

# Watch out for dangerous combinations of over-the-counter cold medicine and prescription drugs, say experts

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When colds, flus and allergies hit, many people automatically turn to over-the-counter medications to push through and treat their symptoms. These include decongestants, painkillers, cough or allergy medicines and combinations thereof. Nearly 70% of adults in the U.S. use over-the-counter medications as a first-line response for [treating cold and flu symptoms](#).

Although these medications are easily accessible and widely used, it might come as a surprise to many people to learn that they are not risk-free.

We are a [pharmacoepidemiologist](#) and pharmacist team and we investigate adherence to medications and potential harms of medications associated with drug-drug interactions. Pharmacoepidemiology is the study of medication use and treatment outcomes among large populations in real-world settings.

A 2021 study showed that from 2017 to 2019 in the U.S., approximately 6.1 of every 1,000 people [visited emergency rooms because of harms from medications](#). Of these emergency room visits, 38.6% led to hospitalization. More of these cases occurred in patients 65 and older than in younger populations.

Another study estimated that every year, 26,735 people went to the emergency room for [adverse events related to over-the-counter cold and cough medications](#). And more than 60% used the medications for reasons other than the medication's intended use.

## **The dangers of mixing medications**

When two or more drugs are used together, their interactions can sometimes [produce unexpected harmful effects](#). Pharmacists and physicians are typically knowledgeable about potential drug interactions,

so it is very important for patients to ask their [health care providers](#) which over-the-counter medications are safe for them to use.

It is important to read the package ingredients of over-the-counter medications closely to avoid duplication of doses. Cold medications are typically made up of multiple ingredients, including [pain relievers](#), nasal decongestants and cough suppressants or expectorants. A person who also takes a single-ingredient medication paired with one of these multi-ingredient formulations can receive an unsafe dose of that ingredient.

For example, acetaminophen, also known by its brand name Tylenol, is commonly taken as a single active ingredient in an acetaminophen pill. But acetaminophen is often added to multi-ingredient over-the-counter drugs as well. For instance, certain formulations of DayQuil, an over-the-counter medication for relief from cold and flu symptoms, contain acetaminophen along with a cough suppressant and a nasal decongestant. Doctors typically do not recommend using both single-ingredient Tylenol and DayQuil at the same time, as it increases the risk of adverse events like liver damage due to accidental overdoses. Signs and symptoms of an acetaminophen overdose include nausea, vomiting, abdominal pain and confusion.

It is also dangerous for patients who are using drugs called monoamine oxidase inhibitors—an early class of antidepressants that includes Marplan (isocarboxazid) and Nardil (phenelzine), among others—or tricyclic antidepressants in combination with [pseudoephedrine](#), [phenylephrine](#) or ephedrine, which are used to treat congestion. [Combining these decongestants](#) with monoamine oxidase inhibitors or tricyclic antidepressants could lead to very [high blood pressure](#) and heart rhythm problems.

Taking the opioid oxycodone at the same time as certain antidepressants can also be dangerous.

## Each person responds to drugs differently

In addition to the potential for drug-drug interactions or other adverse effects, these medications can affect certain people differently and may increase the risk of harm depending on a person's characteristics and age group. As we age, our bodies begin to lose the ability to efficiently clear drugs, which increases the risk of adverse events and unintentional overdoses.

Some drugs can be dangerous for people who have particular health conditions. For example, pseudoephedrine, phenylephrine and ephedrine [could increase blood sugar levels](#), so it is important that diabetic patients be careful when using them. In addition, since these drugs are associated with increased blood pressure, patients with hypertension, hyperthyroidism or heart disease should be careful when using them, or avoid them altogether.

While everyone could potentially experience adverse effects from cold and flu medications, some groups—including older adults, children and pregnant women—may be at greater risk.

Older people who are using prescribed drugs to treat multiple health conditions may have a higher risk of drug interactions because of the higher number of medications being used simultaneously to treat different conditions. The aging body is not as adept at absorbing, distributing and eliminating medications as younger bodies are. This can put [older adults](#) at higher risk for overdose and drug-to-drug interactions with some medications.

## Alternatives for children

The Food and Drug Administration and the Centers for Disease Control

and Prevention [do not recommend giving cold medications to children under age 4](#). Because of a variety of factors, young children have a [higher risk of accidental overdose and adverse events](#) that could lead to death.

For one, small bodies respond to dosages differently—the same dose in a child can lead to higher blood concentration of a drug than it would in an adult. In addition, as the child develops, organs mature at their own pace, and changes in the body composition are observed. So in addition to a child's size, prescribers need to take into consideration the developmental stage of the child. And [some drugs are not even recommended for kids](#), as they haven't developed the necessary mechanisms to process the drug.

However, [there are some safer alternatives](#). Research has shown that honey can be helpful for [reducing cold and flu symptoms](#) in children older than age 1.

Nasal saline, a salt solution used to clean the nasal passages to improve nasal airflow, can help alleviate congestion and nasal drip. And certain creams and ointments containing the soothing compounds camphor, menthol or eucalyptus oils can sometimes be effective at [reducing cough, congestion and sleep difficulties](#).

## **Pregnancy best practices**

Some of the components commonly used in cold medicines are not recommended during pregnancy, as they can put not only the mother at risk but also the fetus. Acetaminophen is [the doctor-recommended over-the-counter medication](#) for management of pain and fever at any stage of pregnancy. But acetaminophen should be used only when needed and taken minimally, from one-time use to a few days at the most.

Any other pain relievers or anti-inflammatory medicine such as ibuprofen, ketoprofen, naproxen and aspirin [should not be taken during pregnancy without a doctor's approval](#). These drugs, with the exception of aspirin, are known as nonsteroidal anti-inflammatories, or NSAIDs. They are associated with [various adverse effects in the unborn baby](#), such as kidney failure and reduced amount of amniotic fluid.

For symptoms such as nasal congestion during pregnancy, a decongestant called oxymetazoline in its intranasal form is [the drug of choice](#). But it is also critically important to use this drug as recommended by a physician, because it is suspected that, in certain settings, it may have some adverse effects on placental and uterine blood flow.

For your safety, always ask your pharmacist or health care provider about the risks and dangers of taking multiple medications at the same time.

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