Health misinformation is rampant on social media—here's what it does, why it spreads and what people can do about it

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The global anti-vaccine movement and vaccine hesitancy that [accelerated during the COVID-19 pandemic](#) show no signs of abating.

According to a survey of U.S. adults, Americans in October 2023 were [less likely to view approved vaccines as safe](#) than they were in April 2021. As [vaccine confidence](#) falls, [health](#) [misinformation](#) continues to spread like wildfire on [social media](#) and in real life.

I am a [public health](#) [expert](#) in [health misinformation](#), [science communication](#) and [health behavior change](#).

In my view, we cannot underestimate the [dangers of health misinformation](#) and the need to understand why it spreads and what we can do about it. Health misinformation is defined as any health-related claim that is false based on current scientific consensus.

False claims about vaccines

Vaccines are the No. 1 topic of misleading health claims. Some [common myths about vaccines](#) include:

- **Their supposed link with human diagnoses of autism**. Multiple studies have [discredited this claim](#), and it has been firmly refuted by the [World Health Organization](#), the [National Academies of Sciences, Engineering and Medicine](#), the [American Academy of Pediatrics](#) and the [Centers for Disease Control and Prevention](#).

- **Concerns with the COVID-19 vaccine leading to infertility**. This connection has been debunked through a [systematic review and meta-analysis](#), one of the most robust forms of synthesizing [scientific evidence](#).

- **Safety concerns about vaccine ingredients, such as thimerosal, aluminum and formaldehyde**. Extensive studies

have shown these ingredients are safe when used in [the minimal amounts contained in vaccines](#).

- **Vaccines as medically unnecessary to protect from disease**. The development and dissemination of vaccines for life-threatening diseases such as smallpox, polio, measles, mumps, rubella and the flu has saved [millions of lives](#). It also played a critical role in historic [increases in average life expectancy](#)—from 47 years in 1900 in the U.S. to 76 years in 2023.

The costs of health misinformation

Beliefs in such myths have come at the highest cost.

An estimated 319,000 COVID-19 deaths that occurred between January 2021 and April 2022 in the U.S. [could have been prevented](#) if those individuals had been vaccinated, according to a data dashboard from the Brown University School of Public Health. Misinformation and disinformation about COVID-19 vaccines alone have cost the U.S. economy an estimated [US$50 million to $300 million per day](#) in direct costs from hospitalizations, long-term illness, lives lost and economic losses from missed work.

Though vaccine myths and misunderstandings tend to dominate conversations about health, there is an [abundance of misinformation](#) on social media surrounding diets and eating disorders, smoking or substance use, chronic diseases and medical treatments.

My team's research and that of others show that social [media platforms have become go-to sources](#) [for health information](#), especially among adolescents and young adults. However, many people are not equipped to maneuver the maze of health misinformation.

For example, an analysis of Instagram and TikTok posts from 2022 to 2023 by The Washington Post and the nonprofit news site The Examination found that the food, beverage and dietary supplement industries paid dozens of registered dietitian influencers to [post content promoting diet soda, sugar and supplements](#), reaching millions of viewers. The dietitians' relationships with the food industry were not always made clear to viewers.

Studies show that health misinformation spread on social media results in [fewer people getting vaccinated](#) and can also increase the risk of other health dangers such as [disordered eating](#) and [unsafe sex practices and sexually transmitted infections](#). Health misinformation has even bled over into animal health, with a 2023 study finding that 53% of dog owners surveyed in a nationally representative sample report being [skeptical of pet vaccines](#).

Health misinformation is on the rise

One major reason behind the spread of health misinformation is [declining trust in science](#) and [government](#). Rising political polarization, coupled with [historical medical mistrust](#) among communities that have experienced and continue to experience [unequal health care treatment](#), exacerbates preexisting divides.

The lack of trust is both fueled and reinforced by the way misinformation can spread today. Social media platforms allow people to [form information silos](#) with ease; you can curate your networks and your feed by unfollowing or muting contradictory views from your own and liking and sharing content that aligns with your existing beliefs and value systems.

By tailoring content based on past interactions, social media algorithms can unintentionally [limit your exposure](#) to diverse perspectives and

generate a fragmented and incomplete understanding of information. Even more concerning, a study of misinformation spread on Twitter analyzing data from 2006 to 2017 found that [falsehoods were 70% more likely to be shared](#) than the truth and spread "further, faster, deeper and more broadly than the truth" across all categories of information.

How to combat misinformation

The lack of robust and standardized regulation of misinformation content on social media places the difficult task of discerning what is true or false information on individual users. We scientists and research entities can also do better in communicating our science and rebuilding trust, as my colleague and I have [previously written](#). I also provide [peer-reviewed recommendations](#) for the important roles that parents/caregivers, policymakers and social media companies can play.

Below are some steps that consumers can take to identify and prevent health misinformation spread:

- **Check the source.** Determine the credibility of the [health information](#) by checking if the source is a reputable organization or agency such as the [World Health Organization](#), the [National Institutes of Health](#) or the [Centers for Disease Control and Prevention](#). Other credible sources include an established medical or scientific institution or a peer-reviewed study in an academic journal. Be cautious of information that comes from unknown or biased sources.

- **Examine author credentials.** Look for qualifications, expertise and relevant professional affiliations for the author or authors presenting the information. Be wary if author information is missing or difficult to verify.

- **Pay attention to the date.** Scientific knowledge by design is meant to evolve as new evidence emerges. Outdated information may not be the most accurate. Look for recent data and updates that contextualize findings within the broader field.

- **Cross-reference to determine scientific consensus.** Cross-reference information across multiple reliable sources. Strong consensus across experts and multiple scientific studies supports the validity of health information. If a health claim on social media contradicts widely accepted scientific consensus and stems from unknown or unreputable sources, it is likely unreliable.

- **Question sensational claims.** Misleading health information often uses sensational language designed to provoke strong emotions to grab attention. Phrases like "miracle cure," "secret remedy" or "guaranteed results" may signal exaggeration. Be alert for potential conflicts of interest and sponsored content.

- **Weigh scientific evidence over individual anecdotes.** Prioritize information grounded in scientific studies that have undergone rigorous research methods, such as randomized controlled trials, peer review and validation. When done well with representative samples, the scientific process provides a reliable foundation for health recommendations compared to individual anecdotes. Though personal stories can be compelling, they should not be the sole basis for health decisions.

- **Talk with a health care professional.** If health information is confusing or contradictory, seek guidance from trusted health care providers who can offer personalized advice based on their expertise and individual health needs.

- **When in doubt, don't share.** Sharing health claims without

validity or verification contributes to misinformation spread and preventable harm.

All of us can play a part in responsibly consuming and sharing information so that the spread of the truth outpaces the false.

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