

Organic Parks

Basic Toxicology Overview
and Public Health Perspective

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public health

**How
are
you?**

Disclosures

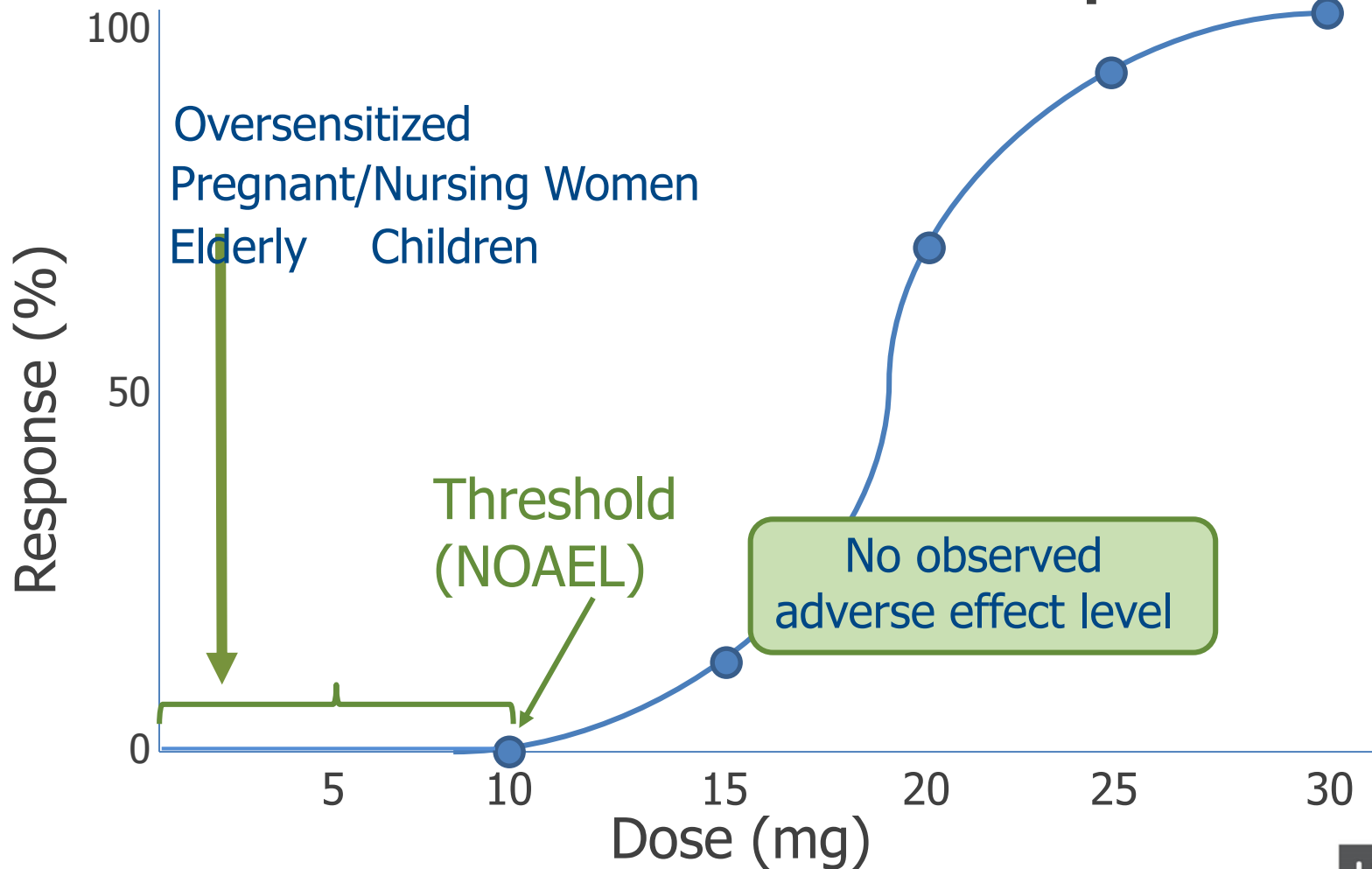
- The information in this presentation is not a full representation of toxicology or chemicals
- The SJBPH does not specialize in toxicology or risk assessments, and the information provided herein is for education purposes only

Toxicology basics

- Definition/description
 - Use science to determine how certain chemicals harm us under particular conditions
- Basic premise:

“Poison is in everything, and no thing is without poison. The dosage makes it either a poison or a remedy.” – *Paracelsus*

Dose and adverse response



Conventional vs. organic parks

- Resources
 - Information from chemical manufacturers
 - Review of peer reviewed literature
- Special Notes
 - Many chemical exposures each day
 - Which one leads to a health effect?
 - Epidemiology identifies risk, not cause

Conventional products (hazard overview)

- Irritation
 - skin, eye, throat, lungs, stomach
- Specific target organ toxicity
- Carcinogenicity
 - 2,4-D: Possible carcinogen (IARC 2B)
 - Inadequate human data and limited animal data
 - Glyphosate: Probable carcinogen (IARC 2A)
 - Sufficient animal evidence, limited human evidence

*Most hazards stated may be applicable for pesticide applicator

2,4-D

- Found in many household products
 - Scotts Turf Builder Plus and Weed and Feed Pro
 - Miracle-Gro® Weed & Feed
- Not absorbed well by humans unless swallowed
 - Does not build up in tissues
- No studies found associating 2,4-D with cancer^{2,3,4}
- Only health effects seen in applicators^{5,6}

Glyphosate

- Found in Roundup (Scotts) and Ortho products
- Has been found on food products (including organic products)⁴
- Associated with other health effects such as rheumatoid arthritis and acute kidney injury^{5,6,7}
- Research on carcinogenicity is inconclusive
 - Research that refutes cancer data are subsidized by major manufacturer of glyphosate

Organic products

(hazard overview)

- Chemical hazard:
 - Overexposure to dust may cause short-term upper respiratory irritation

*Most hazards may be for pesticide applicator

Conclusions

- No clear way to assess true exposure/health effects of pesticides in parks
- Majority of parks around the nation are not pesticide-free
- This does not mean there is no risk

References

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