

# Ethylene Glycol Poisoning

## Patient Education and Care Instruction Sheet

<b>Overview of ethylene glycol</b>	<p>Ethylene glycol is clear, colorless, odorless liquid.</p> <p>Ethylene glycol can quickly cause sickness or death in humans if swallowed. Ethylene glycol has many uses:</p> <ul style="list-style-type: none"><li>• Antifreeze</li><li>• De-icing agent</li><li>• Solvent</li><li>• Heat-transfer fluid</li></ul> <p>Ethylene glycol can cause serious illness in humans.</p>
------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<b>How might I be exposed to ethylene glycol?</b>	<p>The most common source of ethylene glycol exposure is antifreeze. Antifreeze contains up to 95% ethylene glycol. Antifreeze accounts for about 40% of the ethylene glycol produced and is easy to obtain. Ethylene glycol is also used for de-icing airplanes and in air conditioning units.</p> <p>The most common way people are exposed to ethylene glycol and poisoned by it is from swallowing antifreeze.</p>
---------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>How can ethylene glycol affect my health?</b>	<p>Ethylene glycol is toxic. Ethylene glycol first causes symptoms similar to drinking too much alcohol. Those include drunkenness, slurred speech, and sleepiness.</p> <p>If left untreated, these symptoms can quickly become serious, leading to</p> <ul style="list-style-type: none"><li>• seizures</li><li>• coma, and</li><li>• death.</li></ul> <p>Other problems caused by swallowing ethylene glycol include kidney damage.</p> <p>No known human studies have linked ethylene glycol exposure to cancer or reproductive or developmental hazards in humans.</p>
--------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<b>How can ethylene glycol affect the health of children?</b>	<p>Children poisoned by swallowing ethylene glycol would likely show the same health effects as adults. We do not know whether children are more likely to be affected by ethylene glycol than are adults. We also do not know whether ethylene glycol causes birth defects in people.</p>
---------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<b>How can people reduce their risk for ethylene glycol poisoning?</b>	<p>The following steps might reduce the risk for ethylene glycol poisoning:</p> <ul style="list-style-type: none"><li>• Keep antifreeze in original, labeled containers, securely stored, and out of children's reach.</li><li>• If you think someone has swallowed antifreeze, get them to a doctor immediately.</li></ul>
------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<b>What tests can show if someone has been exposed to ethylene glycol?</b>	<p>Ethylene glycol is a common cause of overdose in the United States. Ethylene glycol can be measured in blood.</p> <p>Laboratories use special equipment to detect and measure ethylene glycol. These include gas chromatographs and mass spectrometric detectors. However, many hospitals do not have this equipment.</p>
----------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>When to call your doctor</b>	<p>Call your doctor if you develop signs or symptoms of the following:</p> <ul style="list-style-type: none"> <li>• Central nervous system trouble</li> <li>• Other health changes (especially those possibly related to heart and kidney problems)</li> </ul> <p>Signs and symptoms of central nervous system trouble may include the following:</p> <ul style="list-style-type: none"> <li>• Loss of control of body movement</li> <li>• Loss of speech or trouble talking</li> <li>• Drowsiness</li> <li>• Irritation</li> <li>• Restlessness</li> <li>• Disorientation</li> </ul> <p>Signs and symptoms of heart disease may include the following:</p> <ul style="list-style-type: none"> <li>• High or low blood pressure</li> <li>• Irregular heart beat</li> <li>• Chest pain</li> <li>• Dizziness</li> <li>• Fatigue</li> <li>• Loss of appetite</li> <li>• Shortness of breath</li> <li>• Swelling in your legs, ankles, or feet</li> <li>• Blackouts, fainting, vomiting, or lightheadedness</li> </ul> <p>Signs and symptoms of kidney disease may include the</p>
---------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<p>following:</p> <ul style="list-style-type: none"><li>• Decreased urine output</li><li>• Swelling in your legs, ankles, or feet</li><li>• Chest pain or pressure</li><li>• Drowsiness</li><li>• Shortness of breath</li><li>• Fatigue</li><li>• Confusion</li><li>• Nausea</li><li>• Seizures or coma</li></ul>
--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

---

<b>Clinical follow-up instructions</b>	<ul style="list-style-type: none"><li>❑ No follow-up appointment is needed unless you develop any of the symptoms listed above.</li><li>❑ Return for laboratory testing: _____</li><li>❑ Return to the emergency department/clinic on (date) _____ at _____ AM/PM for a follow-up examination.</li><li>❑ Do not perform vigorous physical activities for 1 to 2 days.</li><li>❑ You may resume everyday activities, including driving and operating machinery.</li><li>❑ Do not return to work for _____ days.</li><li>❑ Avoid exposure to cigarette smoke for 72 hours.</li></ul>
----------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Smoke can worsen the condition of your lungs.

- ❑ Avoid drinking alcoholic beverages for at least 24 hours. Alcohol can worsen injury to your stomach or have other effects.
- ❑ Avoid taking the following medicines:  
\_\_\_\_\_
- ❑ Tell the emergency department the name and number of your doctor so they can send that person a record of your emergency department visit.
- ❑ Other instructions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- ❑ \_\_\_\_\_

# Propylene Glycol Poisoning

## Patient Education and Care Instruction Sheet

<b>Overview of propylene glycol</b>	<p>Propylene glycol is clear, colorless, odorless liquid.</p> <p>Propylene glycol is a “generally recognized as safe” additive for foods and medicines. Propylene glycol rarely causes illness, and then only under very unusual circumstances. It is used in various foods, cosmetics, and medicines. It is also used to make artificial smoke or fog.</p>
-------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<b>How might I be exposed to propylene glycol?</b>	<p>Propylene glycol is used as a solvent in various forms of cosmetics and medicines:</p> <ul style="list-style-type: none"><li>• Oral</li><li>• Injectable</li><li>• Topical</li></ul> <p>Propylene glycol is a diluting solvent found in many intravenous and oral drugs, including</p> <ul style="list-style-type: none"><li>• phenytoin,</li><li>• diazepam, and</li><li>• lorazepam.</li></ul> <p>Propylene glycol exposure occurs mainly through swallowing food and medicines and through skin contact with cosmetics or topical medicines.</p>
----------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<b>How can propylene glycol affect my health?</b>	<p>Propylene glycol is a commonly used solvent for intravenous medicines. Although usually safe, it can be harmful when given in large doses over a short period.</p>
---------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<p><b>How can propylene glycol affect the health of children?</b></p>	<p>Newborns and infants are among those at special risk from rapidly injected propylene glycol-containing medicines or extra-large doses.</p>
-----------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

---

<p><b>What tests can show if someone has been exposed to propylene glycol?</b></p>	<p>Propylene glycol can be measured in blood.</p> <p>Laboratories use special equipment to detect and measure propylene glycol. These include gas chromatographs and mass spectrometric detectors. However, many hospitals do not have this equipment.</p>
------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<p><b>When to call your doctor</b></p>	<p>Call your doctor if you develop signs or symptoms of the following:</p> <ul style="list-style-type: none"> <li>• Central nervous system trouble</li> <li>• Other health changes (especially those possibly related to heart and kidney problems)</li> </ul> <p>Signs and symptoms of central nervous system trouble may include the following:</p> <ul style="list-style-type: none"> <li>• Loss of control of body movement</li> <li>• Loss of speech or trouble talking</li> <li>• Drowsiness</li> <li>• Irritation</li> <li>• Restlessness</li> <li>• Disorientation</li> </ul> <p>Signs and symptoms of heart disease may include the following:</p> <ul style="list-style-type: none"> <li>• High or low blood pressure</li> <li>• Irregular heart beat</li> </ul>
----------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<ul style="list-style-type: none"> <li>• Chest pain</li> <li>• Dizziness</li> <li>• Fatigue</li> <li>• Loss of appetite</li> <li>• Shortness of breath</li> <li>• Swelling in your legs, ankles, or feet</li> <li>• Blackouts, fainting, vomiting, or lightheadedness</li> </ul> <p>Signs and symptoms of kidney disease may include the following:</p> <ul style="list-style-type: none"> <li>• Decreased urine output</li> <li>• Swelling in your legs, ankles, or feet</li> <li>• Chest pain or pressure</li> <li>• Drowsiness</li> <li>• Shortness of breath</li> <li>• Fatigue</li> <li>• Confusion</li> <li>• Nausea</li> <li>• Seizures or coma</li> </ul>
--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Clinical follow-up instructions</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> No follow-up appointment is needed unless you develop any of the symptoms listed above.</li> <li><input type="checkbox"/> Return for laboratory testing: _____</li> <li><input type="checkbox"/> Return to the emergency department/clinic on (date) _____ at _____ AM/PM for a follow-up examination.</li> <li><input type="checkbox"/> Do not perform vigorous physical activities for 1 to 2</li> </ul>
----------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

days.

You may resume everyday activities, including driving and operating machinery.

Do not return to work for \_\_\_\_\_days.

Avoid exposure to cigarette smoke for 72 hours.  
Smoke can worsen the condition of your lungs.

Avoid drinking alcoholic beverages for at least 24 hours. Alcohol can worsen injury to your stomach or have other effects.

Avoid taking the following medicines:

\_\_\_\_\_

Tell the emergency department the name and number of your doctor so they can send that person a record of your emergency department visit.

Other instructions: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

---