



**Kinder- und Jugend-
psychiatrie / Psychotherapie**

Universitätsklinikum Ulm





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Methylphenidat im Kleinkindalter

ADHS Gipfel 2009 Hamburg

Jörg M. Fegert Ulm





Ergebnisse aus dem KIGGS survey des RKI Diagnostizierte ADHS

ADHS-Diagnose:

insgesamt **4,8%**

Jungen: 7,9%

Mädchen: 1.8%

Vorschule (3-6 Jahre): 1,5%

Grundschule (7-10 Jahre) : 5,3%

Altersgruppe (11-13 Jahre): 7,1%

Altersgruppe (14-17 Jahre): 5,6%

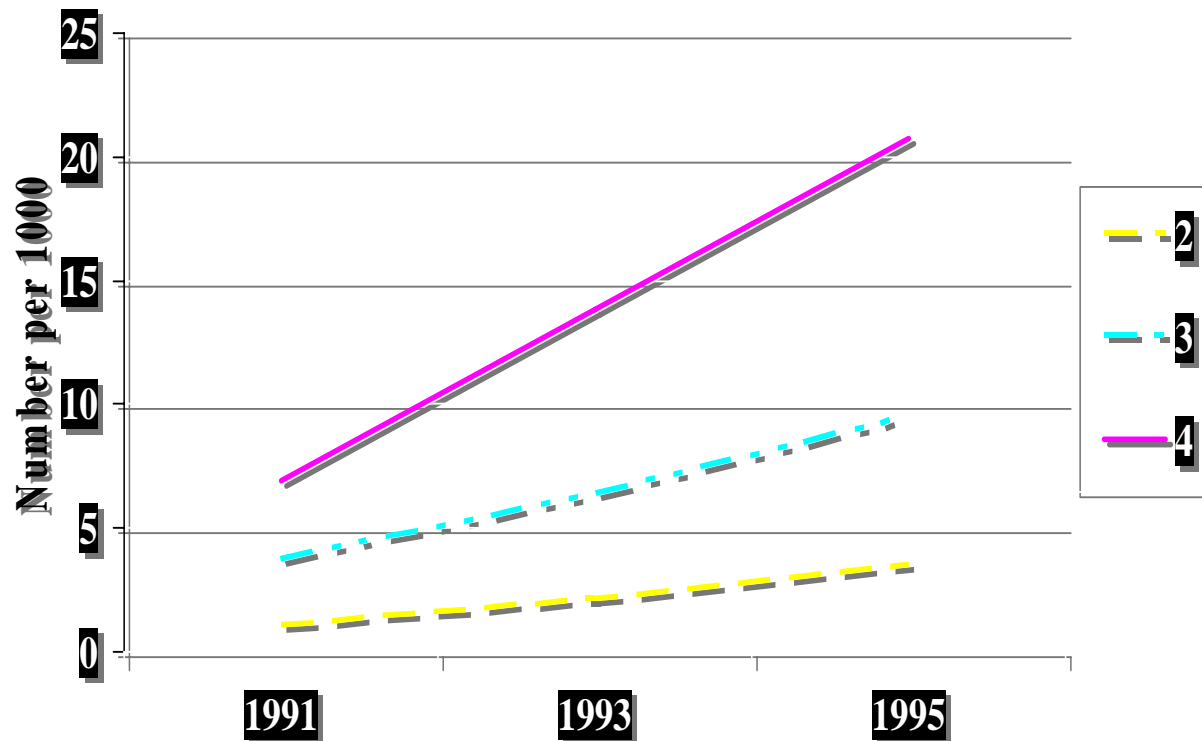
Im Alter von 11-17 Jahren wurde bei jedem 10. Jungen aber nur bei jedem 43. Mädchen jemals ADHS diagnostiziert.





Vorschulkinder Verschreibungstrends in USA

Zito et al. *JAMA* 2000; 283:1025.



- Recent report cites 49% increase in use of behavioral medications for ADHD in children under age 5



Internationaler Vergleich

Stimulant Utilization in Children and Adolescents in 4 Countries

- International Society for Pharmacoepidemiology, Lisbon, Portugal 25. August 2006
- NCDEU Meeting Boca Raton FL 12.-15. Juni 2006

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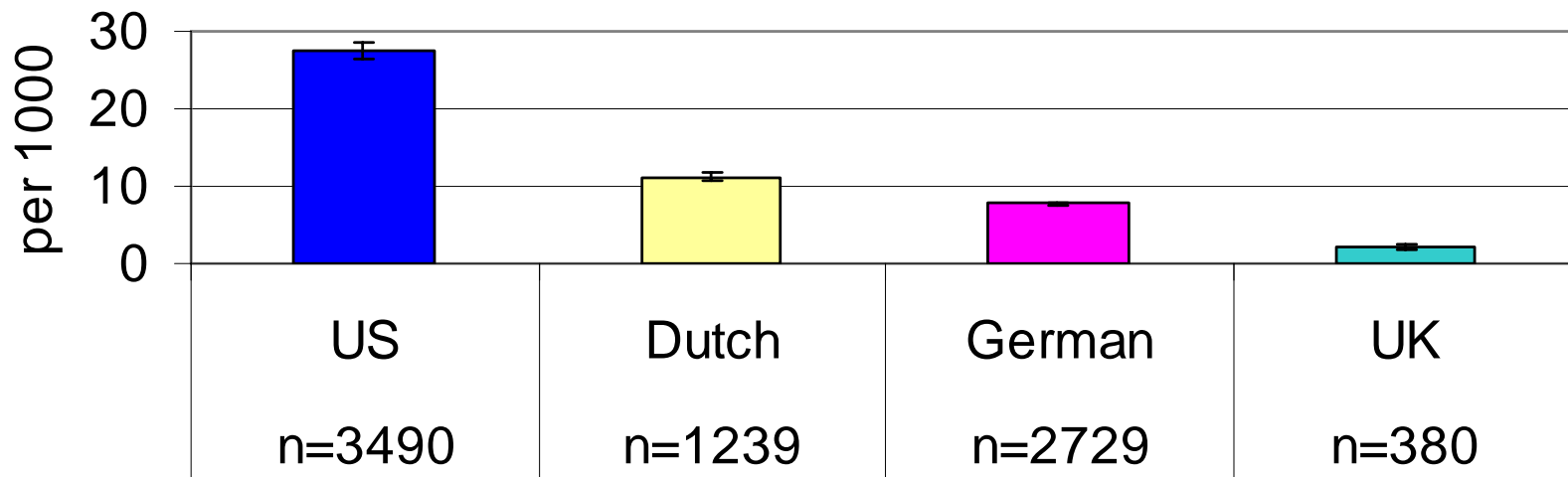


Methods

- Design: Cross-sectional analysis of year 2000 administrative prescription claims or records from youths in
 - the Netherlands (n=110,944)
 - US State Medicaid SCHIP program (n=127,157)
 - United Kingdom, GPRD database (n=177,658)
 - Germany, health insurance data (n=356,520)
- Annual stimulant prevalence for youth <age 20 is defined as the number of youth with 1 or more prescriptions for a stimulant per 1000 youth enrolled during the year 2000.
- We compared the prevalence (and the 95% CI) data by age group (0-4, 5-9, 10-14, and 15-19) and by gender.



Figure 1. Number and prevalence of stimulant users in 4 countries



U.S. stimulant prevalence was 2.5, 3.6 and 13 times higher than that of their Dutch, German and UK counterparts, respectively



Figure 2. Age-specific prevalence of stimulants

Stimulant prevalence for U.S. youths aged 0-4 years was 0.44%, whereas it was 0 in the UK and minimal in the Netherlands (0.05%) and in Germany (0.02%).

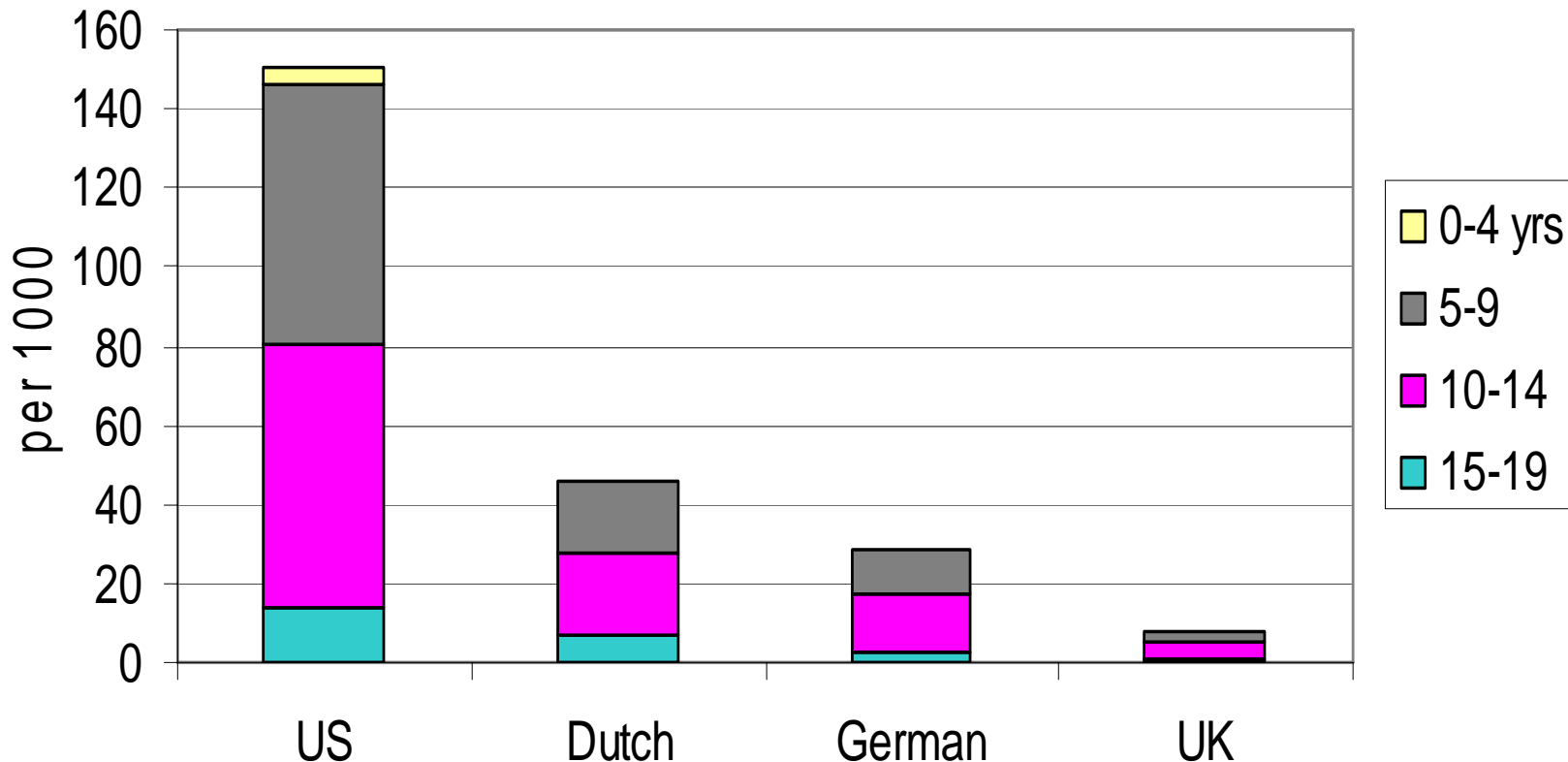
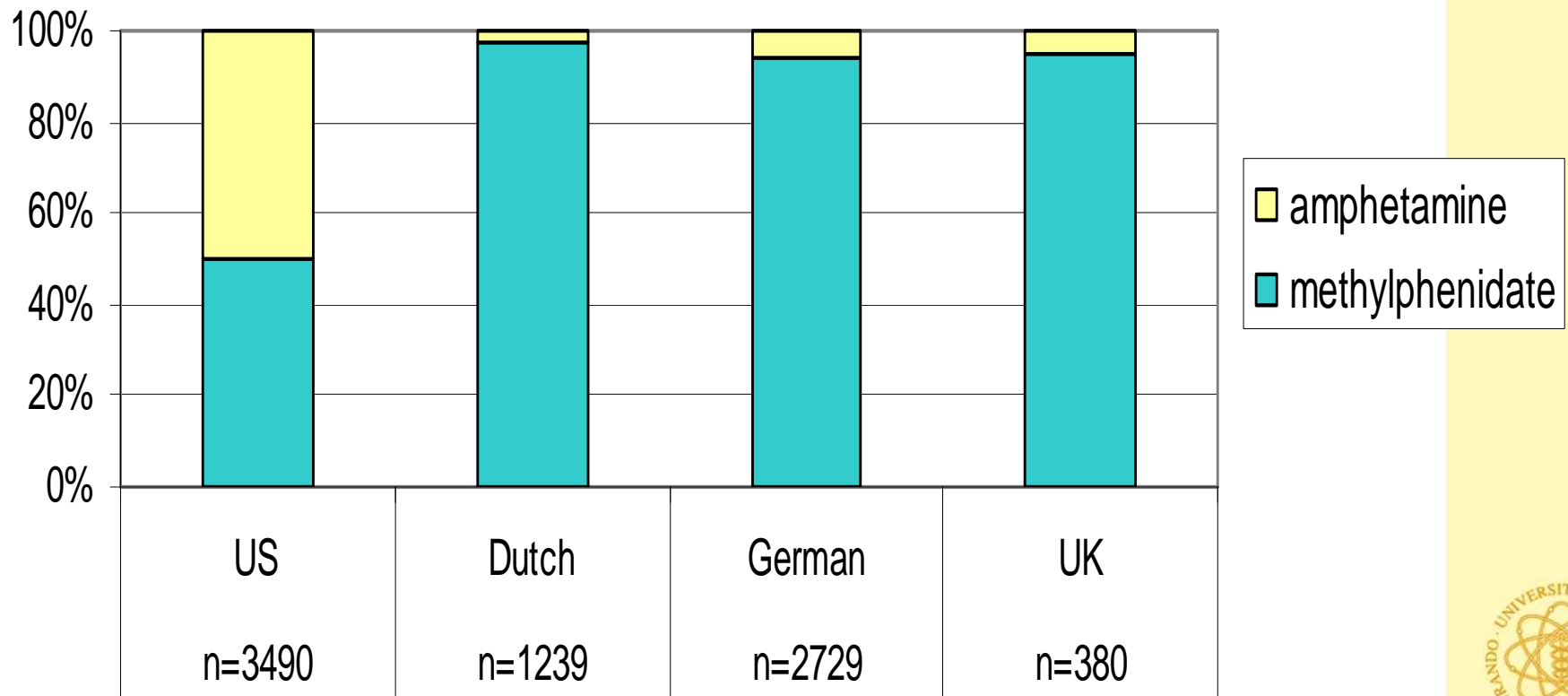




Figure 4. Proportional use of amphetamines among stimulant users in 4 countries



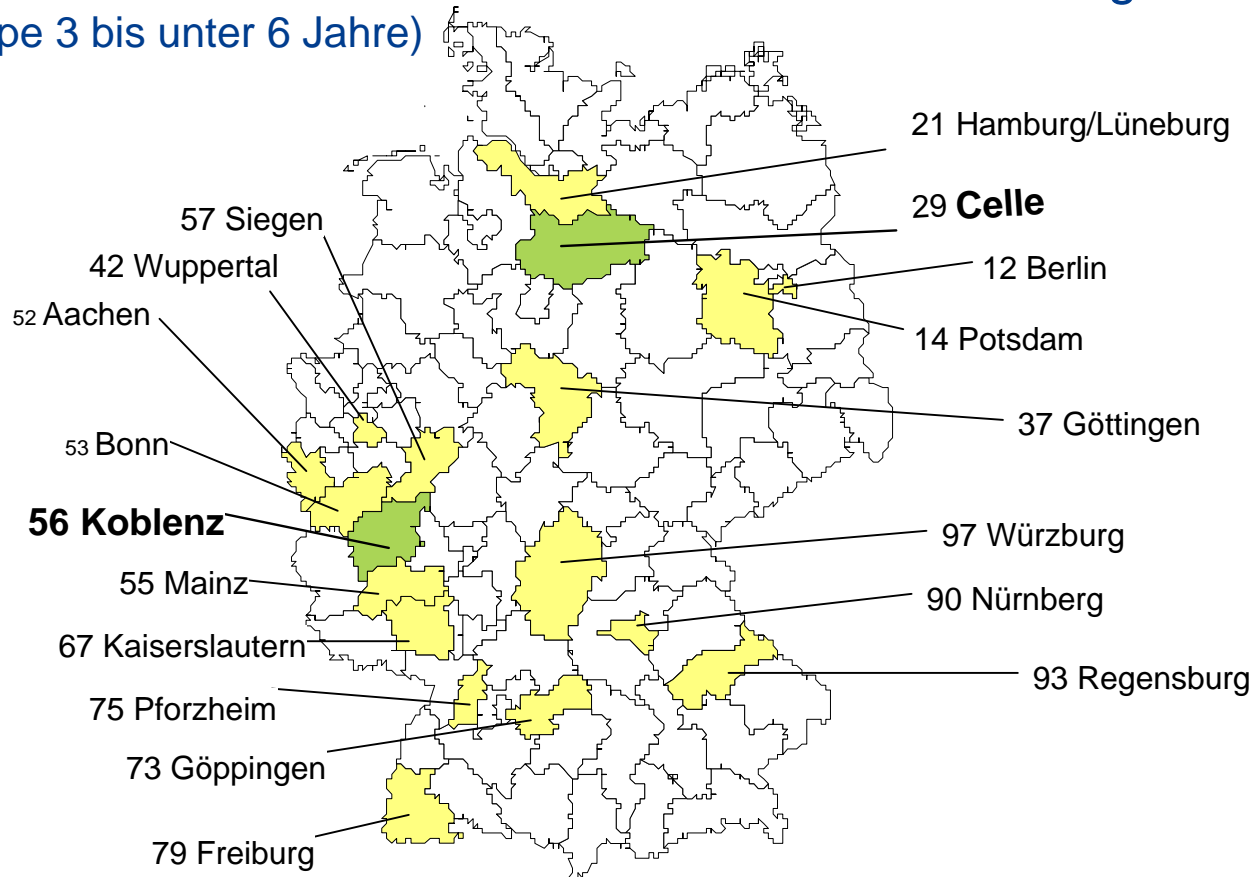


Well, I'm not going to give my baby any more dangerous drugs. From now on, it's nothing but fresh air, lots of hugs, and good old-fashioned **Ritalin**.





Anteil Versicherte in % mit ADHS- relevanter Verordnung (Altersgruppe 3 bis unter 6 Jahre)



Versicherte mit ADHS-Verordnungen pro 100 Versicherte

Yellow box > 0

Green box > 0,4



Prevalence of ADHD compared to proportion of children with at least 1 prescription in 2006 in Germany

age	Prev. KIGGS	Prescription GEK	Prescription/ prevalence
boys			
3-6	2,4%	0,32%	13,33%
7-10	8,7%	4,43%	50,92%
11-13	11,3%	5,57%	49,29%
14-17	9,4%	2,84%	30,21%
girls			
3-6	0,6%	0,06%	10,00%
7-10	1,9%	1,29%	67,89%
11-13	3,0%	1,34%	44,67%
14-17	1,8%	0,8%	44,44%



A new study of whether a popular but controversial drug is safe and effective for preschool children also raises ethical concerns about using young subjects in clinical trials

Planned Ritalin Trial for Tots Heads Into Uncharted Waters

Doctors like to say that medicine is an art as well as a science. But the science seems a bit thin when it comes to giving drugs to young children. Physicians write millions of prescriptions for children each year without solid evidence that the therapy they're offering is safe or effective. To fill in that knowledge gap, U.S. scientists are gearing up for a major clinical trial intended to measure the effects of a popular stimulant on a previously untested population—children aged 3 to 6. But in doing so, they are also running up against one of the hottest ethical issues in research.

The study, funded by the National Institute of Mental Health (NIMH) in Bethesda, Maryland, and set to begin in December, will recruit about 300 preschoolers diagnosed with attention deficit hyperactivity disorder (ADHD). Almost half will receive Ritalin, or methylphenidate (MPH), a drug used to help older children get along with playmates and fit into school routines. The scientists involved in the study admit that they are concerned about the drug's effect on the children's still-developing personalities and brains, as well as their inability to give informed consent. But they believe that such trials are the only way to answer concerns about rising use of the drug among this population. "We've put the study through an ethical wringer" to win approval, says NIMH director Steven Hyman.

However, the demand for better scientific data runs counter to growing concern about human subjects research. "There is a big clash between the pressure to include children in clinical trials [and] discomfort about enrolling young children" in studies, says Norman Fost, a pediatric researcher and bioethicist at the University of Wisconsin, Madison. The ethical problems are reduced if the child volunteers have a chance of benefiting from experimental therapy,

says Fost, who also notes that NIMH can be trusted to provide rigorous oversight.

Drugs without data

The idea for undertaking a trial like this arose 3 years ago, when psychiatrist Laurence Greenhill of the New York State Psychiatric Institute met with other academic researchers and NIMH to discuss the lack of safety and dose information for treating children under 6 with Ritalin. He proposed a large multicenter study that would enlist preschoolers in a test that would establish the best dose for very young children—a group rarely tested for any type of drug use. Peer reviewers at the National Institutes of Health

226,000 times in 1994 for off-label uses.

Early this year, epidemiologist Julie Zito of the University of Maryland, Baltimore, reported in the *Journal of the American Medical Association (JAMA)* that the off-label use of psychoactive drugs by youngsters has increased steadily. Using Medicaid and insurance data, she traced a tripling from 1991 to 1995 in the use of psychoactive medicines among children 2 to 4 years old. MPH topped the list, and Zito estimates that there may now be 150,000 to 200,000 U.S. children in this age group taking it.

Commenting on Zito's findings in the same issue of *JAMA*, Harvard University psychiatrist Joseph Coyle asked whether psychoactive drugs might affect the development of visual processing, language, motor skills, and memory of young children. The

"disturbing prescription practices" documented by Zito, he said, deserve "more thorough investigation." Hillary Clinton and White House health policy staffers picked up the mes-

sage in March, urging officials to warn the public of the risks of off-label use of psychoactive drugs. With such encouragement, NIMH moved ahead and on 30 September awarded \$6 million to Greenhill and colleagues at five other psychiatric centers.

PATS is part of a broader effort to get better information on how prescription drugs affect children. Since the mid-1990s, advocates for children's health have been lobbying to get clinical researchers to include young volunteers in their studies, just as others campaigned to increase the representation of women and minorities in research. Now they've succeeded, and both FDA and NIH are taking steps to enroll thousands of children in clinical trials.

A 1997 law giving FDA new authority for such trials allows it to reward companies with exclusive marketing rights to a drug for 6 months if they agree to study the safety and efficacy of treating children. An April 1999 FDA rule requires companies seeking approval of a new drug to run tests that include



Off label. Children under 6 aren't supposed to use Ritalin, but thousands do.

WARNING:
Ritalin should not be used in children under six years, since safety and efficacy in this age group have not been established.
Side effect data on safety and efficacy of long-term use of Ritalin in children are not yet available. Although a causal relationship has not been established, suppression of growth (i.e., weight gain, and/or height) has been reported with the long-term use of stimulants in children. Therefore, patients requiring long-term therapy should be carefully monitored.

(NIH) gave the proposal, called the **Preschool ADHD Treatment Study (PATS)**, a favorable score in 1998. It then wended its way slowly through a series of ethics and policy review panels.

Its importance seemed to grow, as people became increasingly aware of the need for better scientific data for some popular prescription drugs. Companies have run very few drug trials that include young children, but this hasn't stopped doctors from writing prescriptions. By one estimate, 94% of drugs given to children are prescribed "off label" in this way.

In 1997, the Food and Drug Administration (FDA) drew up a "short list" of the 10 most widely prescribed products used for children without FDA approval. They ranged from the antiasthma drug Albuterol, approved only for children aged 12 and older, to the antidepressant Zoloft, approved for those 16 and older. Ritalin is on the list, prescribed





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\$1 beyond the greater New York metropolitan area.

WHITE HOUSE SEEKS TO CURB PILLS USED TO CALM THE YOUNG

RISKS WOULD BE OUTLINED

National Study Is Planned to
Look at Effect of Psychiatric
Drugs on Preschoolers

By ROBERT PEAR

WASHINGTON, March 19 — The White House will announce a major effort on Monday to reverse a sharp increase in the number of preschool children using Ritalin, Prozac and other powerful psychiatric drugs, administration officials said today.

As part of the initiative, they said, the government will inform parents and teachers about the risks of such drugs, the Food and Drug Administration will develop new drug labels, the National Institutes of Health will begin a huge nationwide study of Ritalin use in children under the age of 6, and the White House will hold a conference this fall on the diagnosis and treatment of mental illness in very young children.

Hillary Rodham Clinton and federal health officials plan to meet on Monday with parents, psychiatrists, pediatricians, psychologists, nurses and social workers to discuss the issue.

Then the administration plans to issue a statement declaring that "the





Regeln zu wirkungsvollen Aufforderungen -1-

- Stellen Sie nur Aufforderungen, wenn Sie bereit sind, sie auch durchzusetzen!
- Sorgen Sie dafür, dass Ihr Kind aufmerksam ist, wenn Sie die Aufforderung geben!
- Verringern Sie jegliche Ablenkung, bevor Sie eine Aufforderung geben!
- Geben Sie immer nur eine Aufforderung
- Äußern Sie die Aufforderung eindeutig und nicht als Bitte!
- Bitten Sie Ihr Kind, Ihre Aufforderung zu wiederholen!

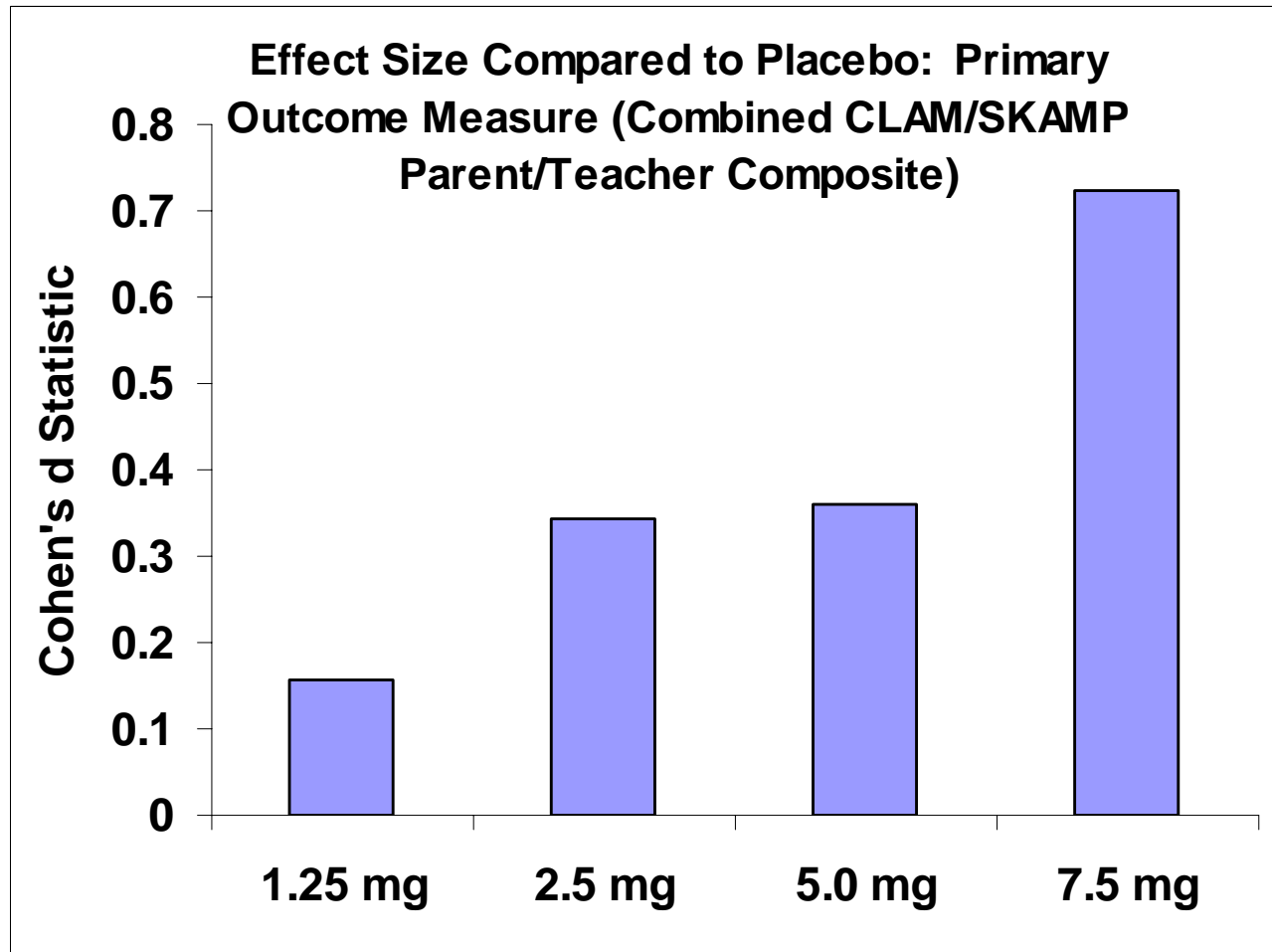


Regeln zu wirkungsvollen Aufforderungen -2-

- Bleiben Sie in unmittelbarer Nähe Ihres Kindes, um sicher zu gehen, dass Ihr Kind der Aufforderung nachkommt!
- Loben Sie Ihr Kind, sobald es die Aufforderung befolgt!
- Loben Sie Ihr Kind ganz besonders, wenn es eine Aufgabe erfüllt hat, ohne dass Sie es darum direkt gebeten haben!
- Konzentrieren Sie sich zunächst auf wenige Aufforderungen und protokollieren Sie diese in Ihrem Tagebuch
- Besprechen Sie abends zusammen mit Ihrem Kind noch einmal, welche Aufforderungen und Regeln es tagsüber befolgt hat!



Titration (n=165): Effect Sizes





Effect Sizes for PATS lower than in MTA

Measure	PATS	MTA
Parent CLAM A/D	.35	.52
Parent CLAM I/O	.54	.63
Teacher CLAM A/D	.43	.75
Teacher CLAM I/O	.66	1.31



Freiheit in Grenzen

3 charakteristische Merkmale von Erziehungskompetenzen

Elterliche Wertschätzung

Fordern und Grenzen setzen

Gewährung von Eigenständigkeit





Babyfernsehen





Früher Fernsehkonsum

- Einführung von Babyfernsehen (Teletubbies) und permanentes Fernsehen als familiäre Backgroundgestaltung vor allem in Unterschichtfamilien.
- Christakis (2004) fand in einer nationalen Langzeitstudie einen, durch eine logistische Regression abgesicherten, Zusammenhang zwischen frühem Fernsehkonsum und ADHD im Alter von 7 Jahren.
- 1278 Kinder wurden mit einem Jahr, 1345 Kinder mit drei Jahren untersucht. Ein klarer Zusammenhang mit der Menge des täglichen Fernsehkonsums und dem Auftreten von ADHD [log. Regression: 1. Lj. mit ADHD im 7. Lj. als abhängiger Variable 1.09 (1.03 – 1.15) und Fernsehkonsum 3. Lj. und ADHD im 7. Lj. ebenfalls 1.09 (1.02 – 1.16)]



Neurobiologie von Fernsehkonsumfolgen

- Das kindliche Gehirn entwickelt sich nach der Geburt rasch weiter (Barkovich et al. 1988, Yamada et al. 2000)
- Umweltfaktoren, insbesondere der Grad der Stimulation, beeinflusst die Zahl und dichte neuronaler Synapsen.
- Greenough et al. (1987) Hypothese Überstimulation durch schnell wechselnde Bilder führt zu kürzerer Aufmerksamkeitsspanne bei Kindern und damit erlernten ADHD, z. B. Hartmann (1996).
- Koolstra und van der Voort fanden statistisch signifikante Zusammenhänge zwischen frühem Fernsehkonsum und schlechterem Schriftspracherwerb bzw. weniger Lesen im Schulalter.



Vielen Dank für Ihre Aufmerksamkeit







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