

# Making Sense of COVID-19 Scientific Studies

It has been said that a little bit of knowledge is a dangerous thing. That thought seems particularly pertinent as we struggle to understand COVID-19.

With the coronavirus threatening our health, safety, and economy, it's not surprising that more laypeople are reading scientific studies for the first time. Given the 24/7 news cycle, they have plenty of information at their fingertips.

Carl I. Schulman, M.D., M.S.P.H., Ph.D., urges caution. An epidemiologist and critical care physician and surgeon, Dr. Schulman works at the University of Miami and Jackson Memorial Hospital. "Clinical and medical studies are very difficult to interpret. I personally wouldn't encourage laypeople to do so. Even with my epidemiological skills, I find studies that appear to be well done, make changes in my practice based on these research studies, and must later reverse practices based on new evidence."

Dr. Schulman is not alone in his concern. An article recently published in *JAMA*, the *Journal of the American Medical Association*, stated that "Government reports, journalism, talk shows, and public relations news releases . . . have often failed to communicate the results of studies well, and these failures have important consequences."

## **The published article highlighted three failures in communication:**

1. focusing on the results of a single research study without putting it in

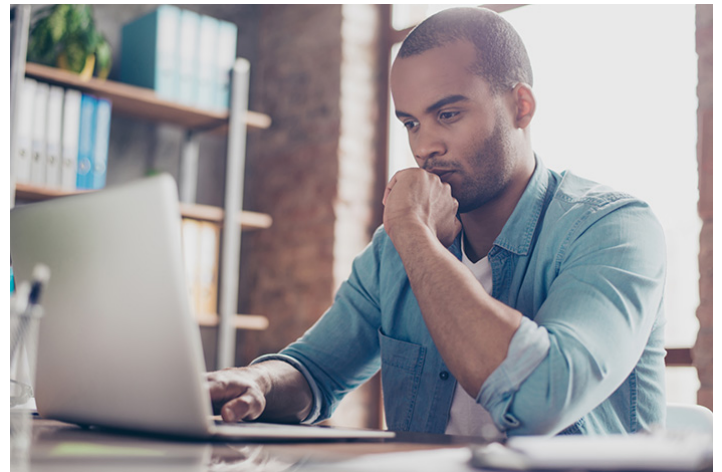
context with other studies or acknowledging that single studies are far from definitive

2. placing too much importance on study results without recognizing significant limitations
3. not thoroughly reviewing the science or relying on incomplete reports of a research study when communicating with the public

Dr. Schulman cites the anti-malaria drug hydroxychloroquine as a “classic example” of a treatment that appeared promising in an early, small research study. Other studies later contradicted that data, demonstrating a lack of efficacy, and in some cases, harm. All of this was reported in the news, which confused the public. Dr. Schulman points out that even if early data looks hopeful, “there’s a huge danger for the public to latch onto a study” too soon.

## **Applying scientific knowledge to your life**

If you’re worried about a COVID-19 headline or soundbite that relates to your particular health condition, speak with your doctor before making any medical decisions, Dr. Schulman empathizes. “I take ACE inhibitors for hypertension. Early data from China led to the suggestion that ACE inhibitors may be dangerous in COVID-19 patients. I pored through



those preliminary reports and discussed them with my doctor. We did not yet know if the science was reliable. Future studies later suggested there was no danger. Fortunately, I didn’t follow the study’s advice and kept taking my ACE inhibitors.”

If you read COVID-19 news relating to your health concern, Dr. Schulman recommends having a “risks versus benefits” discussion with your physician. “It’s common for patients to come into the doctor’s office with studies.” He also suggests talking with family members to gain more information on your family’s medical history.

## Reliable resources

In addition to your doctor, Dr. Schulman suggests turning to these resources for reliable, current content:

- Centers for Disease Control and Prevention (CDC)
- National Institutes of Health (NIH)
- National Institute of Allergies and Infectious Diseases (NIAID)
- World Health Organization (WHO)
- Infectious Diseases Society of America COVID-19 Resource Center (IDSA)

“These organizations consist of highly talented, skilled physicians and researchers who synthesize and distill information for the public.”

## What makes a good study?

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**“All of the great therapies we have developed happened over time, based on a preponderance of evidence and studies, before they entered the medical lexicon.”**

*- Carl I. Schulman, M.D.*

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For a deeper dive into what makes study results more reliable, Dr. Schulman recommends the Bradford Hill criteria. “These nine epidemiological criteria are used to prove causality and to see if a treatment has an actual effect. The criteria include elements such as consistency, specificity, and plausibility. For example, since no single study is trustworthy, it’s important to know if numerous, reproducible studies were done, if they are plausible, and if they are based on good scientific methods.”

## **Evidence in action**

As Dr. Schulman and his colleagues care for patients hospitalized with COVID-19, they follow “thoughtful, vetted protocols” based on the current scientific information. “We constantly look at new evidence to update our protocols.”

He agrees with other health experts who believe that for now, our best defense against the coronavirus is careful adherence to CDC guidelines, which include wearing face coverings in public, handwashing, social distancing, not touching your face, and other precautions.

When we consider the medical advances achieved in the 21st century, it’s frustrating to wait on a solution to the conundrum of COVID-19. To put the situation in perspective, Dr. Schulman offers a caveat. “All of the great therapies we have developed happened over time, based on a preponderance of evidence and studies, before they entered the medical lexicon.”

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*Nancy Moreland is a regular contributor to UMiami Health News. She has written for several major health care systems and the Centers for Disease Control and*

*Prevention. Her writing also appears in the Chicago Tribune and U.S. News & World Report.*

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