



MONITORING CHILDREN'S EXPOSURE: THE GERMAN ENVIRONMENTAL SURVEY

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**Federal Environment Agency (Umweltbundesamt)
Toxicology/ Health-related Environmental Monitoring**



Objectives of GerES

- Generate representative data on exposure to environmental pollutants
- Identify relevant exposure pathways
- Propose strategies on prevention and reduction
- Evaluate environmental policy measures



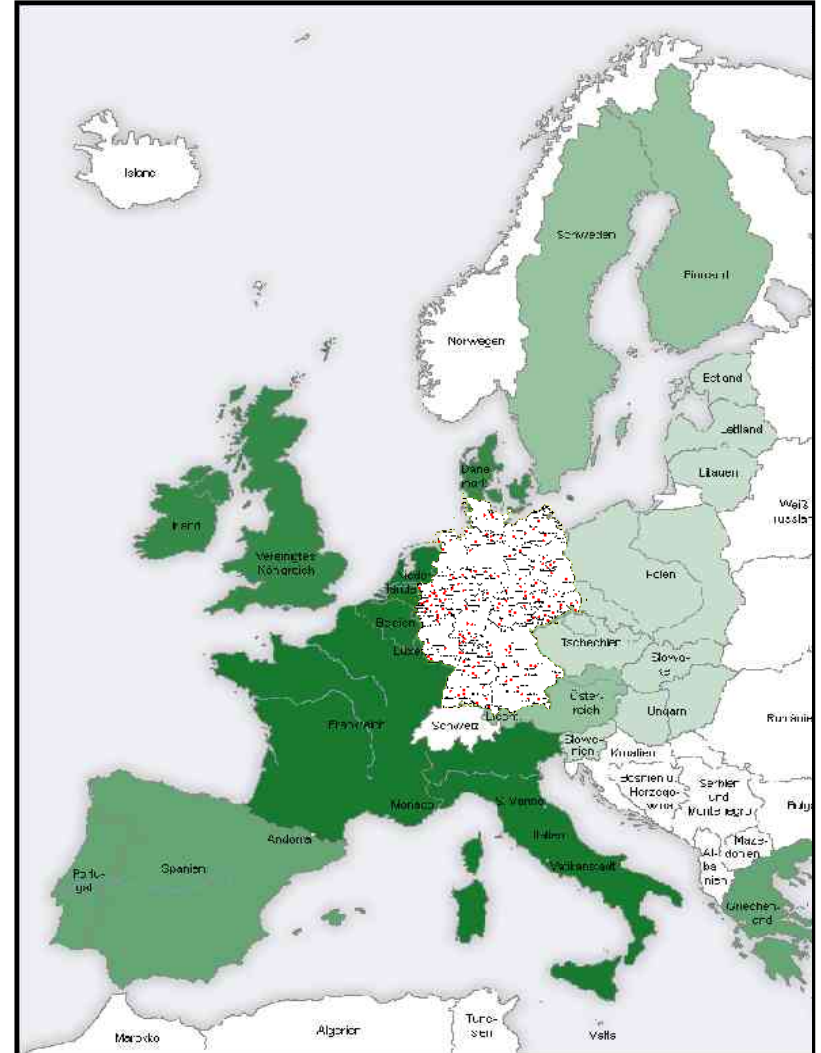
**Sample: 1,790 children
aged 3 to 14 years**

**Representatively selected
from 150 sampling locations
with regard
to age, gender, community
size and region (East-, West-
Germany)**

**Random subsample of the
„German Health Interview and
Examination Survey
for Children and Adolescents
(KiGGS)“**

N = 17.641

map of EU: wikimedia commons



Tools (I)



Blood



Urine



Drinking water



House dust



Questionnaires

Tools (II)



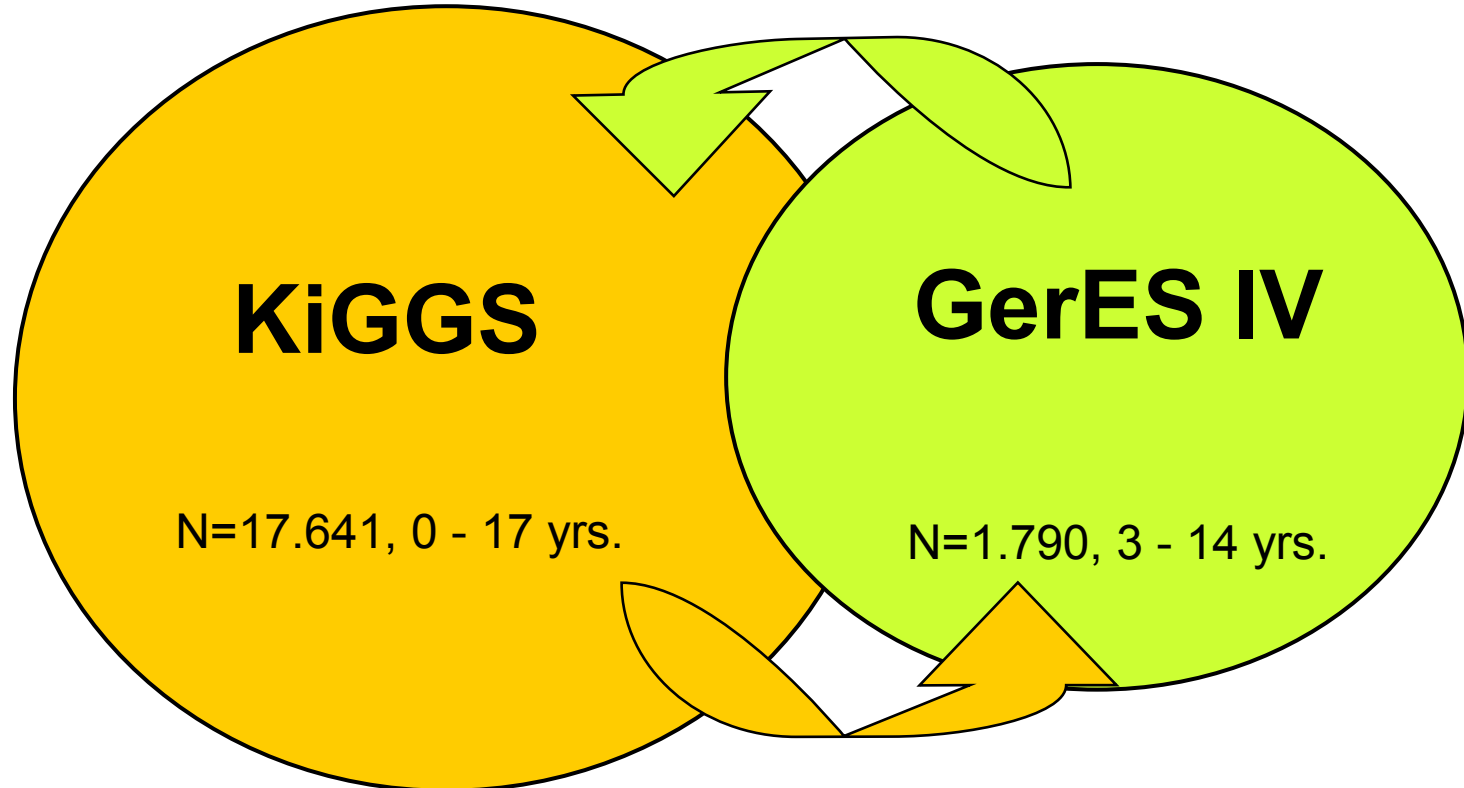
Screening Audiometry



Indoor air



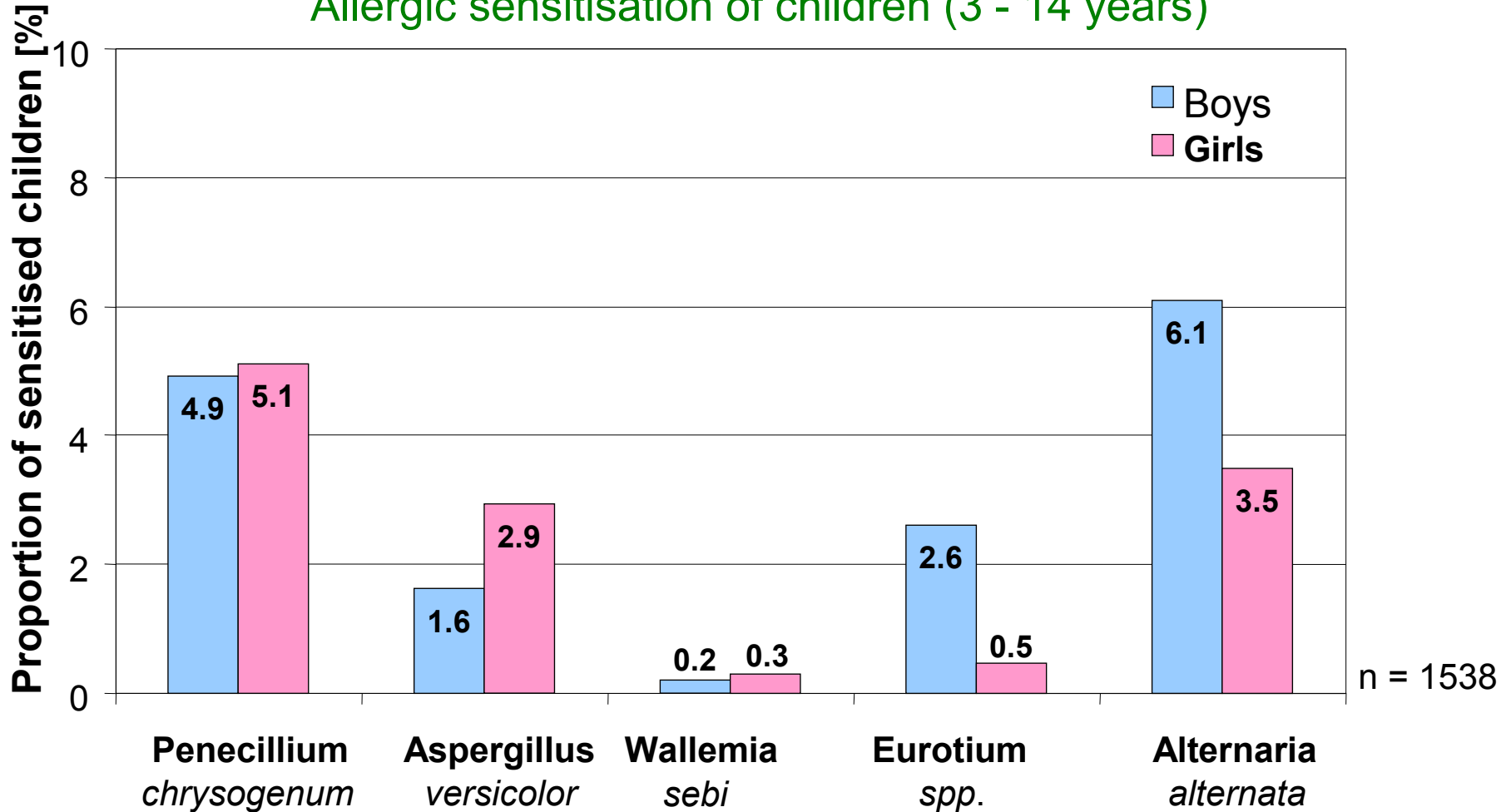
**Indoor air,
Dust from floor
and mattresses**



German Environmental Survey for Children

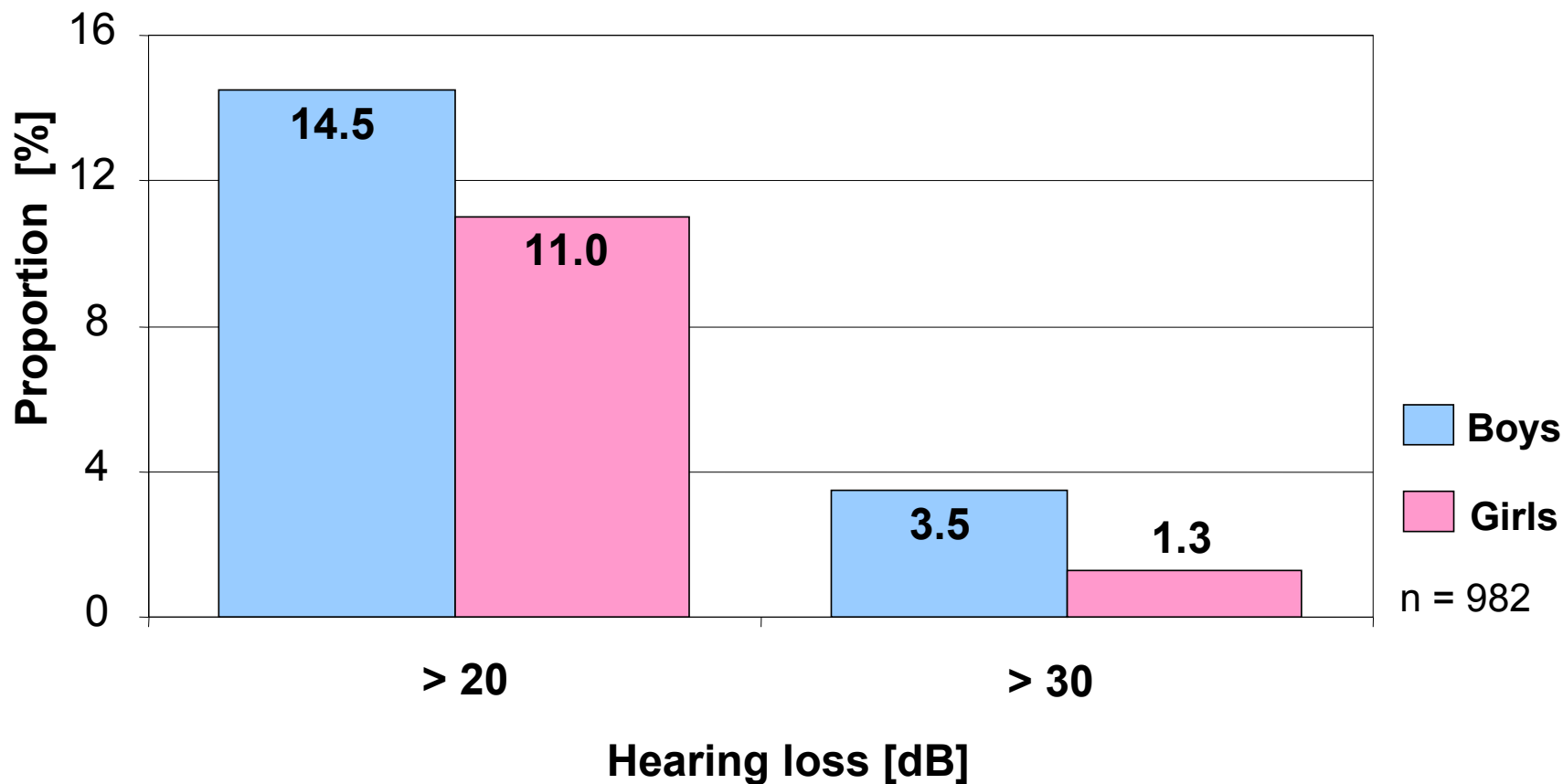
1. Biological environmental influences: moulds

Allergic sensitisation of children (3 - 14 years)



2. Physical environmental influences: noise

Hearing impairment of children (8 - 14 years)

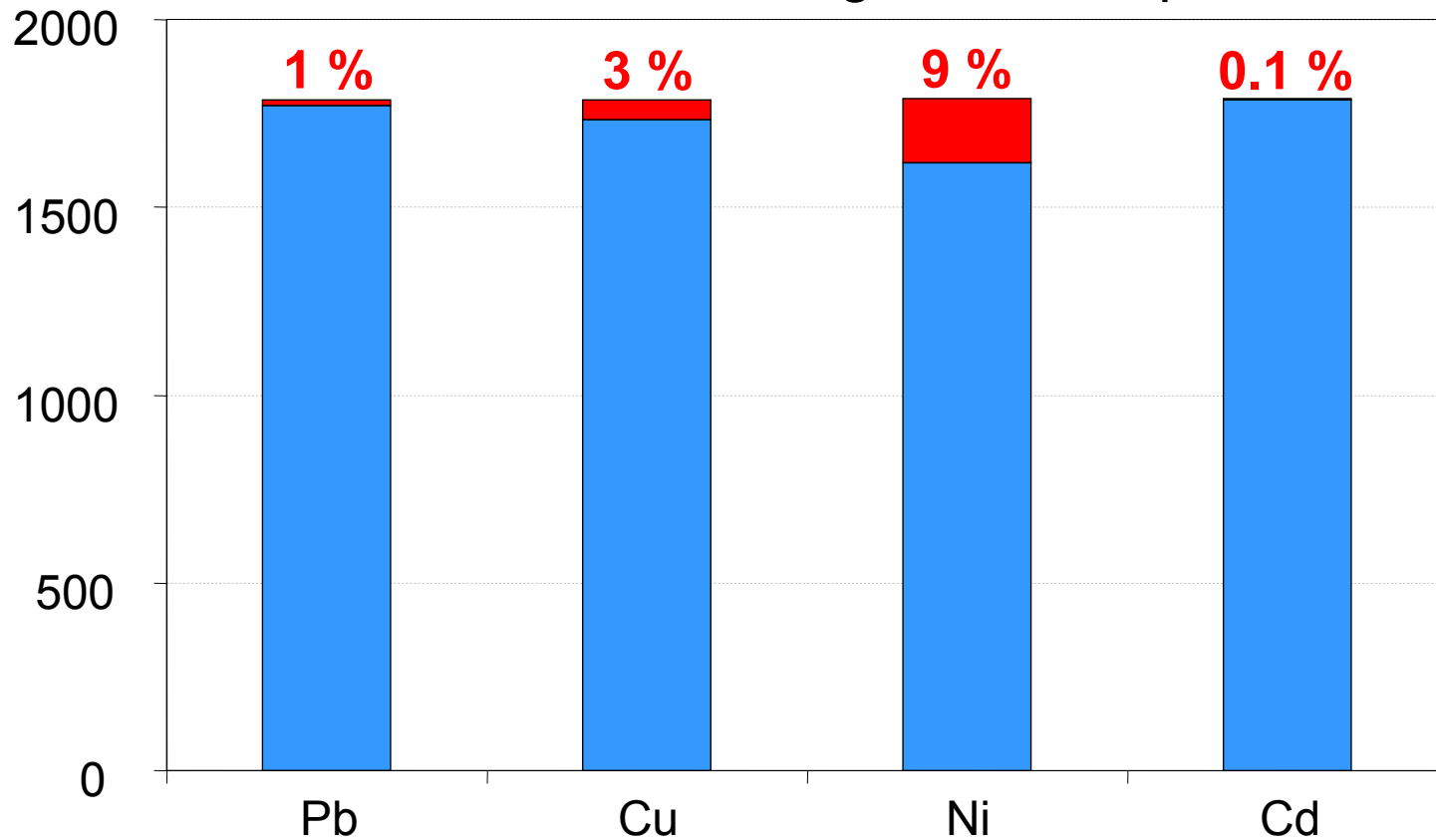


3. Chemical environmental influences:

How much is too much?

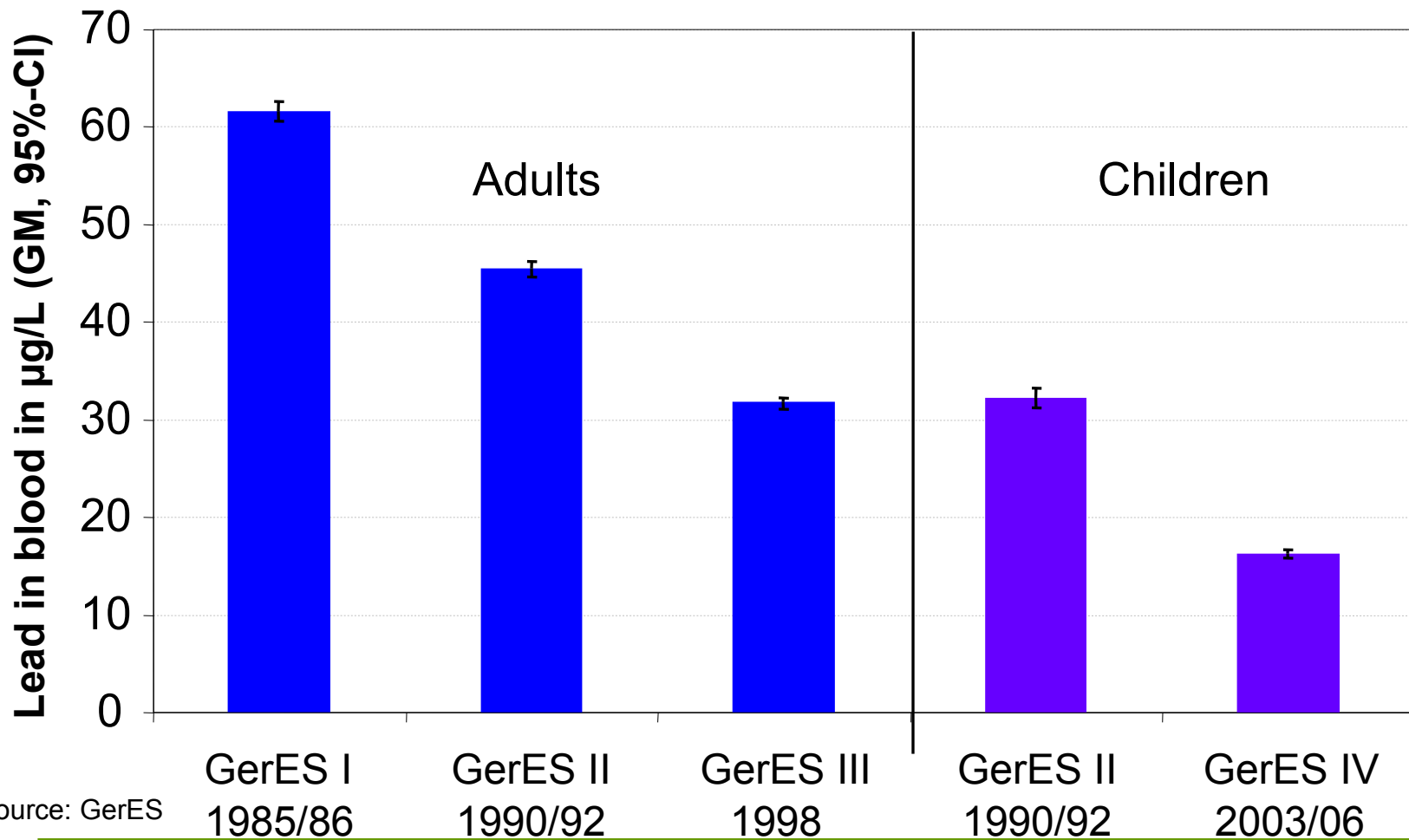
Exceedance of German drinking water standards

Metals in first draw drinking water samples




GerES IV (2003/06)

Lead in blood of the German population



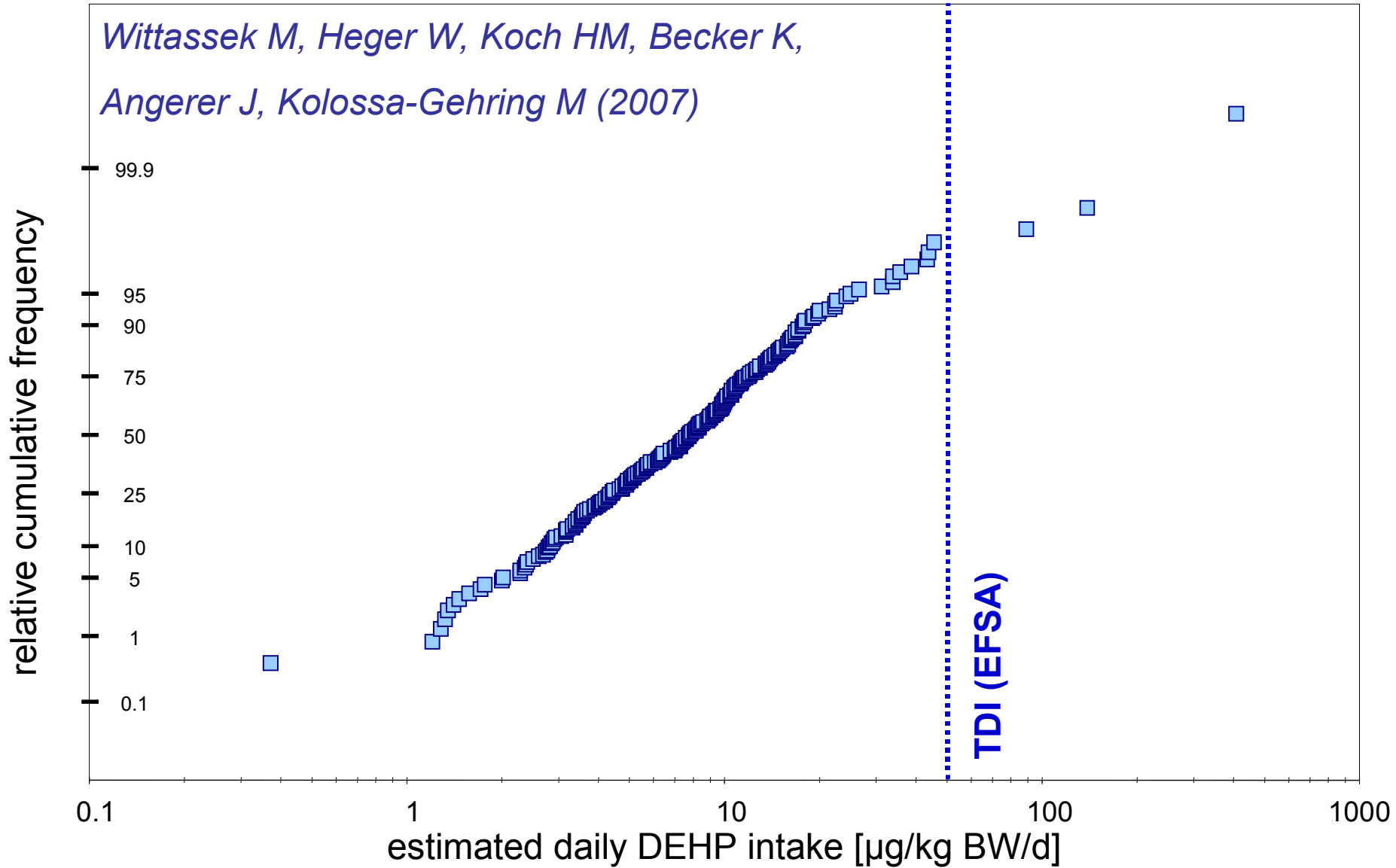
Source: GerES

Health based guidance values for lead in blood [$\mu\text{g/L}$]

time 

	1983	1987	1996/ 2002	2003	2006
Women in child bearing age (and children)	300	70 - 140	100	100	BAT-value for lead suspended Carcinogenic in animal experiments
Men and women > 45 years	700	150 - 350	150	400	
Occupational health	BAT- value			BAT- value	
Environmental health		WaBoLu- Cat. II	HBM-I- value		

German Environmental Survey for Children



Guidance values

- ADI/ TDI: 4- 66 $\mu\text{g}/\text{kg bw/ d}$
- NOAEL: 2. 9- 20 $\text{mg}/\text{kg bw/ d}$
- derived in: 1994- 2005

German Human Biomonitoring Commission:

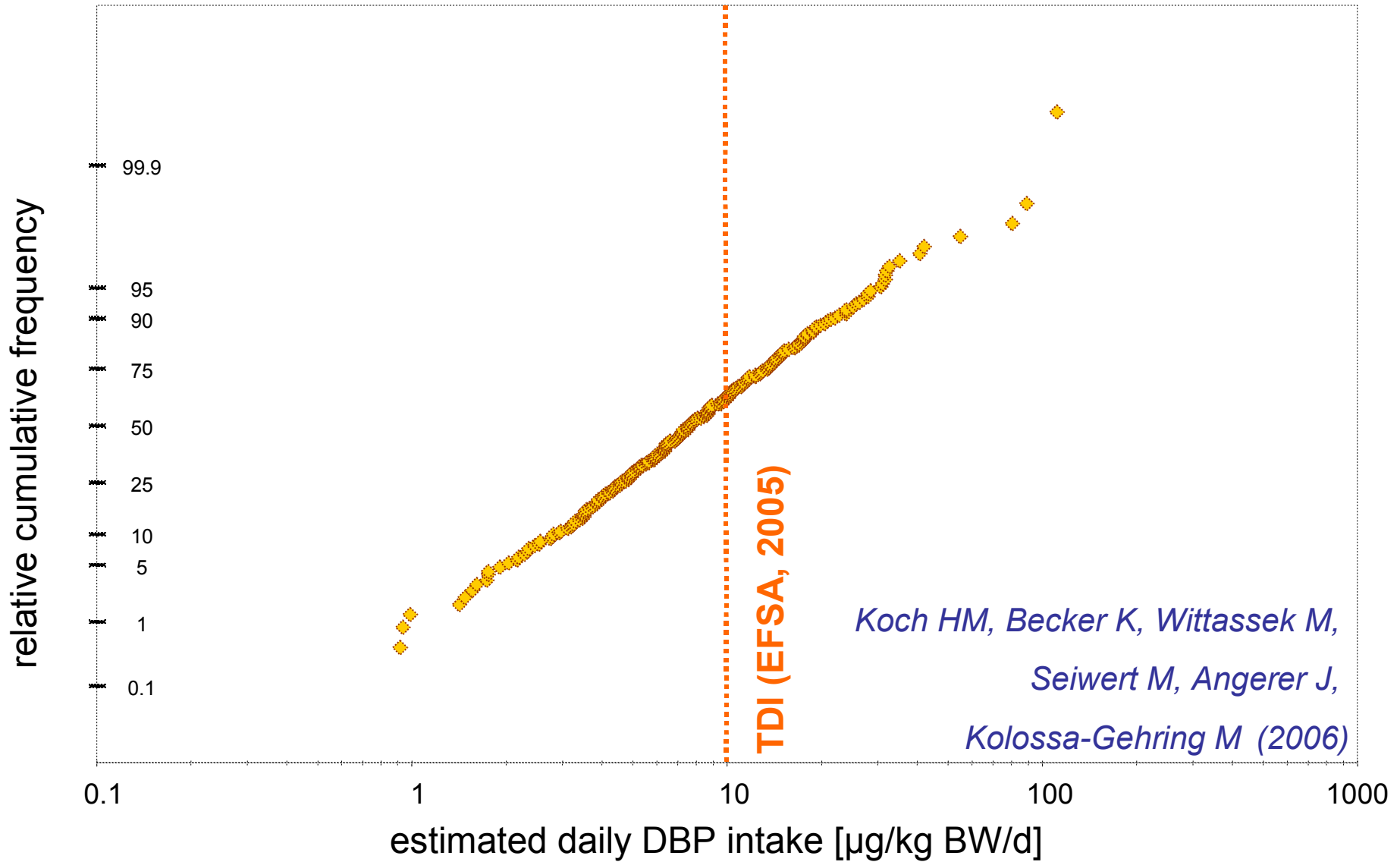
- NOAEL 4.8 $\text{mg}/\text{kg bw/ d}$, Wolfe and Layton (2003):
testicular effects, developmental toxicity

Human Biomonitoring Value I

- Children (6-13 years) 500 $\mu\text{g/ l}$
- women in childbearing age 300 $\mu\text{g/ l}$
- rest of population 750 $\mu\text{g/ l}$

„Bundesgesundheitsblatt-Gesundheitsforschung-Gesundheitsschutz, 2007“

German Environmental Survey for Children



Conclusions

- Evaluation of exposure's health consequences
- Observation of exposed children in a longitudinal study
- Further identification of sources
- Risk assessment by use of representative exposure data
- If necessary, derivation of measures for exposure reduction



www.uba.de/survey



The screenshot shows a Microsoft Internet Explorer browser window displaying the website [http://www.uba.de/survey/](http://www.uba.de/survey). The page header includes the UBA logo and the text "Umwelt Bundes Amt" and "Umweltbundesamt.de". Below the header is a navigation bar with tabs: "STARTSEITE", "PROJEKT", "DATENFAKTEN", "PUBLIKATIONEN", "UMWELTBUNDESAMT", "LINKS", "KONTAKT", and "IML/IE". The main content area is titled "Umwelt-Survey" and contains text about the survey's purpose and history. A map of Germany is visible in the center. The right sidebar contains a "Startseite Umwelt-Survey" section with a list of links and a "Service" section with links to "Ergebnisse" and "Kontakt".

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englisch version 

Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

STARTSEITE PROJEKT DATENFAKTEN PUBLIKATIONEN UMWELTBUNDESAMT LINKS KONTAKT IML/IE

Umwelt-Survey
Stand: 21.11.2006

Der Umwelt-Survey ist eine groß angelegte Querschnittsstudie zur Ermittlung und Aktualisierung von needsentbehr. Daten über die körperliche Schmutzstoffbelastung und die Ertragsstoffbelastung im häuslichen Bereich der deutschen Allgemeinbevölkerung.

Der Umwelt-Survey wurde im Jahre 1985/86 erstmalig durchgeführt ([Umwelt-Survey 1985/86](#)).

Im Jahr 1990/91 wurde er wiederholt und 1995/96 ein weiteres Mal durchgeführt ([Umwelt-Survey 1990/91](#)).

Die dritte Erhebung erfolgte im Jahre 2003/04 bis 2006 ([Umwelt-Survey 2003/04](#)).

Ein Umwelt-Survey für Kinder ([Umwelt-Survey 2003/04](#)) fand im Mai 2003 statt. Die Feldarbeit wurde im Mai 2006 abgeschlossen.



[Zurück zum Seitenanfang](#)

Startseite Umwelt-Survey
Ziele
Erwachsene
1985/86
1990/91
1995/96
Zeitlicher Vergleich
Publikationen
Kinder
1990/91
Erhebung 2003/04
2003/04 (11/15)
Publikationen
Service:
Ergebnisse
Kontakt

[Zurück zum Seitenanfang](#)

Thank you for your attention!

Special thanks to my co-workers
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