

# Prenatal Exposure to Lead and Children's Health

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# Born Pre-polluted?

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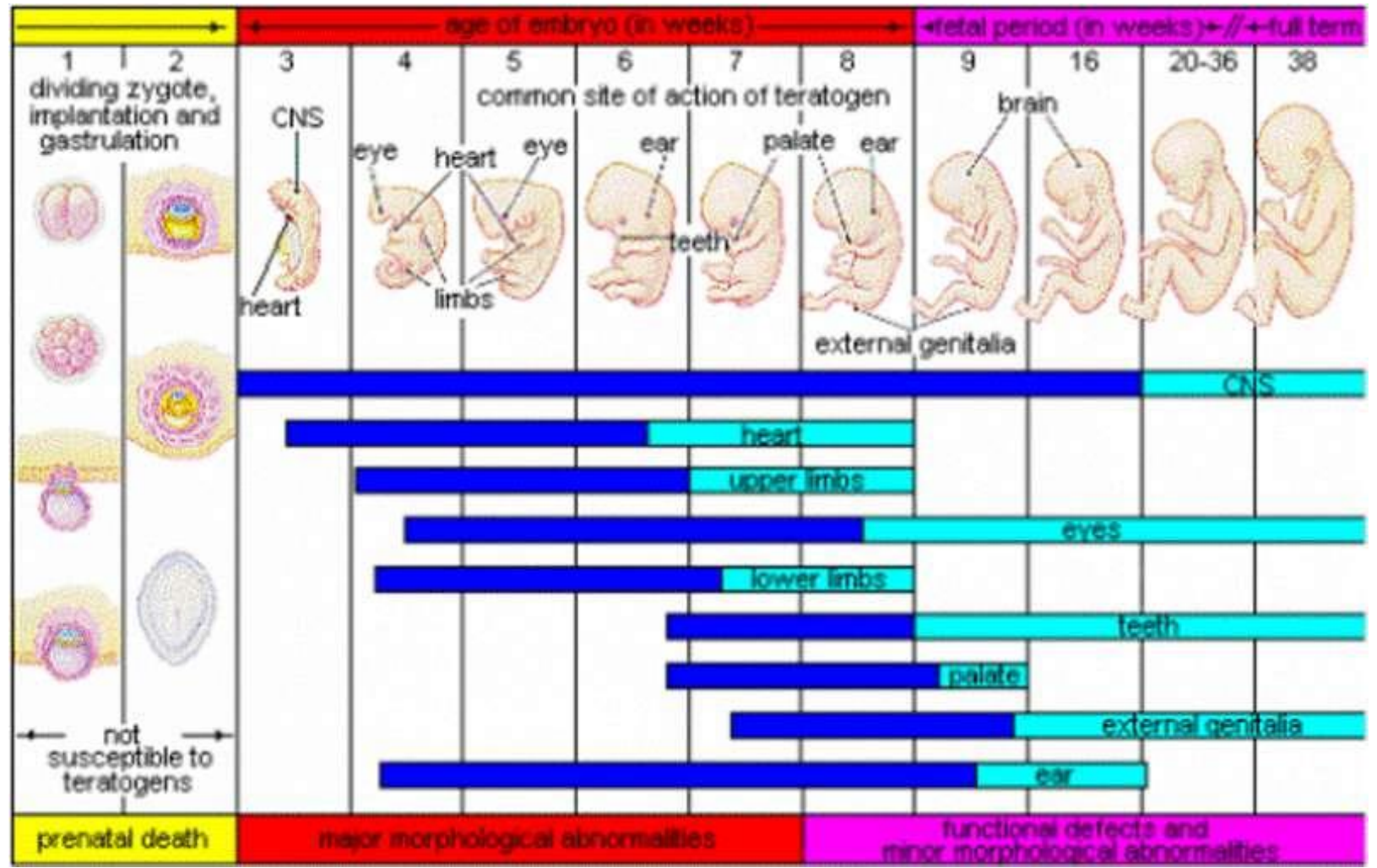
- Preconception and maternal health is a public health priority
- 50% of pregnancies are unplanned
- 80% of women will conceive at some point and another 10% attempt
- Pregnant women are exposed to > 43 chemicals



# WINDOW OF SUSCEPTIBILITY: Who Is At Risk?



# Critical Developmental Windows of Susceptibility



# Lead Exposure in Pregnancy

- No safe lead level identified
- Lead is toxic to the woman AND fetus
- Lead can easily pass through the placenta to the fetus
- Can pass through breastmilk
- Acute vs. Chronic exposure



# Lead Toxicity in Pregnant Women

- Main target for lead toxicity is the nervous system
  - Delirium, seizures, coma, or death
- Increased risk of spontaneous abortion
- Associated with
  - Hypertension
  - Neuropathy
  - Tremor
  - Anemia
  - Headaches
  - Weight loss
  - Concentration/behavior
  - Aches
  - Fatigue





# Increase Lead Levels During Pregnancy

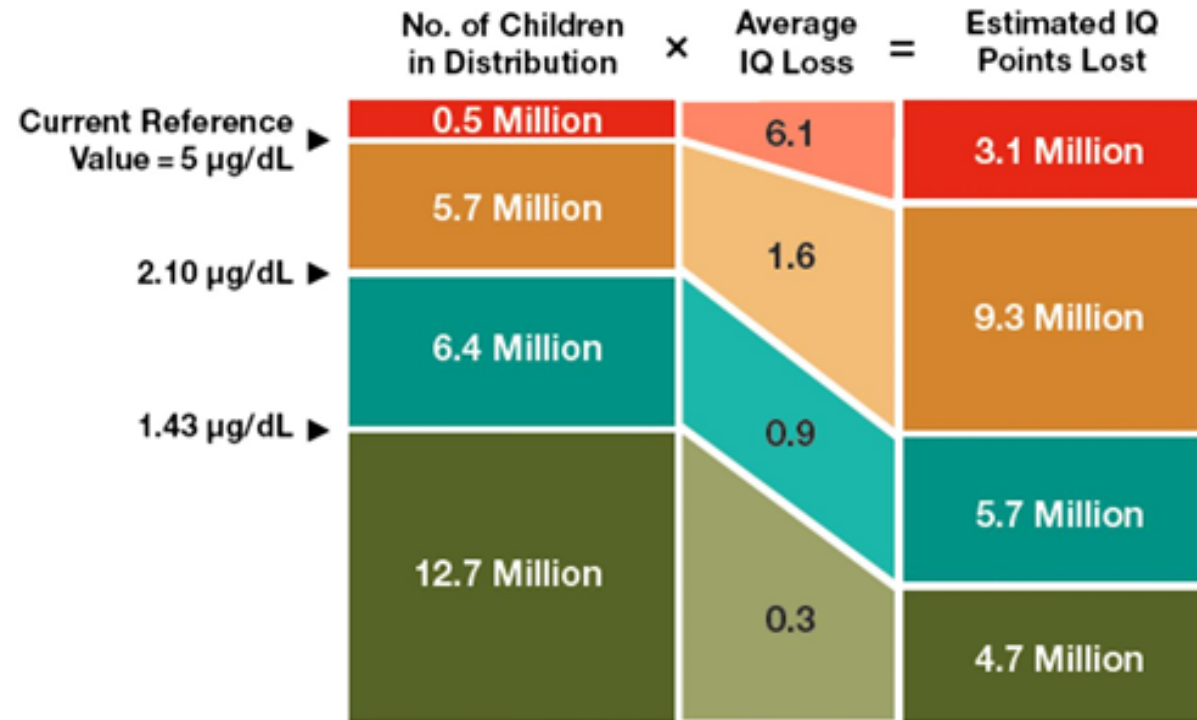
- During pregnancy and lactation, lead from prior exposures can be mobilized from bones because of the increased bone turnover.
- Blood lead levels tend to increase over pregnancy



Maternal lead exposure was monitored throughout pregnancy and gradually declined after removal of the environmental source of lead.

Prevention paradox.

Estimated Loss of IQ in US Children at Different Intervals of Blood Lead ( $\mu\text{g}/\text{dL}$ )



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# Recommendations

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- Prenatal Risk Assessment and Lead Screening for all pregnant persons
- Consider follow-up when levels are  $<5 \mu\text{g/dL}$
- Calcium and Vitamin C Supplementation
- Wider blood lead level testing (clinics, point of care, and laboratories)
- State subsidized testing
- Incentives to test

*Questions?*

