

# Study finds ibuprofen does not increase risk of death from COVID-19

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A new study conducted during the height of UK hospital admissions from COVID-19 has found that the regular use of painkillers including ibuprofen, naproxen and diclofenac did not increase the risk of death

from the disease.

Published in the *Journal of Clinical Medicine*, the study is the first to report on routine non-steroidal inflammatory drugs (NSAIDs) and their impact on patients hospitalized with COVID-19 in eight UK hospitals.

Since the start of the pandemic there has been much speculation on the use of NSAIDs, which are commonly used drugs for pain and inflammation including ibuprofen, naproxen and diclofenac, and their potential role in negative outcomes for patients.

In the early stages of the crisis, a number of European authorities, including those in France and Belgium, issued federal reports suggesting that the use of NSAIDs in COVID-19 infection might adversely affect patients' clinical course and recovery.

Current UK guidance through the Commission on Human Medicines states that there is [insufficient evidence](#) to establish a link between use of ibuprofen and susceptibility to contracting COVID-19 or the worsening of its symptoms.

The study's authors drawn from the University of Aberdeen, Cardiff University, King's College London and UK health trusts and hospitals, say considerable uncertainty regarding the use of common NSAIDs and their effect on COVID-19 has remained.

Professor Phyo Myint, senior author of the study, from the University of Aberdeen, said: "There has been much speculation about the potential role of non-steroidal inflammatory drugs (NSAIDs), which increase the expression of angiotensin converting enzyme 2 (ACE2), a molecule which sits on cell surfaces within the body and acts as the doorway for COVID-19 to enter.

"It has therefore been postulated that NSAID use could result in a higher viral infective load in the [respiratory tract](#) but much of the existing research in this area primarily references respiratory viruses other than COVID-19, such as severe acute respiratory virus (SARS) and Middle Eastern respiratory syndrome (MERS). As a result, the findings of these studies may not be applicable in COVID-19 infection and new research is needed. Our study looked specifically at hospitalized patients with COVID-19 infection in UK hospitals during the peak of the initial wave of the epidemic."

The researchers assessed the outcomes for more than 1,200 patients admitted to eight hospitals around the UK and found no clear evidence that routine NSAID use was associated with higher COVID-19 mortality.

Of those, 54 (4.4%) were routinely prescribed NSAIDs prior to admission and the team looked at the number, type and dose of anti-inflammatory that each patient was taking prior to admission.

Topical NSAIDs such as ibuprofen gels were not included due to their low level of systemic absorption and consequential limited systemic effects.

The death rate for those who took NSAIDS were broadly similar to patients who did not, after controlling for other important risk factors such as age, and pre-existing health conditions such as diabetes and hypertension, smoking status, and kidney function.

Dr. Eilidh Bruce, an Academic Trainee, who led the study added: "Our findings show no significant negative effect of routine NSAID use on mortality in patients with COVID-19 infection. Indeed, a modest beneficial effect of routine NSAID use on mortality may well exist but our sample size was not sufficient to draw conclusions regarding this and

further evidence is required to explore this possible correlation and subsequently guide public health policy. Our study has provided novel information into the impact of NSAID use and outcomes of COVID-19 disease, during a pandemic where there has been much uncertainty. NSAIDs are one of the most commonly prescribed and used pain medications worldwide, for both acute pain and chronic conditions such as rheumatological diseases and osteoarthritis. Based on our results, patients and clinicians should not associate the routine use of NSAIDs with an increased risk of mortality in COVID-19 disease, and so we recommend that patients continue to comply with their baseline drug regime. However, we must also stress that our results specifically apply to the routine use of NSAIDs in patients who then develop COVID-19 infection. These results do not signify the safety of acute NSAID use in the context of COVID-19 disease."

**More information:** Eilidh Bruce et al. Prior Routine Use of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) and Important Outcomes in Hospitalized Patients with COVID-19, *Journal of Clinical Medicine* (2020). [DOI: 10.3390/jcm9082586](https://doi.org/10.3390/jcm9082586)

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