Environmental Challenges to Fertility

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1. Environmental Exposures and Critical Windows of Susceptibility

2. Routes of Exposure

1. Inhalation
2. Ingestion
3. Skin contact
4. In utero exposure (fetus)

3. Exposure-Effect Continuum

Source

e.g., air, water, food, soil

Intake

Breathing, eating/drinking, skin contact, biologic uptake (exposure)

Target Organ Contact

e.g., testis, ovary, transplacental transport

Biologic Change/ Clinical Effect

CDC. 2009.
4. Fertility Challenges – Congenital

• Uterine Anomalies (eg DES)
• Diminished number of eggs (animal data with BPA exposure, human data from in-utero exposure to cigarette smoke)
• Abnormal genitalia (undescended testes or hypospadias) and low sperm counts from testicular exposures prior to birth
5. Fertility Challenges - Acquired

• Obesity – lowers fertility in women and men
• Underweight – lowers fertility in women
• Endometriosis – may be related to environmental exposure to PCBs
• Lower sperm counts (perhaps exposures to BPAs, poor air quality, cigarette smoke, insecticides) and egg numbers (cigarette smoke)
6. Fertility Challenges – Clean up the personal incubator

- Maintain a health weight for men and women (lowers miscarriage rates, improves fetal outcome and health of future adult)
- Decrease exposure to known endocrine disruptors – decreasing exposure to cigarette smoke, avoiding BPA (canned food), phthalates (personal care products), insecticides (organic food) can lower fetal exposure – the important time may be before a woman knows she is pregnant
7. Clean up the Larger Incubator
Your Community and the Planet

• Advocate for clean air
• Advocate for clean water (not water out of plastic bottles.....)
• Advocate for decreased use of pesticides
• Break the cycle
• Protect your future child’s fertility
8. Environmental Exposures and Critical Windows of Susceptibility