



OVER-THE-COUNTER MEDICINE SAFETY

LESSON 3: The Importance of Medicine Measuring Tools, Storage, and Safe Disposal

In this third lesson of the OTC Medicine Safety program, students will learn about accurate dosages, where to store medicine, and how to safely dispose of it.

Grades 7-8

Duration: 40 minutes

Pre-instructional Planning

OBJECTIVES

Students will:

- Identify information found in dosing instructions on drug facts labels (when, how, and how often to take the medicine)
- Explain the importance of reading and understanding dosing information and tools
- Discuss possible consequences of not following dosing instructions
- Describe what makes a location safe or unsafe for medicine storage and the consequences of improper storage
- Brainstorm ways students can talk to family members about safe medicine storage and safe disposal

MATERIALS

- Over-the-Counter Medicine Safety Classroom Poster printable
- Bottle for liquid medicine filled with colored water
- Dosing device that came with liquid medicine
- Kitchen spoons of different sizes
- Additional medicine bottle (spray or dropper) filled with colored water
- Accurate Medicine Dosing printable
- Is It Stored Safely? Printable
- Optional: Medicine Safety for Families Newsletter printable

During Instruction

SET UP

1. Emphasize to students that they should never take medicine without the supervision of a parent or trusted adult.
2. Make copies of the printables for each student in your class.

LESSON DIRECTIONS

Step 1: Begin with a class discussion about the importance of using the right tools when measuring different things. Ask students:

- If I wanted to measure how far it is from the school to my house, would I use a ruler? Why or why not?
- What are some different ways that people make mistakes when measuring things?

Step 2: Encourage students to think about why accurate measurements are important. Ask:

- When is it okay to get less-accurate measurements or to estimate?
- When is it important to get really accurate measurements? Why?

Step 3: Explain that students are going to learn why reading and understanding dosing instructions is important, and why medicines should always be measured using the proper dosing devices under adult supervision.

Step 4: Ask students to think back to the previous lesson on Obtaining Information From a Drug Facts Label.

- What types of measurements are used to measure doses of a medicine? (Answers may include milliliters, tablets, drops, sprays, etc.)

Step 5: Show students a medicine bottle that recommends a dose of 2 teaspoons of medicine. Then take out a handful of different-size household spoons, the kind that students might find in their kitchen drawers at home. Measure out 2 spoonfuls of “medicine” into any of the spoons, pouring the measured liquid into a dosing cup that has an accurate measurement for 2 teaspoons. Discuss the discrepancy with the class.

Step 6: Read the dosing information for the second medicine bottle (e.g. nasal spray or eye drops). Demonstrate that while it may be difficult for us to measure out 50 mcg of a nasal spray or 1 milliliter of eye drops, the provided dosing device eliminates any guesswork.

Step 7: Distribute the Accurate Medicine Dosing printable. Have students complete the worksheet either individually or as a class.

Step 8: Talk about how measuring doses incorrectly (measuring out tablespoons instead of teaspoons, for example) can cause an overdose or underdose. Reinforce the importance of always communicating with a trusted adult before taking any medicine.

Step 9: Ask students to name the locations where medicines are stored in their households. Write answers on the board. Common answers may include kitchen cabinet, bathroom cabinets, or parents' or trusted adult's bedroom. As students answer, ask for specifics.

- Are the medicines in drawers or cabinets or on the countertop?
- Are the medicines easy for young children to see or reach?

Get students thinking about how easy it is for young children in the house to find medicine. Explain that medicines need to be kept out of reach and sight of their naturally curious younger brothers and sisters, or young visitors to their home.

Step 10: Distribute the Is It Stored Safely? printable. Explain to students that they are looking at the inside of a home and it is their job to identify the medicine storage errors that could lead to accidental medicine poisoning.

Step 11: Ask students how their families get rid of unused medicine. Common answers may include putting the medicine in the trash or flushing the medicine.

Step 12: Explain to students that just as safe storage is important for keeping medicines away from people who shouldn't have them, safe disposal is also important. Before throwing away OTC medicines, mix them with an unappealing substance (such as kitty litter or coffee grounds) and place them in a closed container (such as a sealed plastic bag). The FDA has additional guidelines for certain prescription medicines (like disposal by flushing or using the National Take-Back Initiative). The Poison Control Center (1-800-222-1222) can answer any questions you have about how to dispose of medicines.

- Why do you think that the FDA has these guidelines for safe disposal of medicines?
- What could happen if a medicine is not disposed of properly?

Step 13: Have students develop a plan for teaching the concept of using correct measuring tools for medicines to a younger child.

LESSON EXTENSIONS

1. Ask students to create a tool or advertisement to help people remember how to keep a home medicine-safe. Some possibilities include:

- An idea for an app that can help families remember all of the ways to make a home medicine-safe. Research for the app idea may involve connecting with a local health expert (pharmacist, nurse, etc.).
- A jingle for the Poison Control Center's purpose and phone number
- A mnemonic device to remember the directions for safe medicine storage and disposal
- A survey to distribute to families to determine how medicine-safe their home is

HOME CONNECTIONS

If you haven't already, send home the Medicine Safety for Families Newsletter printable so students may continue the discussion at home. Encourage students to discuss what they have learned about the Poison Help number, to post the number in a visible place in their homes, and to get family members to save the number in their mobile phones.

Accurate Medicine Dosing

Directions Below is a sample dosing table for an over-the-counter (OTC) medicine, similar to the information you can find on a *Drug Facts* label. Use the table and your knowledge about medicine safety to answer the questions below.

Children under 6 years of age	Ask a doctor
Children 6 to under 12 years of age	<ul style="list-style-type: none"> • 2.5 mL (½ teaspoonful) two times per day. • Dosage may be repeated every 12 hours while symptoms last. • Do not give more than 5 mL (1 teaspoonful) in 24 hours.
Adults and children 12 years of age and over	<ul style="list-style-type: none"> • 5 mL (1 teaspoonful) two times per day. • Dosage may be repeated every 12 hours while symptoms last. • Do not take more than 10 mL (2 teaspoonfuls) in 24 hours.
Adults 65 years of age and over	<ul style="list-style-type: none"> • 5 mL (1 teaspoonful) two times per day. • Dosage may be repeated every 12 hours while symptoms last. • Do not take more than 10 mL (2 teaspoonfuls) in 24 hours.

Think It Through

1. Olivia is 13 years old. Yesterday, she took her first dose of medicine at 9 a.m. and took a second dose at 9 p.m. She wakes up at 5 a.m. because she is still not feeling better. She talks to her parents and says she should take another dose of medicine since a new day has started. Explain the error in Olivia's reasoning. Use evidence to support your answer.

2. Miguel is 11 years old. He and his parents are reading the directions in the dosing table above. Miguel says that since it is safe to take 2.5 mL twice a day, then he can take 5 mL once a day instead. Explain the error in Miguel's reasoning. Provide facts to support your answer.

3. Khadijah is reading the dosing table with her grandmother in the kitchen. Khadijah's grandmother says that the dosing cup that came with the medicine is in a cabinet upstairs. Khadijah says that they can use a household kitchen spoon to measure 1 teaspoonful of medicine instead. Explain the error in Khadijah's reasoning. Provide facts to support your answer.

Did you know? Nearly 90,000 kids annually, ages 19 and under, need medical help due to medicine mistakes or misuse.

According to the AAPCC National Poison Data System query parameters: 2011–2018 annual average, ages 0–19, all unintentional and intentional misuse reasons for pharmaceutical exposure, cases en route to a health care facility or treatment recommended by specialist in poison information, all outcomes.

Is It Stored Safely?

Directions Circle the six medicine storage errors in this picture. On the back of this sheet, describe safe storage solutions for the medicines pictured below to help make this home safer.



ANSWERS: 1. bottle of cough medicine on the counter and a teaspoon with a trace of medicine visible on spoon (should be put up and away); 2. medicine left out on the nightstand with dosage cup; 3. allergy medicine next to vase; 4. toiletry bag hanging low from doorknob inside closet; 5. medicine bottles visible and accessible inside kitchen cabinet below kitchen sink; 6. open purse with multivitamin bottle sticking out of the top.

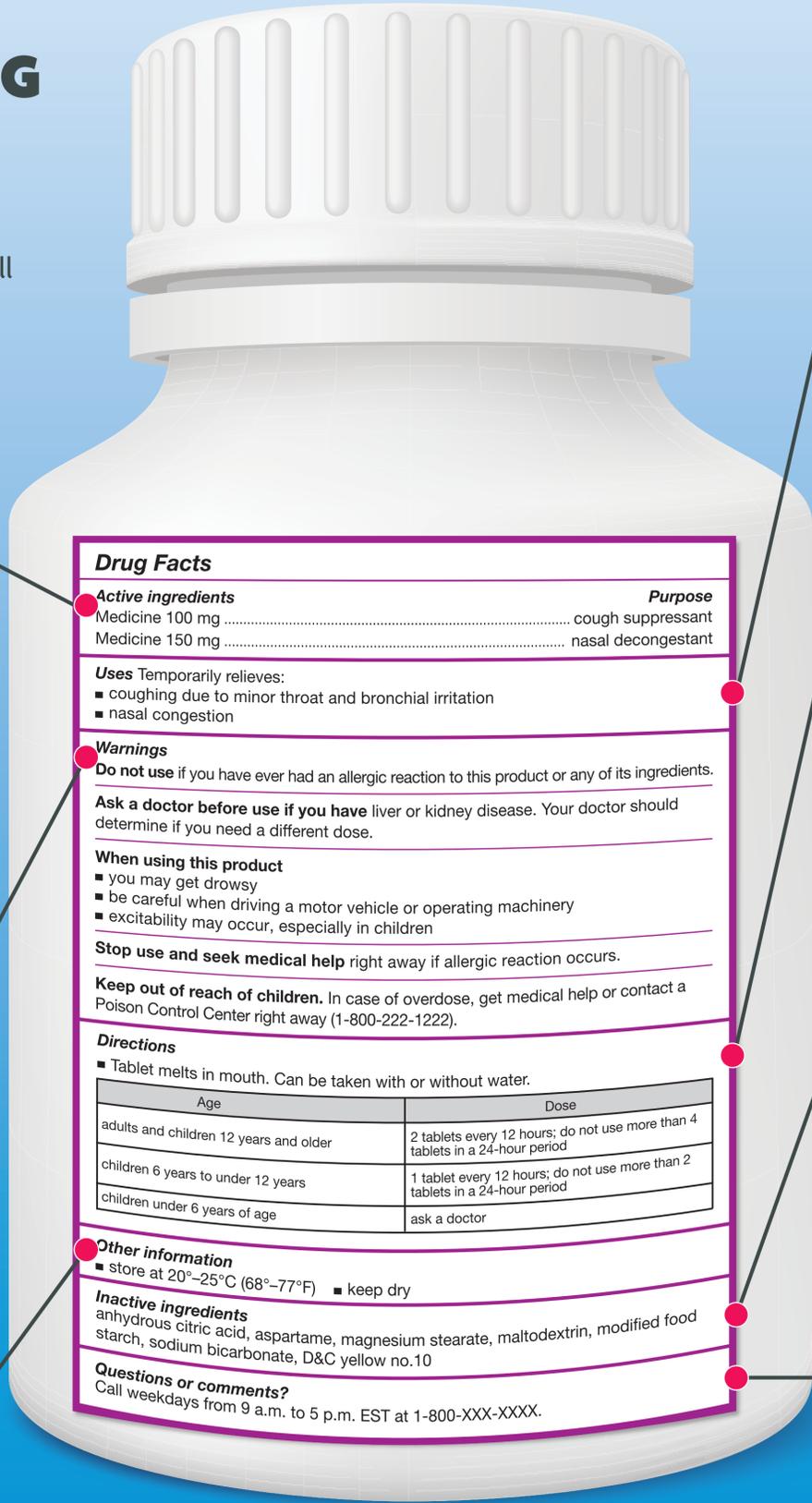
Test your knowledge of medicine safety at [ymiclassroom.com/video/jj-safestorage](https://www.ymiclassroom.com/video/jj-safestorage).



OVER-THE-COUNTER MEDICINE SAFETY

UNDERSTANDING THE LABEL

The *Drug Facts* label helps you understand the medicines that you take and how to take them safely. All medicines should be taken with the direct supervision of a parent or trusted adult.



ACTIVE INGREDIENTS

The ingredients in the medicine that make it work.



WARNINGS

Safety information, including side effects, the questions you should ask a doctor before taking the medicine, and which medicines to avoid using at the same time.



OTHER INFORMATION

How to store the medicine.

USES

Describes the symptoms that the medicine treats.



DIRECTIONS

Indicates the amount or dose of medicine to take, how often to take it, and how much you can take in one day.



INACTIVE INGREDIENTS

Ingredients not intended to treat your symptoms (e.g., preservatives, flavorings).



QUESTIONS OR COMMENTS?

Call the company if you have questions about a specific medicine.



This is not an actual *Drug Facts* label.

MEASURE IT CORRECTLY

To get an exact measurement, it is important to only use the dosing device that is provided with the medicine. The *Drug Facts* label tells you how much medicine you should take based on your weight and/or age. Take only one medicine with the same kind of active ingredient at a time.



FACT Household spoons come in various shapes and sizes, which means they hold different amounts of liquid.

ASK FOR HELP

Always talk with a parent or trusted adult to learn more about the responsible use of all medicines. Other resources include doctors, nurses, and pharmacists as well as your local poison control center.

In 2018, America's poison control centers managed

1.23 MILLION

medicine exposure cases involving children, tweens, and teens. About half of these exposures involved various medicines.¹

Poison Help
1-800-222-1222

DID YOU KNOW?

Poison control centers are staffed with experts including doctors, nurses, and pharmacists who can help answer questions about medicines or can provide help over the phone if you come in contact with a poison. Calls are free and private.

¹Source: American Association of Poison Control Centers' National Poison Data System. Data covers ages 0-19.



OVER-THE-COUNTER MEDICINE SAFETY FOR FAMILIES

Over 20,000 kids per year need medical help due to medicine mistakes or misuse.*

Download more **FREE** resources:
ymiclassroom.com/otcmedsafety-families



Support for the development of this education material was provided by

Johnson & Johnson CONSUMER INC.

*AAPCC National Poison Data System query parameters: 2011–2016 annual average, ages 0-19, all unintentional and intentional misuse reasons for pharmaceutical exposure, cases en route to a healthcare facility or treatment recommended by a specialist in poison information, all outcomes.

All program materials are FREE.



Keeping Your Children Medicine-Safe

As children get older, they often start to take on more responsibility—at home, at school, and even with their health. That is why it's so important for families to help children learn how to make safe choices.

Over-the-counter (OTC) medicines can be purchased from a store without a doctor's prescription, but they still need to be treated with the same amount of care! It is important to read and follow the *Drug Facts* label every time.

Medicine Action Plan

Create a medicine action plan to help keep everyone safe and healthy! Have your child check off each item as you complete it together.

- Which adults should your child talk to if he or she is sick and may need medicine? Provide options if a primary caregiver is unavailable.
- Where will medicines be stored in your home? Remember that they should be up, away, and out of sight!
- How will you make sure that each medicine and the dosing device it comes with are kept together?
- How will your family make sure that the child safety caps are locked on all medicines?
- How will you make sure that visitors keep all of their medicines out of children's reach and sight?
- Program the Poison Help number into your phone: **1-800-222-1222**. Bookmark the Interactive Poison Help Website: **poisonhelp.org**.

Get to Know Your Medicine Label

Work as a family to learn more about the children's OTC medicines that you have in your home. Answer these questions together:

- ▶ What are the active ingredients?
- ▶ Are any side effects listed (under "Warnings")?
- ▶ Where is the poison control number on this label?
- ▶ What is the correct dose for your child to take if he or she is sick?
- ▶ How frequently should your child take the medicine if he or she is sick?
- ▶ Is the dose or frequency different for a younger sibling?
- ▶ What type of medicine dosing device came with the medicine? (Make sure it is stored with the medicine!)



Get free, confidential answers to your medicine questions by calling



Medicine Storage and Disposal, Safe Use, and Misuse

Using the correct dose of medicine is a science—too little won't be effective, and too much could be harmful. It's also important to make sure that medicines are stored up, away, and out of sight, as well as disposed of properly (see bit.ly/fda-disposal).

Play the **Hidden Home Hazards** game as a family to learn about safe storage.

Medicine Safety Hunt

How safe is each room in your home? Work together as a family to make sure that all types of health-related items are up and away in a safe location. Look for all of the following:

- ▶ Liquid medicines
- ▶ Pills
- ▶ Medicated creams
- ▶ Cough drops
- ▶ Eye drops
- ▶ Vitamins
- ▶ Supplements
- ▶ Prescription medicines
- ▶ Other healthcare products or potentially dangerous products, such as detergent pods

1. Are all medicines up, away, and out of sight?
2. Is the medicine dosing device stored with the medicine?
3. When disposing of a medicine, do you follow the U.S. Food and Drug Administration's guidelines?
4. Is any medicine past its expiration date?

What Should You Do?

As a family, read each of the following scenarios about OTC medicines. Is this situation safe? Is this misuse? How should the characters handle the situation?

- ▶ Nikita has a headache. Last time she had a headache, her dad gave her some ibuprofen. He isn't home from work yet, so Nikita goes to the medicine cabinet and takes a couple of the pills without talking to her dad.
- ▶ Ruben is taking a dose of cough syrup under his mom's supervision. He forgot the dosing device in the cabinet, so he

grabs a spoon from the kitchen drawer to measure his dose of medicine.

- ▶ Every day, Angelica takes a once-a-day allergy medicine. Her mom always reminds her at breakfast. Today, though, it doesn't seem to be working. At lunchtime, Angelica takes another dose of the medicine so she will feel better faster.



Dosage Cup

the Poison Help number, 1-800-222-1222, or visit poisonhelp.org.



Our OTC Medicine Safety Checklist

- Read and follow the *Drug Facts* label every time.
- Measure carefully. Keep the medicine and the dosing device it comes with together. Never use household spoons to measure medicine.
- Check that all medicines, vitamins, and supplements are stored up, away, and out of sight of young children. Keep prescription medicines locked away.
- Ensure that the child safety caps are locked on all medicines.
- Remind visitors to keep luggage, purses, or anything else that might have medicines in it out of children's reach and sight.
- Medicines should only be taken with the supervision of an adult or trusted guardian. Communicate with other caregivers to prevent double-dosing errors.
- Make sure your children know that using OTC and prescription medicines incorrectly can cause harm.
- Program the Poison Help number into your phone: **1-800-222-1222**.
- Bookmark the Interactive Poison Help Website: **poisonhelp.org**.

Emergency Contacts

Post these numbers in a prominent place in your home. Remember to save them into your cell phone in case of emergency.

Family Doctor Name: _____

Phone Number: _____

Pharmacy Name: _____

Phone Number: _____



Poison Help Number: **1-800-222-1222**

Open 24 hours a day *every day of the year*. Calls are fast, free, and confidential.

Interactive Poison Help Website: **poisonhelp.org**

All of these resources and more are available for FREE:
ymiclassroom.com/otcmedsafety-families