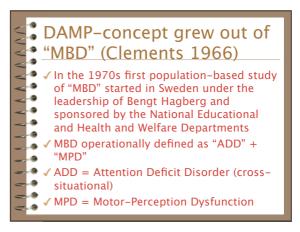
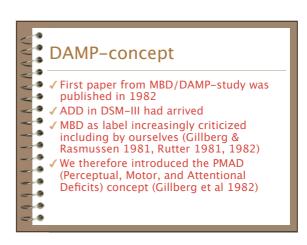
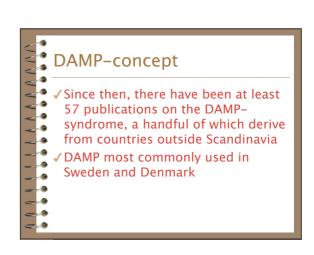
### DAMP Exeter April 2005 Christopher Gillberg, MD, PhD Professor of Child and Adolescent Psychiatry University of Göteborg (Queen Silvia's Children's Hospital) Universities of Strathclyde and Glasgow Universities of Oslo and Bergen



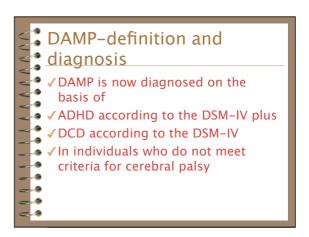




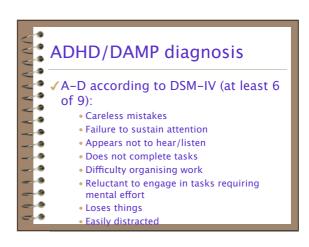
### DAMP-concept √We found this ("PMAD") to be too difficult to "say" and - in accordance with widespread ideas at the time believed the attentional problems to be primary 9 ✓ Hence, we changed the order of the letters to DAMP (Deficits in -9 Attention, Motor control, and -Perception) a

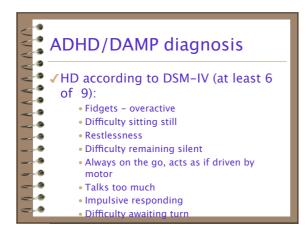


## DAMP-concept With the event of the DSM-III-R (and the DSM-IV) we looked back at our original cohorts and found that 85% of cases with DAMP met criteria for ADHD (mainly inattentive and combined subtypes) We also found that the MPD-label corresponded very well with DCD (Developmental Coordination Disorder)



### ADHD/DAMP epidemiology ADHD is a common condition affecting (in clinically severe form) 3-5 (7)% of all school age children; many more boys than girls (but many girls missed/misdiagnosed) – about half of all with ADHD meet critria for DAMP (Kadesjö & Gillberg 1999) AD/HD is possibly an artificial (?) concoct of AD and HD Two separate syndromes/ends on dimensional scales with considerable overlap AD, HD and AD+HD





ADHD/DAMP diagnosis

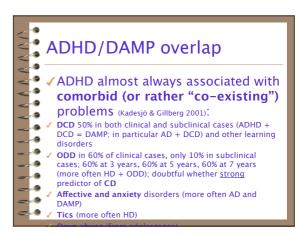
All three AD/HD variants require handicapping symptoms before age 7 years

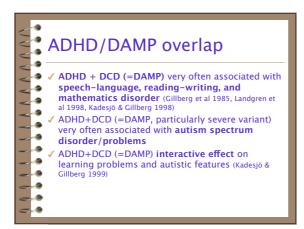
Impairing symptoms in at least two different settings

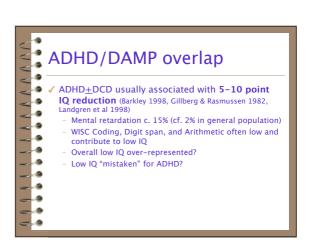
Clinically significant impairment in at least two of social, school and home setting

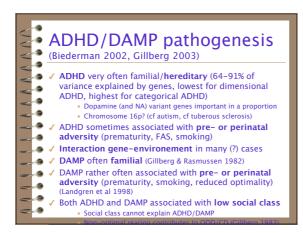
Exclusionary criteria

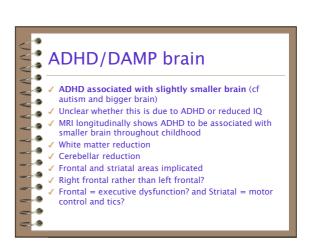




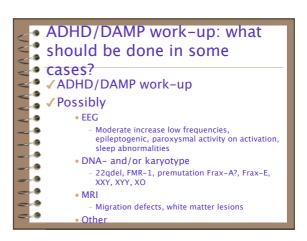




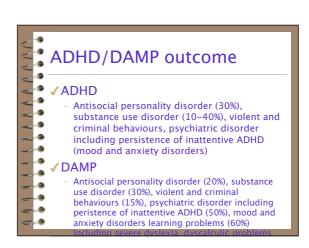


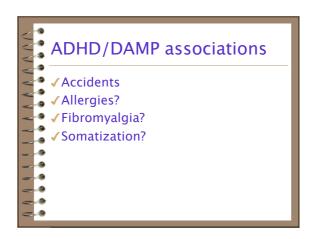


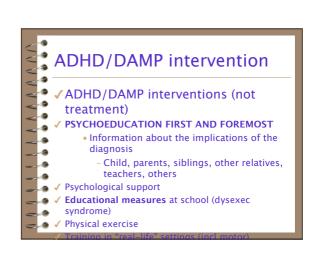
### ADHD/DAMP work-up: what needs to be done in all cases? Child examination • Neuromotor performance, speech-language, psychiatric and physical status, hearing/vision • Neuropsychological: at least WISC-testing -9 (dysexec syndrome; low on DSP, DSY, AR), 9 CPT (long reaction time, omissions (AD), commissions (HD)) Parent interview • ADHDRS, K-SADS?, Goodman (DAWBA) Questionnaires



### ADHD/DAMP outcome ADHD has poor outcome in 40–50% of cases; unmedicated individuals appear to have higher rates of later drug abuse Barkley 2001, Biederman et al 1998 DAMP has poor outcome in 50–60% of cases; academic success almost unheard of in this group Rasmussen & Gillberg 2000







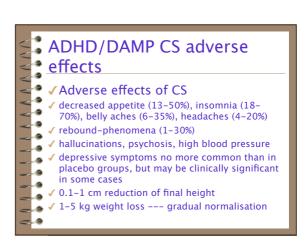
## ADHD/DAMP intervention Psychoeducation makes a positive difference Psychologically and socially for family Psychologically for child Economically for family Economically for society (Gillberg et al 1993, Nydén et al 2000, Nydén et al 2003)



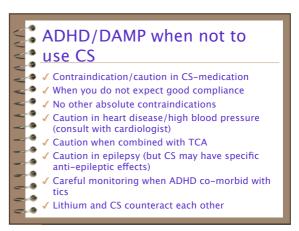
### ADHD/DAMP CS ✓ADHD central stimulant treatment . ✓ Meticulous physical and mental examination √ Child aged 5 or older ✓ Have other measures been systematically . evaluated? -8 ✓ How severe are the child's problems? • Will family be able to comply with treatment plan? -• Parent and child attitudes to treatment essential 9 Drug abuse in family? 9 Will prescriber/nurse have sufficient services available? Child's attitude should be constantly re



### ADHD/DAMP CS ✓ ADHD: central stimulants (CS) • Methylphenidate and D-amphetamine have comparable effects (about double 9 the dose of amphetamine for 9 methylphenidate) - Few if any absolute contraindications 9 Other medications should only rarely be tried if CS have not been carefully 9 evaluated in the individual case -(atomoxetine may change this)



### ADHD/DAMP dosing CS -✓ Dosing central stimulants -Methylphenidate (5-12 years): 5 mg x 1-4 or max 1 mg/kg will give positive response in 9 75% of all cases with severe ADHD/DAMP D-amphetamine (5-12 years) 2.5-5 mg x 1-49 will give positive effect in 1/3 of cases not 9 responding to methylphenidate Older (and younger?) patients appear to respond only in 50%, but recent studies 9 suggest equal response rate 9 Slow release much more convenient but poorer effect??? (Pelham et al 1987); Concerta vs



### ADHD/DAMP CS caution 4 ✓ Before starting treatment with CS -- Try psychoeducation - Careful neuropsychiatric examination of child including assessment of co-morbid features 9 - Height, weight and head circumference 9 - Blood pressure - Adverse effects monitoring 9 ✓ During treatment with CS -9 - Follow-up as above



# ADHD/DAMP intervention How long should interventions continue? Most will need education support throughout childhood into adulthood Some children and adults need medication only occasionally and for specific events All medication treatment should be individualized.

### ADHD/DAMP intervention Once stimulant medication has been 9 started, other interventions need to be 9 re-evaluated √ "Comorbidity" should inform treatment options -8 · Anxiety, autistic features, tics, OCD, ODD CBT, but long-term effects are doubtful 9 • Robo-Memo (Klingberg et al 2005) Special education measures • Learning, language and motor problems of various kinds

### ADHD/DAMP consensus documents AMA: American Medical Association (Council of Scientific Affairs) (1997) NIH: Consensus Development Program: Diagnosis and Treatment of ADHD (1998) (odp.od.nih.gov/consensus/) European: Clinical guidelines for HKD (Taylor et al 1998) AAP: Clinical Practice Guidelines (American

- ▲ ✓ AAP: Clinical Practice Guidelines (American Academy of Pediatrics) (2001) (aap.org/policy/)
- ✓ AACAP: Practice parameters (2002)
- ✓ Socialstyrelsen: ADHD (strd.se/webshop/socialstyrelsen) (2002)