

## Toxicology - Case Vignette of the Month

You have been paged to a 31D02, Unconscious / Fainting (Near), Unconscious person. Per the CAD notes, you are being dispatched to a 59 year old female who had been complaining of a headache for most of the day, and has had several near-syncopal episodes. PD arrives first on the scene and reports the patient is alert, talking and appears well to them. On your arrival, you recognize the patient as a high-utilizer of emergency services, and has multiple medical comorbidities. She complains of having a headache, dizziness, drowsiness, feeling confused, short of breath and has had several episodes of near passing out. She reports to you that she thinks she, "either has COVID or flu or both". When asked about sick contacts, she reports, "everyone is sick, even my dog". The boyfriend on scene states he has generally felt unwell, but does not have specific symptoms.

PD reports to you that they have had several calls to the residence related to conflicts with the landlord and the patient is being evicted. They believe MG&E has already turned off her natural gas, and believe the electric will be next.

### Discussion:

- What is your assessment of this patient, and does she warrant EMS transport?
- What additional cues or clues should you be aware of while on scene?
- Are there any adjunct tools that can help narrow your differential diagnosis for this patient?

## December Viz Quiz

You are responding to a local industrial construction site for a patient complaining of severe bilateral foot pain. When you arrive on scene, you find PD there with the patient, who is awake, alert and talking. He complains of severe pain in both of his feet and inability to walk. PD tells you they caught the patient trespassing on the construction site, reportedly looking for copper pipe to steal. They tell you that when they tried to stop him, he grabbed onto some nearby wires while evading them, and subsequently has been complaining of bilateral foot pain. They are asking for a medical release so they can take him into custody. Your exam reveals what you see in the photo.



Based on this exam finding, you believe that this patient has a:

- A. High Voltage Electrical Injury
- B. Low Voltage Electrical Injury
- C. Industrial Chemical Exposure to Both Feet
- D. Chronic Diabetic Foot Ulcers

Submit your answers at <https://www.surveymonkey.com/r/WLLLC6Z>  
for the chance to win a prize!

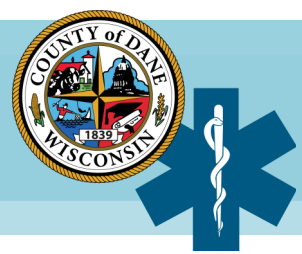
## November Viz Quiz Follow Up

Answer: B. Wellens Syndrome

This clinical syndrome of either a biphasic T-wave or deep and symmetrically inverted T-wave in leads V2 and V3. This is VERY SPECIFIC for stenosis of the Left Anterior Descending coronary artery (LAD). This finding is present even without acute chest pain. Identifying this subtle but important pattern may be life-saving for the patient.



Congratulations to Cynthia from Waunakee EMS for winning the November Viz Quiz!



## Case Study - Carbon Monoxide Poisoning

Clinical findings of CO Poisoning are highly variable and largely nonspecific. Mildly or moderately CO-intoxicated patients are often misdiagnosed with viral syndromes. Common presentations for CO poisoning per the US Poison Center include: Headache (58%), nausea (33%), dizziness (29%), drowsiness (14%), vomiting (14%), confusion (5%), syncope (5%). Physical findings related to CO poisoning are usually limited to altered mental status, tachycardia, and elevated respiratory rate. Mental status changes may range from HA to confusion to coma. The classically described “cherry red” appearance of the lips is neither sensitive nor specific to CO Poisoning.

### EMS Management

- CO Poisoning should be suspected in fire victims, in patients with flu-like symptoms in cold climates - especially if cohabitants or pets are also ill - and patients with unexplained mental status changes.
- Elevated CO levels may be detected by Fire, although ambient levels may be low if the 911 operators advised patients to open their windows and/or door prior to emergency services arrival.
- The diagnosis of CO poisoning is made in conjunction with an elevated CO level, measured by co-oximetry with the Rad-57 handheld monitor or a venous blood gas.
- There are a variety of commercially available CO detectors available to emergency services; if you do not already have one, consider acquiring and attaching one to your medical jump bag or portable radio. This can help dramatically when the presentation is subtle or unclear.
- CO has 240 times the binding affinity of Oxygen to hemoglobin, and reduces the ability to both carry O2 and to off-load O2 in the tissues.
- Severe CO Poisoning is considered in patients with any of the following: seizures, syncope, transient LOC, coma, lactic acidosis (from cellular hypoxia), acute MI, myocardial injury, ventricular arrhythmia, pulmonary edema.

### Where does CO come from?

Carbon Monoxide is produced from incomplete combustion of fuels. Potential sources of CO include: smoke inhalation from fires; poorly functioning heating systems; improperly vented fuel-burning devices (i.e. ice rink, warehouses, parking garages, tailpipes blocked by snow drifts); inhaled or ingested methylene chloride (dichloromethane), an industrial solvent and component of paint remover (metabolized to CO and can cause CO toxicity even when environment negative).

### What is the EMS Treatment?

High flow Oxygen via Nonrebreather facemask. Manage the ABC's. Consider Hyperbaric O2 for any patient with severe symptoms, or concomitant pregnancy.

Reference: <https://www.uptodate.com/contents/carbon-monoxide-poisoning>

### Protocol Quiz

Test your knowledge on the Dane County EMS Protocols by completing the [December Newsletter Protocol Quiz](#). [Email us](#) for the annotated answers and where to find them in the protocols!

### Upcoming Events and Training

**12/17, 6pm-8:30pm - EMS Holiday Appreciation Event at the Henry Vilas Zoo Lights**

Tickets are free, and family is welcome!

RSVP at [https://uwmadison.co1.qualtrics.com/jfe/form/SV\\_8uG1qToJwo4gPSS](https://uwmadison.co1.qualtrics.com/jfe/form/SV_8uG1qToJwo4gPSS)

**12/20 - 6pm, UW Health Monthly Training: Stroke**

Register at [uwhealth.org/EEN23](http://uwhealth.org/EEN23)

Happy  
holidays  
to all!