



Ursachen von ADHS: was ist gesichert, wo sind die Lücken?

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Potenzielle Interessenskonflikte

seit 2010

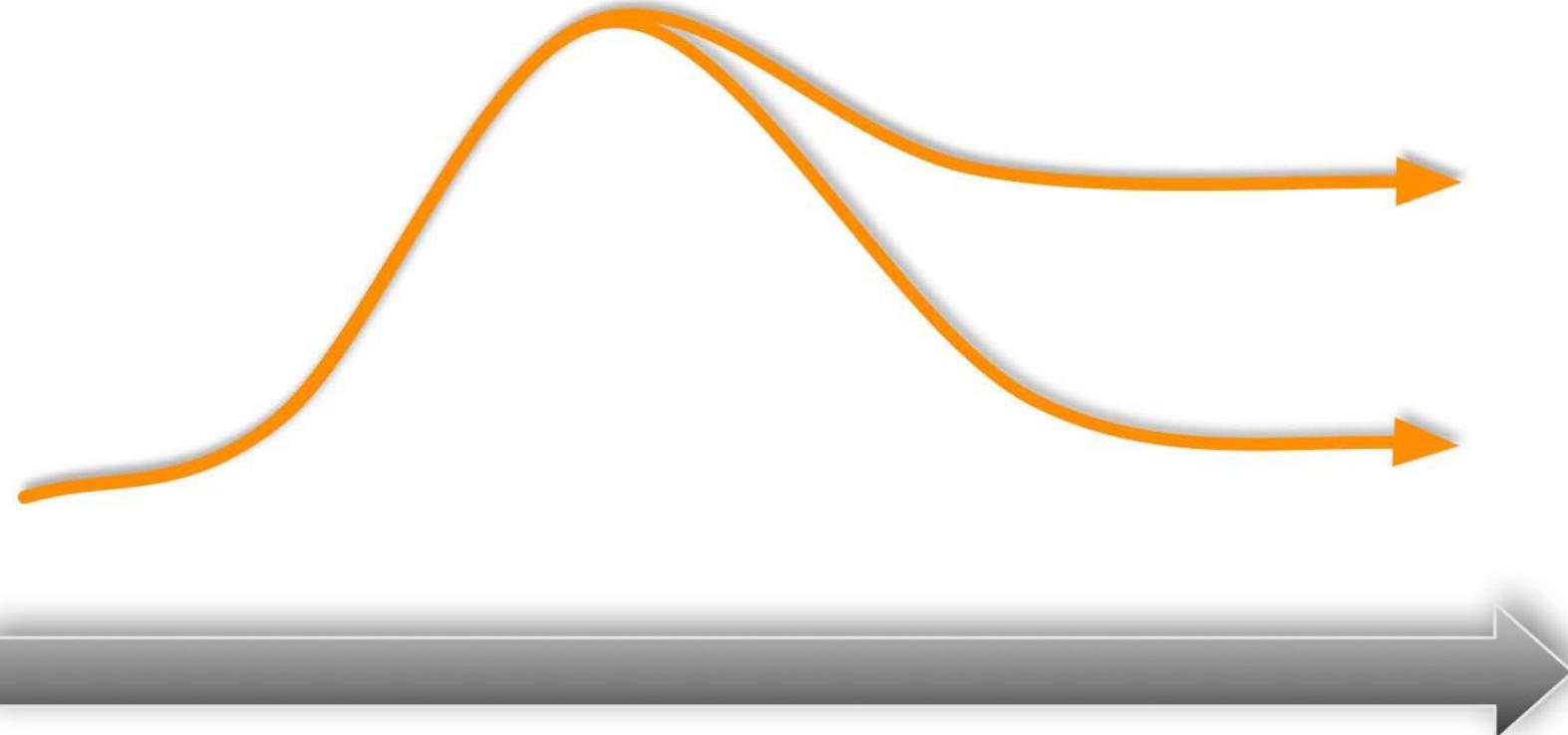
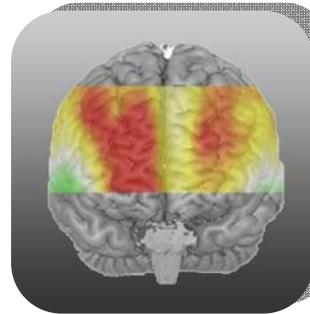
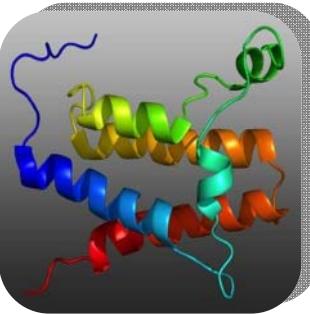


Berater, Gutachtertätigkeit	-
Vortragstätigkeit, Honorare etc.	-
Drittmittel für Forschungsvorhaben, Finanzierung von MA	-
Eigentümerinteresse an Medizinprodukten etc.	-
Besitz von Aktien, Fonds etc.	-
Weitere	-

**Externe Forschungsförderung
durch DFG, BMBF, BfArM, Stiftungen**



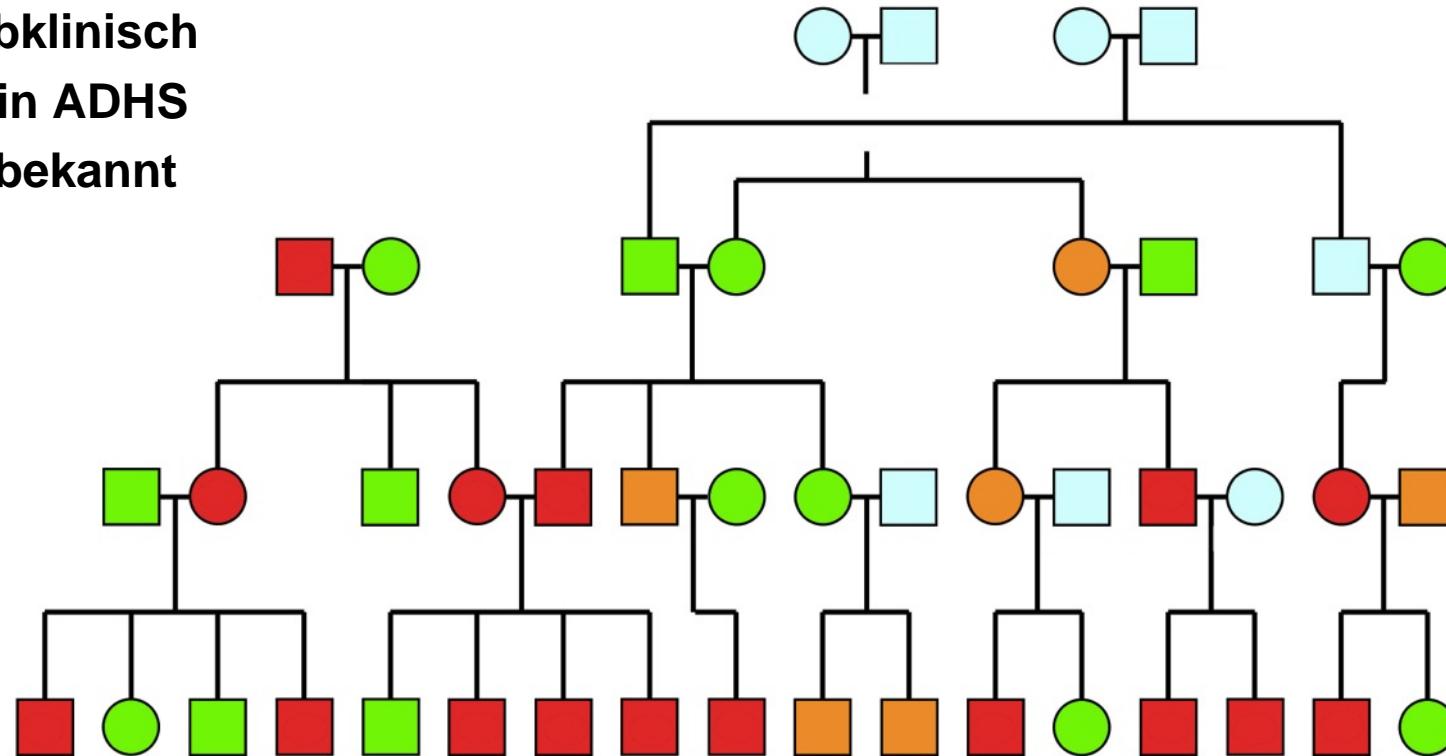
Entwicklungspsychiatrie



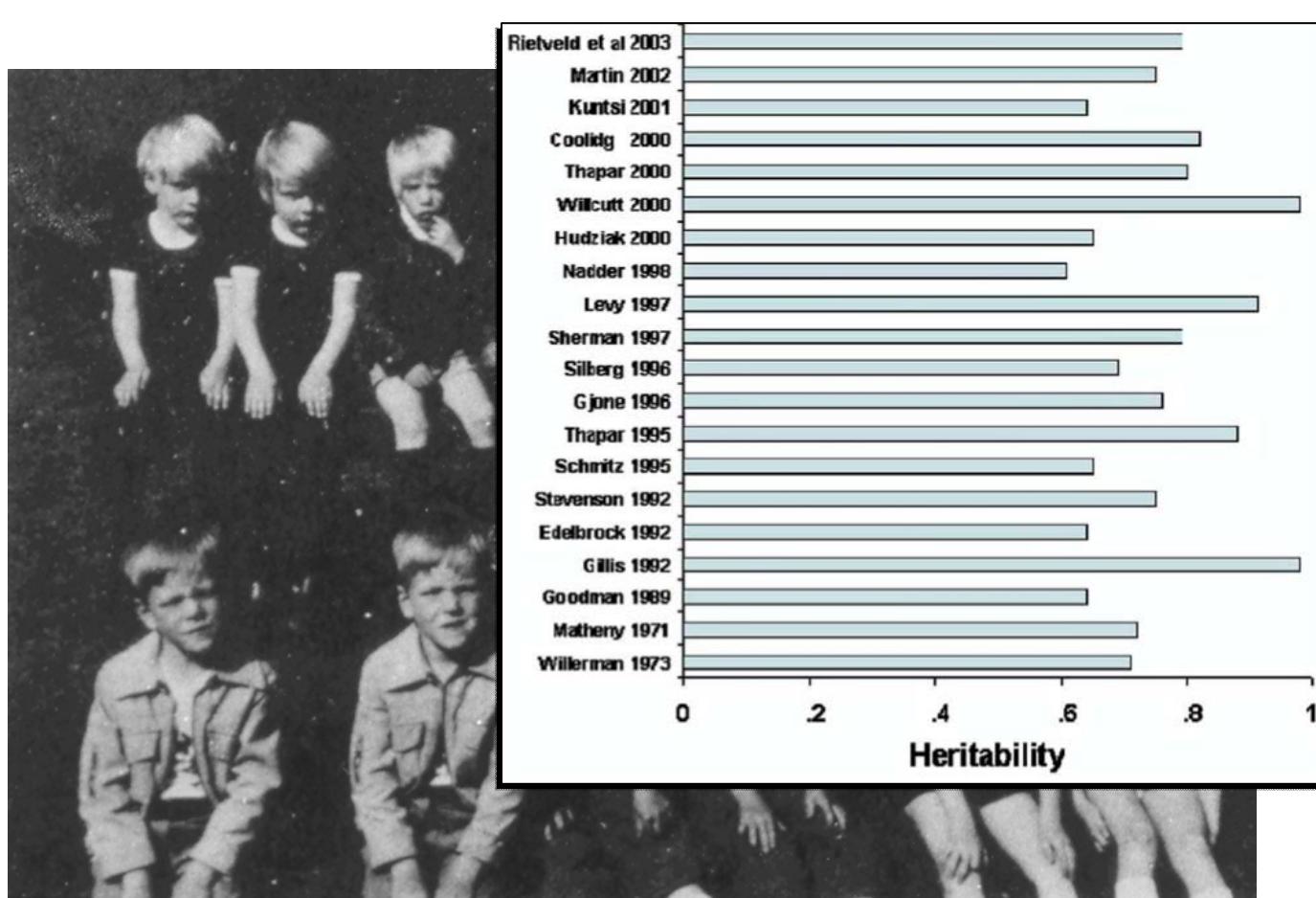
Familiarität



- █ ADHS
- █ subklinisch
- █ Kein ADHS
- █ unbekannt



Zwillingsstudien



Faraone et al., Biol Psychiatry, 2005; Freitag et al., ECAP, 2010



Umweltfaktoren



prä-/ peri-/ postnatal

- SS, Geburt
- Toxine
- Allergie
- psychosozial

Banerjee et al., Acta Paed, 2007; Thapar et al., JCPP, 2013
Thapar et al., Biol Psychiatry 2009; Egmond-Fröhlich et al., PloS1, 2012;
Pettersson et al., JCPP, 2014; Thompson et al., PloS One, 2014;
Schmitt & Romanos, Arch Ped Adol Med, 2012



Umweltfaktoren



Table 2 Environmental risks that have been most commonly been studied in relation to attention deficit hyperactivity disorder

Pre- and perinatal factors	Environmental toxins	Dietary factors	Psychosocial adversity
Maternal smoking, alcohol and substance misuse <i>Risk but not proven causal risk factor</i>	Organophosphate pesticides <i>Risk but not proven causal risk factor</i>	Nutritional deficiencies eg zinc, magnesium, polyunsaturated fatty acids <i>Correlate not yet proven risk factor</i>	Family adversity & low income <i>Correlate not yet proven risk factor</i>
Maternal stress <i>Risk but not proven causal risk factor</i>	Polychlorinated biphenyls <i>Risk but not proven causal risk factor</i>	Nutritional surpluses eg sugar, artificial food colourings <i>Correlate not yet proven risk factor</i>	Conflict/parent-child hostility <i>Correlate not yet proven risk factor</i>
Low birth weight and prematurity <i>Risk but not proven causal risk factor</i>	Lead <i>Risk but not proven causal risk factor</i>	Low/high IgG foods <i>Correlate not yet proven risk factor</i>	Severe early deprivation <i>Risk, likely causal risk factor</i>

Banerjee et al., Acta Paed, 2007; Thapar et al., JCPP, 2013
Thapar et al., Biol Psychiatry 2009; Egmond-Fröhlich et al., PloS1, 2012;
Pettersson et al., JCPP, 2014; Thompson et al., PloS One, 2014;
Schmitt & Romanos, Arch Ped Adol Med, 2012



Umweltfaktoren



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Schmitt & Romanos, Arch Ped Adol Med, 2012



ADHS & Neurodermitis



JAMA®

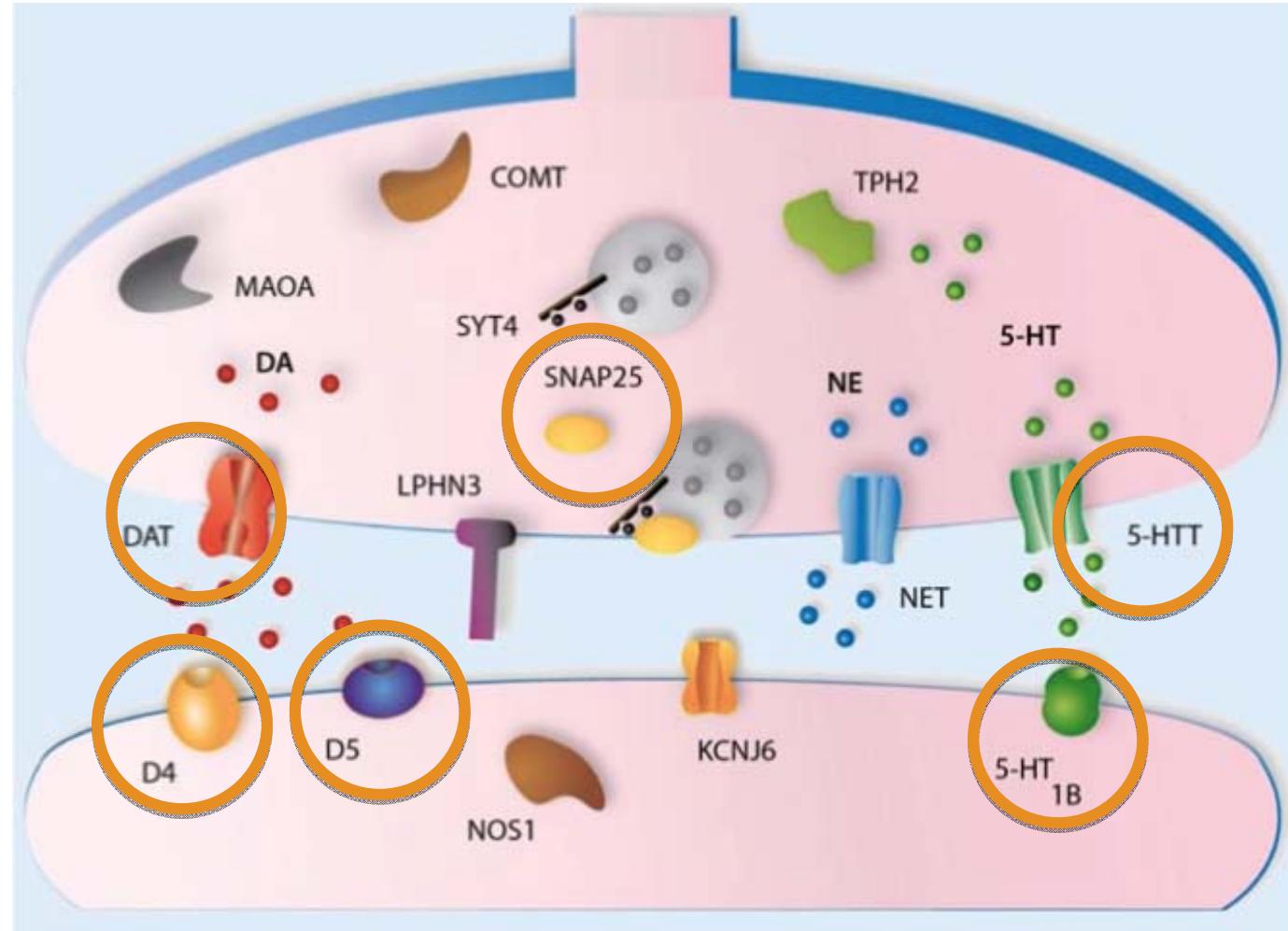
Atopic Eczema and Attention-Deficit/Hyperactivity
Disorder in a Population-Based Sample of Children and



- Romanos et al., *JECH*, 2009
Schmitt & Romanos, *Ped Allergy Immunol*, 2009
Schmitt et al, *JACI*, 2009
Schmitt et al., *Br J Dermatol*, 2009
Schmitt et al., *Allergy*, 2010
Taurines et al., *ADHD*, 2011
Romanos et al., *Allergy*, 2011
Schmitt et al., *ZfKJP*, 2013



Neurotransmission

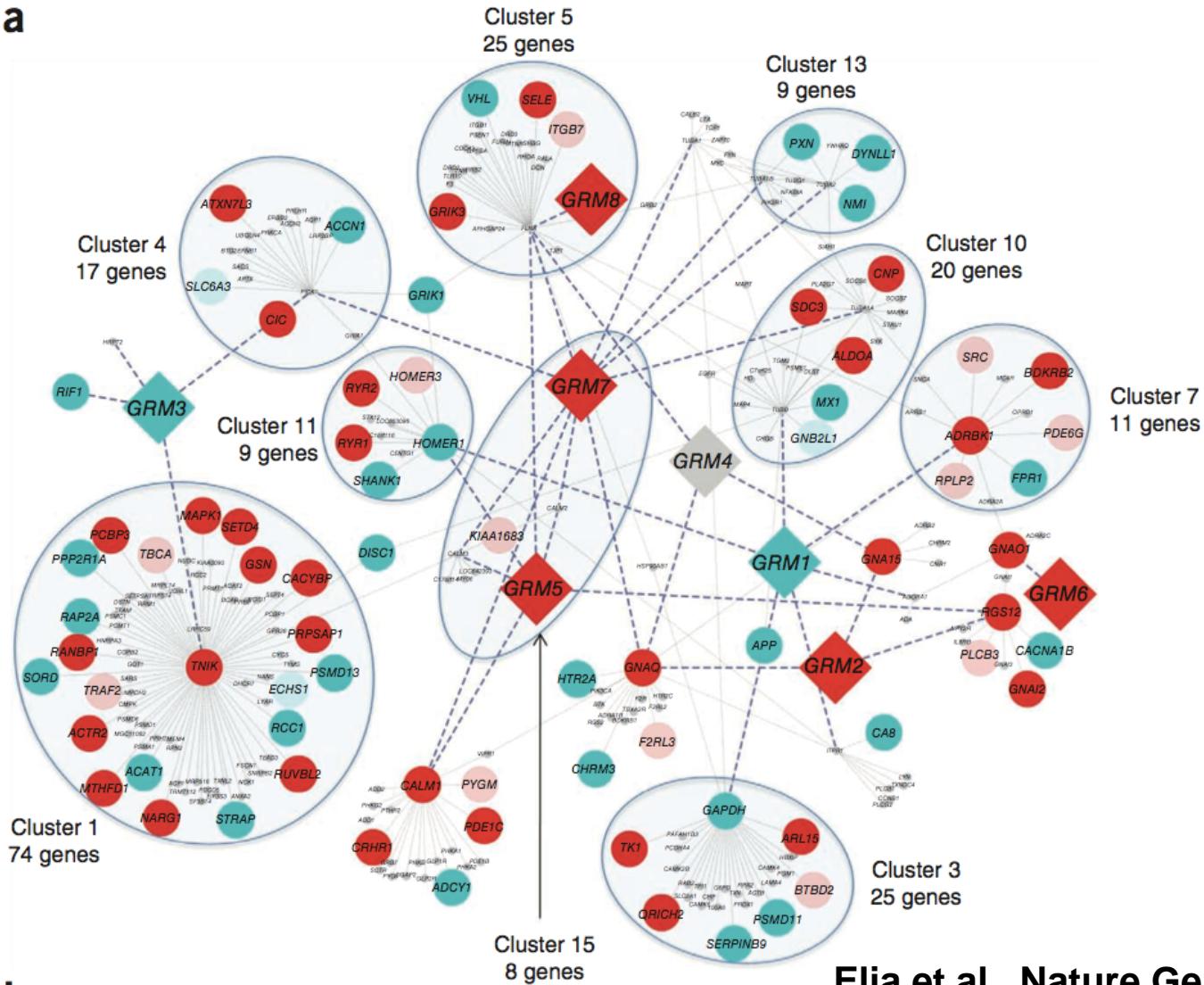


Renner et al., 2008; Gizer et al., 2009, Thapar et al., 2012

Gen-Pfade und -Netzwerke



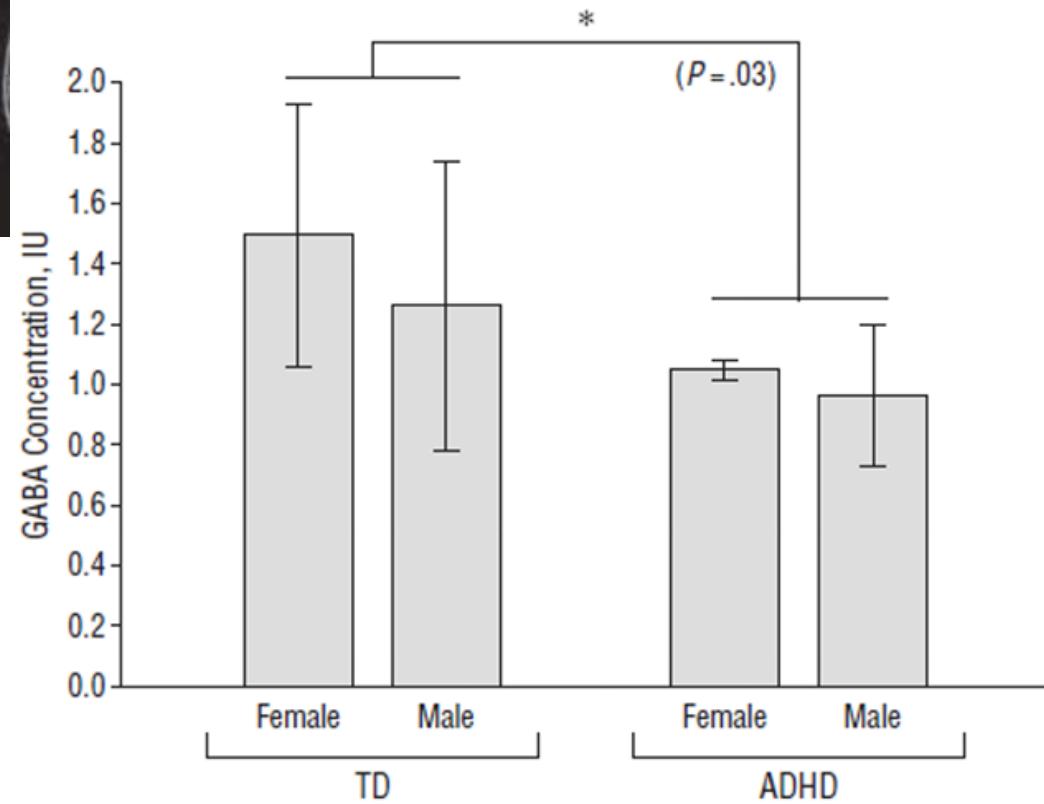
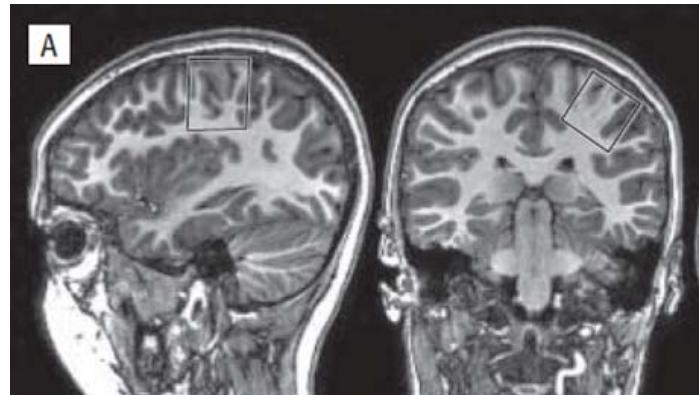
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Elia et al., Nature Genetics, 2011



GABA



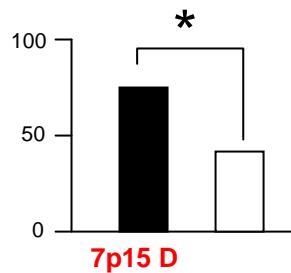
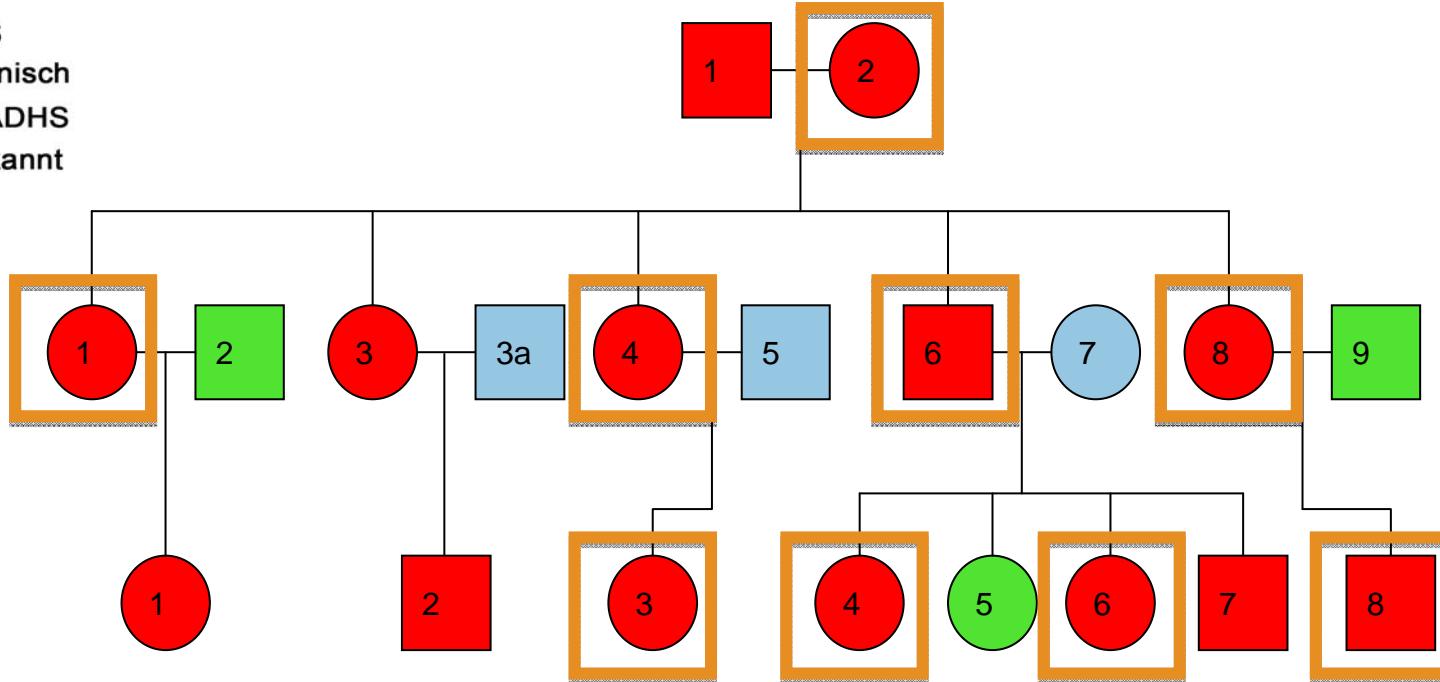
Edden et al., Arch Gen Psychiatry, 2012



NPY Duplikation



- █ ADHS
- █ subklinisch
- █ kein ADHS
- █ unbekannt

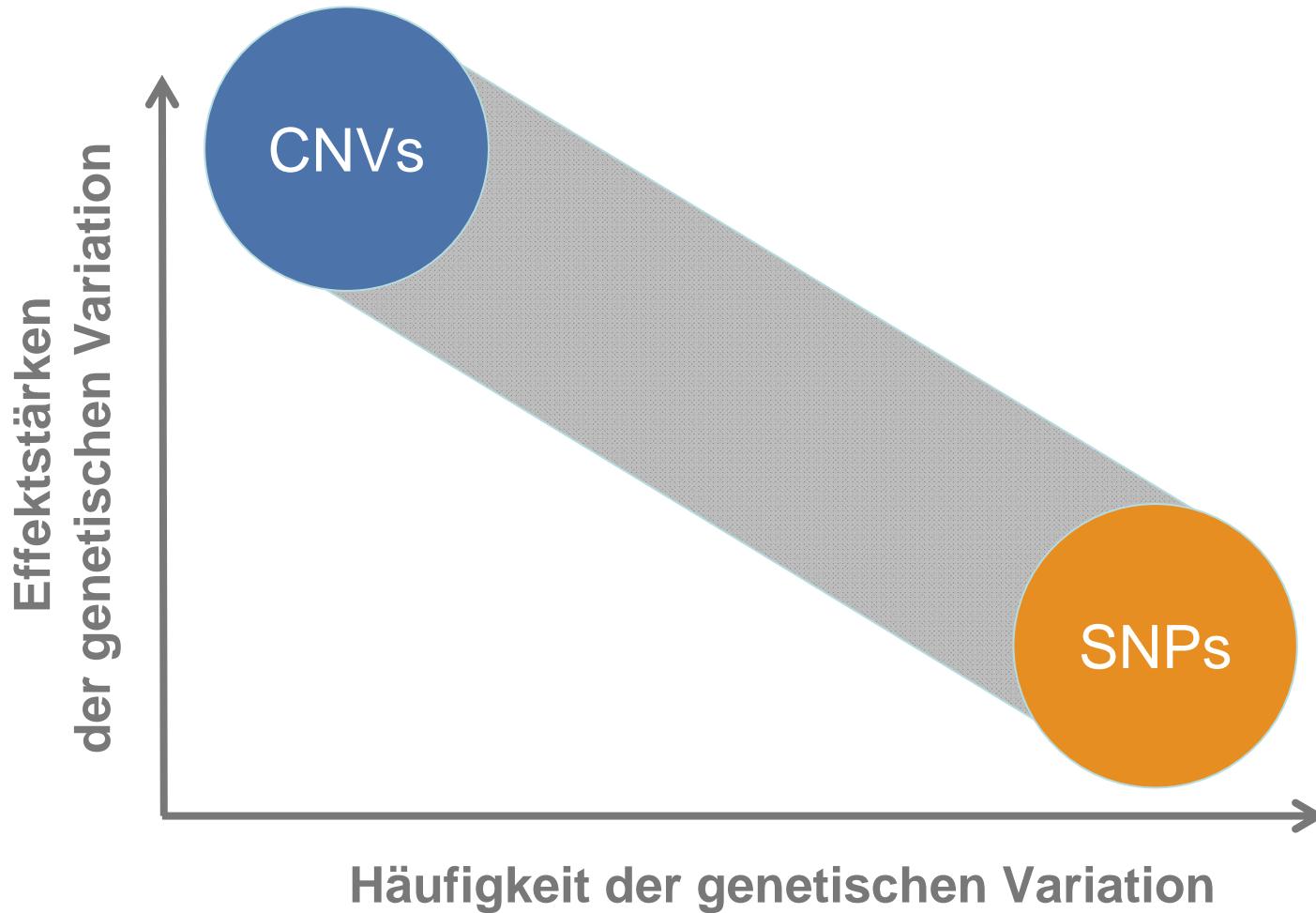


NPY Plasma Konzentration

Allele	df(0)	-LnLk(0)	df(T)	-LnLk(T)	ChiSq	p QTDT	emp. p FBAT
1	9	76.84	8	74.74	4.2	0.0404	
2	9	76.84	8	74.74	4.2		0.152207

Lesch et al, Mol Psychiatry, 2010

common variants – private mutations





offene Fragen und Probleme



- Heterogene Ätiologie
- Genetik:
 - common vs. private variants?
 - G X G
 - Funktionsanalyse
- Umwelt:
 - Assoziationen ohne bewiesene Kausalität
 - Confounder
 - Medienwirksam!
- technische/methodische Limitationen:
 - GxE, Epigenetik, „kleine“ CNVs



**Herzlichen Dank
für Ihre Aufmerksamkeit**