

Imported Drywall and Health— A Guide for Healthcare Providers

Background

The U.S. Consumer Product Safety Commission (CPSC) has received 3,850 reports from residents in 42 States, the District of Columbia, American Samoa, and Puerto Rico who believe their health symptoms or the corrosion of certain metal components in their homes are related to the presence of drywall produced in China. State and local health authorities also received similar reports; some cases have been reported to regional Poison Control Centers.

The CPSC is leading the federal investigation. The Centers for Disease Control and Prevention (CDC), the Agency for Toxic Substances and Disease Registry (ATSDR), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Housing and Urban Development (HUD) are providing technical support to CPSC and several state health departments. The agencies are working to identify whether the drywall is emitting chemicals of concern and whether homes containing the drywall pose any health risk to people who live in them. This drywall was first imported to the U.S. and used to build or remodel homes from 2001–2008 and may still be in use. The number and location of all homes containing the imported drywall is not known.

At this time, not enough information exists to determine the nature and magnitude of a potential health risk. Likewise, we do not know if every home that contains this product is, or will be, affected. This fact sheet provides information for healthcare providers about what we know.

What are residents reporting?

Common reports to the CPSC and state health departments from residents who live in homes believed to contain problem drywall include one or more of the following:

Issues related to indoor air

- a rotten egg smell or smell of matches or fireworks in their homes

Issues related to metal inside homes

- blackened and corroded metal components in their homes and frequent replacement of metal components in air conditioning units

Health symptoms (some symptoms are also consistent with other indoor air quality problems)

- irritated and itchy eyes and skin
- difficulty breathing
- nasal irritation
- recurrent headaches
- sinus infection
- exacerbation of asthma

What chemicals have been found?

CPSC indoor air test results have found low parts per-billion (ppb) levels of reactive sulfur gases including hydrogen sulfide and carbonyl sulfide. The gases are higher in homes that contain imported drywall than those that do not. All of the levels were far lower than levels related to health effects.

CPSC drywall off-gassing studies show higher emissions of reactive sulfur gases in imported drywall than drywall manufactured in the U.S. Emission rates were highest for hydrogen sulfide, followed by sulfur dioxide. The same trend holds true for volatile sulfur compounds. CPSC is using computer modeling to convert the emission test results to predict the estimate levels in indoor air.

Many sulfur-based compounds occur naturally in the environment, such as in swamps. Paper mills, the textile industry, petroleum and natural gas extraction, and other industries produce these gases as waste products. Cigarette smoke, septic tanks, wastewater treatment, and automobiles also emit these compounds.

Other compounds that are typically present in indoor air were found in both homes that contain imported drywall and homes that do not. Sources of these compounds include new carpeting and furniture, pressed plywood and particle board, glues, paints, and cooking.

What health problems can be caused by exposure?

Sulfur gases are colorless and have an unpleasant odor, often described as smelling like a rotten egg. Residents also report smells similar to fireworks or striking a match. Most people can smell these chemicals at levels below those known to cause adverse health effects. However, some people react more strongly to noxious odors. Exposure to high levels of sulfur-containing compounds can cause olfactory fatigue. That is, the olfactory sensing cells in the nose become saturated and no longer signal the brain that the substance is present. When this occurs, people can no longer smell the substance even though it is present in the air.

Exposure to reactive sulfur gases may result in eye, nose, and throat irritation and exacerbation of respiratory problems. Less is known about chronic exposure to lower levels (1-30 ppb), such as those found in the limited indoor testing conducted in homes reported to contain imported drywall.

Short term exposure (hours) to low concentrations of sulfur gas can result in the following symptoms:

- eye irritation
- sore throat
- stuffy nose/rhinitis
- cough
- shortness of breath/chest pain
- nausea
- headaches

Chronic exposure (days to years) to low concentrations can result in the following additional symptoms:

- fatigue
- loss of appetite
- irritability
- poor memory
- dizziness
- insomnia
- headaches

Other sources of indoor contamination may result in similar symptoms.

Who is at risk?

The most sensitive populations include:

- patients with asthma
- patients with chronic obstructive pulmonary disease (COPD),
- the elderly, and
- young children with compromised respiratory function.

What should I tell my patients?

Symptoms of exposure to reactive sulfur compounds are non-specific. A patient may have symptoms that include:

- watery eyes with redness and/or itching,
- increased episodes of nasal congestion or coughing, and
- difficulty breathing or shortness of breath.

Patients may report subsiding of symptoms when they are away from their homes. If the patient is experiencing symptoms of exposure the person attributes to drywall, you can advise the patient to take the following actions:

- If the odor is strong inside the home, go outside to breathe fresh air for immediate relief.
- If possible, avoid areas where the odor is present.
- Avoid heavy exercise indoors.

EPA test results show warm and humid conditions result in higher levels of contaminants in the air. Patients should be encouraged to run air conditioning systems and dehumidifiers as much as feasible. We do not yet know whether opening windows to allow fresh air to come into the home is beneficial.

For patients with chronic respiratory medical conditions (such as asthma or COPD):

- Be sure the patient understands that breathing sulfur gas can aggravate a medical condition.
- Advise the patient to keep inhalers and/or eye drops readily available for use, if needed.

Encourage patients to contact the CPSC (number below) and their state or local health departments to report the problem.

How do I treat my patients?

Although we cannot determine if drywall is responsible for individual health concerns, patients experiencing asthma attacks or aggravation of COPD and reporting worsening of symptoms when in their homes may be advised about the CPSC's recommendation for home remediation. The CPSC and the Florida Department of Health developed guides for residents to help them identify drywall problems available here:

CPSC: <http://www.cpsc.gov/info/drywall/how.html>

Florida: <http://www.doh.state.fl.us/environment/community/indoor-air/inspections.html>

Treat symptoms as you normally would. Additional guidance for treatment is available to health care providers 24 hours a day by contacting your regional Poison Control Center at 800-222-1222. A medical toxicologist is available to answer questions you may have.

What other problems should patients watch for in their home that may be related to this drywall?

Exposed metal wiring has been damaged in some homes with this drywall. The CPSC is investigating the possibility that fires may occur related to this corrosion. The CPSC is also investigating to determine whether smoke and carbon monoxide detectors are being damaged. People experiencing unusual electrical problems (such as malfunctioning appliances or light switches) should contact a licensed electrician.

For more information

U.S. Consumer Product Safety Commission
(for information and reporting a case):

- 800-638-2772 (general public)
- 800-638-8095 (physicians)
- <http://www.cpsc.gov/info/drywall/index.html>

U.S. Centers for Disease Control and Prevention
(for medical provider information):

- 800-CDC-INFO (800-232-4636)
- cdcinfo@cdc.gov
- <http://www.cdc.gov/nceh/drywall/>

American Association of Poison Control Centers
(for guidance on treating patients):

- 800-222-1222
- www.AAPCC.org