Waiting with Bated Breath: How Do We Reduce Air Pollution Exposure in our Communities?

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Smoking vs. air pollution

Then:

Now:
Air pollution – nightmare scenarios

Great London Smog, 1952

Harbin, China, 2013
Air pollution – lower exposures
Intersection of Olive & Boren
Short term exposure – cardiovascular & respiratory death

-Even low exposure has real effects!
Short-term exposure - asthma

- New asthma cases: kids & adults
- Worse symptoms: kids & adults
Long-term exposure - atherosclerosis

- "Hardening of the arteries"
Long-term exposure - atherosclerosis

![Graph showing predicted IMT (μm) over follow-up time (years) for different exposure levels: 7 µg/m³, 5 µg/m³, 3 µg/m³.](image-url)
Other conditions linked to air pollution

- ADHD
- Autism
- Worsened flu

Suggestive associations
- Allergy
- Cancer

Pregnancy issues...
Maternal effects of air pollution

- Disorders of high blood pressure
  - pre-eclampsia
  - gestational diabetes
Fetal effects of air pollution

- Preterm
- Smaller size at term
Fetal long-term consequences

-Uterine “reprogramming”
How can we reduce exposure?

Very difficult for individuals to alter
How can we reduce exposure?

vs.

vs.

Scholars' Studio
How can we reduce exposure?

vs.

vs.
How can we reduce exposure?

vs.

vs.
Summary – health effects

- Even low dose air pollution is bad
  - Can trigger health problems & death
  - Contributes to long-term disease
  - Exposure during pregnancy reduces lifetime health of babies
Summary – what to do

- Impossible to avoid fully
  - Commute by bike or foot
  - Reduce outdoor time and keep windows closed on high pollution days
  - Reduce time near heavy traffic
  - Support green energy and pollution restrictions
Time’s Up!

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