Pollution and Its Impact on Cardiovascular Health

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Introduction

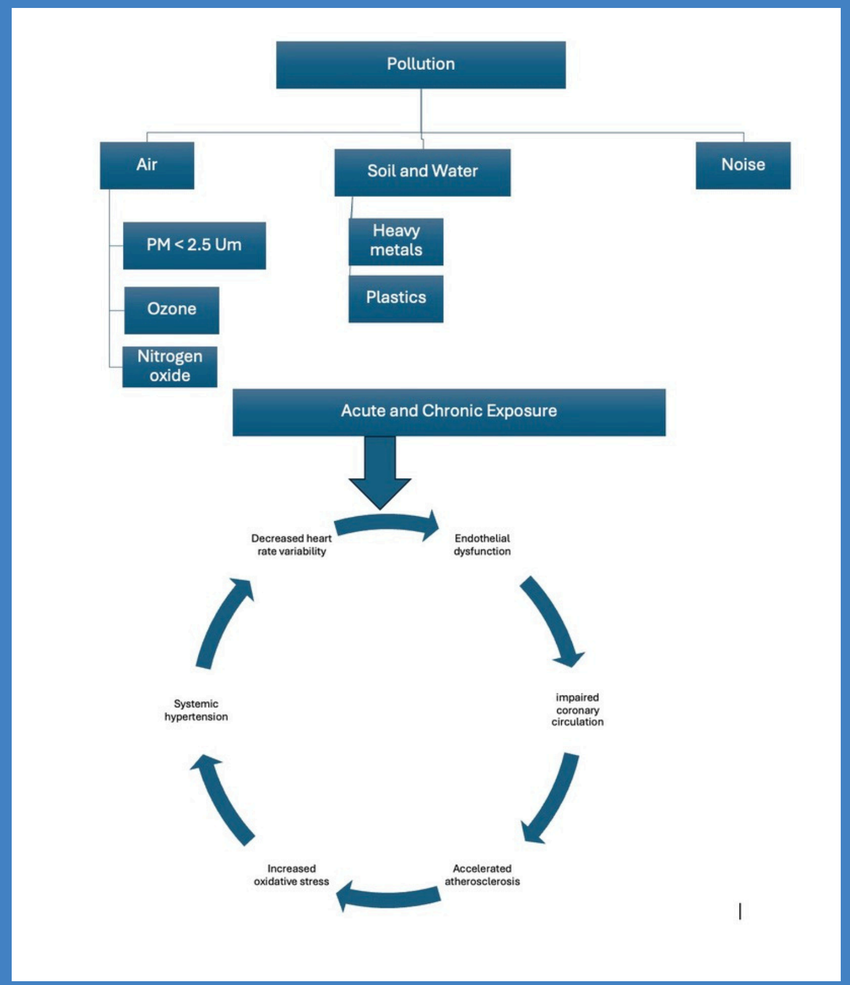
- Pollution is a major preventable cause of cardiovascular disease
- Air, water, soil, and noise pollution contribute significantly to global mortality
- Nearly 99% of the world population is exposed to unsafe air quality

Air Pollution

- PM2.5, ozone, nitrogen oxides strongly linked to hypertension, MI, stroke
- Long-term exposure accelerates atherosclerosis and coronary calcification
- Household biomass fuels increase BP and arterial stiffness

Soil and Water Pollution

- Microplastics and nanoplastics accumulate in organs including the brain
- BPA and phthalates increase diabetes and hypertension risk
- Heavy metals (arsenic, cadmium, lead) worsen oxidative stress and atherosclerosis



Noise Pollution

- Second most harmful pollutant after air pollution
- Causes sleep disruption, stress, and sympathetic activation
- Associated with MI, heart failure, atrial fibrillation, hypertension

Mitigation Strategies

Personal

- N95 and Hepa Filters
- Plant based diet
- Reduce the use of single-use plastics
- Increase composting, regular recycling, and plant more trees.
- Increasing the use of renewable energy (instead of reliance on fossil fuel)

Governmental

- US Environmental Protection Agency [EPA] regulation
- Pradhan Mantri Ujwala Yojana
- Reducing traffic exposure and limiting aircraft flights over residential neighborhoods.
- Reduce sounds generated by heavy machinery like jackhammers, bulldozers, cranes
- Limiting use of gas-powered blowers and landscaping equipment