

Langzeitauswirkung der Frühgeburt



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Overview

1. Kognitive Entwicklung
2. Seelische Gesundheit:
vom Kind zum Erwachsenen
- a) Autismus Spektrum
- b) Aufmerksamkeit
- c) Ängste und Depression
- d) Persönlichkeit und Sozialisation

4. Schlussfolgerungen und Implikationen



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Phenotype vs prevalence vs individual children

- The phenotype pattern applies to preterms at population level rather than individual preterm children
- The bottle is more than half full (prevalence of adaptive outcome)



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EPICure Study: A National Study of Children <26 weeks gestation (1995 born)

98% of units in UK and Ireland contributed to the study (276 nurseries; 171 NICUs)

4004 deliveries reported (20-25w)

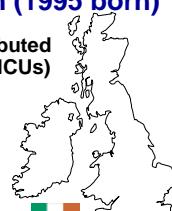
1289 livebirths

314 discharged

308 alive at 2.5 years of age: 283 (92%)

308 alive at 6 years of age: 241 (78%)

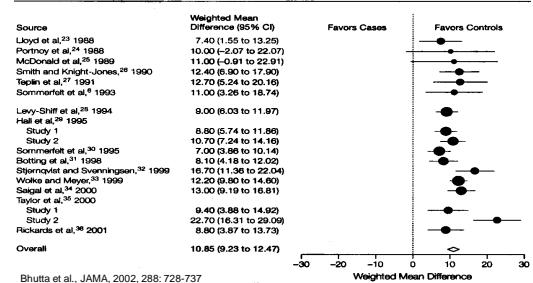
307 alive at 11 years of age: 219 (71%)



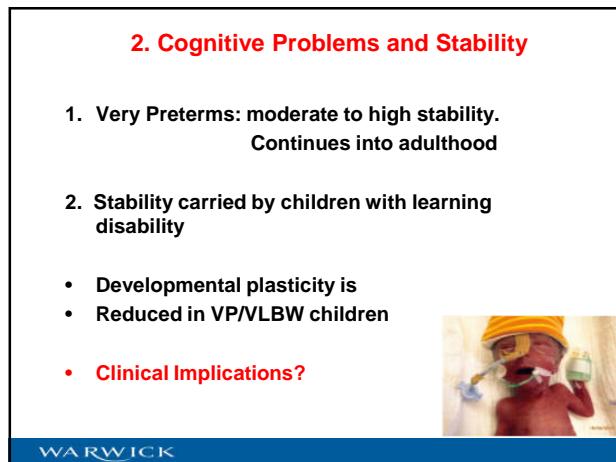
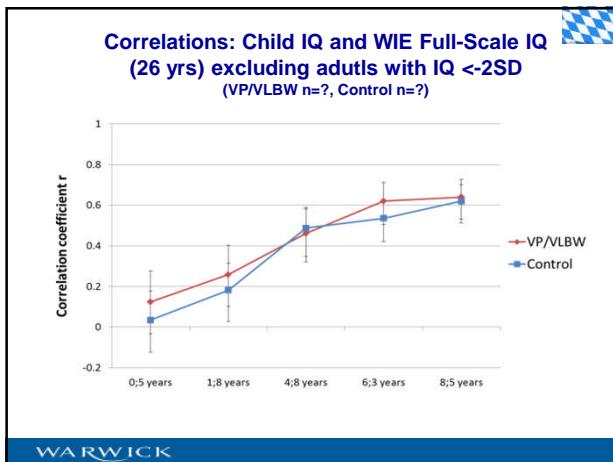
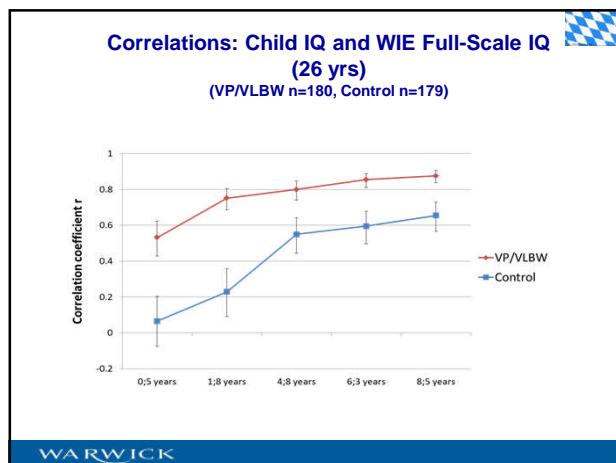
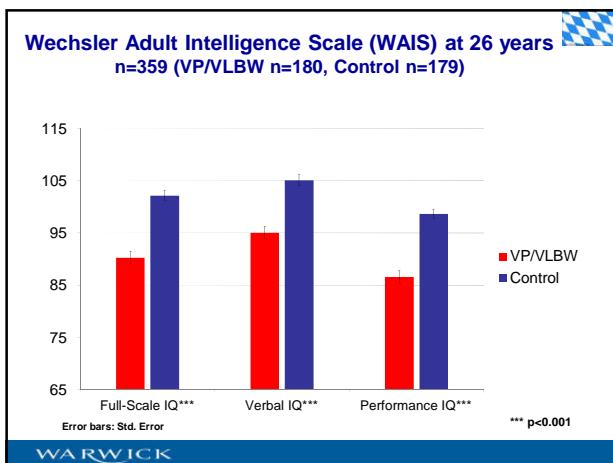
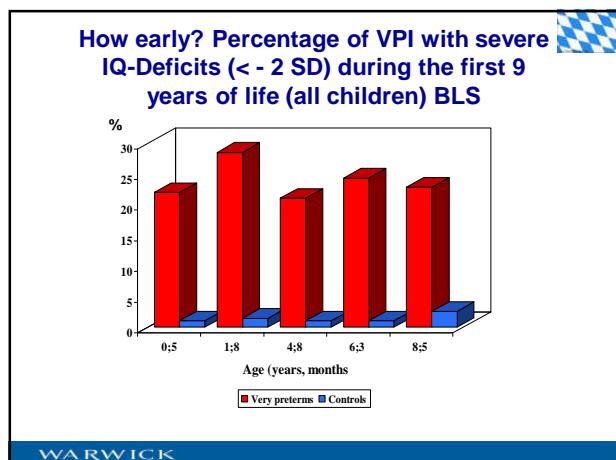
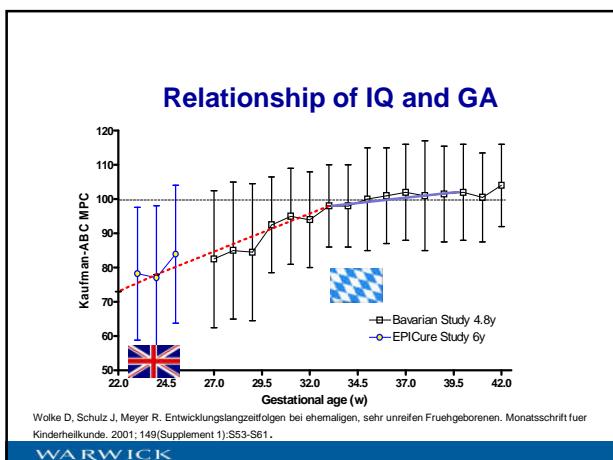
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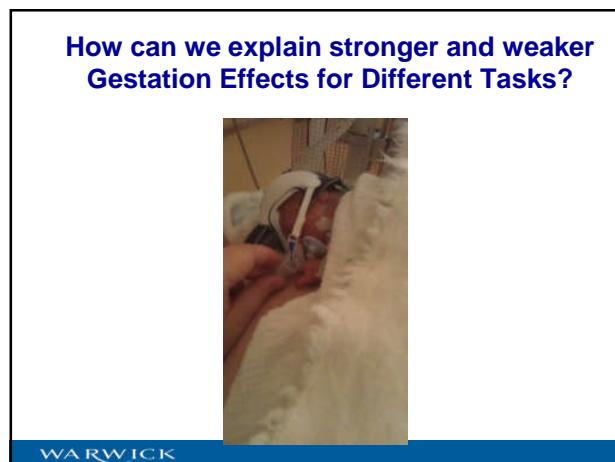
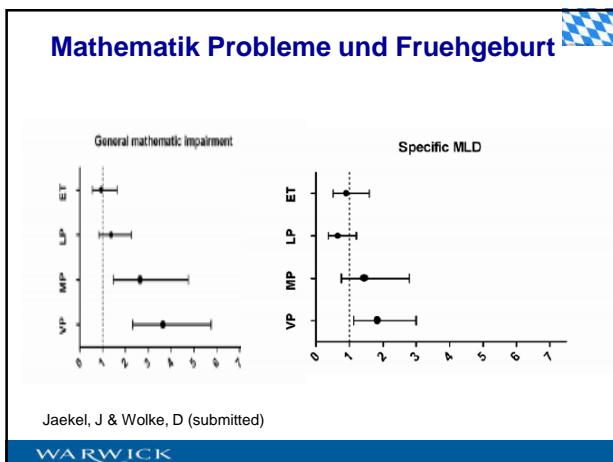
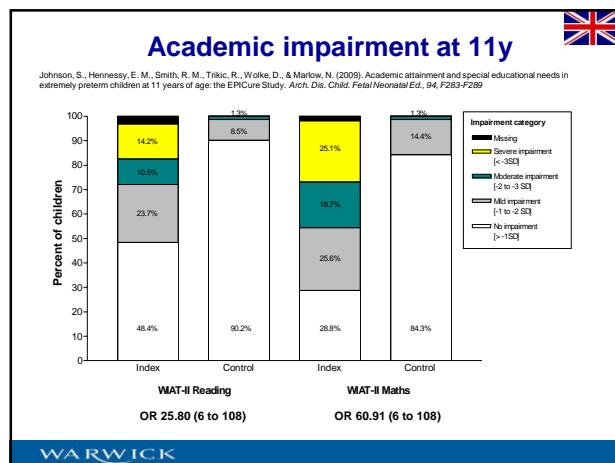
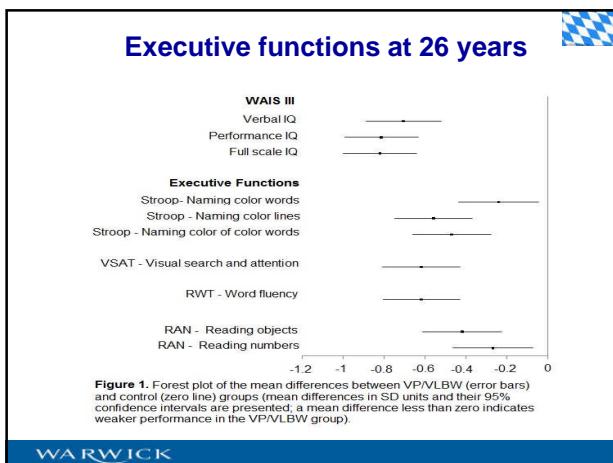
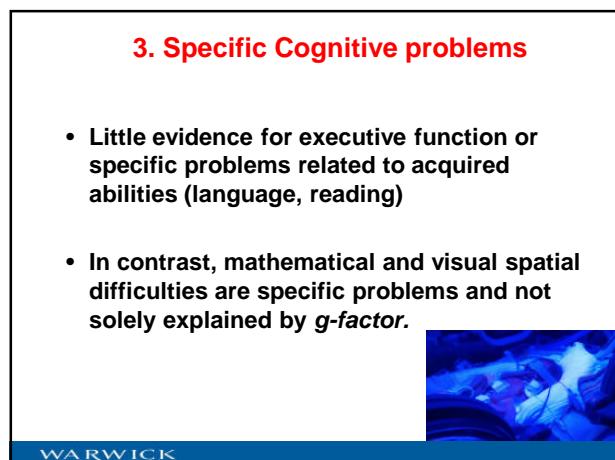
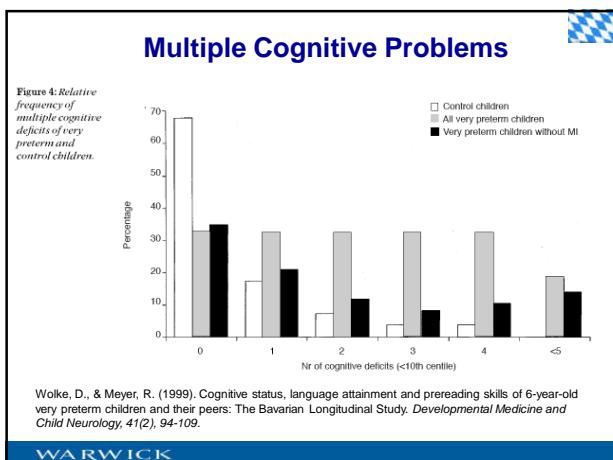
General Cognitive Development and Prematurity

Figure 1. Random-Effects Meta-analysis Comparing Cognitive Test Scores Between Cases and Controls



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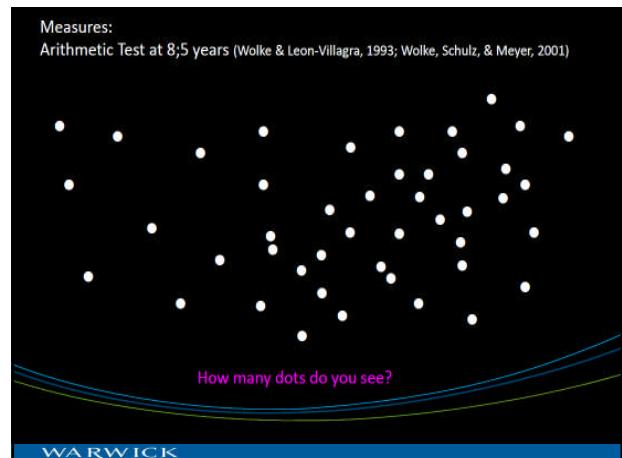
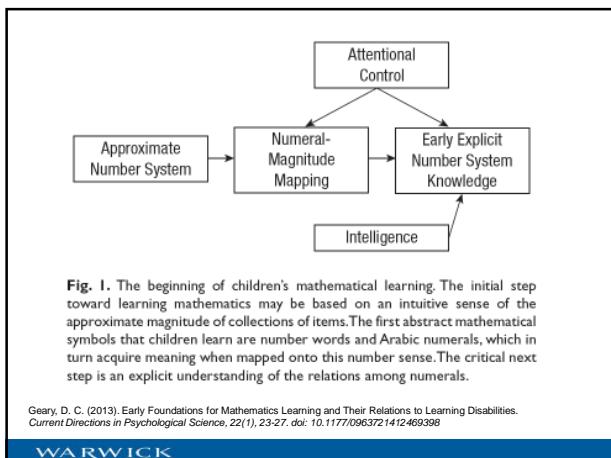


Fig. 1. The beginning of children's mathematical learning. The initial step toward learning mathematics may be based on an intuitive sense of the approximate magnitude of collections of items. The first abstract mathematical symbols that children learn are number words and Arabic numerals, which in turn acquire meaning when mapped onto this number sense. The critical next step is an explicit understanding of the relations among numerals.

Geary, D. C. (2013). Early Foundations for Mathematics Learning and Their Relations to Learning Disabilities. *Current Directions in Psychological Science*, 22(1), 23-27. doi: 10.1177/0963721412469398

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How many dots did you see?

20, 40, 60 or 80 dots?

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Working Memory requirements: low workload

full term

preterm

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high workload

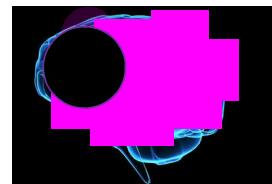
full term

preterm



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Prematurity and cognitive workload



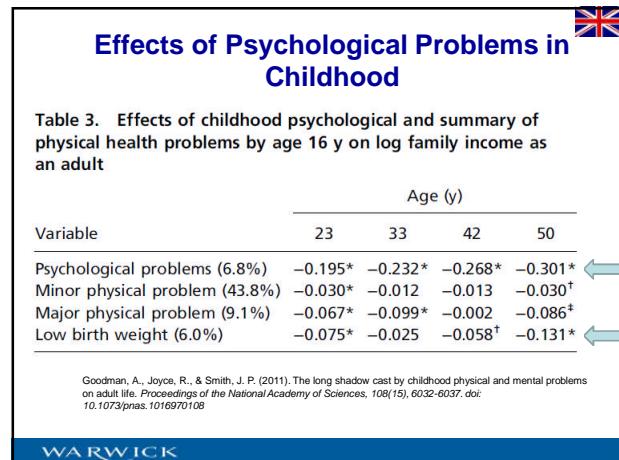
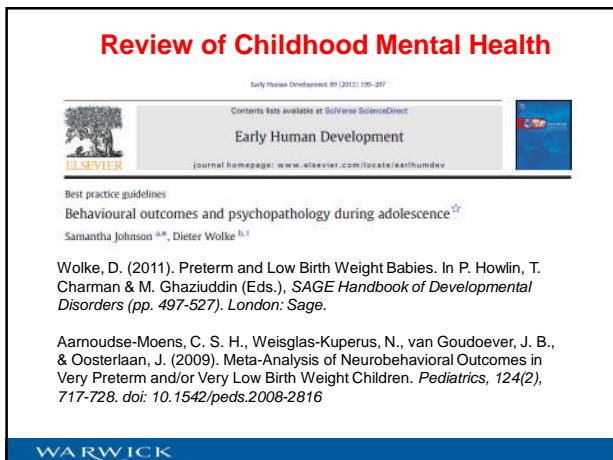
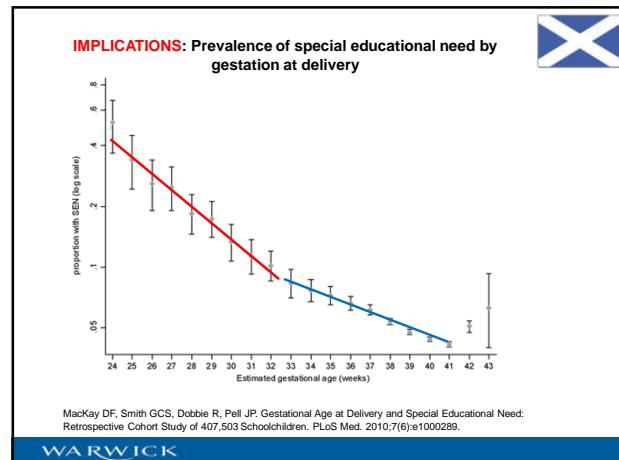
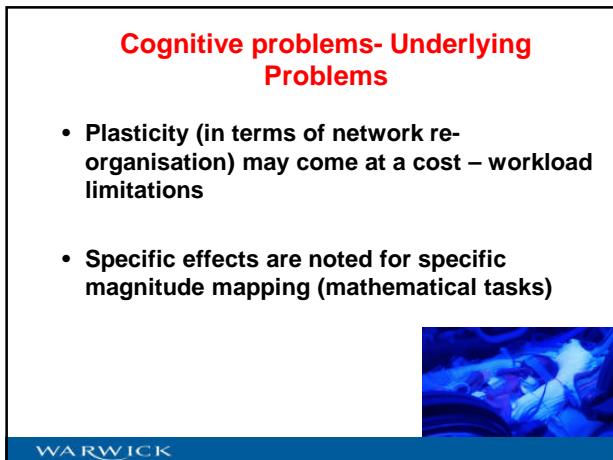
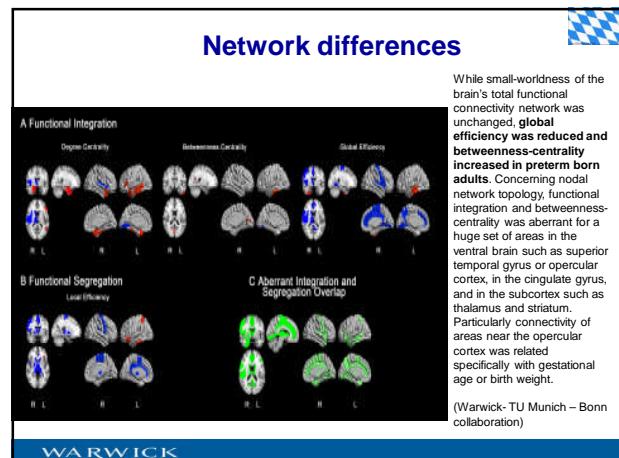
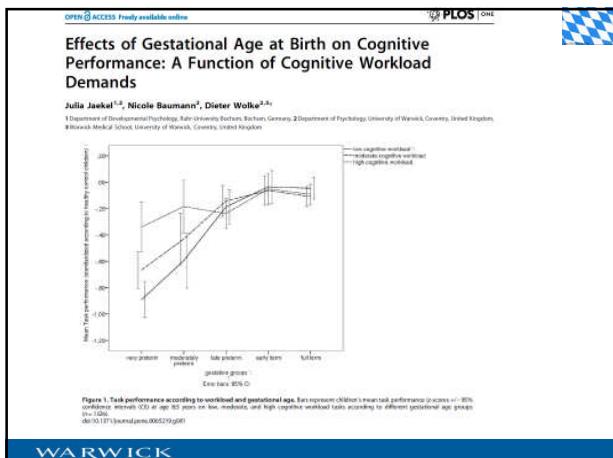
The Implication

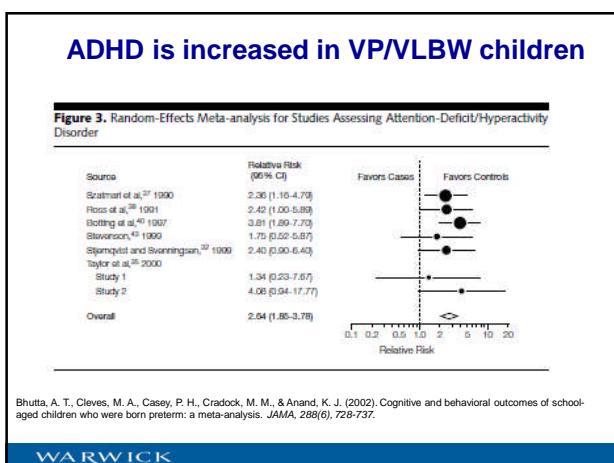
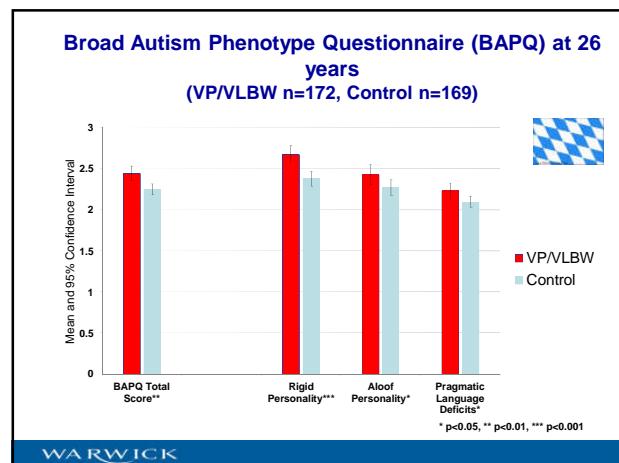
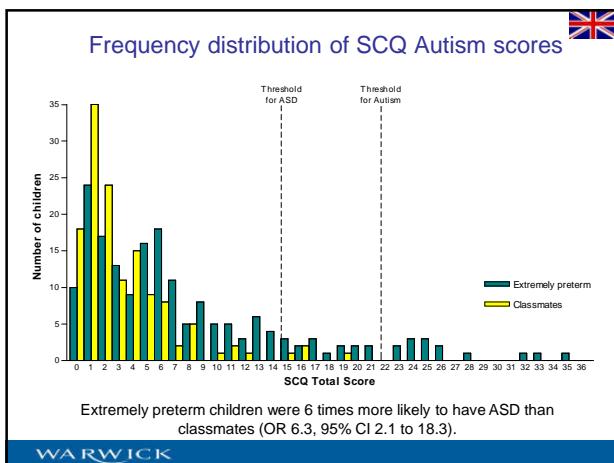
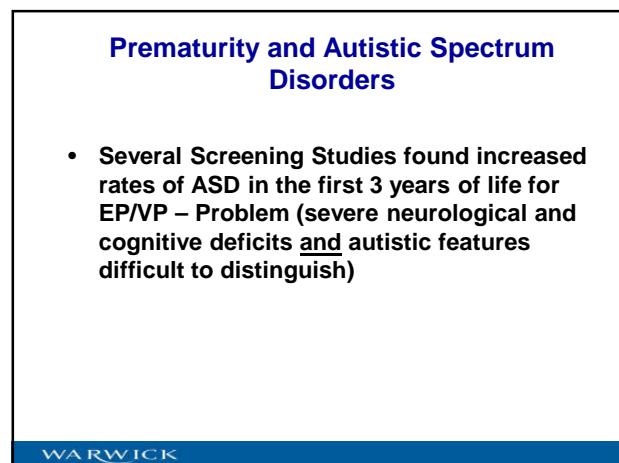
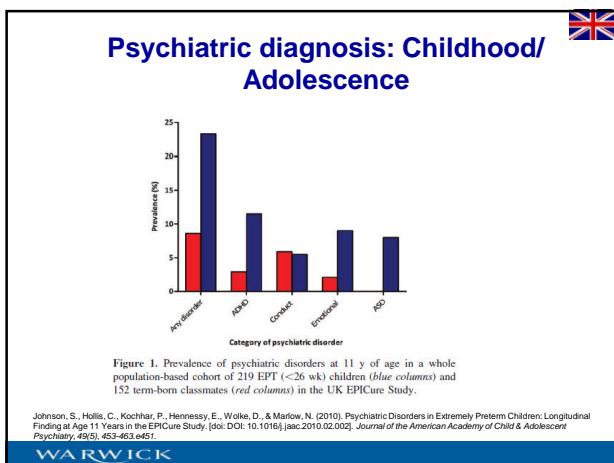
When workload increases

- when workload increases
 - networks become large and thus work more slowly or fail to solve the task
 - bandwidth problems, higher integration requirements

Thus the earlier born → effects increase with workload of the task

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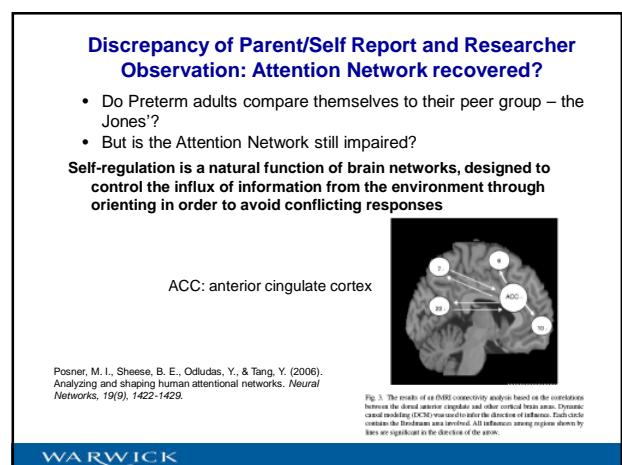
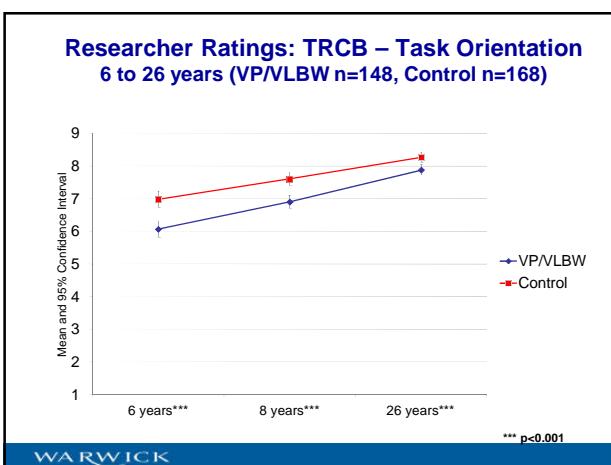
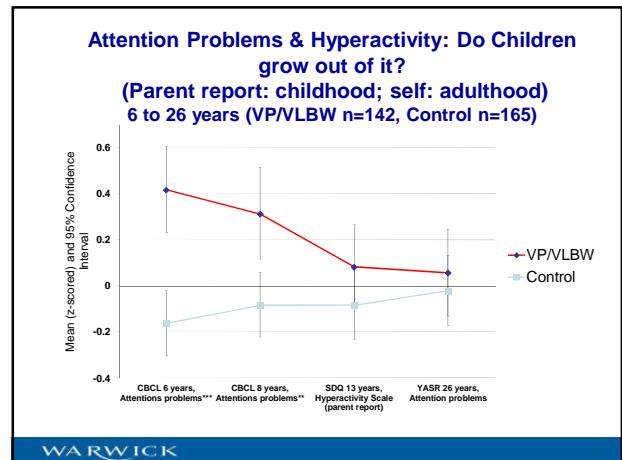
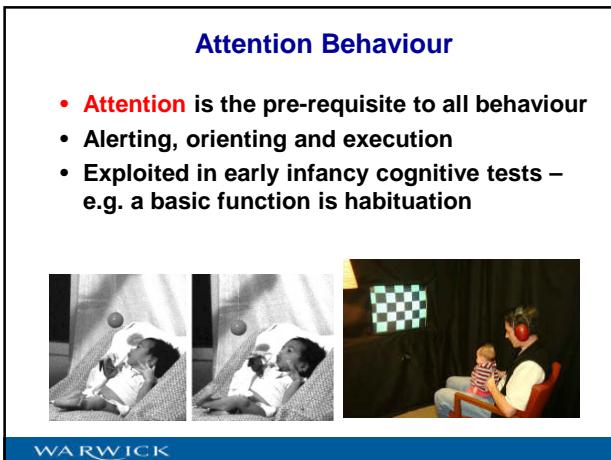
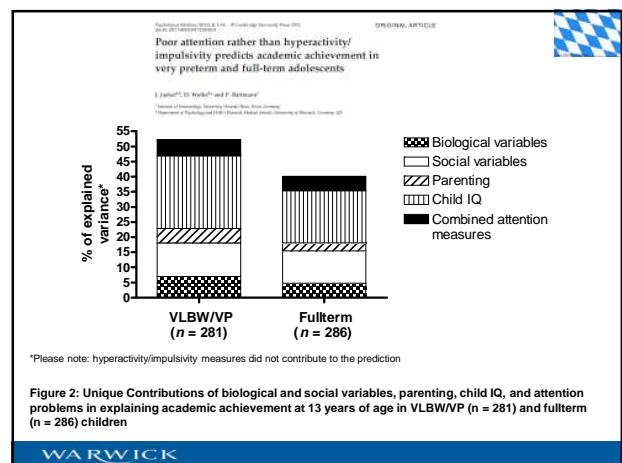
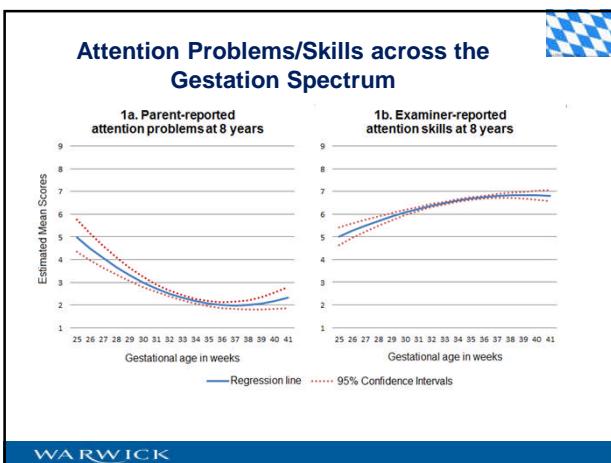


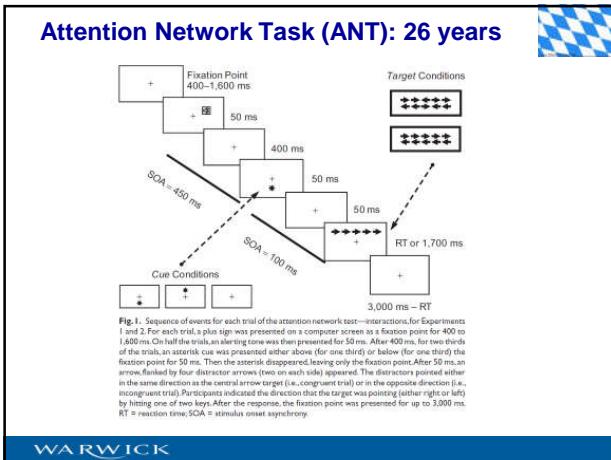


ADHD psychiatric diagnoses

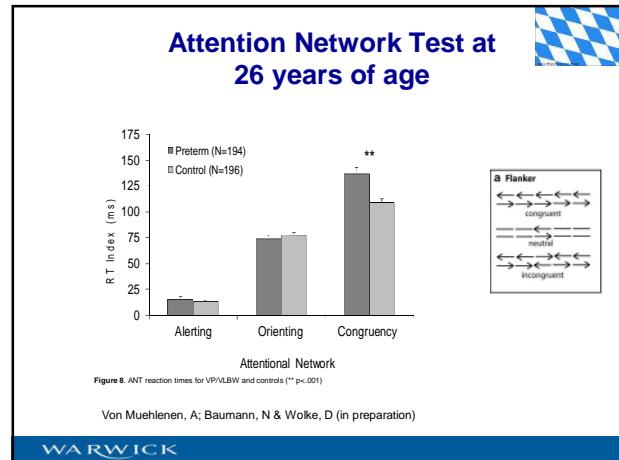
	Classmates	Extremely preterm	OR (95% CI)	p
Any psychiatric diagnosis	8.6%	23.3%	3.2 (12.7 to 6.2)	0.000
ADHD	2.9%	11.5%	4.3 (1.5 to 13.0)	0.005
ADHD-Inattentive	0.7%	7.1%	10.5 (1.4 to 81.1)	0.005
ADHD-Combined	2.2%	4.4%	2.1 (0.5 to 7.9)	0.362

Johnson S, Hollis C, Kochhar P, Hennessy E, Wolke D, Marlow N. Psychiatric Disorders in Extremely Preterm Children: Longitudinal Finding at Age 11 Years in the EPICure Study. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2010;49(5):453-63.





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Summary: ADHD – In-Attention

- Very preterms have more ADHD of the **In-Attention type** in childhood
- Causally related to LBW (brain growth)/prematurity (brain alteration): **biological insult origin**
- In-Attention is detrimental to school achievement beyond IQ and other social factors – **lifetime consequences**
- ADHD is **not self-perceived** in adulthood but still seen by observers
- Executive attention** is still impaired in adulthood in very preterm children

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Diagnoses: Anxiety Disorders

Table 1
Population-based cohort studies investigating psychiatric disorders in preterm adolescents (aged 10–19 years).

Study	Year	Age	Preterm	Control	Preterm %	Control %	OR (95% CI)	Interview	Risk for specific disorders
Johansson et al. [38]	1995	11	n = 219 <26 weeks	n = 152 23%	95	32 (1.7 to 6.2)	DAWBA	ADHD, anxiety disorders, ASD	
Indredavik et al. [44]	1986–1988	14–15	n = 55 <1501 g	n = 66	77%	6%	3.8 (1.3 to 10.5)*	ISADS	ADHD, anxiety disorders
Indredavik et al. [15]	1986–1988	14	n = 56 <1501 g	n = 83	25%	7%	4.3 (1.5 to 12.0)	ISADS	Anxiety disorders
Eggen et al. [28]	1986–1988	11	n = 130 <2000 g	n = 131	27%	9%	3.1 (1.5 to 6.5)	CAS	ADHD
Roeting et al. [39]	1980–1983	12	n = 136 <1501 g	n = 148	28%	10%	3.7 (1.9 to 7.2)*	CAPA	ADHD, anxiety disorders
Schothorst et al. [41]	1977–1978	15–17	n = 24 <32 weeks	n = 20	38%	10%	3.8 (0.9 to 15.4)	CAS	Not reported
			1977–1978 31–37 weeks	n = 19	21%	10%	n/a		

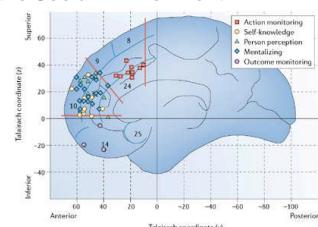
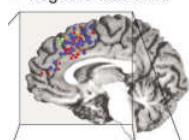
*OR calculated retrospectively from data provided. *Indredavik et al. 2005 report data from a sub-set of the cohort reported in Indredavik 2004. NS: not significant.

Johnson, S., & Wolke, D. (2013). Behavioural outcomes and psychopathology during adolescence. *Early Human Development*, 89(4), 199–207. doi: <http://dx.doi.org/10.1016/j.earhumdev.2013.01.014>

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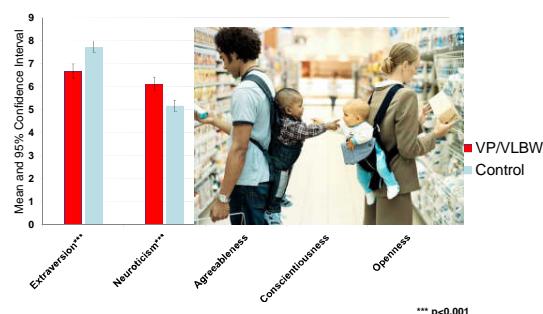
The social implications: The social brain develops strongly in middle childhood throughout adolescence Effects of the Social Environment

- pre-response conflict
- decision uncertainty
- response error
- negative feedback



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Personality (Big-5) at 26 years (VP/VLBW n=170, Control n=169)



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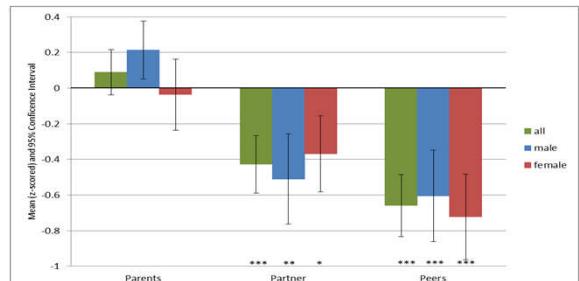
Brand New Evidence

- How does VP/VLBW birth affect “real” life outcomes –
- Risk Taking and Crime – less
- Social Relationships



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Social Relations to Parents, Partner Relationships and Peers (26 years)



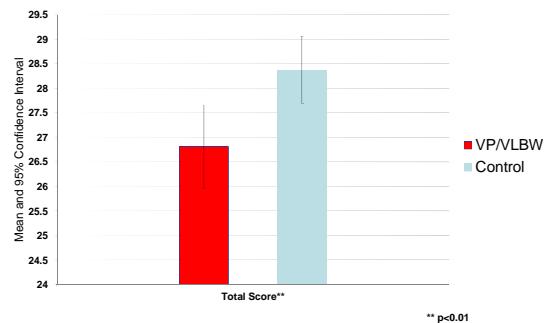
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Social Relationships

- **Parents:** good - not different from control group
- **Peers:** trouble making and keeping friends, few friends, little peer support, more often bullied, few social activities, not belonging to cliques (explains less risk taking!)
- **Partner:** 24% VP/VLBW never had sex vs 3% of controls, fewer romantic partner, more often beaten if have a partner

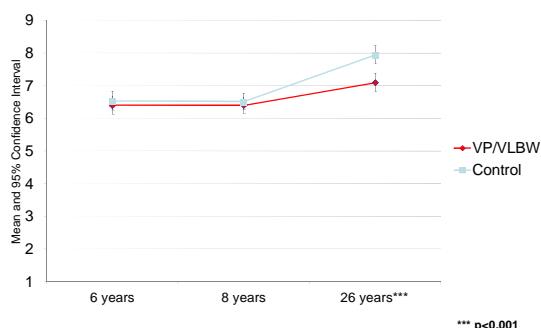
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Does it matter for VP Adults life: Satisfaction with Life Scale (SLS) at 26 years (VP/VLBW n=171, Control n=169)



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TRCB – Outgoing 6 to 26 years (VP/VLBW n=148, Control n=168)



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At risk for social exclusion and victimisation?

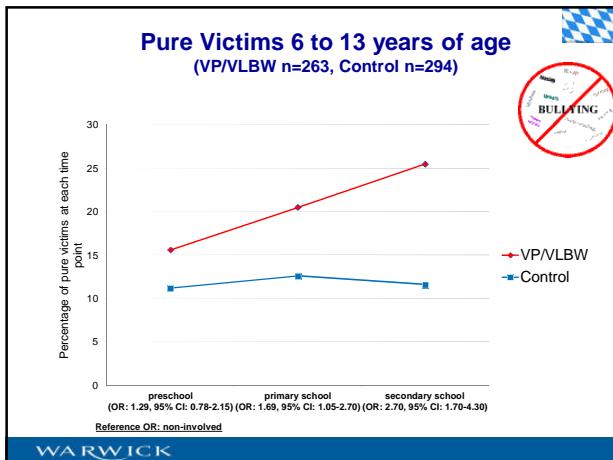
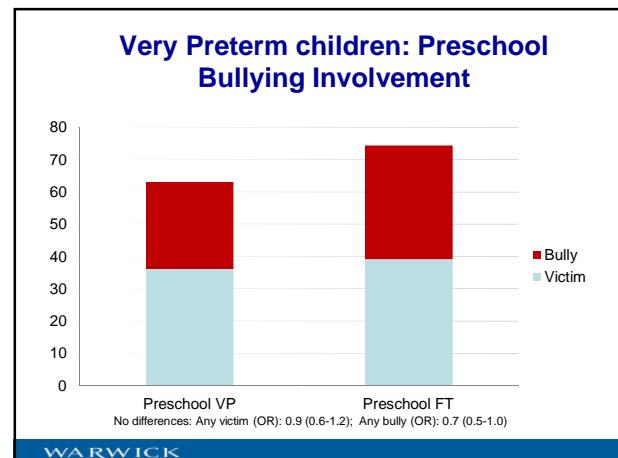
Bullying is defined as

1. aggressive behaviour or intentional harm-doing by an individual or group that
2. is carried out repeatedly over time in
3. an interpersonal relationship characterized by an imbalance of power

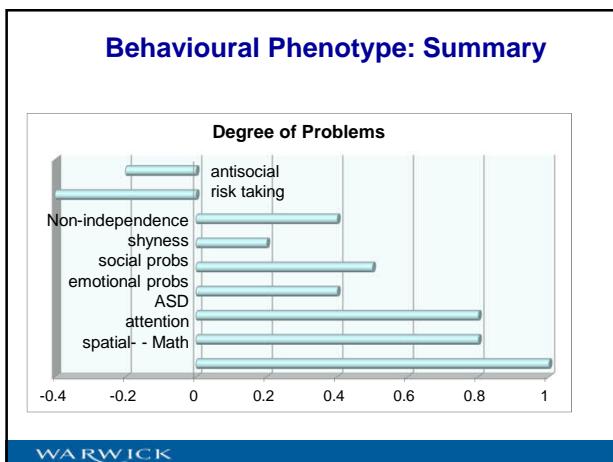


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A collage of newspaper clippings from The Warwick Daily News. The top left features a large photo of a young boy in a suit with the headline 'Bullied boy, 11, dies after pills overdose'. To its right is a photo of a girl in a school uniform with the headline 'Overdose girl, 13, was terrified of bullies'. Below these are several smaller articles: one about 'Modern bullies are seeking victims through cyberbullying', another about a 'boy beaten up' in a lesson on bullying, and a third about a 'Zombie' suicide of a bullied girl, 13. The bottom right corner shows a photo of a man with a microphone and the headline 'Years of bullying drove our son to kill himself'. The bottom left corner contains the Warwick Daily News logo.



Mobben und Emotionale Probleme



Implikationen fuers Unterrichten

- Plane den Unterricht nach Aufmerksamkeitsspanne und Arbeitsbelastung
- Geringe Kognitive Arbeitsbelastung - Erfolgserlebnisse
- moderate bis hohe kognitive Arbeitsbelastung – individuell und adaptiv anpassen, langsamere Uebergaenge, mixe mit Erfolg
- Mathematikaufgaben – besondere Aufmerksamkeit zum Aufbau des numerischen Nummernsystems

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Implikationen fuer Bildung und Intervention

- Groesserer Fokus auf soziale Integration und soziale Faehigkeiten – schuetze vor Mobben
- Fruehgeborene scheinen sensibler gegenueber der Umwelt zu sein: “Zum Besseren oder zum Schlechteren” (Differentielle Empfindlichkeit)
- Benutze dies zur Foerderung des Besseren
- 1. Eltern Training (Vorschulalter, fruehes Schulalter)
- 2. Programme zum Training des Arbeitsgedaechtnisses?

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DEVELOPMENTAL MEDICINE & CHILD NEUROLOGY ORIGINAL ARTICLE

Mother and child behaviour in very preterm and term dyads at 6 and 8 years

JULIA JAEKEL | DIETER WOLKE | JULIA CHERNOVA

Department of Psychology and Division of Mental Health and Wellbeing, Warwick Medical School, University of Warwick, Coventry, UK.

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METHOD We investigated a geographically defined prospective whole-population sample of very low birthweight (<1500g) or very preterm (<32wks' gestation; VLBW/VP) children ($n=267$, 124 females, 143 males) and a comparison group born at term ($n=298$, 146 females, 152 males) in Germany. Mother-child interactions were videotaped during a play situation and analysed with a standardized coding system at children's mean ages of 6 years 3 months and 8 years 5 months.

What this paper adds

- Mothers of very low birthweight/very preterm children are not, in general, less sensitive or more controlling than those of term children, but adapt their behaviour to their children's cognitive level of functioning.
- High maternal sensitivity is particularly beneficial to improve task persistence in children with mild to severe cognitive deficits.

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Kollegen, Teilnehmer, Foerderer



Danke fuers Zuhören

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