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CEHOS

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Researching the health impacts
of endocrine disrupting chemicals



EU Horizon Health project 2024-2028



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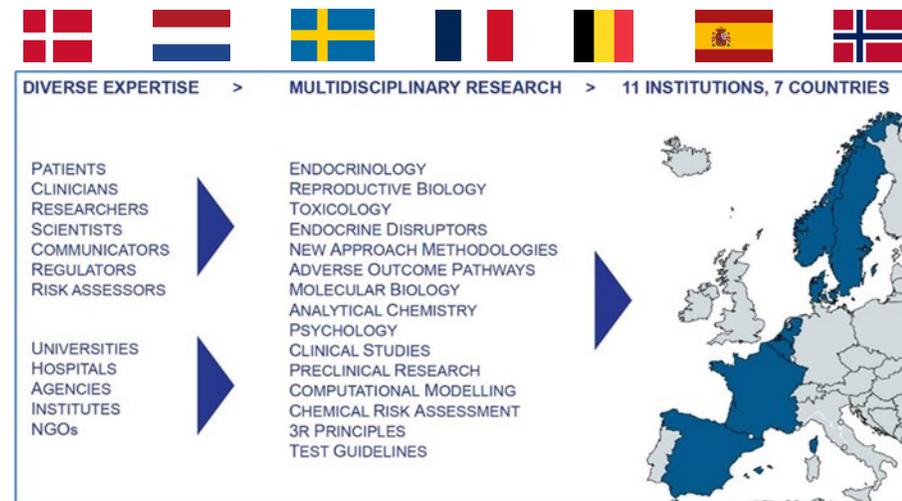
HEALTH AND ENVIRONMENT ALLIANCE

Mrs Genon Jensen



NIVA Norwegian Institute for Water Research

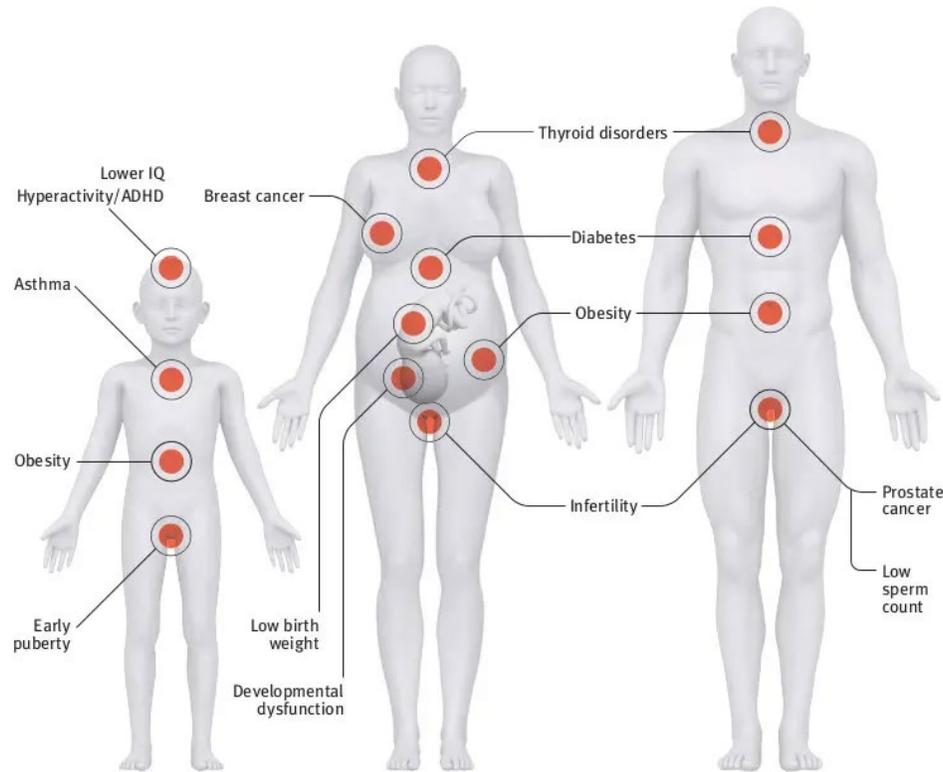
Dr You Song



11 Partners, 7 Countries

Endocrine Disrupting Chemicals Can Impact Human Health

Everyday exposures to EDCs contribute to modern health epidemics.



EDC Definition:

“An endocrine disruptor is an exogenous substance or mixture that **alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub) populations**”;

Burden of Endocrine Disrupting Chemicals



- **Personal cost and suffering** because of health-related issues

- **Monetary costs to society**

- Estimated cost related to EDC exposure: €163 billion/year
 - of which 8.15 billion (5%) attributed to **reproductive disorders**

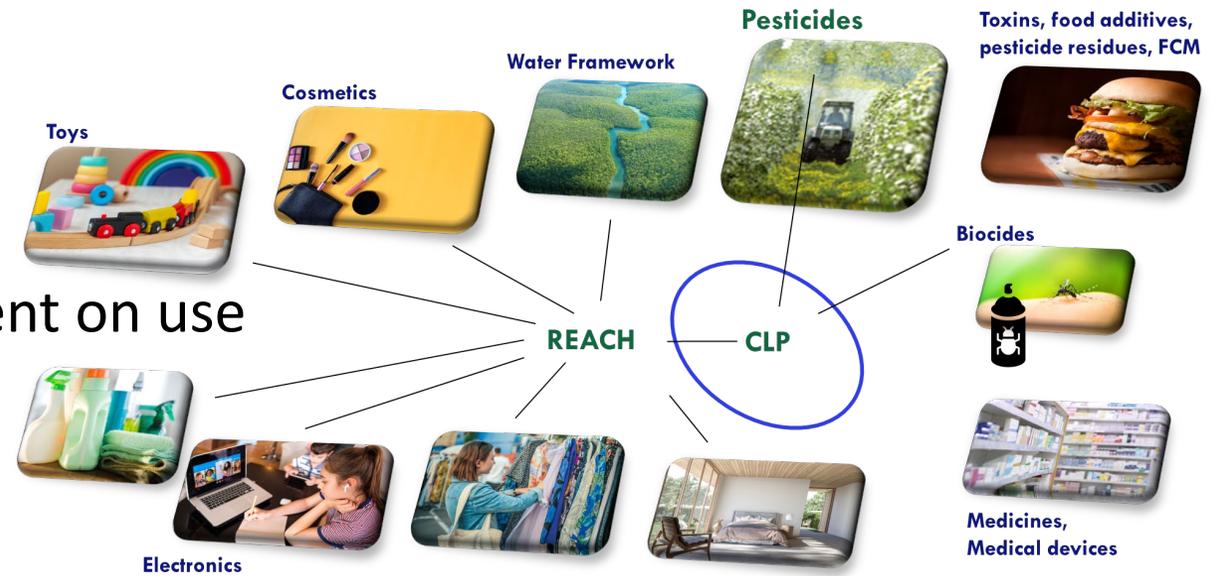
(Kassotis et al 2020, Lancet Diabetes Endocrinol 8:719)



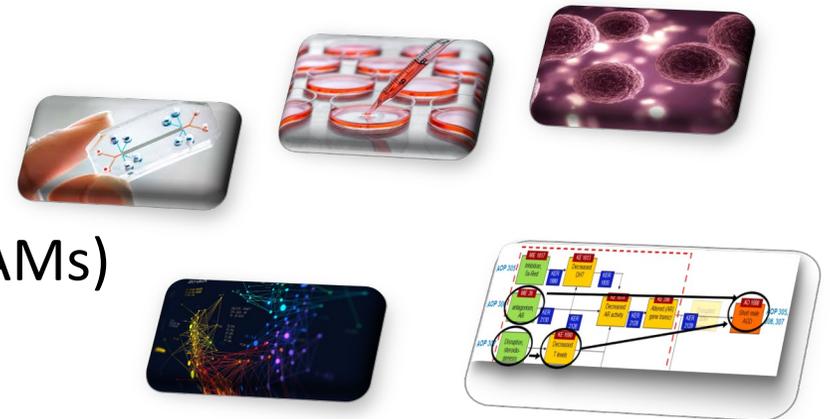
Testing and Regulation is a Challenge

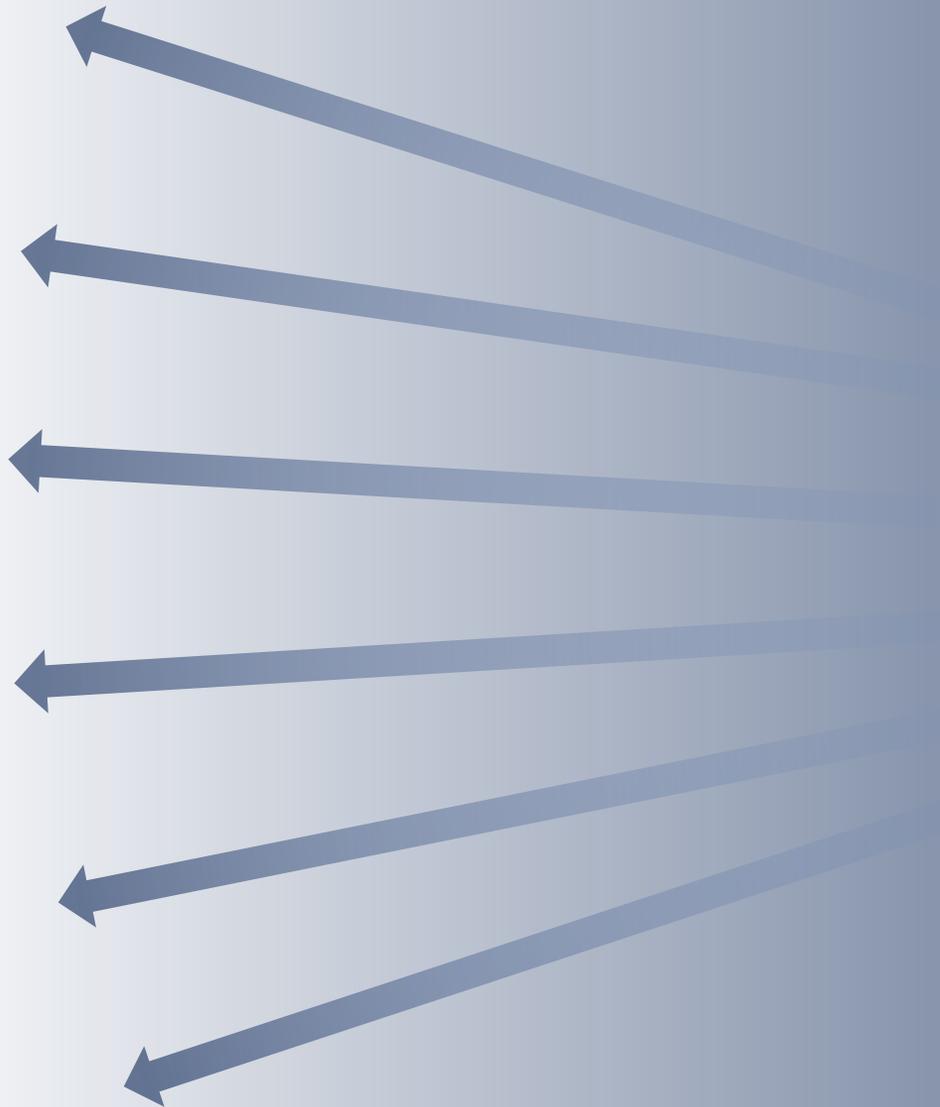
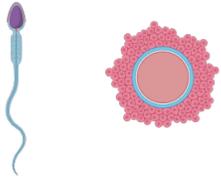
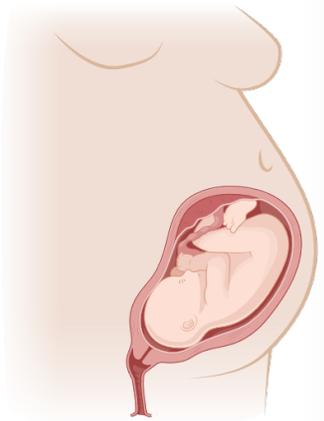


- 40 different applicable regulations - dependent on use



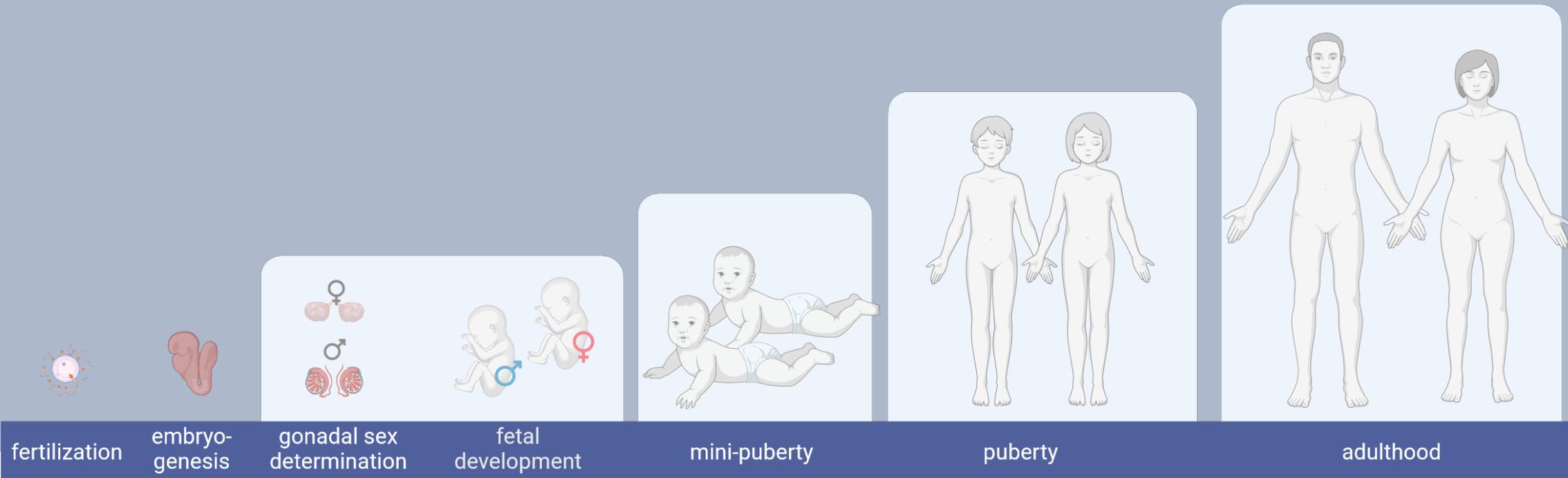
- Animal free testing - New Approach Methodologies (NAMs)





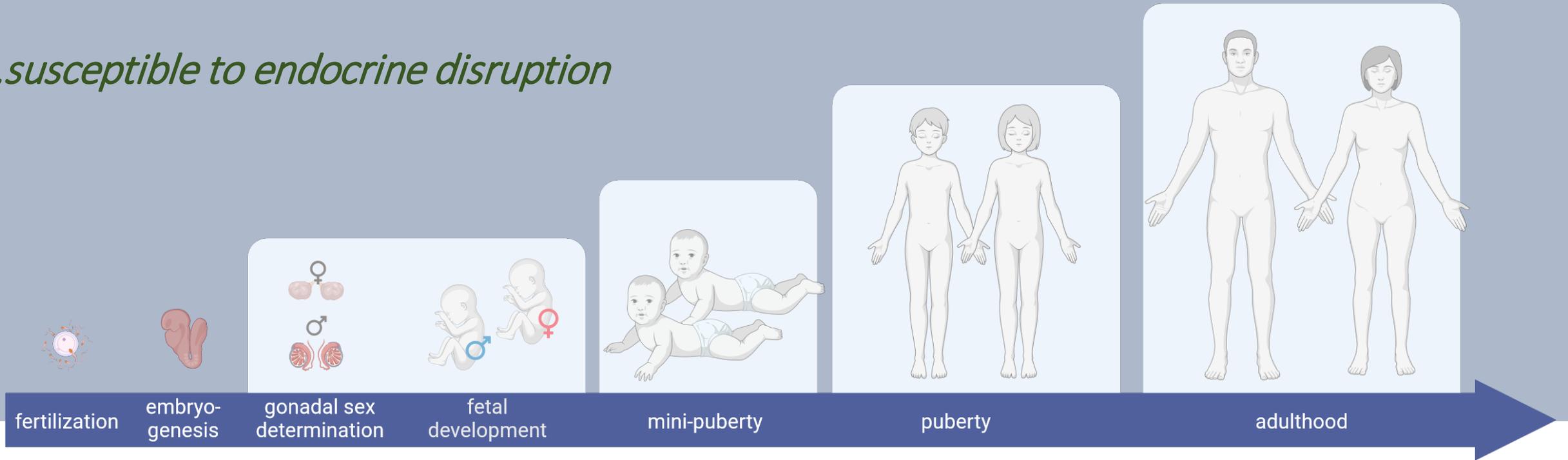
EDCs can interfere with reproductive development and function and cause disorders & diseases

Reproductive development and function: a lifetime journey...



Reproductive development and function: a lifetime journey...

...susceptible to endocrine disruption



Potential consequences of EDC exposure

e.g.

- genital malformations
- under-virilization (M)
- diminished ovarian reserve (F)

e.g.

- disrupted mini-puberty
- disrupted genital development

e.g.

- disrupted puberty onset
- cognitive changes

e.g.

- impaired fertility
- early menopause (F)
- reproductive cancers
- cognitive changes



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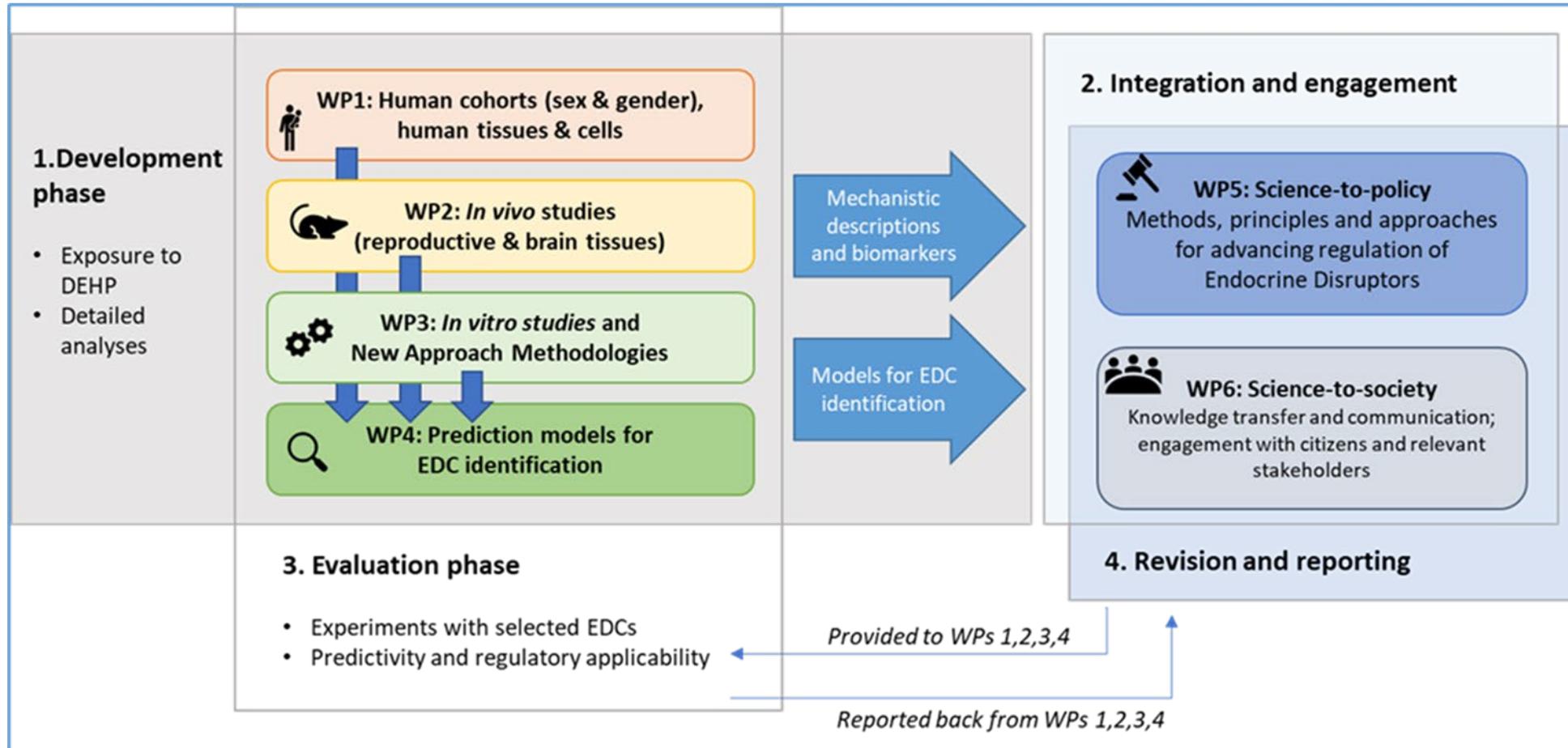
Support public authorities with scientific evidence in safety assessment of EDCs by

providing a roadmap to effectively assess effects on sexual differentiation and function by endocrine disrupting substances

under assessment in EU regulatory frameworks.



Project Structure





From basic research to EDC identification

Experimental approaches

- Human cohorts
- Human tissues
- Induced pluripotent stem cells
- Rat toxicity model
- Mouse genetic models
- Japanese quail embryo
- Zebrafish embryo
- C.elegans*
- In silico modelling

Experimental outcomes

- Human biomarkers
- Animal effect endpoints
- New approach methods
- Predictive models

Integrated outcomes

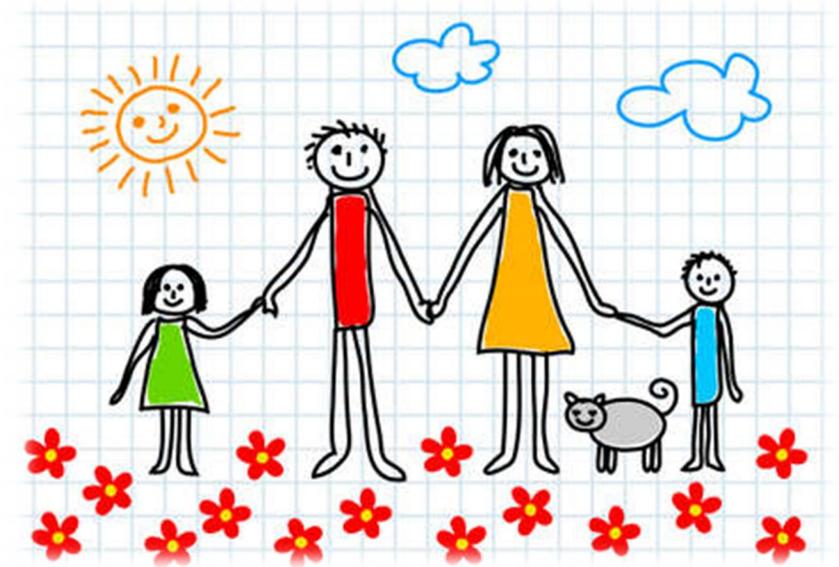
- Adverse Outcome Pathways
- Integrated Approaches for Testing and Assessment

Vision

Next Generation Risk Assessment

Expected Outcomes

- New biomarkers for use in epidemiology and toxicology
- 3R-compliant, new approach methodologies for EDC identification
- A roadmap to advance EDC identification in EU regulations
- Better reproductive and sexual health for everyone



Thank You

Questions?



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