FACT SHEET:

Air Pollution & Reproductive Health

KEY MESSAGES FROM A LITERATURE SYNTHESIS

Overview

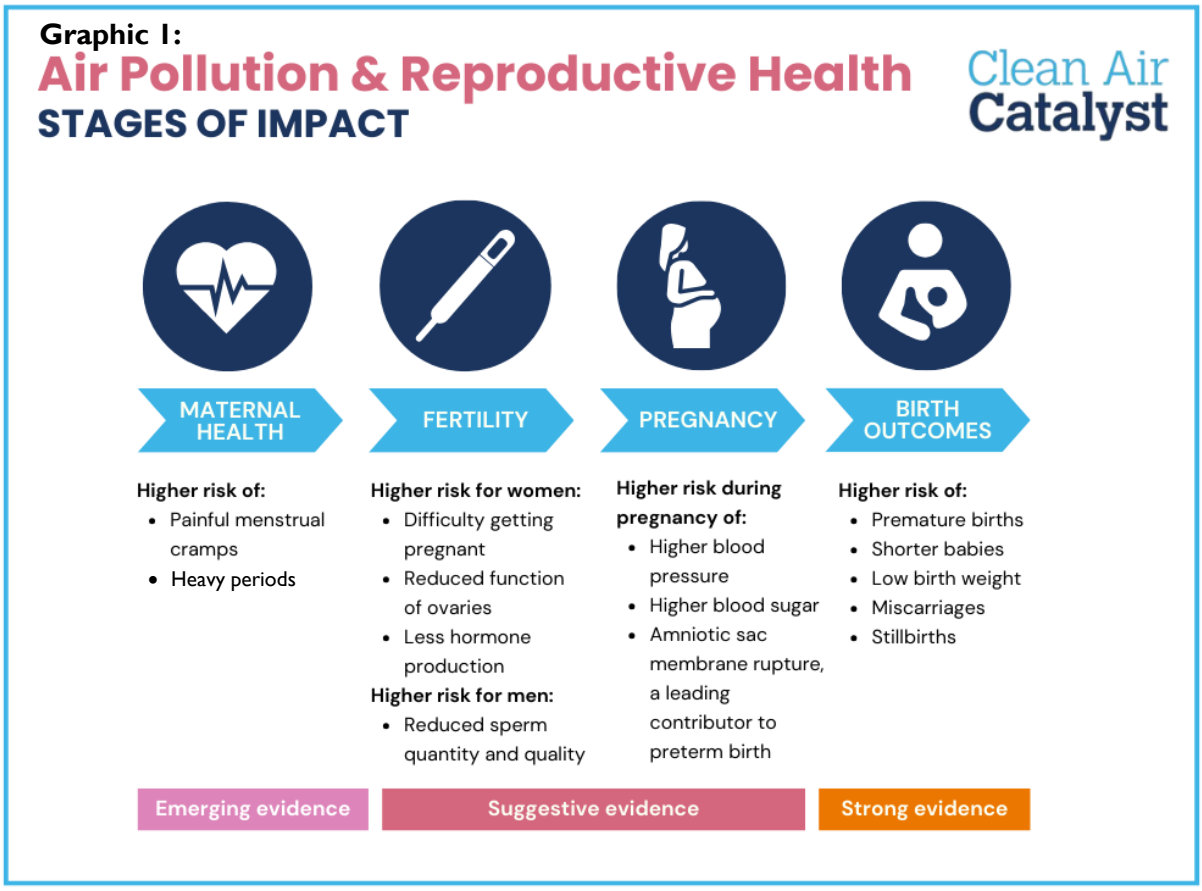
Women and Community Health Promoters (CHP) in Nairobi's informal settlements suggested a link between air pollution, reproductive health issues and violence against women and girls. To understand the existing evidence base, the Clean Air Catalyst looked at research on air pollution's effects on reproductive health, fertility, and pregnancy outcomes. For more detailed technical information, please refer to this annotated bibliography report.

What we found

Research shows that certain pollutants, like fine particulate matter (PM2.5), nitrogen dioxide (NO2), and sulfur dioxide (SO2), are linked to negative health effects, outlined in the graphic above. These include:

- **During pregnancy:** Exposure to pollutants like PM2.5 and ground-level ozone was associated with more pregnancy complications, such as high blood pressure during pregnancy (preeclampsia), gestational diabetes, early delivery, and shorter and smaller babies at birth.

Graphic 1:



- **For fertility**: Women exposed to higher levels of PM2.5 and NO2 may have lower fertility, higher chances of miscarriage, and reduced ovarian reserve. For men, air pollution was linked to lower sperm quality and quantity.
- **Other:** PM2.5 may also be linked to heavy and/or painful periods.

Potential stages of impact

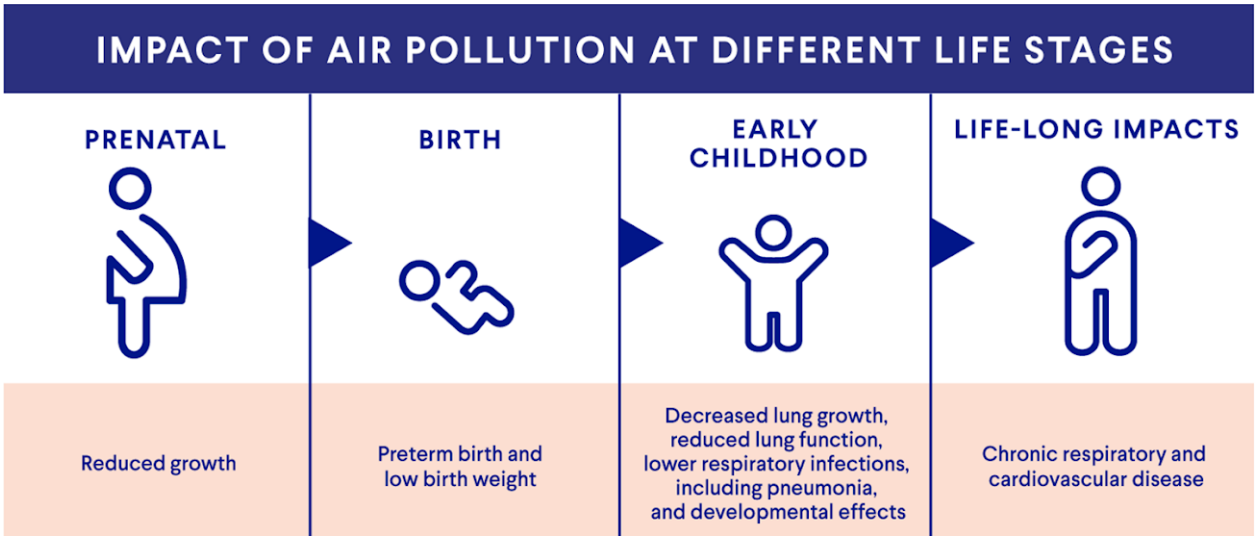
The graphic above shows how air pollution affects reproductive and maternal health across four areas: maternal health, fertility status, pregnancy term, and birth outcomes. While most impacts are on women, air pollution is also suggested to negatively affect sperm quality and quantity.

We classify the findings according to the following level of evidence:

- **Emerging concerns:** The evidence is supported by a few studies with large gaps in methodologies and data collection. More research is required to understand these links better.
- **Suggestive evidence:** The evidence relies on studies with limited health data availability and assessment. This affects the robustness and reliability of the study findings, leading to result inconsistencies.
- **Strong evidence:** The evidence is supported by numerous studies with robust methodology and data collection, conducted globally. The results are more consistent and provide clearer, stronger, and more reliable conclusions.

Air pollution affects all age groups

While data on the effects of air pollution on maternal and reproductive health are still limited, we have solid evidence linking air pollution with other health outcomes, especially for newborns (see Graphic 2), since low birthweight or premature birth puts children at risk for lifelong health consequences.

Children are especially susceptible since their organs are still developing and they breathe faster than adults, allowing them to inhale more air pollutants. Older adults are also susceptible due to their aging process leading to multiple health concerns, reduced lung function, and weakened immune system.

Graphic 2: