Fluoride Developmental Neurotoxicity: Dose-Response Analyses of Recent High Quality Studies

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**Examples of studies suitable for dose-response analyses**

Dose-response curves and BMD analyses based on data or figures in each paper

- **Xiang 2003**
  - Water F concentration, mg/L
  - Most sensitive exposure measure: drinking water F

- **Xiang 2003**
  - Water F concentration, mg/L

- **Zhang 2015b**
  - Water F concentration, mg/L

- **Cui 2018**
  - Water F concentration, mg/L

**Notes**

1.) Exposures measured as urine F concentrations are considered equivalent to drinking water F concentrations.

2.) Community water fluoridation concentration is typically 0.7 – 1.0 mg/L.

3.) For studies with multiple subpopulations, outcomes or exposure measures, the most sensitive significant association was chosen, consistent with standard risk assessment practice.

4.) Benchmark Dose analyses (BMD) used response (BMR) of –1 IQ point as adverse effect.

5.) No intra-species Uncertainty Factor (UF) applied to BMDLs.


**References**

- Adapted from NTP draft monograph data: https://nawp.niehs.nih.gov/assessment/656/
- Grandjean 2019: https://doi.org/10.1186/s12940-019-0551-x
- PROAST BMD software: https://fluoridealert.org/studies/neurath-powerpoint-developmental-neurotoxicity/