A new model for exposure assessment of microbiological and chemical hazards (BIKE)

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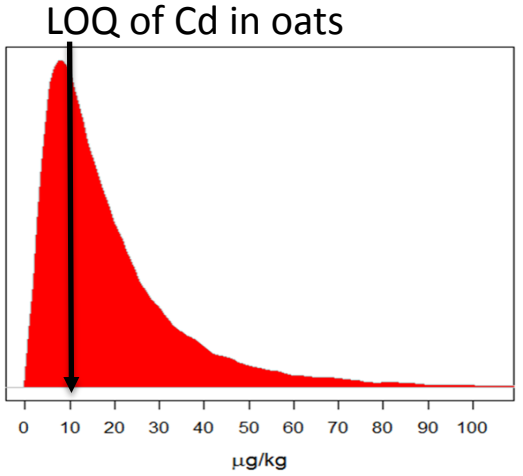
How is BIKE different from other models like MCRA and IMPRORISK?

1. Chemical AND MICROBIOLOGICAL exposure assessment with a probabilistic model

2. Approach to sample result values below LOQ (nondetermined values)
   - Other models replace values below LOQ with fixed percent of LOQ (lower bound estimate, ND = 0; upper bound estimate, ND = LOQ)
   - BIKE: results below LOQ are values belonging to the same distribution as numerical results
   - Occurrence data with many nondetermineds, different LOQ values → LB and UB estimates include bias not present in BIKE

3. Takes into account correlation in food consumption between days, foods, variation between individuals

4. Transparent and modifiable by user



How does BIKE work?
P(unknowns | data)

Concentration and prevalence from occurrence data

Consumption frequency and amounts from consumption data

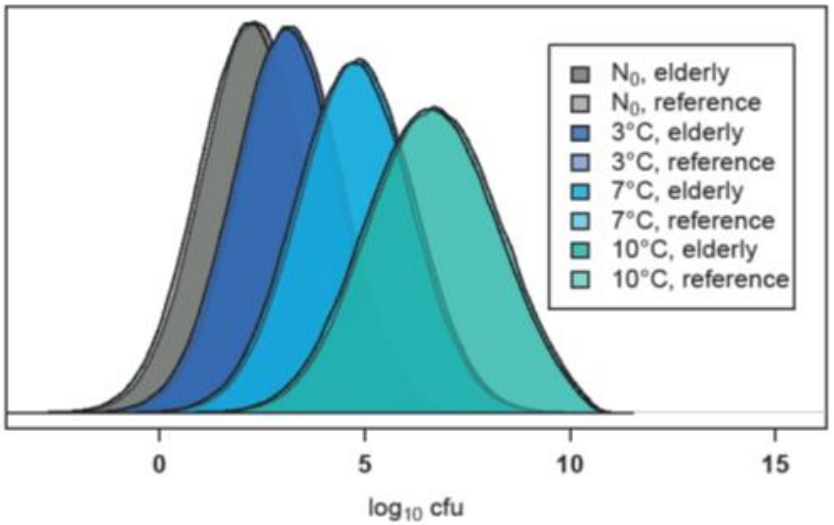
Evira also developed new 24h recall method for collection of consumption data (CoHa, Consumption and Handling). Adds food storage and handling questions to ”normal” 24h recall. Pilot with 42 elderly Finns.

Probabilistic exposure assessment

Reported cases data

Dose-response model

Risk estimate (N of illness cases)



Exposure to Listeria monocytogenes in FI from consumption of cold smoked salmon and salt cured salmon

More information on BIKE?

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