SAFE Medicine®
Protect Yourself from Medication Errors
The Institute for Safe Medication Practices
Volume 5 Issue 4 www.ismp.org July/August 2007

What you put on your skin can end up in your body

Medicines that come in creams, ointments, gels, sprays, and patches will enter your body through the skin and can cause a bad side effect if you use too much of the medicine. This can happen even if the medicine is only intended to treat a skin condition or numb the skin before a procedure.

Several years ago, two young college students in different states died after they applied a numbing gel to their legs to prepare for a laser hair removal procedure. The gel contained high doses of two numbing medicines, lidocaine and tetracaine. The gel was intended to help ease any pain associated with the procedure. One woman was given the gel by staff at the spa where she was planning to have the procedure, and the other woman picked up the gel from the pharmacy. Employees at the hair removal spas told the women to apply the gel to their legs before the procedure and to cover their legs in plastic wrap. Both women had a fatal reaction to the gel because too much medicine entered their bodies through the skin. One woman had a seizure in her car on the way to her appointment. She lapsed into a coma and died the next week. The other woman had a seizure and was on a ventilator (breathing machine) for 2 years before she died. The deadly reactions were caused by:

- High doses of the numbing medicines in the gel
- Applying the gel to very large areas of skin (from groin to ankle)
- Too much medicine entering the body because the tight plastic wrap had heated the skin and allowed more medicine than usual to absorb.

In another case, a 19-year-old college student died after a doctor sprayed too much numbing medicine in her throat. The student was a volunteer in a study looking at the effects of pollutants on the lungs. Repeated sprays of the numbing medicine, lidocaine, had been used when the student complained of pain during an inspection of her air passages with a medical instrument. The student's friend took her home after the procedure. She later had a seizure and died. The doctor did not realize how much of the medicine was actually entering her body.

> Medicines in creams, ointments, gels, and patches will enter your body just like medicines taken by mouth.

When using a skin patch, the medicine is intended to enter the body through the skin. The patch is changed every few days, once a week, or even once a month, depending on the specific drug in the patch. But adding a new patch without taking the old one off, or using a patch that contains more drug that you need, can cause serious harm. In one case, a man died after a doctor prescribed too much medicine in a fentanyl patch. The man had been given this patch to wear to help reduce pain after surgery. But this medicine is only supposed to be given to people with long-term pain who have already been taking high doses of pain medicine by mouth.

continued on page 2 ▶

Check it out!

When using medicines that come in gels, creams, ointments, sprays, or patches:

✓ **Follow directions.** Use the medicine exactly as stated on the label, or exactly as your doctor told you. Do not use more of the medicine than prescribed, and do not use it more often or longer than recommended. Do not use large amounts of numbing medicines on the skin.

✓ **Apply sparingly.** Apply creams, ointments, gels, and sprays only on the areas needed. Do not apply the medicine all over your body.

✓ **Avoid broken skin.** Apply medicine patches only on areas of the skin where there are no cuts or sores.

✓ **Do not use heat or tight bandages.** Do not apply a tight covering over skin creams, ointments, sprays, gels, or patches unless told to do so by your doctor. Tight bandages make the skin warmer, and heat increases the amount of medicine absorbed into the body. Do not apply heat (e.g., prolonged sunlight, hot tubs, tanning beds) without checking with your doctor.

✓ **Seek medical supervision.** Some cosmetic procedures may be performed without a medical doctor present (e.g., laser hair removal). Consider having a pharmacist or doctor first review any creams or ointments you are instructed to apply to the skin.

✓ **Ask for education.** Talk to a pharmacist when buying prescription and OTC creams, ointments, sprays, gels, and patches so you use the products safely.

Brand name medicines appear in green; generic medicines appear in red.

Risks with sleeping pills

A few months ago, the Food and Drug Administration (FDA) issued a news release to notify the public that makers of sleep medicines are now required to have a stronger warning label about possible risks. The involved sleep medicines are listed in the Table below.

Ambien/Ambien CR (**zolpidem**)
Butisol Sodium (**butabarbital**)
Carbrital (**pentobarbital** and **carbromal**)
Dalmane (**flurazepam**)
Doral (**quazepam**)
Halcion (**triazolam**)
Lunesta (**eszopiclone**)
Placidyl (**ethchlorvynol**)
Prosom (**estazolam**)
Restoril (**temazepam**)
Rozerem (**ramelteon**)
Seconal (**secobarbital**)
Sonata (**zaleplon**)

These risks include severe allergic reactions and sleep-related behaviors such as sleep-driving—driving while not fully awake after taking a sleep medicine and not remembering the driving event. Sleeping driving can happen if you do not get enough rest after taking a sleeping pill or if you take more pills than your doctor prescribed. It is important to remember that side effects can happen at anytime, including the first time you take the sleeping pill.

The FDA also asked the drug companies to develop **Patient Medication Guides** to inform consumers about these risks and advise them of additional precautions that should be taken. For more information, please visit the FDA Website at: www.fda.gov/bbs/topics/NEWS/2007/NEW01587.html.

Skin medicines continued

The dose of the drug in the patch was too high, so his breathing stopped during the first night he was home.

These examples all involve prescription medicines, but harm has also resulted from using too much over-the-counter (OTC) medicines applied to the skin. Last month, the death of a 17-year-old girl was blamed on the use of too much cream for muscle aches. She was a cross country runner and had been using the cream to soothe her aching legs after exercise. Heat and exercise can increase the amount of medicine entering your body. Her body apparently absorbed high levels of **methyl salicylate**, an anti-inflammatory medicine found in sports creams such as **Bengay** and **Icy Hot**. This was an unusual case because **methyl salicylate** poisoning is very rare. Using too much muscle cream over days or weeks is more dangerous than one-time use of a large amount of the cream.

The cases described above are examples of harm that can occur when applying too much medicine on the skin. Even though harm does not happen often, medicines in creams, ointments, gels, sprays, and patches can enter your body just like medicines taken by mouth. See **Check it out!** for recommendations to follow to reduce the risk of harm with medicines applied to the skin.

60-second safety tips

■ **Unsafe abbreviation.** A pregnant woman was given a prescription for "PNV" tablets. The doctor used this abbreviation for "prenatal vitamins." The pharmacist thought that "PNV" stood for "**penicillin VK**," an antibiotic, and filled the prescription with **penicillin** tablets in error. The woman's husband noticed the mistake before leaving the pharmacy. As we suggest all should do, he had read the label on the prescription bottle, opened the container, and looked at the medicine to make sure it was what he expected. When it wasn't, he brought his concern to the attention of the pharmacist.

■ **Substitutions can be sticky.** When a man arrived at a pharmacy to pick up a refill for **lactulose** (a common laxative), he was told that he needed a new prescription. There were no refills left on his previous prescription. The pharmacist suggested that he could use KARO corn syrup as a substitute for **lactulose** until he could get a new prescription. Karo corn syrup is an age-old remedy used for constipation. But **lactulose** has other uses and the man was actually taking it to treat a liver problem, not constipation. Luckily, the patient called his doctor about the suggestion and was told not to use the substitute. He was given a new prescription for **lactulose**. The man could have lapsed into a coma if he had stopped taking the **lactulose** for an extended period of time. You do not need to call your doctor if your pharmacist gives you a generic substitute of a medicine; generic and brand medicines contain the same ingredients. But if a totally different medicine or product is suggested, you should first check with your doctor.

Contact Information

Safe Medicine (ISSN 1550-6282)

Editors: Judy Smetzer, RN, BSN; Charlotte Huber, RN, MSN; Michael R. Cohen, RPh, MS, ScD, Russell Jenkins, MD. ISMP, 1800 Byberry Road, Suite 810, Huntingdon Valley, PA 19006. Email: consumer@ismp.org. To subscribe, visit: www.ismp.org/consumerarticles.

Brand name medicines appear in green; generic medicines appear in red.

Learn to read the label of your OTC medicine

Sales of over-the counter (OTC) medicines have increased by more than 60% over the last 15 years. Whether used to treat a cold, fever, headache, allergies, insomnia, or other common ailment, OTC medicines have been improving our health and comfort for years. When taken as directed, OTC medicines are relatively safe. But many contain powerful drugs, with risks as well as benefits to those who take them. One of the best ways to protect yourself from the more serious side effects of OTC medicines is to read and understand the information on the label. All OTC medicines have *Drug Facts* labels, where information is provided in a standard way so it is easier to find. The following sample of a *Drug Facts* label will help you learn about the important information provided on every OTC drug label.

Anatomy of an OTC medicine label

A Active Ingredients: The ingredients in the medicine that make it work in your body to relieve your symptoms or to bring about the desired effects. If taking more than one OTC medicine, the active ingredients should not be the same unless your doctor has told you to take them together.

B Uses: The symptoms or conditions that the medicine is approved to treat.

C Warnings: The safety instructions for when and when not to take the medicine. This includes:

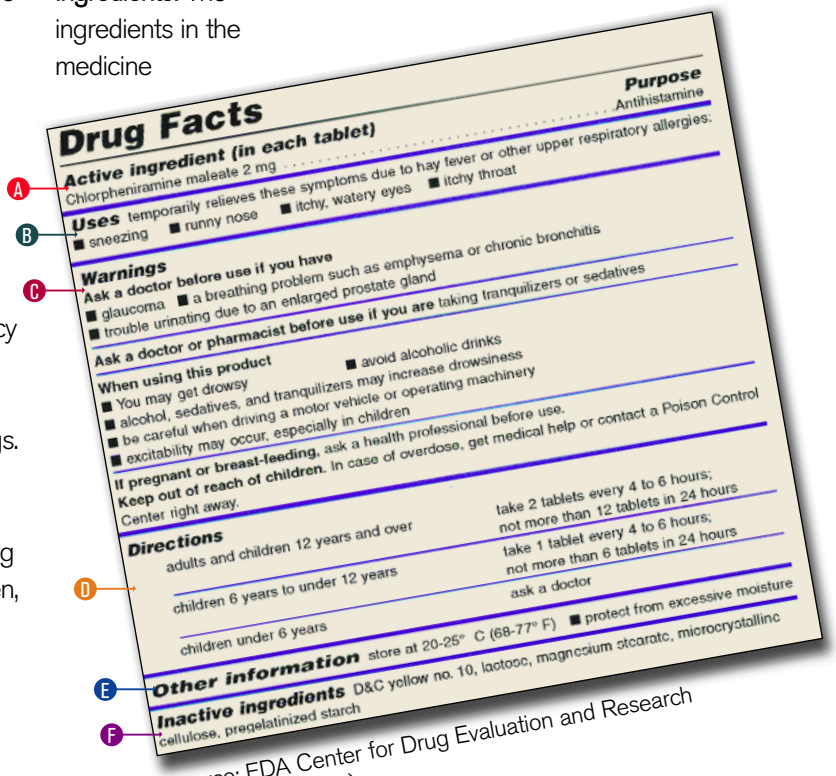
- Other medicines, foods, beverages (e.g., alcohol), and situations (e.g., driving) you shouldn't take or do while taking the medicine
- A list of other diseases that mean you should not take the medicine
- A list of other diseases to tell your doctor or pharmacist about before using the medicine
- Side effects you may experience while taking the medicine
- When you should stop taking the medicine and seek advice from your doctor
- Whether the medicine is safe to use during pregnancy or when breast-feeding
- Overdose warnings.

D Directions: Exact instructions regarding how much, how often, and how long you should take the medicine.

E Other information: Information about how to store the medicine or other important facts about the medicine not presented elsewhere on the label.

F Inactive Ingredients: The ingredients in the medicine that do not have an effect in your body but are used to make it and give it color. (Inactive ingredients like lactose and red dye can cause effects if the person is allergic to them.)

● Questions: Some labels also provide a telephone number in case you have questions about taking the medicine.



Source: FDA Center for Drug Evaluation and Research (www.fda.gov/cder)

The next time you're shopping for an OTC medicine, take time to read the label. The information presented will help you choose the most appropriate OTC drug for your needs, as well as help you use it safely.

The National Council of Patient Information and Education (NCPIE) began a national campaign several years ago, called "Be MedWise," to promote the safe use of OTC medicines. To learn more about taking OTC medicines safely, visit: www.bemedwise.org.