

When it comes to chemicals--  
*Is the issue really dose?*

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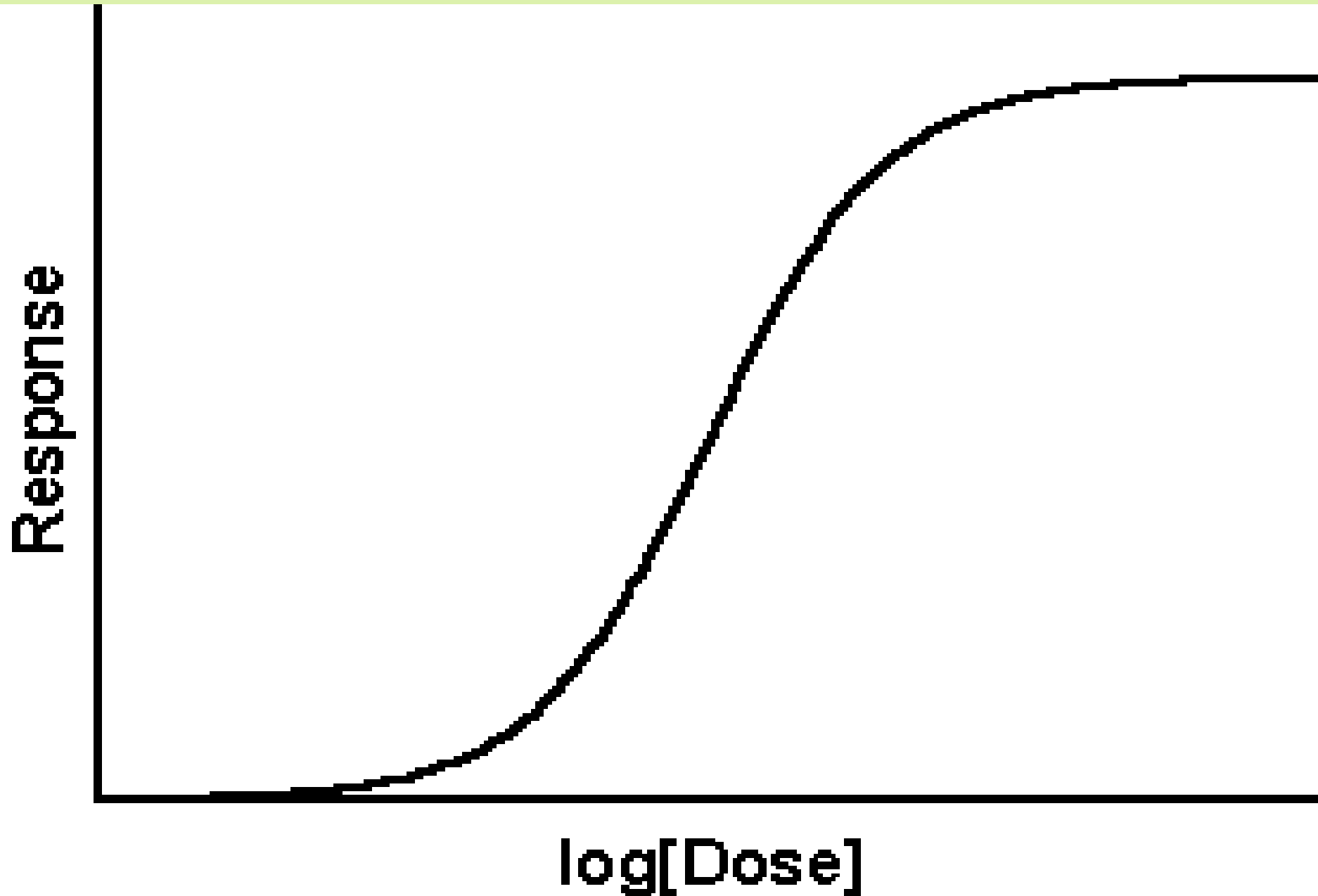
*“When it comes to chemicals-Is the issue really dose?”*

1. Toxicologist: Dose determines a poison. 1450 Paracelsus  
*There is a safe level of everything.*

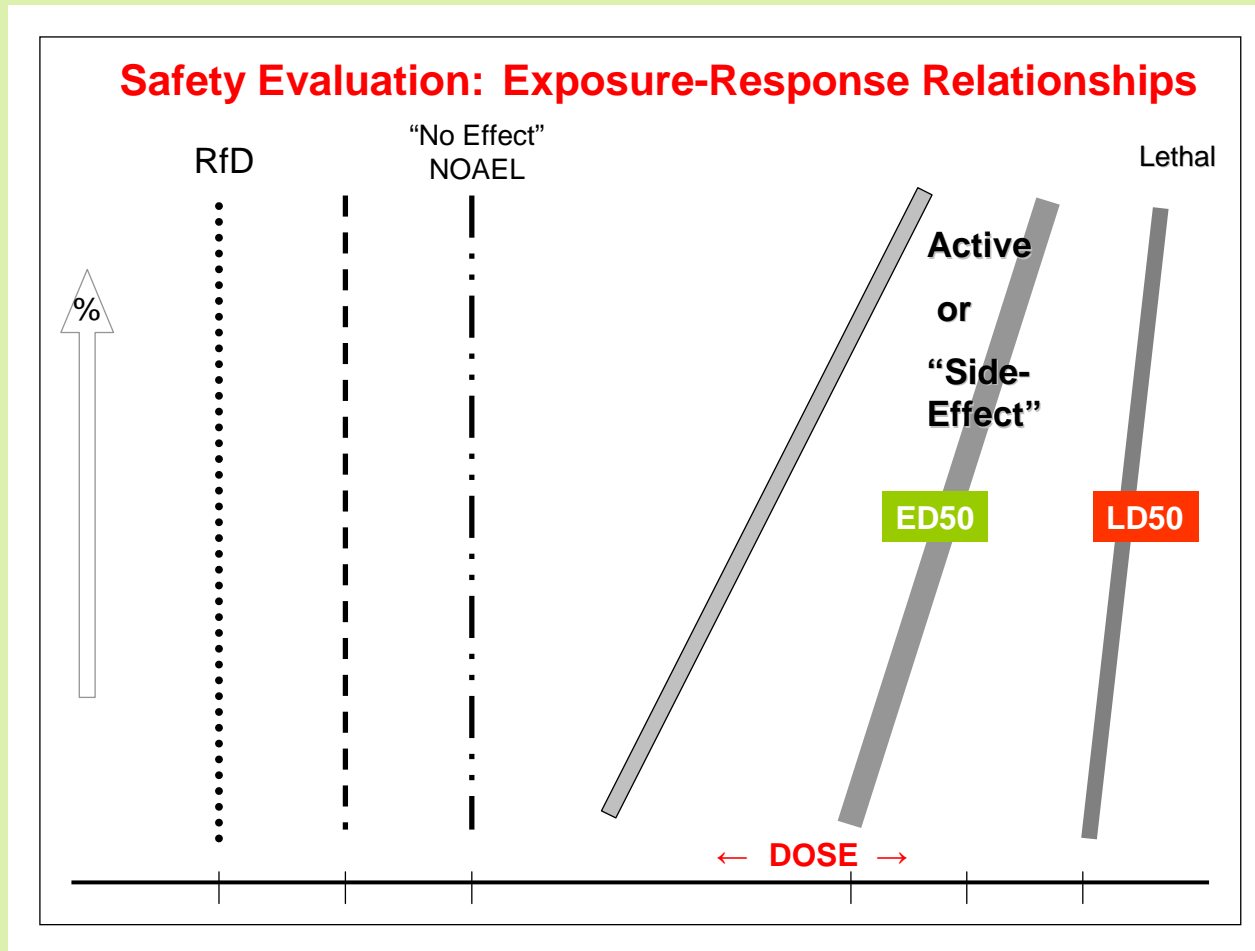
2. Chemicals of concern:                      Natural and Synthetic substances

3. Occurrence (use, technology): Food    Drugs    Pesticides    Others

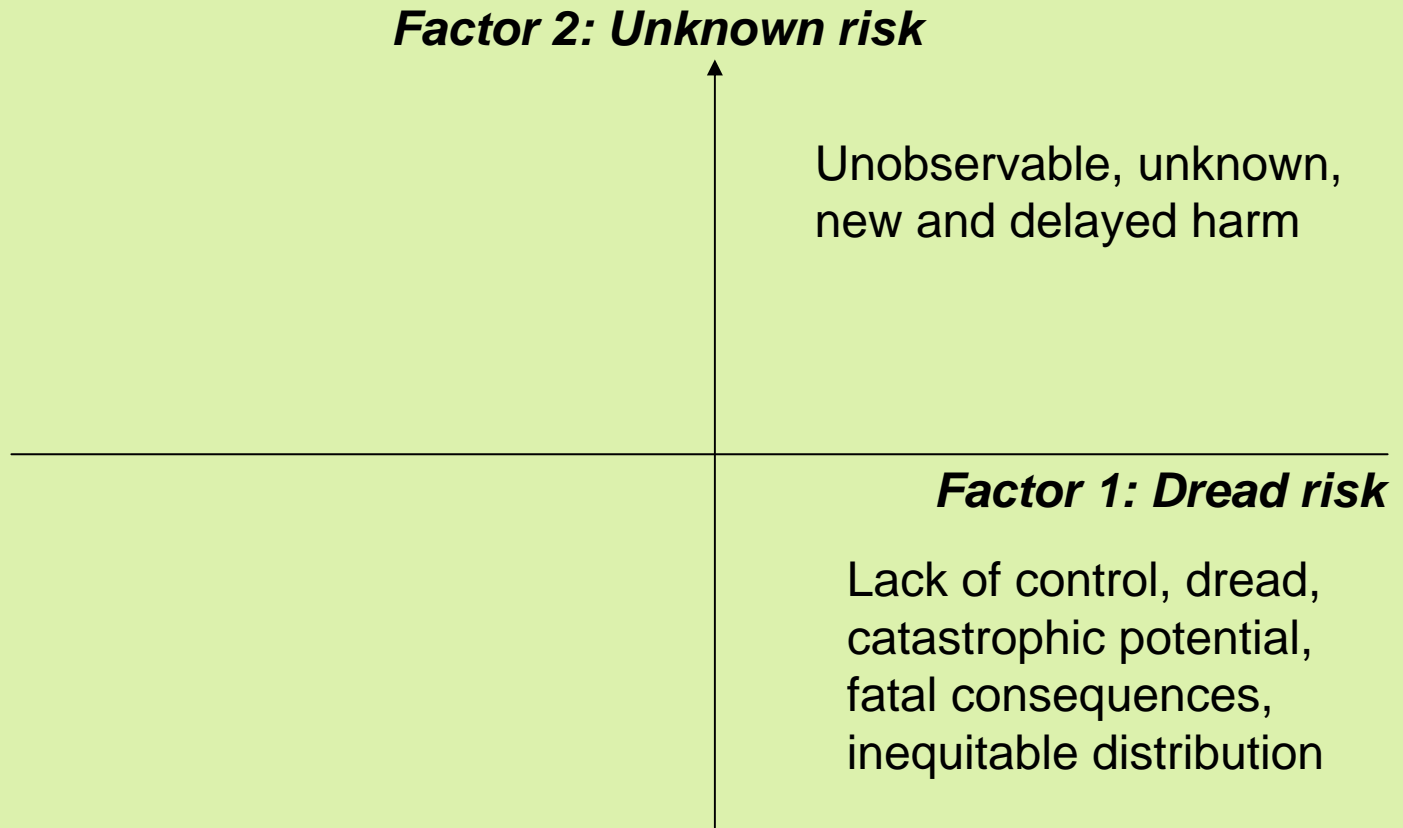
*When exposure makes something happen....*



#### 4. Common denominators in toxicology and safety evaluation



5. Facts and Fears: Understanding perceived risk (Slovic et al 1980)



“We live in a troubled, but wonderful time. It is our good fortune to witness and benefit from scientific advances that would have been literally unimaginable to our grandparents. However, there are dark clouds on the horizon. **The rate of growth of scientific knowledge has been so great as to outstrip the ability of our society to assimilate it, the capacity of the educational system to teach it properly, and the wisdom of government to adequately sustain and apply it.** There is growing indifference to science....”

E. J. Corey et al., *Molecules and Medicine* (2007)

# Acting in the public interest...

Regulators must be risk takers. Declare an allegiance to science and reason in an area which is profoundly human and political. Pick and choose a path of action through the minefield of other's prejudices and ethical systems. The regulator will, therefore, be subject to political attack.

Remington, *Coping With Technological Risk* (1993)

# Perception of Pesticide Risk Characterization

- Quantitative risk estimates for a variety of hazards indexed to death or disability
- Balance sheet may not reflect nature of risk; other agendas can be clarified for public debate
- There is opportunity for wisdom and error in regulatory and public attitude and perception of risk

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