Combating Health Misinformation Through Health Literacy



Aracely Rosales
Chief Content Expert and Multilingual Director
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About Health Literacy Innovations (HLI)

Mission
Knowing that "literacy" is the single most important indicator of health outcomes, HLI was founded to create tools to help eliminate medical mistakes and confusion due to low health literacy.

Health Literacy Advisor

Flagship Product
The Health Literacy Advisor (HLA) is the nation's first interactive health literacy software program

Goals
- Streamline the health literacy review process
- Replace inefficiency with technology and knowledge
- Empower communicators with the tools to create, produce, print, display, share, and advertise clear health information

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Today's Webinar Goals

Discuss	Health misinformation, its impact, and sources
Share	Effective strategies and resources to combat health misinformation
Apply	Health literacy principles to build resilience against misinformation.

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Health



and why it matters

Accurate health information is key to make informed decisions. Misinformation gets in the way—misleading consumers may cause harm. Still, we can protect health consumers.

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What is Health Misinformation?

Misinformation
Information that is false, inaccurate, or misleading according to the best available evidence at the time



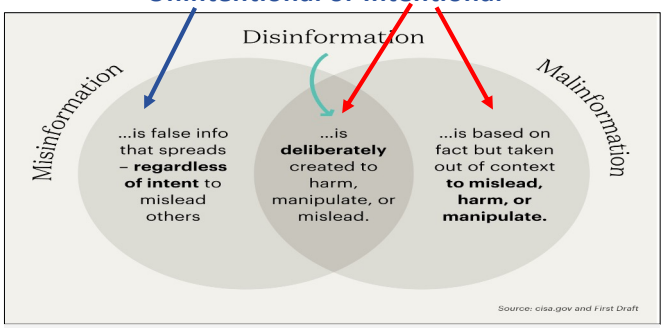
US Surgeon General Health Misinformation Toolkit

Health Misinformation in Plain Language…
"…fake health claims lacking scientific evidence"

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Health Misinformation can be Unintentional or Intentional

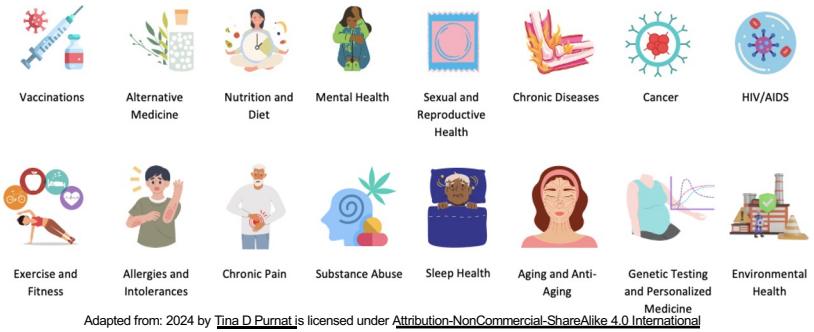


INFODEMIC:
Too much information — including false or misleading content — spread during a disease outbreak.
Example: The COVID-19 infodemic

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Common Health Topics Included in Health Misinformation Studies



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Do we see misinformation in any of these topics?

At some point or another, we all search for health information—

– sometimes this information is misinformation.

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Common Types of Misinformation

Memes



Memes made as jokes but reshared as if they were true

Stats



Cherry-picked stats that support a point but leave out key elements

Fakes News



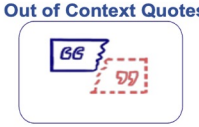
Fake news sites that look real, with sensational headlines and false stories to make us click

Fakes Graphs



Misleading graphs or diagrams that look official but don't tell the whole story

Out of Context Quotes



Quotes cropped to change the meaning—true words, but out of context

Dated Images



Old images that recirculate as if they are recent

Fake videos



Videos that have been edited to change the meaning

US Surgeon General Health Misinformation Toolkit

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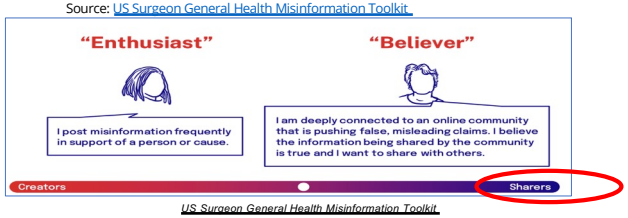
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People who Share Misinformation are Classified in Two Groups:



Source: US Surgeon General Health Misinformation Toolkit



US Surgeon General Health Misinformation Toolkit

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Common Practices to Promote Health Misinformation



Logos



Professional visual cues



Good looking website



Close relation reference



Rare terms' search



Personal experience

NARRATIVES

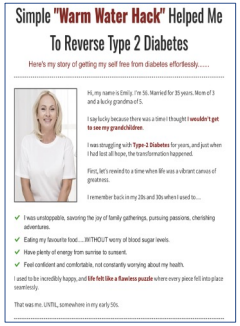
US Surgeon General Health Misinformation Toolkit

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Narratives and Misinformation

Narratives and/or personal stories help misinformation go viral.



Consumers:

- **Tend to model their behavior after the stories they encounter**
- **May pay less attention to statistics and science when there are narratives present**

https://www.pnas.org/doi/10.1073/pnas.1914085117

Why stories go viral?

- Pushes emotional buttons and appeals to audience values
- Contains images or video specifically formatted for a particular audience and channel
- Tells a story
- Uses humor or satire
- Provides a simple explanation for a complex problem
- Uses language that is appealing to the audience (e.g. slang, memes)

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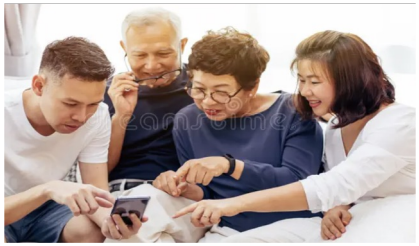
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Potential Reasons for Health Information Spread

Consumers are more likely to share misinformation if it or when it aligns with their identity, or it triggers strong emotions.

Other reasons for the spread of misinformation are:

- Declining trust in science and government
- Diverse political views
- Historical medical mistrust among communities that experience unequal health care treatment
- Consumer misunderstanding



Studies show consumers sometimes share misinformation on social media—even if they don't believe it.

https://www.psychologytoday.com/us/blog/the-resistance-hypothesis/202211/people-share-fake-news-even-when-they-dont-believe-it

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Why Consumers Create and/or Share Harmful Misinformation?

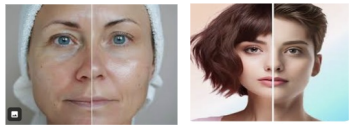
Deliberate disinformation or intentional misinformation is created by:

1. **Partisan actors:** Spread false information to discredit opponents
2. **For-profit websites:** Publish fake news for clicks and revenue
3. **Political regimes:** Use disinformation to control narratives
4. **Bots and trolls:** Amplify false content to confuse consumers and manipulate public
5. **AI tools:** Generate realistic deep fakes, fake media and images that are difficult to detect



https://apnews.com/article/us-news-ap-top-news-elections-social-media-technology-4086949d878336f8ea6daa4dee725d94

Fake images of celebrities, doctors, and politicians are often used in fake news making it hard to tell what's real.

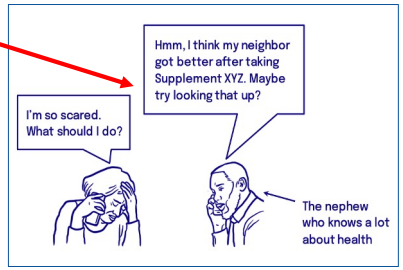


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Why Consumers Create and/or Share Misinformation?

Unintentional misinformation is created by:

1. **Well-meaning individuals:** Share false information they believe is true
2. **Satire:** Intended as humor but can be mistaken for factual content
3. **Challenging journalism:** Inaccurate reporting may be caused by tight deadlines and/or lack of oversight
4. **Evolving science:** Changes in scientific facts may lead to confusion and the spread of outdated information



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Why is it Tempting to Share Health Misinformation?



We like to feel that we have new information that others don't know.



We want to protect the people we care about.



We may be seeking explanations or wanting to share information that helps us make sense of events.



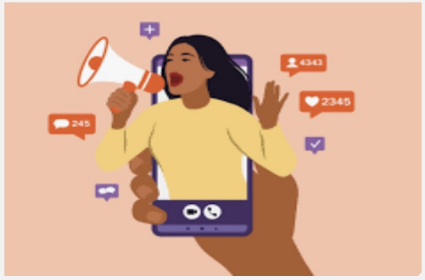
We want to feel connected to others.

US Surgeon General Health Misinformation Toolkit

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Where is Health Misinformation Coming From?



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Cell Phones, etc.

The rapid growth of the internet, smartphones, and online platforms make it easier for health misinformation to spread quickly.

US consumers check their phones at least 205 times daily.



https://www.digitalinformationworld.com/2024/12/mobile-addiction-soars-americans-check.html

Cell phone screens and use of them from virtually everywhere, and at anytime, increases the likelihood of fake news and misinformation.



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Social Media Platforms (SMP)

A 2025 report of US consumers found 73% of consumers (253 million) are active on social media

https://www.demandsage.com/social-media-users/

Yet, another study has found that 40% of the most frequently shared links contain fake news.

hhttps://www.sciencedirect.com/science/article/abs/pii/S2211883718300881



Do you read the news on SMPs?

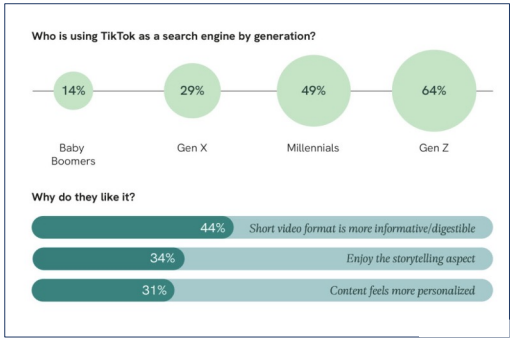
False news stories were 70% more likely to be shared on social media than true stories.

https://www.scientificamerican.com/article/you-cant-handle-the-truth-at-least-on-twitter/

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SMPs and Health Misinformation





https://www.everybodyagency.com/en-us/insights/tiktok-healthcare-trends/

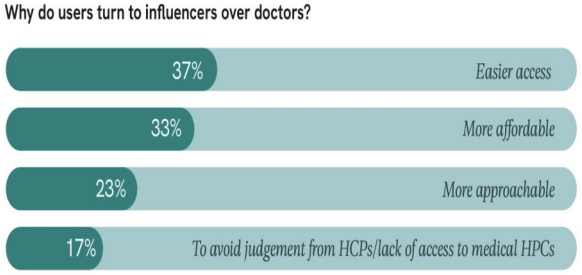
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SMPs and Health Misinformation

In 2023, TikTok users spent more than 1.3 billion hours watching videos with hashtags like #Doctors, #Nurses, and #Dentists.

Nearly 1 in 5 consumers in US—TikTok's largest users—trust health influencers more than doctors and turn to TikTok for treatment advice.

Why do user turn to influencer over doctors?



https://www.everybodyagency.com/en-us/insights/tiktok-healthcare-trends/

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Can we trust #HealthTikTok?

Younger generations are more likely to discuss health online:

33% of all Gen Z

26% of all Millennials

5% of all Baby Boomers



Globally, 30% of consumers with chronic conditions don't rely on their doctor for information.

https://hallandpartners.com/news/dr-tiktok-new-player-in-medical-information-healthcare-advice

Of 221 videos about sinusitis, more than 300 million views and 1 million shares were amassed, with nearly half posted by nonmedical influencers.

https://pubmed.ncbi.nlm.nih.gov/38431902/

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Mechanisms Misinformation Spread

Algorithms:

Boost engaging content, rapidly spreading misinformation with minimal fact-checking.

Echo chambers:

Personalized feeds reinforce existing beliefs and limit exposure to diverse perspectives.

User behavior:

Consumers share information that aligns with their identity or triggers emotion, fueling the spread.



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Health Misinformation Reality



At least 4 in 10 people say that they've heard each of 10 specific false claims about COVID-19, reproductive health, and gun violence.

Misinformation is a global problem, but the U.S. has the second-highest rate of misinformation worldwide.
https://static1.squarespace.com/static/5f088a46ebe405013044f1a4/t/65f34e3e82fe386241d5a3b2/1710444095625/Ashby_Jessica.pdf

Up to 98% of videos under the top health hashtags (such as #healthhack, #healthhacks, and #healthtok) contain misinformation, but unqualified users get nearly five times more views than medical professionals.
https://www.everybodyagency.com/en-us/insights/tiktok-healthcare-trends

Three out of four videos (224 of 300) were created by non-health care professionals.
https://pmc.ncbi.nlm.nih.gov/articles/PMC10256293/

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Misinformation Impact



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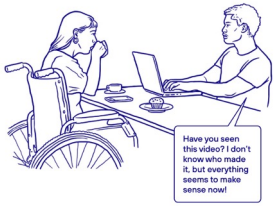
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Who is at Risk of Being Influenced by Misinformation?

Between July and December 2022, more than half of U.S. adults (58.5%) went online to find health or medical information.

https://www.cdc.gov/nchs/products/databriefs/db482.htm#:~:text=During%20July%E2%80%93December%202022%2C%2058.5%25%20of%20U.S.%20adults%20used,used%20HII%20compared%20with%20men.

We are all at risk of believing misinformation, especially when we are unsure or frightened and look for answers.



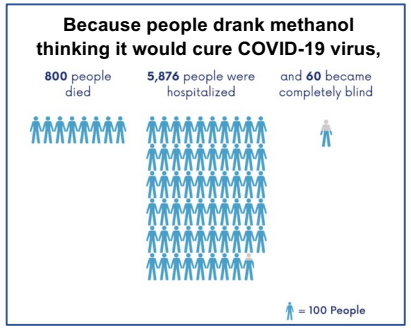
Source: US Surgeon General Health Misinformation Toolkit

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The Disinformation Impact

Increased deaths and negative health outcomes are clear consequences of health misinformation





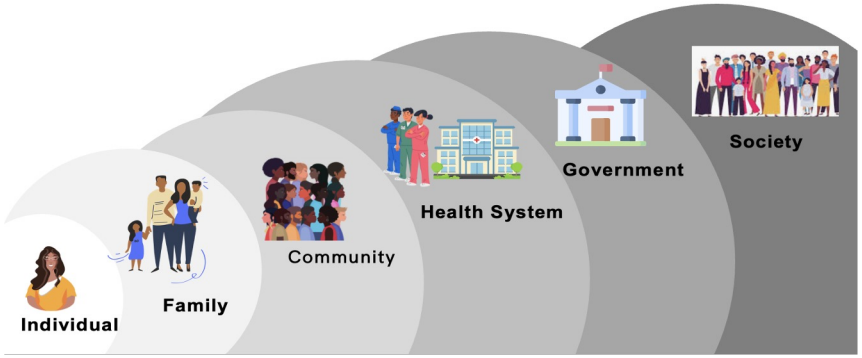
https://ballardbrief.byu.edu/issue-briefs/the-effects-of-medical-misinformation-on-the-american-public

Health disinformation is harmful because it can shape behaviors and opinions.

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Health Misinformation Affects all Levels of Society



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Health Misinformation Impacts

Domains	Consequence
Physical	• Limited accurate knowledge about available treatments • Misplaced actions • Reduces adherence to evidence-based treatments • Leading to preventable illness or death
Social	• Victimization and stigma • Undermining trust in health care professionals
Economic	• Falling for scams • Panic buying
Political	• Limited trust in officials • Rejection of official guidelines • Disregard of government-led responses
Psychological	• Mental health epidemic (fuels stigma and fear) • Extreme anxiety • Long-term depression

Adapted from: The importance of social media users' responses in tackling digital COVID-19 misinformation in Africa
https://pmc.ncbi.nlm.nih.gov/articles/PMC8935564/

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Addressing Health Misinformation



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Strategies to Fight Health Misinformation



- Collaboration
- Mitigation
- Practical Tips
- Consumer Education
- Prebunking vs. Debunking

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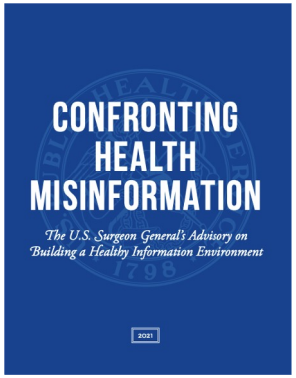
Collaboration: It Takes a Village

- Everyone can stop misinformation from spreading
- We can protect ourselves, our communities, and loved ones from harmful misinformation

Ways to act based on your role:

- What individuals can do
- What educators can do
- What health professionals can do
- What media and journalists can do
- What researchers can do
- What funders can do
- What governments can do

https://www.hhs.gov/surgeongeneral/reports-and-publications/health-misinformation/index.html



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Mitigation

How to Reduce Harm from Misinformation	
1. Promote credible information over misinformation	• Create compelling, inclusive, easy-to-read, and accurate content based on science
2. Encourage self-efficacy to detect misinformation	• Teach consumers how to recognize misinformation
3. Create misinformation policies	• Clearly define the types of misinformation that are unacceptable and outline the consequences for violating the policy
4. Infoveillance	• Monitor and analyze data and patterns of information exchange on the internet
5. Create technical interventions	• Use innovative technologies to detect, simplify and debunk misinformation
6. Debunk misinformation	• Monitor, test, and correct misinformation on the same platform where it was shared
7. Create social media and health institutions partnerships	• Delete accounts that may be created with the intent to spread conspiracy theories • Incorporate technical features in your organization's system that help users self-correct or identify misinformation • Work with SMPs to stop false claims
8. Create collective campaigns against misinformation	• Engage local communities, social media platforms, health organizations, civil society, public authorities and figures, tech companies, the media, physicians, and medical associations to help stop misinformation claims
9. Educate the public on social media campaigns	• Use tools and SMP's to educate the public, detect misinformation, and stop misinformation

Adapted from: The importance of social media users' responses in tackling digital COVID-19 misinformation in Africa

https://pmc.ncbi.nlm.nih.gov/articles/PMC8935564/

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Practical

Encourage reliance on scientific sources to combat misinformation:

- Debunk myths with clear, evidence-based facts
- Help consumers verify what's true and what's not
- Provide tools and resources to spot trusted sources
- Boost science literacy and critical thinking
- Partner with trusted voices to challenge false claims
- Encourage sharing of accurate, reliable health information
- Identify and reduce misleading content on social media

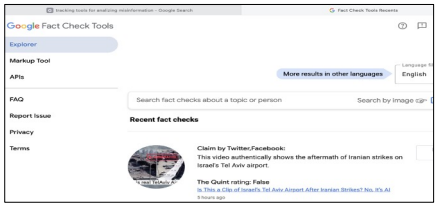


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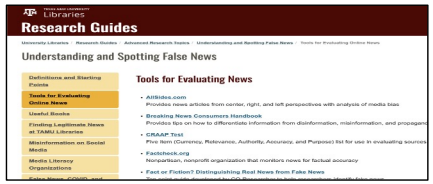
Fact Check

Tools to help spot misinformation:

- Content verification tools
  - Botometer
- Fact-checking websites
  - Snopes.com
- Google's fact-checking features
- Media literacy resources
  - InVID WeVerify
- AI-powered content evaluation
  - AI content analysis
- Evaluators of images on the web
  - TinEye
- **the Health Literacy Advisor, an interactive health literacy tool to** review and edit health information and content



https://toolbox.google.com/factcheck/explorer/search/list:recent;hl=en

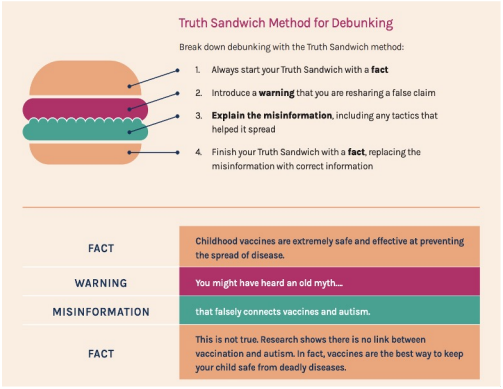


https://tamu.libguides.com/c.php?g=1062388&p=7801826

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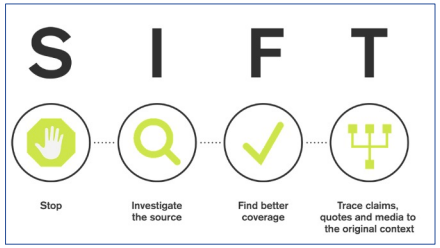
Prebunking vs. Debunking

- **Prebunking** prevents misinformation by filling knowledge gaps, focusing on facts, and exposing misleading tactics
- **Debunking** reacts to misinformation, often using a **"truth sandwich"** that surrounds false claims with accurate information
- **Avoid tactics that unnecessarily amplify the spread of misinformation**

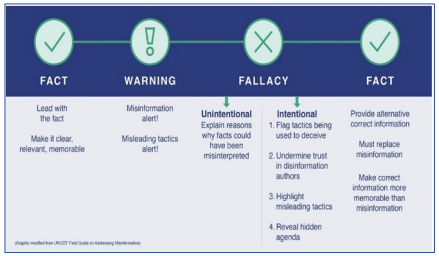


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Fact Checking



https://guides.lib.uchicago.edu/c.php?g=1241077&p=9082322



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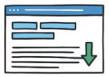
How to Identify Health Misinformation

Top tips for navigating the infodemic

World Health Organization



1. Assess the source:
Who shared the information with you and where did they get it from? Even if it is friends or family, you still need to vet their source.



2. Go beyond headlines:
Headlines may be intentionally sensational or provocative.



3. Identify the author:
Search the author's name online to see if they are real or credible.



4. Check the date:
Is it up to date and relevant to current events? Has a headline, image or statistic been used out of context?



5. Examine the supporting evidence:
Credible stories back up their claims with facts.



6. Check your biases:
Think about whether your own biases could affect your judgment on what is or is not trustworthy.



7. Turn to fact-checkers:
Consult trusted fact-checking organizations, such as the International Fact-Checking Network and global news outlets focused on debunking misinformation.

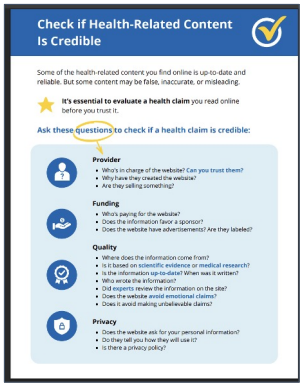
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How to Identify Health Misinformation







https://library.csi.cuny.edu/misinformation/spotfakenews

US Surgeon General Health Misinformation Toolkit

https://www.unicef.org/eca/stories/quick-guide-spotting-misinformation

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Action Steps:



- **Create Compelling Health Content!**
- **Apply Health Literacy Principles**
- **Create Narratives**
- **Test Audiences**
- **Use Established, Vetted Tools**

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Create Compelling Health Content!

Compelling Content Helps to:

- Reach more consumers
- Amplify accurate, positive messages that can "**go viral**"
- Improve health knowledge
- Answer questions and fill information gaps (prebunking)
- Influence perceptions
- Connect consumers to information and services
- Promote healthy behaviors
- Protect consumers from harmful misinformation



Watch what is good too!
8-Best Examples of Impactful Health Care Videos

https://fewstones.com/best-examples-impactful-healthcare-videos

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How to Create Compelling Health Content!

- Understand your target audience
- Make content culturally relevant to the audience
- Write the way people talk
- Use character-driven and captivating stories
- Highlight real experiences
- Tap into emotions like empathy to build connection
- Use vivid visuals to make messages memorable
- Encourage interaction and feedback to boost engagement and trust
- Share messages across multiple platforms—social media, print, and videos





https://www.youtube.com/watch?v=Dqs8IjaE9aQ

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The Connection Between Misinformation and Low Health Literacy

Consumers with low education and limited health literacy are more likely to believe health myths and distrust medical systems.
https://pmc.ncbi.nlm.nih.gov/articles/PMC11516026/#:~:text=Mistrust%20towards%20a%20perceived%20system,tackle%20health%2Drelated%20institutional%20mistrust

Consumers with limited education may be more vulnerable to misinformation because they're less likely to recognize it.
https://static1.squarespace.com/static/5f088a46ebe405013044f1a4/t/65f34e3e82fe386241d5a3b2/1710444095625/Ashby_Jessica.pdf

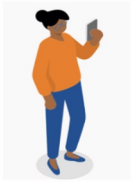
Many consumers aren't familiar with science, so they often find health information confusing or hard to trust.
https://www.pnas.org/doi/10.1073/pnas.1914085117

Apply Health Literacy Principles to Build Resilience Against Misinformation!

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What is Health Literacy?

Health literacy is a consumer's ability to:



Obtain

Read

Understand

Act on

health information and services

Brochures, consent forms, health videos, health information on the internet, etc.

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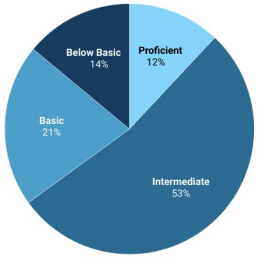
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The Health Literacy Problem

Health Literacy Levels

12% Proficient
53% Intermediate
35% Low

88% Under the proficient health literacy level



National Assessment of Adult Literacy (NAAL): National Center for Educational Statistics, U.S. Department of Education, 2003.

Use Universal Precautions: Assume anyone needs clear communication!

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Apply Health Literacy Principles

Use health literacy strategies to prevent and correct misinformation:

- Communicate clearly and provide simple education to help consumers understand and navigate complex health information
- Ensure consumer health information are written at or below a **6th-grade reading level**



https://www.cdc.gov/mmwr/volumes/71/wr/mm7133e1.htm

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Use plain language:

- **Use a friendly, conversational tone**
- **Use everyday words and personal pronouns like "we" and "you"**
- **Stick to active voice**

Limit the amount of information:

- **Break content into short sections with clear headings**
- **Use bullet points for lists**
- **Avoid complex statistics and excessive data**
- **Keep it simple and focused — less is more**



https://www.who.int/images/default-source/health-topics/coronavirus/infographics/who_side-effects-poster.jpg?sfvrsn=ab965c1f_8

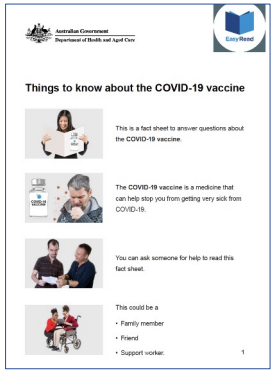
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Help readers find what they need:

- Put the most important information first
- Highlight key points with summaries
- End with clear action steps — tell readers what to do next

Create content that motivates and connects:

- Use easy-to-read fonts
- Include relatable images so the audience sees themselves
- Share stories that reflect the audience's experiences — stories that will draw people in



https://www.health.gov.au/sites/default/files/2023-11/covid-19-vaccination-things-to-know-about-the-covid-19-vaccine-easy-read.pdf

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Write directly for your audience:

- Know who you're writing for and important take-away messages
- Connect the message to your audience a
- Use consistent language throughout all/every document

Motivate readers to take action:

- Use clear examples and explain why the information matters
- Tell readers exactly what to do - use action-oriented language
- Break steps down clearly and simply
- Keep the tone positive — focus on what to do, not what to avoid



https://evidence.nihr.ac.uk/collection/promoting-vaccination-the-right-approach-for-the-right-group/

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Create Narratives

"Storytelling can help engage audiences, make science more relatable, and promotes inclusivity. It can also convey accurate science."

https://www.pnas.org/doi/10.1073/pnas.1914085117

Narratives:

- **Help consumers accept science-backed and reliable information**
- **Provide an opportunity to counter misinformation**
- **Makes information from real doctors and other health care professionals more believable**

Most importantly:

- **When writing your video scripts, make sure they are in layman terms, and easy-to-understand.**
- **Provide captions, and versions for diverse audiences:**
  - **Other languages**
  - **Other versions—brail, sign language, etc.**

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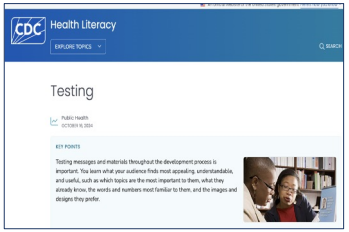
Final Important Step: Audience Testing

Feedback is an effective tool to detect image manipulation, enhance digital literacy, and combat misinformation.

https://misinforeview.hks.harvard.edu/article/feedback-and-education-improve-human-detection-of-image-manipulation-on-social-media/

To effectively test materials:

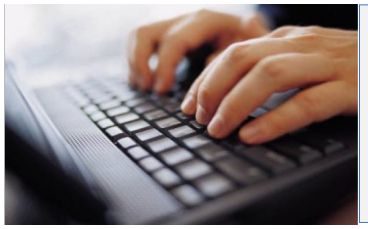
1. **Use a representative sample of at least 10 consumers**
2. **Assess understanding, readability, accessibility, relevance, and emotional response**
3. **Use the feedback to refine and improve your materials**



https://www.cdc.gov/health-literacy/php/develop-materials/testing-messages-materials.html#:~:text=Do%20background%20research%20on%20your,and%20implementing%20health%20communication%20efforts

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Readability + Usability + Health Literacy + More



One comprehensive solution!

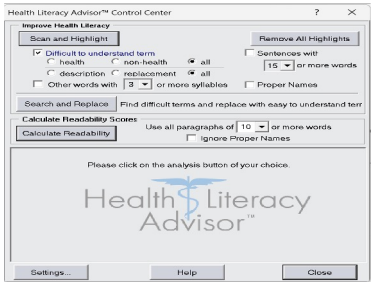
Health Literacy Advisor

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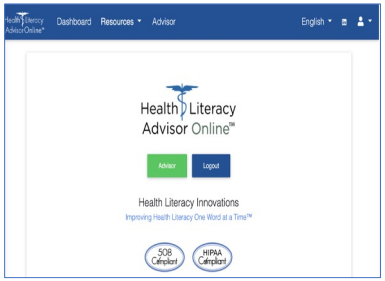
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The Health Literacy Advisor
Two Platforms

HLA Desktop (Add-in to Word)



HLA Online (Web-based version)



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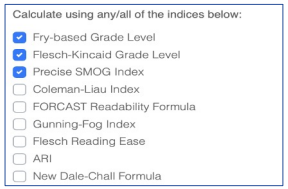
52

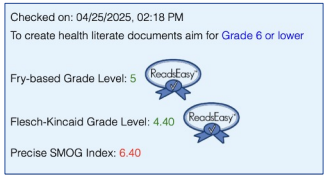
Health Literacy Advisor Features

Calculates Readability:

- **Uses nine differently readability indices in English and six in Spanish.**
- **Creates detailed reports**
- **Stamps results on the document**
- **Rewards users with a "Reads Easy" stamp for achieving the 6th grade reading level or lower**

Assesses principles of plain language using the REDA – Reads Easy Document Assessment, a suitability tool.



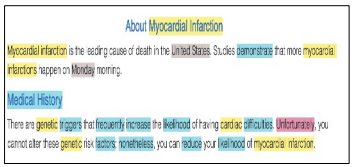


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Health Literacy Advisor Features

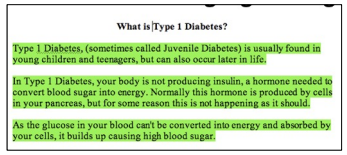
Highlights Words

- Long words by database
- Long words by syllable count
- Medical terms and jargon
- Proper names/nouns



Highlights Long Sentences

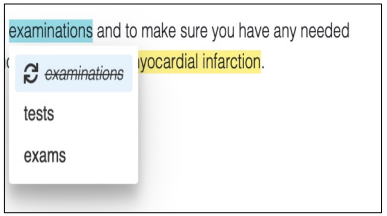
Long sentences with 10 words or more

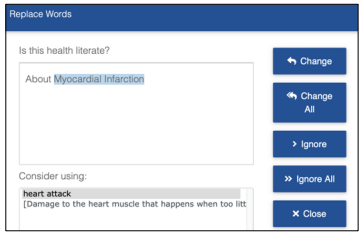


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Health Literacy Advisor Feature

- **Search difficult terms and replace** them with easy-to-understand choices right on your document
- Includes definitions for health terms and non-health terms





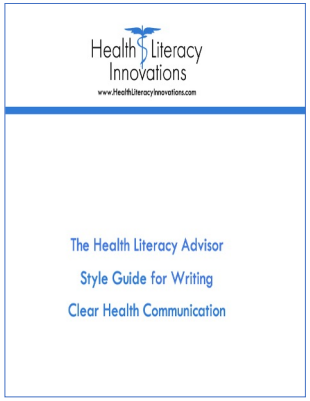
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More Benefits!

Cleans documents before scoring readability which can produce more accurate scores

Comes with the FREE:



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Conclusion:

- Misinformation comes from many sources and spreads through a mix of intentional manipulation, accidental sharing, and social media dynamics
- Health professionals must take an active role to create and share accurate information
- We all have a role to protect vulnerable users from misinformation

The battle against misinformation is not lost!

Effective strategies to combat social media misinformation should:

- Be grounded in research and theory
- Help create persuasive, accurate easy-to-read and understand health messages



Social media is here to stay—and it's a powerful tool for delivering accurate, timely health messages to combat misinformation.

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Final Thoughts!

If you accidently share health misinformation…

1. Don't beat yourself up! We've all done it
2. Acknowledge and apologize
3. Delete your post
4. Post a link to true information!

Remember:

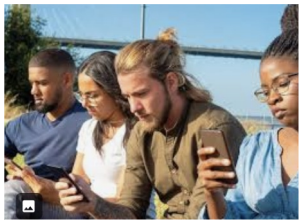
BEFORE YOU SHARE, THINK:

- WHO made it?
- WHAT is the source?
- WHERE did it come from?
- WHY are you sharing this?
- WHEN was it published?

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Take a Way!



No one is fully protected against misinformation.
Yet, we all can work to combat and end it together!

I admit. Sometimes I share things I see without checking first, but honestly, I feel that it's better to be safe than sorry.



Encourage consumers to:

- Share only vetted information
- Consult with a qualified health care professional before sharing information

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