

Choosing over the counter drugs for COVID 19? It's complicated

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Researchers take a closer look at both the potential benefits and risks of acetaminophen, non-steroidal anti-inflammatory drugs (NSAIDs)—such as ibuprofen, as well as aspirin for the selection of OTC drugs to treat mild symptoms of COVID-19. Credit: Florida Atlantic University

COVID-19 illness may include symptoms such as a sore throat, fever, cough, and fatigue. In January, the United States Centers for Disease Control and Prevention (CDC) issued its most recent guidelines for the use of over-the-counter (OTC) drugs for COVID-19. Specifically, its guidelines state that most people with COVID-19 have mild illness and can recover at home while treating symptoms with OTC medicines such as acetaminophen (Tylenol) or ibuprofen (Motrin, Advil).

Researchers from Florida Atlantic University's Schmidt College of Medicine and academic colleagues say it's more complicated. They suggest that selecting an OTC medication to alleviate mild symptoms of COVID-19 should be based on the entire benefit-to-risk profile of the patient. Moreover, they say the health care provider should make [clinical decisions](#) for each of his or her patients.

In a review [published](#) in *The American Journal of Medicine*, researchers take a closer look at both the [potential benefits](#) and risks of acetaminophen, [non-steroidal anti-inflammatory drugs](#) (NSAIDs)—such as ibuprofen, as well as aspirin for the selection of OTC drugs to treat mild symptoms of COVID-19.

Traditional nonspecific NSAIDs, such as shorter-acting ibuprofen and longer-acting naproxen, have been used to treat COVID-19. These widely used OTC drugs reversibly and non-specifically inhibit both cyclooxygenase enzyme isoforms. This results in a systematic reduction in the synthesis of prostaglandins, resulting in anti-inflammatory and fever-reducing effects.

The researchers caution, however, that both ibuprofen and naproxen have similar but greater side effect profiles than aspirin, such as gastroenteritis and peptic ulcers.

Acetaminophen is one of the most frequently used OTC drugs in the

U.S. and worldwide as a treatment for fever, allergic symptoms, headaches, myalgia, symptoms of the common cold, and, most recently, COVID-19. Acetaminophen was originally marketed as an alternative to aspirin for the treatment of mild to moderate pain based on reduced mucosal gastrointestinal side effects.

The authors caution that even at daily doses of 4,000 milligrams per day, generally accepted as safe for adults, acetaminophen can be toxic to the liver and may result in the onset of acute liver failure. In the U.S., acetaminophen is the leading reason for calls to Poison Control Centers, with more than 100,000 cases per year. These circumstances account for more than 2,600 hospitalizations and 450 deaths in the U.S. due to acute liver failure.

Aspirin, or [acetylsalicylic acid](#), inhibits the production of prostaglandins, which are responsible for mediating pain, inflammation, and fever. The authors say that the beneficial effects of aspirin include anti-platelet, analgesic, antipyretic or anti-fever, and anti-inflammatory properties. Aspirin is rapidly absorbed when taken orally and has a half-life of around four hours, after which the kidneys mostly metabolize it.

The researchers note that the anti-inflammatory benefits of aspirin should provide symptomatic relief of fever and body aches during COVID-19. They underscore, however, that health providers should view these in the context of the increased risks of bleeding, principally gastrointestinal. Further, COVID-19 itself may already predispose individuals to bleeding as well as to clotting abnormalities.

"We believe that health care providers should make individual clinical judgments for each of his or her patients in the selection of OTC drugs to treat symptoms of COVID-19. This judgment should be based on the entire benefit-to-risk profile of the patient," said Charles H. Hennekens, M.D., Dr.PH, senior author, first Sir Richard Doll Professor, and senior

academic advisor in FAU's Schmidt College of Medicine.

"It is our belief that the individual [health care provider](#) knows far more about each of his or her patients than anyone, including expert members of guideline committees."

The authors conclude that when the totality of evidence is complete, health care providers can make the most rational individual clinical judgments for their patients and policymakers for the health of the general public.

The authors believe that, at present, the totality of evidence is incomplete and requires reliable evidence from large- scale randomized trials designed a priori to do so, which is necessary to develop rational guidelines. They also believe that any guidelines should provide only guidance to health care providers. Currently, these considerations pose new clinical challenges for health care providers in prescribing OTC drugs to treat COVID-19.

"The astute and judicious individual clinical decision-making of health care providers for each individual patient based on all these considerations has the potential to do far more good than harm. Finally, guidelines should provide guidance to individual health care providers," said Hennekens.

More information: Gage Collamore et al, Guidance for healthcare providers on newest guidelines for over-the-counter drug treatment of mild symptoms of COVID-19. (word count=18; limit=20), *The American Journal of Medicine* (2024). [DOI: 10.1016/j.amjmed.2024.03.003](https://doi.org/10.1016/j.amjmed.2024.03.003)

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