

## Introduction

Efforts are underway within both the human health and ecotoxicology communities to develop screening assays capable of identifying thyroid hormone system disrupting chemicals (THSDCs) and to describe adverse outcome pathways (AOPs) to support these assays. We aim to break down the wall between human and environmental health assessment of chemicals using an AOP network (AOPN) approach and promote the use of non-mammalian assays for predicting effects in mammals, including humans, and vice versa.

## Methodology

All thyroid-related AOPs were taken from the AOP-Wiki temporary download. The AOPN was curated in collaboration with Wiki authors. Information on the taxonomic domain of applicability was added and redundant key events were removed to increase connections. The taxonomic domain of applicability of the AOPs was evaluated and used for filtering the AOPN. We are exploring cross-vertebrate applicability of molecular initiating events (MIEs) and adverse outcomes (AOs) based on SeqAPASS analysis and literature review.

## Results & Discussion

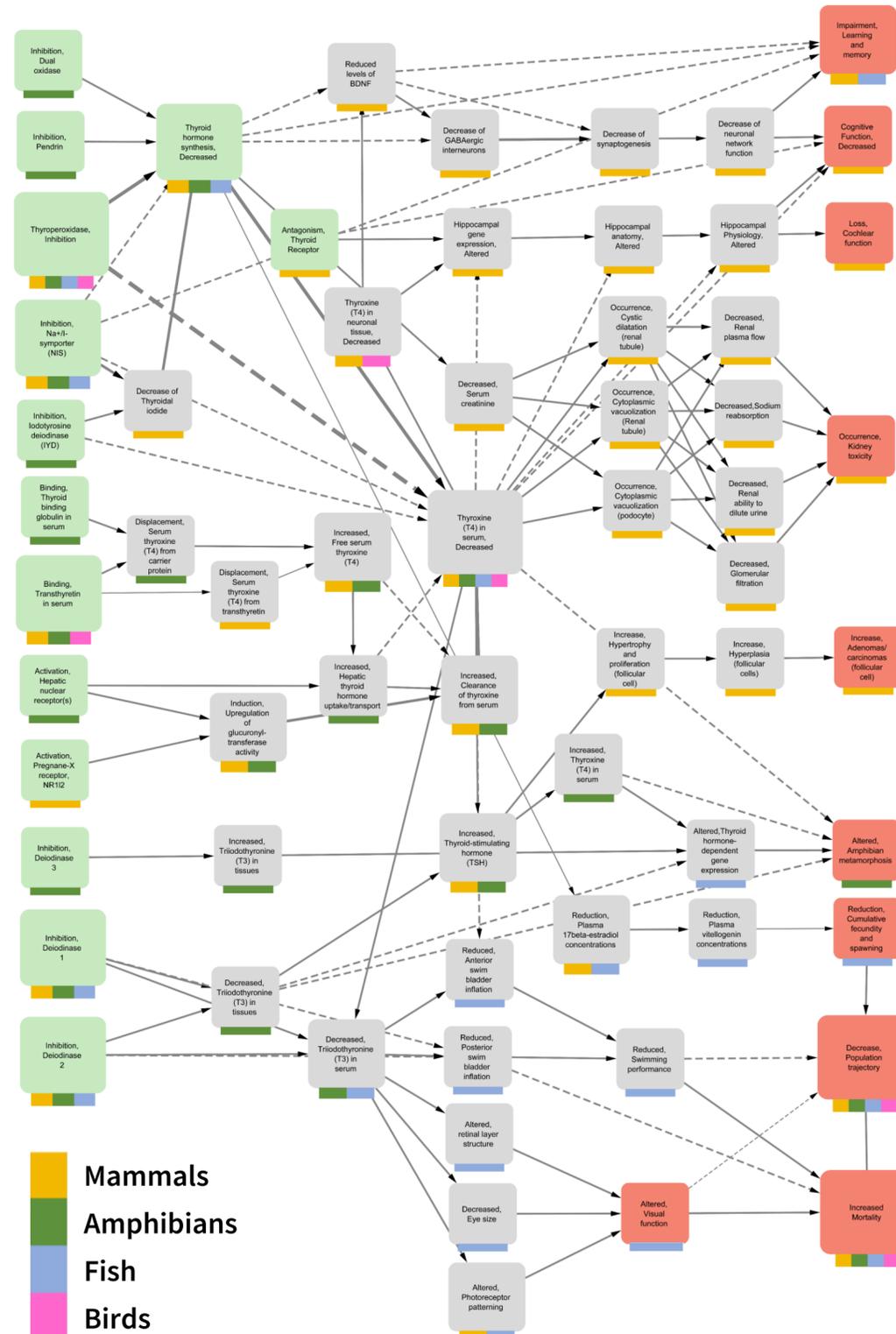
Most existing AOPs have focused on one taxon.

Gaps and priorities for cross-species AOP development with some support available in literature:

- Developmental neurotoxicity
- Impaired neurosensory development (visual, etc.)
- Impaired reproduction

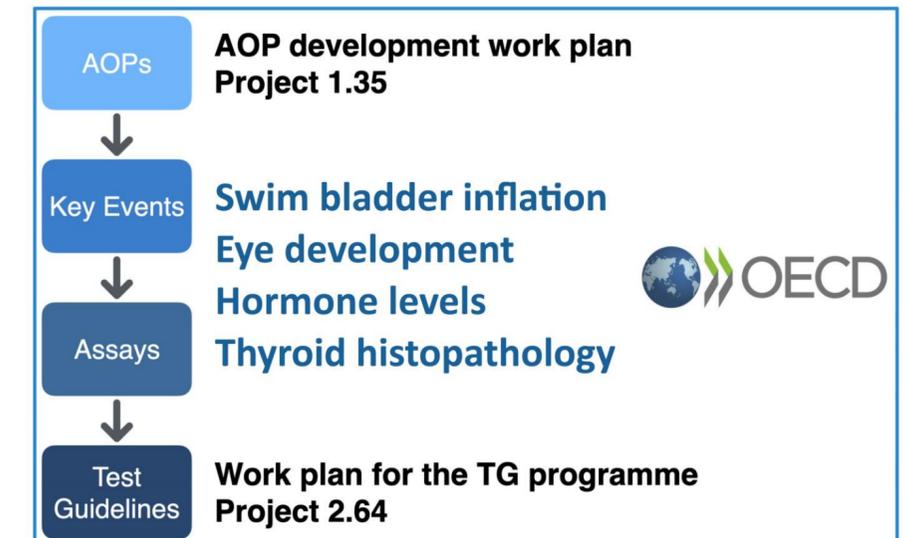
Importance of cross-species hub key events (KEs decreased thyroid hormone levels) for cross-species extrapolation

The AOP-Wiki currently lacks thyroid-related AOPs for birds or reptiles.



## Conclusions

Based on the AOP network, priority endpoints for addition to fish tests with potential for cross-species extrapolation have been identified including cross-species hub KEs, taxon-specific and cross-species AOs. We are aligning AOP and Test Guideline (TG) development at the OECD level to support this.



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