Doing your own research

Most of us have used the phrase "I did my own research" at one time or another, especially when it comes to vaccines. But what we are really doing is independent learning. This fact sheet helps parents understand what research is—and what it isn't. It also shows the value of independent learning. And how to make sure you're getting the most out of your efforts.

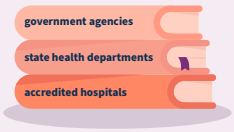
What research is—and what it isn't

True research is a very systematic process that investigates something and answers a particular question. The process includes collecting data, evaluating data, and finally describing results based on the findings. Each step has a lot of rules to ensure the research is as unbiased as possible.

- **Collecting Data:** Scientists and researchers create strict criteria that data must meet to be included. This step ensures that researchers are including everything—not just the data that will answer the research question the way they want.
- **Evaluating Data:** Once all the data has been collected, researchers evaluate it using another set of criteria to ensure the data is unbiased. Often, researchers will enter all the data into a statistical program to identify advanced statistical measurements, such as confidence intervals and power. This helps them understand how confident they can be that the findings are true.
- **Describing Results:** Based on the findings, researchers will write results using a scientific format that again helps reduce bias.

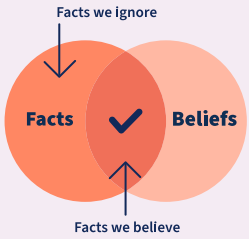
Few of us are doing this at home. Instead, we are usually doing internet searches and sometimes reading books. This is independent learning. It helps us learn more about topics we don't always understand. But it's not research. The difference matters because our independent learning is not as unbiased and comprehensive as research. And independent learning can lead us to misinformation.

IDENTIFYING VACCINE MISINFORMATION



Is the website from an established and reputable organization?
Government agencies, state health departments, and accredited hospitals are great sources for credible information.

Does it confirm what you already believe?
If so, you may have fallen into the confirmation bias trap. Confirmation bias is when we favor information that confirms what we already believe, while also discounting information that goes against our beliefs.



Does it trigger strong feelings?
Factual content tends to be less emotional. It does not use scare tactics or try to anger you.

Is it trying to sell something?
Credible sites do not have advertisements or try to sell you anything. They just want to give you vaccine information—not make money from you.

Are its sources credible experts?
Anyone can publish anything on the web, regardless of whether they are experts. Make sure your sources are experts. Search for their name online to learn about their background. And check to see whether they have a health degree, like MD, PhD, RN, or MPH, which can help indicate that they're an expert.

Recognizing bias in independent learning

One of the biggest challenges in independent learning is bias. Bias is when we favor something over something else, usually in a way that can be unfair. When we do independent learning, we introduce bias we aren't even aware of. For instance, results from our web searches are tailored to appeal to us based on what we have searched before. So we are likely to get appealing results that may not necessarily give us the most true answer. But when we learn from an expert, we can be confident that the information they provide is balanced, comprehensive, and true.

How to get the most out of independent learning

We don't know as much as the experts and that's okay. When we look to learn more about something, our first stop should be the experts. In the case of vaccines, that is:

- Our health care providers, including doctors, physician assistants, nurses, pharmacists, and others with medical training and experience.
- State health departments.
- Medical associations like the American Academy of Pediatrics or the American Medical Association.
- Nonprofits that share science-based, objective, and transparent information. Typically, you'll be able to spot this type of information if they provide peer-reviewed citations from multiple sources, include dates for when the content was updated, keep health information separate from financial or political messaging, and disclose any conflicts of interest.
- Research universities that are accredited and classified as top tier. This means they conduct cutting-edge research, have significant research funding, and publish large amounts of scholarly articles. You can search for these types of institutions.
- Accredited hospitals and health care organizations. Accredited means these organizations have been formally recognized for meeting specific standards of quality and patient safety.
- Federal agencies such as the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the U.S. Food and Drug Administration (FDA).

When you search beyond the experts, it's important to review the information very critically. Some steps to take:

- **Find out the sources of the information.** Credible sources are the ones listed previously as well as peer-reviewed research. Peer-reviewed means that it is evaluated by experts before being published in science journals.
- **Read between the lines.** Is the website trying hard to convince you? Is it trying to scare you? Is it trying to sell you something? These are signs you should stay away from these websites.
- **Read the sources.** Sometimes a website will link to credible sources but misinterpret what the source is saying. Check the sources yourself to make sure they support the website's claims.
- **Circle back to your health care provider.** Verify what you have learned and make sure you found credible information. Doctors, especially pediatricians, have a great understanding of vaccines.

Learn more

To learn more about what research is—and what it isn't—please visit https://ori.hhs.gov/module-1-introduction-what-research

Scan this QR code to find more tools and resources.