

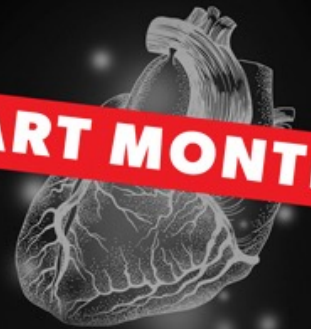
Worker Particulate Exposure and Heart Disease: Case Study on McIntyre Powder

Part 1: Sandra Dorman, PhD

Centre for Research in Occupational Safety and Health

Monday Feb 26, 12:00pm

HEART MONTH



FEBRUARY

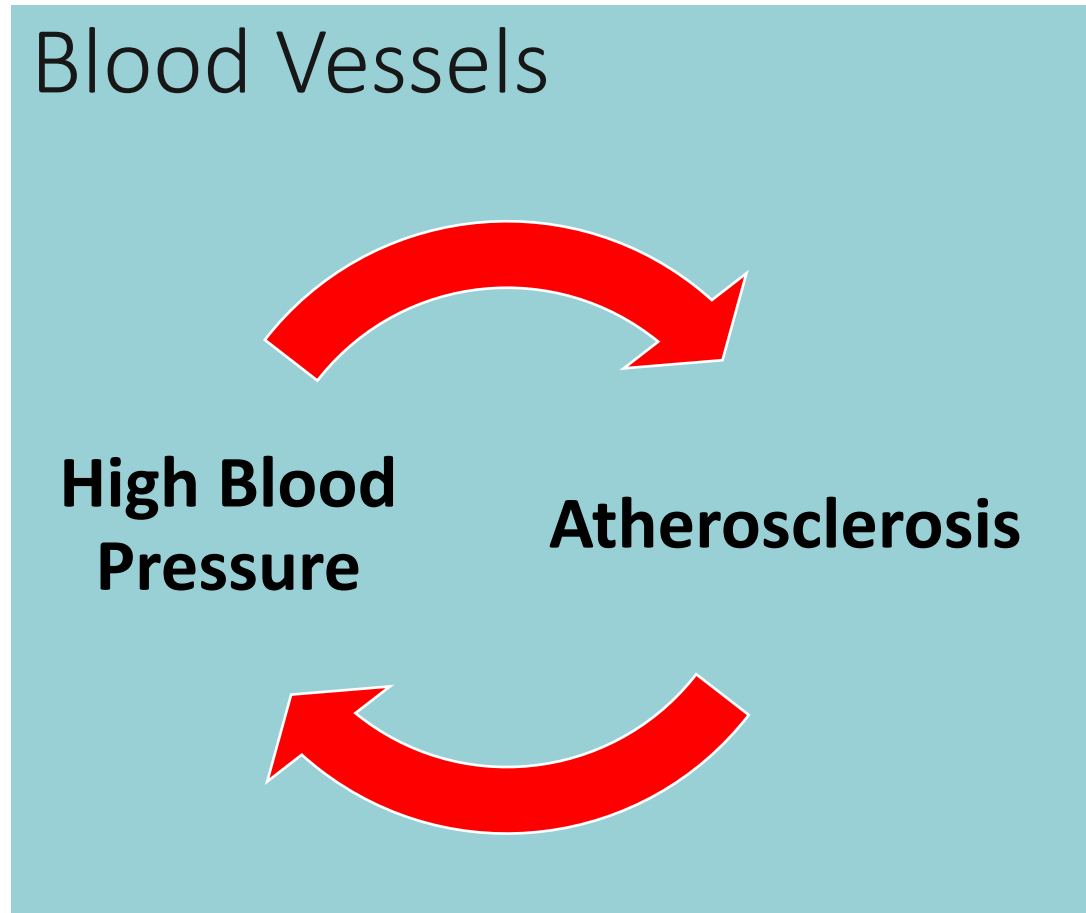




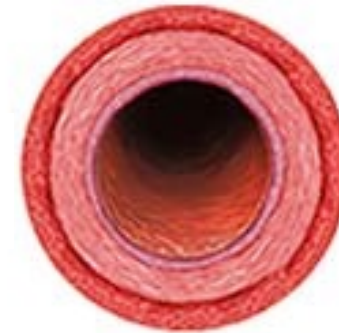
Cardiovascular Disease



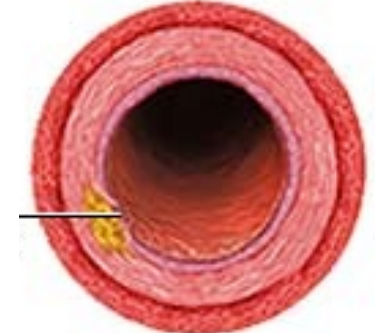
Major Vascular Diseases



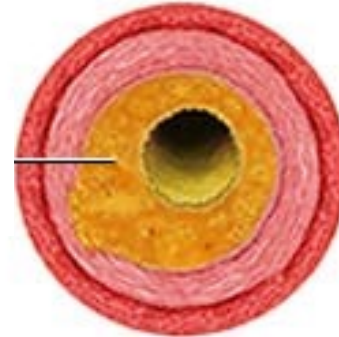
Normal artery



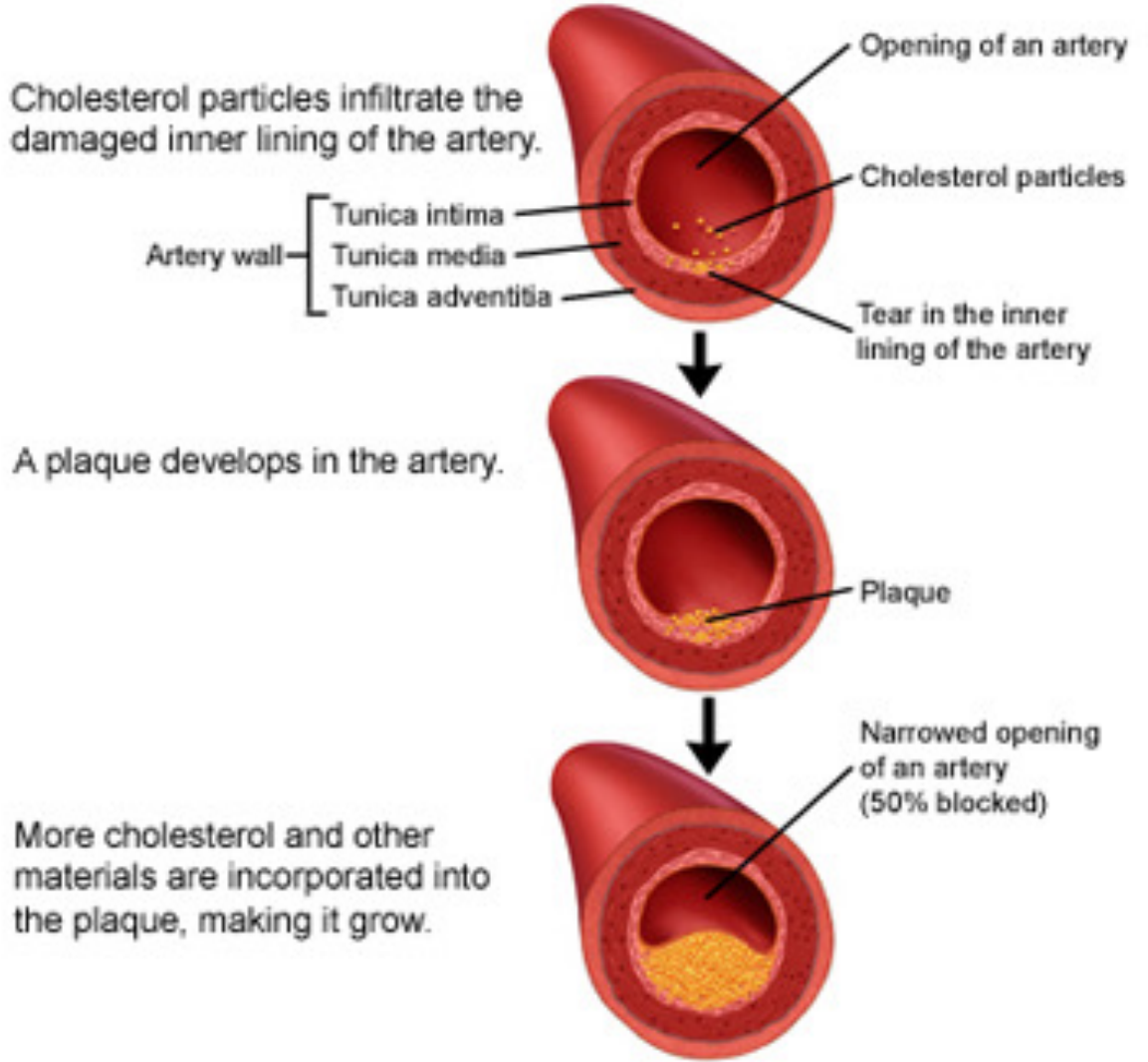
Tear



Fatty plaque



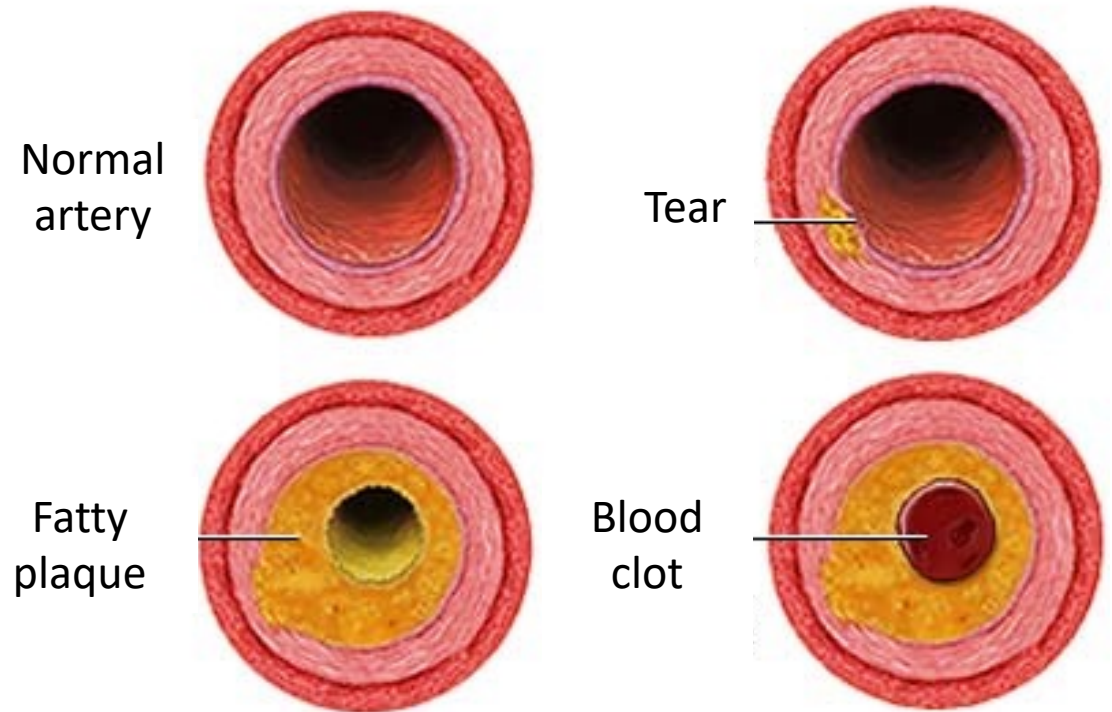
Tears



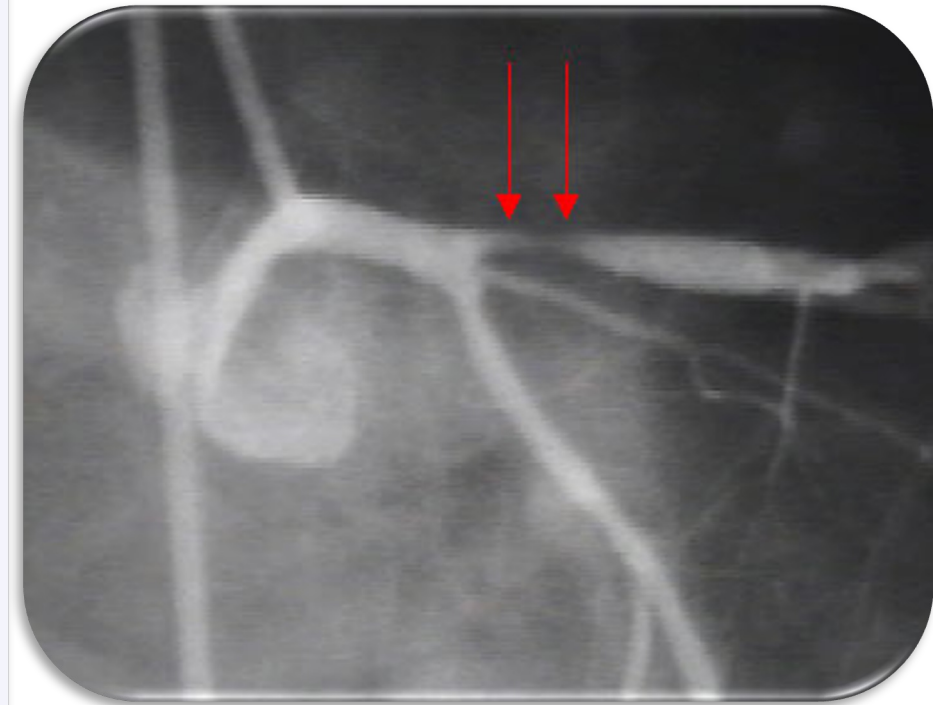
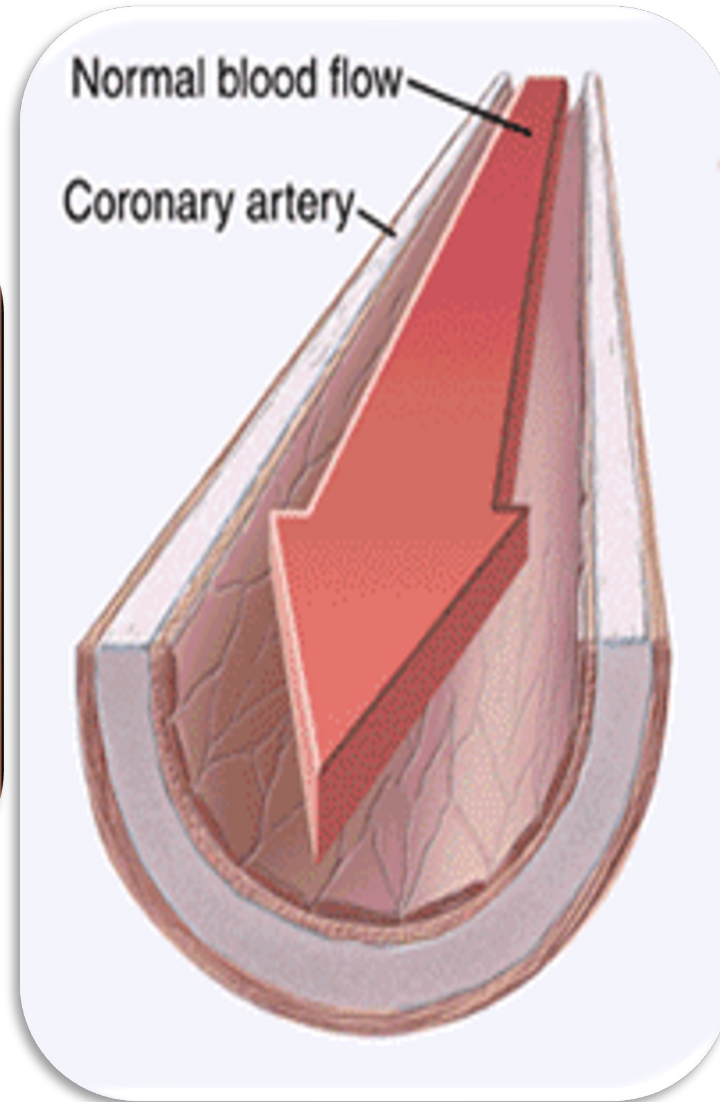
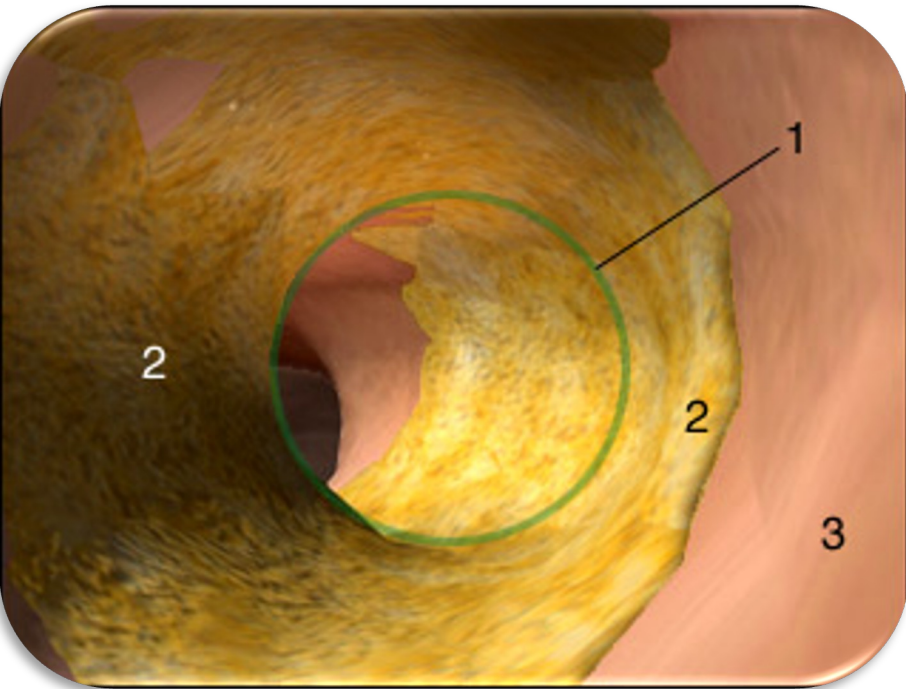
Major Cardiovascular Diseases

Coronary (heart) Artery Disease

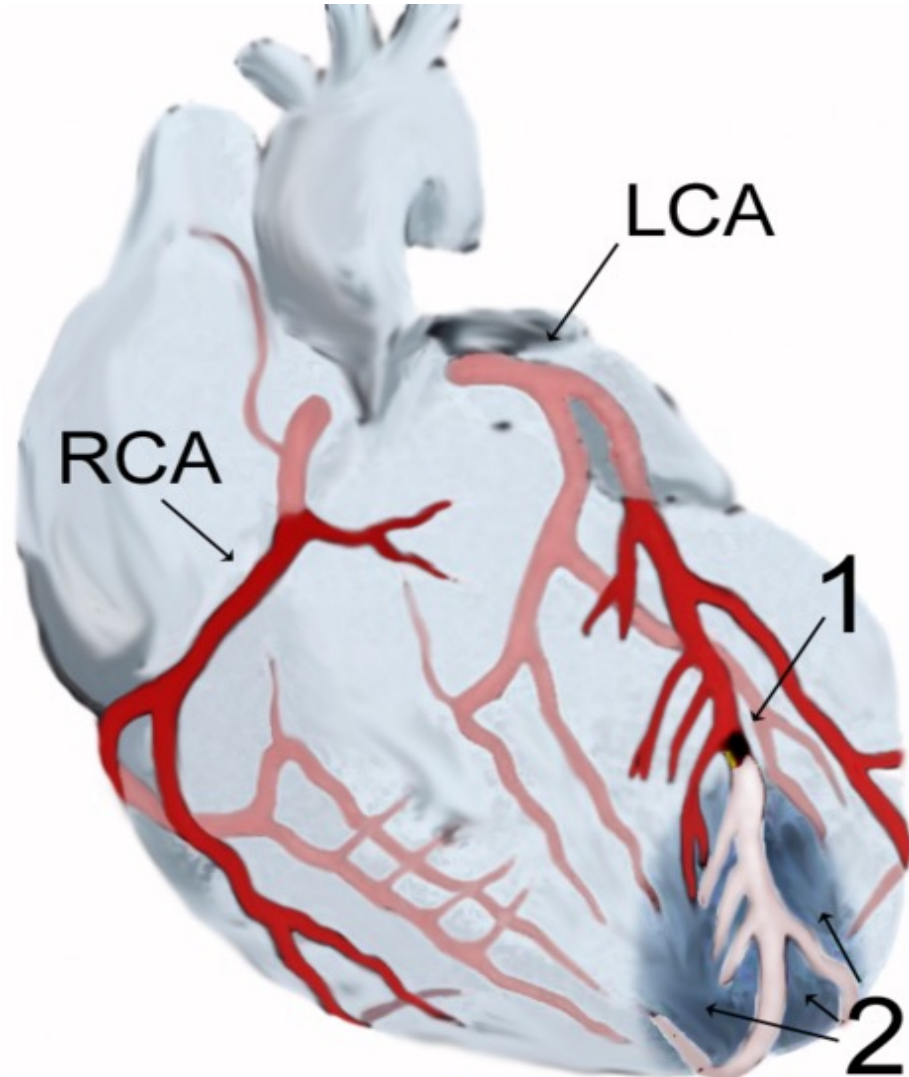
- Angina
- Myocardial Infarction (Heart Attack)



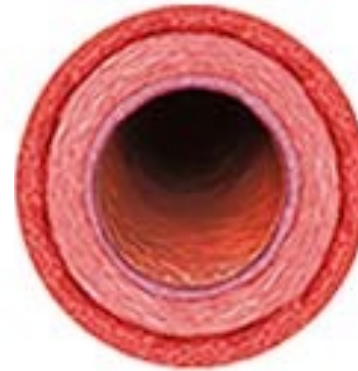
Angina



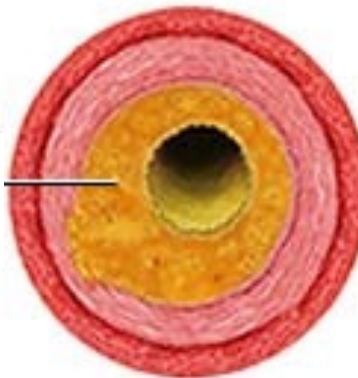
Heart Attack



Normal artery



Angina



Heart Attack

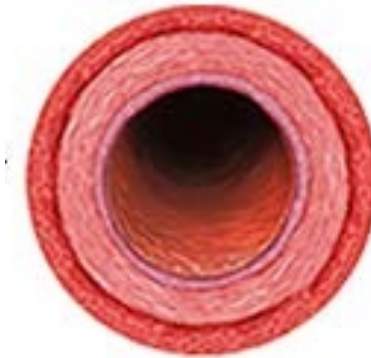


Major Vascular Diseases

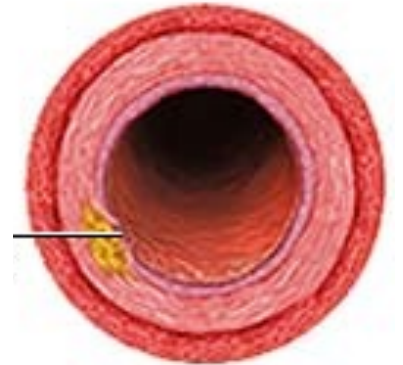
Brain

- **Stroke**

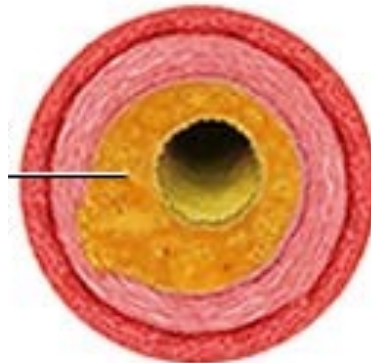
Normal artery



Tear



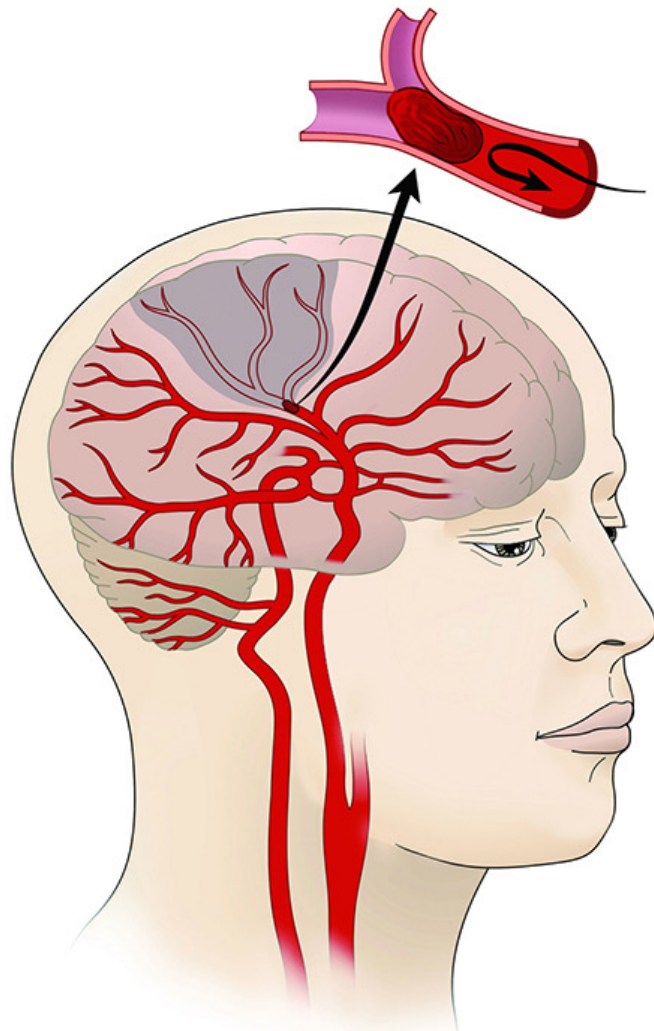
Fatty plaque



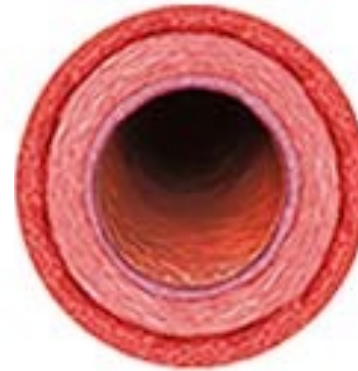
Clot



Stroke



Normal artery



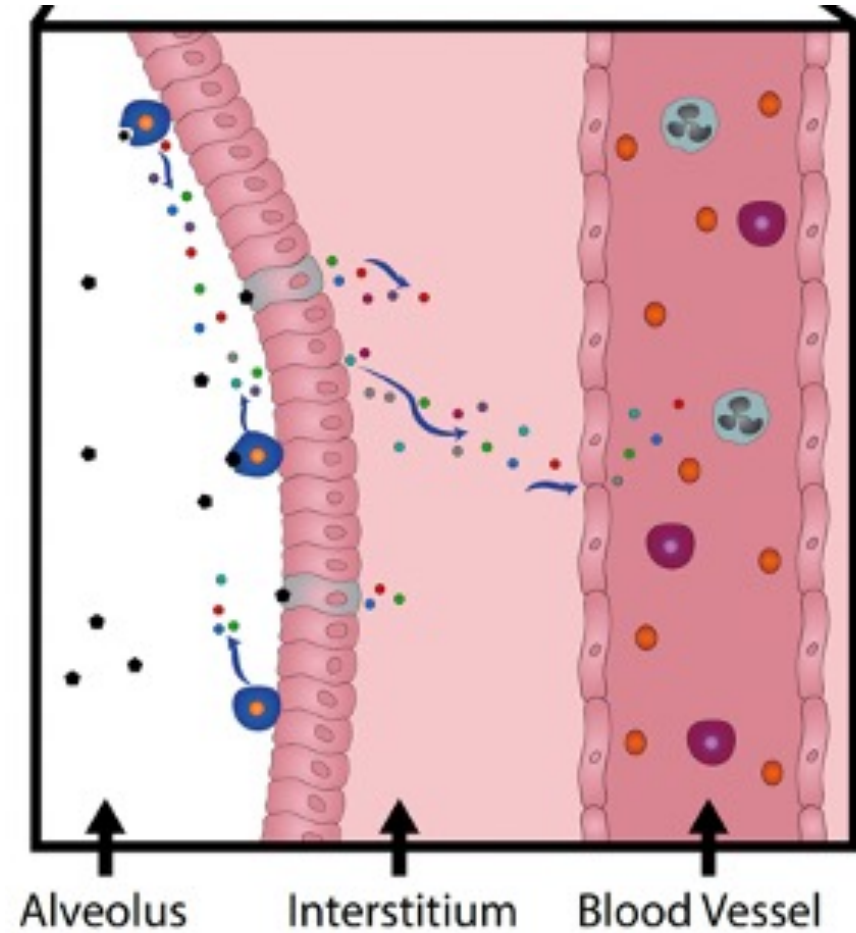
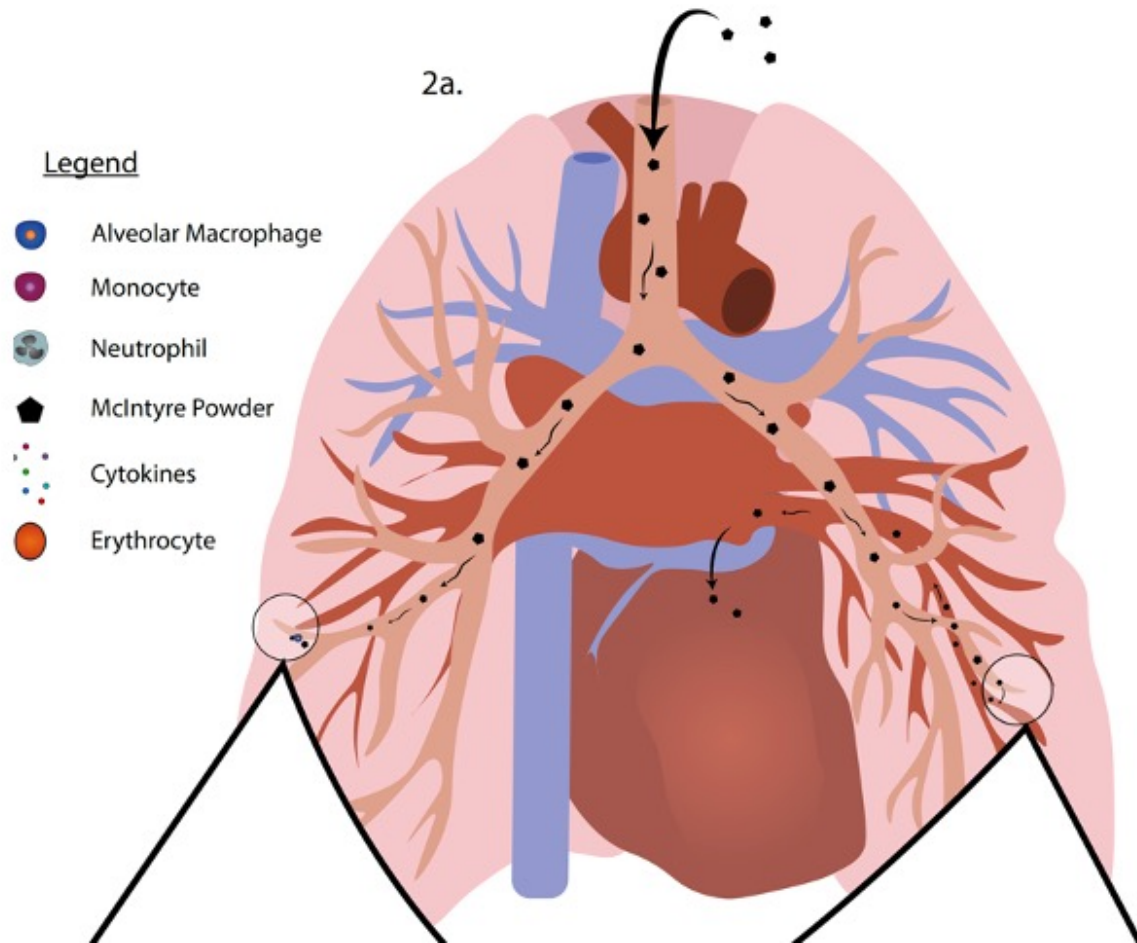
Stroke



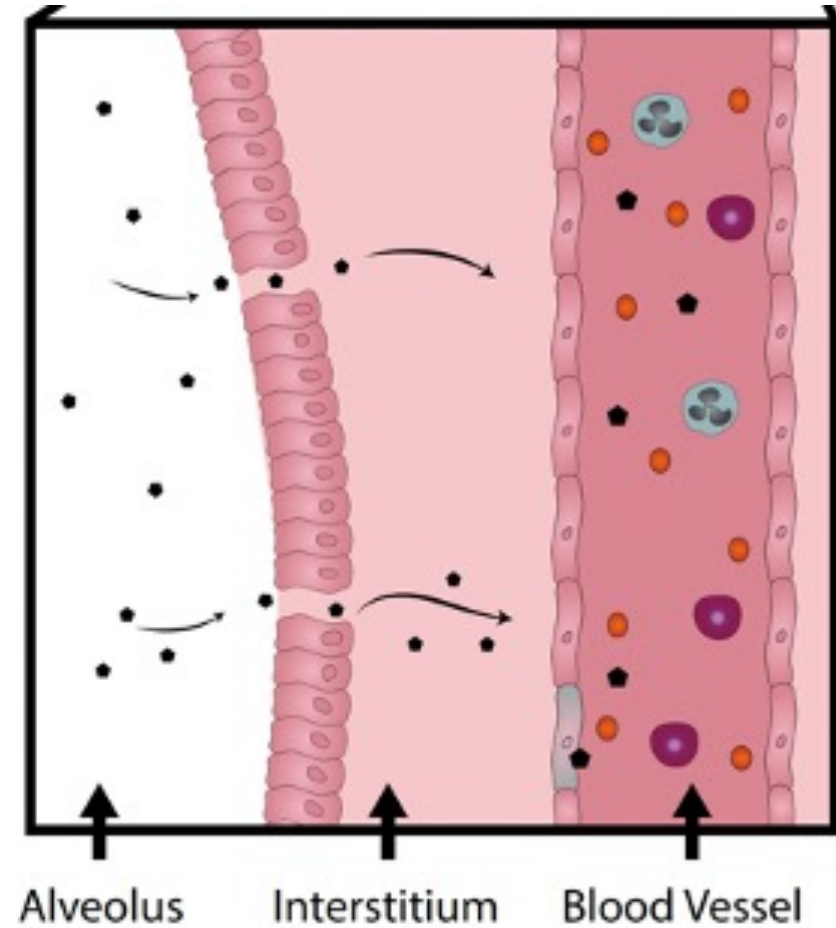
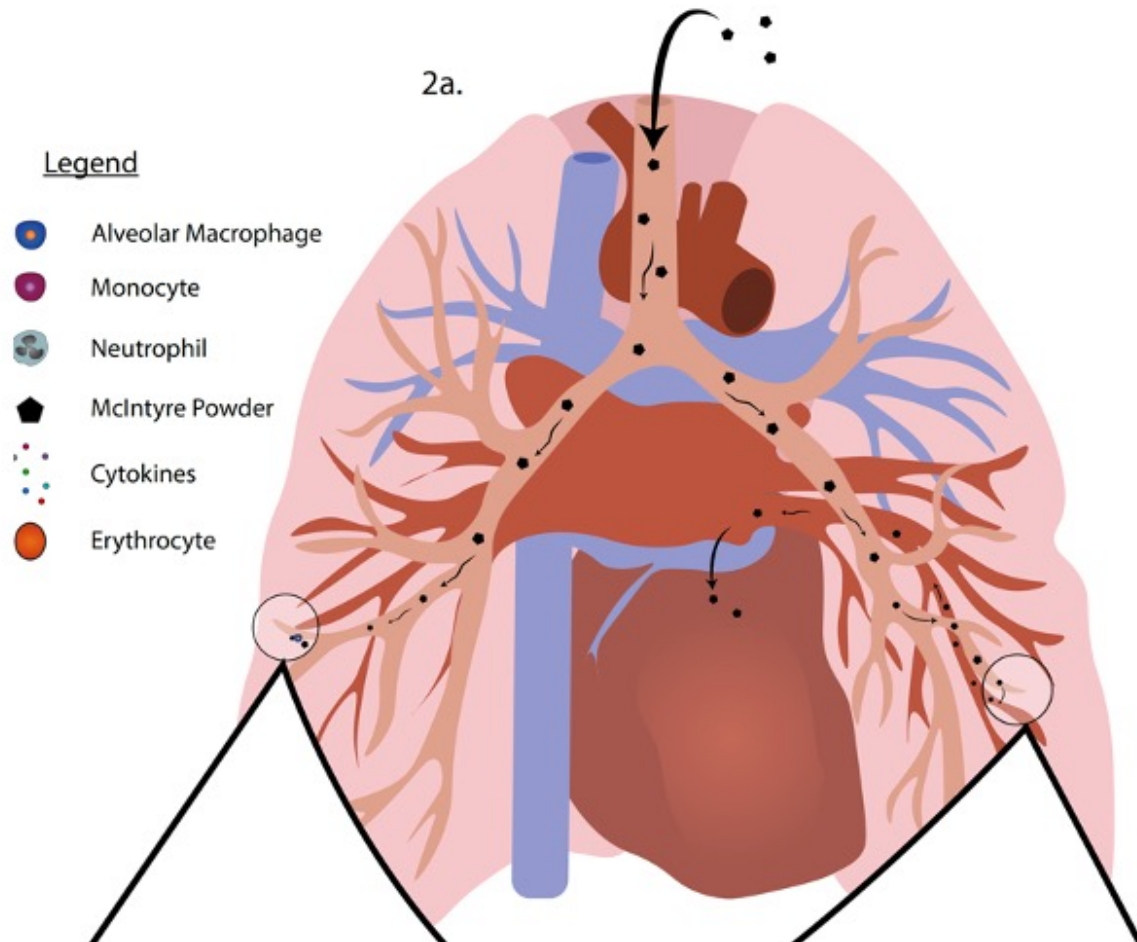
Mechanisms of Particulate Damage



Inflammation



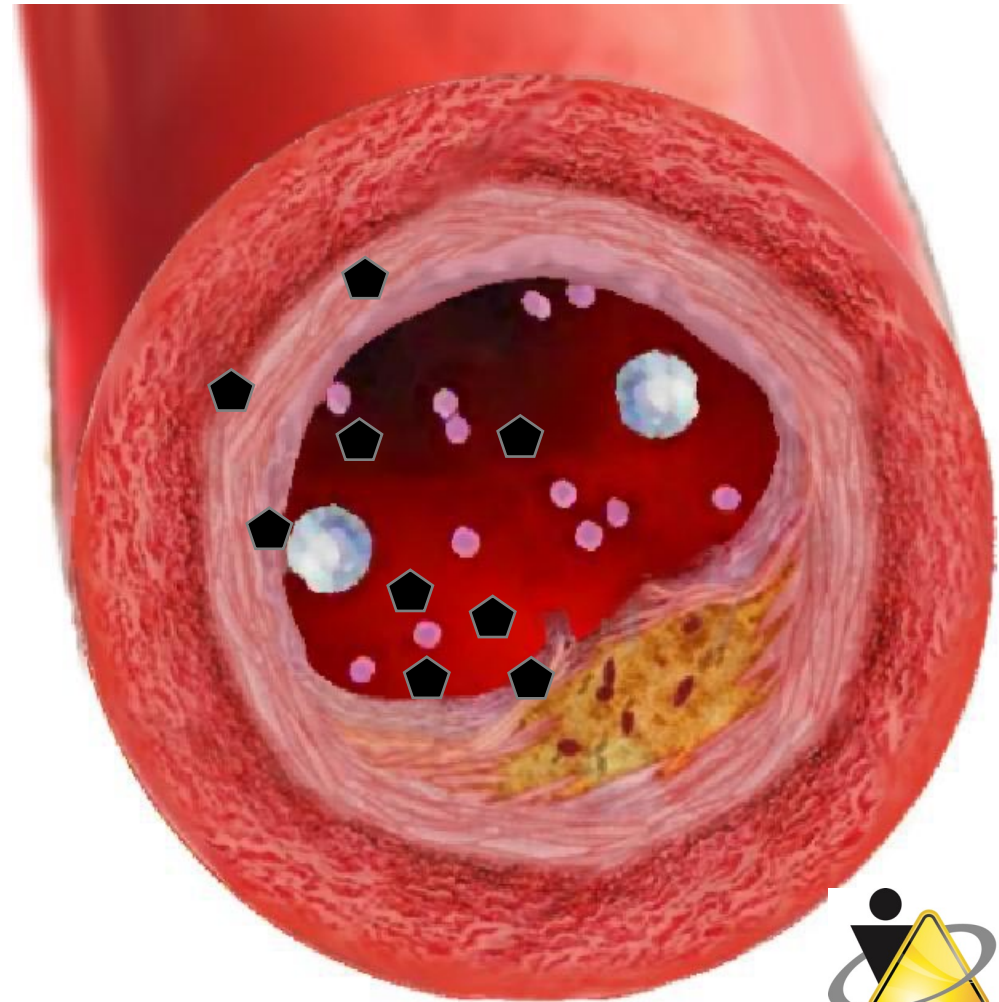
Vascular Tears



Cardio-vascular Effects

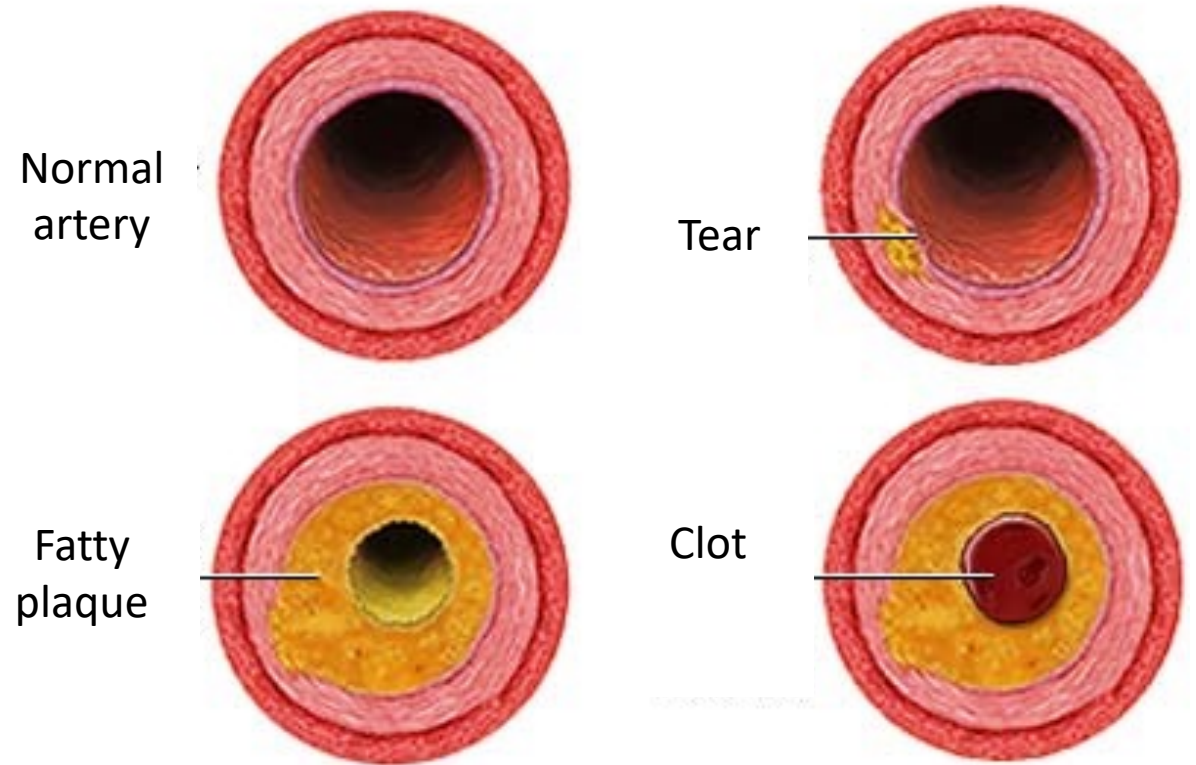
Two Effects:

- Diesel Particulates directly damage vessel wall
- Induced inflammation increases stickiness of the vessel wall



Summary

- Small, reactive particulate matter can directly damage blood vessels and increase inflammatory conditions conducive to developing atherosclerosis, angina, heart attack, and stroke.



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Conference Reference

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Center for Research in Occupational Safety and Health (CROSH)

OHCOW Webinar, February 26th, 2024.