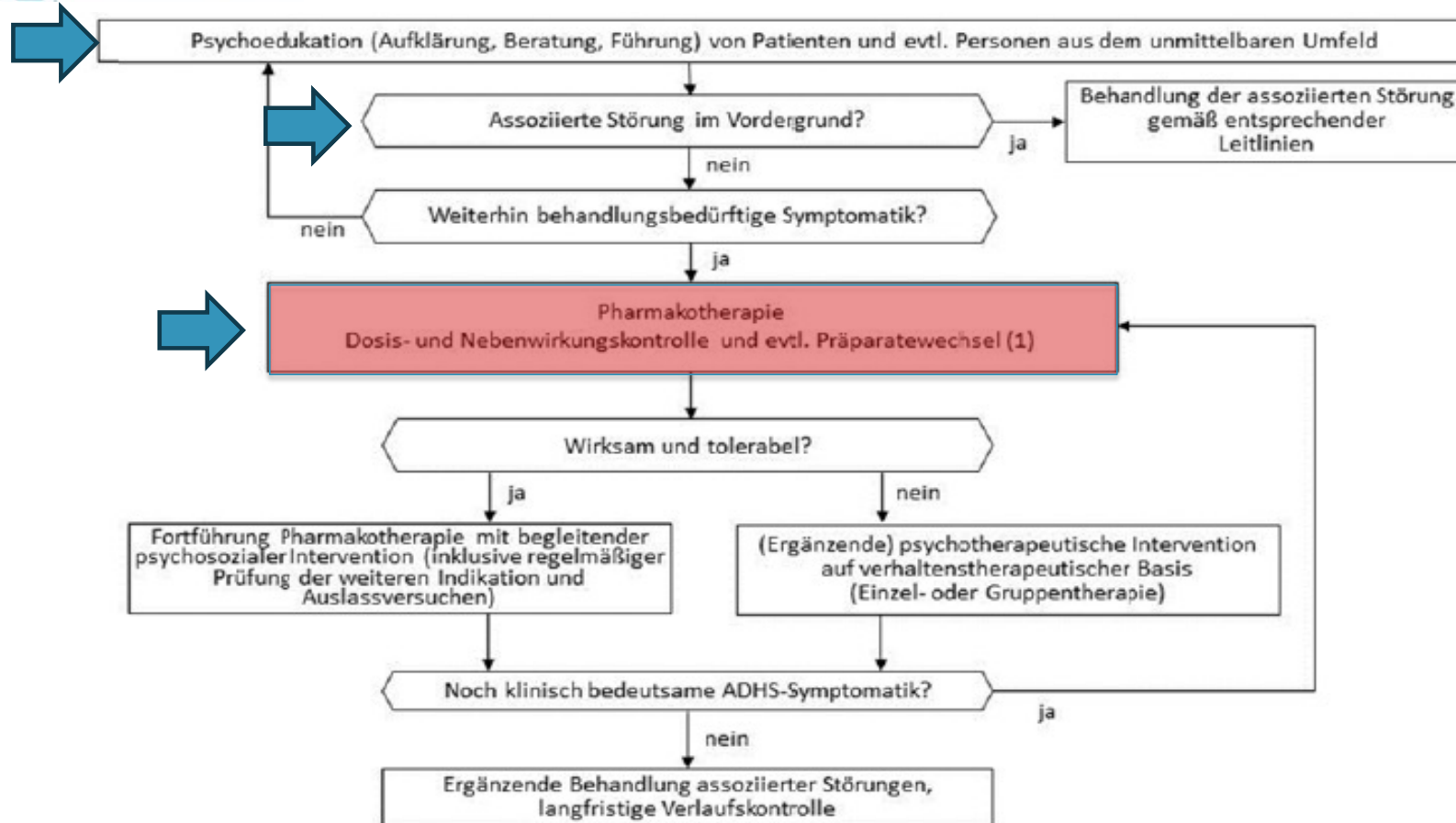
1) Wenn unter den aktuellen Rahmenbedingungen weder psychosoziale Interventionen auf verhaltenstherapeutischer Basis noch Pharmakotherapie indiziert / wirksam sind, sollten bei dringendem Behandlungsbedarf ergänzende therapeutische Maßnahmen (z.B. stationäre Therapie) oder Jugendhilfemaßnahmen erwogen werden.

2) Unter dem Alter von sechs Jahren soll primär psychosozial interveniert werden. In Einzelfällen kann bei behandlungsbedürftiger residualer ADHS-Symptomatik ergänzend eine Pharmakotherapie angeboten werden. Diese sollte nur durch einen Arzt mit besonderen Kenntnissen zu Verhaltensstörungen in dieser Altersgruppe durchgeführt werden. Eine Pharmakotherapie soll nicht vor dem Alter von drei Jahren angeboten werden (siehe Empfehlung 1.2.2 und 1.4.1).

3) Wenn Pharmakotherapie unwirksam: Überprüfen der Adhärenz und der Diagnose.

4) Bei Indikation für Pharmakotherapie kann auch eine Indikation für eine parallele intensive psychosoziale Intervention auf verhaltenstherapeutischer Basis gegeben sein.

Algorithmus für Erwachsene



1) Wenn Pharmakotherapie unwirksam: Überprüfen der Adhärenz und der Diagnose, evtl. stationäre Behandlung

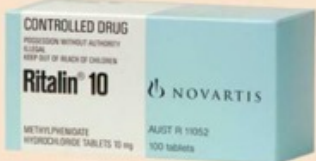
Für Kinder / Jugendliche



Doc: Benway, MD
DEA No. 81246660078630
555-0420
RX: Ritalin 10mg
Patient: Donny Brooks
Disp: 30 pills
Sig: one every day by mouth
Refills: 12
Date: 4/1/14
Dr. Benway

Norm Ratwell

“Look, Mom - no ADHD!”



CONTROLLED DRUG
POSSESSION WITHOUT AUTHORITY
IS ILLEGAL
KEEP OUT OF REACH OF CHILDREN
Ritalin 10
METHYLPHENIDATE
HYDROCHLORIDE TABLETS 10 mg
NOVARTIS
AUST R 110612
100 tablets

Parents, educators and law enforcement officials agree that Ritalin helps boys to behave in compliance with socially accepted standards.

<https://www.ebay.de/itm/191430042241>

Auch für Erwachsene...?

...erst seit 1971 auf BtM-Rezept



Ritalin®

Ritalin gently overcomes mild depression and the fatigue so often associated with it. This is one agent that really brightens mood and improves performance, helps restore alertness, enthusiasm, and drive. Patients often report that fatigue and worry seem to vanish; they are able to go all day without becoming tired.

Acts in minutes Unlike other antidepressants, Ritalin usually brings relief with the very first dose. Your patients need not wait days or even weeks to begin feeling better. Ritalin also . . .

Offers outstanding safety Unlike amphetamines, Ritalin rarely affects blood pressure or heart rate. It has not been associated with muscle tremors or urinary retention as have the potent MAO inhibitors or tricyclic compounds. And toxic or adverse effects on blood, urine, liver or kidney function are not to be anticipated. For these reasons, Ritalin . . .

Proves especially valuable for the elderly This time-tested agent is well tolerated, even by older patients. It rarely affects appetite or causes rebound depression.

Dosage: Oral: Initially, two 10-mg. tablets in the morning, one at noon, and one more, if necessary, at 5:00 p.m. For maintenance, revise as needed.

Side-effects: Nervousness or insomnia, if present, can be avoided by dosage reduction or by omitting Ritalin in the afternoon. Reports note a few cases of anorexia, dizziness, headache, palpitations, dryness of the mouth, and psychomotor behavior and psychic dependency. Caution has recommended for severe depression, except in hospital under close supervision. Patients with agitation may react adversely. Use cautiously in the presence of marked anxiety or tension. Ritalin may potentiate the effect of pressor agents, exercise care in use with epinephrine, levaterrenal, or angiotensin analogs. While oral Ritalin has little or no effect on normal blood pressure, use cautiously in patients who have hypertension.

Contraindications: Glaucoma, epilepsy.

Supplied: All forms contain methylphenidate hydrochloride. Tablets of 10 mg. (pink blue, scored); bottles of 100 and 500. Tablets of 20 mg. (pink, scored); bottles of 100 and 500. Ampoules of 20 mg. (lyophilized); boxes of 10 and 100.

Helps relieve chronic fatigue and apathy quickly

CIBA
DORVAL, QUÉBEC

0062



Brighten the day

overcome depression, fatigue, lethargy

improve spirits and performance

with

Ritalin®

hydrochloride
(methylphenidate hydrochloride DIB)

... new mild smooth-acting antidepressant and stimulant, chemically unrelated to the amphetamines.

• Ritalin brightens outlook and renews vigor—overcomes drug sedative effects—often improves behavior in the elderly. In most cases, Ritalin does not overstimulate, has little or no effect on appetite, blood pressure or pulse rate.

AVERAGE DOSE: 10 mg. b.i.d. or t.i.d.

SUPPLIED: Tablets, 5 mg. (yellow), 10 mg. (light blue), 20 mg. (teach-colored)

INDICATIONS:

- the depressed
- the psychically fatigued
- the apathetic
- the oversaturated
- the moody

CIBA BURNETT, N.J.

2023

Adverse Effects of Stimulant Interventions for Attention Deficit Hyperactivity Disorder (ADHD): A Comprehensive Systematic Review

Ankita Nanda ¹, Lakshmi Sai Niharika Janga ¹, Hembashima G. Sambe ¹, Mohamed Yasir ¹, Ruzhual K. Man ¹, Amaresh Gogikar ¹, Lubna Mohammed ²

analysis. Conclusions indicate that the administration of stimulant medications can potentially translate into a small rise in blood pressure along with increased heart rate particularly when amphetamines are taken. However, no reports of notable serious cardiovascular events have emerged. In the domain of neuropsychiatry, it appears that long-term usage of methylphenidate generally bears no serious consequences, even though a hike in risk levels related to the occurrence of psychotic episodes was detected among those treated with amphetamines. Several gastrointestinal side effects including decreased appetite and stomach pain were reported, however, findings regarding ocular abnormalities or growth-related effects stood inconclusive.

Therefore, based on this data the consensus is that stimulant medications do generate manageable and mild negative outcomes within the ADHD population. It is vital however to highlight the need for careful observation and further scientific inquiry to achieve a better grasp on both immediate as well as long-term implications involved.

Nanda A, Janga L, Sambe H G, et al. (September 26, 2023) Adverse Effects of Stimulant Interventions for Attention Deficit Hyperactivity Disorder (ADHD): A Comprehensive Systematic Review. Cureus 15(9): e45995. DOI 10.7759/cureus.45995

Online ahead of print.

An updated safety review of the current drugs for managing ADHD in children

Erika Ryst ¹, Ann Childress ²

Affiliations + expand

PMID: 37843488 DOI: [10.1080/14740338.2023.2271392](https://doi.org/10.1080/14740338.2023.2271392)

Areas covered: This manuscript provides an updated safety review of medications used to treat ADHD in children and adolescents. PubMed and OneSearch online databases were utilized to search for literature relevant to the topic of ADHD medications and safety. Clinical trials of medications used to treat ADHD, systematic reviews and meta-analyses, and articles covering specific safety issues (adverse or unfavorable events) such as cardiovascular effects, seizures, impact on growth, depression, suicidal ideation, substance use disorders, psychosis, and tics are described.

Expert opinion: Available pharmacologic treatments for ADHD have favorable efficacy, safety and tolerability and allow many patients to achieve significant improvement of their symptoms. Despite the availability of multiple stimulant and non-stimulant formulations, some individuals with ADHD may not tolerate available medications or attain satisfactory improvement. To satisfy unmet clinical needs, ADHD pharmaceutical research with stimulant and nonstimulant formulations targeting dopamine, norepinephrine, and novel receptors is ongoing.

As described in earlier sections of this review, many, but not all, AEs are common across all catecholaminergic ADHD drugs. ADHD drugs are usually referred to as “stimulants” and “non-stimulants”. Based on pharmacology, therapeutic and AE profile, we propose that the α_2 -adrenoceptor agonists should be classified as “sedative” ADHD drugs.

S Clare Stanford • Emma Sciberras (Editors)
New Discoveries in the Behavioral Neuroscience of Attention-Deficit Hyperactivity Disorder,
Springer 2022

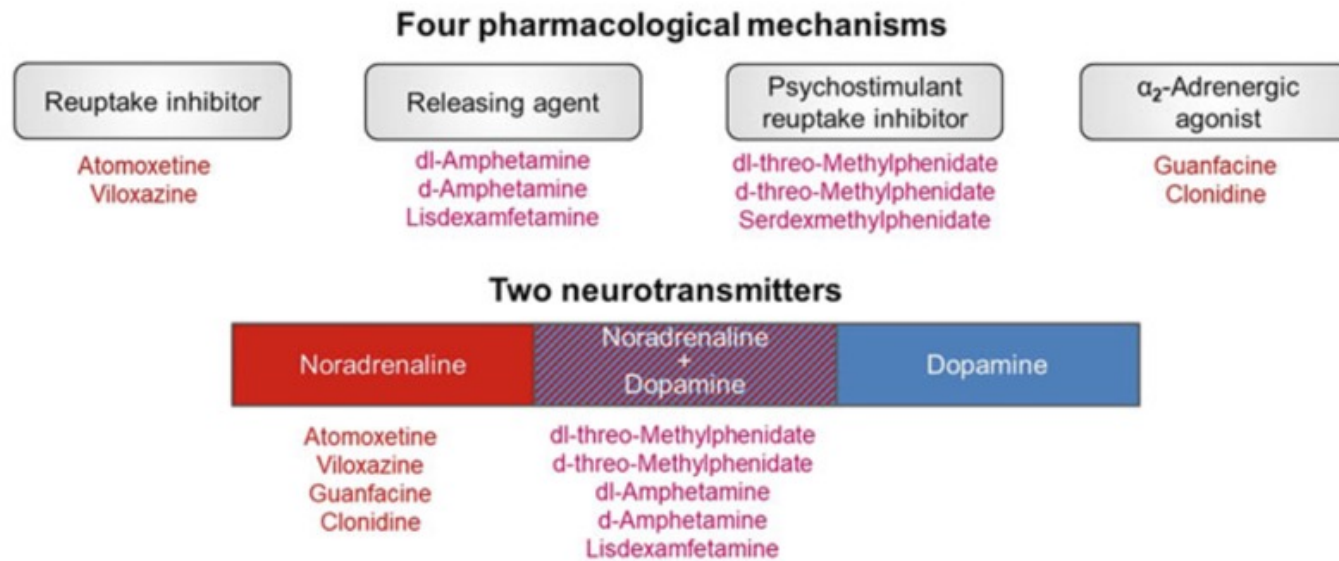


Fig. 1 Mechanism of action of ADHD drugs

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Springer 2022

Table 1 List of drugs currently approved to treat ADHD

	Generic drug name	Trade names	Generic versions	Mode of action	USA		UK/Europe	
					Children adolescents	Adults	Children adolescents	Adults
➡	d-Amphetamine Attentin	Adzenys ER, Adzenys XR-ODT, Dexedrine Spansules, Dyanavel XR Evekeo, Evekeo ODT	Yes	Catecholamine (NA +DA) releasing agent ^a	Yes	Yes	Yes	Yes
	Mixed salts/mixed enantiomers amphetamines (3:1 mixture of d- and l-isomers)	Adderall, Adderall-XR	Yes	Catecholamine (NA +DA) releasing agent ^b	Yes	Yes	N/A	N/A
	Methamphetamine	Desoxyn	Yes	Catecholamine (NA +DA) releasing agent ^c	Yes	Not approved	N/A	N/A
➡	Lisdexamfetamine (d-Amphetamine prodrug) Elvanse	Vyvanse	No	D-Amphetamine prodrug Catecholamine (NA +DA) releasing agent	Yes	Yes	Yes	Yes
➡	dl-threo-Methylphenidate Ritalin, Ritalin LA, Medikinet, Medikinet MR, Concerta	Aptensio XR, Concerta, Concerta XL, Cotempla XR-ODT, Daytrana, Delmosart, Equasym XL, Jornay PM ER, Matoride XL, Medikinet XL, Metadate CD, Methylin, Quillichew ER, Quillivant XR, Relexxii, Ritalin, Ritalin SR, Xaggitin XL, Xenidate XL	Yes	Psychostimulant catecholamine (NA+DA) reuptake inhibitor	Yes	Yes	Yes	Yes
➡	d-threo-Methylphenidate	Focalin, Focalin-XR	Yes	Psychostimulant catecholamine (NA+DA) reuptake inhibitor ^d	Yes	Yes	N/A	N/A

(continued)

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New Discoveries in the Behavioral Neuroscience of Attention-Deficit Hyperactivity Disorder,
Springer 2022

Table 1 (continued)

Generic drug name	Trade names	Generic versions	Mode of action	USA		UK/Europe	
				Children adolescents	Adults	Children adolescents	Adults
Serdexmethylphenidate (d- <i>threo</i> -methylphenidate prodrug) + d- <i>threo</i> -methylphenidate	Azstarys	No	Psychostimulant catecholamine (NA+DA) reuptake inhibitor ^d	Yes	Yes	N/A	N/A
Atomoxetine Strattera	Strattera	Yes	NA-selective reuptake inhibitor	Yes	Yes	Yes	Yes
Viloxazine	Qelbree	No	NA-selective reuptake inhibitor/5HT _{2C} agonist/5HT _{2B} antagonist ^e	Yes	No	N/A	N/A
Guanfacine Intuniv	Intuniv, Tenex	Yes	α _{2A} -Adrenoceptor agonist	Yes ^f	Yes ^f	Yes	Not approved
Clonidine Catapresan	Kapvay	Yes	α _{2A} -Adrenoceptor agonist	Yes ^f	Yes ^f	N/A	N/A

N/A Not available, NA norepinephrine, DA dopamine

^a Profile in vivo DA ≥ NA (Heal et al. 2009)

^b Profile in vivo DA ≈ NA (Heal et al. 2008)

^c Profile in vivo DA > NA with lower potentiating effect on NA transmission in PFC (Kuczenski et al. 1995; Shoblock et al. 2003, 2004)

^d Profile in vivo almost identical to dl-*threo*-methylphenidate (Heal and Pierce 2006; Heal et al. 2009).

^e Yu et al. (2020)

^f Also approved as adjunctive therapy in combination with stimulants

Table 2 New drug-candidates evaluated as potential treatments for ADHD

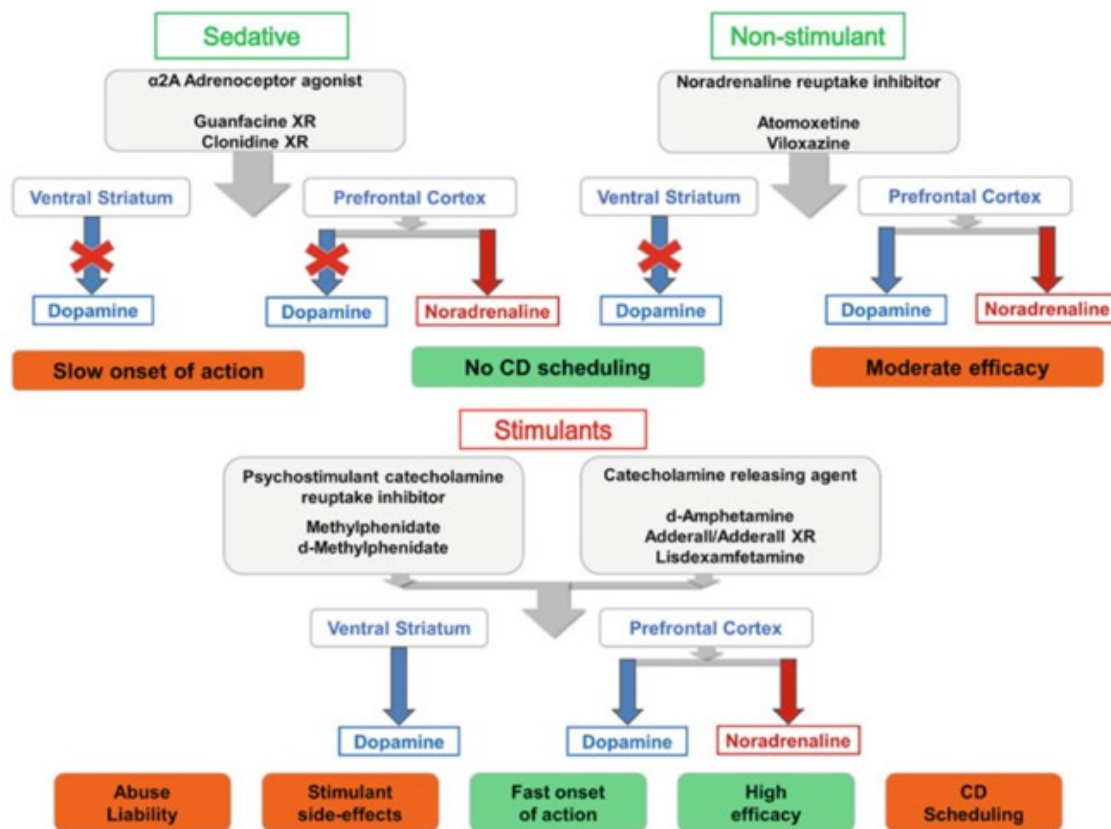
Drug-candidate	Mode of action	Company	Status in ADHD	References
Centanafadine (EB1020)	Noradrenaline + dopamine reuptake inhibitor	Otsuka/ Neurovance	Phase 3 in children Positive findings in Phase 2 and 3 trials in adults	Wigal et al. (2020b)
Mazindol	Noradrenaline + dopamine reuptake inhibitor	NLS Pharmaceuticals	Phase 2/3 Positive findings in Phase 2 trials in adults and children	Konofal et al. (2014) Wigal et al. (2018)
Dasotraline	Noradrenaline + dopamine reuptake inhibitor	Sunovion	Positive findings in Phase 3 trials FDA declines approval Discontinued in 2020	Adler et al. (2021) Findling et al. (2019)
Vortioxetine	Serotonin reuptake inhibitor + 5HT _{1A} agonist + 5-HT ₃ antagonist	Lundbeck	Lack of efficacy in Phase 2 trial Discontinued in ADHD	Biederman et al. (2019)
Edivoxetine (LY22166840)	Noradrenaline reuptake inhibitor	Eli Lilly	Positive findings in Phase 2 trials Discontinued in 2013	Lin et al. (2014) Nery et al. (2017)
GSK372475 (NS2359)	Triple monoamine reuptake inhibitor	GSK/ Neurosearch	Lack of efficacy Discontinued	Wilens et al. (2008)
DOV102677	Triple monoamine reuptake inhibitor	Dov Pharmaceuticals	Discontinued Company wound up	No published data
SPD473	Triple monoamine reuptake inhibitor	Shire Pharmaceuticals	Discontinued Shire acquired by Takeda	No published data
Posanicline (ABT089)	Nicotine α_4/β_2 partial agonist	AbbVie/ NeuroSearch	Lack of efficacy Discontinued Neurosearch wound up	Wilens et al. (2011) Bain et al. (2012) Apostol et al. (2012)
AZD1446 (TC6683)	Nicotine α_4/β_2 partial agonist	AstraZeneca/ Targacept	Lack of efficacy Discontinued Targacept acquired by catalyst	Jucaite et al. (2014)

(continued)

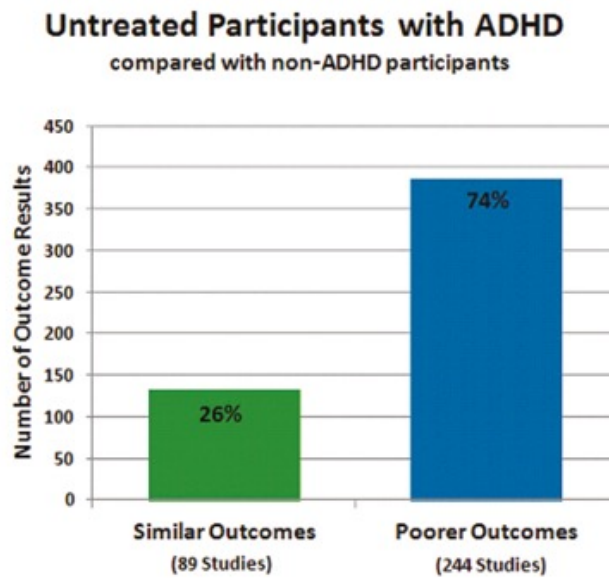
Table 2 (continued)

Drug-candidate	Mode of action	Company	Status in ADHD	References
Sofinicine (ABT894)	Nicotine α_4/β_2 agonist	AbbVie/ NeuroSearch	Minimal efficacy Discontinued Neurosearch wound up	Bain et al. (2013)
AZD3480 (TC1734)	Nicotine α_4/β_2 agonist	AstraZeneca/ Targacept	Minimal efficacy Discontinued Targacept acquired by catalyst	Potter et al. (2014)
Bavasant (JNJ31001074)	Histamine H ₃ antagonist	Johnson & Johnson	Lack of efficacy Discontinued	Weisler et al. (2012)
Org26576	AMPA modulator	Merck	Lack of efficacy Discontinued	Adler et al. (2012)

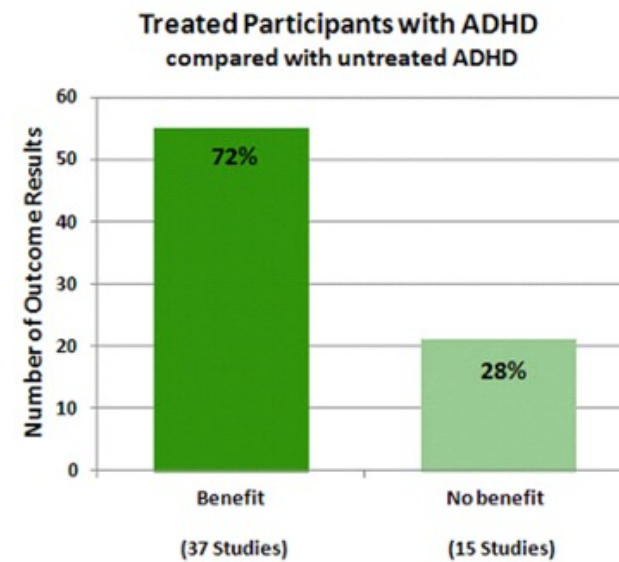
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 Springer 2022



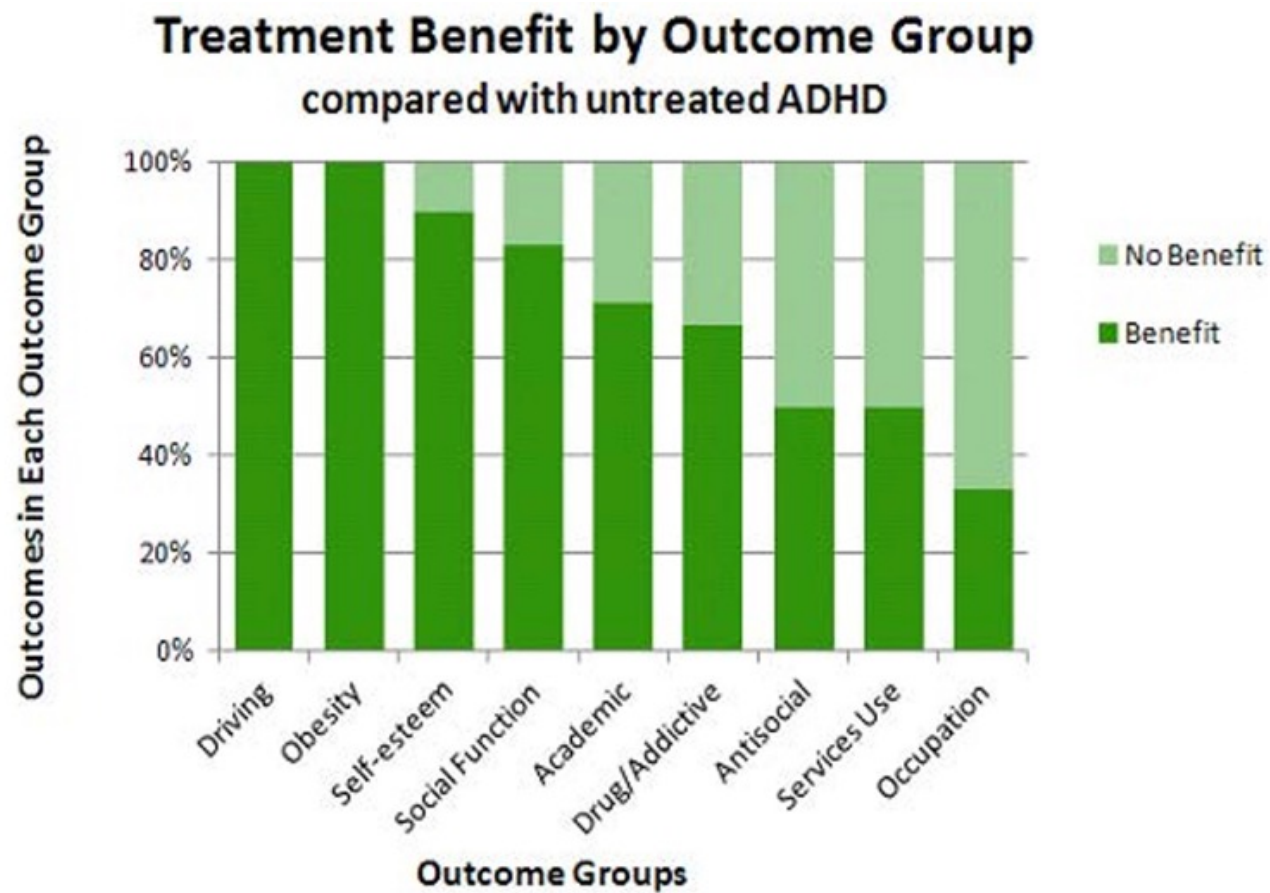
S Clare Stanford • Emma Sciberras (Editors)
New Discoveries in the Behavioral
Neuroscience of Attention-Deficit
Hyperactivity Disorder,
Springer 2022



Shaw et al.; BMC Medicine 2012, 10:99; 1741-7015



Shaw et al.; BMC Medicine 2012, 10:99; 1741-7015



Shaw et al.; BMC Medicine 2012, 10:99; 1741-7015

Benefits der Medikation bei ADHS-Patient*innen

J Child Psychol Psychiatry. 2014 August ; 55(8): 878–885. doi:10.1111/jcpp.12164.

Stimulant ADHD medication and risk for substance abuse

Zheng Chang, MSc¹, Paul Lichtenstein, PhD¹, Linda Halldner, MD, PhD^{1,2}, Brian D’Onofrio, PhD³, Eva Serlachius, MD, PhD⁴, Seena Fazel, MD⁵, Niklas Långström, MD, PhD¹, and Henrik Larsson, PhD¹

Conclusions—We found no indication of increased risks of substance abuse among individuals prescribed stimulant ADHD medication; if anything, the data suggested a long-term protective effect on substance abuse. Although stimulant ADHD medication does not seem to increase the risk for substance abuse, clinicians should remain alert to the potential problem of stimulant misuse and diversion in ADHD patients.

- Eine Behandlung mit Stimulanzien kann die spätere Entwicklung einer Suchterkrankung im jungen Erwachsenenalter verhindern
 - Hochdosierte Stimulanzien können eine wirksame Behandlung für Jugendliche mit ADHS + Suchterkrankung sein
 - Eine kognitive Verhaltenstherapie kann bei diesen Patienten eine geringe positive Wirkung haben
 - Alternative Behandlungen sind wahrscheinlich nicht wirksam.
- Treatment of Adolescents with Concurrent Substance Use Disorder and Attention-Deficit/Hyperactivity Disorder: A Systematic Review; Özgen et al., 2021
- International Consensus Statement for the Screening, Diagnosis, and Treatment of Adolescents with Concurrent Attention-Deficit/Hyperactivity Disorder and Substance Use Disorder; Özgen et al., 2021



<https://www.google.com/url?sa=i&url=https%3A%2F%2Fm.facebook.com%2FGarfieldMauritius%2Fposts%2F4696629150440673%2F&psig=AOvVaw3jTVK07QZKwfJJY70EMDh9&ust=1711100848386000&source=images&cd=vfe&opi=89978449&ved=0CBIQjRxqFwoTCMDfsMjYUDFQAAAAAdAAAAABAD>



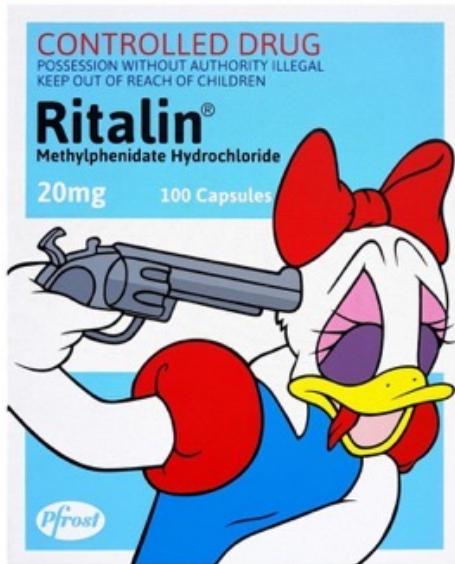
Sonntag 29. Oktober 2017 08:07

Zahl der Ausweisentzüge wegen Medikamenten explodiert

Wegen Schmerzmitteln, Ritalin und Beruhigungspillen verlieren mehr Lenker ihren Ausweis als unter Einfluss von Cannabis oder Kokain.



Was der Patient fürchtet...



<https://www.creativeboom.com/inspiration/sweet-and-sour-paintings-by-ben-frost-that-are-satirical-observations-of-western-culture/>

Was der Patient ohne Medikation häufig macht...



<https://artist.co.nz/sub/artist>

<https://www.nextstreetdead>

<https://www.artsy.net/artwork/ben-frost-store-in-a-dark-place-mickey-on-prozac-2>

Treatment Outcomes With Licensed and Unlicensed Stimulant Doses for Adults With Attention-Deficit/Hyperactivity Disorder: A Systematic Review and Meta-Analysis

Results: A total of 47 randomized clinical trials (7714 participants; mean age, 35 (SD, 11) years; 4204 male [56%]) were included. For methylphenidate, dose-response curves indicated additional reductions of symptoms with increments in doses, but the gains were progressively smaller and accompanied by continued additional risk of adverse events dropouts. Network meta-analyses showed that unlicensed doses were associated with greater reductions of symptoms compared with licensed doses (standardized mean difference [SMD], -0.23; 95% CI, -0.44 to -0.02; very low certainty of evidence), but the additional gain was small and accompanied by increased risk of adverse event dropouts (odds ratio, 2.02; 95% CI, 1.19-3.43; moderate certainty of evidence). For amphetamines, the dose-response curve approached a plateau and increments in doses did not indicate additional reductions of symptoms, but there were continued increments in the risk of adverse event dropouts. Network meta-analysis did not identify differences between unlicensed and licensed doses for reductions of symptoms (SMD, -0.08; 95% CI, -0.24 to 0.08; very low certainty of evidence).

Conclusions and relevance: Based on group averages, unlicensed doses of stimulants may not have positive risk benefits compared with licensed doses for adults with ADHD. In general, practitioners should consider unlicensed doses cautiously. Practitioners may trial unlicensed doses if needed and tolerated but should be aware that there may not be large gains in the response to the medication with those further increments in dose. However, the findings are averages and will not generalize to every patient.

Review > Expert Rev Neurother. 2023 Jul-Dec;23(11):981-994.

doi: 10.1080/14737175.2023.2263645. Epub 2023 Oct 27.

Revisiting stimulant use for emotional dysregulation in attention-deficit/hyperactivity disorder (ADHD)

Introduction: Emotional dysregulation (ED) symptoms are present in a considerable portion of patients with attention-deficit/hyperactivity disorder (ADHD). In recent years, an increasing number of studies investigated the effects of stimulant medications on ED in patients with ADHD.

Areas covered: A narrative review of the literature on stimulant treatment for ED is provided, including controlled and observational clinical studies conducted on pediatric and adult samples and neurobiological investigations. Positive effects of stimulants on irritability have been demonstrated in children. Comorbidity with disruptive behavior disorders (DBD) and disruptive mood dysregulation disorder does not prevent stimulant effectiveness. Methylphenidate has also been found to reduce temper problems, affective instability, and emotional over-reactivity in adults with ADHD, although with variable effect sizes. A variety of adverse emotional effects have been reported, especially at high doses and in special populations. However, several possible confounders of treatment-emergent ED have been highlighted. Finally, according to neuroimaging studies, stimulants may mitigate emotional processing anomalies associated with ADHD.

Expert opinion: The findings are consistent with models including ED within the core features of ADHD. Stimulant treatment should be prioritized over antipsychotics in ADHD-DBD. It remains to be elucidated whether other medications may be more effective in specific populations with ADHD and/or ED.

- **Antipsychotika** sollen für die Behandlung einer ADHS ohne assoziierte Störungen **nicht eingesetzt** werden.
- Cannabis soll für die Behandlung der ADHS nicht eingesetzt werden.
- Kontrollen vergessen
 - „Auch im weiteren Verlauf sind regelmäßige Kontrollen der Wirksamkeit und Erfassung unerwünschter Wirkungen der Medikation notwendig. Mindestens alle sechs Monate soll überprüft werden, ob eine weitere Verabreichung indiziert ist.“

Nicht nur ein Defizitmodell!

The positive aspects of attention deficit hyperactivity disorder: a qualitative investigation of successful adults with ADHD

Jane Ann Sedgwick^{1,2}  · Andrew Merwood² · Philip Asherson²

Received: 25 May 2018 / Accepted: 19 October 2018 / Published online: 29 October 2018
© The Author(s) 2018

Abstract

The behavioural characteristics of ADHD do not exist in binary form (i.e. normal vs. abnormal); instead, they exist on a spectrum or continuum. This implies that some aspects of ADHD can be adaptive rather than impairing, or some adults may possess certain strengths or attributes that mediate and/or compensate for their ADHD-related deficits or impairments. More research is needed to clarify these observations. To explore and describe positive aspects of ADHD from the perspective of successful adults with ADHD. A phenomenological approach with open-ended interviews was used to collect data. The interviews were audio taped, transcribed verbatim and analysed using thematic content analysis. Six core themes (*cognitive dynamism, courage, energy, humanity, resilience and transcendence*) defined by 19 sub-themes were found. These themes were compared against attributes catalogued in the character strengths and virtues (CSV) handbook and classification for positive psychology. Two core themes (*cognitive dynamism* and *energy*) were not listed as virtues in the CSV, and neither were six sub-themes (*divergent thinking, hyper-focus, nonconformist, adventurousness, self-acceptance* and *sublimation*) listed as behavioural traits. We propose these constructs as positive aspects specific to ADHD, and the other constructs, as positive aspects relevant to people in general, with or without ADHD. This study offers insights into positive human qualities, attributes or aspects of ADHD that can support and sustain high functioning and flourishing in ADHD life. This study also addresses the question in the disability research about “how we might reconsider the behaviours associated with ADHD so that they are seen as valuable and worthy of conservation?”.

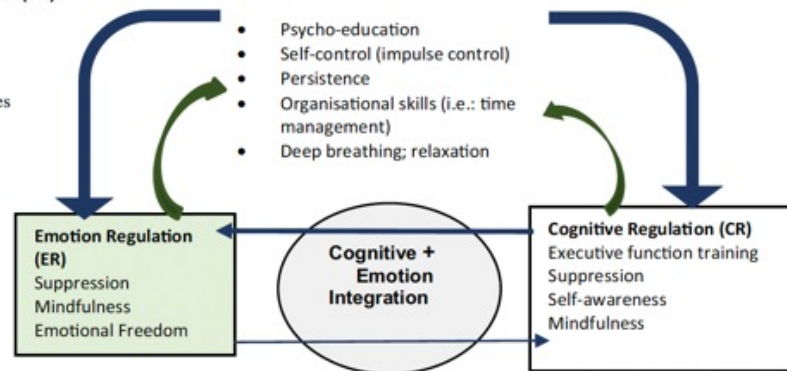
Table 4 Core themes and defining sub-themes that represent the positive aspects of ADHD

COGNITIVE DYNAMISM	COURAGE	ENERGY	HUMANITY	RESILIENCE	TRANSCENDENCE
Divergent thinking	Non-conformist	Spirit	Social intelligence	Self-regulation	Appreciation of Beauty and excellence
Hyper-focus	Adventurousness	Psychological	Humour	Sublimation	
Creativity	Bravery	Physical	Self-acceptance		
Curiosity	Integrity		Recognition of feelings		
	Persistence				

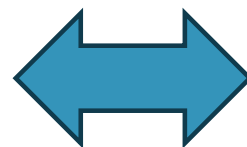
Behaviour Regulation(BR)

: p. 7)

(SR) strategies and processes
(Murray et al. 2015)



<https://twitter.com/Garfield/status/489479790878289922>



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Klinisches Bild



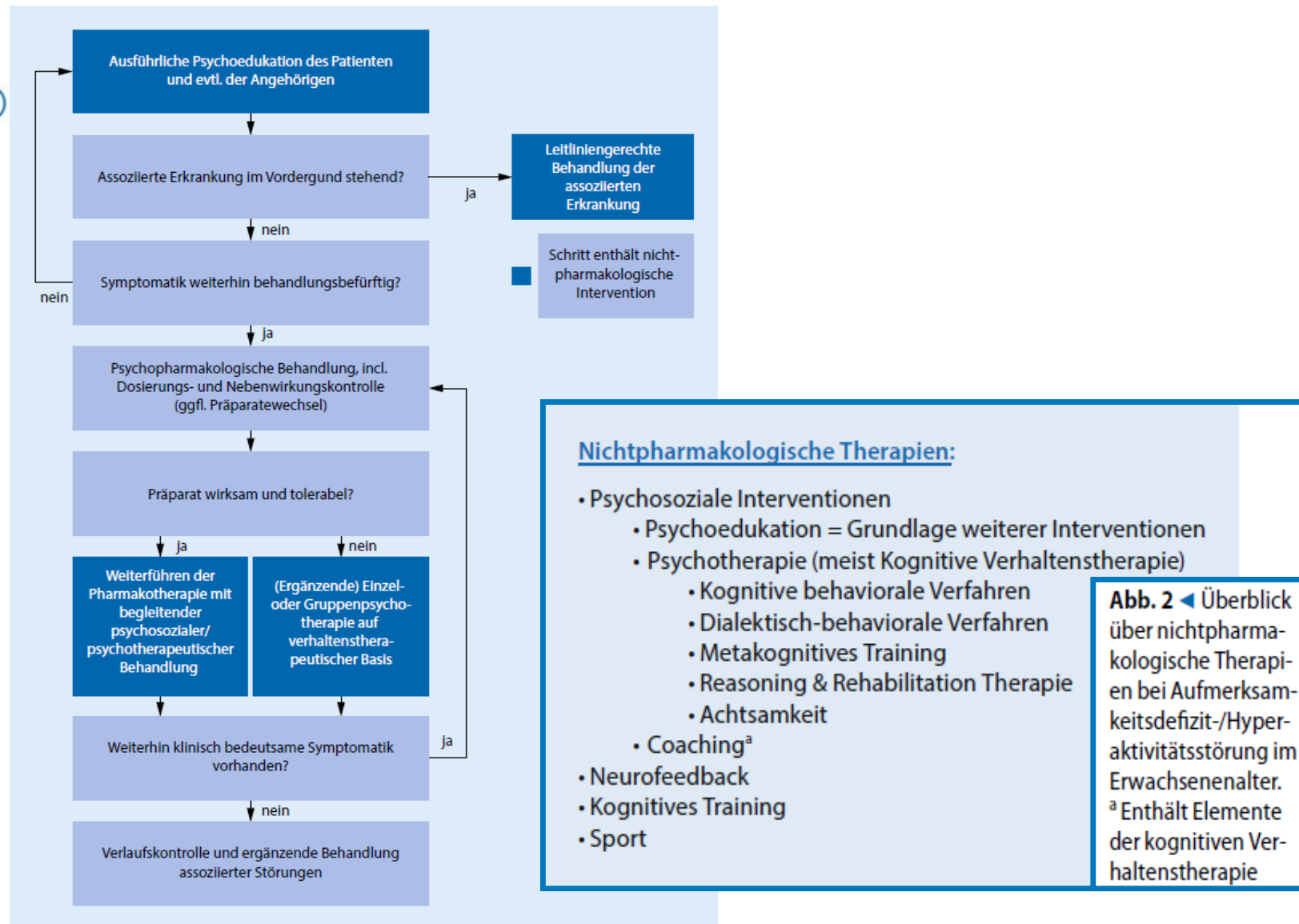


Abb. 1 ▲ Behandlungsschema bei Aufmerksamkeitsdefizit-/Hyperaktivitätsstörung im Erwachsenenalter

Psychoedukation

- Vermittlung eines „adäquaten Krankheitsverständnisses“
- Näherbringen des „Ursachengefüges der Störung“
- Erzielen eines Verständnisses der Symptomatik und der funktionellen Einschränkungen
- Erläuterung von Strategien zur Verbesserung und Behandlungsoptionen

Psychosoziale (einschließlich psychotherapeutischen) Behandlung soll insbesondere Personen angeboten werden:

- die die Diagnose erst im Erwachsenenalter erhalten haben und einen Prozess des Akzeptierens und der Einsicht im Hinblick auf die spät erfolgte Diagnose durchlaufen;
- die sich nach Aufklärung gegen eine Medikation entscheiden;
- die unter einer medikamentösen Behandlung noch Symptome und / oder funktionelle Beeinträchtigungen aufweisen;
- bei denen Kontraindikationen gegen eine medikamentöse Behandlung bestehen;
- die Schwierigkeiten mit der Akzeptanz der Diagnose und / oder der Adhärenz einer medikamentösen Behandlung haben;
- die wenige Symptome aufweisen und bei denen psychosoziale (einschließlich psychotherapeutischen) Interventionen als ausreichend erachtet werden, um geringe oder moderate funktionelle Einschränkungen im Alltag zu behandeln.

kognitive Verhaltenstherapie (KVT)

- *„... soll die Entwicklung von Strategien und das Erlernen praktischer Techniken unterstützen, die zu einer Reduktion des Einflusses der ADHS Symptomatik auf die Alltagsfunktionen beitragen“*
 - Lösung von Problemen
 - Techniken zur Reduktion von Ablenkbarkeit
 - Fertigkeiten zum Umgang mit Stress
- *„über die Lebensspanne erworbene dysfunktionale Kognitionen ... annt und überprüft werden“*



Vielen Dank für
Ihre
Aufmerksamkeit!