



# Poison HOTLINE

Partnership between Iowa Health System and  
University of Iowa Hospitals and Clinics

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### Did you know .....

The ISPCC has received calls regarding synthetic marijuana, also known as K2, Spice or Genie. The media has recently spotlighted this synthetic marijuana that is being used across the nation. The synthetic chemical is sprayed on dried flowers, herbs and tobacco and smoked in joints or pipes.

Next month's *Poison Hotline* article will feature K2 and its effects.

Call the ISPCC for treatment recommendations on how to manage a patient that may have used this synthetic marijuana.

[www.iowapoisson.org](http://www.iowapoisson.org).

## Methemoglobinemia

Methemoglobin is formed when the iron molecule in hemoglobin is oxidized from the normal ferrous state ( $Fe^{2+}$ ) to the ferric state ( $Fe^{3+}$ ). In this state, hemoglobin cannot carry oxygen. Methemoglobinemia (MetHb) is defined as a MetHb level > 2%. Many products can induce MetHb. Common MetHb inducers include: aniline dyes, benzocaine (e.g. teething gels), dapsone, phenazopyridine, lidocaine, naphthalene (e.g. mothballs), nitrites (e.g. amyl nitrite), and nitrates (e.g. contaminated well water).

Symptoms are related to decreased oxygen delivery and often correlate with measured MetHb levels. Cyanosis (typically more brown or gray in color than blue) that is unresponsive to oxygen therapy suggests MetHb.

Met Hb	Symptoms
~15%	Cyanosis and chocolate-brown colored blood
20-40%	Headache, anxiety, fatigue, weakness, dizziness
40-60%	Lethargy, dyspnea, bradycardia, respiratory depression, stupor
60-80%	Seizures, dysrhythmias, shock, coma
> 70%	Death

MetHb should be suspected when a patient has any combination of: (a) a history of exposure to a causative agent, (b) cyanosis that is unresponsive to oxygen and (3) the blood has a chocolate-brown color to it. The diagnosis is confirmed by measuring a MetHb level.

When the MetHb is < 25% and the patient is asymptomatic, supportive care and removal of the causative agent will usually be sufficient. Methylene blue is indicated for: (1) a symptomatic patient with an elevated MetHb level; (2) a MetHb level above 25% in an asymptomatic patient; and (3) a symptomatic patient with cyanosis that does not correct with administration of 100% oxygen, and a MetHb level can not be performed or the results are not immediately available.

The dose of methylene blue is 1-2 mg/kg, given IV over 5 minutes, and can be repeated in 1-2 hours if needed. Maximal response occurs within 30-60 minutes. Check a MetHb level ~1 hour after administration of methylene blue.

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