



Patient Information:
Proton Pump Inhibitors and Risk of COVID-19
Advice from Digestive Disease Experts from the American College of Gastroenterology

What are proton pump inhibitors (PPIs)?

- PPIs are medicines that strongly block acid production in the stomach. They are available over-the-counter or through a prescription from a doctor.
- Examples of PPIs include dexlansoprazole (Dexilant[®]), esomeprazole (Nexium[®]), lansoprazole (Prevacid[®]), omeprazole (Prilosec[®] or Zegerid[®]), pantoprazole (Protonix[®]), and rabeprazole (Aciphex[®]).
- PPIs can be very effective in treating symptoms such as acid reflux, heartburn, and belly pain, and treat and protect from acid complications such as ulcers.

What is the link between PPIs and COVID-19?

- Normally, stomach acid helps keep your digestive system free of infections by killing viruses and bacteria that you might swallow in your saliva or in food.
- Multiple prior studies have shown that PPIs slightly increase the risk of gastrointestinal infections like food poisoning or traveler's diarrhea. This is likely because PPIs reduce the amount of acid produced by your stomach.
- Earlier research also shows that stomach acid can kill coronaviruses.
- Since the virus that causes COVID-19 can enter the body through the digestive system—not just the respiratory system—it is possible that decreased stomach acid from PPIs could make it easier for coronavirus to invade and spread within the body.
- In a large, nationwide survey of over 53,000 Americans published in *The American Journal of Gastroenterology*, people taking PPIs had higher odds for reporting a positive COVID-19 test.
- The highest risk was seen among those taking PPIs twice a day. This group had almost 4-times the odds of being positive for COVID-19 when compared to people not using PPIs.
- Importantly, this study was not a randomized, controlled trial; it does not definitively prove that PPIs increase the risk for COVID-19.
- Future research is needed to confirm the findings in this new study.

Do patients need to stop their PPIs right now because of these new findings?

- Patients should not immediately stop their PPIs as there are many important reasons to be on a PPI.
- As with any medicine, patients should discuss the benefits and risks of taking PPIs with their doctor before making any treatment changes. It may be helpful to consider these questions:
 - Why am I taking a PPI in the first place? Is it helping me feel better? If so, then the benefits of using the PPI are probably much greater than the potential risk of PPI lowering resistance to COVID-19.
 - If I am taking a PPI twice a day, should I consider taking it once a day instead? The largest risk of COVID-19 was among people taking double-doses of PPI, so it is always reasonable to re-consider whether you need twice-daily treatment.

- If I need a medication to reduce stomach acid, might I be able to use a less potent acid-blocker like a H2 blocker (e.g., cimetidine [Tagamet®] or famotidine [Pepcid®]) instead of a PPI? H2 blockers are not as strong as PPIs in reducing acid and did not increase risk of COVID-19 in the study.
- For patients concerned about COVID-19 who need to continue a PPI for an appropriate reason, it is important to remember that the best ways to reduce the risk of getting COVID-19 include:
 - regular hand washing
 - social distancing
 - wearing a mask when around others
- Following recommended public health practices will have a much greater impact on personal risk of COVID-19 than PPI dosing. The knowledge from this study could help by reminding users to be especially vigilant about following these protective health behaviors.

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