



COVID-19

# SBAR NSAID use in COVID-19

**Situation:** Recent articles in popular press suggest avoiding NSAIDs in COVID-19, leading to a need for clarification on management recommendations.

**Background:** NSAIDs (ibuprofen, motrin) are commonly used in addition to acetaminophen (tylenol) to provide pain and fever relief in viral and bacterial infections. Recent articles in press/media have warned against this use for COVID-19.

**The New York Times France Warns Against Use of Anti-Inflammatory Drugs to Tackle Coronavirus March 14, 2020**

"Taking anti-inflammatory drugs (ibuprofen, cortisone ...) could be an aggravating factor for the infection. If you have a fever, take paracetamol," Oliver Veran- French Health Minister

**The Guardian March 16, 2020 Health experts criticise NHS advice to take ibuprofen for Covid-19.**

"A trial by Little and his colleagues, published in the BMJ, found patients with respiratory infections such as coughs, colds and sore throats who were prescribed ibuprofen rather than paracetamol by their general practitioner were more likely to subsequently suffer severe illness or complications.. Little said this could be because inflammation is part of the body's natural response to infection. "If you're suppressing that natural response, you're likely inhibiting your body's ability to fight off infection," he said. The evidence in this area was "not 100% clear" and had not come directly from studies of patients with Covid-19, Little said. "I personally think that given there is plausible evidence for harm, the advice should be changed."

**Los Angeles Times March 18, 2020 There's no good reason to avoid ibuprofen if you're infected with the coronavirus**"More research is needed to evaluate reports that ibuprofen may affect the course of COVID-19," the National Institute for Allergy and Infectious Diseases said in an emailed response. "Currently, there is no evidence that ibuprofen increases the risk of serious complications or of acquiring the virus that causes COVID-19."

**Press statement 3-17-20** WHO spokesman Christian Lindmeier told reporters in Geneva the UN health agency's experts were "looking into this to give further guidance." "In the meantime, we recommend using rather paracetamol [acetaminophen] and do not use ibuprofen as a self-medication. That's important," he said..He added that if ibuprofen had been "prescribed by the healthcare professionals, then, of course, that's up to them."

**Press statement 3-19-2020** "Based on currently available information, WHO does not recommend against the use of ibuprofen," the [United Nation's health agency said in a statement](https://news.abs-cbn.com/overseas/03/19/20/who-backpedals-no-scientific-evidence-ibuprofen-worsens-covid-19). <https://news.abs-cbn.com/overseas/03/19/20/who-backpedals-no-scientific-evidence-ibuprofen-worsens-covid-19>

**Lancet letter to editor** (Fang, 2020): COVID-19 enters cell through ACE2. Ibuprofen upregulates ACE2. Theoretical risk to worsen disease if using ibuprofen (letter was primarily focused on anti-hypertension meds). No corresponding study. (1)

The **European Medicines Agency** (European equivalent of our FDA) states: There is currently NO scientific evidence establishing a link between ibuprofen and worsening of COVID-19 <https://www.ema.europa.eu/en/news/ema-gives-advice-use-non-steroidal-anti-inflammatories-covid-19>

**Studies re: ibuprofen use in viral infections (general, not COVID-19 specific):** Observational studies of patients with viral infections or bacterial pneumonia have *associated* NSAID use with worse outcomes, such as increased risk for progression to empyema. Randomized trials are needed in order to show causation- 2 have been conducted. Little et. al. found that ibuprofen *improved* symptoms severity in the short term (reported by patient diary, compared with paracetamol [acetaminophen]) but the ibuprofen group had increased likelihood to return for complications or worsened disease. Key studies: (2-7)



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# SBAR NSAID use in COVID-19 *continued*

**Assessment:** There is currently NO scientific evidence establishing a link between ibuprofen and worsening of COVID-19. There might be a **theoretical** risk specific to COVID-19 that ibuprofen may worsen disease. There is correlation (not causation) that ibuprofen in general viral/bacterial infections may be associated with progression to more severe disease.

## **Recommendation:**

- **Consider the use of acetaminophen over NSAIDs in patients with COVID-19.**
- **If acetaminophen is used, consider NSAIDs if breakthrough fevers impairing sleep or other indications where risk: benefit ratio is in favor of use.**
- **Scripting “: If your child has a fever, we recommend using Tylenol (acetaminophen) first. There has been some concern that ibuprofen (Advil/Motrin) worsens COVID19 symptoms, however there is no scientific evidence for that as of March 19, 2020.”**

## **References**

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Website with breakdown and pictures explaining ACE2 and COVID-19: Sparks MA, Hiremath S et al. "The Coronavirus Conundrum: ACE2 and Hypertension Edition" *NephJC* <http://www.nephjc.com/news/covidace2> accessed March 17, 2020

SBAR prepared 3-17-2020 by Gabrielle Hester MD, MS and Brooke Moore, MD. *Disclaimer: This guideline is designed for general use with most patients; each clinician should use his or her own independent judgment to meet the needs of each individual patient. This guideline is not a substitute for professional medical advice, diagnosis or treatment.*