

# Public confused about ingredients in pain relievers

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People take billions of doses of over-the-counter pain relievers like Tylenol every year, but many do not pay attention to the active ingredients they contain, such as acetaminophen, according to a new Northwestern Medicine study. That lack of knowledge about popular pain relievers plus particular ignorance of acetaminophen's presence in more than 600 over-the-counter and prescription medicines could be a key reason acetaminophen overdose has become the leading cause of acute liver failure in the U.S.

The study reported only 31 percent of participants knew Tylenol contained [acetaminophen](#). In addition, 75 percent of participants knew Bayer contained aspirin; 47 percent knew Motrin contained ibuprofen; 19 percent knew Aleve contained naproxen sodium; and 19 percent knew Advil contained ibuprofen.

The solution proposed by the researchers is to develop a universal icon for acetaminophen that would appear on all medicine labels.

"It's incredibly alarming," said Michael Wolf, an associate professor of medicine at Northwestern University Feinberg School of Medicine and senior author of the study that will be published May 3 in the [American Journal of Preventive Medicine](#).

"People may unintentionally misuse these medicines to a point where they cause severe liver damage," Wolf said. "It's easy to exceed the safe limit if people don't realize how much acetaminophen they are taking."

Unlike prescription products, there is no gatekeeper, no one monitoring how you take it."

Individuals don't understand they may be taking the drug simultaneously in multiple medications, said Jennifer King, lead author of the paper and project leader for medication safety research in Feinberg's [Health Literacy](#) and Learning Program.

The study found only 41 percent of participants read the ingredients on drug labels.

"When you have pain, you aren't paying attention to what's in a medicine, you just want relief," King said. "People think 'if I can buy it without a prescription, it can't be harmful'. They don't realize exceeding the maximum dose can cause liver damage."

It may also be difficult to identify the drugs in some medicine. Acetaminophen is called APAP on prescription medications. "It's confusing, so even if a person is looking for acetaminophen on the label, she wouldn't know APAP is the same ingredient in her Tylenol," King said.

In addition to proposing a universal icon for acetaminophen on all medications, consumer focus groups suggested manufacturers place an icon on Tylenol that resembles a red stop sign indicating the maximum dose in 24 hours. Consumers also said they would like to see a more clear warning about potential [liver damage](#) on the package.

Wolf and King launched the study after a Food and Drug Administration panel in 2009 determined there was little concrete evidence showing how consumers misuse over-the-counter products. The Feinberg School team focused on acetaminophen because its misuse was of particular interest to the FDA.

Researchers interviewed 45 individuals in six focus groups during 2010 in Chicago and Atlanta. The interviews evaluated knowledge of over-the-counter [pain relievers](#), attention to product label information and literacy level. Forty-four percent of participants, all English speakers, read at or below the sixth-grade level -- a low-literacy group at highest risk for drug misuse.

Provided by Northwestern University

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