



We identified 221 chemicals causing mammary gland tumors in animals

- From NTP, IARC, Gold-CPDB, CCRIS
- Includes hormones, pharmaceuticals, some research chemicals, as well as industrial pollutants, pesticides, dyes, etc.
- Many with widespread exposure
e.g., HPV chemicals, air pollutants, consumer product chemicals, food additives or contaminants, pharmaceuticals

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Likely human relevance indicated by mutagenicity, multi-species tumors

- 88 of 117 IARC chemicals - "sufficient" evidence in animals
- 84% with some evidence of mutagenicity
- CPDB analysis – multi-species carcinogens
 - 91% MG carcinogens in rats also caused tumors at some site in mice
 - 89% MG carcinogens in mice also caused tumors at some site in rats

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Issues related to interpretation of mammary gland tumors

- Inconsistent treatment of fibroadenomas
- High background fibroadenomas in rats
- Rodent/human diffs. in hormonal regulation
- Treatment-related weight loss

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Risk assessments ignore mammary gland tumors

- 20 of 221 chemicals have EPA slope factor
 - 2 of 20 are based on MG tumors
- 30 of 221 are in NIOSH list of potential carcinogens
 - 7 of 30 list MG as a tumor site in animals
- 11 of 221 have OSHA-required medical surveillance
 - 0 of 11 require mammography
- High-profile risk assessments don't mention breast cancer or mammary gland tumors
e.g., diesel exhaust, disinfection byproducts

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Priority needs

- Integrate bioassay findings into risk assessment and regulatory documents
 - Carefully evaluate existing and novel testing programs with focus on breast cancer
- Remember – there's a lot riding on the bioassay,
. . . we need to get it right!

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"Certainly for the
generations yet
unborn, prevention is
the imperative need."

--Rachel Carson
1962



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