

# EMF Recommendations Specific for Children?

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# EMF recommendations specific for children?

- YES, of course and by all means when there's a risk
- Yes, when there are scientific uncertainties
- Yes, when there are known gaps in knowledge
- NO, when science concludes that there's no risk

**Translation of scientific evidence into legal frameworks, information on scientific knowledge, protection measures and precautionary recommendations**

**→ Communication to non scientists and lay persons**

**→ Risk perception and risk communication comes into play**



# Putting science into societal context

— Risk communication: bridging two different points of view

- **Science:**
  - Scientific knowledge
  - Risk assessment
- **Risk Communication:**
  - Science Communication
  - Risk Perception
  - Risk adequate behaviour
  - Characteristics of recipients
  - Meet the needs of target groups



# Risk perception: different for ELF, RF, UVR

## — ELF:

- Public perception moderate
- Local focus on high voltage power lines

## — RF:

- Parts of the public: high risk perception, mainly base stations
- Concerns about children's health: focus mobile phones
- High media coverage

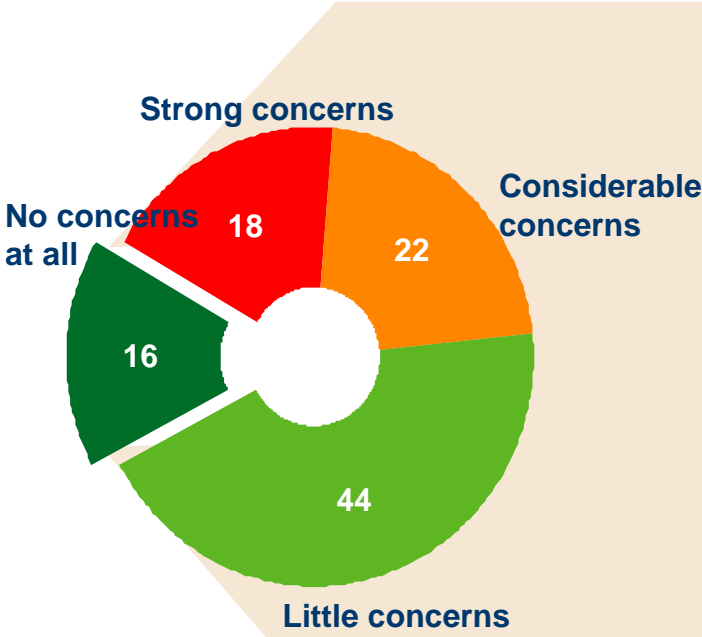
## — UV:

- High knowledge about risk in general public
- No adequate / sufficient protective behaviour
- Adults protect their children better than themselves



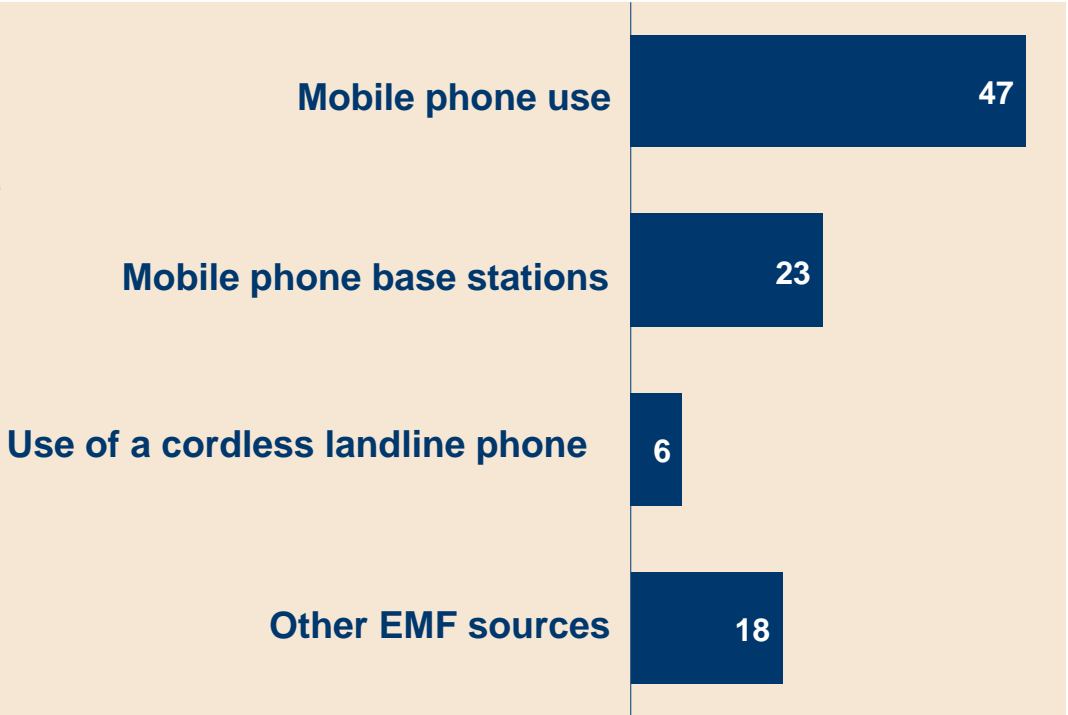
# Worries about health risks due to EMF for the own children

Worry about children: health risks due to EMF (n=664)



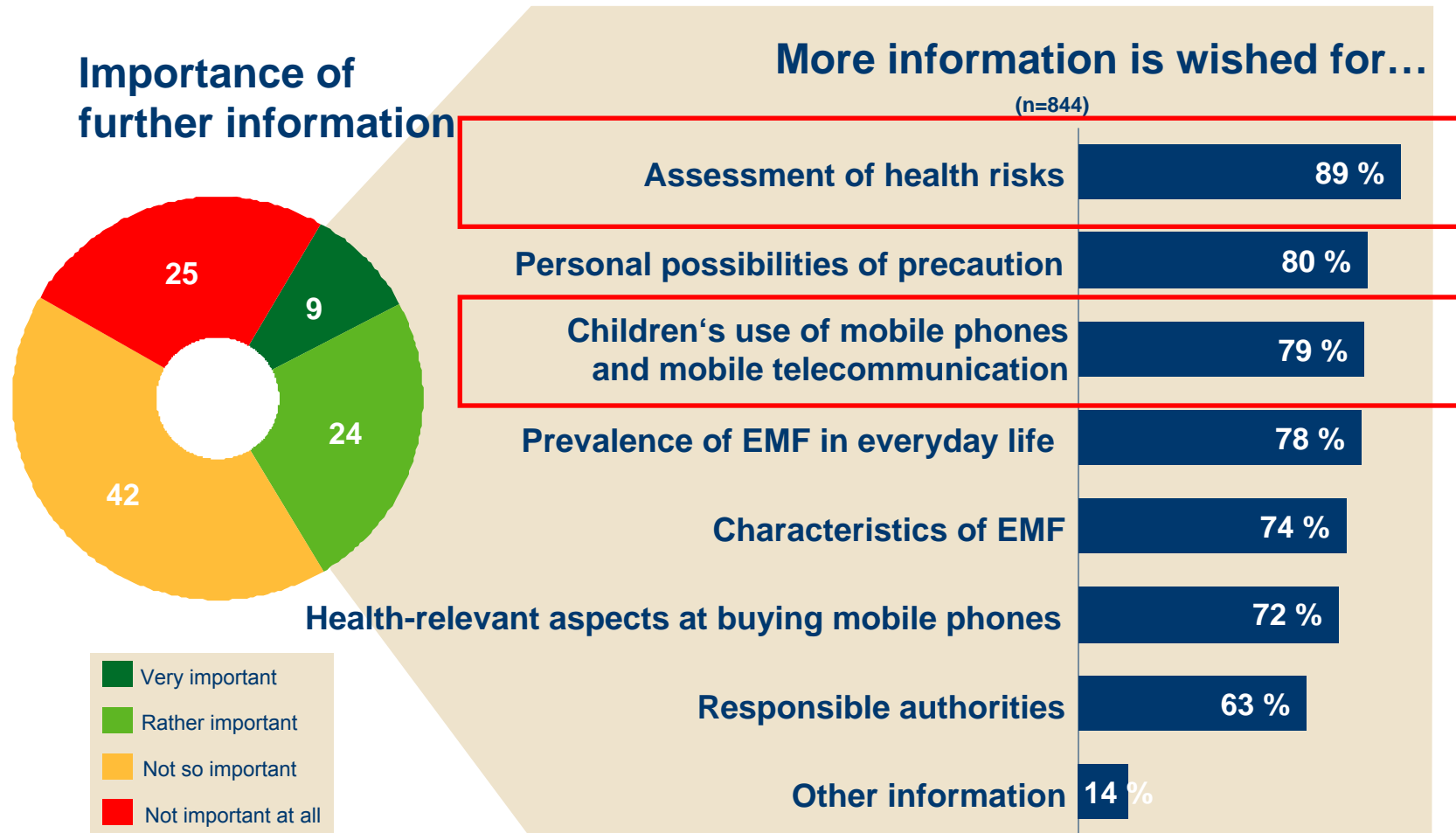
Hartmann, Belz (Infas) 2010

Reason for worry about children (n=551)



Personal concerns in population: 16 % considerable concerns, 7 % strong concerns

# Personal wish for further information about mobile telecommunication and health



Hartmann, Belz (Infas) 2010

# Communicating scientific uncertainties and recommendations for precautionary measures

- Increase in risk perception?
- Decrease of trust in regulatory bodies?
- Refusal of information because of confusion?
- In case of children:
  - Role of parental emotions in protecting their children as best as possible?
  - Unintended consequences, e.g. higher exposure of children due to false behaviour adjustment?
- Different information processing behaviour plays a big role: motivation and ability to deal with new information



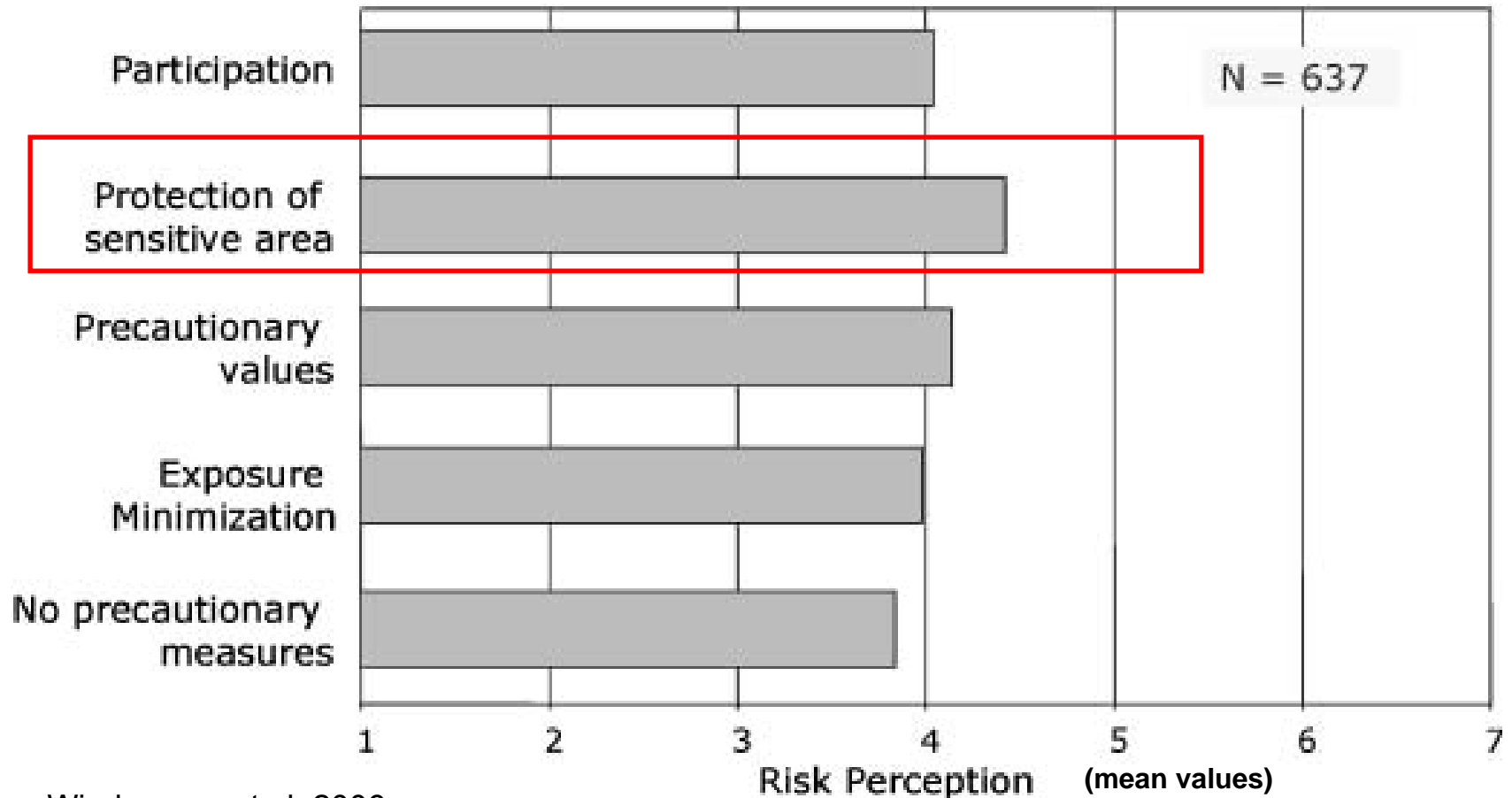
# Recent studies (I) on effects of communicating precautionary measures and scientific uncertainties

- P.M. Wiedemann, A.T. Thalmann, M.A. Grutsch, H. Schütz (2006)  
„The Impacts of Precautionary Measures and the Disclosure of Scientific Uncertainty on EMF Risk Perception and Trust”
  
- Age of participants 17 – 43, average 22





# The effect of mentioning precautionary measures on risk perception



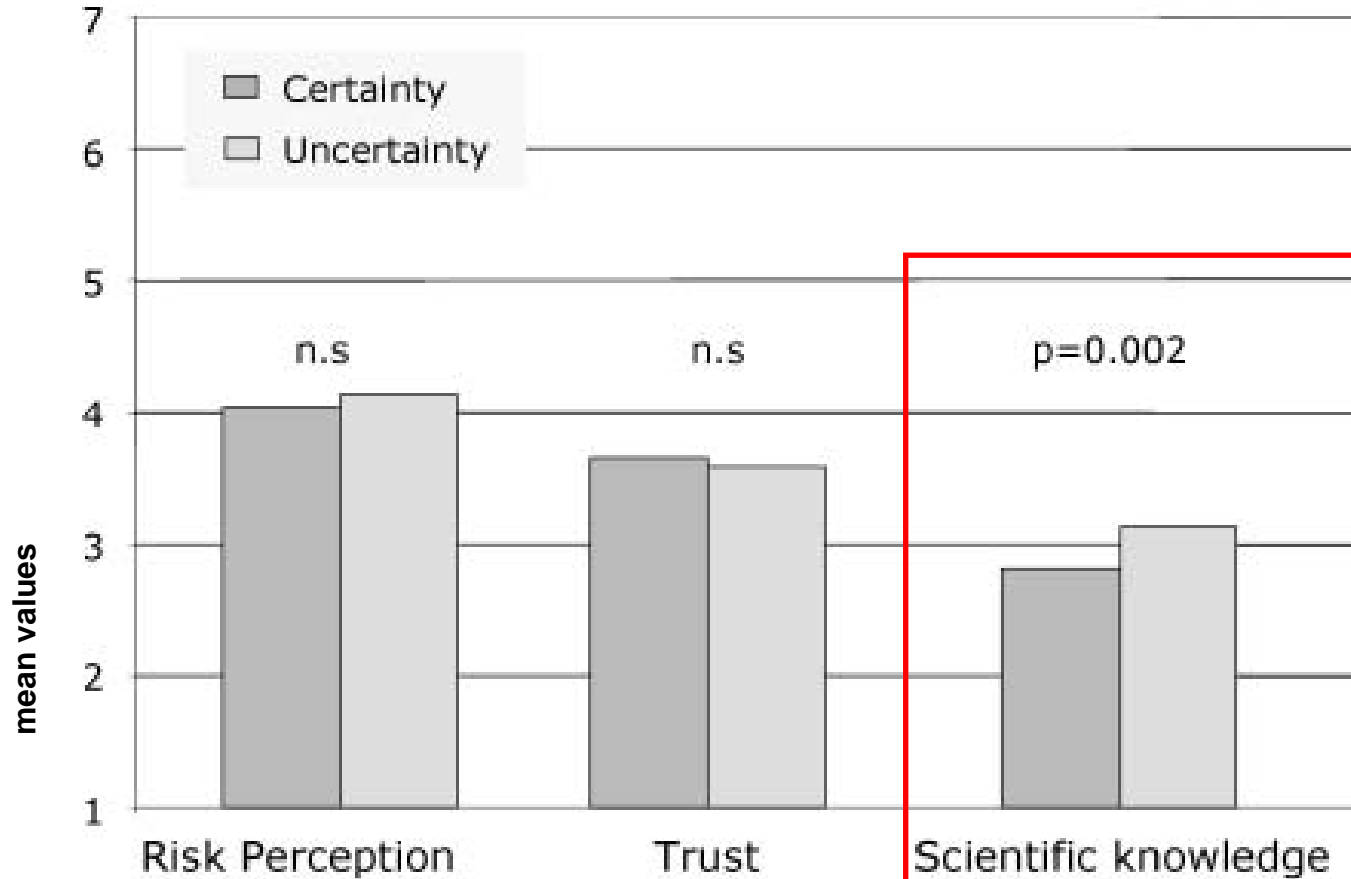
Wiedemann et al. 2006

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# Effects of the disclosure of uncertainty in knowledge on risk perception, trust and assessment of current knowledge



Wiedemann et al. 2006

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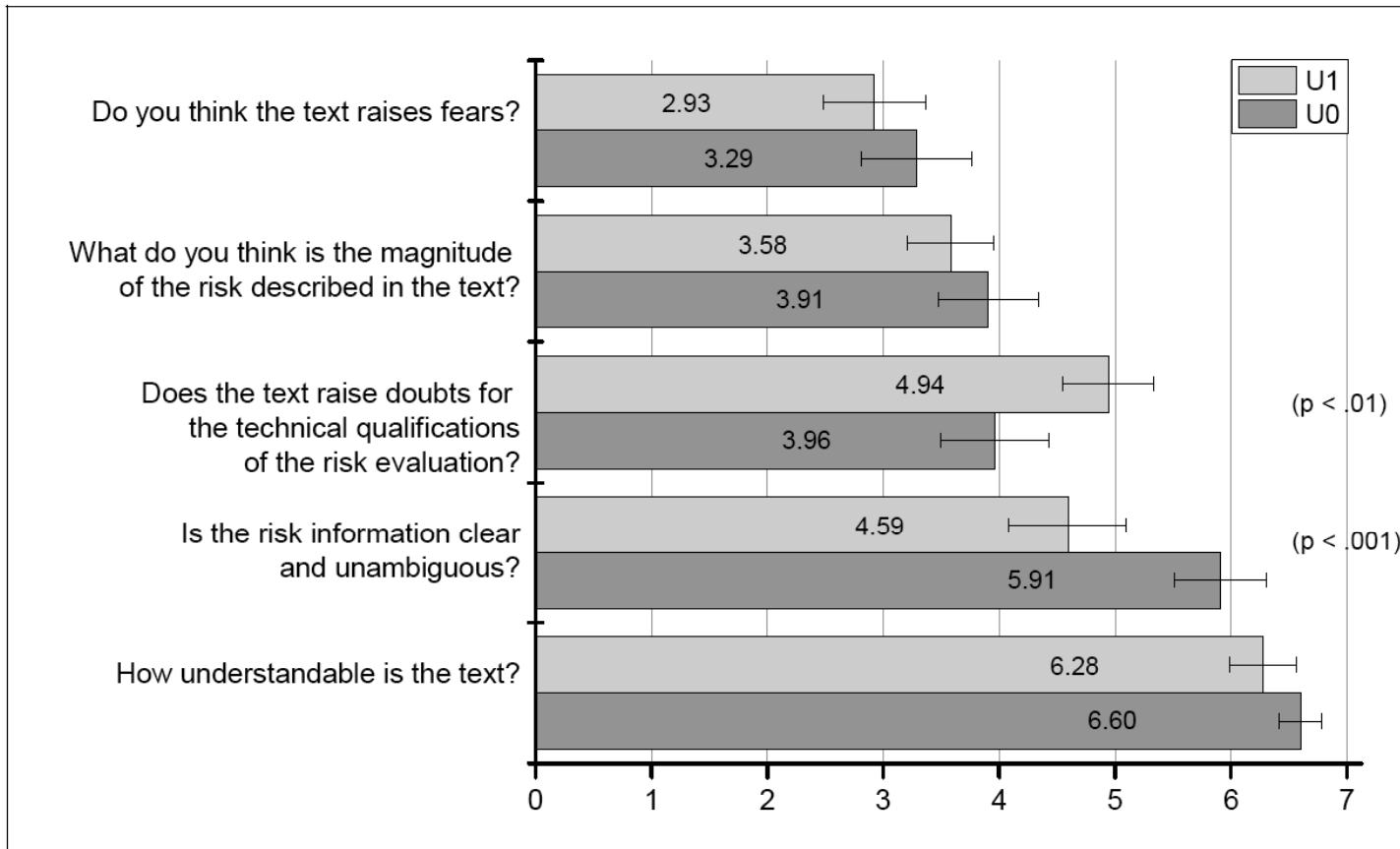
Bundesamt für Strahlenschutz

# Recent studies (II) on effects of communicating precautionary measures and scientific uncertainties

- P. M. Wiedemann, S. Löchtefeld, F. Claus, S. Markstahler, I. Peters (2009): **Lay person adequate communication of scientific uncertainties in the field of EMF**
- **Main results: Effects of reporting uncertainty depend on the reference case**
  - **R1: Uncertainty about the hazard**
  - **R2: Uncertainty about the risk magnitude**
  - **R3: Uncertainty about the risk protection**
- **Participants: Students**



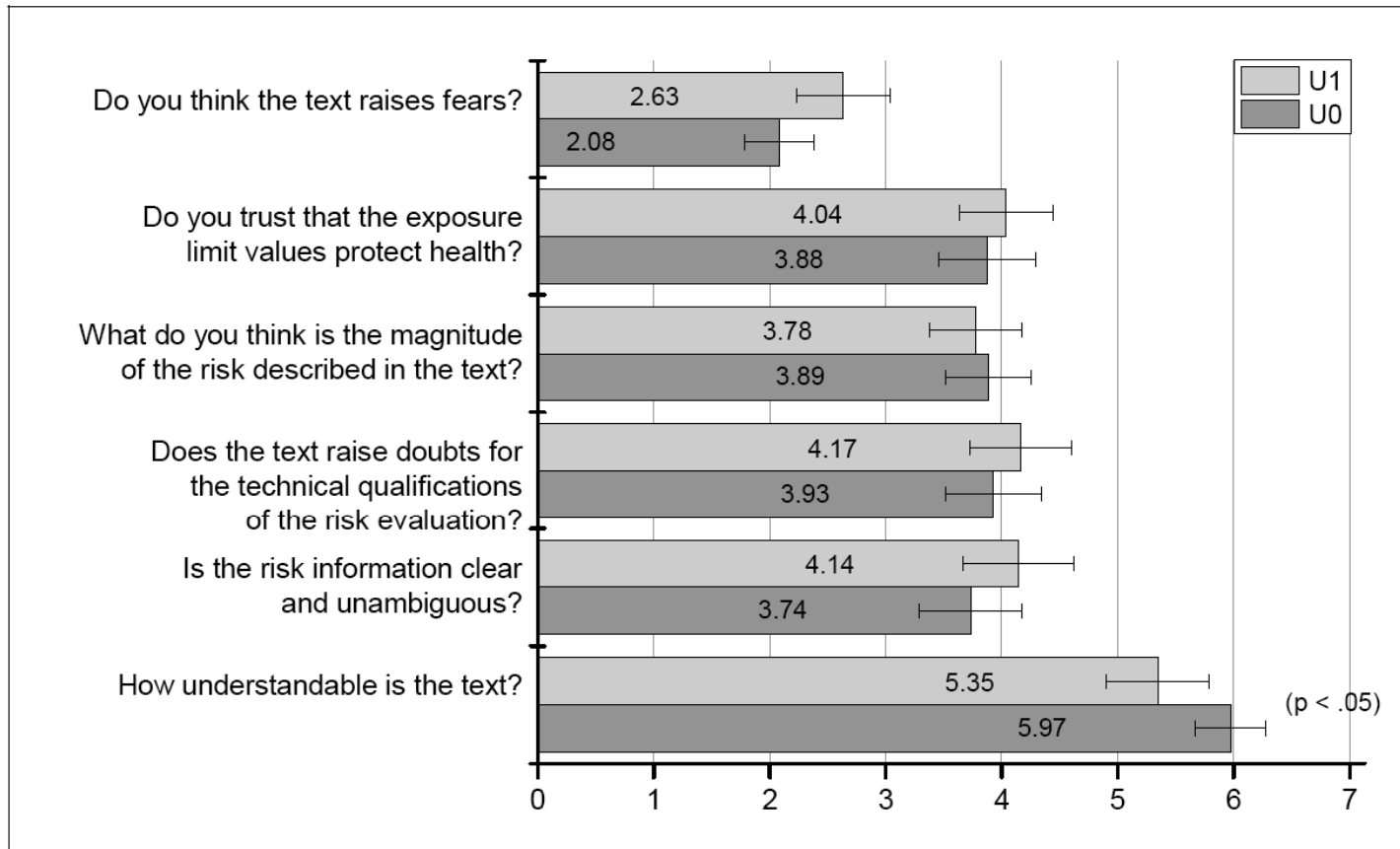
# Results: Reporting uncertainties about hazard identification (R1)



Wiedemann et al. 2010

Figure 1: Results R1, mean values (and 95% confidence intervals) of the dependent variables for the two levels of factor "uncertainty" (U0: no information about uncertainty, U1: information about uncertainty)

# Results: Reporting uncertainty about risk protection (R3)



Wiedemann et al. 2010

Figure 5: Results R3, mean values (and 95% confidence intervals) of the dependent variables for the two levels of factor “uncertainty” (U0: no information about uncertainty, U1: information about uncertainty)

# Children are different than adults – a specific challenge to risk communication

- Different ability and willingness to modify behaviour
- Perceived self efficacy plays a crucial role in health behaviour – development in childhood and adolescence
- Cognitive development (knowledge, fears, etc.)
- High readiness of mind
- Ritualisation of behaviour
- Role model learning
  - In (early) childhood: Parents
  - In adolescence: Peers, other adults
- Protection by parents (White et al. 2007: Children were perceived to be at more risk from the technology in general than other adults)



# Ways to modify children's behaviour

- Regulatory frameworks
- Address parents / care persons:
  - Adjust their own behaviour to protect their children and
  - To be role models for their children
- Address children / health education:
  - Education in family, social environment, peer groups, nursery school, at school
  - Important role in forming and influencing individual behaviour
- Special multipliers and competent authorities for children's protection → sound scientific information!



# Recommendations

- Recommendations should be part of children's living world
- Use of parental action motivation: protection of their children
  - Recommendations for children = recommendations for adults on how to protect their children
- Be careful with fear appeals
- Concerted actions: address children AND their education persons (parents, teacher, nursery school teacher)
- Important to reach students at a young age:
  - Older children become less receptive to interventions
  - More challenge to change attitudes and alter behaviours





# What is needed by risk communicators?

- **Clear information on scientific knowledge, knowledge gaps (known and unknown...), uncertainties, reason for uncertainties**
- **Clear statements on risk assessment and risk evaluation**
- **Clear information, which health consequences might be possible or are impossible**
- **Clear recommendations from a scientific point of view, if precautionary measures (and which) could be a good measure**



# Conclusions

## **EMF-specific recommendations for children? YES!**

- As soon as you see a risk**
- When you tend to appeal to protective behaviour of children/their parents**

- Risk communication has to consider that one might address parents with more or less young children
- Risk communication regarding health of children: more sensitive
- Communicating scientific uncertainties: provide information on the range of possible consequences for children's health
- Provide different information levels



# Thank you for your Attention!

