

Ivermectin and COVID-19

INFORMATION FOR HEALTH CARE ORGANIZATIONS AND PROVIDERS

4/20/2022

The Minnesota Department of Health (MDH) does not recommend the use of ivermectin for the prevention or treatment of COVID-19. This position is consistent with that of other medical and public health organizations, including the National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), Infectious Disease Society of America (IDSA), and American Medical Association (AMA).

Key messages

- Ivermectin is not approved by the Food and Drug Administration (FDA) for the prevention or treatment of COVID-19.
- MDH and other U.S. health organizations recommend against its use for these purposes.
- Available data demonstrates there is no benefit associated with ivermectin when taken for the prevention or treatment of COVID-19.
- The use of ivermectin for COVID-19 treatment is being further studied in controlled clinical trials.
- The use of ivermectin without the oversight of a health care provider or at unapproved doses can lead to serious health complications and death.

What is ivermectin?

Ivermectin is a drug that is FDA-approved for treatment of parasitic diseases such as onchocerciasis (river blindness) and strongyloidiasis (round worm infections) in humans. Topical forms of ivermectin can also be used to treat head lice and rosacea. Ivermectin is also approved for veterinary use to prevent heartworm disease in dogs and cats and to treat parasitic diseases of multiple animal species, including livestock.

The FDA has not authorized or approved the use of ivermectin for prevention or treatment of COVID-19 in humans or animals.

Studies of ivermectin and COVID-19

While some studies have reported ivermectin activity against SARS-CoV-2 in vitro,¹ other pharmacokinetic and pharmacodynamic studies suggest the plasma concentrations needed to achieve the level of antiviral efficacy detected in vitro would require administration of doses up to 100-fold higher than those approved for use in

humans.^{2,3} Several studies have reported no clinical change or worsened outcomes among patients with confirmed COVID-19 who took ivermectin.⁴⁻⁸ Studies that did report clinical benefit from ivermectin had several methodological limitations, including small sample size, varied dosing regimens, concomitant medication administration resulting in the potential for confounding, and non-blinded status of researchers and participants.⁹ Clinical trials assessing ivermectin tablets for the prevention or treatment of COVID-19 in people are ongoing.¹⁰

Potential harms of ivermectin use

Administration of ivermectin without oversight of a medical provider, or through preparations intended for use in animals, can result in elevated blood and tissue levels of ivermectin, leading to nausea, vomiting, diarrhea, hypotension, allergic reactions, dizziness, ataxia, seizures, coma, and death. Even when taken at doses approved for human consumption, ivermectin can interact with other medications, including certain blood thinners.

Resources

[AMA. AMA, APhA, ASHP statement on ending use of ivermectin to treat COVID-19 \(www.ama-assn.org/press-center/press-releases/ama-apha-ashp-statement-ending-use-ivermectin-treat-covid-19\)](http://www.ama-assn.org/press-center/press-releases/ama-apha-ashp-statement-ending-use-ivermectin-treat-covid-19)

[FDA: Why You Should Not Use Ivermectin to Treat or Prevent COVID-19 \(www.fda.gov/consumers/consumer-updates/why-you-should-not-use-ivermectin-treat-or-prevent-covid-19\)](http://www.fda.gov/consumers/consumer-updates/why-you-should-not-use-ivermectin-treat-or-prevent-covid-19)

[FDA FAQ: COVID-19 and Ivermectin Intended for Animals \(www.fda.gov/animal-veterinary/product-safety-information/faq-covid-19-and-ivermectin-intended-animals\)](http://www.fda.gov/animal-veterinary/product-safety-information/faq-covid-19-and-ivermectin-intended-animals)

[IDSA Guidelines on the Treatment and Management of Patients with COVID-19 \(www.idsociety.org/practice-guideline/covid-19-guideline-treatment-and-management/\)](http://www.idsociety.org/practice-guideline/covid-19-guideline-treatment-and-management/)

[NIH: Coronavirus Disease 2019 \(COVID-19\) Treatment Guidelines \(www.covid19treatmentguidelines.nih.gov/\)](http://www.covid19treatmentguidelines.nih.gov/)

References

1. Caly L, Druce JD, Catton MG, Jans DA, Wagstaff KM. [The FDA-approved drug ivermectin inhibits the replication of SARS-CoV-2 in vitro \(www.ncbi.nlm.nih.gov/pubmed/32251768\)](http://www.ncbi.nlm.nih.gov/pubmed/32251768). *Antiviral Res.* 2020;178:104787.
2. Chaccour C, Hammann F, Ramon-Garcia S, Rabinovich NR. [Ivermectin and COVID-19: Keeping Rigor in Times of Urgency \(www.ncbi.nlm.nih.gov/pubmed/32314704\)](http://www.ncbi.nlm.nih.gov/pubmed/32314704). *Am J Trop Med Hyg.* 2020;102(6):1156-1157.
3. Guzzo CA, Furtek CI, Porras AG, et al. [Safety, tolerability, and pharmacokinetics of escalating high doses of ivermectin in healthy adult subjects \(www.ncbi.nlm.nih.gov/pubmed/12362927\)](http://www.ncbi.nlm.nih.gov/pubmed/12362927). *J Clin Pharmacol.* 2002;42(10):1122-1133.
4. Ahmed S, Karim MM, Ross AG, et al. [A five-day course of ivermectin for the treatment of COVID-19 may reduce the duration of illness \(www.ncbi.nlm.nih.gov/pubmed/33278625\)](http://www.ncbi.nlm.nih.gov/pubmed/33278625). *Int J Infect Dis.* 2020;103:214-216.
5. Chachar AZK, Khan KA, Asif M, Tanveer K, Khaqan A, Basri R. [Effectiveness of Ivermectin in SARS-COV-2/COVID-19 Patients \(www.ijsciences.com/pub/article/2378\)](http://www.ijsciences.com/pub/article/2378). *Int J of Sci.* 2020;9:31-35.
6. Chowdhury ATMM, Shahbaz M, Karim MR, Islam J, Guo D, He S. [A Randomized Trial of Ivermectin-Doxycycline and Hydroxychloroquine-Azithromycin therapy on COVID19 patients \(www.researchsquare.com/article/rs-38896/v1\)](http://www.researchsquare.com/article/rs-38896/v1). *Research Square.* 2020; Preprint.

7. Soto-Becerra P, Culquichicón C, Hurtado-Roca Y, Araujo-Castillo RV. Real-world effectiveness of hydroxychloroquine, azithromycin, and ivermectin among hospitalized COVID-19 patients: results of a target trial emulation using observational data from a nationwide healthcare system in Peru (www.medrxiv.org/content/10.1101/2020.10.06.20208066v3). *medRxiv*. 2020; Preprint.
8. Reis, et al. Effect of Early Treatment with Ivermectin among Patients with COVID-19 (www.nejm.org/doi/full/10.1056/NEJMoa2115869). *New England Journal of Medicine*. DOI: 10.1056/NEJMoa2115869.
9. NIH: Ivermectin (www.covid19treatmentguidelines.nih.gov/therapies/antiviral-therapy/ivermectin/)
10. NIH Clinicaltrials.gov: Ivermectin and COVID-19 clinical trials (www.clinicaltrials.gov/ct2/results?cond=COVID-19&term=ivermectin)



Minnesota Department of Health | health.mn.gov | 651-201-5000
625 Robert Street North PO Box 64975, St. Paul, MN 55164-0975

Contact health.communications@state.mn.us to request an alternate format.