

The Hormesis Thesis

**Ron Melnick¹, Kris Thayer¹, James Huff¹,
Kathy Burns², Devra Davis³**

¹National Institute of Environmental Health Sciences

²ABT Associates

³Carnegie-Mellon University

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Hormesis in the Media

***Fortune Magazine:* A little poison can be good for you**

“Policies that foster small exposures to toxins might be better for public health than one aimed at eliminating them”

***Wall Street Journal:* Scientists revisit idea that a little poison could be beneficial**

***Boston Globe:* A scientist finds benefit in small doses of toxins
“save billions by relaxing overly strict environmental standards”**

Hormesis in the Media

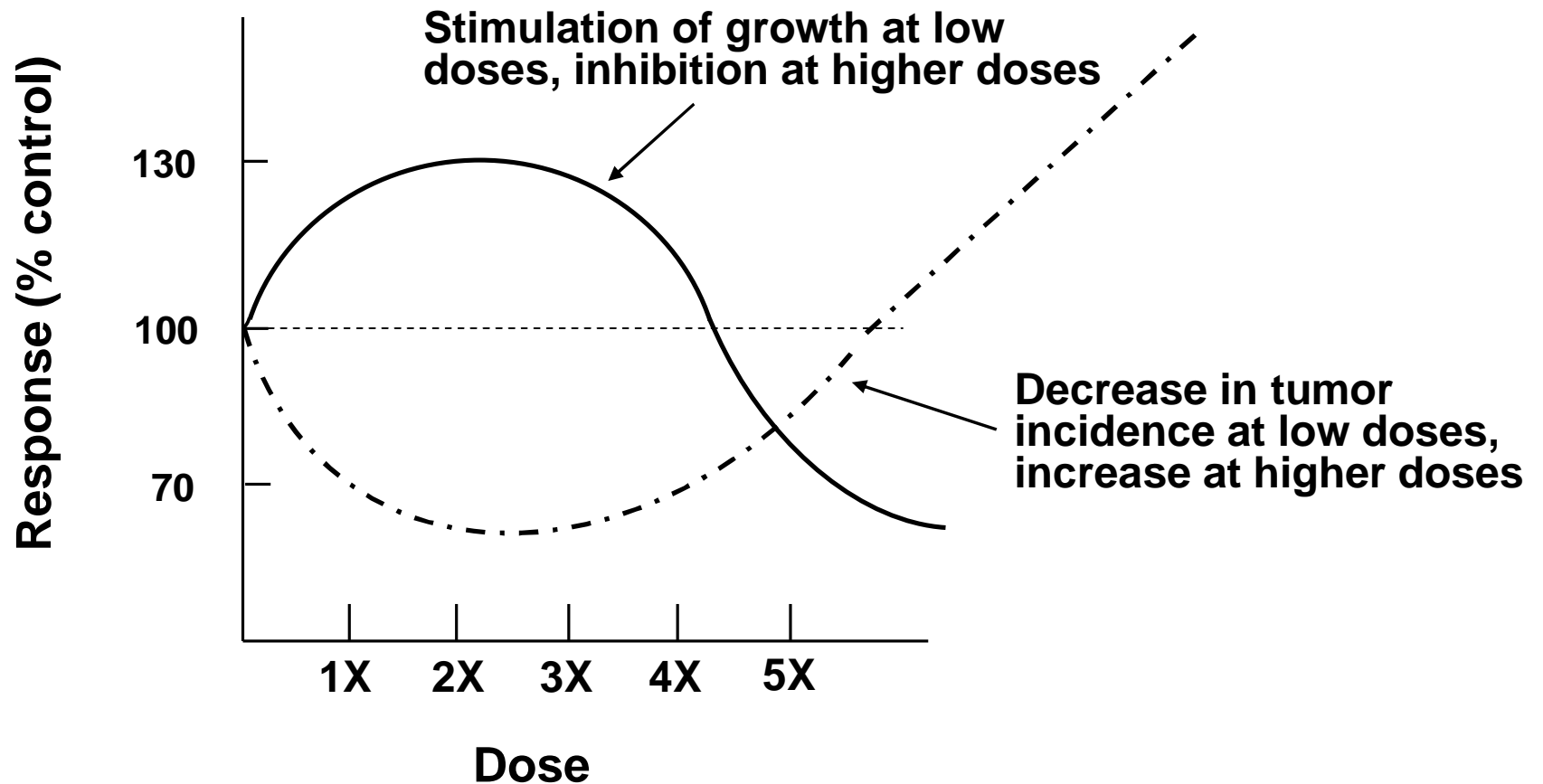
***Sun Herald:* Tiny doses of some toxins may make body stronger, theory says**

“since humans need more toxins in our environment than allowed under current government regulations, future efforts to clean up the environment could be greatly reduced” - Science & Environment Policy Project

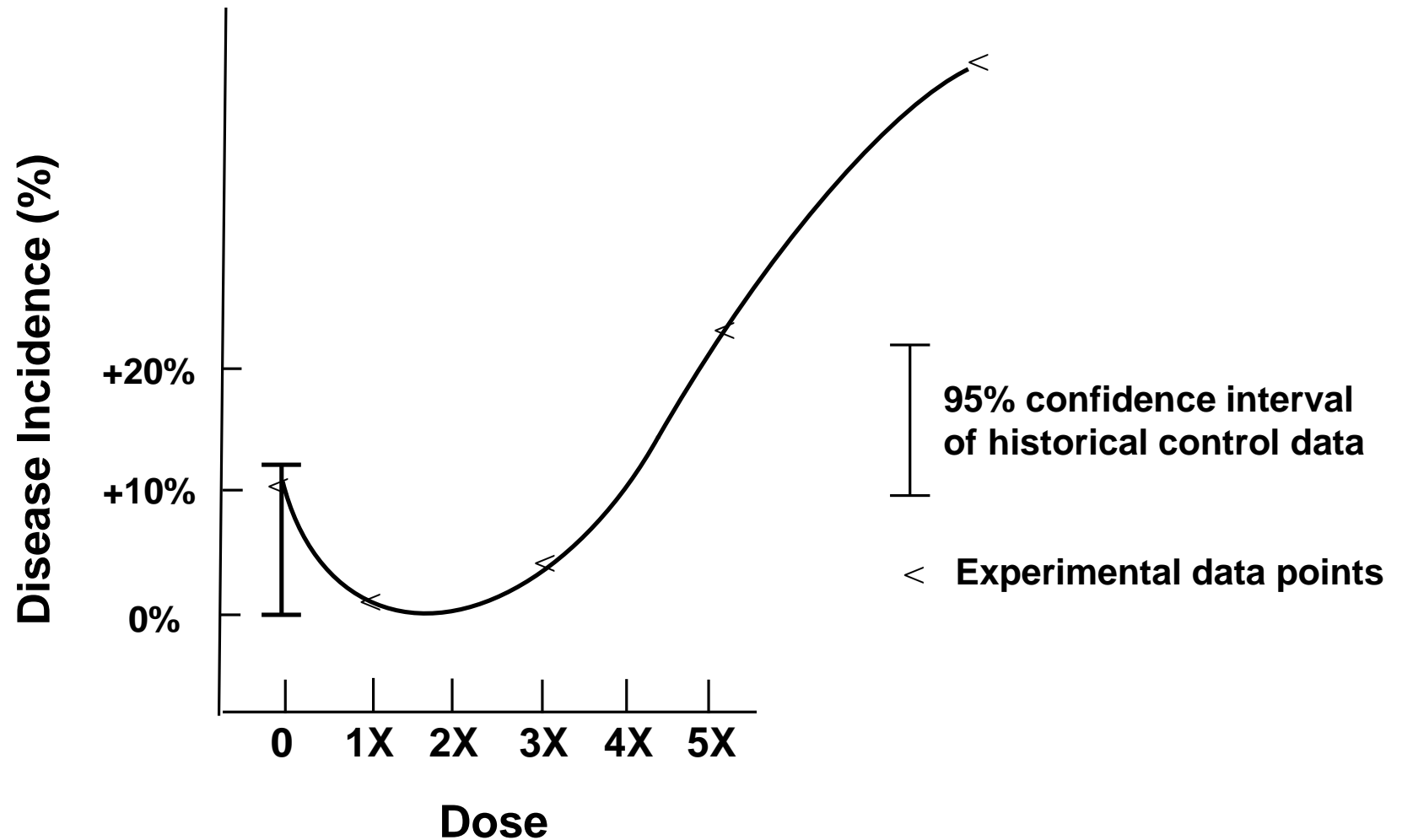
***Science:* Sipping from a poisoned chalice**

“Hormesis could allow society to enjoy the benefits of many chemicals that have been banned” - Texas Institute for the Advancement of Chemical Technology

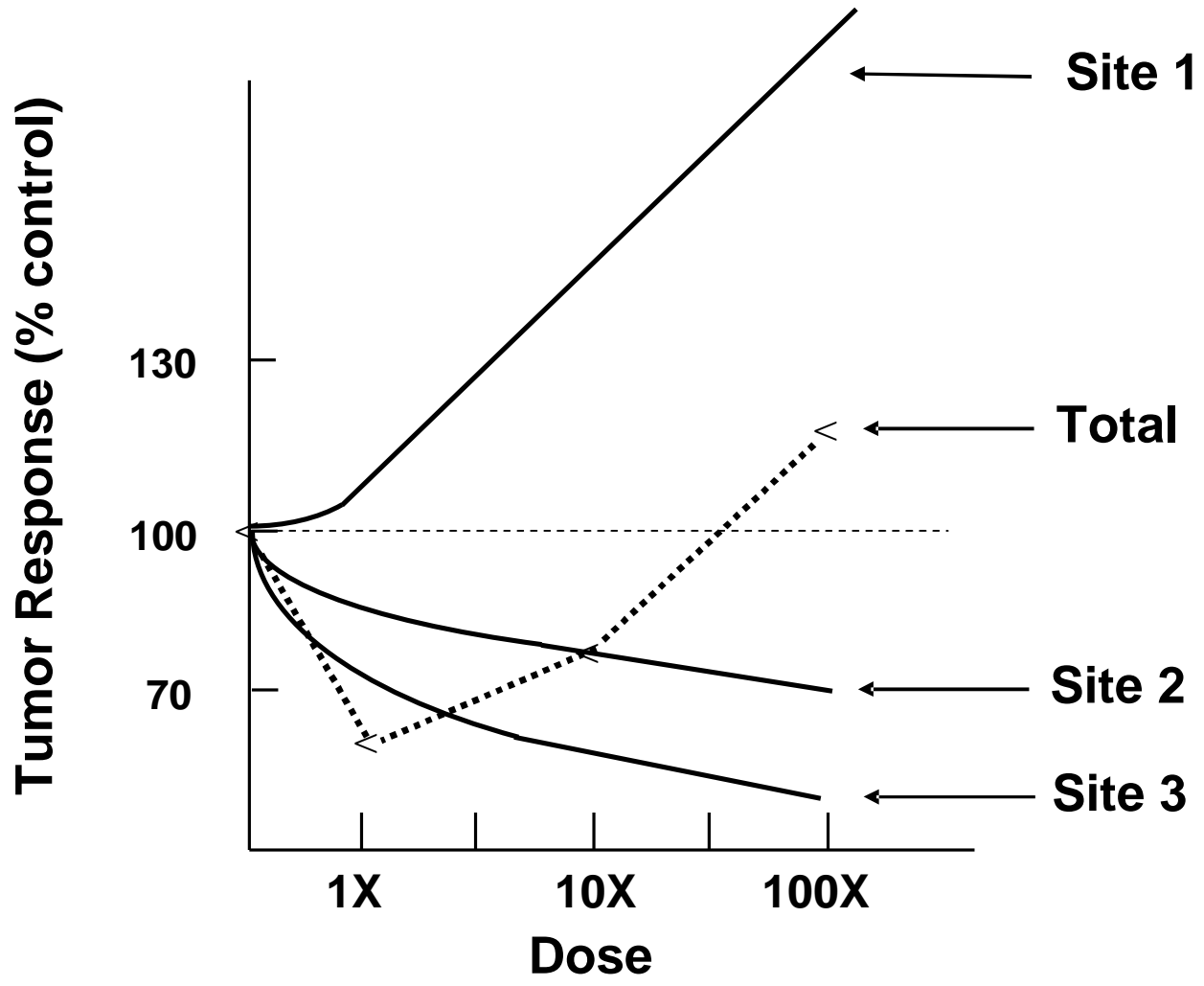
Non-monotonic Dose-response: Growth or Cancer Incidence



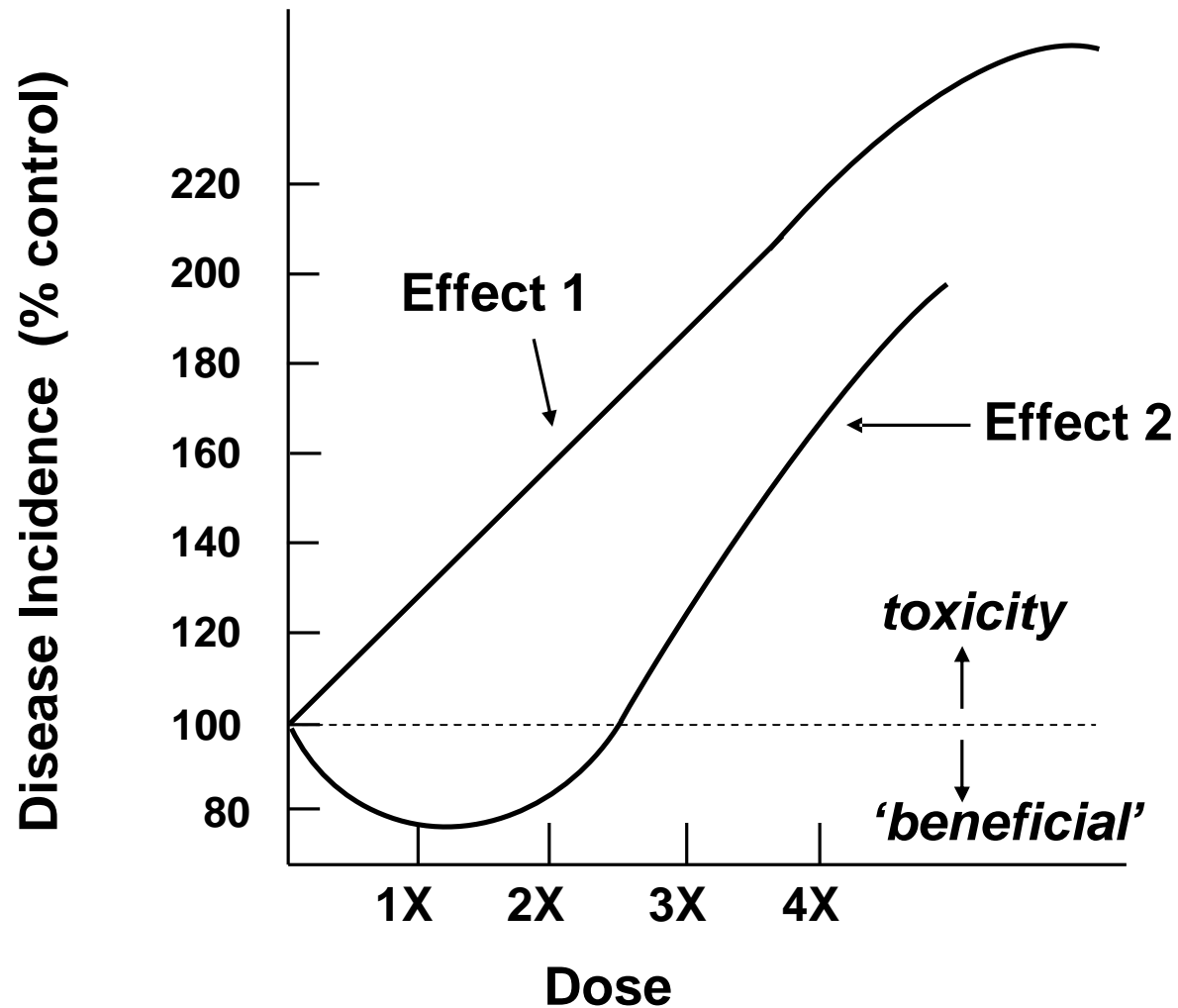
An Apparent Hormetic Response May Simply Reflect Data Variability



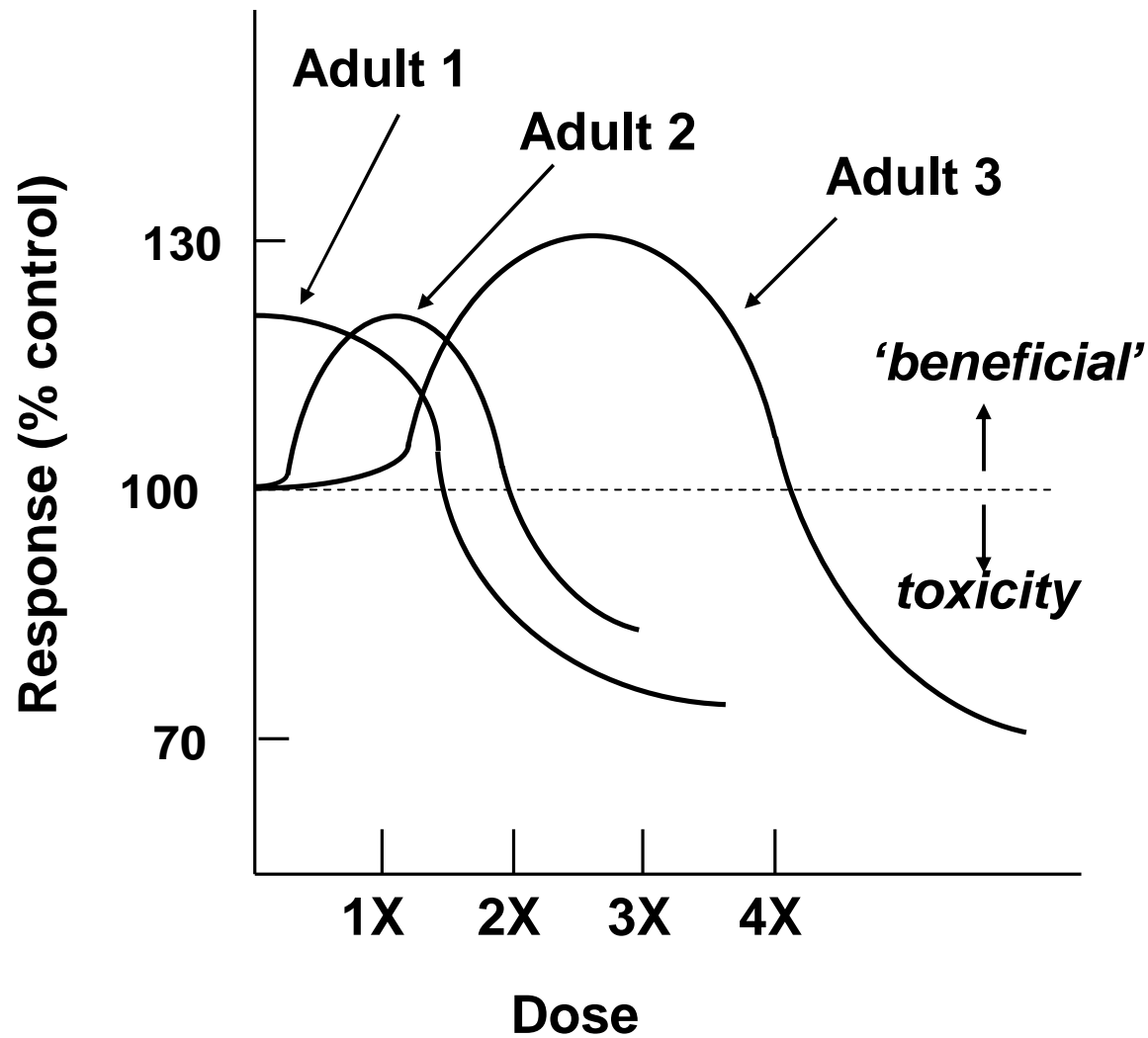
Three Non-hormetic Responses \neq Hormesis



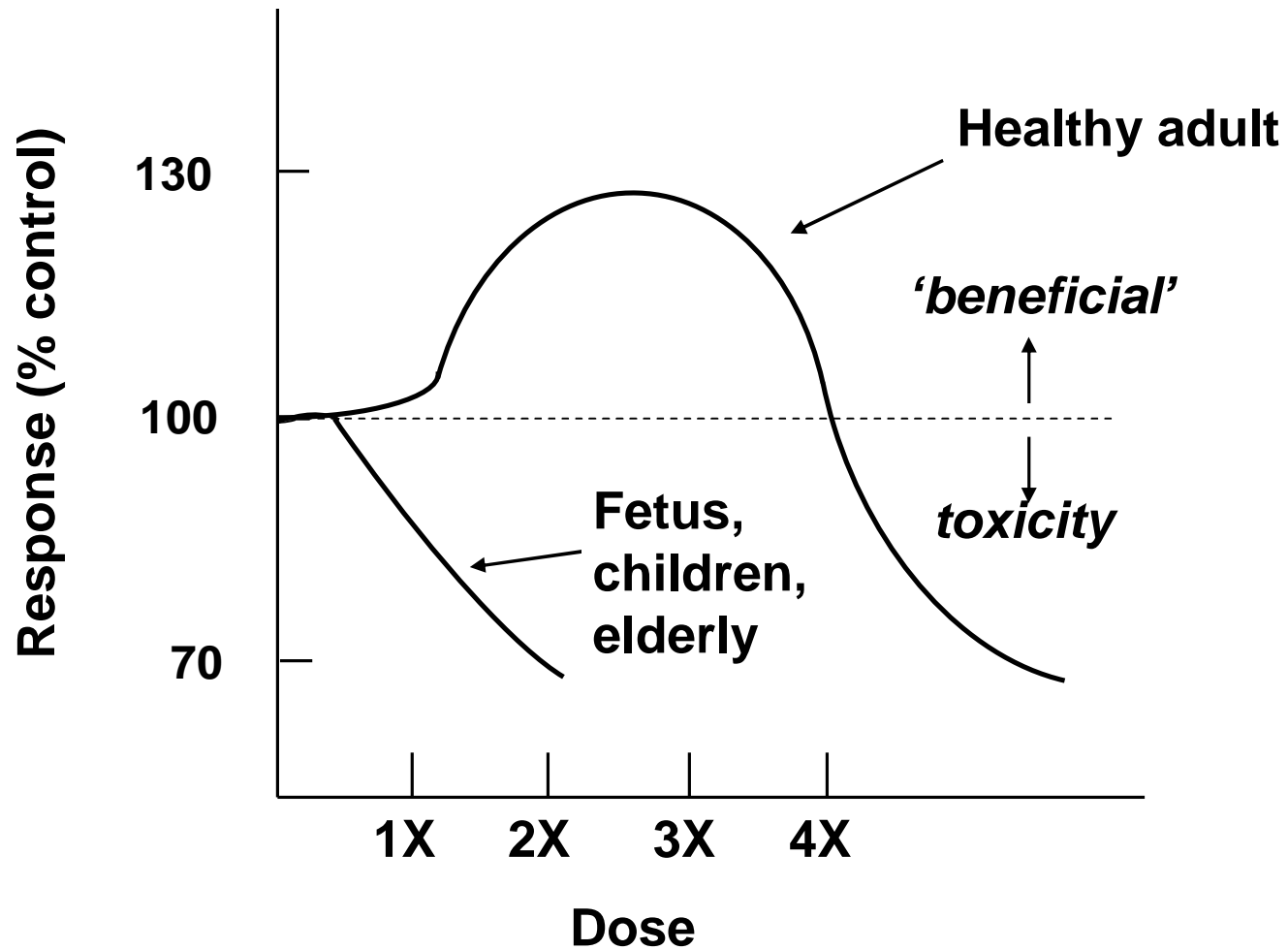
Many Agents Induce Multiple Effects With Different Dose-responses



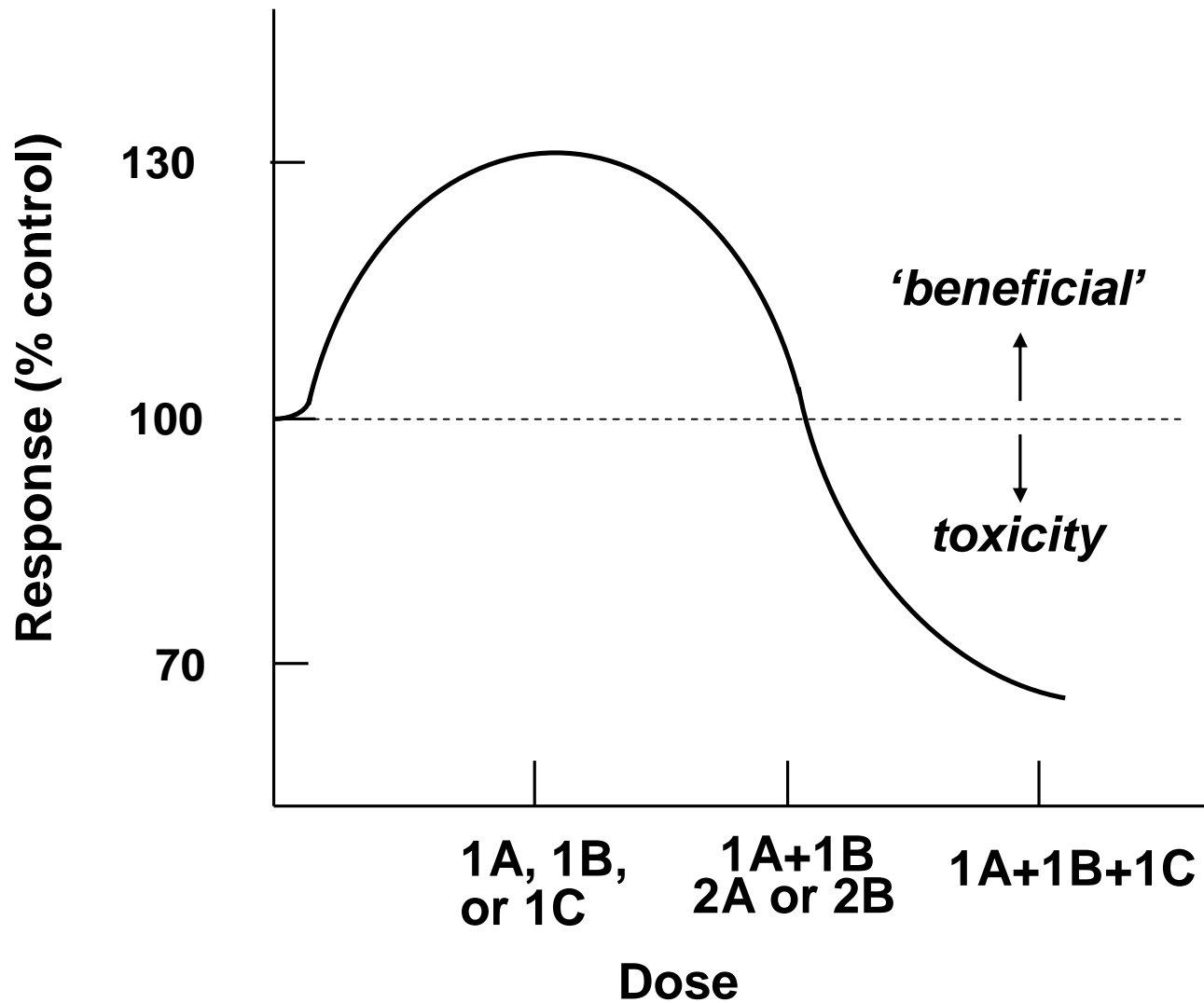
Individuals Differ in Response to Toxic Agents



A Beneficial Effect in Healthy Adults May Be Harmful to Children, Elderly, and Others



Our Environment is Not Limited to Single Exposures



Conclusions

- **Low-dose stimulation may produce adverse effects rather than health benefits**
- **Some of the claimed benefits are artifacts of the evaluation methodologies**
- **A low-dose ‘beneficial’ effect in a healthy adult may be harmful to children, pregnant women, the elderly, or others**
- **Because toxins may act by multiple mechanisms at different doses and sites, an exposure that appears ‘beneficial’ to one organ may be toxic to another**
- **Due to current background exposures we already carry too many toxins, including many that accumulate in the body**

Final Conclusion

Claims that low-dose ambient exposures to toxic substances can be set so as to benefit the general population are utterly absurd.

Application of this flawed concept to environmental regulations would result in higher allowable exposure standards and substantially increase health risks for many segments of the general population.