



Sofie Christiansen PhD, Senior Scientist

Research Group for Molecular and Reproductive Toxicology

National Food Institute, Technical University of Denmark

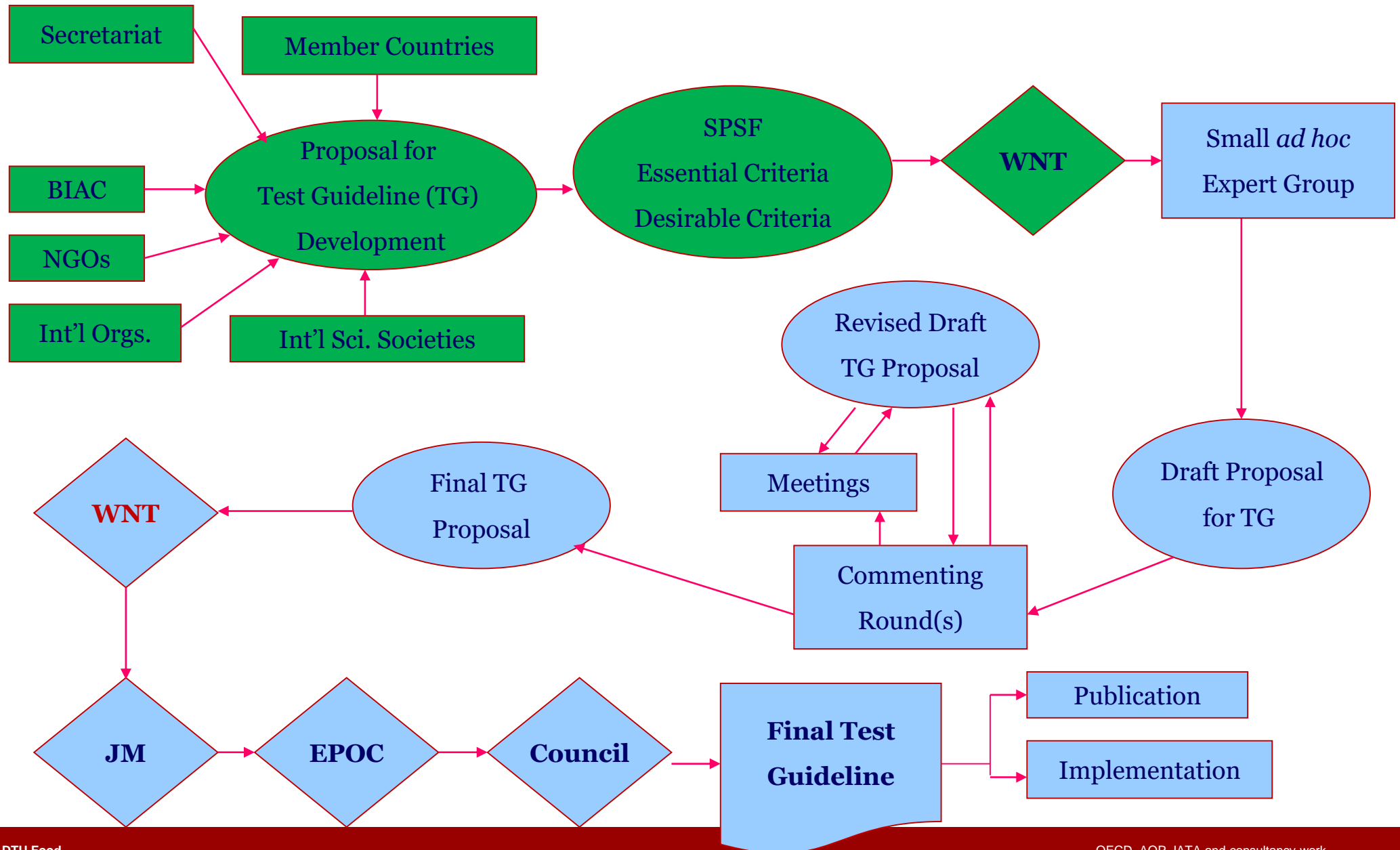
OECD, AOP, IATA and consultancy work

**Toxicology in Denmark, 21+22 April 2022, University of
Copenhagen**

OECD Guidelines for the Testing of Chemicals

- **Organisation for Economic Co-operation and Development**
 - WNT: Working Group of the National Coordinators of the Test Guidelines Programme – Since 2010 (*I have been DK NC*)
 - Unique tool for assessing the potential effects of chemicals on human health and the environment
 - Accepted internationally as standard methods for safety testing
 - Used by industry, academia and government involved in the testing and assessment of chemicals (**chemical legislation** e.g. REACH)
 - **Section 1: Physical Chemical Properties**
 - **Section 2: Effects on Biotic Systems**
 - **Section 3: Degradation and Accumulation**
 - **Section 4: Health Effects (also in vitro)**
 - Develop **alternative methods** to animal tests & QSAR
 - Revise, as appropriate, existing animal tests to accommodate **animal welfare – better use of animals (3R)**

OECD Test Guideline Development Process



Our Research group contribution to: OECD TG programme



Uterotrophic assay (TG 440)

Hershberger assay (TG 441)

H295R (TG 456)

EOGRTS (TG 443 + DNT) GD 151



Lead: Repro Screening TG 421/22
(AGD, NR, TH)

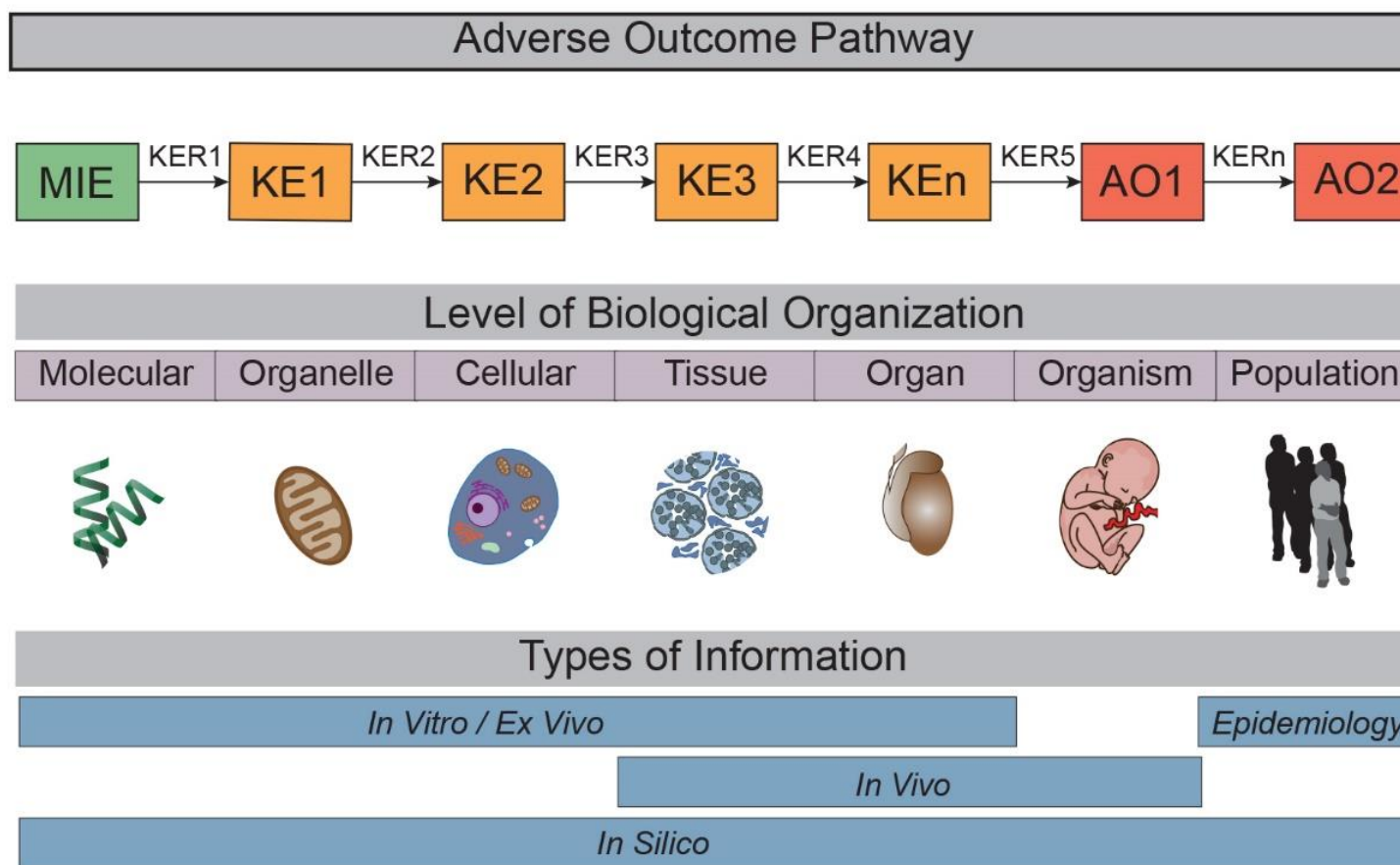
Lead: Dev. Tox TG 414
(AGD, TH)

Updated GD 150

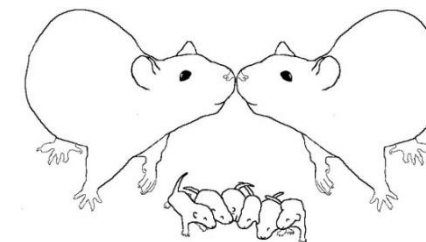


What is an Adverse Outcome Pathway?

- A pragmatic description of the mechanistic basis of a toxicological effect
- Chemical agnostic (i.e. non-committal to a specific chemical; they are biological constructs)



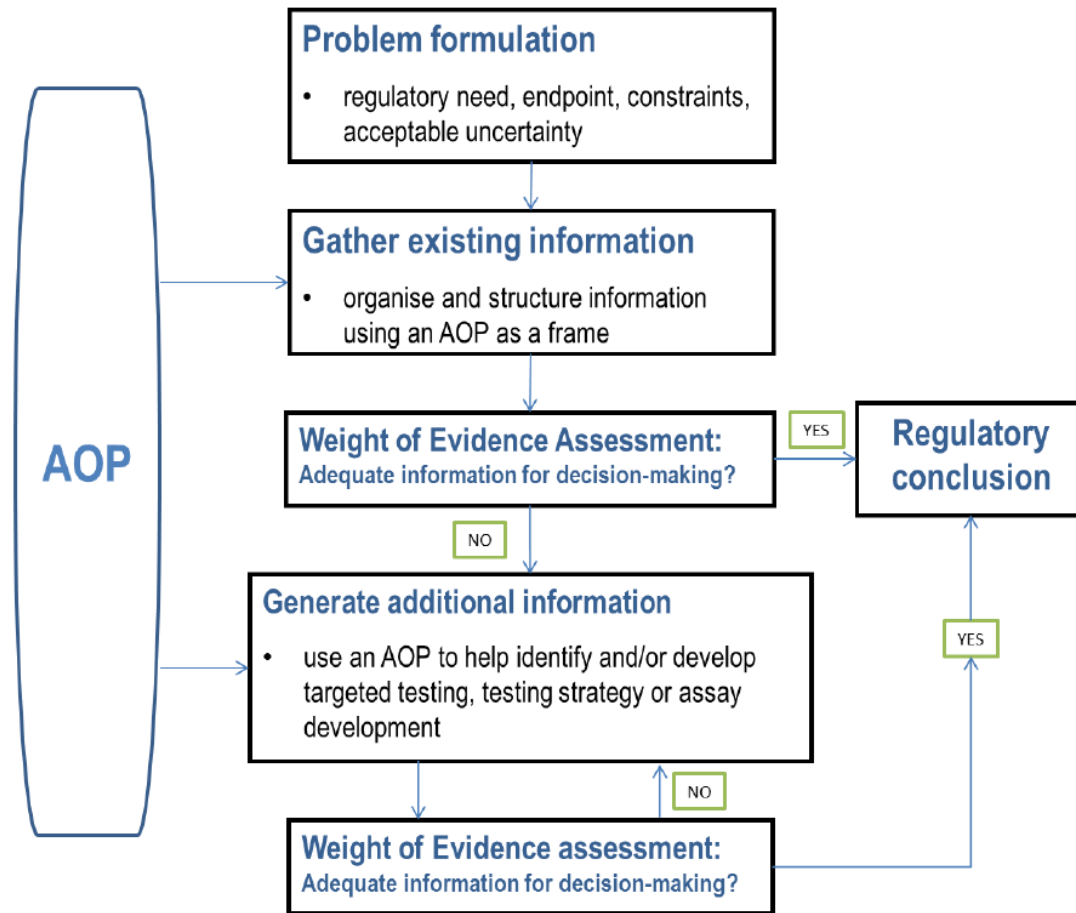
MIE = molecular initiating event
KE = key event
KER = key event relationship
AO = adverse outcome



← **Test methods / assays**

Draskau *et al* (2020) *Mol Hum Reprod* 26:111

Generic IATA* framework and decision flow



IATA (*Integrated Approaches to Testing and Assessment):

- pragmatic
- science-based
- for a defined question (hazard or risk characterization)
- integrated and iterative WoE analysis (existing and new information)
 - Both in vivo, vitro and in silico
- using testing strategies

from OECD GD 260: Guidance document for the use of adverse outcome pathways in developing integrated approaches to testing and assessment (IATA)

Research-based advice and vice versa

Reproductive toxicity, Endocrine disruptors, Mixtures

