



ADHD, fylgiraskanir og klínískar leiðbeiningar

Without a theory, the facts are silence

The sensory order

F. A. Hayek (1899-1992)



ICD-11

Hegðunar- og taugáþroskaraskanir Mental, behavioural or neurodevelopmental disorders

<https://www.who.int/classifications/icd/en/>



ICD-11 og taugáþroskaraskanir

Neurodevelopmental disorders

- **Proskaraskanir - Disorders of intellectual development**
- **Málþroskaraskanir -Developmental speech or language disorders**
- **Einhverfurófsraskanir - Autism spectrum disorders**
- **Námserfiðleikar - Developmental learning disorders**
- **Hreyfiþroskaraskanir - Developmental motor coordination disorder**
- **Athyglisbrestur og ofvirkni - Attention deficit hyperactivity disorder**
- **Kipparaskanir - Primary tics or tic disorders**



ICD-11 Hegðunaraskanir

Disruptive behavior or dissocial disorders

- **Andstöðuþrjóscuröskun - Oppositional defiant disorder**
- **Hegðunarröskun - Conduct/dissocial disorder**
- **Other specified disruptive behavior or dissocial disorders**
- **Disruptive behavior or dissocial disorders, unspecified**

<https://www.who.int/classifications/icd/en/>



ICD-11 og taugáþroskaraskanir

Neurodevelopmental disorders



- **Þroskaraskanir - Disorders of intellectual development**
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- **Kækjaraskanir - Primary tics or tic disorders**

Athyglisbrestur og ofvirkni

- Athyglisbrestur og ofvirkni (ADHD) er algeng taugaproskaröskun sem getur haft víðtæk áhrif á daglegt líf, nám og félagslega aðlögun einstaklinga.
- Rannsóknir benda til að 5 til 7 af hundraði barna og unglinga glími við ADHD (Polanczyk et al., 2007, 2014)



COMMON SIGNS OF ADHD

- IMPULSIVITY**
 - Experiences difficulty waiting for his or her turn
 - Has trouble waiting until a question is finished before answering
 - Often interrupts others
- INATTENTION**
 - Is easily distracted
 - Has trouble following directions and finishing tasks
 - Displays organizational problems
 - Experiences difficulty listening while others are speaking
 - Forgets about daily activities
 - Often loses things
 - Has tendency to daydream
- HYPERACTIVITY**
 - Squirms or fidgets when sitting
 - Doesn't stay seated
 - Has trouble playing quietly
 - Is restless – always on the move
 - Talks excessively

hello life



Einkenni athyglisbrests:

- Hugar illa að smáatriðum og gerir oft fljótfærnislegar villur.
- Á erfitt með að halda athygli við verkefni eða leiki.
- Virðist ekki hlusta þegar talað er beint til hennar/hans.
- Fylgir ekki fyrirmælum til enda og lýkur ekki við verkefni.
- Á erfitt með að skipuleggja verkefni og athafnir.
- Forðast viðfangsefni sem krefjast mikillar einbeitingar (t.d. heimanám og skólaverkefni).
- Týnir oft hlutum sem hann/hún þarf á að halda til verkefna sinna eða annarra athafna.
- Truflast auðveldlega af utanaðkomandi áreiti.
- Er gleyminn/n í athöfnum daglegs lífs.

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: (ICD-11; World Health Organization, 2018).



Einkenni ofvirkni/hvatvísi:

- Er oft stöðugt á ferðinni eða eins og „þeytispjald“
- Talar óhóflega mikið.
- Hendur og fætur á sífelldu iði.
- Fer úr sæti í skólastofu eða við aðrar aðstæður þar sem ætlast er til kyrrsetu.
- Hleypur um eða þrilar óhóflega við aðstæður þar sem slíkt á ekki við.
- Á erfitt með að vera hljóð/ur við leik eða tómstundastarf.
- **Einkenni hvatvísi:**
- Á erfitt með að bíða eftir að röðin komi að honum/henni í hópvinnu eða leik.
- Grípur fram í eða ryðst inn í samræður eða leiki.
- Grípur fram í með svari áður en spurningu er lokið.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: (ICD-11; World Health Organization, 2018).





ADHD

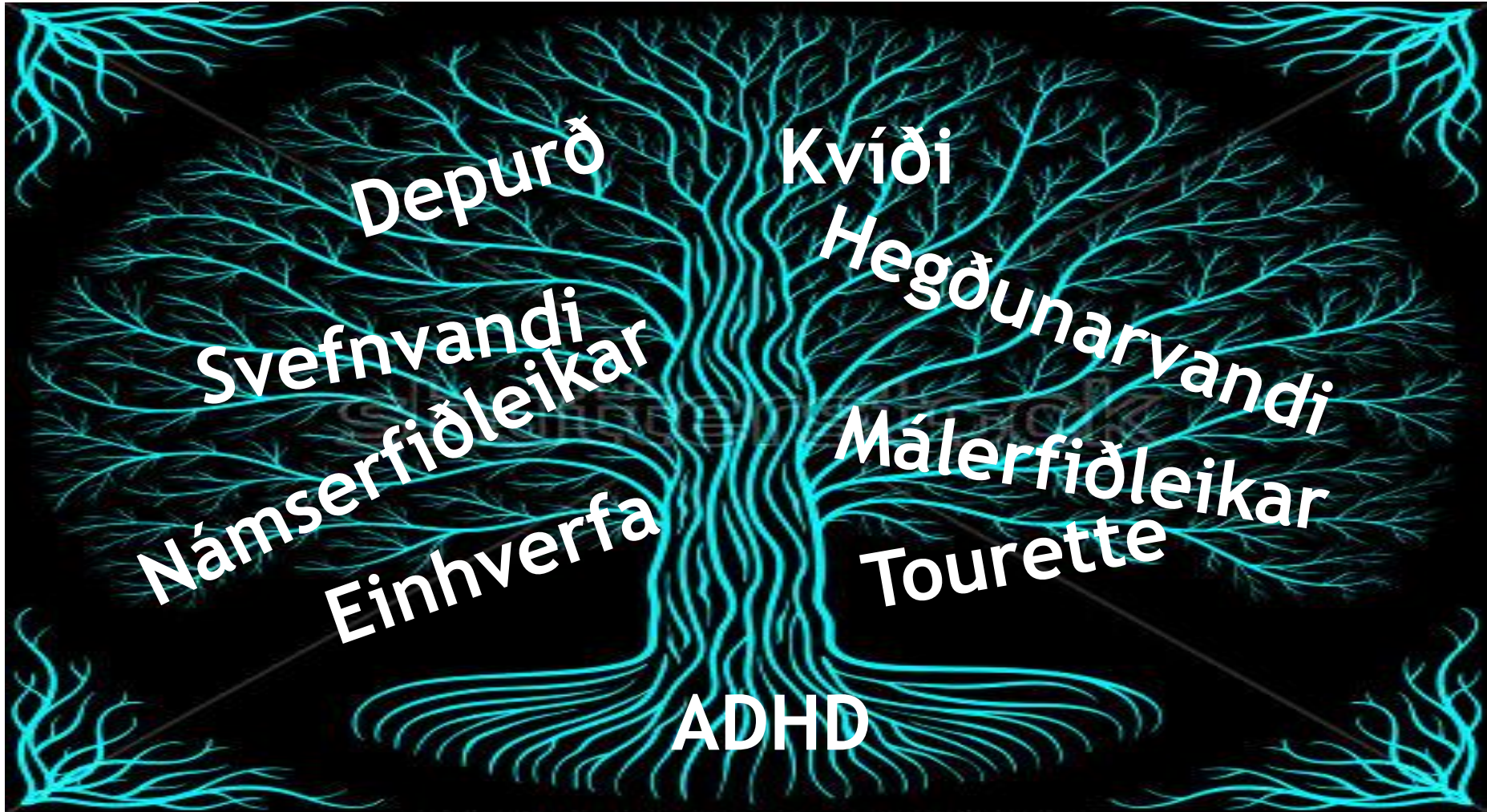


- Til þess að uppfylla greiningarskilmerki ADHD þarf barn að hafa hamlandi einkenni athyglisbrests og/eða ofvirkni/hvatvísi við mismunandi aðstæður í daglegu lífi og um lengri tíma.

athyglisbrestur

ofvirkni

ADHD



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athyglisbrestur

ADHD

ofvirkni

Andstöðuprjóscuröskun

Hegðunarröskun

Kvíði - depurð

Námserfiðleikar

Tourette

Stýrifærni

vinnsluminni

athygli

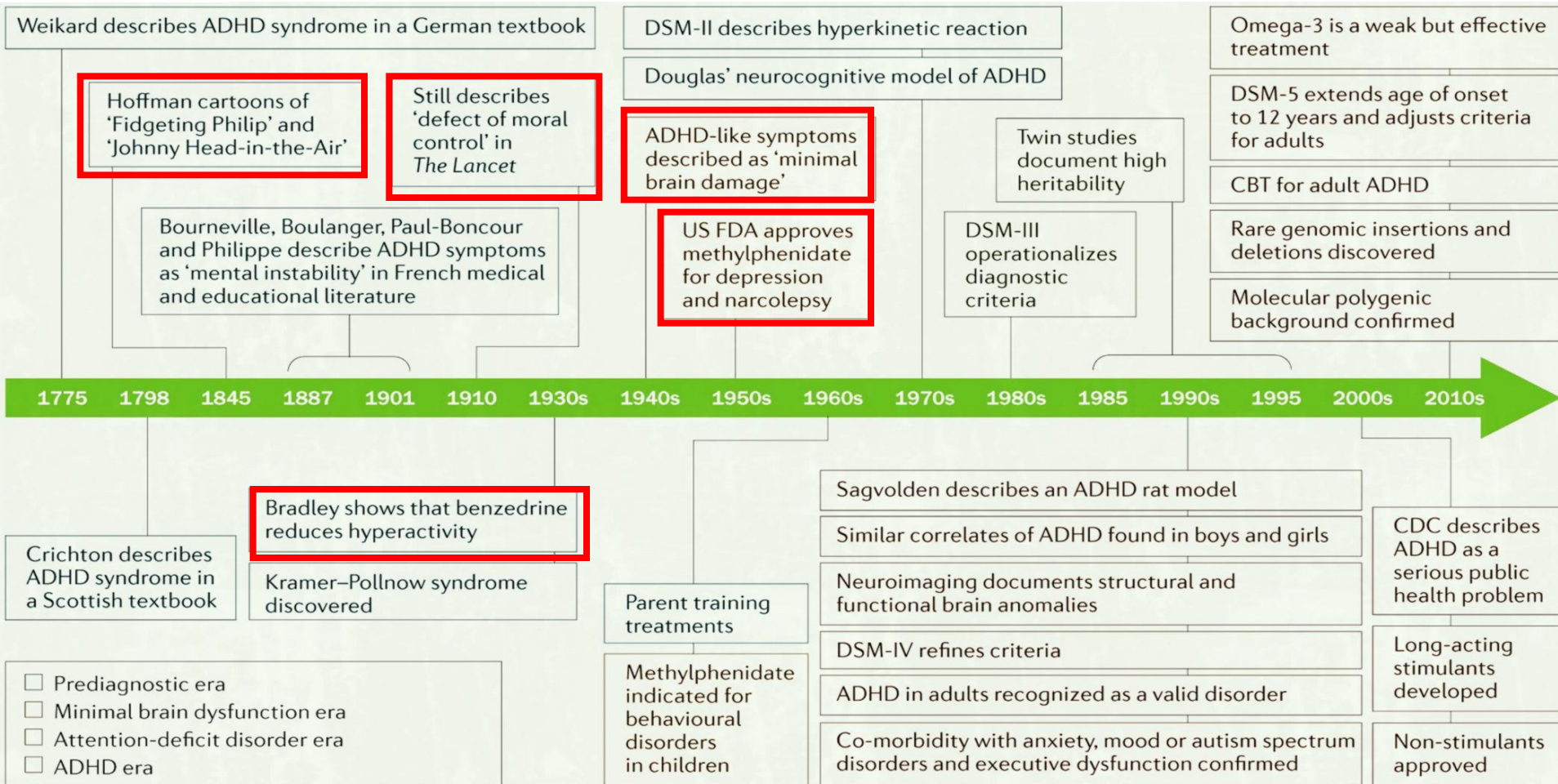
innra tal og hvatastjórn

að læra af reynslunni

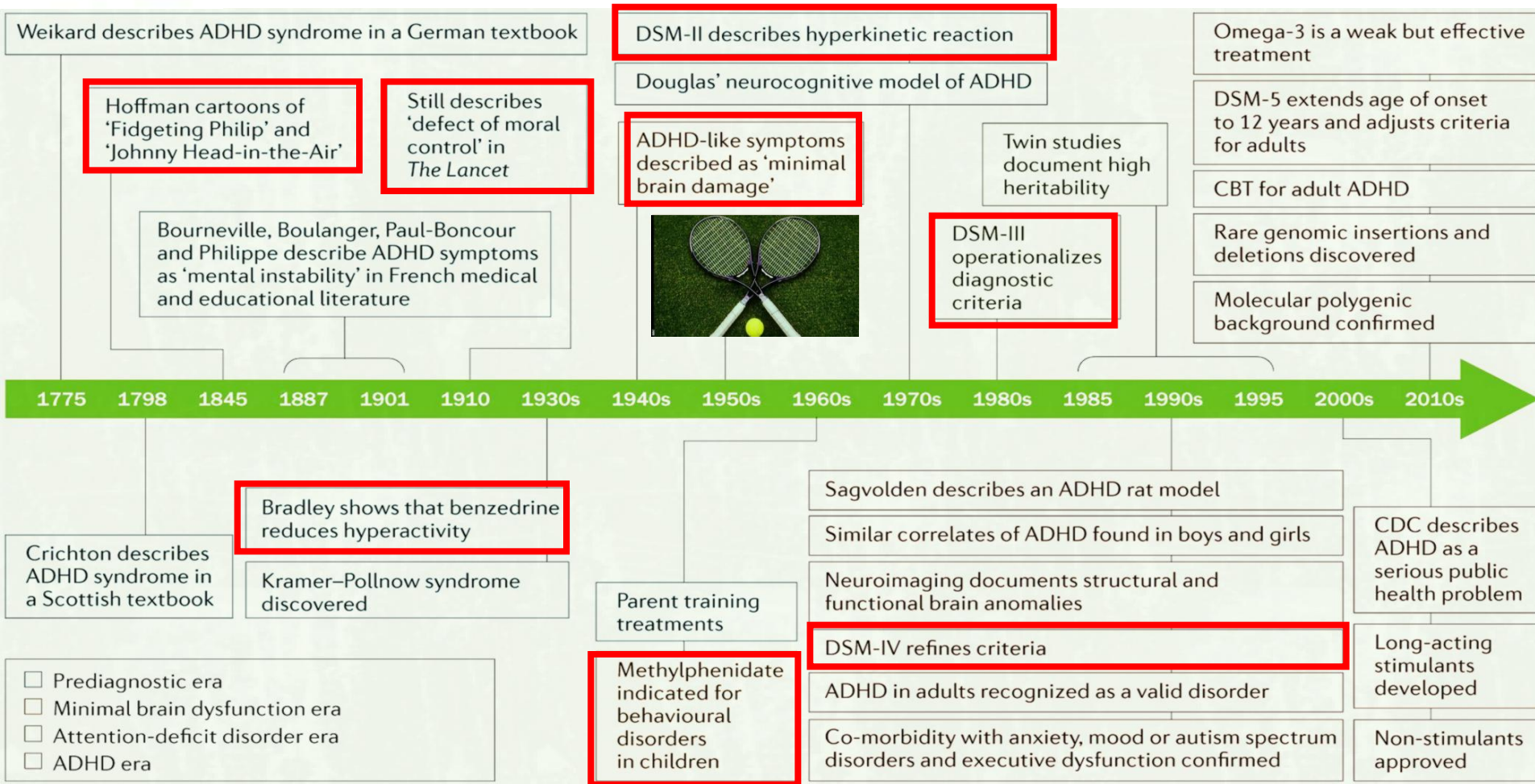
skipulagsgeta og tímaskyn

Sveigjanleiki

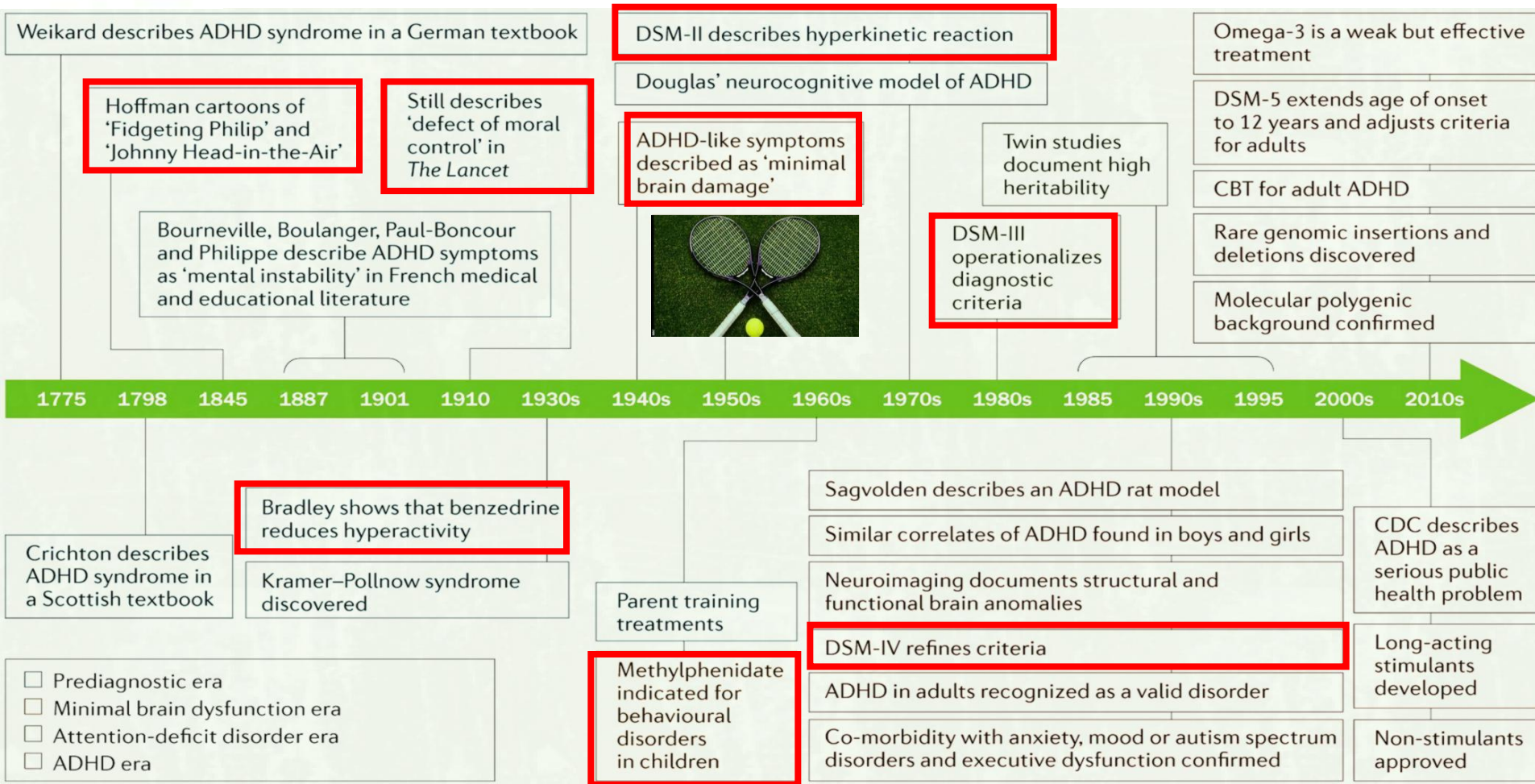
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Sagan



Sagan





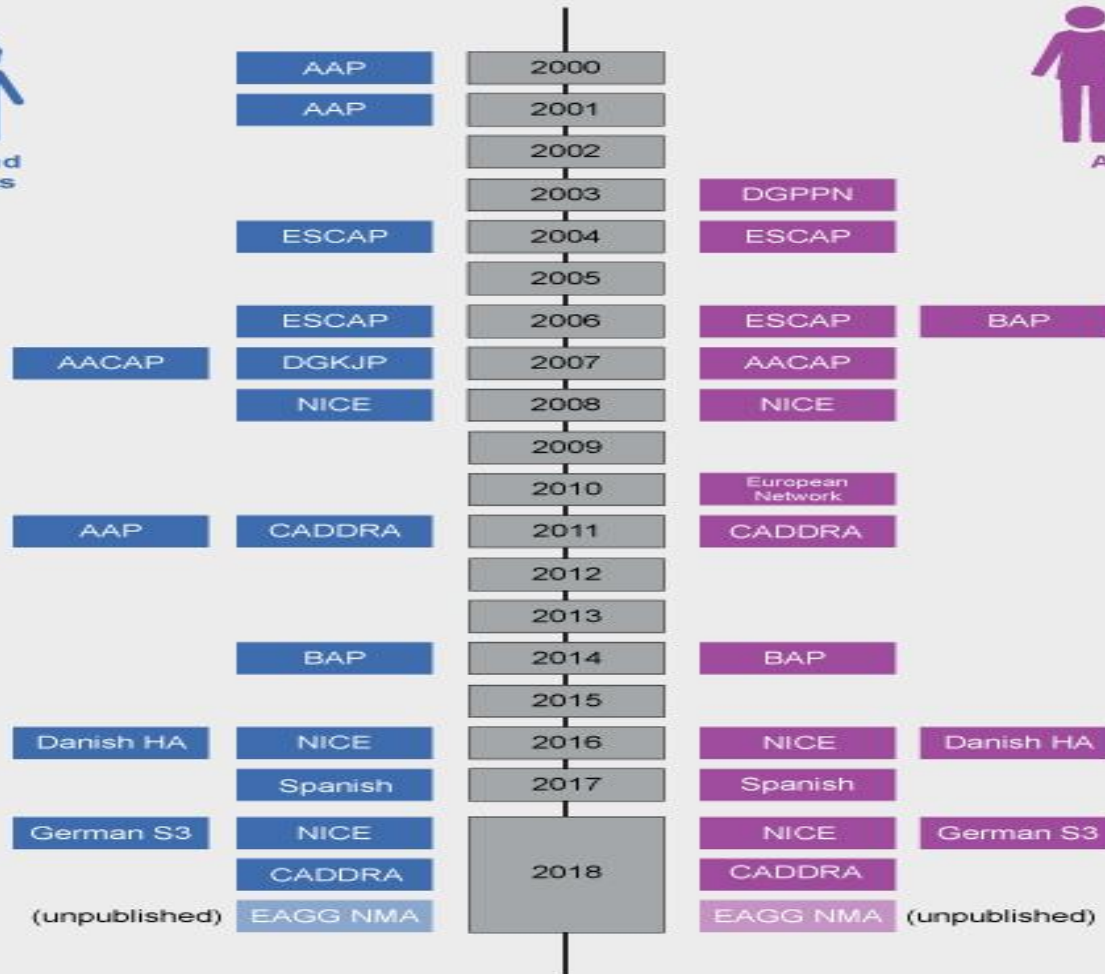
Klínískar leiðbeiningar



- Klínískar leiðbeiningar (*clinical guidelines*) eru leiðbeiningar um verklag, þróaðar á kerfisbundinn hátt og eru byggðar á traustum vísindalegum grunni, til stuðnings starfsfólki í heilbrigðisþjónustu og almenningi við ákvarðanatöku við tiltekna aðstæður.
- Þær taka mið af bestu þekkingu á hverjum tíma og eru lagðar fram í því skyni að veita sem besta meðferð.



Landlæknir
2007, 2012, 2014





Klínískar leiðbeiningar vinnulag við greiningu ADHD



- Tekin er ítarleg sjúkra- og þroskasaga
- Mikilvægt er að safna upplýsingum um einkenni barnsins við mismunandi aðstæður
 - Matskvarðar
- Greiningarviðtal, til að meta einkenni og fylgiraskanir
- Mælt er með að greindarpróf liggi fyrir.
- Viðtal og skoðun hjá lækni.

Die Geschichte vom Zappel-Philipp

Ob der Philipp heute still
Wohl bei Tische sitzen will?“
Also sprach in ernstem Ton
Der Papa zu seinem Sohn,
Und die Mutter blickte stumm
Auf dem ganzen Tisch herum.
Doch der Philipp hörte nicht,
Was zu ihm der Vater spricht.

Er gaukelt
Und schaukelt,
Er trappelt
Und zappelt
Auf dem Stuhle hin und her.
„Philipp, das mißfällt mir sehr!“

Der Struwwelpeter
Heinrich Hoffmann, 1844





Klínískar leiðbeiningar með vísindin að vopni

- **A:Hár/mikill**
 - Hágæða meta-analýsur, kerfisbundin yfirlit slembaðra rannsókna eða slembaðar rannsóknir með mjög lágri skekkjuhættu

- **B:Meðal**

- **C:Lítill**

- **D: Mjög lítill**
 - Hágæða kerfisbundin yfirlit sjúkratilfella-viðmiðunar rannsókna (case-control studies)
Sjúkratilfellaskýrslur (case reports, case studies)



Multimodal Treatment Study of ADHD (MTA rannsóknin, 1999, 2004)



- 1. Markviss lyfjameðferð eingöngu, fólst m.a í mánaðarlegu eftirliti þar sem lyfjaskammti var breytt í samræmi við klínískar upplýsingar (frá foreldrum, barni og kennara)**
- 2. Fjölpætt og yfirgripsmikil sálfélagsleg meðferð eingöngu (inn gripi beitt heima, í skóla og yfir sumar).**
- 3. Samþætt markviss lyfjameðferð og sálfélagsleg meðferð.**
- 4. Hefðbundin meðferð (Treatment as usual in the community) sem einkum fólst í lyfjameðferð án sérstaks eftirlits.**



Multimodal Treatment Study of ADHD (MTA rannsóknin, 1999, 2004)

- **Einkenni ADHD minnkuðu eftir 14 mánaða meðferð hjá öllum hópunum.**
- **Árangur hópanna tveggja (hópar 1 og 3) sem fengu markvissa lyfjameðferð var betri en hópsins sem fékk eingöngu sálfélagslega meðferð (hópur 3) og hópsins sem fékk hefðbundna meðferð (hópur 4).**
- **Árangur hópsins sem fékk eingöngu sálfélagslega meðferð (hópur 2) var ekki betri en árangur af hefðbundinni meðferð (hópur 4).**



Multimodal Treatment Study of ADHD (MTA rannsóknin, 1999, 2004)

- **Varðandi önnur einkenni, svo sem tilfínninnga- og hegðunarerfiðleika, félagsfærni, tengsl við foreldra og frammistöðu í skóla, kom ekki fram marktækur munur milli hópa.**
 - Bestur árangur varðandi þessi einkenni kom fram hjá hópi barna sem fékk samþætta meðferð (hópur 3).

Klínískar leiðbeinignar

American Academy of Child and Adolescent Psychiatry (AACAP) Practice Parameters: Assessment and Treatment for ADHD

- They are based on the current scientific evidence and clinical consensus of experts in the field.
- They consider the clinical evaluation for ADHD, comorbid conditions associated with ADHD, and evidence based psychopharmacological and psychosocial interventions for ADHD.
- These guidelines seek to lay out evidence-based guidelines for the effective diagnosis and treatment of ADHD.

AACAP ©2007



ADHD

Hvað virkar?



Table 3. Recommendations for pharmacological treatment of ADHD

Association	AAP (2000,2001)	NZ (2001)	DGPPN (2003)	ESCAP (2004,2006)	BAP (2006)	AACAP (2002,2007)	DGKJP (2007)	NICE (2008)	SIGN (2009)	CADDRA (2011)
MPH	1st	1st	1st	1st	1st	1st	1st	1st	1st	+
MPH MR	1st	+	0	+	1st	1st	1st	1st	1st	1st
Mixed amphetamine salts	1st	0	+	+	0	1st	+	0	0	1st
Lisdexamphetamine	0	0	0	0	0	0	0	0	0	1st
Atomoxetine	0	0	+	+	1st	1st	1st	+, 1st in C&A	+	1st
Bupropion	Outside scope	0	+	0	+	+	+	+	+	+
Clonidine	Outside scope	0	0	+	+	+	+	+	+	0
Guanfacine	0	0	0	+	+	+	+	0	0	0
Modafinil	0	0	0	0	+	0	0	+	-	+
Pemoline	-	0	0	+	-	-	0	0	0	0
TCA	Outside scope	+	+	+	+	+	+	+	+	+
Pre-treatment safety measures	0	+	0	0	0	+	+	+	+	+
Explicit dose	+	+	0	+	0	+	+	+	For some agents only	+
Titration	Outside scope	+	0	+	0	+	+	+	+	+
Monitoring	+	+	+	+	+	+	+	+	+	+
Adverse effects	+	+	0	+	+	+	+	+	+	+
Contra-indications	+	0	0	+	0	+	+	+	0	+
Cost considerations	0	0	0	+	0	0	+	+	0	+
Drug holidays	0	0	0	Only if growth retardation	0	+	+	-, exceptions permitted	0	-, exceptions permitted

0, no recommendation found; +, explicit favourable recommendation; -, negative recommendation; 1st, first line option; MPH, methylphenidate; MPHMR, methylphenidate modified release; TCA, tricyclic antidepressant. AAP 2000, American Academy of Pediatrics, Committee on Quality Improvement Subcommittee on Attention-Deficit/Hyperactivity Disorder (2000) Clinical Practice Guideline: Diagnosis and evaluation of the child with attention-deficit/hyperactivity disorder; AAP 2001, American Academy of Pediatrics, Committee on Quality Improvement, Subcommittee on Attention-Deficit/Hyperactivity Disorder (2001) Clinical Practice Guideline: Treatment of the school-aged child with attention-deficit/hyperactivity disorder; NZ 2001, New Zealand Ministry of Health (2001) New Zealand Guidelines for the Assessment and Treatment of Attention-Deficit/Hyperactivity Disorder; DGPPN 2003, Ebert D, Krause J, Roth-Sackenheim C (2003) ADHS im Erwachsenenalter - Leitlinien auf der Basis eines Expertenkonsensus mit Unterstützung der DGPPN; ESCAP 2004, Taylor E, Döpfner M, Sergeant J, Asherson P, Banaschewski T, Coghill D, Santosh P, Zuddas A, Asherson P, Buitelaar J, Danckaerts M, Döpfner M, Faraone SV, Rothenberger A, Sergeant J, Steinhausen HC, Sonuga-Barke EJ, Taylor E (2004) Long-acting medications for the hyperkinetic disorders. A systematic review and European treatment guideline; BAP 2006, Nutt DJ, Fone K, Asherson P, Bramble D, Hill P, Matthews K, Morris KA, Santosh P, Sonuga-Barke E, Taylor E, Weiss M, Young S; British Association for Psychopharmacology (2006) Evidence-based guidelines for management of attention deficit/hyperactivity disorder in adolescents in transition to adult services and in adults: recommendations from the British Association for Psychopharmacology (2006) Evidence-based guidelines for management of attention deficit/hyperactivity disorder (2007) Hyperkinetische Störungen (F90). In Deutsche Gesellschaft für Kinder- und Jugendpsychiatrie und Psychotherapie (eds), Leitlinien zur Diagnostik und Therapie von psychischen Störungen im Säuglings-, Kindes- und Jugendalter. 3. überarbeitete Auflage; AACAP 2002, Greenhill LL, Pliszka S, Dulcan MK, Bernet W, Arnold V, Belchman J, Benson RS, Bukstein O, Kinslan J, McClellan J, Rue D, Shaw JA, Stock S; American Academy of Child and Adolescent Psychiatry (2002) Practice Parameter for the Assessment and Treatment of Children and Adolescents with Attention-Deficit/Hyperactivity Disorder; NICE 2008, National Institute for Health and Clinical Excellence (2008) Attention Deficit Hyperactivity Disorder - Diagnosis and management of ADHD in children, young people and adults. NICE clinical guideline 72; SIGN 2009, Scottish Intercollegiate Guidelines Network (2009) Management of attention deficit and hyperactivity disorders in children and young people - A national clinical guideline; CADDRA 2011, Canadian Attention Deficit Disorder Resource Alliance (2011) Canadian ADHD Practice Guidelines, Third Edition.

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ADHD

Hvað virkar?

Table 4. Psychosocial treatment recommendations

Association	AAP (2000, 2001)	NZ (2001)	DGPPN (2003)	ESCAP (2004, 2006)	BAP (2006)	AACAP (2002, 2007)	DGKJP (2007)	NICE (2008)	SIGN (2009)	CADDRA (2011)
Individual interventions	0	0	+	+	0	0	+	+	0	+
Group interventions	0	+	+	+	0	0	+	+	0	0
Family-based interventions	0	0	0	+	0	0	+	+	+	+
School-based interventions	+	0	0	+	+	0	+	+	+	+
Occupational interventions	0	0	0	0	+	0	+	+	+	+
Behavioural parent training	+	0	0	+	0	0	0	0	0	+
Behavioural management	0	+	0	+	0	0	+	+	+	+
Psychoeducation	+	0	+	+	0	+	+	+	0	+
Family therapy	0	0	0	0	+	+	+	+	+	+
Social skills training	0	0	0	+	0	0	+	0	0	+
Cognitive therapy	-	0	0	0	0	-	0	+	+	+
CBT	-	0	0	+	0	-	+	+	0	0
Supportive therapy	0	0	0	+	+	0	0	0	0	+
Self-help	0	0	0	+	0	0	+	0	0	+
Counselling	0	0	0	0	0	0	0	+	+	+
Cognitive remediation	0	0	0	0	0	0	0	0	0	+
Carer support	+	+	0	0	0	0	+	0	0	Academic skills
Other therapies	Play therapy not recommended	Dietary interventions supervised by dietician and at parents' request. Optometric vision training, sensory integrative training, chiropractic manipulation, tinted lenses, megavitamins, herbal remedies and biofeedback not recommended (-)	0	Elimination and restriction diets not routinely recommended (-)	0	Dietary modification and EEG biofeedback not recommended (-)	Dietary modification, and EEG biofeedback	Elimination and restriction diets not recommended; omega-3 and omega-6 fatty acid supplements not routinely recommended (-)	Avoidance of case-specific food additives (+); zinc supplements, antioxidants, Bach flower remedies, homeopathy, massage therapy and neurofeedback (all -)	Anger management; interpersonal therapy; expressive arts therapy; play therapy.
Multimodal interventions	+	0	+	+	0	+	+	+	+	+

0, no recommendation found; +, explicit favourable recommendation; -, negative recommendation; C&A- child and adolescent; CBT, cognitive behavioural therapy; EEG, electroencephalography; AAP 2000, American Academy of Pediatrics, Committee on Quality Improvement Subcommittee on Attention-Deficit/Hyperactivity Disorder (2000) Clinical Practice Guideline: Diagnosis and evaluation of the child with attention-deficit/hyperactivity disorder; AAP 2001, American Academy of Pediatrics, Committee on Quality Improvement, Subcommittee on Attention-Deficit/Hyperactivity Disorder (2001) Clinical Practice Guidelines: Treatment of the school-aged child with attention-deficit/hyperactivity disorder; NZ 2001, New Zealand Guidelines for the Assessment and Treatment of Attention-Deficit/Hyperactivity Disorder; DGPPN 2003, Ebert D, Krause J, Roth-Sackenheim C (2003) ADHS im Erwachsenenalter Leitlinien der Baseline. Expertenkonsensum mit Unterstützung der DGPPN; ESCAP 2004, Taylor E, Döpfner M, Sergeant J, Asherson P, Banaschewski T, Buitelaar J, Coghill D, Danckaert M, Rothenberger A, Sonuga-Barke E, Steinhausen HC, Zuddas A (2004) European clinical guidelines for hyperkinetic disorder - first upgrade; ESCAP 2006, Banaschewski T, Coghill D, Santosh P, Zuddas A, Asherson P, Buitelaar J, Danckaert M, Döpfner M, Faraone SV, Rothenberger A, Sergeant J, Steinhausen HC, Sonuga-Barke E, Taylor E (2006) Long-acting medications for the hyperkinetic disorders. A systematic review and European treatment guideline; BAP 2006, Nutt DJ, Fone K, Asherson P, Bramble D, Hill P, Matthews K, Morris KA, Santosh P, Sonuga-Barke E, Taylor E, Weiss M, Young S; British Association for Psychopharmacology (2006) Evidence-based guidelines for management of attention deficit/hyperactivity disorder in adolescents in transition to adult services and in adults: recommendations from the British Association for Psychopharmacology; DGKJP 2007, Deutsche Gesellschaft für Kinder- und Jugendpsychiatrie und Psychotherapie (2007) Hyperkinetische Störungen (90) In Deutsche Gesellschaft für Kinder- und Jugendpsychiatrie und Psychotherapie (2007) Diagnostik und Therapie von psychischen Störungen im Säuglings-, Kinder- und Jugendalter, 3. überarbeitete Auflage; AACAP 2002, Greenhill LL, Pliszka S, Dulcan MK, Bernet W, Arnold V, Beitchman J, Benson RS, Bukstein O, Klinian J, McClellan J, Rue D, Shaw JA, Stock S; American Academy of Child and Adolescent Psychiatry (2002) Practice Parameter for the Use of Stimulant Medications in the Treatment of Children Adolescents and Adults; AACAP 2007, Pliszka S; American Academy of Child and Adolescent Psychiatry (AACAP) Work Group on Quality Issues (2007) Practice Parameter for the Assessment and Treatment of Children and Adolescents with Attention-Deficit/Hyperactivity Disorder; NICE 2008, National Institute for Health and Clinical Excellence (2008) Attention deficit hyperactivity disorder - Diagnosis and management of ADHD in children, young people and adults. NICE clinical guideline 72; SIGN 2009, Scottish Intercollegiate Guidelines Network (2009) Management of attention deficit and hyperactivity disorders in children and young people - A national clinical guideline; CADDRA 2011, Canadian Attention Deficit Disorder Resource Alliance (2011) Canadian ADHD Practice Guidelines, Third Edition.

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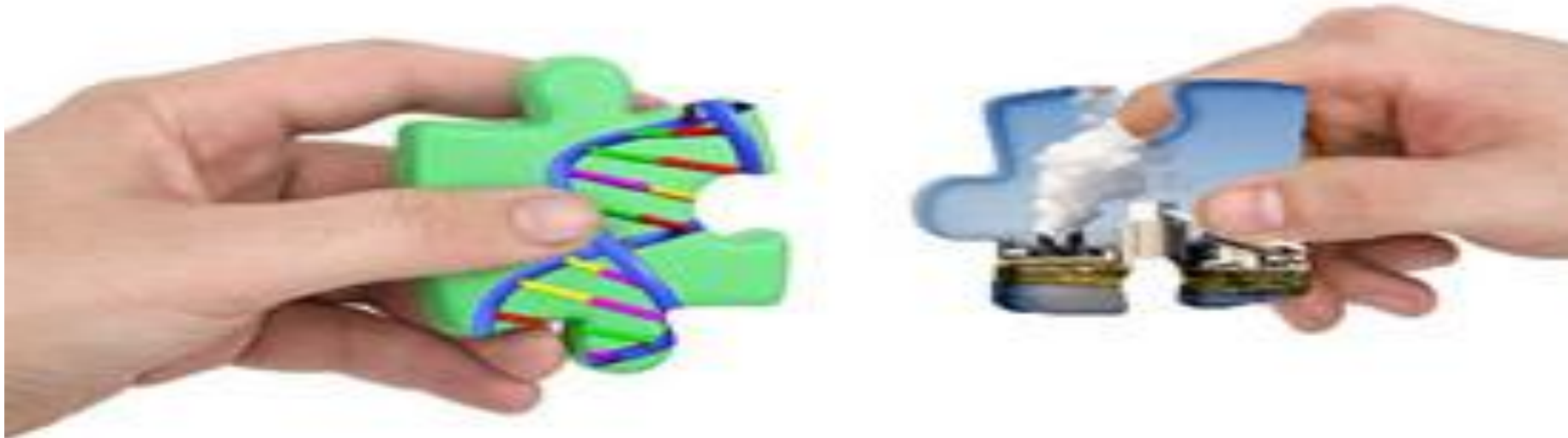
ADHD Hvað virkar?



“Knowing yourself is the
beginning of all wisdom.”

~Aristotle

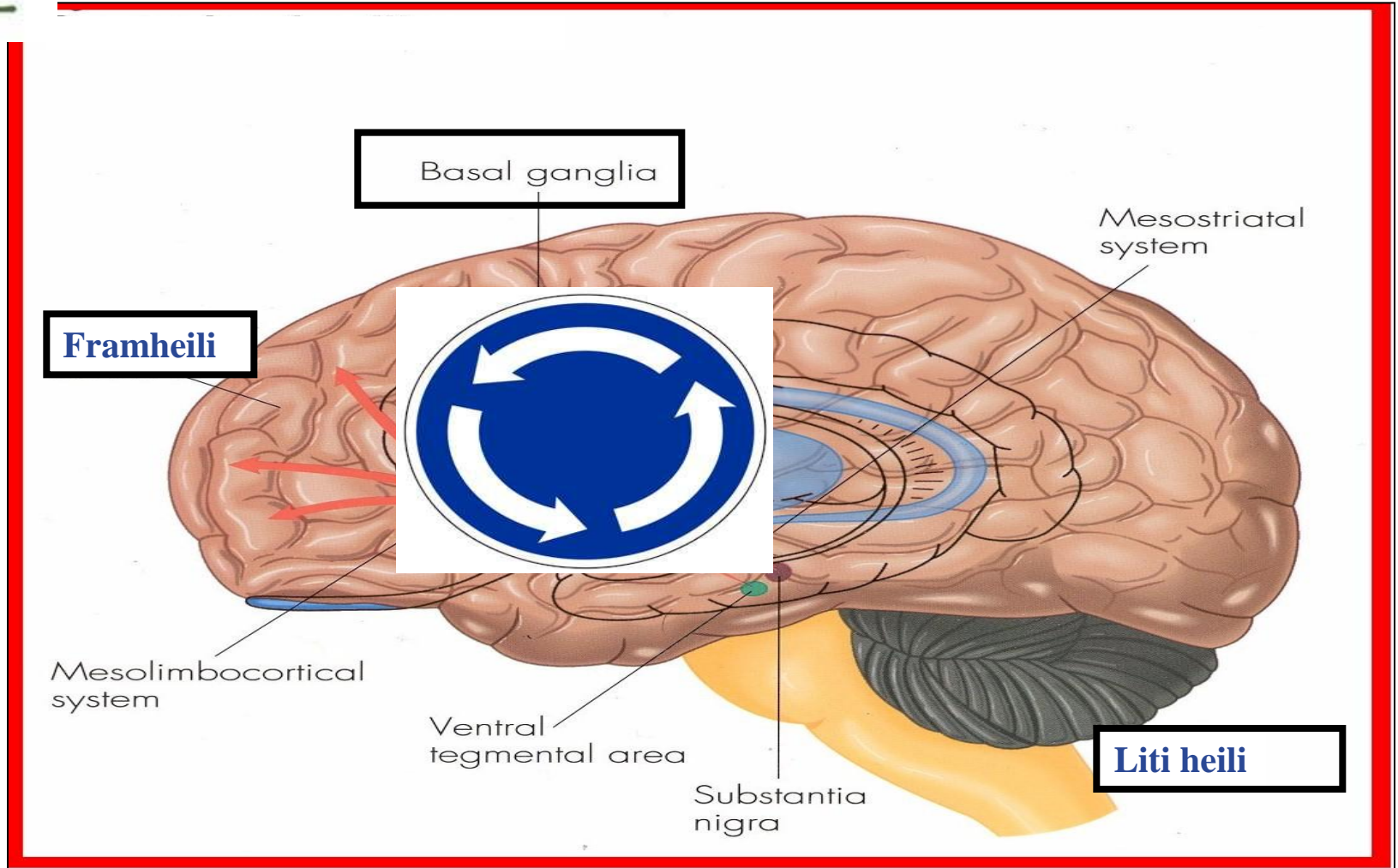




Í grunninn má segja að orsakir ADHD séu líffræðilegar og hafa rannsóknir sýnt að erfðir geti útskýrt á bilinu 75-90% einkenna á meðan umhverfispættir útskýra 20 til 30% einkenna

Biederman & Faraone, 2005; Faraone & Asherson, 2005

ADHD og heilinn



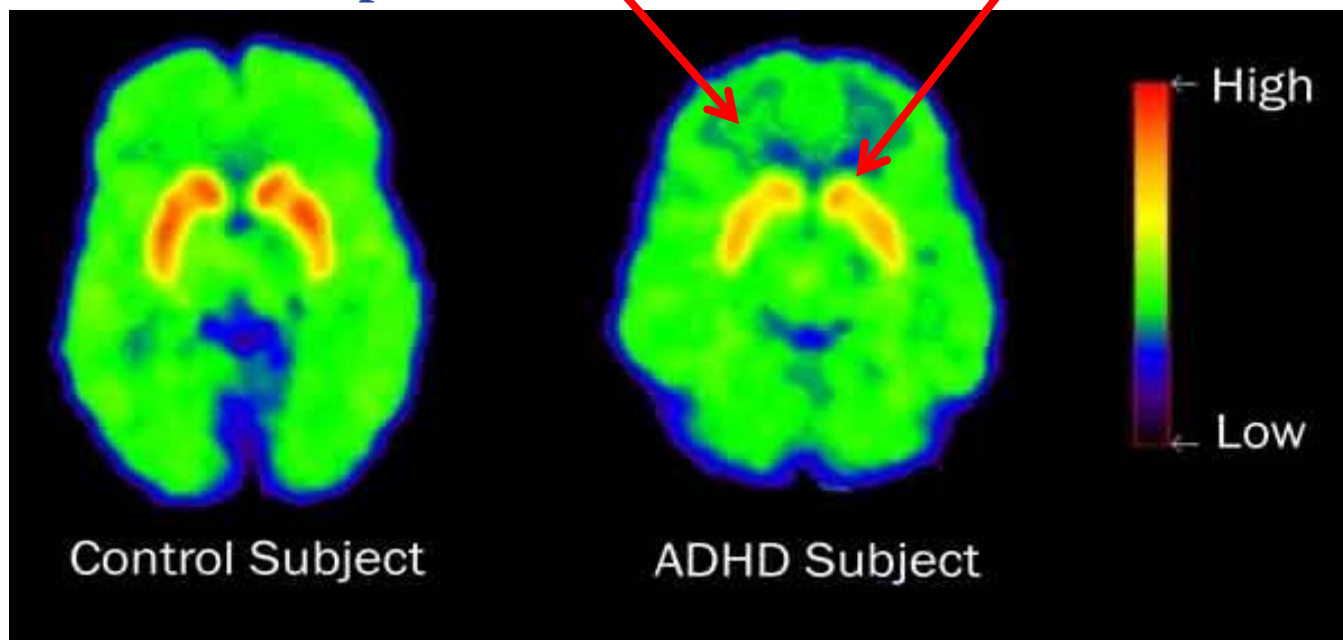


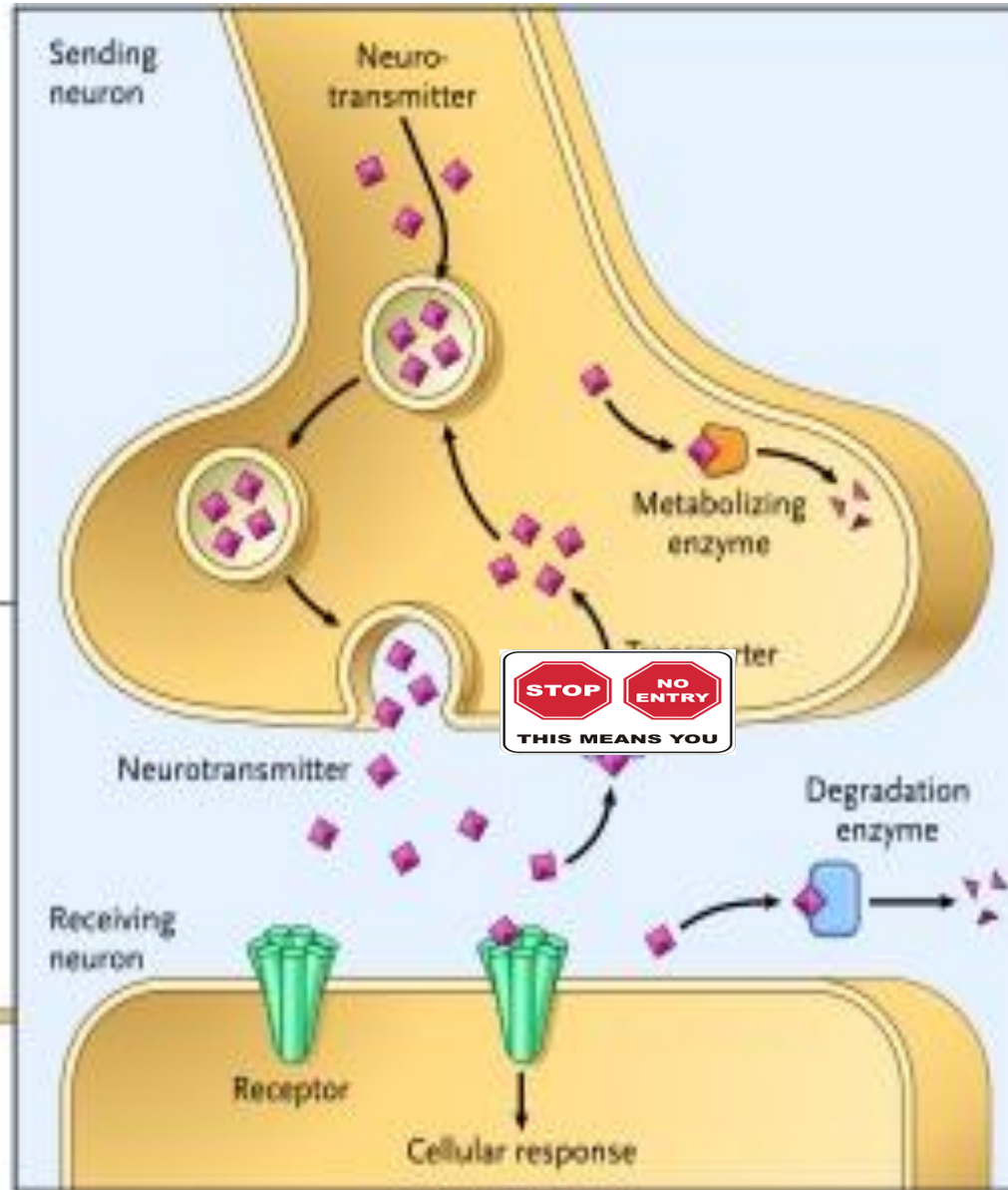
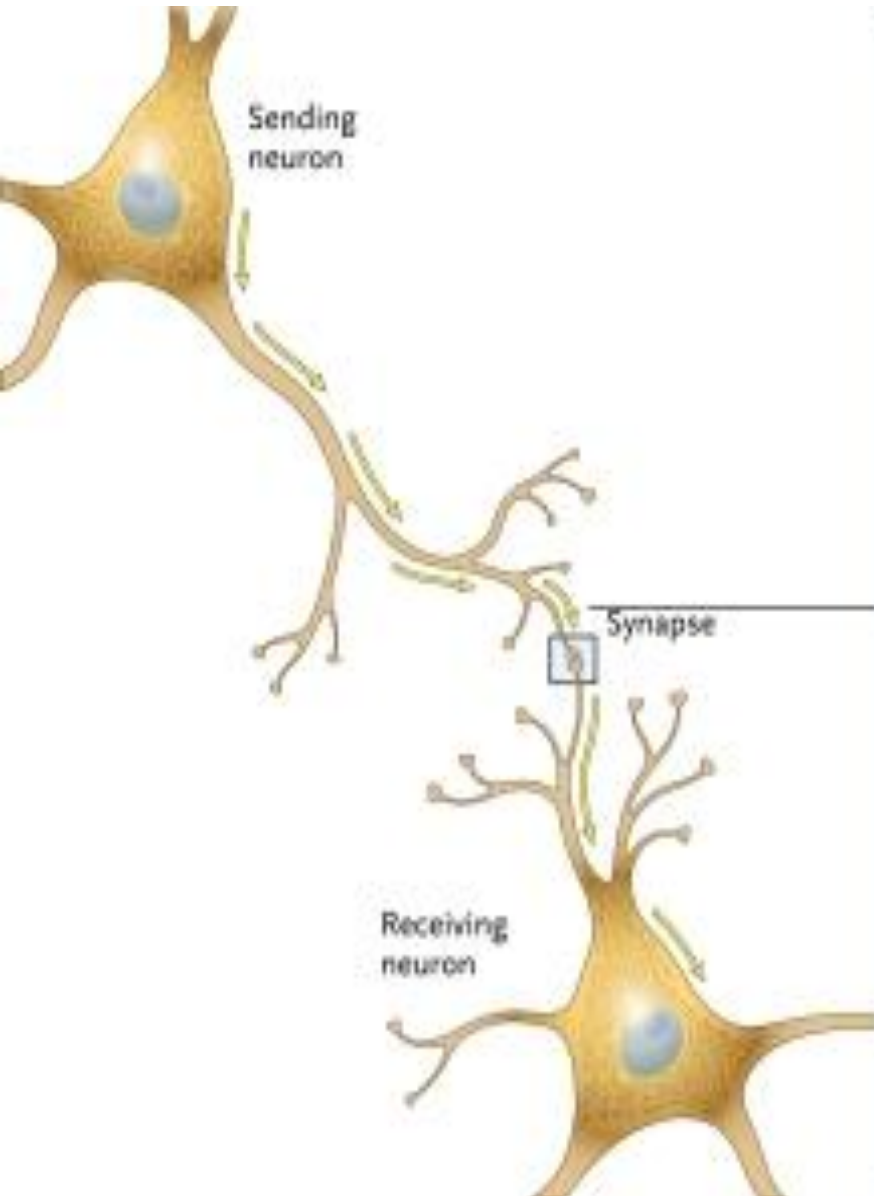


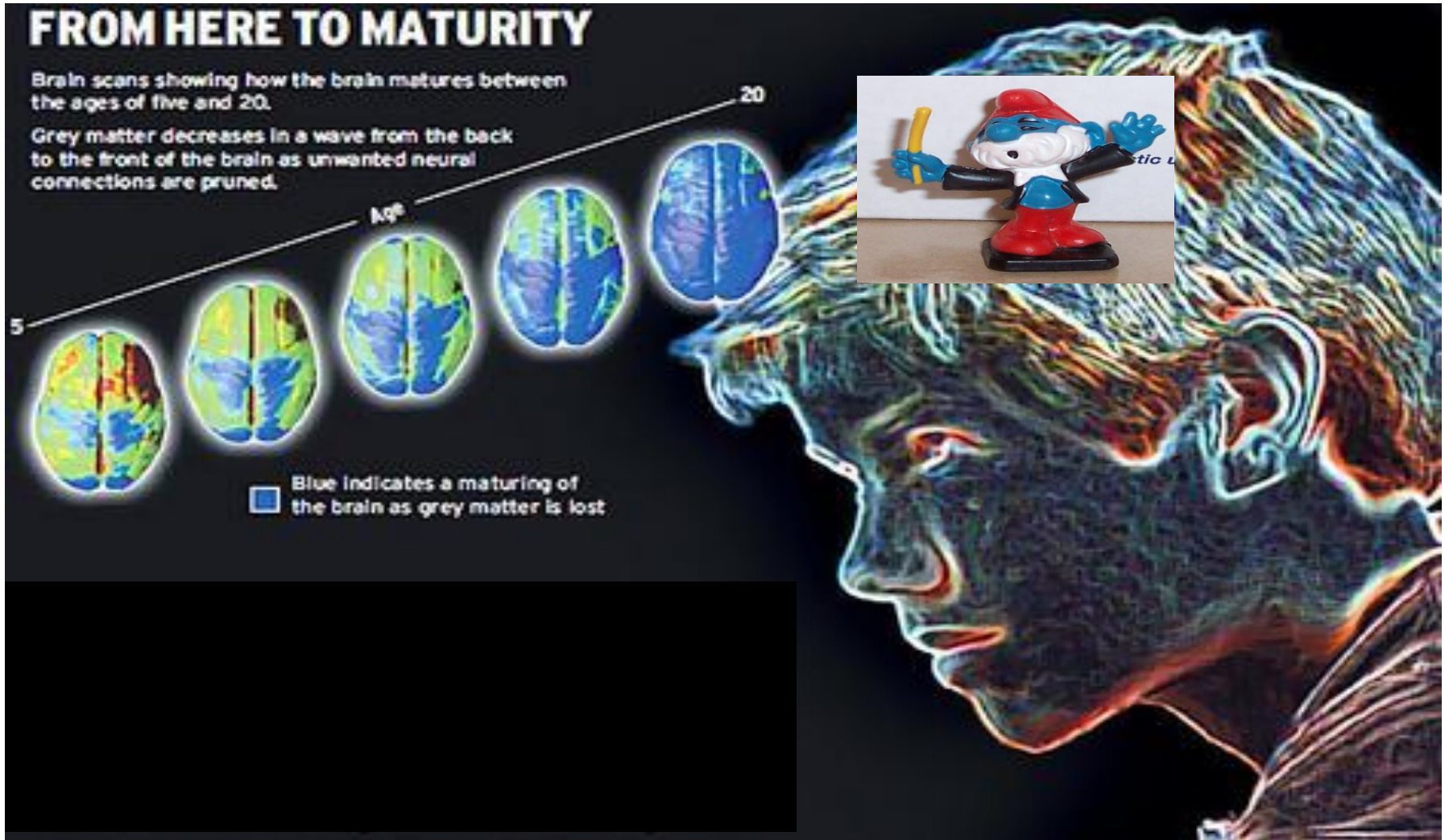
ADHD



- Orsakir ADHD eru í grunninn líffræðilegar og benda rannsóknir til að orsaka sé að leita í truflun í boðefnakerfi heilans á stöðum sem gegna mikilvægu hlutverki við stjórn hegðunar – þar sem að framheilinn spilar hvað stærst hlutverk

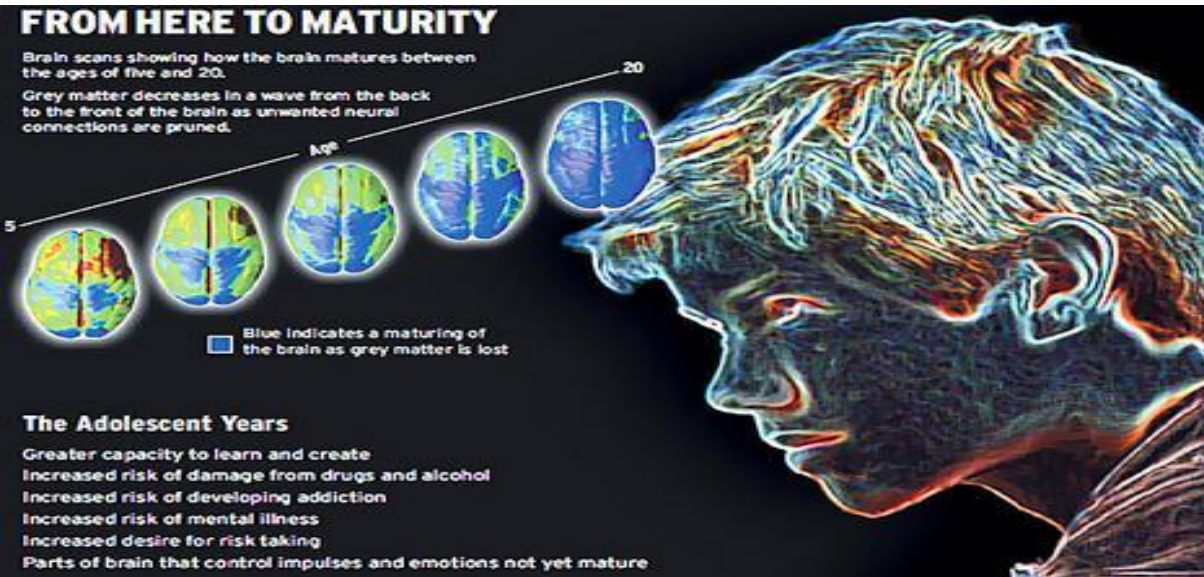






25. janúar 2019

Attention-deficit/hyperactivity disorder is characterized by a delay in cortical maturation.
 Proc Natl Acad Sci USA, 4; 104(49):19649-54.
 Shaw et al., 2007



16 ára og eldri



13 til 15 ára

10 til 12 ára

6 til 9 ára





Stýrifærni og ADHD

slakt vinnsluminni

slök athygli

slakt innra tal og hvatastjórn

læra seint af læra af reynslunni

slök skipulagsgeta og tímaskyn

lítill sveigjanleiki

Andstöðubrjóskuröskun

• Hegðunarröskun

• Kvíði - depurð

• Námsferfiðleikar

• Árátta- og þráhyggja

• Tourette

ofvirkni

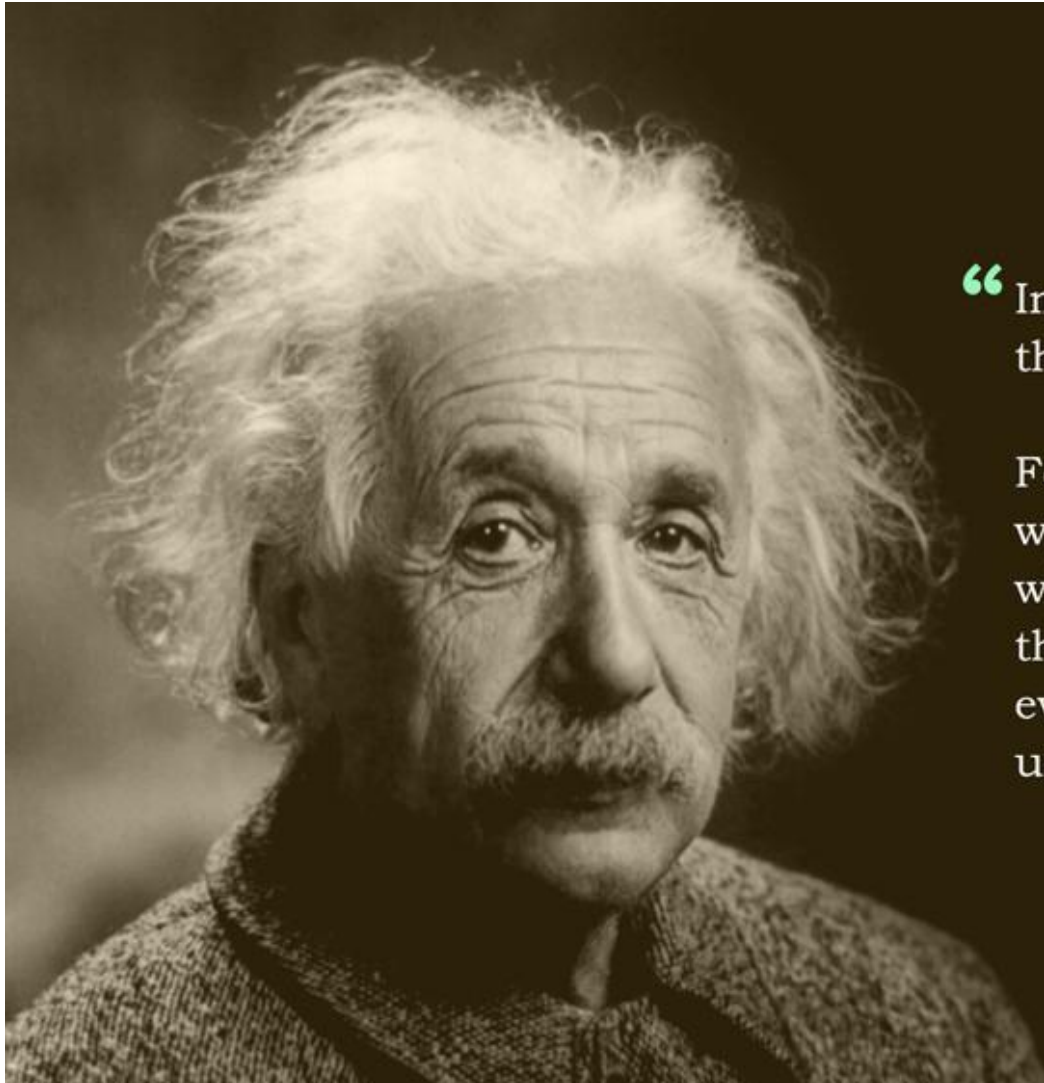
ADHD

athyglisbrestur



depurð
samskipti
hegðunarvandi
reiðivandi
sjálfsmat
kvíði

ADHD



“Imagination is more important than knowledge.

For knowledge is limited to all we now know and understand, while imagination embraces the entire world and all there ever will be to know and understand.”

- Albert Einstein



25. janúar 2019

■ Takk fyrir



Just AD_HD water



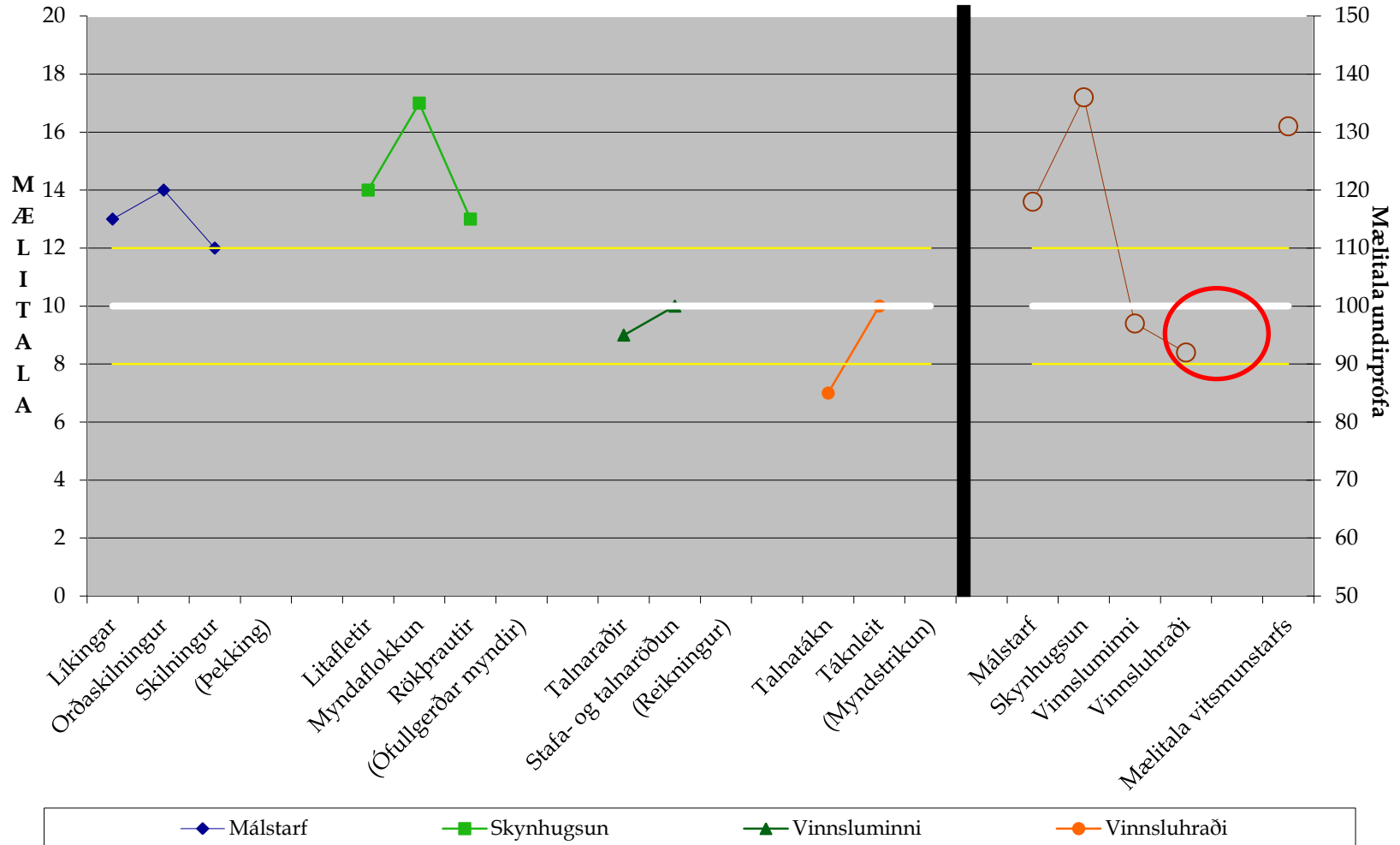
LANDSPÍTALI
HÁSKÓLASJÚKRAHÚS

25. janúar 2019



Drug Name	Brand Name
Amphetamine sulfate	Dyanavel
Amphetamine sulfate	Evekeo
Dextroamphetamine	Dexedrine Spansule
Dextroamphetamine and amphetamine	Adderall XR
Dextroamphetamine and amphetamine	Mydayis
Dexmethylphenidate	Focalin XR
Lisdexamfetamine	Vyvanse
Lisdexamfetamine	Vyvanse chewable
Methylphenidate	Aptensio XR
Methylphenidate	Concerta
Methylphenidate	Cotempla XR ODT
Methylphenidate	Daytrana Transdermal patch
Methylphenidate	Metadate CD ₂ Ritalin LA
Methylphenidate	Metadate ER ₂ Methylin ER
Methylphenidate	Ritalin SR
Methylphenidate	Quilichew ER
Methylphenidate	Quillivant XR

Niðurstaða WISC-IV^{IS}



ADHD og stýrifærni (Executive Functions)

HOW MIGHT POOR 'EXECUTIVE FUNCTIONING' PRESENT?

