Auto – Working Safely with EV Stats and Facts

FACTS

1. **High Voltage Shock:** EVs contain high-voltage systems (up to 800V); accidental contact during repairs or diagnostics can result in severe electric shock or fatality.
2. **Battery Fire Risk:** Damaged or improperly handled lithium-ion batteries can ignite or explode, especially during post-collision recovery or when punctured.
3. **Thermal Runaway:** Faulty or overheated battery modules may enter an uncontrollable chain reaction, posing serious fire and toxic smoke hazards to technicians.
4. **Improper PPE Use:** Failure to use arc-rated gloves, insulated tools, and protective face gear exposes workers to shock and burn injuries during service tasks.
5. **Lack of EV Training:** Untrained auto techs may unknowingly disconnect components incorrectly or skip safety lockout/tagout steps on high-voltage systems.
6. **Crush Hazards During Lifting:** Misunderstanding EV weight distribution or lift points can lead to vehicle imbalance and hoist-related injuries.
7. **Exposure to Toxic Fumes:** Battery damage during service can release gases like hydrogen fluoride, which are dangerous if inhaled without proper ventilation or respiratory protection.

STATS

- In 2024, OSHA recorded 5,190 workplace fatalities, with EV-related incidents rare (<0.5%) but tied to electric shock or battery fires. Proper training and PPE could prevent most cases, per NIOSH.
- In 2024, Respiratory Protection violations (29 CFR 1910.134) ranked 4th (2,800 citations), and Electrical Safety violations (29 CFR 1910.137) ranked 8th (1,500 citations), often due to inadequate EV training or PPE. Hazard Communication violations (29 CFR 1910.1200) ranked 2nd (3,200 citations).
- A 2023 IEA report noted 1 million EVs sold in the US, with 2.7 million on roads by 2025, increasing repair demand. Only 25% of shops are EV-certified, per IMR Inc.
- WorkSafeBC reported 10–15 annual fatalities in automotive repair in British Columbia (2020–2023), with EV-related incidents rare but tied to high-voltage mishandling.
- CCOHS 2023 data showed that EV-trained shops with proper PPE reduced electrical

and chemical injuries by 20%.
- Ontario’s 2024 fines (up to $500,000) target OHS violations, including EV safety non-compliance. Only 5% of technicians are EV-trained, per IMI.