

Please note there is limited research associated with the long term effects associated with exposure due to the short time frame since the introduction of Alternate Fuel Vehicles. At this stage we have no indications of any detrimental health effects additionally due to minimal number of incidents. The evidence presented below is drawn from research currently being undertaken throughout the emergency services sector.

Supplementary questions - NSW State Emergency Service

1. What are the short term and long term health risks associated with exposure to chemicals from electric and hybrid vehicle battery fires?

Short-term health risks:

1. Acute respiratory irritation – inhalation of smoke and fumes from battery fires or decomposition can cause immediate irritation to the respiratory tract – leading to coughing, shortness of breath and throat irritations.
2. Skin and eye irritation – contact with fumes or smoke released during decomposition can cause skin and eye irritations, itching, burning sensations and redness.
3. Nausea and dizziness - Exposure to toxic gases such as carbon monoxide and hydrogen fluoride can cause symptoms like nausea, dizziness, and headache.
4. Allergic reactions - Some individuals may experience allergic reactions to specific chemicals released during the fire, leading to symptoms like skin rashes, swelling, and itching.

Long Term health risks

1. Respiratory problems - Prolonged exposure to toxic fumes and particulate matter from battery fires can increase the risk of developing respiratory conditions such as asthma, chronic bronchitis, and lung cancer
2. Neurological effects - Certain chemicals released during battery fires, such as heavy metals like lead and cadmium, have neurotoxic properties and can accumulate in the body over time, potentially leading to neurological disorders.
3. Cardiovascular disease - Exposure to air pollutants from battery fires, including fine particulate matter and volatile organic compounds, can contribute to the development of cardiovascular diseases such as heart attacks and strokes.



4. Cancer - Some chemicals released during battery fires, such as benzene and formaldehyde, are known carcinogens and may increase the risk of developing cancer over the long term.

It is essential that decontamination procedures and safety protocols, procedures and policies articulate the risk involved and the development of mitigation strategies to minimise exposure.