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BPA Risk assessment work plan

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Background

- 2009 : ministry of health requests Anses to assess health risks in connection with consumer goods, products and articles – BPA being one in a list of 50 chemical substances/ endocrine disrupters

- 2010 : ministry of ecology requests Anses targeting BPA and substitutes :

summary of risks,

identification of uses and exposures (oral, respiratory, skin),

HRA feasibility, substitutes,

recommendations in the framework of REACh,

medical devices and cosmetics excluded (ANSM)

BPA risk assessment objectives

- Identify products and/or items containing bisphenol A and estimate exposure in the general population (vulnerable populations and certain contexts of occupational exposure)
- Assess the health effects of Bisphenol A for all types of potential toxicological effects (e.g. reproductive, thyroid and immune toxicology, behaviour, obesity, etc.)
- Assess the relevance of undertaking a health risk assessment
- Identify Bisphenol A substitutes and their effects on human health
- Consider potential substitutes
- Document social representations, an analysis of uncertainties and their interpretations.

Background

- September 2011 :

  -experts appraisal report on the health effects and uses of bisphenol A

  -call for contributions on substitute products to reduce exposure of the most sensitive populations

- June 2011 : report on contributions received and summary list of 74 substitutes

- October 2012 : CLH report proposal for harmonised classification and lebelling of BPA

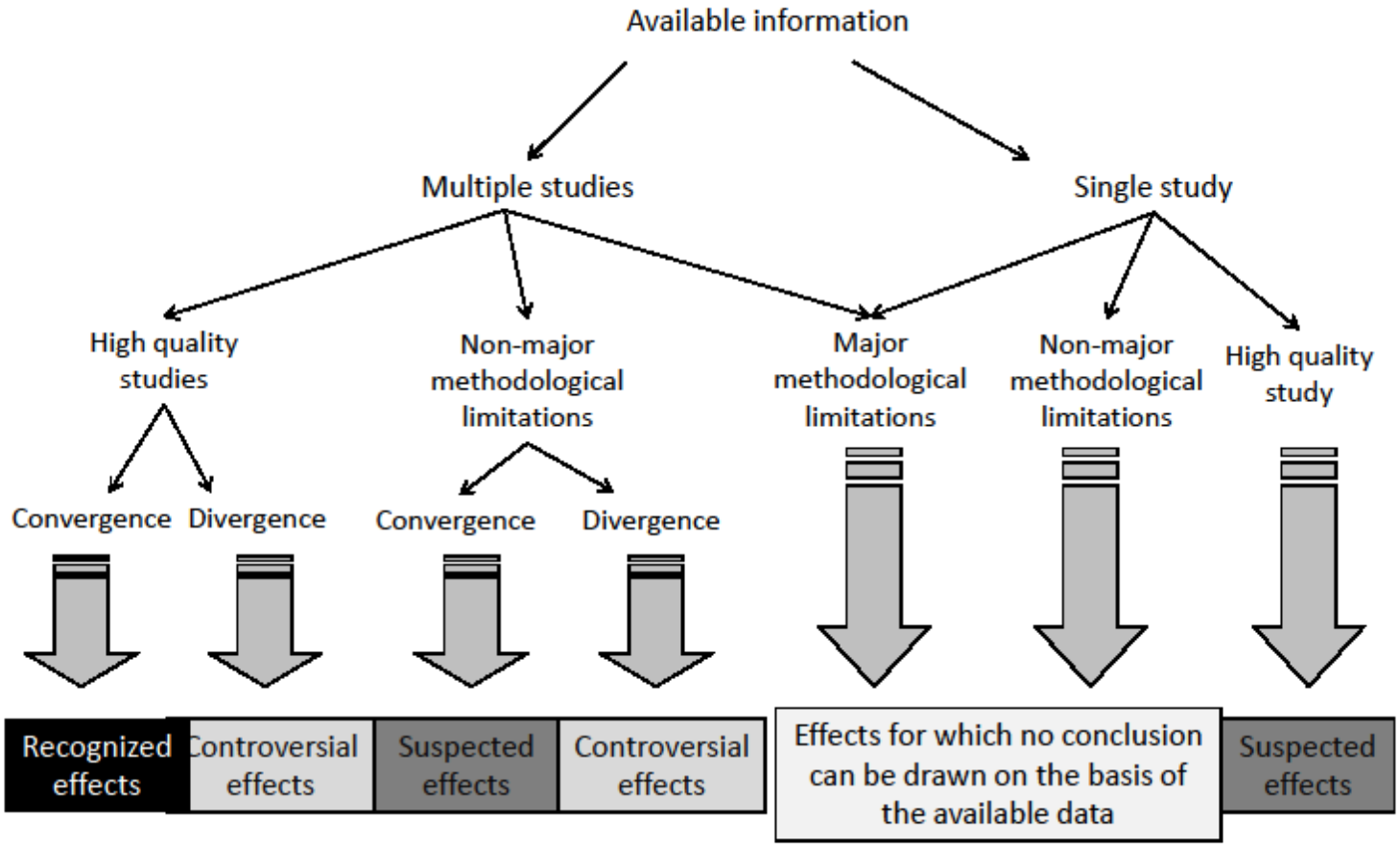
Health effects report (Sept. 2011)

- **Consultation of previous expert appraisal reports**:
  - EU-RAR, 2002-2008; JRC, 2010; NTP-CERHR, 2008; Health Canada, 2008; etc.

- **Analysis of the INSERM preliminary report** of June 2010

- **« In-depth" analysis of recent literature (70) with focus on**:
  - Epidemiological studies
  - Experimental studies undertaken after the expert appraisal reports (from January 2010 to January 2011)
  - Tested doses < NOAEL of 5 mg/kg/day
  - Subcutaneous exposure (in addition to oral exposure)

Analysis of publications



Assessed effects

1. male reproductive system
2. female reproductive system
3. brain and behaviour
4. metabolism and cardiovascular system
5. thyroid
6. immune system
7. intestine
8. prostate
9. breast
10. *Environmental effects*

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Toxicological characterization

30, October 2012

BPA Dose-response assessment

- All effects identified by the experts working group are under discussion.
- Those effects considered as «recognized » based on animal data or «suspected» based on human data will be used for RA.
- For each of these effects, a scoring of the studies was done, based on the level of information available, number of animals, doses tested, etc.
- Oral and subcutaneous studies are both considered in the scoring process.
- LOAEL, LOAELu, NOAEL connected to the health effects listed in Anses 2011 BPA report were reported.

BPA Dose-response assessment

The following dose-response assessments are under consideration on the basis of Anses Sept.2011 BPA report on health effects:

- **Effects on the female reproductive system**
  - Altered patterns of estrous cyclicity; Increased occurrence of ovarian cysts and appearance of endometrial hyperplasia linked to pre- or perinatal exposure

- **Effects on the brain and behaviour**
  - Effects on cerebral development linked to pre- or perinatal exposure to BPA; effects on exploratory behaviour

BPA Dose-response assessment

- **Effects on the mammary gland**
  - Acceleration of the mammary gland's structural maturation in adulthood, development of intraductal hyperplastic lesions after pre- or perinatal exposure to BPA (recognized effects)
  - Increase in mammary gland susceptibility to developing mammary tumours at a later period (with co-exposure to a carcinogenic agent) after pre- or perinatal exposure to BPA (suspected effect).

- **Effects on the metabolism**
  - Increases blood lipid levels, excess body weight and enhanced lipogenesis after pre- or perinatal exposure or exposure in adulthood

BPA Risk assessment

- Aggregate exposure taking into account all sources of exposure (excluding however medical devices and cosmetics).
- Internal doses of BPA will be calculated for different age groups based on estimation of bio-availability following oral, skin exposure and exposure by inhalation.
- Internal doses will be compared to PODs derived from the selected key studies.
- A probabilistic approach is applied to exposure assessment with margins of safety

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Thank you for your attention