



GETTING TO THE HEART AND MIND OF THE MATTER:

A Toolkit to Build Confidence as a Trusted Messenger of Health
Information

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WASHINGTON STATE
UNIVERSITY



EXCITE
Extension Collaborative on
Immunization Teaching & Engagement

Attribution

Getting to the Heart and Mind of the Matter: A Toolkit to Build Confidence as a Trusted Messenger of Health Information

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Executive Summary

The purpose of this toolkit is to better equip and empower all Extension professionals to participate as active agents in vaccine education and any other health education initiatives in their communities. The toolkit and accompanying workshops materials were created to help professionals learn and enhance communication skills, with an emphasis on HOW to communicate with audiences rather than what to communicate. This research-based, theory-informed, multidisciplinary approach combines the influence of emotions and reason on communicating for one's well-being.



INTRODUCTION

Introduction

Welcome to *Getting to the Heart and Mind of the Matter: A Toolkit and Workshops for Building Confidence in Being a Trusted Messenger of Health Information*. In preparation of this e-field book, the Washington State University's EXCITE team conducted a needs assessment to enhance resource development and evaluation for providing Extension professionals with resources to equip and empower them to implement vaccine education in their communities. The assessment, which involved a survey, follow-up focus groups and interviews, and Neuromarketing message testing, identified four key needs: tailoring trainings based on Extension roles, prioritizing preserving community trust and professional credibility, establishing connections with medical experts, and strengthening science media literacy skills to counter misinformation and communicate emerging science (Austin et al., 2024). The needs assessment findings informed the current toolkit by addressing the unique needs of Extension professionals and offering evidence-based strategies for promoting vaccine education while maintaining trust and credibility within the community.

What is new in the 5th Edition of the Toolkit

Based on continuous assessment of previous Toolkit editions, this edition includes the following additions along with information updates as they have become available:

- A focus on how the Toolkit supports Health Equity, integrated throughout every section;
- An explanation of the integrated model that informs the Professional Development Core for the Toolkit;
- Additional examples of how to navigate challenging health communication conversations with community members, including when political climate becomes an issue;
- More about how to use motivational interviewing in group settings;
- More explanation and examples of how to integrate the skills for motivational interviewing, science media literacy and neuromarketing science;
- More about how to apply science media literacy to do real-time fact checking;
- More contemplation worksheets and other resources;
- An additional section on performing and demonstrating Impactful Outreach, with a focus on social media;
- Brief video examples released alongside the Toolkit to support integration of Toolkit sections on motivational interviewing, science media literacy, and neuromarketing;
- Additional handouts released alongside the Toolkit to easily utilize most requested information from the Toolkit

Our approach combines the influence of emotions and reason on well-being engagement. The Toolkit features an integration of motivational interviewing, science media literacy, neuromarketing-based communication, and impactful engagement through social media outreach to equip and empower health communication professionals to build and maintain trusting and mutually beneficial relationships with priority populations. Building upon the previous Extension 'expert model,' whereby professionals enter communities to provide answers to different situations or problems, this toolkit focuses on a community involvement model whereby Extension is a trusted partner, working together in partnership with community members, to leverage each other's expertise and support community health and well-being (Rodgers et al., 2024). The Toolkit therefore supports Cooperative Extension's mission to facilitate sustainable improvements in community well-being.

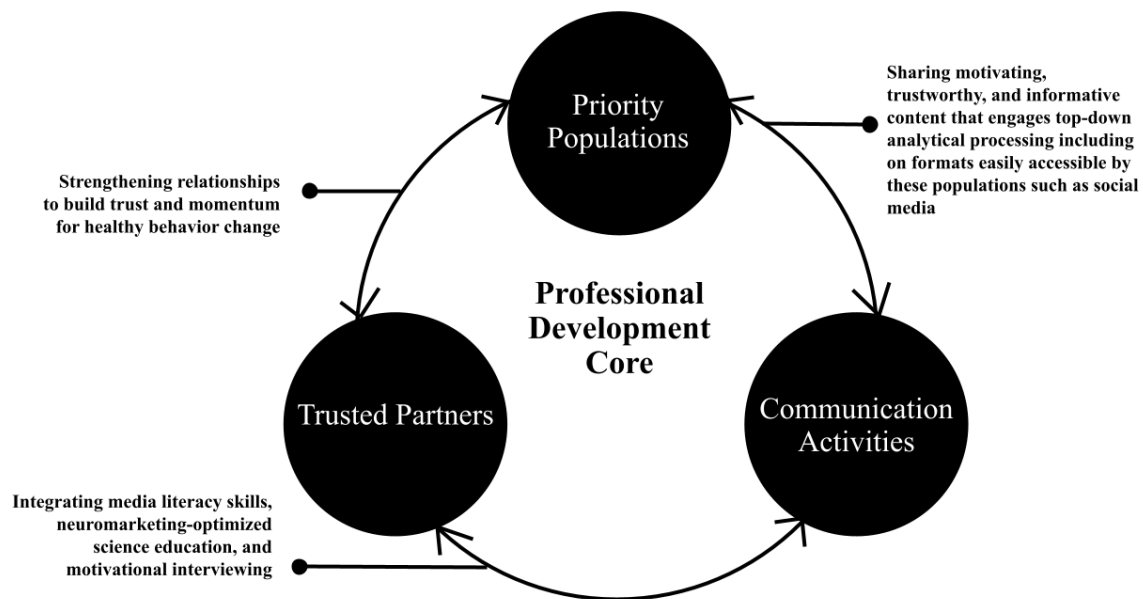
The approach of the toolkit aligns with [Cooperative Extension's Framework for Health Equity and Well Being](#) by providing tools and techniques to build Extension Professionals' confidence (comfort) in engaging with the community as equal partners (Burton et al., 2021). According to the CDC (2024), health equity is "the state in which everyone has a fair and just opportunity to attain their highest level of health." *Health disparities* are unjust, unequal health outcomes resulting from preventable and often systemic differences, especially experienced among historically marginalized communities. Known as *social drivers of health*, these differences create barriers to opportunities for well-being. Within this framework, Extension works to minimize disparities and inequities and support well-being by 1) promoting health behaviors through communication and education, as well as 2) helping to create healthy communities by reducing barriers to social drivers of health.

The emotions that underlie health behavior hesitancy include anxiety, fear, and uncertainty. Our integrated approach replaces these emotions with confidence, a sense of personal agency, and positive expectations. This motivates sustainable change that reduces health inequities and supports changes to promote well-being. This aim necessitates a process for building confident relationships and collaborations among community members, Extension Professionals and other partners. We portray this process in the Integrated Model of Sustainable Health Decision-Making (see Figure 1).

The center of the Professional Development Core comprises the integration of Media Literacy Skills, Neuromarketing Optimized Science, Motivational Interviewing Skills, and Impactful Social Media Outreach that supports trust and collaboration among community members and trust partners such as Extension Professionals. Trusted partners provide credible health-related information for community members who may have inequitable access to credible health information and services. Extension professionals belong in all the nodes - as trusted partners in their communities, members of their communities, and facilitators of professional development activities. Through this interaction between

community members and Extension professionals, they can create and co-create trustworthy messages and activities that both educate and motivate each other for the purpose of sustainable and equitable improvements one's own and their community's well-being. Extension Professionals have a key role given their special areas of expertise to facilitate connections among each of these entities/activities in a co-collaborative manner to reduce health inequities in underserved priority populations.

Figure 1: Integrated Model of Sustainable Health Decision-Making



The content and resources reflect an integrated approach to promoting well-being in communities (see figure 2). The first chapter on *Motivational Interviewing (MI)* discusses the foundation of how we communicate with individuals and groups to make them feel understood, confident, and in control to make good decisions. The second chapter on *Science Media Literacy (SML)* focuses on how our SML confidence and skills help ensure we can access, analyze, evaluate, create, and act using media in a variety of forms to build trust with communities and help them navigate the always-changing information environment. The third chapter is about *Neuromarketing (NM)* where we reflect on the human mind and how to apply brain friendly messaging to develop vaccine education content. The fourth chapter discusses *Impactful Outreach (IO)* using social media and presents promotional tactics to ensure audience engagement, supporting the strategies presented in the first three chapters. Finally, our conclusion addresses the synergy created when an integrated approach is utilized to support sustainable health decision-making. Although the COVID-19 pandemic inspired this vaccine-focused content, we have expanded the information to apply to health education initiatives beyond adult vaccination. This tool kit and the accompanying materials provide an opportunity to learn and enhance your communication skills, with an emphasis on HOW to communicate with your audience rather than WHAT to communicate with them.

Effective Vaccine Communication

Effective vaccine communication is at the heart of increasing uptake rates of adult immunizations. However, it is not clear what kind of messaging works to support community members' vaccinations and promote health equity. Let's look at the options below:

Which of these approaches do you predict are effective for addressing vaccine hesitancy?

- Correcting misinformation
- Presenting information on disease risks
- Using dramatic narratives (stories)
- Using images of individuals with the disease to make those risks more relevant

Nyhan et al (2014) discovered **all these approaches** may further confuse the issue or increase resistance to vaccinations. Here is a summary of what they found when they showed [these different types of vaccine education materials](#) to parents:

- Correcting misinformation about the link between MMR and autism successfully reduced misperceptions ***BUT decreased intent to vaccinate among parents most resistant to vaccinate.***
- On average, simply providing information about disease risks ***didn't improve either attitudes or intentions for vaccinations.***
- An emotional story about an infant in danger increased belief in serious vaccine side effects.
- Showing images of children with visible symptoms of measles, mumps, and rubella ***increased belief in the link between autism and the MMR vaccine.***

Take Aways:

- Trying to change vaccine hesitancy by simply providing facts may backfire and increase resistance.
- Current public health communications about vaccines may not only be ineffective but may increase misperceptions and reduce vaccination intention.

To access the full Nyhan and colleagues' (2014) article, check out the Resource Box below.

Resource Box:

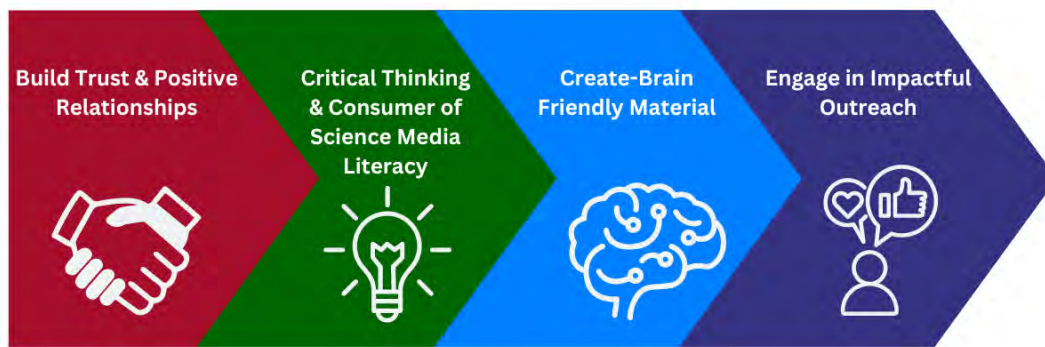
Peer Reviewed
Journal Article

Effective Messages in Vaccine Promotion: A Randomized Trial
<https://doi.org/10.1542/peds.2013-2365>

So, what strategies support effective vaccine communication? Drawing on research in media literacy, motivational interviewing, health equity, and neuromarketing-based communication (e.g., Austin et al., 2021; Bolls et al., 2019; Burton et al., 2021; Miller & Rollnick, 2023), we propose the following sequence of steps to engage in effective vaccine communication:








- Center [Health Equity](#) in all of your work
- Build trust and positive relationships with community members by leveraging existing relationships, engaging in culturally responsive programming, incorporating [inclusive language](#), and conducting community needs assessments
- Incorporate the guiding spirit of [motivational interviewing](#) in conversations
- Engage in ongoing reflection individually and in your team, asking:
 - Who is not a part of this conversation and should be?
 - Whose voice should be most elevated here?
 - What could I/we do differently next time based on what I/we have learned?
- Integrate critical thinking and consumer [science media literacy](#) throughout Cooperative Extension programming
- Create [brain-friendly](#) materials
- Engage in impactful outreach or the strategic and evidence-based approach to meaningful engagement with community members and develop connections, share stories, and engage with communities to consider health behaviors that benefit their well-being.
- Consider ways to make larger-scale impact on systemic barriers to equity through:
 - Sharing your work and learnings with others
 - Participating civically at multiple levels (e.g., local, state, regional, national)
 - Engaging in policy and advocacy work
 - Building coalitions

Figure 2: Toolkit Flow to Addressing Vaccine Hesitancy



It is important to note that as an Extension Professional you are likely to encounter community members who are presented with misinformation regarding adult vaccination. Use the resource box below to get a taste of how to help community members recognize misinformation. You can also find more information about this in the [Science Media literacy section](#) of the toolkit.

Table 1: Making the Truth Stick

 5 Minute Read	<p>Another typical approach for addressing misinformation is to use a “Myth versus Facts” format. But due to how our brain works, this can increase salience and spread misinformation!</p> <p>Website Link:</p>	<div data-bbox="829 1187 1396 1758"> <p>The impact of mythbusting sites</p> <table border="1"> <thead> <tr> <th>What you see:</th> <th>What you might remember:</th> </tr> </thead> <tbody> <tr> <td> <p>THE DAILY MYTHBUSTER</p> <p>MYTH: “The moon is made of green cheese.”</p> <p>FACT: The Moon formed 4.51 billion years ago, some 60 million years after the origin of the Solar System. Several forming mechanisms have been proposed, including the fission of the Moon from Earth’s crust through centrifugal force (which would require too great an initial spin of Earth), the gravitational capture of a pre-formed Moon (which would require an unfeasibly extended atmosphere of Earth to dissipate the energy of the passing Moon), and the co-formation of Earth and the Moon together in the primordial accretion disk (which does not explain the depletion of metals in</p>  </td> <td> <p>THE DAILY MYTHBUSTER</p> <p>MYTH: The moon is made of green cheese.</p> <p>FACT: The Moon formed 4.51 billion years ago, some 60 million years after the origin of the Solar System. Several forming mechanisms have been proposed, including the fission of the Moon from Earth’s crust through centrifugal force (which would require too great an initial spin of Earth), the gravitational capture of a pre-formed Moon (which would require an unfeasibly extended atmosphere of Earth to dissipate the energy of the passing Moon), and the co-formation of Earth and the Moon together in the primordial accretion disk (which does not explain the depletion of metals in</p>  </td> </tr> </tbody> </table> <p><small>The Conversation, CC BY-ND</small></p> </div>	What you see:	What you might remember:	<p>THE DAILY MYTHBUSTER</p> <p>MYTH: “The moon is made of green cheese.”</p> <p>FACT: The Moon formed 4.51 billion years ago, some 60 million years after the origin of the Solar System. Several forming mechanisms have been proposed, including the fission of the Moon from Earth’s crust through centrifugal force (which would require too great an initial spin of Earth), the gravitational capture of a pre-formed Moon (which would require an unfeasibly extended atmosphere of Earth to dissipate the energy of the passing Moon), and the co-formation of Earth and the Moon together in the primordial accretion disk (which does not explain the depletion of metals in</p> 	<p>THE DAILY MYTHBUSTER</p> <p>MYTH: The moon is made of green cheese.</p> <p>FACT: The Moon formed 4.51 billion years ago, some 60 million years after the origin of the Solar System. Several forming mechanisms have been proposed, including the fission of the Moon from Earth’s crust through centrifugal force (which would require too great an initial spin of Earth), the gravitational capture of a pre-formed Moon (which would require an unfeasibly extended atmosphere of Earth to dissipate the energy of the passing Moon), and the co-formation of Earth and the Moon together in the primordial accretion disk (which does not explain the depletion of metals in</p> 
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Moving Beyond Facts

The topic of adult vaccinations is one fraught with emotions, both positive and negative. So,

how do we reconcile facts and emotions?

“Given that emotions are found to influence vaccine risk perceptions and intentions more strongly than statistical information, vaccine education efforts must move beyond presenting factual information to address emotions surrounding COVID-19 .”

-Chou & Budenz, 2020

According to Chou & Budenz (2020), leveraging and balancing positive and negative emotions are essential for significantly addressing vaccine hesitancy and increasing vaccine confidence. They recommend three specific strategies, which align with the three communication strategies of Motivational Interviewing, Science Media Literacy, and Neuromarketing (see Table 2 and Resource Box below).

Table 2: Three Strategies for Leveraging and Balancing Emotions

	Chou & Budenz Recommendations	Examples
1.	Acknowledge fear, anger, and other negative emotions while supporting self-efficacy.	Motivational Interviewing: Use Reflections and Affirmations to validate emotions; provide new information with Ask-Offer-Ask to support autonomy.
2.	Raise awareness of how anti-vaccine groups use negative emotional appeals to amplify fear and anger.	Science Media Literacy: Recognize how groups spreading misinformation and disinformation are manipulating emotions. Develop skills to manage emotions to work with rather than against self-interests when evaluating science media.
3.	Counteract negative emotions and activate positive emotions.	Neuromarketing: Tailor vaccine education content to activate but not overwhelm with negative emotions. Use narrative and images promoting community-focused, pro-social values that elicit positive emotions. Motivational Interviewing: highlight feelings of control by emphasizing choice, providing accurate &

		trusted information and connect vaccine decision to values.
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Resource Box:

Peer Reviewed Journal Article	<p>Considering Emotion in COVID-19 Vaccine Communications: Addressing Vaccine Hesitancy and Fostering Vaccine Confidence.</p> <p><u>Article Link</u></p>
--	--

You can use this reading guide and fill in the blanks to help you find the major take aways from this article:

- One of the major factors influencing vaccine hesitancy among the U.S. population is concerns over _____ and _____ of the vaccine.
- Anti-vaccine disinformation often manipulates negative emotions such as fear and anxiety to increase _____.
- Acknowledging _____, while emphasizing vaccine safety and efficacy, may help to increase vaccine confidence.
- Adapting vaccine education to the audience's current _____, instead of using a generic approach, can be more effective.
- _____ appeals are particularly effective in increasing preventive behaviors compared to messaging that promotes personal motivations.

Contemplation Worksheet

Using the [Integrated Model of Sustainable Health Decision-Making](#) and [Cooperative Extension's Framework for Health Equity and Well-Being](#) use the following prompts to guide your reflections about engaging in effective vaccine education.

How does your thinking about health promotion change when you think about communicating *with* a community instead of *to* an audience?

When you think about a health issue that is affecting your community, what role might emotions play in the decisions that people will make about the recommended behaviors to adopt in response to this issues? _____

What questions or thoughts do you have about how to apply this model in your community as you think about using this toolkit?

When we think about how Cooperative Extension endeavors to promote health equity, can you think of any ways that applying this model in your community might help to promote vaccine education?

When you think about your community, can you think of any ways that applying this model might help to reduce barriers to vaccine education?

MOTIVATIONAL INTERVIEWING

Chapter 1

Motivational Interviewing

What is Motivational Interviewing? Why Motivational Interviewing for Vaccine Education?

Motivational interviewing (MI) was developed by Drs. Miller and Rollnick to help people change their substance use and health behaviors. MI is defined as:

...is a specific form of interviewing. When practicing MI, the interviewer has a guiding role The recipient of MI is being served and ultimately is the one who decides what to change, if anything. MI is not about *installing* motivation in people, but rather *evoking* it from them. (p.15, [Miller & Rollnick, 2023](#)).

How does MI fit into the [Integrated Model of Sustainable Health Decision-Making](#)? MI, at its core, is focused on building and strengthening relationships between Extension Professionals and community members. Additionally, it supports impactful communication activities that support community members' motivation to explore the topic of adult vaccinations or receive adult vaccinations. Finally, it complements the strategies that are used by [science media literacy](#), [neuromarketing-based communication](#), and [impactful outreach](#) to engage community members in conversations about misinformation, adult vaccinations, and well-being.

How Motivational Interviewing Supports Health Equity?

MI also aligns with [Extension's National Framework for Health Equity and Well-Being](#) (Burton et al., 2021). MI focuses on partnership and collaboration to build trust and relationships with community members. This emphasis reduces the power differential between Extension professionals and community members. Moreover, when operating within the MI frame, Extension professionals recognize community members as experts on their own lives, prioritize community goals, and serve as guides that support priority communities. As such , Extension professionals look to communities for help in identifying goals that support health equity and well-being within specific sociocultural contexts and support community members in working towards meeting those goals. MI can be integrated into Extension education workshops which focus solely on supporting vaccinations for individuals, as well as workshops that focus on health more broadly.

Why Motivational Interviewing for Vaccine Education?

MI is an evidence-based strategy to engage people in conversations about changes in health behaviors ([Rollnick et al., 2023](#)). It is effective in supporting a variety of health behaviors such as medication adherence ([Palacio et al., 2016](#)) and smoking cessation ([Lindson-Hawley et al., 2015](#)), and has recently been identified as an effective strategy to decrease vaccine hesitancy (e.g., [Bidkhanian, 2023](#); [Cogordan et al., 2023](#)).

When utilized by Extension Professionals it provides the avenue for:

- Communicating confidently with anyone about adult vaccines.
- Avoiding unpleasant confrontations while maintaining trust and credibility.
- Creating the environment for people to express concerns and questions

The Guiding Spirit of Motivational Interviewing

Motivational interviewing is founded upon the following principles, also known as the Spirit of MI ([Miller & Rollnick, 2023](#)):

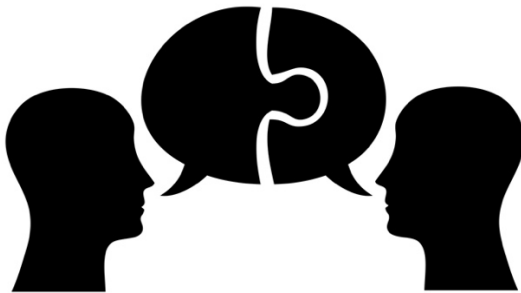
Partnership: Invite people to share their expertise on their own lives and experiences. Ask permission to share your expertise about vaccines and check-in about how the information that you share fits with people's values and goals.

Acceptance: Accept people where they are and do not try to persuade or change them. Support people's autonomy to make choices about their lives, affirm their strengths and values, and demonstrate empathy.

Compassion: Communicate to people that we hold their autonomy and well-being as the highest priority.

Empowerment: Supporting autonomy with the focus of evoking individual's strengths, resources, and skills to engage in goal behavior.

An easy way to remember the Guiding Spirit of MI is to think of the acronym **PACE**. We **PACE** our conversations with others: we partner with and accept them from a compassionate and evocative stance.



The Guiding Spirit of MI helps prevent or decrease *discord* (Miller & Rollnick, 2023).

Discord arises when people do not feel heard or understood. It can look like a power struggle, irritation, anger, or giving one-word answers or not answering at all. To decrease *discord*, you can (1) support their autonomy, (2) change the topic of the conversation, and/or (3) apologize.

Below you will find an example of two conversations: typical conversation and MI-informed conversation. As you watch this video, consider how MI-informed conversation differs from the typical conversation.

Video Resource Box: A Taste of Motivational Interviewing



A Taste of MI



- You will observe two interactions between me and one of my colleagues
- Please, note what is effective about each interaction and what is less effective.

Four Tasks of Motivational Interviewing

Motivational interviewing has four tasks that can be used as a roadmap for MI practitioners ([Miller & Rollnick, 2023](#)):



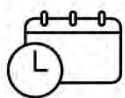
Engage: Before having a conversation about change, you need to build sufficient engagement. During *engaging* you demonstrate empathy about the other person and who they are. *Tip:* Ask the person about their successes, strengths, or values. Affirm their life experiences. Listen well.



Focus: Once you have sufficient engagement, you can start to focus on the conversation. Collaboratively with the person, you identify the focus of the conversation. Having a focus will help you move the conversation toward the direction of change. *Tip:* Provide the person with a menu of options or a list of potential topics that you could talk about. Invite them to choose one of the topics or identify a different topic.



Evoke: Having a focus helps you evoke the person's own arguments for change (also known as *change talk*). The higher the frequency of these statements, the higher is the likelihood that the person will engage in change. You will find more information about *change talk* in the next section of the Toolkit. *Tip:* Explore with the person how *important* it is for them to consider receiving a vaccination and what would need to happen for it to become a little more important. Explore with the person how *confident* they feel about getting a vaccination and what could help them feel a little more confident.



Plan: The planning process invites the person to develop a formal or informal plan of next steps towards a new behavior. *Tip:* Invite the person to summarize why this change is important to them, the next steps that they are willing to take towards that change, and who could support them during this change. Evoke hope and confidence.

Change Talk: Statements about Change

Change talk is at the heart of motivational interviewing and refers to the person's own arguments for change ([Miller & Rollnick, 2023](#)). An increase in the frequency of change talk is related to a change in a behavior ([Magill et al., 2018](#)). Below you will find the seven categories of change talk. You do not have to memorize these categories; however, having some familiarity with them might help you notice change talk in your conversations.

- **Desire:** I want to change.
- **Ability:** I can change.

- **Reasons:** These are my reasons for changing.
- **Need:** I need to change
- **Commitment:** I will start engaging in the new behavior
- **Activation:** I am considering change.
- **Taking Steps:** I will start/have started to take these steps towards change.

The acronym for change talk is DARN CATS



Now, it's your turn to practice recognizing change talk! Find Table 3 below. Read each statement in the first column. In the second column, write-in what change talk category this statement falls under (desire, ability, reasons, need, commitment, activation, taking steps).

Table 3: Change Talk Exercise

Statement	Change Talk Category?
Example: I'd like to find out more information about vaccine safety.	Desire
I am a little afraid that if I don't get the vaccine, I might get sick and not get better.	
I must take care of my family and can't afford to take sick time off.	
I have nothing against medicine. I go to the doctor when I need to.	
I scheduled an appointment at the pharmacy to get my vaccine.	

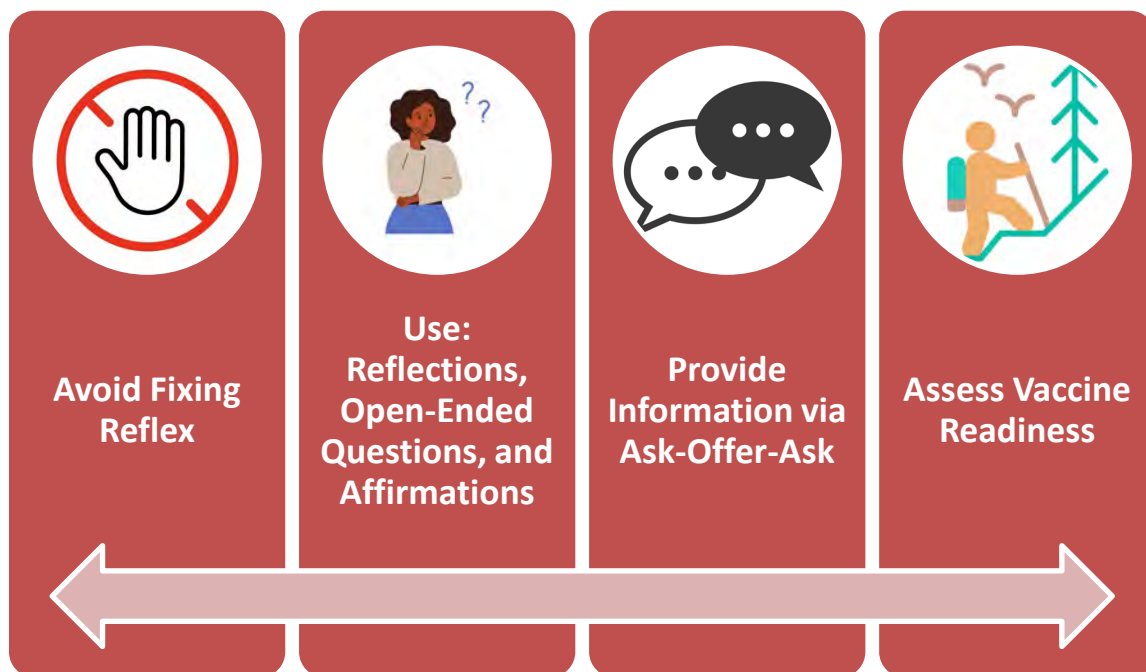
MI and Vaccine Hesitancy

In the next pages, we will explore key MI skills that help us demonstrate *the Guiding Spirit of MI*, move through the *Tasks of MI*, and evoke and reinforce *Change Talk*. This section will provide information to help you understand MI concepts and provide strategies for how to put each concept into practice. Whether you are brand new to MI or have explored these skills in the past, this section gives you the opportunity to apply MI skills to audiences experiencing vaccine hesitancy.

First, what is vaccine hesitancy? [Dr. Larson and colleagues \(2022\)](#) define vaccine hesitancy as:

... a state of indecision and uncertainty that precedes a decision to become (or not become) vaccinated. Vaccine hesitancy is an attitude or sentiment, whereas vaccination is an action, which is measured to determine vaccine coverage. The period of hesitancy and indecision is a time of vulnerability, as well as opportunity. Sentiments concerning whether to undergo vaccination can change, and change again, as evidenced in multiple surveys showing that Covid-19 vaccine sentiments are influenced by factors such as a new report of vaccine risks or perceptions of increasing or decreasing disease threats (p. 58).

In other words, vaccine hesitancy is an ongoing state where readiness and willingness to get vaccinated fluctuates. Most importantly, it is a time of “vulnerability, as well as opportunity” ([Larson et al., 2022, p. 58](#)). Motivational interviewing is a guiding approach that offers support and focuses on increasing intrinsic motivation to move towards reducing vaccine hesitancy in the direction of getting vaccinated.



Note: Is it important to emphasize that these motivational interviewing skills are not always utilized in a linear process. Based on the conversation, you might utilize any one of the motivational interviewing skills in any order.

Additionally, these skills in Figure 3 do not cover the entire array of Motivational Interviewing skills or concepts. We tailored the information provided in the Toolkit to be focused on the most essential elements of Motivational Interviewing likely to be relevant to Extension professionals engaged in individual or group vaccine education or community outreach.

Avoid Fixing Reflex

The “fixing reflex” is our urge to correct misinformation or tell people what to do when we have important information. The “fixing reflex” makes it difficult to build an effective working relationship and can shut down a conversation ([Miller & Rollnick, 2023](#)). It is easy to fall into the trap of fixing reflex when addressing vaccine hesitancy. Our intention is to provide accurate information and to try and convince others to act in the best interest of their health. However, this approach often backfires.

Refer to the video example above. What did you notice about how fixing reflex impacted Alexandra’s engagement? Think about a time when you used fixing reflex in a conversation. Record your thoughts about the conversation: What happened during and after the conversation? How did you feel about the conversation? How do you think the other person felt?

So, what can we do instead of trying to fix? First, we need to engage and establish a positive relationship with the other person.

- Listen
- Rely on Partnership, Acceptance, Compassion, and Empowerment of the Guiding MI Spirit
- Seek to understand the other person’s perspective and suspend judgement
- Acknowledge that the person is the expert on their life and that do not have control over what they choose to do
- Emphasize that the person is working towards having a good life, as they define it

What situations will be most difficult for you to resist the fixing reflex? What will you do to prepare yourself ahead of time or adjust during the conversation?

Reflections

Reflections are statements that communicate “I hear you and I want to understand you.”

Reflections, as the name suggests, reflect back to the person what they just said. Sometimes you may want to reflect exactly what that person said (*simple* reflection). Sometimes, reflecting the underlying meaning or feeling of the person’s statement might be more impactful (*complex* reflection). Using accurate reflections can build a strong working relationship and help you evoke and reinforce change talk ([Miller & Rollnick, 2023](#)). Here are some tips for using reflections:

- Respond to underlying meaning and feeling
- Respond to change talk
- Note all cues, including non-verbal clues

Reflections can be *simple* (restating what the person said) or *complex* (reflecting the underlying meaning or feeling of what the person said) (Miller & Rollnick, 2023). See two scenarios below for an illustration of simple and complex reflections.

Scenario 1

Extension partner:

“I don’t see why Extension is doing vaccine education. That is work for the health department.”

Simple reflection:

“You don’t think Extension should be doing vaccine education.”

What other ideas do you have for a simple reflection for this statement?

Scenario 2

Extension professional:

“I wouldn’t touch vaccine education with a ten-foot pole! It is so controversial and political. Besides, it is a personal decision, and you can’t change people’s minds.”

Complex reflection:

“You want some evidence that vaccine education is effective and can support people’s individual health choices.”

What other ideas do you have for a complex reflection for this statement?

Open-ended questions

Open-ended questions help you move the conversation forward. They are questions that prompt more than just a yes or no response ([Miller & Rollnick, 2023](#)). Open-ended questions often begin with the words *How, What, When, and Tell me more about that*. A fun fact – sometimes open-ended questions can sound like a statement rather than a question.

Examples:

- Tell me more about that.
- What do you like/dislike about that?
- What is your biggest concern?
- What might be the best outcome of this decision?
- How might this impact your life?
- How could you find out more information?
- Tell me about the time when you had to make a big decision.

Here is an example of using open-ended questions in a conversation:

Community Member: “Well, don’t take that personally, but yes to be honest. At least you are listening to me and trying to understand how we feel in this community.”

Extension Professional: “What will help you feel more comfortable about this?” (Open-ended question)

Take a few moments to make the statements below into open-ended questions:

Do you have any questions about adult vaccines?

Do you have any concerns about getting the COVID booster or another vaccine?

Affirmations

Affirmations reflect a person’s value, strength, effort, or skill and help build confidence ([Miller & Rollnick, 2023](#)).

In the exercise below, you have an opportunity to practice providing affirmations.

Extension Partner "Extension shouldn't be promoting vaccines and telling people they should get them."

Example of an affirmation: “Making sure people have a choice about vaccines is important to you.”

What other value, strength, effort, or skills can you get from this statement and provide as an affirmation?

The video on the next page provides a summary of MI and the skills described above:

Video Resource Box: Overview of Motivational Interviewing



Let's come back to vaccine hesitancy. With the wealth of credible information, why would people not want to get vaccinated? The answer to this question is complex. A systematic literature review conducted by [Kumar and colleagues \(2022\)](#) focused on identifying key factors in Covid-19 and influenza vaccines across several countries. They identified the following four themes:

- Concerns about vaccine safety
- Lack of trust in the government, the pharmaceutical companies, healthcare policies, and published studies; lack of knowledge about types of available vaccines and their safety
- Lack of perceived need for vaccination due to low concern about getting ill and viewing vaccines as ineffective, and relying on higher power for protection
- Cultural reasons

While this is not an exhaustive list, we can see that the reasons for vaccine hesitancy are personal and that it may be challenging to alter these beliefs by information sharing alone. Read through the following hypothetical statements and follow prompts to develop an MI-consistent response.

Community Member: "My daughter posted on X an article that says that the flu vaccine is unsafe. I hardly ever get sick. Why should I risk it?"

Your response (**prompt**: use a complex reflection to highlight the underlying meaning):

Community Member: “Yeah. I just don’t trust the government. They have their own agenda and really don’t care that much about my health.”

Your response (**prompt 1**: identify change talk; **prompt 2**: use a complex reflection to reinforce this change talk):

Community Member: “My health is important to me. I grew up in the church and I believe that God will protect me and if it’s my time to go, there is nothing I can about that.”

Your response (**prompt 1**: use a simple reflection to respond):

Community Member: “So, what am I supposed to do and who am I supposed to trust?”

Your response (**prompt 1**: go through previous statement from the community member and identify change talk that is present; **prompt 2**: summarize that change talk in a form of a statement; **prompt 3**: end with an open ended question aimed at guiding the community member towards finding out more information about vaccines):

Well done on completing this part. Let’s talk about other MI skills to address vaccine hesitancy.

Ask-Offer-Ask for Providing Information

Ask-Offer-Ask is a strategy to share information in an MI-consistent way ([Miller & Rollnick, 2023](#)). There are several steps to using this strategy effectively.

Step 1: ASK: “What do you know about _____?”

This step supports the person’s autonomy and competence. Additionally, it elicits what information they already know so you don’t have to repeat it. After the person shares what they know with you, *affirm* them for their knowledge. Consider using a reflection to highlight any change talk that they might share. See an example of Asking below:

Extension Professional: “What do you know about vaccine safety?”

Community Partner: “Well, I know that some of them are safe. But some, I am not sure about.”

Extension Professional: “You’ve done your homework (affirmation). And if you had more information about some of the other vaccines, that’d help you make up your mind about them (reflection).”

Community Partner: “Yeah, that sounds about right.”

Extension Professional: “*Would it be ok if I share some information about these vaccines?* (asking permission)” Note: asking permission supports the person’s autonomy to decline. If they decline, you do not move to Step 2. If they agree, then go to Step 2.

Community Partner: “*Sure.*”

Step 2: OFFER: [Share 1 piece of information].

Step 3: ASK: “What do you think about what I shared?”

This step allows the person to discuss how this information impacted them. See an example of Asking below:

Community Partner: “Well, it kind of makes sense but I am the kind of person who likes to do my own research.”

Extension Professional: “If you had some resources you read, you would feel more confident in being able to make up your own mind about these vaccines (reflection).”

Additionally, integrating strategies from the [Science Media Literacy](#) portion of this toolkit to support your efforts in dispel misinformation and aid community members in identifying credible sources of information. For example, you might use Ask-Offer-Ask to share the Science Media Literacy infographic in your workshops when community members bring up the topic of misinformation.

Assess Vaccine Readiness

Assessing readiness helps us understand how we can best support the other person ([Miller & Rollnick, 2023](#)). For example, if the person is not ready to talk about vaccines, we could start to build a relationship with them by having a conversation about their health and affirming their efforts to keep themselves healthy. If a person is very ready and wants to know how they can schedule an appointment to receive their vaccine, we can help them to come up with a plan.

Below you will find the steps of assessing a person's readiness and Figure 4 can help you assess their readiness:

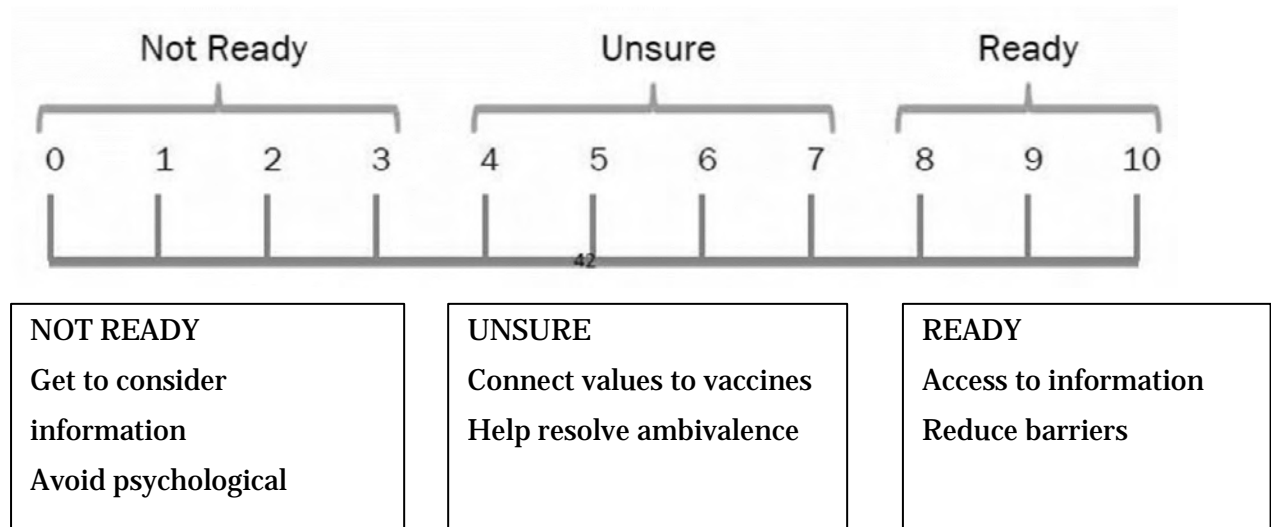
Step 1: Ask the person on a scale from 1 to 10, how ready they are [insert the focus of your conversation].

Step 2: Ask the person *why they are as high as this number and not lower*. This elicits change talk. If a person is at a 1, then affirm that they are not ready at this time.

Step 3: Ask the person *what would help them to become a little more ready*. This also can elicit change talk and help you understand how you can best support them.

Step 4: Summarize and highlight any change talk. Example: "You are at about a 3 for how ready you are to consider getting a Covid-19 vaccine. Your health and the health of your young children is important to you and if you had more reliable information about the safety of the covid vaccine, it might make you feel more ready, like at a 5 or a 6."

Figure 4: Vaccine Readiness Assessment



Video Resource Box: Ask-Offer-Ask and Assessing Readiness



Vaccine Readiness Conversation Practice

Instructions:

- Read through the following exchange between a Community Member and an Extension Professional.

Extension Professional: On a scale from 1 to 10, where 1 means not ready at all and 10 means very ready, how are ready are you to ask your doctors about the MMR vaccine?

Community Member: Oh geez. I don't know. Um. A 4?

PROMPT Write an example of a reflection that you can offer this Community Member. Remember, reflection is a statement that reflects what the person said. It could be a simple restatement or a reflection of underlying feeling or meaning.

Community Member: Sounds about right.

Extension Professional: What makes it as high as a 4 and not a 2?

Community Member: Well, I know that if I have my vaccines, I'll stay healthier. And I want to have children, so that could help me stay healthy during pregnancy. But what if there are side effects that I don't know about...

PROMPT Write down what change talk you are hearing in the Community Member's Statement. Remember, change talk are statements of: *desire, ability, reasons, need, commitment, activation, or taking steps towards change.*

PROMPT Write down an affirmation that you could offer this Community Member. Remember, an affirmation *is a statement that reflects person's strengths, values, or goals.*

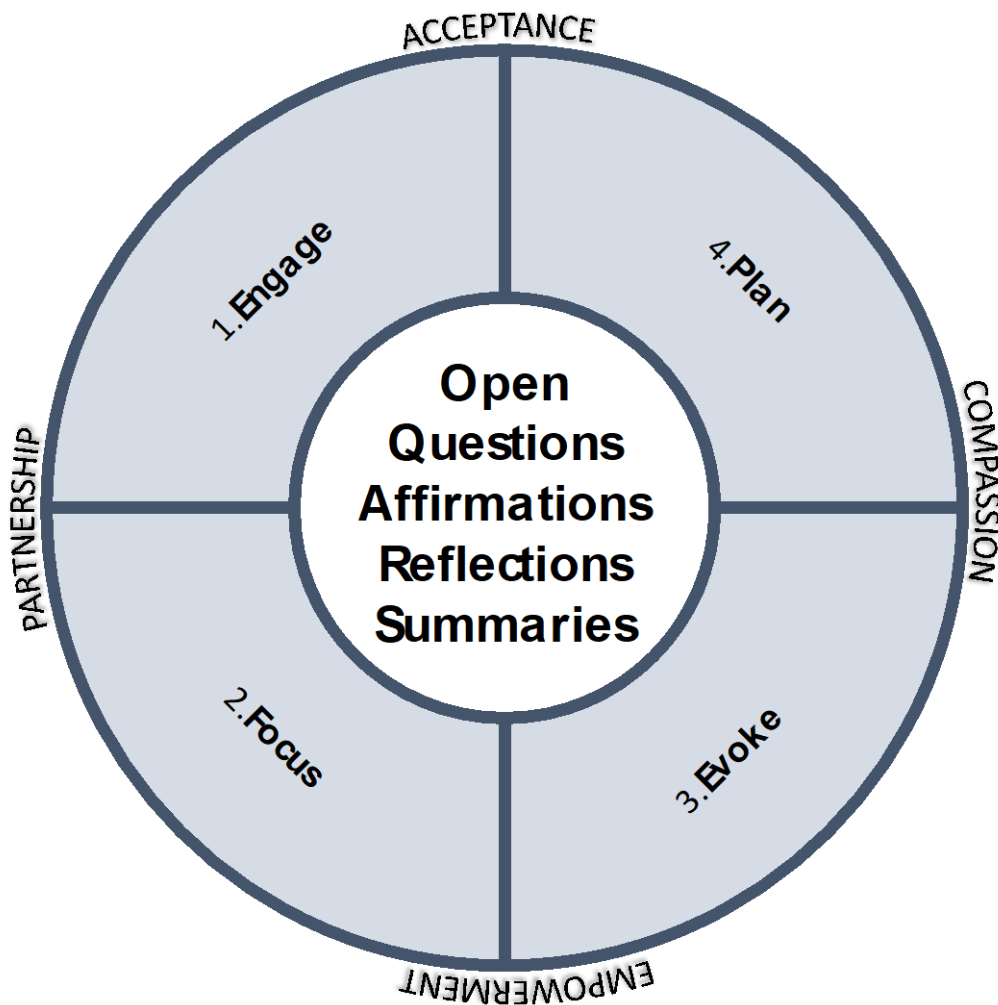
Extension Professional: What would need to happen for you to feel a little more ready, like a 5 or a 6?

Community Member: I think writing down some of the questions that I have for my doctor so I don't forget to ask them, that would make me feel more prepared.

PROMPT Write down a question you could ask this Community Member to move the conversation forward:

MOTIVATIONAL INTERVIEWING INFOGRAPHIC

MI consists of several smaller components that fit together to support effective vaccine education. The infographic below might be a helpful visual as you conceptualize your work with priority populations through the MI lens.



Reflection on Conversation Goals of Extension Professionals

A person's readiness can inform the focus of your conversation with them. Perhaps the focus of one conversation is to increase a person's importance to get a vaccination by connecting it to their values. Yet, in another conversation, the focus could be simply building a positive relationship with an Extension Professional. Yet another conversation could focus on increasing a person's confidence in talking to their family members about their decision to get a vaccine. Overarchingly, any conversation will be grounded in the Guiding MI Spirit: Partnership, Acceptance, Compassion, and Empowerment. Another way to think about this is: listen more, talk less.

For Extension Professionals, some of the most challenging conversations about vaccines may be around the topic of whether other Extension professionals or members of the community think Extension should be engaged in vaccine education. This topic provides a great opportunity to reflect on and put into practice the various motivational interviewing skills covered in this section. Remember, the motivational interviewing skill used depends on the conversation's needs. There is not a specific order to which motivational interviewing skills are used, as all can have a place in any conversation.

Here is an opportunity for you to practice having these conversations.

Imagine that an Extension stakeholder has made the following statement to you:

"Extension shouldn't be in the business of vaccine education."

Write out possible statements or your personal thoughts in utilizing the following MI strategies in a conversation with this partner:

Think back to Four Tasks of MI. How could you engage this person in a conversation?

What could be the potential focus of this conversation?

How could you Assess their Readiness?

How could you use Ask-Offer-Ask?

What Open-Ended Questions could you ask?

What Affirmations could you offer?

Write down a sample Simple Reflection:

Write down a sample Complex Reflection:

How could you evoke Change Talk?

How Could You Avoid Fixing Reflex?

Persona Engagement

Resource Box: Vaccine Hesitancy Course and Video



This course was adapted from the California Coronavirus Testing Task Force, Human Centered Recommendations for Increasing Vaccine Uptake. Published June 8, 2021. Stanford CME is extremely grateful to Kaiser Permanente for permission to create this adaptation. As we see pockets of people unwilling to get the COVID-19 vaccine, we need to ask ourselves what their values are and why they perceive vaccination as a threat to such. This document presents a set of human centered recommendations to increase vaccine uptake and close the gap of herd immunity. World views are the lens through which we perceive risk and make decisions. These are deep seated and unchanging values. They can be understood and used to adapt messaging to be more effective. Seven archetypes illustrate people's attitudes and mindsets towards COVID-19 vaccination. These archetypes provide insights into how to improve messaging and engagement to shift people towards vaccine acceptance. Specific examples of messaging and service delivery considerations are provided for each archetype.

Given the information in the video and workbook, use the worksheet below in Table 4 to make observations about individuals you are working with to understand the various personas. Think of three people you have recently engaged with on the topic of vaccines. Place their names in the far-left hand box. Then, based on your conversations with them,

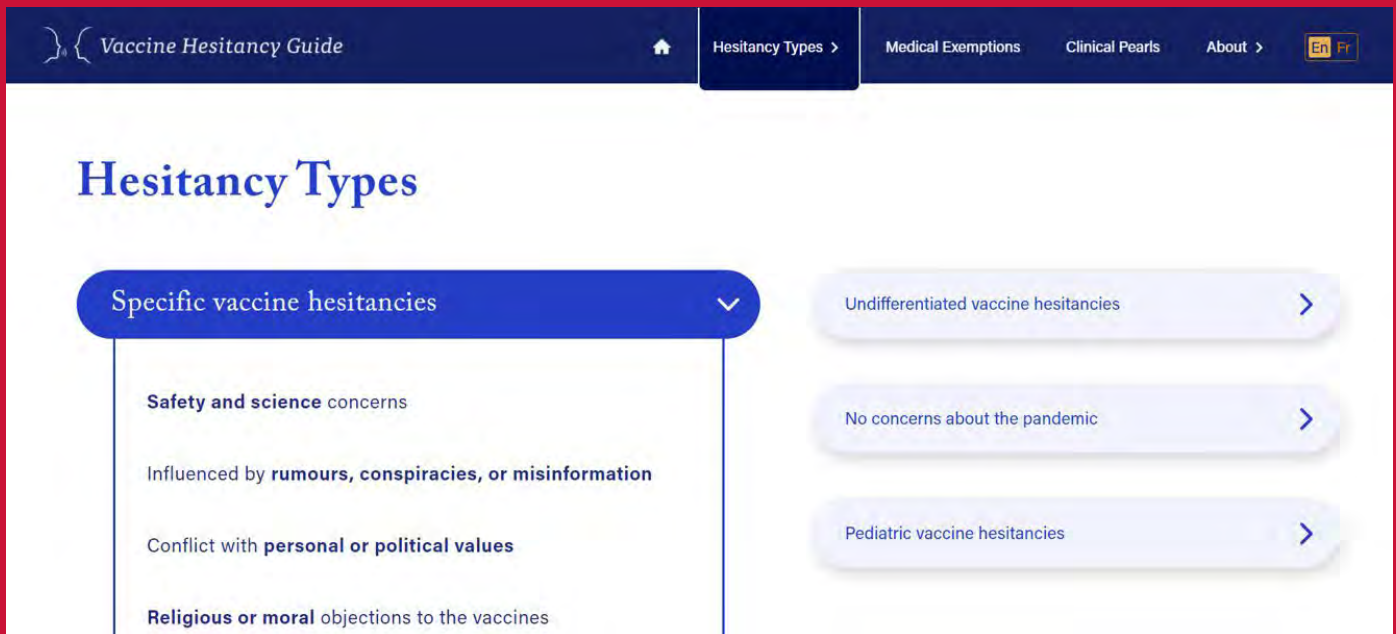
determine which persona best reflects where that individual is. Then also note what does that means you might consider when you approach a future conversation with them.

Table 4: Personas of Engagement for Extension Professionals Worksheet (adapted from Vaccine Mindset Spectrum)

Individuals you work with	Personas of Engagement for Extension Professionals						
Invest	Invest						
Motivate			Motivate				
Inspire						Inspire	
Individuals you work with	Steadfast Opponent	Healthy Independent	Concerned Skeptic	Indifferent Individual	Cautious Supporter	Reluctant Vaxxer	Vaccine Advocate
Name:							
Name:							
Name:							

Resource Box: Vaccine Hesitancy Guide

Source: <https://www.vhguide.ca/>



The screenshot shows the 'Vaccine Hesitancy Guide' website. The navigation bar includes 'Home', 'Hesitancy Types >', 'Medical Exemptions', 'Clinical Pearls', and 'About >'. There are also language selection buttons for 'En' and 'Fr'. The main heading is 'Hesitancy Types'. A dropdown menu is open for 'Specific vaccine hesitancies', listing four categories: 'Safety and science concerns', 'Influenced by rumours, conspiracies, or misinformation', 'Conflict with personal or political values', and 'Religious or moral objections to the vaccines'. To the right, three other categories are listed with right-pointing arrows: 'Undifferentiated vaccine hesitancies', 'No concerns about the pandemic', and 'Pediatric vaccine hesitancies'.

MI in Group Settings

Motivational interviewing is an effective group facilitation strategy ([Wagner & Ingersoll, 2012](#)). In a group setting, the Guiding Spirit and Tasks of MI and MI Technical Skills are used to engage group participants in a conversation, support conversations about change, build group cohesion, and focus on solutions. Think of a group as an opportunity to hear multiple perspectives and increased opportunities to evoke and reinforce change talk. Below you will find concrete strategies by [Drs. Wagner and Ingersoll \(2012\)](#) about how to use MI to engage individuals in a group conversation.

Have a Plan

We encourage you to have a flexible plan and focus for the group conversation. It is easy to be pulled off track by multiple perspectives that might emerge during a group conversation. Having a plan that is shared with the group participants will ease the redirection of the conversation towards to topic at hand. With that said, we encourage you to maintain the stance of Partnerships, Acceptance, Compassion, and Empowerment as you move through your plan. For example, if the next item on your plan is for group participants to discuss vaccine efficacy information, yet some of the group participants appear hesitant about this

topic you can (1) **Partner** with the group by acknowledging that that this topic might be challenging for some of the group members, (2) demonstrate **Acceptance and Compassion** by affirming that group members want to be thoughtful about their decisions, and (3) **Empower** group members by evoking how they made difficult decisions in the past. Note, that the last step is focused on increasing change talk among the group participants. You may also want to start the group with reviewing Group Norms or Group Agreements. This could be a good introductory activity where group participants could have an opportunity to share and engage in a collaborative process of identifying group norms.

Focus on the Positive

Engage the group participants and start to build group cohesion by focusing on the positive. It easy to move into the direction of the negative, or in the case of vaccine hesitancy, why group members do not want to be vaccinated. This can disrupt the group process. To prevent this, you can use MI technical skills to (a) explore participants' reasons for attending this group, (b) briefly acknowledge the reasons why some group members are hesitant about vaccines and (c) elicit any change talk from the group. Additionally, consider using strategies described in the [Neuromarketing-Based Communication](#) section of the Toolkit to curate any images that you might use during your workshops and ensure that these images do not evoke negative emotions.

Scenario 1

Group Participant 1: "I don't know if I trust all the information that is out there."

Group Participant 2: "Yeah! Everyone has an agenda."

Extension Professional: "Some of you have concerns about what information to trust. Let me ask the group – how do you all vet information about vaccines to make sure that it is reliable?"

Bring Group Participants into the Moment

Staying in the present moment can enhance the feelings of safety and group cohesion. Sometimes group participants begin talking about the past or the future. Refocus the conversation on the current thoughts and emotions and tie together common themes across group participants. Doing so will help build a sense of comfort and trust among group participants.

Scenario 2

Group Participant 1: "I remember when my neighbor got a flu vaccine and then was really sick. I am so worried about getting sick from a vaccine."

Extension Professional: "Tell me about what it's like for you all to be a part of this group and hearing all sorts of thoughts about vaccines."

Group Participant 1: "It is interesting. I am just not sure I am so ready yet. I have lots of

questions.”

Group Participant 2: “I kind of like it. As I listen to folks talk, it makes me think more about why I haven’t gotten vaccinated yet and maybe it’s not that bad.”

Group Participant 3: “I actually really appreciate all the information about vaccines through the Extension Office. I hear you all, it is kind of scary with all the mixed messages out there. But it’s nice to know that there are ways to find accurate information.”

Extension Professional: “It is kind of scary to hear about people getting sick or vaccines not working. And I am also hearing that for some of you this group is making some things more clear, like maybe it’s not that bad and maybe actually helpful to get vaccinated.”

Explore Perspectives and Focus on the Present

To continue to build group cohesion, consider engaging group participants in values and/or strengths exploration activities. Doing so will help them share more about themselves and their perspectives in a safe and positive way. Use open-ended questions and reflections to elicit information, use affirmations to focus on the positive, and use summaries to tie together and identify common themes in statements from group participants. Integrate resources from the [Science Media Literacy](#) section of the Toolkit if participants share misinformation.

Broaden Perspectives and Focus on the Future

It can be helpful to focus on the present and explore perspectives as you are building group cohesion. At the same time, the focus of an MI-based group is on the future choices and actions. Oftentimes people feel stuck in one way of thinking and see their options for the future as restricted. Utilizing the many voices of the group, you can elicit multiple future goals, choices, and options, thus helping group participants broaden their sense of agency in their lives.

Scenario 3

Extension Professional: “Thank you all for sharing with me about what’s important to you and what brings you to this meeting. When you imagine your life in one year, what would it look like?”

Group Participant 1: “Well, I’d like to be healthy, and I’d like my kids to be healthy! We are planning a big cross-country trip.”

Group Participant 2: “I hope this covid thing really quiets down. I am tired of hearing about it.”

Group Participant 3: “I am not sure if I understand your question, but I think I just want to have a good life. Like they said, no worries and healthy.”

Extension Professional: “You all want to stay healthy and not feel so on edge. I heard cross-country trip, staying healthy, not worried. What decisions are you making right now that will help you achieve these goals?”

Group Participant 2: “We are all here, aren’t we? We want to get some clarity about vaccines.”

Reflect and Explore Change Talk

Help group participants hear each other’s change talk. You can use open-ended questions, affirmations, and reflections to amplify group’s change talk, thus building a stronger momentum for change. A word of caution – we don’ want you to ignore participant statements about not wanting to get vaccinated or their fear about that. If you ignore those statements, the group participants will keep bringing them up because they would want to make sure that you understand their perspective. One suggestion is to briefly acknowledge those statements and then pivot to statements about change. See if you can notice this technique in the scenarios shared above.

Assessing Vaccine Readiness could also be a helpful activity. This will help group participants who are not as ready hear others’ perspectives about why they are more ready. You can ask group participants to mark down on a white board where they are at in terms of vaccine readiness. Or, if you want to get them out of their seats, consider asking them to line up from 1 to 10. Then, follow the Assessing Vaccine Readiness instructions from an earlier

section in the Toolkit.

Counteract Negative Reactions before the End of the Group

Sometimes tensions will arise during a group conversation. Actively working to reduce interpersonal discord, acknowledging the value of everyone's contribution, and providing affirmations can reduce the feeling of tension. Think of a group activity that you can do to close out the group, such as "affirmation conga line" where each group participant has an opportunity to share what they appreciated about the group. Finally, you can have the group participants share out what next steps they may take towards reducing their vaccine hesitancy. Be sure to give the option of "passing" for participants who are not ready to think about their next steps.

General Considerations: Support Self-Efficacy

The power of the group is that through working together, group participants can walk away feeling supported and heard by multiple others. Group conversations have the potential to help group participants clarify their goals. You can support this process by affirming group participant strengths and values, their past accomplishments, and their commitment to keep themselves and others healthy. It is also important to note that group members will have different goals and while some of them may experience a decrease in vaccine hesitancy, others may not. Reminding group participants that it is ok to have different goals and perspectives can reinforce their sense of autonomy.

General Considerations: Reduce Discord

When interpersonal discord arises, come alongside the group participants. Acknowledge that this is a challenging conversation and affirm group participants' candor. Sometimes it could be helpful to shift the focus of the conversation away from a "hot" topic.

In summary, we encourage you to see group facilitation as an exciting opportunity to elicit and get to know multiple perspectives that your community has about vaccines. Bringing forth these multiple voices can be helpful in understanding what your community needs in terms of vaccine education and how you can best support them, with the ultimate goal of reducing vaccine hesitancy.

Video Resource Box: MI with Groups



Change Talk
(p. 23)

Miller & Rollnick, 2013

- **Desire:** *I want to change*
- **Ability:** *I can change*
- **Reasons:** *These are my reasons for changing*
- **Need:** *I need to change*
- **Commitment:** *I will start engaging in a new behavior*
- **Activation:** *I am considering change*
- **Taking Steps:** *I will/have started to take steps towards change*

Use the MI with Groups Worksheet below to practice these skills.

MI with Groups Practice

Instructions:

Read through the following exchange between Community Members and an Extension Professional.

Extension Professional: Hello everyone! Welcome to a conversation about the vaccines that are offered in our county. As you came in today, you received an informational pamphlet. Before I start with my presentation, I wonder if you have any questions.

Community Member 1: So, are you here to talk us into getting a vaccine?

Community Member 2: I, for one, am grateful to get some more information.

PROMPT Write down an example of a reflection that you can offer to both community members.

PROMPT Write down an example of a sample agenda for this meeting. Remember to emphasize participants' autonomy.

Community Member 1: Well, okay, that sounds good.

Community Member 3: I don't have any questions right now.

PROMPT Write down an example of Ask-Offer-Ask in regard to providing information about vaccine availability in your county.

Community Member 3: Yeah, thanks for sharing this. But I am here to learn but I don't think I want to get all of the vaccines.

Community Member 1: I think it's great that all these vaccines are available, but don't you think that some of them are optional? Like I hardly ever get the flu, so I never get the flu vaccine.

Community Member 4: Oh, c'mon folks. You know that we should be getting the flu vaccine. It's not just about you. It's about all of us.

PROMPT Go through above statements and underline parts of the statements that are focused on the willingness to learn more about vaccines or get vaccinated. Write down an example of how you can refocus the conversation towards change (think: desire, ability, reasons, need, taking steps towards getting vaccines).

Community Member 2: I hear you all. Sometimes I feel crummy after getting a vaccine, but it feels good knowing that I am protecting myself.

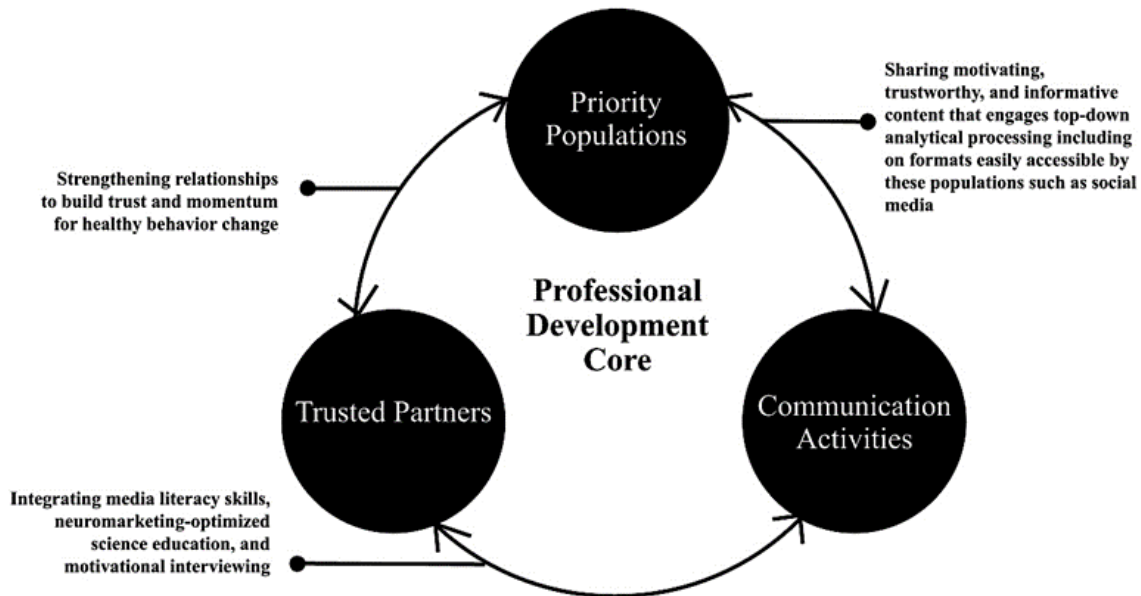
Community Member 3: I don't know. I don't love feeling crummy.

PROMPT Reread the above statements. Identify change talk (for extra challenge, see if there is any change talk in Community Member's 3 statement). Summarize that change talk with the focus on future action.

PROMPT Write down an affirmation that you could offer to the whole group.

PROMPT Write down how you would end the group (remember: focus on the positive)

Contemplation Worksheet



Now that you know more about MI, how do you see it fitting into the [Integrated Model of Sustainable Health Decision-Making](#)?

What resonates with you about Motivational Interviewing?

What information did you already know but maybe hadn't integrated into your work?

What will be your next steps for employing Motivational Interviewing for vaccine education?

Resources for Continued Skill Development

American Hospital Association. (2021). Human-centered recommendations for increasing vaccine uptake. Retrieved from

<https://www.aha.org/system/files/media/file/2021/06/Human-Centered-Recommendations-For-Increasing-Vaccine-Uptake.pdf>

Bidkhanian, P. A. (2023). Motivational Interviewing Technique As a Means of Decreasing Vaccine Hesitancy in Children and Adolescents During the COVID-19 Pandemic. *European Psychiatry*, 66(S1), S740-S740. <https://doi.org/10.1192/j.eurpsy.2023.1555>

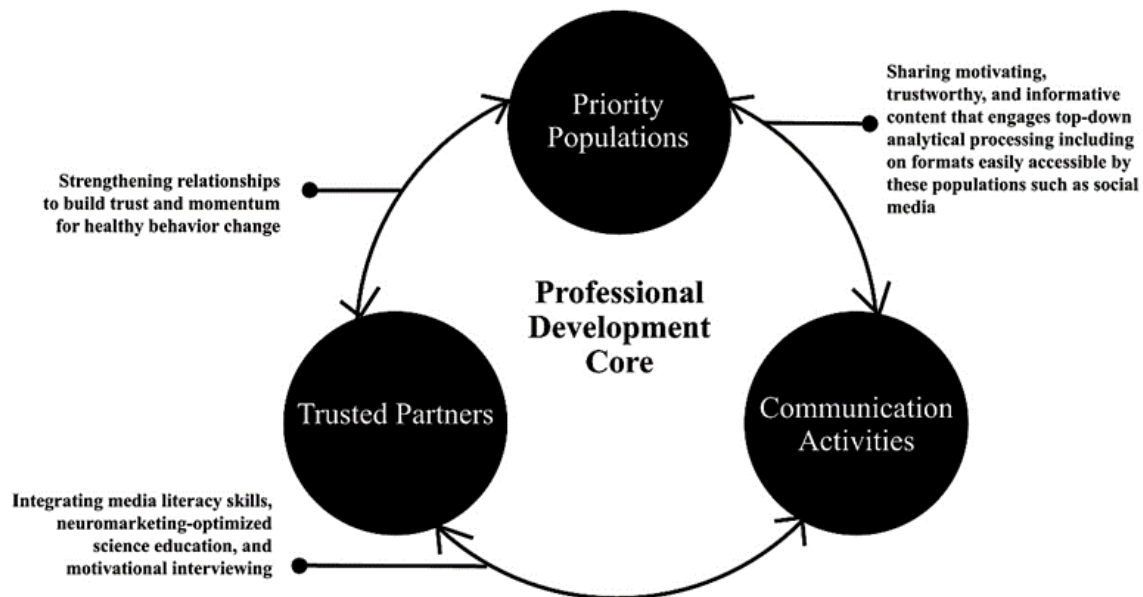
Cogordan, C., Fressard, L., Ramalli, L., Rebaudet, S., Malfait, P., Dutrey-Kaiser, A., ... &

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- Lindson-Hawley, N., Banting, M., West, R., Michie, S., Shinkins, B., & Aveyard, P. (2016). Gradual versus abrupt smoking cessation: a randomized, controlled noninferiority trial. *Annals of internal medicine*, 164(9), 585-592. <https://doi.org/10.7326/m14-2805>
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- Palacio, A., Garay, D., Langer, B., Taylor, J., Wood, B. A., & Tamariz, L. (2016). Motivational interviewing improves medication adherence: a systematic review and meta-analysis. *Journal of general internal medicine*, 31, 929-940. <https://doi.org/10.1007/s11606-016-3685-3>
- Rollnick, S., Miller, W.R., & Butler, C. (2023). *Motivational Interviewing in Health Care: Helping People Change Behavior*. Guilford Press.
- Rosengren, D. (2017). *Building Motivational Interviewing Skills: A Practitioner Workbook*. Guilford Press.
- Wagner C. & Ingersoll, K. (2012). *Motivational Interviewing in Groups*. Guilford Press.

SCIENCE MEDIA LITERACY

Chapter 2

Integrated Model of Sustainable Health Decision-Making



How Science Media Literacy Supports Health Equity

In this section we focus on Science Media Literacy as an important aspect of the Professional Development Core in the Model of Sustainable Health Decision Making for helping Trusted Partners to strengthen relationships with Priority Populations to engage in Communication Activities that build sustainable well-being.

The article excerpted below by Calac and Southwell explains that trusted sources within the community are key to public health—and to prevent misinformation that threatens well-being. When people don't have locally trusted sources within easy reach when they have questions and concerns, they can end up more susceptible to unintentional or intentional messengers of misinformation on the internet. Having a diverse array of messengers available to build and main relationships helps to ensure clear and comfortable communication ([Calac et al., 2022](#)).

How Misinformation Research Can Mask Relationship Gaps that Undermine Public Health Response

Alec J. Calac, BS¹ and Brian G. Southwell, PhD^{2,3}

Public health journals such as the *American Journal of Health Promotion* have spotlighted health misinformation in recent years as a cause for concern.^{1,2} Researchers have noted the diffusion of health misinformation as well as its tendency to complicate

exposure to inaccurate claims and which settings are opportune for debunking misinformation.⁹

Some research has described potential demographic differences in health misinformation acceptance and tendency to share health

Not surprisingly, our needs assessment of Extension professions in preparation for

developing this toolkit found that having trusted sources readily available matters for health professionals, too. Our national survey of Extension professionals (N=1009), performed during towards the end of the COVID-19 pandemic in 2022, found that trust in public health sources was a key factor in how comfortable professionals felt about addressing misinformation in their communities ($r = 0.325, p < 0.001$), how willing they were to speak out about vaccinations ($r = 0.363, p < 0.001$), and how willing they were to provide vaccine education ($r = 0.576, p \leq 0.001$). While building and maintaining trustworthiness in Extension, in public health sources, and among communities we are working with is beyond the scope of this toolkit, identifying and leveraging those trusted relationships through effective communication is key to addressing misinformation. The skills from the toolkit can be used to develop and carry out communication activities through trusted interrelationships. Remember “The Fixing Reflex” from [Motivational Interviewing?](#) (Tip: The fixing reflex is our urge to correct misinformation or tell people what to do when we have important information.)

What are some examples of misinformation you have heard recently that you have wanted to correct?

How comfortable do you feel addressing misinformation about the COVID-19 vaccine?

- Very Uncomfortable
- Uncomfortable
- Neither
- Comfortable
- Very Comfortable

Comfort in addressing misinformation, whether with COVID-19 vaccine, or any other health information topic relates to our confidence in interacting with others about the misinformation. Some people have confidence without skills. Some people have skills without confidence. We must have both confidence and skills. One without the other won't do.

The objective of the Science Media Literacy section of the toolkit is for you to leave with both more confidence and more skills for identifying and addressing misinformation in your environment.

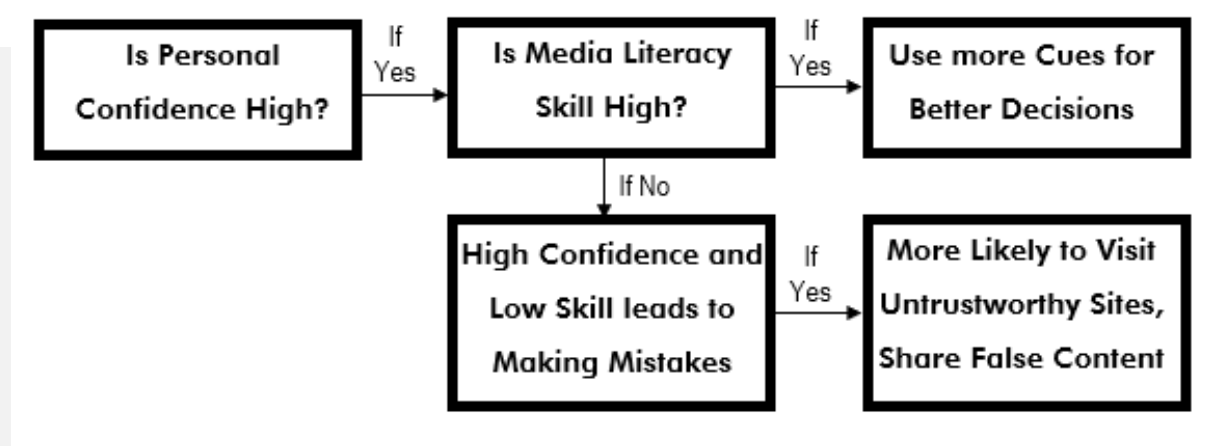
Science Media Literacy Confidence

When it comes to confidence in our own science media literacy, survey researchers have learned that:

When people are overconfident in their news judgments it can make them more susceptible to false news. In a study by Lyons et al. (2021), 3 in 4 Americans overestimated their ability to distinguish between legitimate and false news. Having high confidence and low media literacy skill can lead to problems in navigating information environments, which in turn can cause costly mistakes that hurt people we care about in our communities and beyond (see Figure 5).

Here is what they found in their study:

Figure 5: Information Environment Navigation



Source: [Lyons, Montgomery, Guess, Nyhan, & Reifler \(2021\)](#)

Research also suggests ([Austin et al., 2012](#)) that those with lesser media literacy skills used fewer cues to evaluate health information and were more likely to make mistakes about their own health, but they still felt confident about their ability to gather information.

In that study, during the H1N1 flu outbreak, college students who tended to rely on their experience level, or year in school, to predict their knowledge and confidence about their information-seeking ability to make evidence-based health choices, were likely to be wrong about diagnosing themselves.

The ones who diagnosed themselves correctly were more likely to use multiple sources of information, media literacy skills and did not depend on the most easily accessible information. Properly assessing your own media literacy ability is important to avoid being overconfident about information you find, and making sure you critically assess that information.

The challenge of keeping up with science information...

What is Science?

A variety of definitions exist. How well do these resonate with you?

- ◆ A system of acquiring knowledge. This system uses observation and experimentation to describe and explain natural phenomena (*Sciencemadesimple.com*)
- ◆ (Knowledge from) the careful study of the structure and behavior of the physical world, especially by watching, measuring, and doing experiments, and the development of theories to describe the results of these activities (*Cambridge English Dictionary*)
- ◆ An understanding of basic scientific terms, concepts, and facts; an ability to comprehend how S&T generates and assesses evidence; and a capacity to distinguish science from pseudoscience have become widely used indicators of basic science literacy (*National Science Foundation*)

Some of these definitions are static descriptions, but *science changes. Science is a process.* That is why focusing only on facts and terms provides a very limited view. Science strives for explanations of *HOW AND WHY*.

This means that science requires the ability to manage change.

Teachers of science often are asked to measure “science literacy,” and the National Science Foundation regularly releases reports about science literacy. So, then what is science literacy if science changes? What should be measured?

What is Science literacy?

- ◆ "Scientific literacy is the knowledge and understanding of scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity." (*The National Science Education Standards*)
- ◆ "Scientific literacy means that a person can *ask, find, or determine answers to questions* derived from curiosity about everyday experiences. It means that a person can *describe, explain, and predict* natural phenomena." (*National Academies*)

To summarize: Science literacy is about *critical thinking*.

This means science is a *process*, and science knowledge therefore changes over time. It therefore requires *critical thinking*, which means science literacy requires skills to understand new information scientists make available. It does not mean everybody must be an expert scientist!

Science Media Literacy Skills

So, what skills do we need to be a competent outsider, to interpret scientific information without getting taken advantage of by charlatans?

Fortunately for all of us, Carl T. Bergstrom, Daniel R. Pimentel, and Jonathan Osborne (2022) summarized these skills in *Scientific American* as follows:

Scientific understanding as a "competent outsider" requires:

- ◆ *Uncertainty*: Scientists deal with unsettled questions, and so one set of results from a single study is not seen as a definitive answer, but as a step to support certain hypothesized answers over others.
- ◆ *Peer Review*: Scientists review claims from other experts to determine if they are valid and rigorous enough to enter the ongoing scientific conversation through publication. This makes published answers credible but not definitive.
- ◆ *Expertise*: It is important to question how a person became a credible source for their scientific knowledge and whether their employer or sponsor may bias their findings in some way, such as by making the product they are testing.
- ◆ *Consensus*: Multiple observations and interpretations of data that have been considered and tested can lead most scientists to agree on a most likely explanation. Total agreement is rare, but scientific claims with broad support from the scientific community are considered a credible way to guide understanding of the world.
- ◆ *Deliberate creation of doubt*: It is important to unmask attempts to undermine confidence in scientific findings for political gain or profit.

You can read more about what they had to say about this [in their article linked here](#).

Remember, confidence begins to build as skills develop, but overconfidence in your abilities can lead to mistakes. Building a realistic view of your own skill in science media literacy will help your abilities match your confidence. This will help you verify information and avoid sharing misinformation. Knowing that science is limited, but continually improving as a process, is key to understanding how it is used in media. This will help you critically assess its applications to your own decision-making, as well as how it can help your community.

Contemplation Worksheet

To think through how we deal with the dynamics of science as an Extension Professional, let us apply it to our own field of expertise. Think of a science topic in your field that has been evolving. For that area of science, fill in how scientific understanding has changed over time:

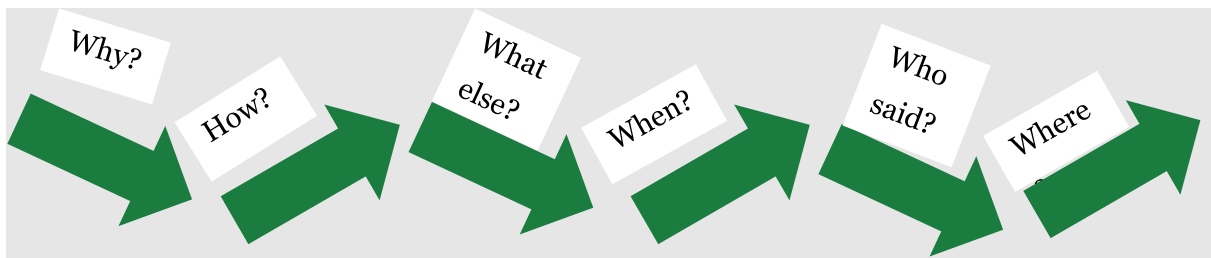
Scientific Understanding	Science topic: _____
Uncertainty	First scientific information came out saying:
Peer Review	What changes were made through peer review:
Expertise	Who were the experts in this science topic:
Consensus	When did this science topic gain some consensus:
Deliberate Creation of Doubt	How has doubt been created on this science topic:

How Can Science Media Literacy Help?

Media literacy can help us manage an uncertain and sometimes toxic information environment.

- ◆ Media literacy is the ability to access, analyze, evaluate, create, and act using media in a variety of forms.
 - News, social media, marketing, books, films, TikTok. You can think of more examples...
 - Media literacy is about asking questions, including about science! These questions can be asking why and how these results occurred to asking questions about the source as shown in Figure 6.

Figure 6: Media Literacy Questioning Pattern



Below are five principles of media literacy:

- All media messages are “constructed” by people and using medium/context-specific techniques.
- Media messages are produced for particular purposes (to have goals).
- All media messages contain embedded values and points of view.
- People construct their own meanings from media messages based on their skills and experiences.
- Media and media messages can influence beliefs, attitudes, values, behaviors, and society.

What Is Science Media Literacy?

Science Media Literacy is about applying media literacy to science information. Thus, science media literacy principles can be summarized as follows:

- All media messages that contain science information are “constructed” by people and using medium/context-specific techniques.
- Media messages that contain science information are produced for particular purposes (have goals).
- All media messages that contain science information contain embedded values and points of view.
- People construct their own meanings from media messages that contain science information based on their skills and experiences.
- Media and media messages about science can influence beliefs, attitudes, values, behaviors, and society.

It is important to keep in mind that science information can be embedded in news, entertainment, marketing, social media posts, health campaigns, sports, books, everyday conversations, and all sorts of other communication vehicles. We learn from news, entertainment, games, stories, marketing, music, and so on.

Science Media Literacy Needs Assessment Scores

In a survey of approximately 1,000 U.S. Extension professionals in 2022, the Washington State University EXCITE Project Team asked a series of science media literacy questions to help assess whether a science media literacy toolkit could be of interest for helping to manage misinformation for science and health news.

The following table shares Extension Professionals' responses about science media literacy in that needs assessment. The results suggest that professionals, on average, do each of these media literacy thinking and checking behaviors sometimes, and additional analysis showed that they tend to do each of these things at a similar rate compared to the other things. On average, the results showed that they had some room to improve on their skills even more, and the analysis showed that their media literacy skills associated with their comfort to handle misinformation in their communities.

Specifically, they were asked, “How comfortable do you feel addressing misinformation about the COVID-19 vaccine?” On a scale of 1 (Very Uncomfortable) to 5 (Very Comfortable), the professionals responded on average at 2.86, and their level of science media literacy was associated with their misinformation comfort level even after statistically controlling for their years serving in Extension. Their comfort to manage misinformation was associated with their willingness to “speak out” about COVID-19 in settings such as a community meeting, with Extension coworkers, with Extension funders or stakeholders, and with Extension constituents/clients ($r = 0.438$, $p < 0.001$), and their comfort for managing misinformation also was associated with their willingness to provide vaccine education ($r = 0.496$, $p < 0.001$). This suggested that science media literacy skills helped them, even after having had years of experience, to gain an understanding of their communities and Extension processes. More information about the needs assessment can be found in Austin et al. (2024).

For some, simply answering the science media questions might have provided a good reminder to keep doing these thinking and checking behaviors!

Table 5: Science Media Literacy Needs Assessment, 2022 WSU EXCITE Needs Assessment

	Item	Mean (1 Never/ 6 Every Time)
S O U R C E	I check whether those who create science news know about the topic	3.72
	I think about what point of view a science broadcaster or writer is trying to support.	4.12
	I look to see if those who share science news on social media have checked the accuracy of their facts.	3.65
	I think about whether sources of science news have my best interests in mind.	4.00
	I think about whether those who provide science information might be doing so to gain power or profit.	3.94
	I get science news from multiple sources to make sure I get the full story.	4.20
C O N T E N T	I think about how scientists can draw different conclusions from the same science facts.	3.97
	I check to see if a science fact in a news story is backed up by a credible source.	4.10
	I check to see if a picture or graph accurately matches the scientific information it represents.	3.86
	I check to see if the science news I read is up to date.	4.23
	I think about whether a news story with real science facts could still lead to a false conclusion.	3.82
	I have changed my thinking about a science topic when I received new information.	3.62

SCIENCE MEDIA LITERACY QUESTIONNAIRE

Please take a moment to evaluate your science media literacy skills.

QUESTIONS	RATING SCALE
<input type="checkbox"/> Source	Never Rarely Sometimes Frequently Usually Every Time
I check whether those who create science news know about the topic	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I think about what point of view a science broadcaster or writer is trying to support	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I look to see if those who share science news on social media have checked the accuracy of their facts	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I think about whether sources of science news have my best interests in mind	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I think about whether those who provide science information might be doing so to gain power or profit	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I get science news from multiple sources to make sure I get the full story	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
<input type="checkbox"/> Content
I think about how scientists can draw different conclusions from the same science facts	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I check to see if a science fact in a news story is backed up by a credible source	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I check to see if a picture or graph accurately matches the scientific information it represents	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I check to see if the science news I read is up to date	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I think about whether a news story with real science facts could still lead to a false conclusion	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
I have changed my thinking about a science topic when I received new information	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
	TOTAL POINTS: _____

If you tried completing this needs assessment questionnaire, what number would you have given yourself to each question? Please record your number next to the scores above. As you continue to build your science media literacy skills, think about converting these Source and Content items, from the questionnaire, into questions. Consider the questions in Table 5 for assessing and developing science media literacy. You also can think about whether the source has relevant expertise, the implications of its viewpoint, its demonstrated ethics/track record, and the implications of its messaging purpose. You further can consider the accuracy, context, completeness, recency and evidence-base of information provided, along with the role of stylistic elements, visuals and sound included in the production of the message.

You can ask these as questions throughout this workbook as well. Do we provide evidence

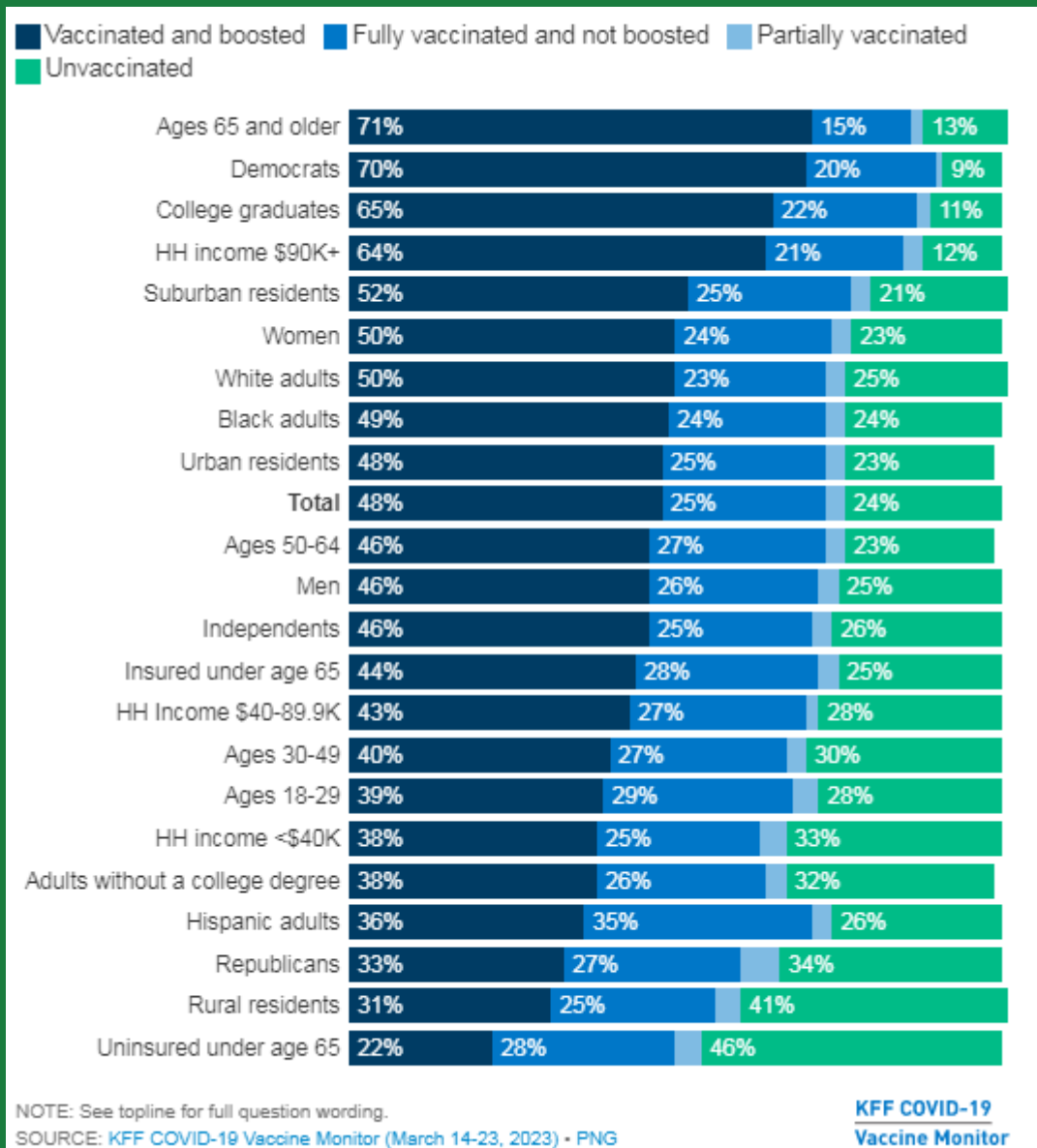
and citations for the information provided? Do the charts and graphs make sense? Is this workbook created by individuals with content expertise? Are multiple sources for principles about science media literacy provided? Can people draw different conclusions about the material? Is the material up to date? Is any of this material changing your thinking in any way?

When people decline a vaccine, is it because they lack trust, accurate information or some of both?

Consider how widely vaccine trust varies: Where have people been getting their information? How have they been making their decisions? The example below (Table 6) from 2023 shows the types of decisions different population groups have made about the COVID-19 vaccine.

Table 6: KFF COVID-19 Demographics

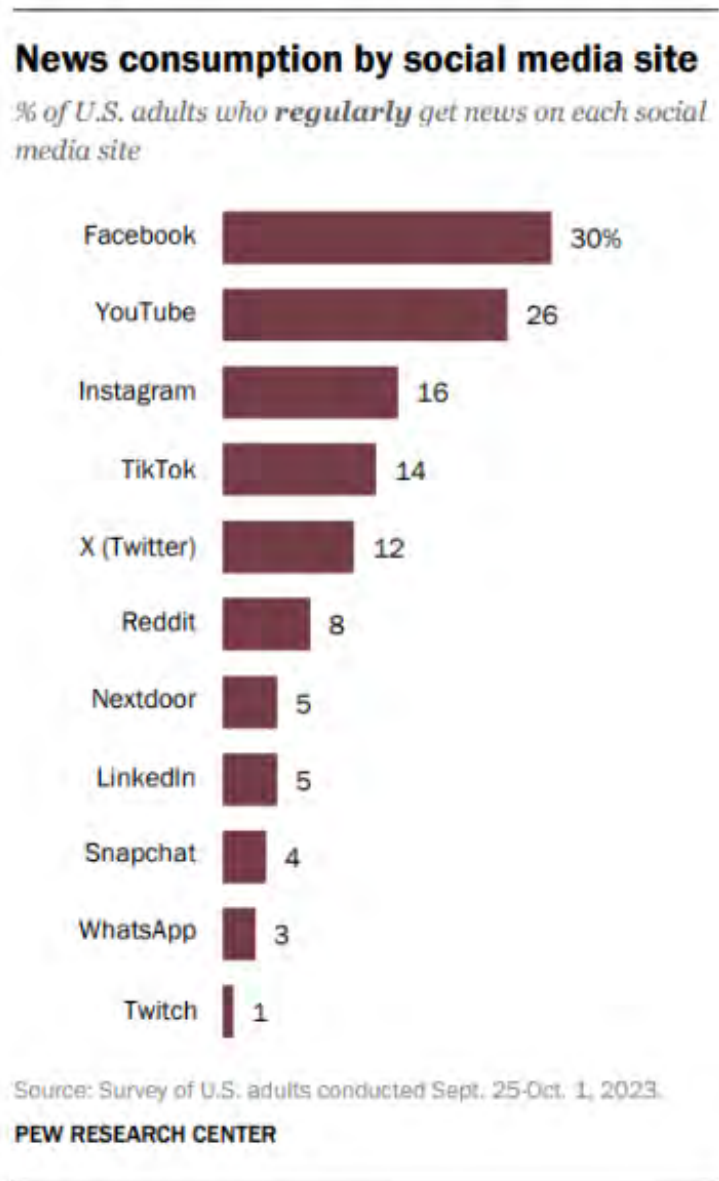
Resource Box: KFF COVID-19 Demographics



Source: <https://www.kff.org/coronavirus-covid-19/dashboard/kff-covid-19-vaccine-monitor-dashboard/#vaccines> When we think about people’s trusted sources for news more generally, this varies widely as well. Before cable news and social media people used to use

similar sources for news, but that is no longer the case. A 2022 Pew research poll (Liedke & Gottfried, 2022) found that adults under 30 tend to trust information from social media sites “some” or “a lot” almost as much as they trust information from more traditional national news outlets (See Table 7). Similar to older adults, however, they trust traditional local news sites (62%) more than national ones (56%). Across all age groups, trust in local news sources is at 71%. As shown in the chart below, however, social media has become a major source of information, providing diverse voices that do not necessarily provide reliable fact checking, verification of source expertise and motives, and regular updates.

Table 7. Where People Get Their News.



Resource Box: Carter, A. Ragan (2023, Nov. 16). Where Americans get their news: New data from Pew Research. PR Daily. <https://www.prdaily.com/where-americans-get-their-news->

Table 8: Demographics and Political Identity of Social Media News Consumers.

new-
data-

from-pew-research/

Demographic profiles and party identification of regular social media news consumers in the U.S.

% of each social media site's **regular** news consumers who are ...



* Estimates for Asian adults are representative of English speakers only.

Note: Snapchat, Twitch and WhatsApp not shown due to small sample sizes. White, Black and Asian adults include those who report being only one race and are not Hispanic; Hispanic adults are of any race.

Source: Survey of U.S. adults conducted Sept. 25-Oct. 1, 2023.

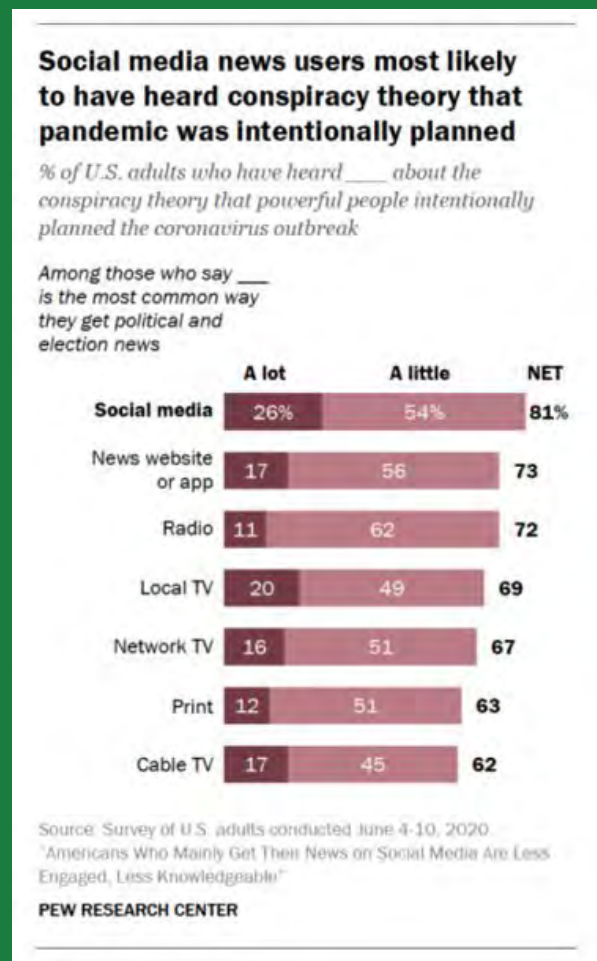
PEW RESEARCH CENTER

The table 8 example from 2023 (Pew Research Center, 2023) shows how much variety there is in the ways people are using social media for news. Identifying a single trusted source is going to be impossible!

Table 9: Social Media News Users & Conspiracy Theories

On the other hand, it is easy to spread misinformation on social media, because people who use social media create echoes across their own communities. *Source:*

<https://www.pewresearch.org/journalism/2020/07/30/americans-who-mainly-get-their-news-on-social-media-are-less-engaged-less-knowledgeable/>



As shown in Table 9, about a quarter of U.S. adults who get most of their news through social media (26%) say they heard “a lot” about this conspiracy theory, and about eight-in-ten (81%) heard at least “a little” – a higher share than among those who turn to any of the other six platforms for their political news (Mitchell et al., 2020).

Contemplation Worksheet:

Where do you go to get your information/content? How much effort do you tend to use?

What sources do you trust? Does it vary based on the topic?

What criteria do you think about when evaluating whether you will trust a new source of information/content?

Who in your circle of friends, colleagues, or community members do you trust?

What leads you to share (or decide not to share) information or a message with others?

Trying to Build Trust as a Source:

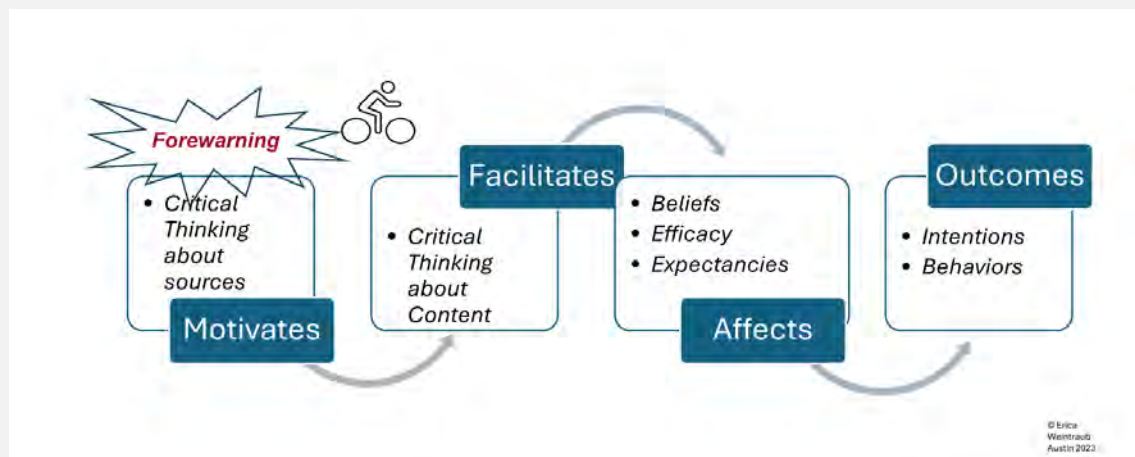
The “[CALM](#)” approach promoted by the Public Health Communications Collaborative (2024) aims to build trust in situations of uncertainty and aligns with [motivational interviewing](#) through the following steps of emphasis:

- CONNECT to build a relationship and trust to reduce interpersonal discord;
- ACKNOWLEDGE what you know and what you don’t know;
- LEAD with individual choice to support community members’ autonomy;
- MAINTAIN consistency, composure, and commitment in your messaging to provide reassurance.

The Media Literacy Theory of Change

Figure 7: The Media Literacy Theory of Change

Decision making is partly **logical** and partly **emotional**;



We need our **emotions** to work **for** us instead of **against** us

As shown in Figure 7, The Media Literacy Theory of Change explains how we interact with and make decisions about the media we use in our daily lives (Austin & Domgaard, 2024). When we are *forewarned* that sources might not always be acting in our best interests or might not always be accurate and truthful, we tend to more critically think about message sources.

If we start to think more critically about message sources, that *motivates* critical thinking about content, which *facilitates* more critical conclusions about what is happening in the world (beliefs), giving us more confidence about things we can accomplish (called efficacy), and more evidence-based if-then beliefs about what will happen when we put certain behaviors into action (called expectancies).

These conclusions *affect* all sorts of *outcomes*, such as what we talk about and post about on social media, what we intend to do when we have the opportunity, what behaviors we exhibit when we are in public, and when we are with our families or by ourselves, and what we actually do when faced with barriers and opportunities. The more we practice these skills, the more they become like the muscle memory we learn when we learn to ride a bicycle. When we ride an easy bicycle trail we don't need to think about the skills very much, but when we encounter a more difficult trail, we know we can activate our muscles more energetically.

The Media Literacy Theory of Change tells us that this process is not just a logical one. Our emotions can help us, or they can get in the way. It is important to remember that our emotions are an important part of our decision-making. Emotions provide valuable clues, and we need to pay attention to our intuition as much as we pay attention to our other thoughts. Some sources will try to take advantage of our emotions to inhibit critical thinking. Social media platforms are awash with quick-fix promises for weight loss products, for example, with unregulated nutritional supplements hawked by attractive influencers without scientific evidence to provide support for their effectiveness. While marketed as miracle drugs, nutritional supplements are regulated as foods, not as drugs (Klein & Schweikart, 2022). A Nielsen study from 2021 found that 71% of consumers 15 years old and up across 15 countries “somewhat” or “completely” trust advertising, opinions, and product placements from influencers (Nielsen, 2022).

When people state that they “do their own research” and trust statements from influencers and sources that cite “studies,” it is important to remember that not all studies are of equal scientific quality, relevance, or recency. Have they been published in peer-reviewed journals, for example? Have they been cited by other reputable scientists? How did they perform their sampling and testing, and who sponsored their work? Some resources below can help your community members “do their research.”

The *forewarning process* is designed to help us prevent ourselves from short-circuiting this sort of valuable critical thinking. We can be forewarned by logic and by emotional reactions such as anger, excitement, wishful thinking, and fear of missing out. Marketers rely on these feelings to encourage us to shortcut past cold cognitions, as explained more in the Neuromarketing section of the toolkit. Positive emotions such as trust and liking also can help set up an environment that is beneficial for cognitive processing of new information, facilitating critical thinking about the *accuracy, context, completeness, recency and evidence-base* of information provided, along with the *relevant expertise, viewpoint, demonstrated ethics/track record, and messaging purpose* of the source.

The Science Media Literacy Infographic:

This science media literacy infographic was created to provide a guide to help the user find accurate and credible science information to make their own better health decisions (see Figure 8). There are 4 parts to the process, but **they do not need to be done in any specific order.**

Consider The Source

A critical part of our science media literacy skill set is to determine if the source is trustworthy and credible. What is the perspective of the source, and did they have relevant expertise? Are they trying to sell a viewpoint or product? Can you determine if other reputable organizations say that this source is trustworthy and knowledgeable? Have fact-checking databases or retraction databases called this source into question?

Examine The Content

Before quickly, trustingly repeating information, science media literacy skills encourage an examination of the content. Just in case. Just to make sure. Does the author cite their sources? Is the information current or out of date? Are there typos that indicate something might be unprofessional? Ideally you will look across multiple sources to verify if you are getting consistent information about the topic?

Check Your Emotions

Although we often may not realize it, our emotional reactions to a message can provide valuable clues about the information we absorb. How does the message make you feel? Misinformation can trigger emotions like anger and fear, including the fear of missing out on a popular trend or sale. Stop and think before sharing or believing an upsetting or tempting message. These clues can alert you that the source does not have your best interests at heart and instead may be trying to sell a product or viewpoint. You may find that checking your emotions is the **FIRST** step to take rather than the third step!

Ask Trusted Experts

Another aspect of determining credible and accurate information is to ask a trusted expert. If you are not sure about something or just want an additional opinion, seek out someone you trust who has the expertise needed. For example, ask your doctor or medical professional any questions about your health or your children's health. Local librarians are great resources, too, and they can help you find others.

Figure 8. Science Media Literacy Infographic

HOW TO RECOGNIZE MISINFORMATION



CONSIDER THE SOURCE

Take time to look up a source on your phone or a new window.
Double check the expertise or credentials of people on social media.
Do other reputable organizations say this source is credible?



EXAMINE THE CONTENT

Evaluate the claims made by social media posts.
Does the author cite their sources? Is the information out of date?
Check across multiple sources for consistency.



CHECK YOUR EMOTIONS

Emotional language is meant to persuade you, not always inform.
Misinformation often uses angry and fearful messages.
Are your emotions hurting your ability to critically think?



ASK TRUSTED EXPERTS

Work with and ask experts when you are not sure about something.
Health decisions are based on health, not politics.
Ask your local doctor about vaccines and other health decisions.

THE MURROW CENTER FOR MEDIA AND HEALTH PROMOTION RESEARCH
WASHINGTON STATE UNIVERSITY

Now try critically assessing a story using the Science Media Literacy Infographic
As Extension professionals, you are translators of expert information.

From the needs assessment we know that Extension professionals have a range of science

media literacy skills and confidence addressing vaccine science misinformation.

The people you are talking with also will have varying levels of media literacy skills and confidence.

This infographic can help you provide an intentional, structured forewarning strategy to help others build science media literacy skills.

Please click the link below to practice critically assessing a story using the Infographic:



[Example article for exercise using the Infographic](#)

Using the Infographic as a tool, what assessments can you make about this story from Regenerative Medicine Center from 2023?

Contemplation Worksheet

What resonates with you about the science media literacy infographic?

What information did you already know but maybe hadn't integrated into your work?

What are some of the ways you might utilize the infographic with groups? In individual conversations?

Where else can you go to check whether a source is credible, or a fact is accurate?

Using multiple sources and checking your emotions both provide useful guidance, but what steps can you take if you experience uncertainty and need to take action on your own?

As a first step, the fact-checking sites listed can help!

Also, to assess the credibility of any online sources, including these fact-checking sites, you can look for links that help to assess relevant expertise, purpose (such as educational, political, sales, health promotion), funding sources (such as grants, donations, advertising, sales), and independence of editorial content. It also can be helpful to look at the type of domain name extension for a clue about the goals of the organization. Usually, a for-profit organization will have a dot-com extension, a non-profit or educational organization will have a dot-org extension, and an international service organization will have a dot-net extension, but it is important to know that this is not always the case (Ricart, 2024).

On the home landing page, look for links such as “About Us,” “Our Funding” and “Annual Reports,” “Our Process,” “Staff” or “Contact Us,” and for a nonprofit (“.org”), “Mission/Vision” and “Board/Directors.”

The following fact-checking sites provide transparency for assessing their source credibility and content veracity. Some focus on public affairs and political content, but science and health issues often cross over into public affairs and politics.

<https://apnews.com/hub/ap-fact-check>

<https://www.factcheck.org>

<https://www.politifact.com/>

<https://www.opensecrets.org/>

<https://www.reuters.com/fact-check/>

<https://www.verifythis.com>

<https://leadstories.com/>

Example of how to Understand the Misinformation News Cycle:

Part of becoming more astute in our science media literacy skills is understanding more about the misinformation news cycle. The following data comes from a study by [Simon](#).

[Howard, and Nielsen \(2020\)](#) at the Reuters Institute about COVID-19 misinformation and is illustrated in Table 10 (it reproduces a “Figure 2” from a previously published article).

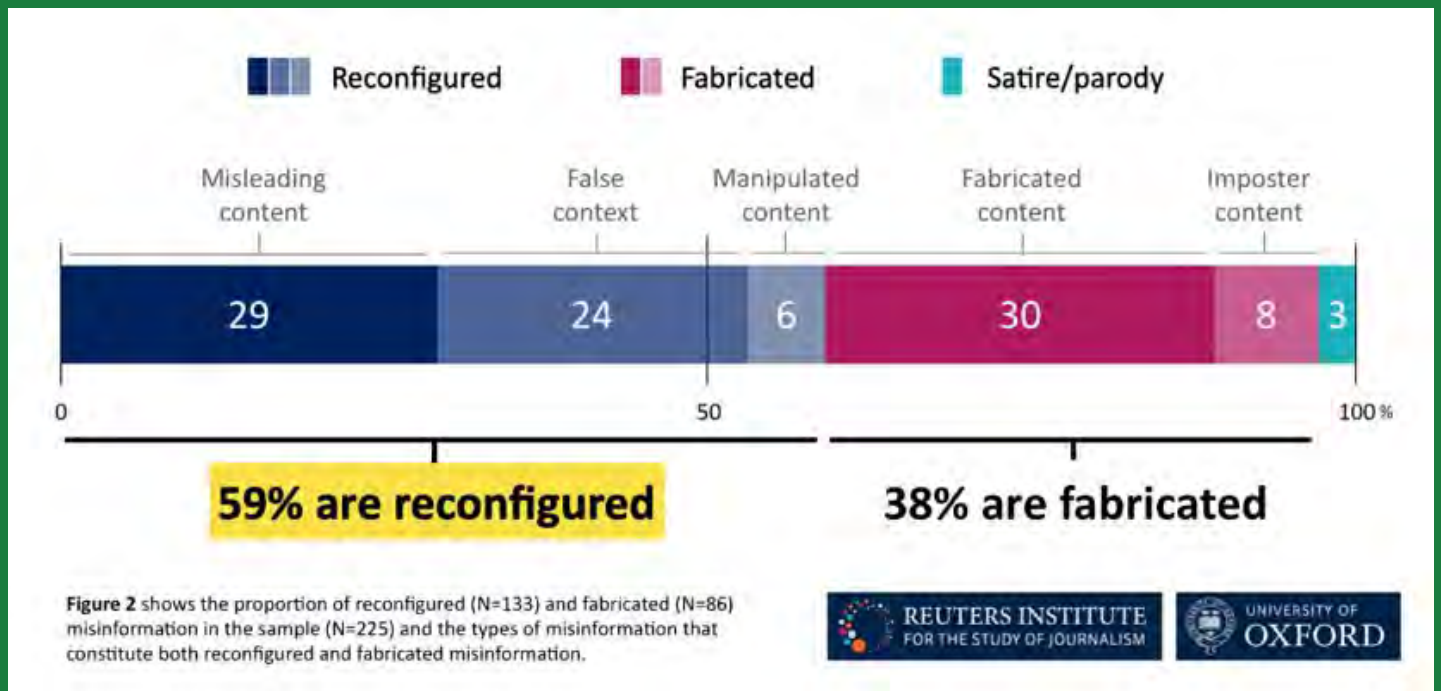
Misinformation tracked early in the COVID-19 pandemic:

Most misinformation is not totally made up. N=225, Jan-March 2020, Simon et al. (2020), rated false or misleading by Fact Check sites.

1. Satire or parody
2. False connection (headlines, visuals or captions do not support the content)
3. Misleading content (misleading use of information to frame an issue or individual when facts/ information is misrepresented or skewed)
4. False context (genuine content is shared with false contextual information, e.g., real images which have been taken out of context)
5. Imposter content (genuine sources, e.g., news outlets or government agencies, are impersonated)
6. Fabricated content (content is made up and 100% false; designed to deceive and do harm)
7. Manipulated content (genuine information or imagery is manipulated to deceive, e.g., deepfakes or other kinds of manipulation of audio and/or visual) (88%) from social media, 9% TV, 8% (9%), news outlets (8%), 7% websites.

Table 10: Reconfigured vs. Fabricated Misinformation

Resource Box: Types, sources, and claims of COVID-19 misinformation



(The figure below is a screenshot taken from [Reuters Institute on their site about Types, sources, and claims of COVID-19 misinformation](#) in May of 2023).

For more reading on how false information is affected by social dynamics, check out the article by [Duffy, Tandoc, and Ling \(2018\)](#).

Resource Box: World Health Organization Misinformation Tracking

- 5G Mobile networks
- Alcohol
- Antibiotics
- Bleach
- Cold weather, snow
- Dexamethasone
- Drugs
- Garlic
- Hand dryers
- Holding your breath
- Hot and humid climates
- Hot baths
- Hot peppers
- Houseflies
- Hydroxychloroquine
- Masks, CO2 intoxication
- Masks, exercise
- Medicines
- Methanol, ethanol
- Misinformation
- Mosquitoes
- Older people, younger people
- Pneumonia vaccines
- Recovery
- Reduce risk of infection
- Saline
- Shoes
- Sunny and hot weather
- Supplements
- Swimming
- Thermal scanners
- Ultra-violet (UV) lamps
- Viruses, bacteria, antibiotics

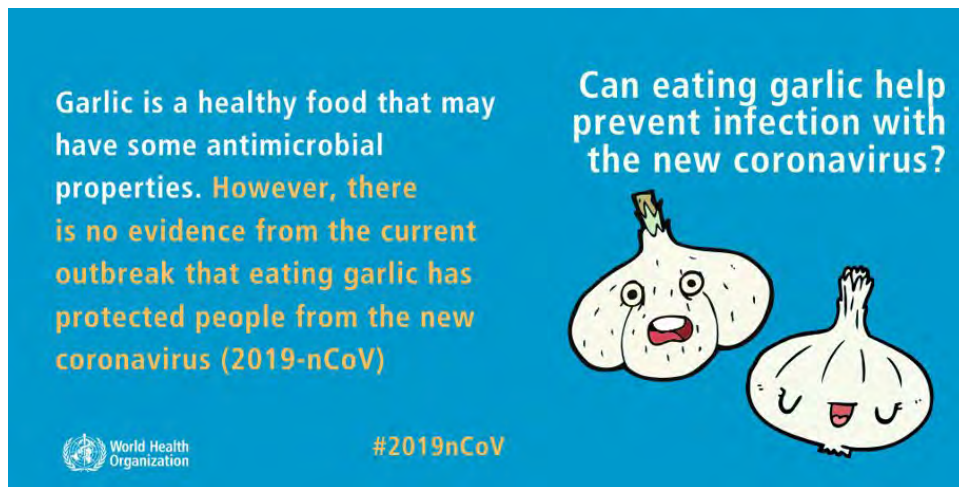
The World Health Organization (WHO) tracked the following misinformation and disinformation topics – (screenshoted from WHO on March 26, 2021. [The updated link with different topics can be found here](#)).

Disclaimer: Because of the continuous updates made by the World Health Organization to their debunking website, some links may not work. The World Health Organization has continued to update its misinformation pages and has discontinued some of the topics as information has been updated and some misinformation topics have faded from apparent urgency.

To access these sources as they were captured in the screenshots, please visit [The Way Back Machine](#) and copy and paste the link into the search bar and go to the time referenced.

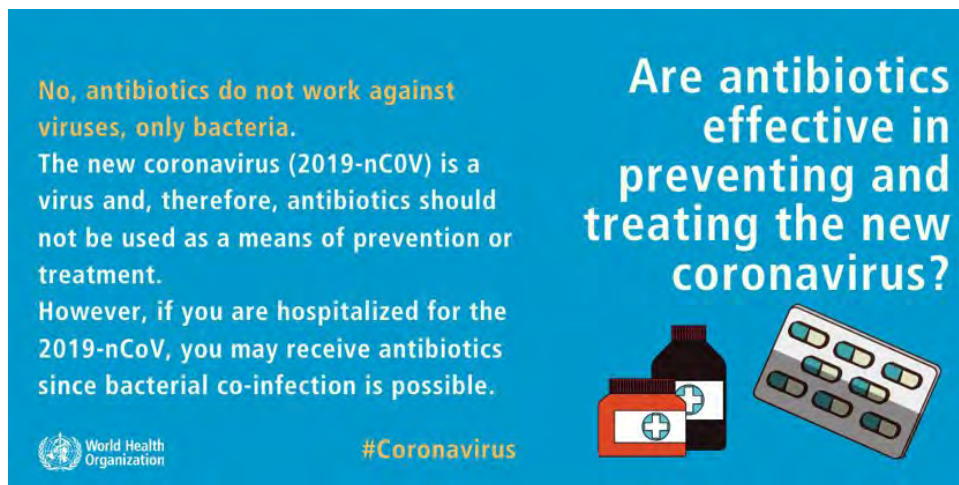
Figure 9 and Figure 10 were screenshots that were saved from the World Health Organization [WHO \(2022\)](#) early in the COVID 19 pandemic.

Figure 9: Misinformation: Garlic



The percent of people who thought this info was correct in two U.S. national surveys our team did in 2020: April-59.3 % vs July-68.7 % ([Austin et al., 2021](#)).

Figure 10: Misinformation: Antibiotics



The % of people who thought this info was correct in the U.S. national surveys we did in 2020: April 49.4 % vs July 54.5 % ([Austin et al., 2021](#)).

According to a report by [the Center for Countering Digital Hate \(2022\)](#), the Disinformation Dozen were twelve anti-vaxxers who played leading roles in spreading digital misinformation about COVID vaccines. They were selected because they had large numbers of followers, produced high volumes of anti-vaccine content or had seen rapid growth of their social media accounts in a two-month period.

Resource Box: [The Disinformation Dozen](#)



2. Analysis of a sample of anti-vaccine content that was shared or posted on Facebook and Twitter a total of 812,000 times between 1 February and 16 March 2021 shows that 65 percent of anti-vaccine content is attributable to the Disinformation Dozen.
 - a. Research conducted by CCDH last year has shown that platforms fail to act on 95 percent of the Covid and vaccine misinformation reported to them.

Too often this happens when influencers try to mislead the public, as explained in the Media Literacy Theory of Change: “Like me, trust me, do what I tell you (and do not trust others).” When we only (and maybe just barely) consider the source and skip right to our own beliefs, efficacy, and expectancies (if-then beliefs), we miss a crucial step in the Media Literacy

- b. CCDH’s recent report, *Malgorithm*, uncovered evidence that Instagram’s algorithm actively recommends similar misinformation.

Theory of Change, the step of critically thinking about the *accuracy, context, completeness, recency and evidence-base* of the content. When we decide that we trust the source (based on our emotions? Or based on evidence such as *relevant expertise, viewpoint, demonstrated ethics/track record, and messaging purpose?*) we still should realize that even the most trustworthy source sometimes can make a mistake.

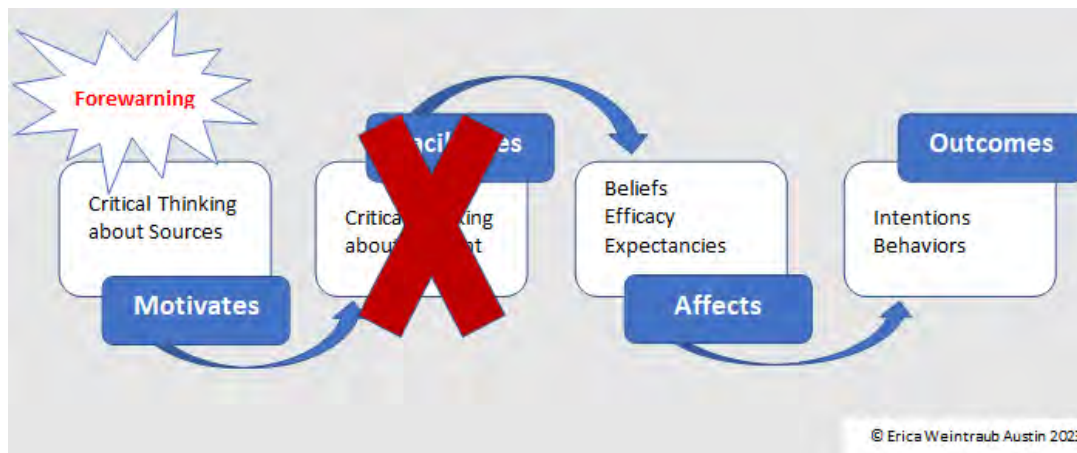
If we think of media literacy like riding a bicycle, trusting a source can make riding information trails seem a lot easier. Having multiple trusted sources who agree that the trail goes the same direction can help us relax about reaching our destination safely without having to do a lot of extra research. When the information trail seems like a more challenging one, or if the source seems like a questionable one, it’s a good idea to gather additional trustworthy sources and to do extra critical thinking about the content.

Sometimes an emotional cue—uncertainty, uneasiness, anger, or excitement about an easy

solution to a tough problem, someone stating that “the media is not talking about this”--can alert us to the need to do a bit more research.

Remember the Media Literacy Theory of Change model we covered earlier? When emotions about a source cloud our ability to evaluate and critically think about the content of information, it can hinder our beliefs and decision-making (see Figure 11).

Figure 11: The Media Literacy Theory of Change without Critical Thinking



We need our emotions to work for us instead of against us!

Using the Science Media Literacy Infographic and Motivational Interviewing skills, how might you respond to someone who comes to you and says:

“My friend heard on the news that young people’s deaths are up, and it is because of the COVID vaccine.”

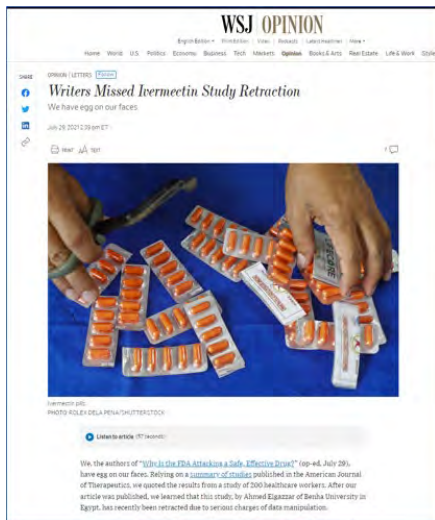
It sure can be tough to keep up with fake science!

Sometimes the peer review process can allow bad science to get through and get published. Fortunately, sites, such as those listed below can help correct the spread of misinformation as it occurs. By recognizing retractions, correcting the use of unsupported science, and forewarning about how some scientific information is communicated and then updated in media, these efforts help push science media literacy forward.

Check out these articles for examples:

[WSJ Opinion Article \(Henderson & Hooper, 2021\)](#)

[The Scientist \(Thomasy, 2022\)](#)



You can also double check if scientific articles have been retracted from their journals using [Retraction Watch \(2023\) website](https://retractionwatch.com/2023/07/28/retraction-watch-journal-checker/). The site is an initiative of the Center for Scientific Integrity, a nonprofit funded by grants from the John D. and Catherine T. MacArthur Foundation, the Laura and John Arnold Foundation, and the Leona M. and Harry B. Helmsley Trust. <https://retractionwatch.com/the-center-for-scientific-integrity/>



The main site includes a link to a “top-ten” list of retracted articles, here:

<https://retractionwatch.com/the-retraction-watch-leaderboard/top-10-most-highly-cited-retracted-papers/>

and a list of retracted COVID-19 papers if that is a concern you want to follow:

<https://retractionwatch.com/retracted-coronavirus-covid-19-papers/>

They also provide papers and peer reviews with evidence of ChatGPT writing:

<https://retractionwatch.com/papers-and-peer-reviews-with-evidence-of-chatgpt-writing/>

Below is an example of an article that was retracted. Energetic discussions about this article and about the value of ivermectin as a COVID-19 treatment for humans have continued to go on in the scientific literature, so it can be useful to check with experts for the latest news on this topic.

The screenshot shows the header of an article in the journal "Open Forum Infectious Diseases". The article title is "Meta-analysis of Randomized Trials of Ivermectin to Treat SARS-CoV-2 Infection". The authors listed are Andrew Hill, Anna Garratt, Jacob Levi, Jonathan Falconer, Leah Ellis, Kaitlyn McCann, Victoria Pilkington, Ambar Qavi, Junzheng Wang, and Hannah Wentzel. A prominent pink box with an exclamation mark icon states: "This article has been retracted. Retraction in: Open Forum Infect Dis. 2022 March; 9(3): ofac056 See also: PMC Retraction Policy". Below this, a yellow box contains the following text: "See the article 'Ivermectin for the Treatment of COVID-19 Disease: Too Good to Pass Up or Too Good to Be True?' in volume 8, ofab318. An expression of concern has been published for this article. See Open Forum Infect Dis. 2021 August; 8(8): ofab394. This article has been retracted. See Open Forum Infect Dis. 2022 March; 9(3): ofac056." The journal logo "Open Forum Infect Dis" is visible on the left side of the page.

Resource for Continued Skill Development

Below is an example from “*Stories from the Field, Partnering for Vaccine Equity*,” published by the Centers for Disease Control and Prevention featuring regional success stories, located at <https://www.cdc.gov/vaccines/health-equity/field-stories.html>.

Locally driven partnerships and community-designed solutions are essential for addressing the root causes of health disparities and ensuring health equity. However, it takes time to build trust within many communities that are underserved and experience distrust of governmental institutions. The approach of the Association of State and Territorial Health Officials’ (ASTHO) is to develop community-driven solutions designed to provide leadership opportunities, technical support, and advocacy for community action programs. This type of public health/community action partnership is a model that can be applied nationwide. The regional presence and capacity of Community Action Program agencies (CAPs) to reach deeply into communities are an often-untapped resource for public health. They enable public health to work more directly with community members and community organizations on a more local level.

CAPs are non-governmental community-based agencies working with the governmental health and human services system. Authorized under the 1964 Economic Opportunities Act, state health and human services departments contract with CAPs using the federal Community Services Block Grant (CSBG). CAPs have a long history of assisting people experiencing economic insecurity and housing instability, as well as providing support for people living with disabilities. They serve people in every age group – from infants in Women, Infants, and Children ([WIC](#)) program clinics to young children in [Head Start](#) to seniors receiving heating assistance and home care. CAPs also have the infrastructure in place to handle administrative functions on behalf of smaller nonprofits, such as procurement, payroll, and fiscal management.



With funding from the CDC, ASTHO worked with the [National Community Action Partnership](#) to engage five CAPs and their respective networks of local community action teams in five geographic areas:

- Pickens Community Action – Pickens County, AL
- Enrichment Services Program, Inc. – Russell County, AL and Troup and Stewart Counties, GA
- Community Action Partnership of Kern – Kern County, CA
- Community Action Program for Central Arkansas—White County, AR
- Palmetto Community Action Partnership – Berkeley County, SC

ASTHO CEO Michael Fraser says, “the result of this work will be instrumental in informing

future vaccination efforts in our member states and territories.”

These CAPs take [evidence-based strategies](#) to increase vaccine equity and tailor them to their own communities. For example, in Berkeley County, South Carolina, Palmetto Community Action Partnership works with the South Carolina Department of Health and Environmental Control (SCDHEC) and Fetter Health Care Network (Fetter) to promote vaccination during patient visits. SCDHEC provides nursing outreach teams who administer on-site vaccinations at events throughout Berkeley County. Fetter administers flu vaccines at its income-based health clinic in rural Berkeley County, and patients are encouraged to receive them through [ASTHO’s Vaccine Equity Project](#). Palmetto Community Action Partnership held COVID-19 vaccination events during the summer with a focus on fun. A “Sports Extravaganza” vaccination event was held at a recreation facility in Moncks Corner, South Carolina featuring retired NFL players and members of the Charleston Southern University football team. A “Community Day” in partnership at Berkeley High School featured food trucks, jump castles, and a partner resource fair.

The CAPs mentioned above have addressed vaccine hesitancy by working with local leaders to serve as trusted messengers. These have included faith-based leaders, local providers such as physicians but also community health workers and emergency medical technicians (EMTs). They are also have engaged their local medical and nursing schools to build up the next generation of providers as vaccine champions.

These CAPs are seeking to dispel distrust and misinformation by sharing credible information through as many means as possible: through social media, traditional media, and most importantly through one-one-conversations at local health fairs and vaccine clinics. Their trusted messengers share stories of how and why they were vaccinated. In addition, the CAPs have met the holistic needs of their community members by addressing social barriers to [health](#): they have provided food, housing, and utilities assistance, job training programs, and childcare for low-income families. With their reputation as trusted resources, and their extensive network of local partnerships, the CAPs have reached those harder-to-reach segments in their communities.



ASTHO's partnerships with these CAPs serve as a promising example of public health/community action collaboration to improve the health of individuals in the community and increase vaccine equity in areas that face disparities. ASTHO believes such partnerships can be replicated to address other types of health equity issues such as chronic disease prevention or improving [community resiliency](#).

Here are a few questions for reflection from this case study:

- What steps did this Association seem to be taking that seems consistent with a motivational interviewing approach?
- What role might science media literacy play to help them as they build these partnerships and strive to build trust?
- Can you think of any brain-friendly examples of communication strategies they employed while communicating with their communities?
- What motivational interviewing techniques might you utilize in your conversations with your own community groups?

Resource for Continued Skill Development

TedX Event Resource Materials

Online speakers, such as over YouTube and TikTok, have become some of the most popular sources of science and health information. They often have honed the skills to seem trustworthy, but they may have outdated or questionable expertise, their motivations may focus on profit or politics, or they may seek power of some other sort. Your trusted relationships and those of your partners can withstand a credibility test. You can use this strength to help your communities learn to test the credibility of other sources, and you can

use the tools of other popular sources without sacrificing your credibility as you do so. The popular TEDx series, linked [here](#), provides a way for local communities to develop nonprofit versions of the [TED](#) Talks that have become famous for entertaining, inspirational and educational videos. Each video covers a topic in 18 minutes or less.

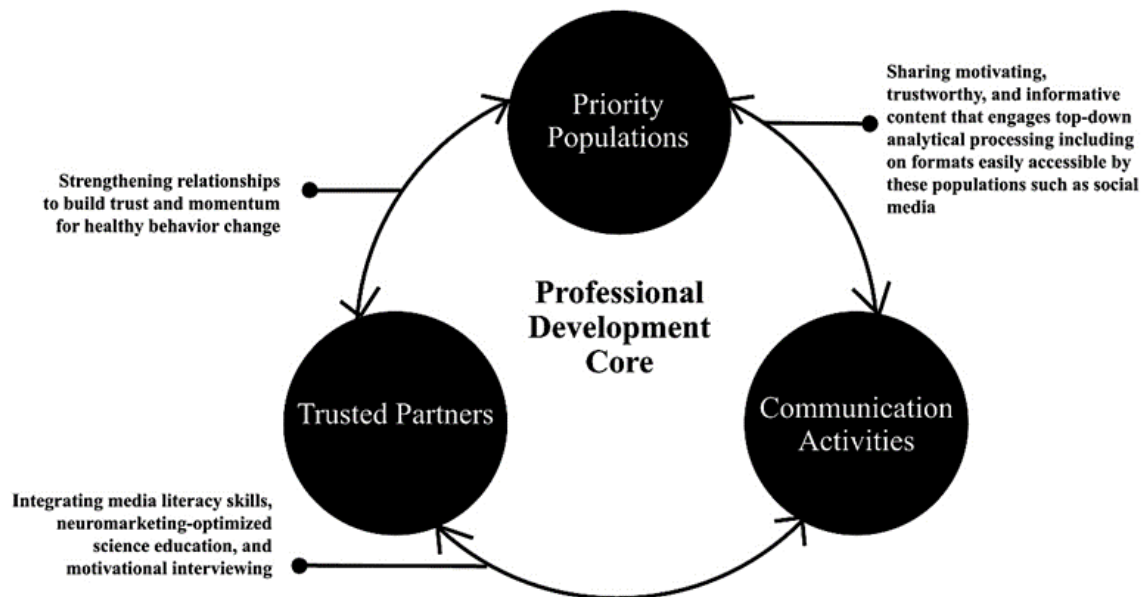
Guidance for TEDx Talks covers how to help someone develop a motivational live or recorded talk no more than 18 minutes in length, and possibly only in 3, 5 or 9 minutes. Of special relevance for science media literacy skill building, the [guidance for speakers](#) provides excellent tips for ensuring credibility and for fact-checking content. The basic guidelines include:

- **Guideline 1: No commercial agendas**
- **Guideline 2: No political agendas or inflammatory rhetoric**
- **Guideline 3: No religious agendas**
- **Guideline 4: No bad science**
- **Fact-checking: what it is, and what to check**

The TedX speakers guide can serve as a useful handout for communities to double-check any live or recorded speaker, including you!

Contemplation Worksheet

Integrated Model of Sustainable Health Decision-Making and Science Media Literacy



When you think about your community, what and/or whom would community members identify as some trusted sources of information in terms of media, social media and/or community sources?

For whom and in what situations might Extension be listed as one of those trusted sources? What characteristics and/or actions can help strengthen Extension as a trusted match? What partners can enhance the match?

What can you or Extension do to increase recognition as a trusted source of information?

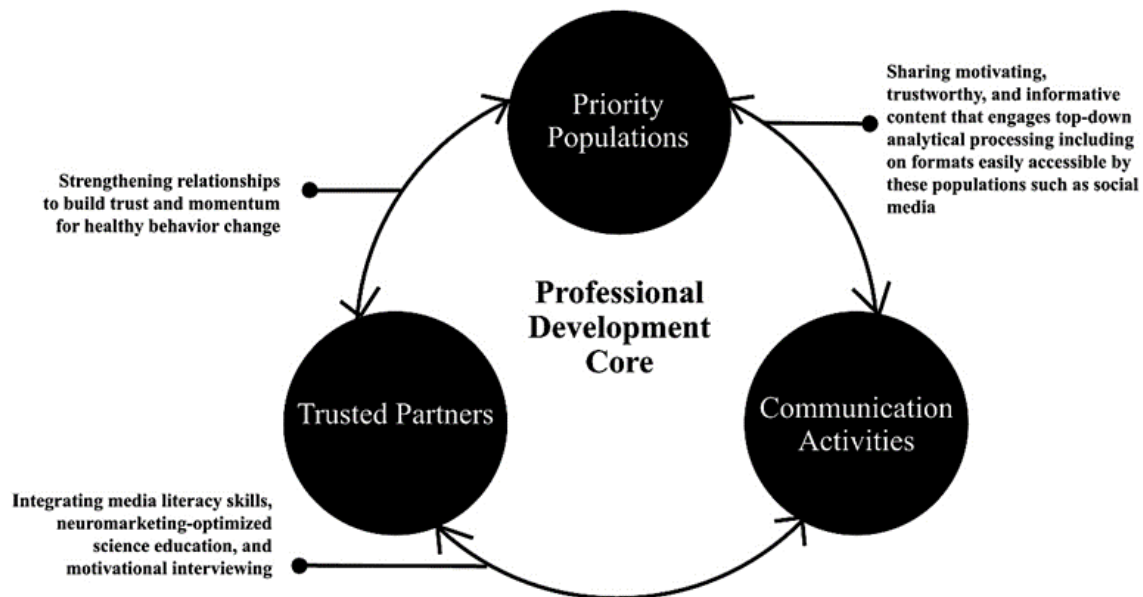
What role do you think science media literacy can serve for strengthening healthy equity in your community? _____

After considering the aspects of science media literacy, how might you go about sharing aspects of it within your community to help build momentum for strengthening trusted partnerships? _____

NEUROMARKETING

Chapter 3

Integrated Model of Sustainable Health Decision-Making



HOW NEUROMARKETING SUPPORTS HEALTH EQUITY

Neuromarketing can be a valuable tool for professionals dedicated to advancing health equity. This tool is specifically useful for creating and delivering health messages that are produced with health equity in mind. The principles of Neuromarketing can also be used to promote health equity through messaging for health topics that addresses both issues and opportunities in health equity. The strength of Neuromarketing is it arms professionals with a powerful tool for creating health messages that uniquely empower specific communities to make evidence-based health decisions. It leads to health messaging that is more likely to resonate with and help individuals in communities facing the hard challenges of health inequity. The bottom line is that Neuromarketing can't address health equity at a policy level, but it is an especially valuable tool for using communication strategies and tactics to deliver health messaging that resonates with stakeholders and community members by promoting attitudes and behaviors that support health equity. Let's learn more about this powerful tool.

What Is “Neuromarketing?”

Neuromarketing is a scientific approach to creating and delivering effective communication content. This approach draws on brain science to gain actionable insights for creating content that resonates and works with (as opposed to against) the way human brains uniquely process and respond to information.

Global corporations are increasing the use of Neuromarketing to optimize all kinds of content across communication channels and technological platforms. Companies are predicted to spend a total of \$3.2 billion on Neuromarketing solutions by the year 2032 (<https://www.futuremarketinsights.com/reports/neuromarketing-solutions-market>). The growth in Neuromarketing is due to a highly competitive business environment and the power of Neuromarketing to inform the development and delivery of content that effectively achieved communication objectives. This novel and powerful communication tool leads to the delivery of powerful, effective communication content whether it's used for the objective of global corporations or professionals who are highly dedicated to advancing human health through science education and communication.

Neuromarketing is a unique tool that Extension professionals can also use to succeed at achieving communication objectives tied to their community outreach and engagement mission. The science underlying Neuromarketing focuses on understanding the human brain and communication involving media content delivered over media technologies. This science is not specific or exclusive to marketing or advertising.

Neuromarketing science goes beyond the intuitive principles of content design you may have learned in your professional life. Correct use of this tool by Extension professionals requires the following:

1. Applying direct knowledge of how the human brain is structured and processes the information you communicate as an Extension professional
2. Defining all communication content and technology from the perspective of the human brain and not traditional communication/media industry perspectives
3. Generating actionable insights that guide the production and delivery of communication content so that communication efforts effectively engage, educate, and empower community members as part of the community outreach mission of Extension

Why Use “Neuromarketing” As A Communication Tool?

Neuromarketing science empowers professional communicators, like Extension professionals, to combine brain and communication science with their existing level of creative intuition and expertise to design and deliver communication content that more effectively and consistently achieves desired objectives. This occurs by mixing creativity with a scientific understanding of the human brain and how the human brain processes communication content delivered over communication technologies. A scientific understanding of the human brain is grounded in current principles of how our human mind works (covered below). A scientific understanding of how the human brain processes communication requires understanding communication from the perspective of the brain and not communication industries. This requires professional communicators to focus on the design and use of communication elements like visuals, language, size, color, motion, camera angles, tempo, emotional tone, etc.

The human brain defines communication based on the experience that the “sensory” elements of communication content evoke. The brains of the audiences for communication content do not process information based on industry definitions of communication such as flyers, public service announcements, radio ads and public service announcements, etc.

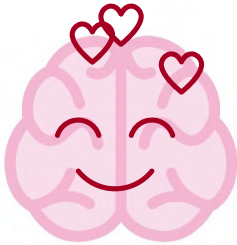
The application of Neuromarketing science gives Extension professionals a tool for developing, designing, and delivering communication content that can be said to be “brain friendly!”

Brain friendly content brings together all the “sensory” elements of communication content in a way that:

1. Effectively engages the audience by capturing and sustaining attention
2. Effectively educates the audience by structuring content to enhance memory for key “messages” in the content
3. Effectively empowers the audience through the presentation of accurate scientific information and an emotional tone that enhances attention and memory for the communication content

We want to develop “brain friendly content” not “brain unfriendly content.”

Brain Friendly vs. Brain Unfriendly Content.



Brain Friendly Content

Not Brain Unfriendly Content

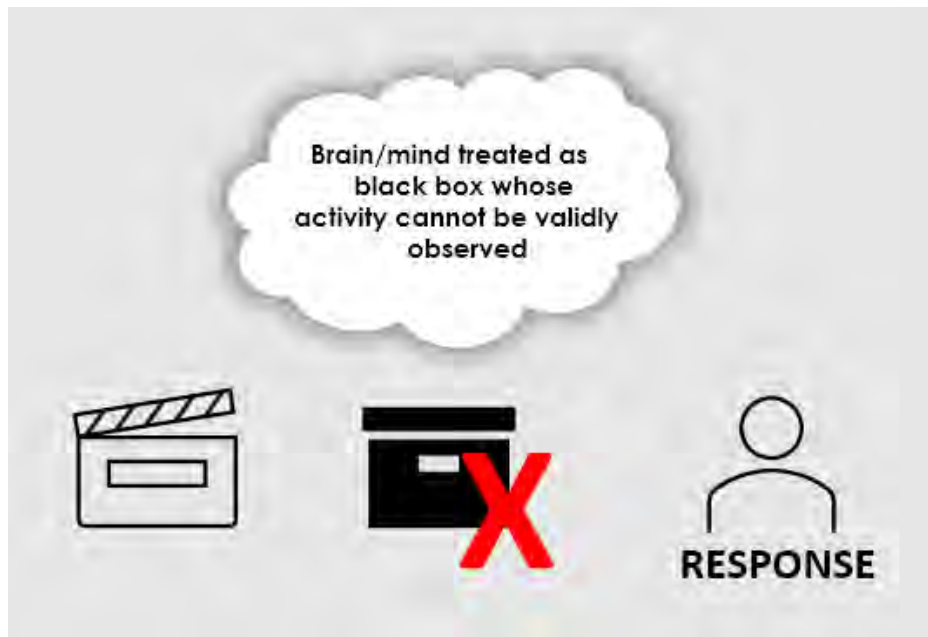
The development, design and delivery of brain friendly content begins with a basic knowledge and understanding of the human brain.

Understanding The Human Brain and Communication

Thankfully you do not need to be a brain science expert to develop, design, and deliver brain friendly content! You do need to understand some basic principles of how our human minds, that exist in the functioning of the human brain, work.

Mind Principle 1: Communication efforts can fail through “ignorance” of how the human mind processes AND responds to content:

Figure 12: Brain/Mind treated as a Black Box.



- The human mind that is embodied in the human brain, nervous system, and body is what experiences, processes, and responds to communication content.
- Communication content can be produced based solely through creative intuition that often contains an elevated level of ignorance about the human mind or through creativity enlightened by an understanding of how the human mind works.
- Communication efforts developed without Neuromarketing science treat the brain/mind like a black box that content gets shoved into in hopes of evoking a desired response (see Figure 12). This is relying on creative guesswork that is at best informed by creative intuition rather than science. Creative intuitions have some usefulness in the design of effective content. Effective communication in the complex, often politicized and emotional, contexts of science communication, that Extension professionals need to engage in, especially requires breaking open the “black box” and specifically producing brain friendly science communication content.
- Brain friendly communication content, informed by an understanding of how the human mind processes AND responds to content is less likely than content based only on creative intuition to elicit defensive responses or completely fail at engaging

the audience.

Mind Principle 2: We may “feel” like we know *why* we make decisions, but we really do not know!

- The human mind produces conscious experiences that offer us convenient explanations of our world and our behaviors in it.
- The human mind, embodied in the brain, unconsciously constructs reality created through communication content, and predicts what will be an effective response to any communication content. (See the following podcast featuring Dr. Lisa Feldman-Barrett, <https://www.3takeaways.com/episodes/lisa-feldman-barrett-neuroscientist>)
- Audience members may think they know precisely how and why they respond in certain ways to communication content, but they do not!

Mind Principle 3: Attitudes and behaviors are primarily driven by unconscious, cognitive and emotional processes (see Figure 13).

- Observational data obtained from audience members may accurately describe attitudinal and behavioral responses to communication content but cannot explain how or why communication content leads to responses in a way that can be used to inform the effective development, design, and delivery of communication content.
- The extent to which communication content leads to desired attitudes and behaviors primarily depends on unconscious cognitive and emotional processes that are automatically engaged as audience members encounter and interact with communication content.

Figure 13: Attitude and Behaviors as Primary Drivers of Unconscious, Cognitive and Emotional Processes.

The human brain creates a conscious mind that makes us think that we can see why and how we respond to specific communication content, but we don't!

Most of the "work" the brain does while processing and responding to communication content occurs on an unconscious level.

The "sensory" elements of communication content that professional communicators can control first and foremost engage unconscious brain processes that determine responses to communication content.



Mind Principle 4: Brain scientists have categorized the activity of the human mind into two kinds of processes, "automatic - unconscious" and "controlled - highly conscious" processes

- Automatic, unconscious processes lay the foundation for communication effectiveness and dominate how audience members respond to communication content.
- Controlled conscious processes can help individuals purposefully increase or withdraw a degree of attention paid to communication content and slightly regulate the intensity of emotional responses to content
- The influence of motivational interviewing and increased science media literacy (covered in previous sections of this tool kit) on how individuals mentally process and respond to communication content occurs through controlled/conscious, NOT, automatic/unconscious processes
- A famous cognitive scientist Daniel Kahneman has developed a model that describes how we make decisions. This model extends the idea of automatic and controlled processes into what he has termed "system 1" and "system 2." System 1 operates in an intuitive, unconscious, and extremely fast manner. System 1 fuels most of the decisions we make, including attitudinal and behavioral responses to communication content. System 2 operates in a highly conscious, purposeful, deliberative manner. It takes significant mental effort for System 2 to have a high degree of influence on the decisions we make. Every decision we make involves varying influences of System 1

and System 2 on attitudes and behaviors (see Figure 14). Attitudinal and behavioral responses to communication content are never the result of only System 1 or only System 2 processes.

- The key to developing, designing, and delivering brain friendly content is knowing how to produce communication content activates BOTH System 1 and System 2 through the strategic selection and design of content elements that will effectively engage, educate, and empower community members that are the audience for specific communication efforts.

Figure 14: Intuition vs. Rational Thinking



System 1 – Intuition & Instinct

- Unconscious
- Fast
- Automatic processing

System 2 – Rational thinking

- Takes effort
- Logical
- Controlled processing

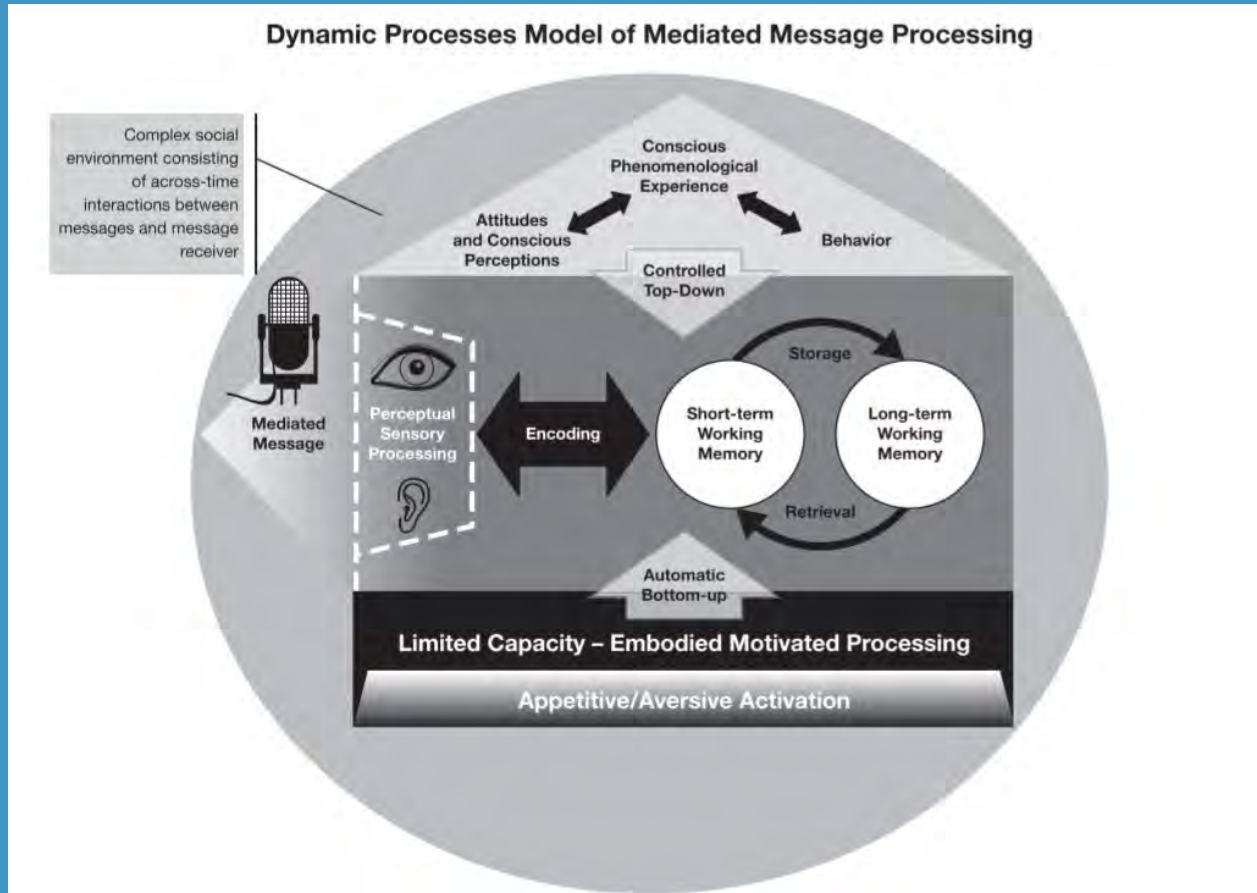
NOTE: Decision making, including audience responses to communication content involves the activity of BOTH System 1 and System 2. Brain friendly communication content will have design (e.g., color/layout) and content (e.g., copy/language) elements that are strategically used to engage both System 1 and System 2.

Mind Principle 5: The human mind does a lot of work processing communication content. Most of the work is unconscious/automatic

- Conscious phenomenological experience is what our brain consciously produces as we interact with and respond to communication content. This experience emerges from the activity of many unconscious cognitive and emotional processes.
- These unconscious cognitive and emotional processes broadly involve human attention, emotion, and memory/learning processes embodied in brain activity.
- Unconscious cognitive and emotional processes evoked by the specific “sensory elements” of communication content direct all conscious attitudinal and behavioral responses to communication content.
- This “Basic Principle” of the human mind describes what is termed the Dynamic Processes Model of Mediated Message Processing (see Figure 15). This model

describes all the mental processes involved in effectively engaging, educating, and empowering audiences through brain friendly communication content!

Figure 15: Dynamic Process Model of Mediated Message Processing (Potter and Bolls, 2012)



Potter, R. F., & Bolls, P. (2012). Psychophysiological measurement and meaning: Cognitive and emotional processing of media. Routledge.

Brain “Truths” for Brain Friendly Content

The “Mind Principles” listed above describe current scientific understanding of the nature of brain activity that underlies how our human mind processes information and helps us adaptively respond to it. These principles can be distilled into three valuable “Brain “Truths” for brain friendly communication content. These “Brain Truths” can be used to help guide creative choices concerning communication content as Extension professionals engage in the processes of developing, designing, and delivering content that is central to the mission of educational outreach intended for specific communities. The practical value of these “Brain

Truths” comes from the fact that they are fundamental truths about the human brain. These “Brain Truths” are not restricted to any specific audience or focus of educational outreach effort. Each truth has practical implications for producing brain-friendly communication content.

Brain Truth 1

The brain is a limited capacity processor

- The overall amounts as well as number of distinct “bits” of information in communication content can overload cognitive capacity of the targeted audience causing memory for the content to suffer.
- The practical implication of this brain truth is that Extension professionals must focus on:
 - Developing content that highlights one central message with a maximum of two or three supporting messages communicated in a clear, uncluttered manner
 - Designing content to be delivered in a concise manner with as few “bits” of distinct information as possible. Bits of information are defined according to the number of distinct pieces of sensory information the brain of an audience member is expected to process. This can be viewed as the “cognitive load” that communication content places on the brain.
 - Delivering content in a way that makes it as easy as possible for audience members to cognitively process (pay attention and learn) the central, most valuable information in the communication content.

Brain Truth 2

The brain is a contextual/culture processor

- Cultural “cues” in communication content increase the motivational relevance of the content and the context in which content is delivered determines attention and memory.
- The practical implication of this brain truth is that Extension professionals must focus on:
 - Developing content that is informed by expert understanding of the cultural background, emotional triggers, values, and pre-existing attitudes of the

intended audience.

- Designing content with sensory elements (e.g., visuals, words, colors) that resonate with the cultural background of the intended audience and in a form (layout) that focuses attention on relevant cultural cues.
- Delivering content over channels/technology platforms that are culturally relevant to the intended audience and are as uncluttered as possible.

Brain Truth 3

The brain is a motivated/emotional processor

- Raw motivations related to approach/avoid in combination with emotional responses determine how individuals will process and respond to communication content. These emotional processes determine how the brain will process and respond to communication content within milliseconds of exposure to the content. Brain friendly communication content that is intended to educate community members **MUST** resonate with them at an emotional/motivational level.
- The practical implication of this brain truth is that Extension professionals must focus on:
 - Developing content that strategically includes sensory elements that explicitly connect with current emotional triggers the intended audience feels toward the subject of the content.
 - Designing content that strikes the best mixture of positive and negative emotional tone based on the emotional context surrounding the topic. A rule of thumb is that most science related topics have both positive and negative emotional characteristics that should be explicitly included in communication content.
 - Delivering content over channels/technology platforms that evoke a positive user experience using sources/spokespeople that have strong, positive emotional affiliations with the intended audience.

How can Extension Professionals Apply Neuromarketing Science?

Neuromarketing Science is a tool for Extension professionals to use to develop, design, and deliver brain friendly communication content which effectively engages, empowers, and educates community members they serve. A fundamental belief in the value of educational outreach is a component of the Extension Agent's Creed. Brain-friendly communication content is the core of effective educational outreach. How might Neuromarketing science tie into the discipline of Education?

The field of Education is becoming increasingly integrated with Neuroscience to form what is termed Neuroeducation. The objective of Neuroeducation is to optimize educational experiences through knowledge of how the human brain learns information (see Kim, Si. (2012). Neuroeducational Approaches on Learning. In: Seel, N.M. (eds) Encyclopedia of the Sciences of Learning. Springer, Boston, MA. https://doi.org/10.1007/978-1-4419-1428-6_1823). Neuroeducation – applying brain science to learning – and Neuromarketing Science – applying brain science to developing brain friendly communication content – creates an ideal approach to the unique communication tasks Extension professionals must accomplish. The unique tasks involved in effectively developing, designing, and delivering content for specific educational outreach efforts that successfully engages, educates, and empowers community members.

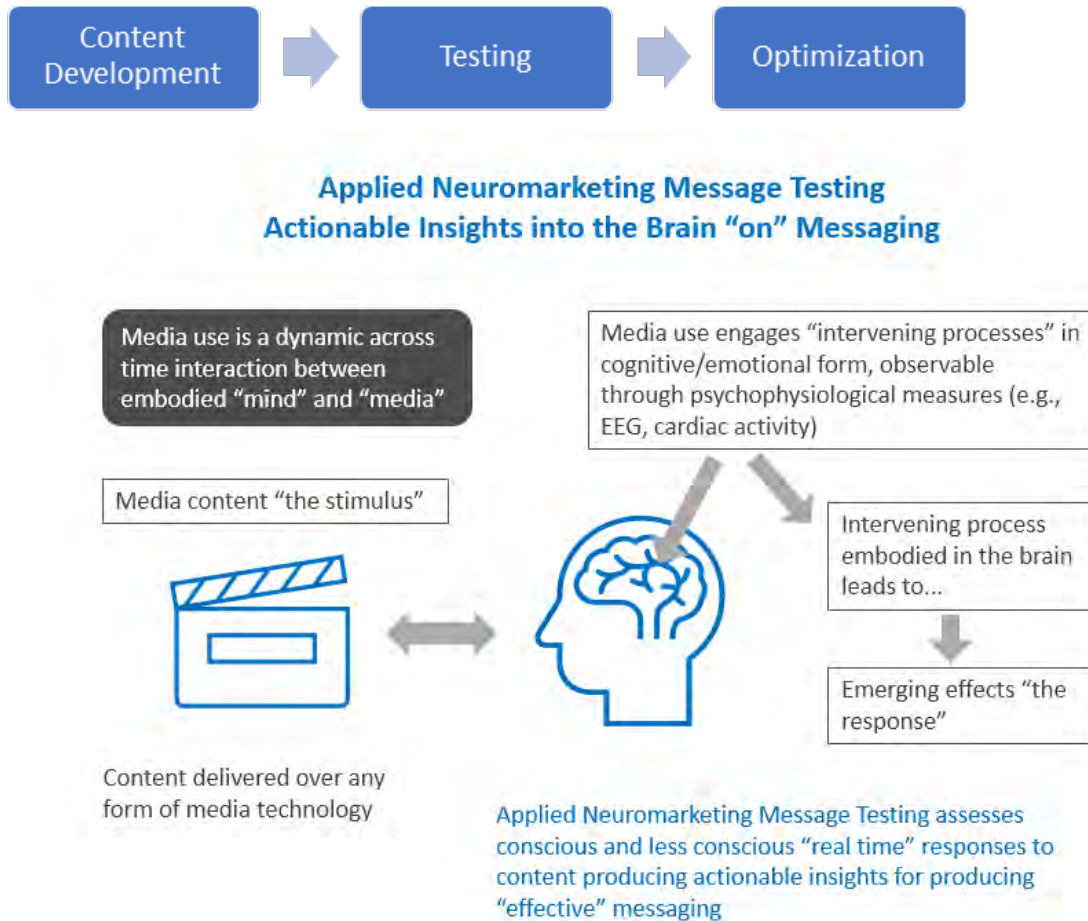
There are two ways that Extension professionals can apply Neuromarketing Science as a tool for communication content (see Figure 16).

1. Extension professionals can apply an understanding of how the human brain/mind processes information (see “mind principles” listed above) to develop content that is strategically informed by brain science. This application can encompass the processes of content development, design, and delivery as well as evaluation and refinement of content.
2. Extension professionals can engage with a partner to conduct applied Neuromarketing Science content testing. This involves the collection of biometric measures (eye tracking, heart rate, facial muscle activity, etc.) that directly test how individuals mentally process specific characteristics of communication content. The results of content testing are translated into actionable insights that can be used to for developing, designing, and delivering content that effectively engages, educates, and empowers community members. Applied Neuromarketing Science content testing also generates insights that go beyond optimizing a current communication effort to producing generalizable insights for the development, design, and delivery of brain friendly content across multiple communication efforts.

The process of using applied neuromarketing science content testing using biometric

measures of brain activity to produce actionable insights for producing brain friendly communication content:

Figure 16: Applied Neuromarketing Message Testing Insight into the Brain “on” Messaging



Extension professionals can effectively use Neuromarketing Science as a tool for producing brain friendly communication content by using these two applications separately or in combination with each other. The crucial point to remember is that application one only involves application of knowledge about the brain that can be gained from sources like this toolkit. Application two requires connecting with a partner that has a prominent level of Neuromarketing expertise and the technology for conducting applied Neuro marketing testing. You can contact Dr. Paul Bolls (pbolls@wsu.edu), a co-author of this toolkit, for more information about Neuromarketing partners.

Contemplation Worksheet

What surprised you about the three brain truths?

What information did you already know but maybe hadn't integrated into your work?

Can you think of a recent experience where these brain truths were ignored? How would have applying these brain truths helped that situation?

Let us think about how the brain works and the communication content of websites. Please click and review the following websites.

<https://whitmancountypublichealth.org/>

<https://www.healthygallatin.org/>

What are some of the brain friendly elements you notice in each of these websites? What are some of the brain unfriendly elements you notice in each of these websites?

We now turn to specifically considering Neuromarketing Science as a communication content tool in the context of the issue of Covid-19 vaccination. Information presented in this section can be applied to health science topics beyond this specific issue.

Neuromarketing in the Context of Vaccine Education

Applied Neuromarketing Content Testing was performed to produce specific, generalizable, actionable insights about content elements in messaging about Covid-19 vaccination. We tested characteristics of photographs and text-based framing of the issue of Covid-19 vaccination.

Neuromarketing-based Message Testing

Extension professionals participated in two different on-site neuromarketing testing of messages. The photo shows an individual connected to the various instruments used to measure responses.



AEA (American Evaluation Association)

August 2022 Orlando, FL



NAE4-HYDP (National Association of Extension 4-H Youth Development Professionals) October 2022 Madison, WI



Photo Credit: Dr. Toby Lepley, Associate Vice-President and State Youth Development Program Leader, Louisiana State University Agricultural Center

Objective: Identify visual and text content elements that are likely to effectively engage Extension Professionals in favorably responding to Extension and Covid-19 Vaccine Messaging

Vaccine Message Content Tested

- Photos depicting “vaccination”
Emotional tone (unpleasant) and Dominance of Vaccine Cue
- Textual framing that ties Extension to Covid-19 Vaccine education through emotional appeal and Extension values

Examples for Visuals:



Source: Appalachian Regional Healthcare System



Source: Unsplash

Examples for Textual Framing:

"Covid-19 Vaccine education fits with the mission of Extension Professionals because we believe in intellectual freedom to search for and present the truth without bias and with courteous tolerance toward the views of others."

Actionable Insights – Visual Framing

Effective vaccine education content begins with “brain friendly” visuals that:

- Capture attention and elicit a mixture of positive AND negative emotional responses
- Evoke positive attitudes that will enhance mental processing of text
 - Positive attitudes
 - Favorable
 - Desirable
 - Likable
 - Informative

Brain Friendly Visuals

Highly Effective

Brain friendly visuals that are highly effective in terms of elicit positive emotions and attitudes towards vaccination education utilizing pleasant emotional tone and avoiding high presence of vaccination cues, such as needles, vaccine bottles, or image of virus.



Mod

Moderately Effective

Brain friendly visuals that are considered to be moderately effective utilizing pleasant emotional tone with high presence of vaccination cues.



Source: ERIC SEALS/USA TODAY NETWORK/SIPA

In sum, brain friendly visuals utilizing pleasant emotional tone, and the presence of vaccination cue is less matter compared to the emotional tone.

Brain Unfriendly Visuals

Visuals to Avoid

Images with highly unpleasant tone and high presence of vaccination cue eliciting negative attitudes toward vaccination education among Extension professionals, which is not recommended to use in vaccination education.



Double Edged Sword

Visuals with unpleasant emotional tone and low presence of vaccination cue is a double-edged sword. Empirical data from both neuromarketing science method and self-report method showed that images with unpleasant emotional tone effectively attracted attention to some extent. However, it also evoked negative responses toward the content, and the content was perceived to be less desirable and favorable.



Source: Kaiser Permanente of the Northwest

Actionable Insights – Textual Framing

What is “brain friendly” textual framing?

- Engaging attention and emotion in a way that enhances memory/learning
 - Lowering negative feelings
 - Increasing self-efficacy
- Two primary “framing” strategies for Extension vaccine education
 - Emotional frames (Gratitude; Empathy, Pride)
 - Extension Value frames

Brain friendly “emotional” framing

“Empathy for constituents” is the most brain friendly in emotional framings in terms of letting Extension professionals feel more willing and comfort for conducting vaccination education and has a positive effect on cognitive engagement. “Pride in Expertise” is the second emotional framing that is perceived to be effective and can be used as an alternative to “empathy for constituents” framing.

Empathy for Constituents

Extension Professionals who are willing to engage in Covid-19 Vaccine education with their clients/constituents can demonstrate empathy for constituents through their work.

Extension Professionals can be equipped to deliver vaccine education in ways that treat individuals who are afraid of vaccination with respect and does not involve intimidation, humiliation, or even persuasion. Extension should avoid a “savior complex” especially in rural areas. Just share general information about vaccinations, how they work and how they are developed.

Pride in Expertise

Extension Professionals who are willing to engage in Covid-19 Vaccine education with their clients/constituents can feel pride in their expertise used to educate their community.

Extension Professionals have tremendous ability to understand vaccines and the science behind them. Extension has a history of providing vaccine education to Livestock producers, youth, and adults. Extension has a history of providing evidence-based education. We can be proud to engage in programs that lead to more thoughtful decision making.

Brain friendly “extension value” framing

“Link between people and scientists” framing is highly recommended. “Believe in intellectual freedom” framing can be used on a light rotation as an alternative to the first framing.

Link between people and scientists

Covid-19 Vaccine education fits with the mission of Extension Professionals because we believe that Extension is a link between the people and the ever-changing discoveries produced by expert scientists.

Believe in intellectual freedom

Covid-19 Vaccine education fits with the mission of Extension Professionals because we believe in intellectual freedom to search for and present the truth without bias and with courteous tolerance toward the views of others.

Brain unfriendly framing

Brain unfriendly framings evoke more negative emotions and more reactance towards vaccination education.

Examples:

Covid-19 Vaccine education fits with the mission of Extension Professionals

... because education is basic in stimulating individual initiative and self-determination.

... because we believe in our own work and in the opportunity, we must make our lives and the work we do as Extension Professionals useful to humanity.

Sample Message Template Script (Creative Brief)

Communities served by Extension have a critical need for respectful science-based vaccine education. Many community members have significant concern and confusion about the benefits and risks of vaccines. Extension professionals uniquely identify with the community members we serve. We can be a critical bridge between our communities and vaccine science. We can take pride in using our expertise to understand vaccines and the science behind them to produce programs that foster thoughtful decision making and empower ourselves with scientific knowledge.

Extension professionals are dedicated to treating individuals who are concerned about the risks of vaccination with respect, without intimidation, humiliation, or even persuasion about human vaccines. Extension vaccine education is Extension expertise and empathy, bridging science and our communities.

Contemplation Worksheet

How do these actionable insights resonate with you and/or with the work you do?

What information did you already know but maybe hadn't integrated into your work?

In what other areas can you apply these actionable insights besides vaccine science content?

Application of neuromarketing science as a “TOOL” for brain-friendly vaccine science education content:

Neuromarketing Science & Vaccine Science Content

- Neuromarketing Science has a valuable role to play in producing and delivering effective vaccine science content by:
 - Guiding production of “brain friendly” content
 - Providing new “data based” actionable insights
- “Effective” “brain friendly” vaccine science content will engage, educate, and empower individuals to make evidence-based health decisions

The problem: “three brain truths” in “overdrive”

The “Brain Truths” previously presented in this toolkit can be used to develop, design, and deliver brain friendly communication content about vaccine science. Extension professionals MUST remember, however, that these human brain characteristics ALWAYS impact how community members mentally process and attitudinally and behaviorally respond to all information. The highly politicized and potentially emotionally explosive communication context that can still surround Covid-19, and vaccine science in general, makes processes described by the “Brain Truths” even more influential in shaping community responses to related communication content.

Here is how:

The brain is a motivational emotional processor

Vaccine Science information/misinformation is extremely emotional/political, priming “aversive/defensive” responses

The brain is a limited capacity processor

Vaccine Science information contains a lot of “bits” of changing information tied to the evolving science

The brain is a cultural/contextual processor

Cultural background and experiences creating disparities and distrust shape the communication context and filter how Vaccine Science is interpreted and responded to

The Solution:

Respect the “three brain truths” and follow the practical advice given in the previous section about brain truths!

Contemplation Worksheet

The Brain is a Motivational Emotional processor:

Brain Unfriendly

Brain friendly



Campaign Materials for Vaccinate T&T, Ministry of Health, Government of the Republic of Trinidad and Tobago & AdTechCares

Note the reasons why one ad is brain unfriendly, and the other ad is brain friendly:

The Brain is a Limited Capacity processor:

Brain Unfriendly

Brain friendly

From the U.S. Department of Health and Human Services Website, COVID-19 Public Education Campaign

Note the reasons why one ad is brain unfriendly, and the other ad is brain friendly:

The Brain is a Cultural/Contextual processor:

Brain Unfriendly

The advertisement for Clinica Sierra Vista features a circular logo in the top left corner. The main image shows a healthcare worker in a white coat and mask administering a vaccine to a patient. Below the image, the text reads "Hope & Healing COVID-19 VACCINES". A large syringe and a vial of vaccine are shown to the right. The text continues: "Clinica Sierra Vista, Community Action Partnership of Kern, Circle of Life Development Foundation, #MLKcommUNITY, Kern County Latino Covid-19 Task Force, United Against Covid-19, Upside Productions, Kern County Black Chamber of Commerce and Girl Trek are partnering to provide COVID-19 vaccines in our community. First come first served. Moderna COVID-19 2-dose vaccine." Below this are logos for ecapk, Circle of Life, United Against COVID-19, GirlTrek, and Kern County Black Chamber of Commerce. The event details are: "Saturday, April 24th 8:00am-4:00pm CLINICA SIERRA VISTA East Niles Community Health Center 7800 Niles Street Bakersfield, CA 93306". A QR code is provided, and the text says "Please Make Your Appointment and Register at appointment.clinicas ierravista.org/eastniles".

Brain friendly

The advertisement features a photograph of a healthcare worker in a blue polo shirt comforting an elderly man in a peach-colored shirt. The text reads: "Getting back to these moments we miss starts with getting informed." Below the photo is a yellow banner with the text "IT'S UP TO YOU COVID-19 VACCINATION" and the Ad Council logo. At the bottom right, it says "Get the latest information about COVID-19 vaccines at GetVaccineAnswers.org".

Source: Clinica Sierra Vista & The Ad Council

Note the reasons why one ad is brain unfriendly, and the other ad is brain friendly

Practical Advice for Developing “Brain Friendly” Vaccine Science Content

Brain Friendly vaccine education content will include content that engages BOTH “Intuitive” AND “Rational” thinking

Use production features to engage System 1

- Camera angle and shot length
- Color Schemes
- Font size
- Production pacing and “effects”

Use copy/content to engage System 2

- Write copy/content to highlight key points
- Write copy/content to empower
- Write copy/content to evoke feelings
- ❖ Brain Friendly vaccine education content for “vaccine hesitant” communities MUST reduce defensiveness and emotionally resonate to motivate individuals to consider and act on information

Brain Friendly vaccine science content needs to “tame the Elephant” meaning highly negative emotional and defensive responses that have been primed by the politicized and emotional communication environment that surrounds vaccine science.

- Feature “relatable” real humans
- Feature positive emotional content (hope)
- Acknowledge risks (negative affect)
- Use calming color schemes
- Use inclusive language “we”
- Avoid highlighting “vaccine” cues
- Avoid unintended politicized cues
- Avoid “red” or similar color schemes
- Avoid “directive” or “loss-frame” content

Utilize the Bite-snack-meal for content design

When developing content, consider the amount of content people can absorb in the communication content format. Thinking about this food analogy helps with making the decisions about the right amount of content to include.



Source:

<https://martech.health/articles/how-to-market-to-physicians-is-medical-jargon-the-answer>

Contemplation Worksheet

Think about some content that you are currently working on. With the Bite-Snack-Meal strategy in mind, record what content you might share in each situation.

Consider each of the Right Sizes	Content Topic: _____
Bite size	
Snack size	
Meal size	

Video Resource Box: Brain friendly vaccine video

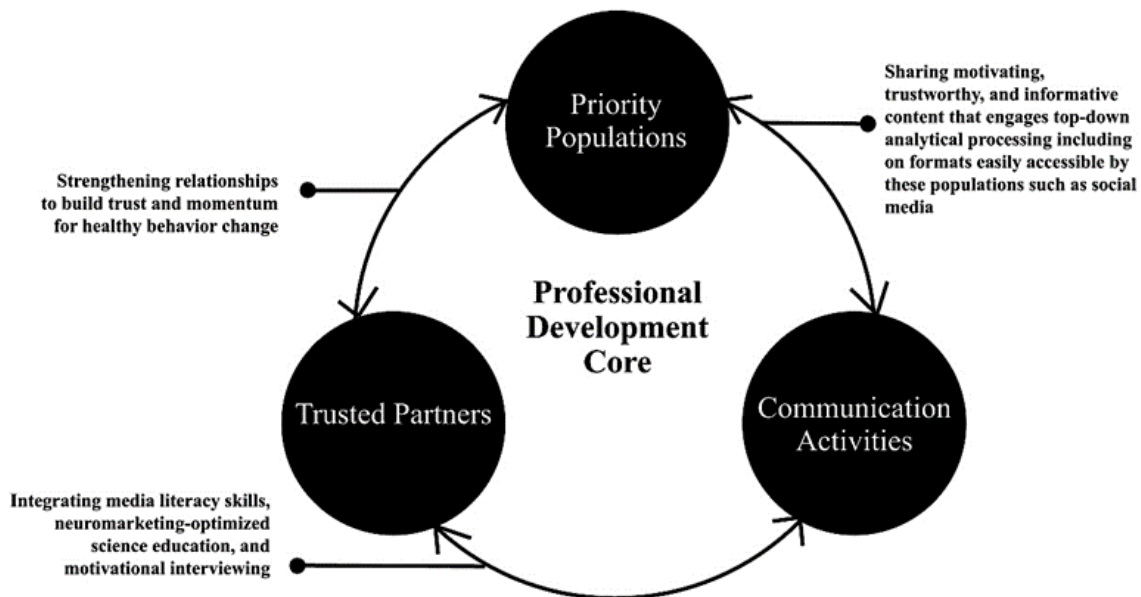
[Whitman County's COVID-19 Vaccine Journey - Linda's Story](#)



What evidence is there for this to be a good example of a brain friendly vaccine video?

Contemplation Worksheet

Integrated Model of Sustainable Health Decision-Making and Neuromarketing



The most effective way for Extension professionals to use Neuromarketing as a tool for engaging trusted partners through communication activities is to integrate it with principles from Motivational Interviewing and Science Media Literacy. How might you combine your knowledge of these three tools of these three tools (Motivational Interviewing, Science Media Literacy, and Neuromarketing) to more effectively communicate with trusted partners and other community members through your outreach?

What can you or Extension do to specifically make your communication content and activities more “brain friendly?” You are encouraged to reflect on specific education and/or community outreach messaging you need to deliver as an Extension professional?

What role do you think neuromarketing-optimized science education, as well as other kinds of health messaging, can serve for promoting health equity in your community?

Knowing that cultural background and experiences can create disparities and distrust shape the communication context, how will this affect the way you approach developing and delivering brain friendly content in your role as an Extension professional?

IMPACTFUL OUTREACH

Chapter 4

What is Impactful Outreach?

Impactful outreach is about creating meaningful connections, sharing compelling stories, and engaging communities in ways that inspire positive health behaviors. The previous three chapters described critical strategies for getting to the matter's heart and mind, including motivational interviews, science media literacy, and neuromarketing science. When employing these strategies, the outreach tactics outlined in this chapter will serve as practical guides for their effective application. In the context of public health, this chapter of the toolkit intends to help Extension professionals use social media to disseminate significant information about vaccines in ways that are educational, inspiring, and engaging (Byaello, 2022).

Why is Impactful Outreach Essential for Vaccine Education?

Impactful outreach is a strategic and evidence-based approach to engaging people in health-related conversations. It effectively reaches diverse audiences and supports various health behaviors, such as vaccination uptake and preventive health measures. This design of the toolkit is to help Extension professionals utilize social media effectively to:

- Communicate confidently with diverse audiences about vaccines.
- Build trust and avoid confrontations while maintaining credibility.
- Create a supportive environment where people can express their concerns and ask questions.



What You'll Learn

In this toolkit chapter, you will explore the following key areas:

Part I: Message Strategies for Target Audiences

Segmenting audiences: Understand how to prioritize your efforts and focus on crucial audience groups, ensuring your messages resonate with those who need them most.

Tailoring messages: Learn to craft compelling and relevant messages for different audience segments, including Long-Haul, Single-Issue, Hot-Button, and Apathetic Audiences.

Ensuring equity: In this section, we discuss "target audiences" and how to tailor messages. However, throughout this toolkit, we emphasize that our audiences are individuals within our priority populations with whom we are engaging in conversations, rather than merely speaking to them.

Part II: Platform Best Practices

Algorithmic literacy: Gain insights into how social media algorithms work and learn strategies to optimize your content for higher visibility and engagement.

Engagement techniques: Understand how to evaluate your outreach efforts through metrics such as engagement velocity, optimal posting times, and the effective use of hashtags. Discover ways to build community engagement using interactive tools like polls, quizzes, hashtag campaigns, and contests.

Advertising tips: Explore ways to boost content to your priority populations using platform-specific features.

Part III: Measuring Impactful Outreach

Metrics for success: Learn to measure the immediate results (outputs), the reception of your message by the audience (outtakes), and the long-term impact on opinions, attitudes, and behaviors (outcomes).

Why This Matters

Effective outreach is about more than just disseminating information. It is about creating connections, building trust, motivating action, and internally measuring benchmarks for success to learn from and expand on. By mastering the tactics outlined in this toolkit chapter, you will be better equipped to inspire, educate, and engage audiences.



How can health professionals use social media to inspire, educate, and engage audiences?

Health professionals face significant challenges when using social media to reach their audiences. With people spending a lot of time online, information fatigue becomes common. Educational content often competes with more engaging, amusing, and entertaining posts, making it hard to capture your audience's attention. Other challenges include the spread of misinformation and “fake news”, which increases audiences' skepticism about the quality of the information (Afful-Dadzie et al., 2023; Vraga & Tully, 2019). See [Science media literacy chapter](#) for more information on the importance of media literacy in discerning fake news from real news.

To address these challenges, using research-driven message strategies is key. Incorporating storytelling into health messages makes the content more relatable and memorable. Sharing patient stories or real-life scenarios helps humanize the information and connect with audiences. Collaborating with trusted community figures and or social media influencers can also boost the reach and credibility of health messages, leveraging their established trust and broad follower base (Alam et al., 2024; Bonnevie et al., 2021). Overall, health professionals need to delve into their target audience's demographics, interests, values, and behaviors to tailor their messages more effectively. Equally important is knowing the features (e.g., algorithm practices) and trends (e.g., popular hashtags) of each social media platform to optimize content for better reach and engagement. By combining these strategies - research-driven messages, audience insights, and platform knowledge - health professionals can overcome social media challenges and ensure their content reaches and resonates with their audiences.



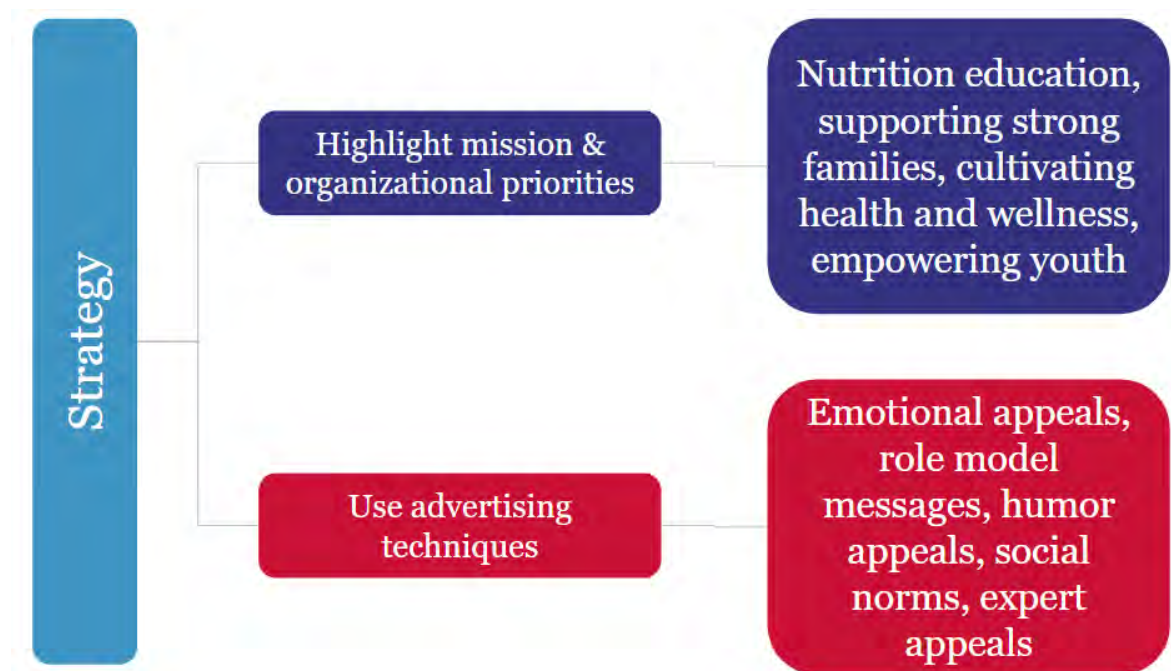
How do we break through this noise?

Ultimately, we will address the essential question: How can health professionals use social media to inspire, educate, and engage audiences, breaking through the noise?

Part I: Message Strategies for Target Audiences

Effective social media outreach for vaccine communication should be audience-driven, tailoring strategies to the specific needs and characteristics of different audience segments (see Figure 17).

Figure 17: Message Strategy Priorities vs. Techniques



Highlighting Mission and Organizational Priorities vs. Advertising Techniques

Highlighting Mission and Organizational Priorities: This approach focuses on conveying the core values, goals, and long-term objectives of your organization. It is particularly effective for audiences who are already engaged or have a specific interest in your cause (e.g., long-haul and single-issue audiences which we'll describe on the next page). By emphasizing the mission and priorities, you build trust and reinforce the importance of your work.

Examples:

- Sharing detailed information about vaccine programs and their impact on community health.
- Posting stories and testimonials that align with the broader mission of promoting public health and safety.
- Providing educational content that explains how specific initiatives, like the CDC's Bridge Access Program, support your organizational goals.
- **Advertising Techniques:** This approach uses engaging, attention-grabbing content

designed to elicit an emotional response. It is effective for reaching audiences who may not be initially interested or who have strong emotional connections to specific issues (e.g., hot-button and apathetic publics). Advertising techniques often include humor, popular culture references, and cause advocacy to capture attention and encourage engagement. (See section on [How to Emotionally Engage your Audience](#))

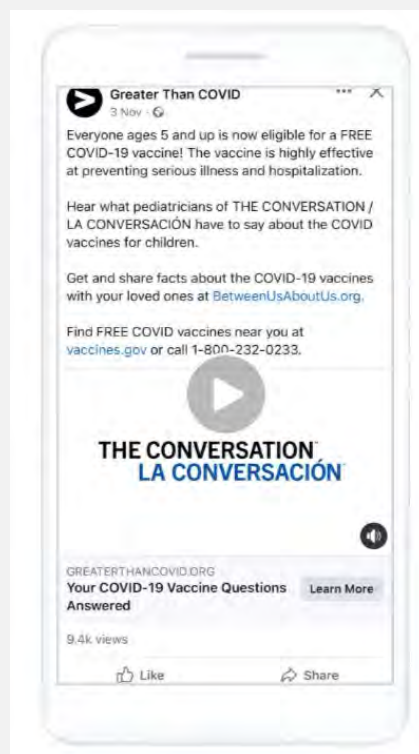
Examples:

- Creating humorous or entertaining posts related to vaccines to attract attention.
- Developing campaigns that align with the personal values and beliefs of the audience, such as stories of individuals positively impacted by vaccines.

By tailoring your message strategies to the specific characteristics and preferences of your audience, you can more effectively engage them in public health initiatives.

**Resource
Box**

Creative Best Practices for COVID-19 Vaccine Campaigns: What an analysis of 143 advertising campaigns run on our 'Facebook' globally have shown us



[Article Link](#) Meta (2021)

Audience Segmentation

Audience segmentation is the process of dividing a broad audience into smaller, more homogenous groups based on shared characteristics or behaviors. This allows organizations to tailor their messages and strategies to meet the specific needs, preferences, and interests of each segment, thereby increasing the relevance and impact of their communication efforts, which is essential in our oversaturated information environment as discussed in our [Science Media Literacy](#) section.

“You can’t please all people all the time.” Prioritize efforts to include audiences on which it can focus.

Defining Audience Segments

All-Issue Audience: These individuals follow your organization because they appreciate all aspects of your brand. They engage with all your messages and are often loyal supporters.

Single-Issue Audience: These individuals are attracted to your brand due to specific values and priorities, engaging primarily with content related to their interests.

Hot-Button Audience: These individuals follow your organization because they have an emotional response to your messages, motivated by campaigns that align with their personal values and beliefs.

Apathetic Audience: These individuals are initially uninterested in your brand and messages but may become engaged through other means, such as influencer involvement or special community partnerships.

Distribution Strategy

To effectively engage these audiences, distribute your social media posts as follows:

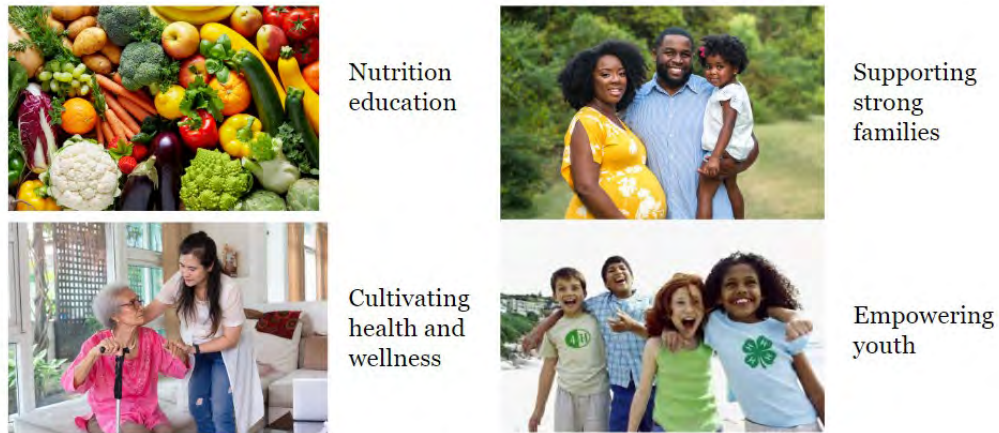
- **40% focused on long-haul publics:** Those who consistently like and engage with your content.
- **20% focused on single-issue publics:** Highlighting unique audience needs, such as uninsured individuals who benefit from the Bridge Access Program.
- **20% focused on hot-button publics:** Individuals who have an emotional connection to Extension due to specific ad appeals or campaigns.
- **20% focused on apathetic publics:** Individuals who may become engaged through influencers or community partnerships.

The following pages provide examples of posts that may reach these audiences.

All-Issue Audience

These individuals follow your organization on social media because they appreciate every aspect of your brand. They engage with all your messages and are often your loyal supporters, including friends and family members. See figure 18 for examples.

Figure 18: What are the Family Priorities of Extension?



Context: [WSU's Youth & Families](#)

Contemplation Questions

What are your Extension office's priorities, and how do they relate to vaccines?

Who are the audiences you consistently reach on social media?

Do these individuals engage with all types of posts (likes, shares, comments)?

Does your content cover a wide range of topics relevant to your mission?

Are there signs of a community forming around your brand (e.g., user-generated content, active discussions)?

Single-Issue Audience

These individuals are drawn to your brand because of specific values and priorities. For example, people interested in public health or those passionate about community safety may follow your Extension programs. Single-issue publics for the Bridge Access Program may include uninsured individuals who are drawn to the message because the program offers vaccines without needing insurance.

Figure 19 is a good example of a single-issue post from [Oregon State University's Food Hero](#) program Facebook page:

Figure 19: Oregon State University's Food Hero



Contemplation Worksheet

Are your posts addressing specific interests or issues these individuals care about (e.g., public health, community safety)?

Are these followers engaging more with posts related to their specific interests compared to other content?

Are you providing detailed and actionable information relevant to their interests?

Do your posts include clear calls to action that align with their interests and encourage further engagement?

Hot-Button Audience

These individuals follow organizations because they have an emotional response to the messages. They are motivated by campaigns that align with their personal values **and beliefs**. Using social media influencers to promote health information is a positive strategy to engage this audience and has been found to help shift social norms when it comes to heavily debated topics like vaccination (Alam et al., 2024; Bonnevie et al., 2021). Figure 20 offers some good examples of engaging an audience.

Figure 20: Hot-Button Audience Social Media Posts



[Humor appeal from Food Hero](#)



[Cause advocacy from 4H](#)



[Popular culture reference from the Illinois Department of Public Health](#)

**Resource
Box**

The Language of Persuasion

The Language of Persuasion toolkit teaches how mass media use various techniques to persuade audiences to believe or act in a certain way.

Understanding [media literacy](#) and persuasion techniques can help vaccine educators craft more effective appeals by making their messages more credible, engaging, and compelling to their audience.

[Article Link](#)

Contemplation Worksheet

Are your posts designed to evoke an emotional response aligned with these followers' values and beliefs?

Do you currently use any advertising appeals in your messaging? If not, which might suit your organization best?

Are your campaigns generating strong emotional reactions and high engagement levels?

Is your messaging clearly tied to specific values or beliefs that motivate these followers?

Are these followers sharing your content, indicating a strong personal connection and desire to spread the message?

Are these followers becoming advocates for your cause, taking further actions beyond social media interactions?

Apathetic Audience

These individuals follow organizations because they have an emotional response to the messages. They are motivated by campaigns that align with their personal values and beliefs.

Example high performing post from the [4-H Instagram page](#) that is relevant to audiences inside and outside of Extension (see Figure 21). An opinion leader or celebrity appeal can capture apathetic audiences by leveraging broad recognition and curiosity. Using a famous figure like Julia Roberts in a trivia format can attract attention and spark engagement from both 4-H members and those initially uninterested.

Figure 21: 4-H Social Media Post for Apathetic Audience



Contemplation Worksheet

Have you partnered with influencers or community leaders or influencers to reach and engage this audience?

Are you using creative methods (e.g., gamification, interactive content) to spark interest in apathetic audiences?

Contemplation Worksheet:

Create detailed personas for each audience segment to develop tailored engagement strategies.

Definitions:

Demographics: Basic characteristics such as age, gender, and location.

Values and interests: Specific topics or values that engage this audience.

Engagement strategies: Methods to effectively connect with and motivate this audience, considering the information provided earlier in this chapter (e.g., highlighting the organizational mission and priorities or advertising techniques).

Example message: A sample message or post tailored to this audience segment.

All-Issue Audience Persona

- Demographics:
- Values:
- Engagement strategies:
- Example message:

Single-Issue Audience Persona

- Demographics:
- Values:
- Engagement strategies:
- Example message:

Hot-Button Audience Persona

- Demographics:
- Values:
- Engagement strategies:
- Example message:

Apathetic Audience Persona

- Demographics:
- Values:
- Engagement strategies:
- Example message:

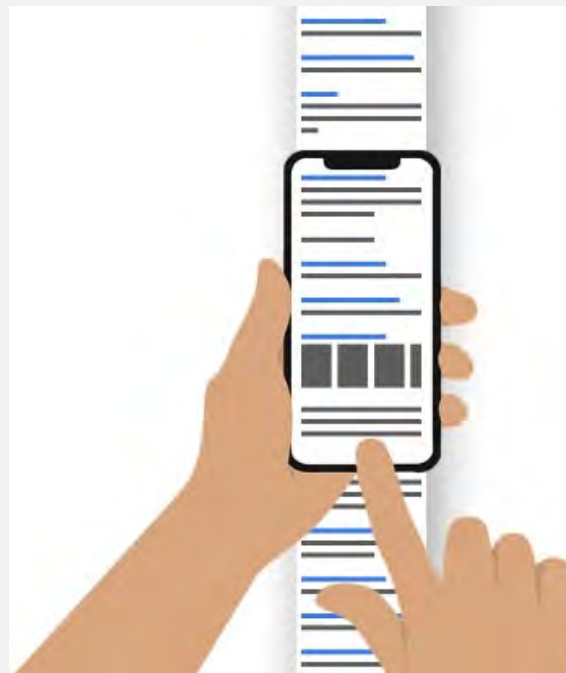
Part II: Platform Best Practices

In today's digital age, people spend countless hours on platforms like Facebook, Instagram, and TikTok, consuming vast amounts of media. To effectively reach these audiences, it's not enough to just get your messaging and target audience right—you also need to understand how these platforms work. This sub-section will teach Extension professionals how to engage with users, navigate social media algorithms, manage comments, create compelling content, and determine the best times to post, ensuring maximum impact for vaccine promotion efforts.

Resource
Box

HubSpot's Social Media Marketing: The Ultimate Guide

Discover how social media marketing can help you generate leads, boost conversions, and increase brand awareness.



[Resource link](#) (Baker, 2024)

What is Social Media Engagement?

Understanding how to effectively engage with your audience on social media is crucial for promoting vaccine content. Here are some best practices to help Extension professionals enhance their outreach:

- **Learn About Your Platform:** Each social media platform has unique features, user behaviors, and audiences. Facebook and Instagram have been identified as potentially the best sources of information for Extension audiences.
- **Engagement Metrics:** Familiarize yourself with the engagement metrics provided by social media platforms like Instagram, Twitter (X), and TikTok. These metrics, available on the platforms' native analytic dashboards, can help you identify successful posts and analyze what made them engage.
- **Determine the Best Times to Post:** Timing is crucial for achieving higher engagement (typically weekdays during the morning hours [as suggested by Sprout Social](#)).
- **Post Often:** Consistency is key to building a loyal following. Regularly posting content keeps your audience engaged. We recommend posting 2-3 times per week with only 1-2 posts each month focusing on vaccines.
- **Use Local Hashtags:** Hashtags extend your reach beyond your immediate followers and are especially effective in a local context. They help your content get discovered by a larger audience. Consider hashtags that local health organizations and businesses use.
- **Share Interactive Content:** Encourage interaction by posting polls, quizzes, hashtag campaigns, contests, and Q&A sessions. Interactive posts foster a sense of community and engagement.
- **Aim to Capture the Attention of Power Users and All-Issue Publics:** Power users are highly active on social media and can significantly amplify your message. Additionally, engaging with all-issue publics can help spread your content more widely.

The following section will delve more deeply into these best practices.

Resource Box:

Social Media
Management Tool:
Sprout Social

About: A third-party social media management tool, that allows teams to collaborate, schedule posts, and determine the impact of their reach for a subscription cost. There is also relevant information accessible for free, such as tips on how to increase social media engagement.

Website: <https://sproutsocial.com/>

How do Platform Features Affect Engagement?

As we have discussed throughout this chapter, social media platforms are essential tools for communication, marketing, and information dissemination. Each platform's unique features significantly influence user interaction and engagement. To understand this dynamic, it is crucial to explore concepts, such as algorithms and engagement velocity, as these are key metrics that tie directly into how these features affect the visibility and impact of social media content.

What is an Algorithm?

If you are unfamiliar with social media algorithms or find them puzzling, it's okay—you are not alone! However, it is critical to understand the algorithm practices these platforms use to reach your audience and achieve impactful outreach as they vary by platform.

Social media algorithms have been compared to news publishers and distributors, as they perform similar functions (Cetinal & Martinez, 2019). In fact, many individuals use social media for news and health information purposes (Thompson et al., 2020), while others say, “health news finds me”, which is known as incidental news exposure (Barnidge & Xenos, 2024).

Due to algorithms, many individuals believe they stay informed about health information without actively following the news, as important information “finds them” through social media, especially among younger audiences (Boczkowski et al., 2017). However, there are also those who live in “social media news deserts” where they are not exposed to a lot of news content due to news curation algorithms and or the accounts they follow, pointing to a digital inequality in the way social media curtails the dissemination of certain information from specific audiences (Barnidge & Xenos, 2024). Nonetheless, these algorithms determine the importance of shared information and how to disseminate it.

In addition, social media algorithms enable these platforms to tailor content for their audiences by collecting an immense amount of user data driven by an online advertising business model (Cetinal & Martinez, 2019). This data is used to profile individuals based on their behaviors and share content that is ranked and personalized to keep them engaged and spend more time on the platform (Milan, 2015). For example, infinite scroll features on social media are used to retain engagement and prolong users' time on the platform.

While these platforms collect data on their users to maximize profit (Cetinal & Martinez, 2019), it's crucial to understand how they prioritize certain content over others. This

knowledge can empower you to leverage this information and maximize your outreach.

Resource
Box

Here are a couple of resources to help you learn about Facebook's algorithm practices:

[Decoding the Facebook Algorithm in 2024: Everything You Need to Know](#)

[How Facebook Distributes Content | Meta Business Help Center](#)

What is Engagement Velocity?

Engagement velocity is a measure of the speed at which users interact with your content after it is posted. It is considered one of the most important factors for any social media post as social media algorithms use engagement velocity as the main metric to gauge the relevance and quality of your content. For a social media post to appear at the top of users' timelines, it needs to be a post that receives high engagement (e.g., likes and views) right when it is posted.

In general, if your post is not receiving any likes, then content from your page may not be shown in the algorithm.

What Influences Engagement Velocity?

1. **The time of day you post.** For example, if you post in the middle of the night, your post most likely will not reach the level of engagement velocity needed to prevent your post from being suppressed from users' algorithms.
2. **How often you post.** By posting frequently, you are creating more opportunities to reach your audience. For example, apps like Instagram will display the stories of accounts individuals frequently interact with or accounts that are receiving a lot of engagement, at the beginning of their story feeds.
3. **The content you are posting.** If you are sharing content your audience finds boring or dislikes, you will most likely receive lower engagement and may lead to your post being suppressed from the algorithm. Consider the advertising techniques presented for hot button and apathetic publics to draw audiences in.



Contemplation Worksheet

Do Algorithms Impact How People Learn About Health?

Reflect briefly: Think about the last time you learned something about health. Reflect on the source and how you received this information. Answer these questions briefly:

- **Source of Information:**

- Where did you learn it (e.g., social media, news, TV, a friend)?

- Did you seek it out, or did it “find you”?

- **Role of Algorithms:**

- Did algorithms deliver this information?

- How often does health news “find you” without you actively seeking it out?

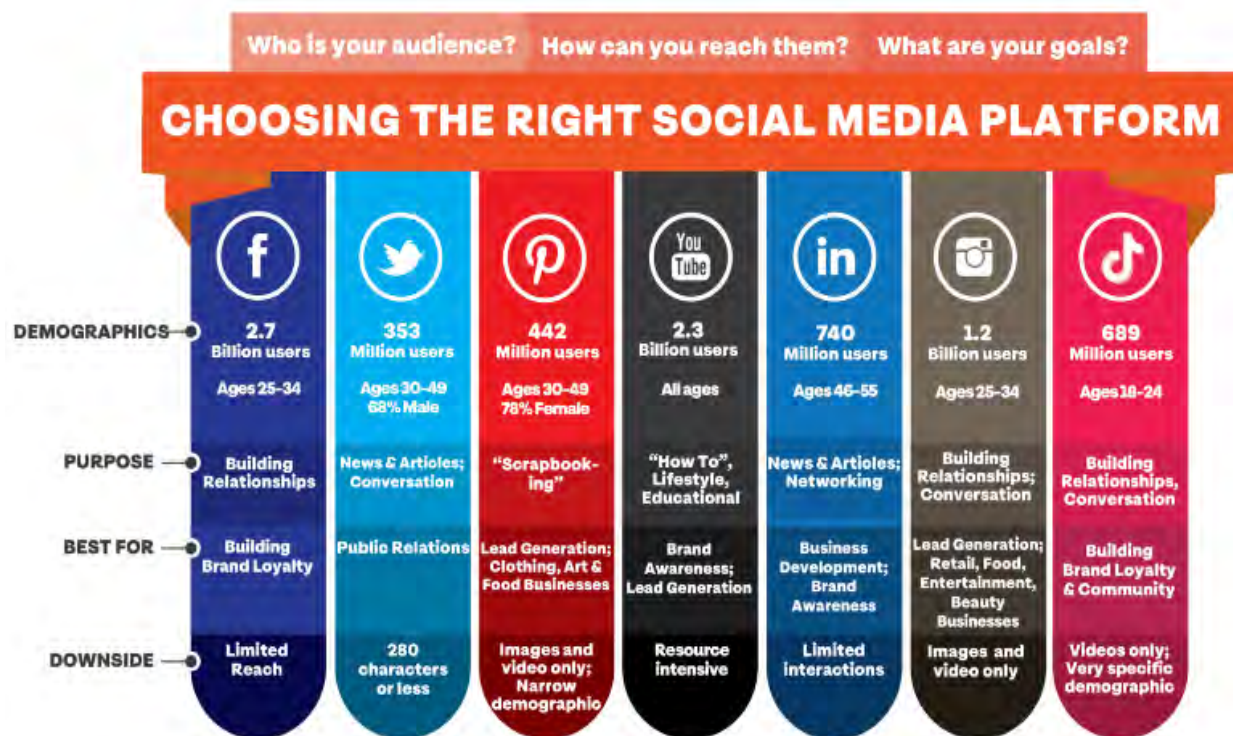
- **Impact on Learning:**

- Can you think about how your own learning about health has changed due to the Internet and social media?

Learn about your platform

If you have not selected a social media platform to use yet, below Figure 22 is a helpful for you to make your decision.

Figure 22: Choosing the Right Social Media Platform



Note. Figure is from "Choosing the Right Social Media Platform for Your Business" by Action Opportunity Fund, n.d. (<https://aofund.org/resource/choosing-right-social-media-platform-your-business/>)

As previously discussed, every social media platform varies from algorithmic practices to audiences (see Figure 25). Knowing which social media platforms are most popular among your target audience is essential to be able to reach them.

- For example, Instagram, Snapchat, and TikTok have the largest age gaps as they are mostly used by younger audiences (adults under 30; Pew Research Center, 2024).
- Besides YouTube, the three most widely used platforms among Hispanic adults are Facebook (66%), Instagram (57%), and WhatsApp (54%; Pew Research Center, 2024).

After you select the right platform for your audience, the first step in achieving greater engagement is to familiarize yourself with the social media platform you are utilizing such as what features are available and what popular trends individuals are engaging in. Instagram has a paid boost feature, which increases the likelihood of your followers seeing your post.

Both Facebook and Instagram have paid advertising features, that can target specific audiences (e.g., low income, zip code) outside of your own following. Although algorithm practices are intricate and tend to evolve it's essential to stay updated on the current algorithm practices of your platform to achieve impactful outreach. For example, Facebook considers the length of a video in its algorithm and tends to prioritize short authentic videos they believe will lead to more meaningful interactions (Quickframe, 2023). It's recommended to start with videos that are 30-90 seconds long and adjust as needed (Quickframe, 2023).

Resource
Box

How Americans Use Social Media in 2024

The Pew Research Center provides a report of demographic differences in Americans social media use that are important to consider when selecting a platform.

[Article Link](#)

Determine the Best Time to Post

Knowing when your audience is online is essential in achieving engagement goals and reaching your audience. Engagement levels are known to vary for post shared during the week vs during the weekend (Moran et al., 2020). One recommendation if you are sharing a post about a serious topic, is to share it during the work week, instead of during the weekend when most individuals are looking to relax (see Figure 23).

Most social media platforms have in-app features that allow you to learn more about your followers and help you determine the best times to share your content to receive higher engagement.

- Instagram allows you to see what times during the day your viewers are most active if your account has 100 or more followers.
- Facebook provides also recommended active times to post when scheduling your post.

Moreover, websites like Sprout Social share the optimal times to post on each social media platform. Below are the best times and days to post and the worst days to post on social media including Twitter, Facebook, LinkedIn, Instagram, Pinterest, and TikTok (Sprout Social, 2024). However, each platform does vary slightly.

Figure 23: Best Times to Post on Social Media



Post Often

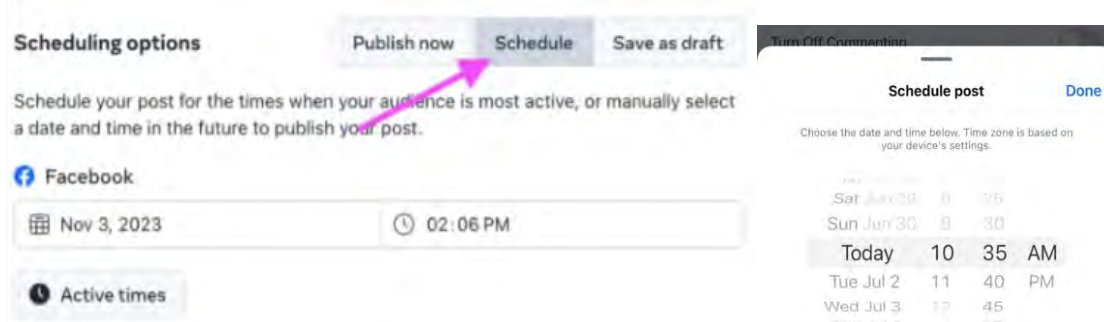
Once you determine the best times to share your content, make sure you are posting frequently enough to keep your audience engaged, but not too much that you are overwhelming their timeline, as that can lead to your account being muted and or unfollowed. However, it's recommended to post more than a couple times a year, as some platforms such as Facebook tend to suppress accounts from the algorithm if they have been inactive for long periods of time.

To help you manage and stay on top of posting consider scheduling post ahead of time. Many social media platforms have features that allow you to schedule posts ahead of time, which will then be shared during the corresponding times and days.

- Instagram has in-app feature that allows you to schedule multiple posts ahead of time under the advanced settings. You can schedule 25 posts per day and up to 75 days in advance. If you prefer using a desktop to schedule post, you can do so using Meta Business Suite, which allows you to schedule stories and reels ahead of time too.
- Facebook also allows you to schedule posts up to 29 days away using the Planner feature on the Meta Business Suite dashboard.

You can also find social media calendar templates online to help you plan out your post throughout the month and stay on track using excel or google sheets (see Figure 24). The Sprout Social Index recommends posting 1-2 posts per day. However, this will differ depending on your audience preferences, engagement level, and capacity.

Figure 24: Scheduling Social Media Posts



Resource Box:

<p>Monthly Social Media Calendar Template</p>	<p>2024 Social Media Planner Calendar in Google Sheets [FREE Template]</p> <p>Website: https://www.youtube.com/watch?v=7Pfi39LeB90&t=25s</p>
<p>Monthly Social Media Calendar Template</p>	<p>Social Media Planner Calendar in Google Sheets</p> <p>Website: https://docs.google.com/spreadsheets/d/1g9YZ4TELrMl45x8nsU56AykBW1RAZY5F6kvpBbScpyQ/edit?usp=sharing</p>

Contemplation Worksheet

Determining Best Times and Frequency to Post Worksheet

When is the population you intend to target, online?

What is their mood or state of mind like at different times in the day or during different days in the week?

What type of content do you want to share (e.g., vaccine information, nutritional content)?
And how often do you think your audience would like to see that type of content?

Based on your answers to the questions above, determine how often you should post on your social media and what times.

What strategies can you use to help you stay organized?

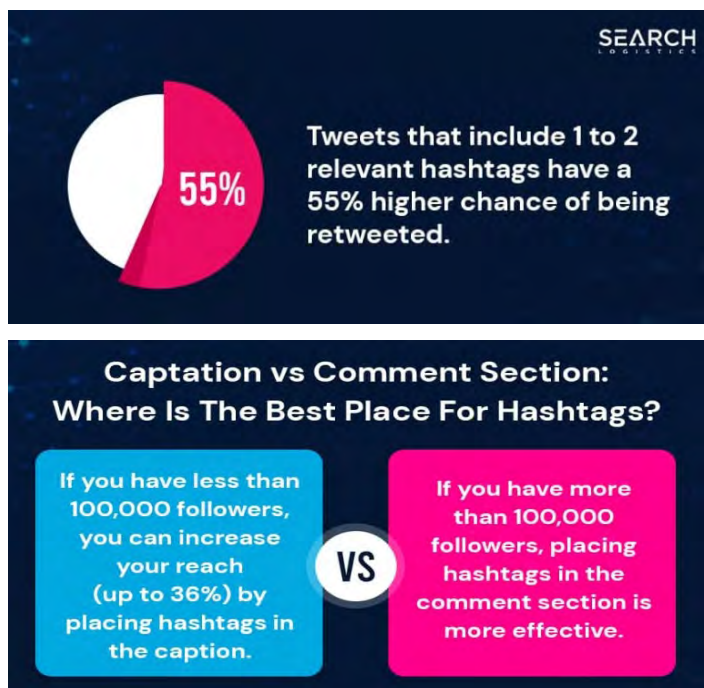
The Power of Hashtags

Hashtags have the power to increase the visibility of your content and connect like-minded people. Most social media platforms allow you to search for popular hashtags. Hashtags are crucial to increase engagement on platforms like Instagram, X, and TikTok.

Using hashtags related to a national awareness month topic can increase the discoverability of your content. For example, August is National Immunization Awareness Month and by using the hashtag #NIAM” you are making it easier to reach a wider audience that is looking for vaccine content under that hashtag. A few other popular hashtags related to vaccines include #VaccinesWork, #Worldimmunizationweek, #vaccinessavelives, #vaccinated (Fuster-Casnovas et al., 2022). It is important not to include too many as it can look unprofessional and can decrease engagement (see Figure 9).

- On the social media platform, X, posts with more than 2 hashtags dropped engagement by 17% (Woodward. 2024). Try to aim for 1 or 2 relevant hashtags per Tweet.
- While for Instagram, posts with 11+ hashtags were found to have the highest engagement, increasing by 79.5% for accounts with less than 1,000 followers (Houk, n.d).
- For TikTok, it is recommended to include at least 3 to 5 relevant hashtags (Singh, 2024).

Figure 25: Things to Consider When Using #Hashtags



Hashtag Campaigns

A hashtag campaign, also known as hashtag activism, is a popular social media marketing strategy to increase audience engagement and reach. These hashtag campaigns are known to start conversations and help foster a sense of community. One way to utilize a hashtag campaign is to promote services and or events offered by your organization or in the community.

Recommendations on running a hashtag campaign:

- Define the goals of your campaign
- When selecting which hashtag to use, make sure it is short and novel.
- Choose the right social media platform. Instagram is more appropriate for hashtag campaigns that are photo-based, while X is more fitting for conversation-based hashtag campaigns.
- Participation should be easy! Requiring your audience to complete multiple steps will decrease interaction with your campaign. It should be as simple as asking your audience to share the hashtag on their own posts.
- Make sure to create a lot of content featuring the hashtag to increase the campaign's visibility.

How to determine the success of a hashtag campaign: Measuring the performance of your hashtag campaign is essential in determining its success and can help inform future campaigns.

Here are a few metrics to look at:

- **Posts:** How many posts were shared featuring the hashtag?
- **Audience:** How many accounts interacted with the hashtag?
- **Engagement:** “How many likes, shares, clicks and comments did the hashtag receive?” (West, 2021).
- **Reach:** How many feeds did the hashtag appear on?
- **Views:** How many views did your hashtag receive?

Resource Box:

Sprout Social Blog	A Guide to Hashtag Campaigns for Marketers Website: https://sproutsocial.com/insights/hashtag-campaigns/
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How to Emotionally Engage your Audience

Use storytelling. Sharing stories, especially authentic stories, with your viewers helps them connect with your content and can evoke a range of emotions.

- When doing so, using emotional headlines can help increase engagement with your post. However, make sure not to create clickbait content as it can lead to losing followers.
 - Clickbait is when you create a title or heading that entices your audience to click on your post or link and the content does not reflect what the title/heading depicted.

Use humor in your post. Many individuals use social media for entertainment purposes and want to find content they think is funny. Therefore, when appropriate to include for your audience and the topic, using humor is another way to emotionally engage your audience and increase the shareability of your post (Wang et al., 2023). Examples in Figure 26 are good examples of humor in social media posts.

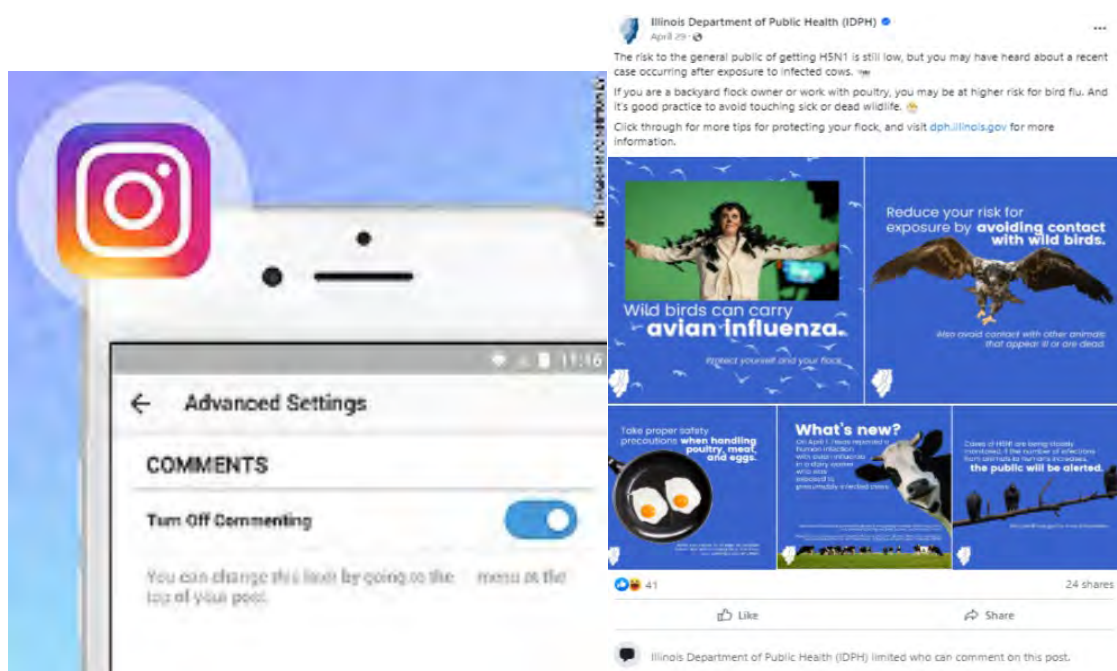
- When doing so, it is important to not include offensive or controversial jokes.
- Using popular social media memes is a cost-effective and culturally relevant strategy for health campaigns (e.g., vaccine campaign) to increase audience support and engagement, especially among younger audiences (Kostygina et al., 2020; Wang et al., 2023; Wasike, 2022).
 - “A meme is a piece of information (e.g., a joke, lyrics, or an image) that is... shared by media users or audiences and often represents popular culture or norms” (Kostygina et al., 2020, p. 3).

Figure 26: Memes and Humor



Interactivity ≠ Comments

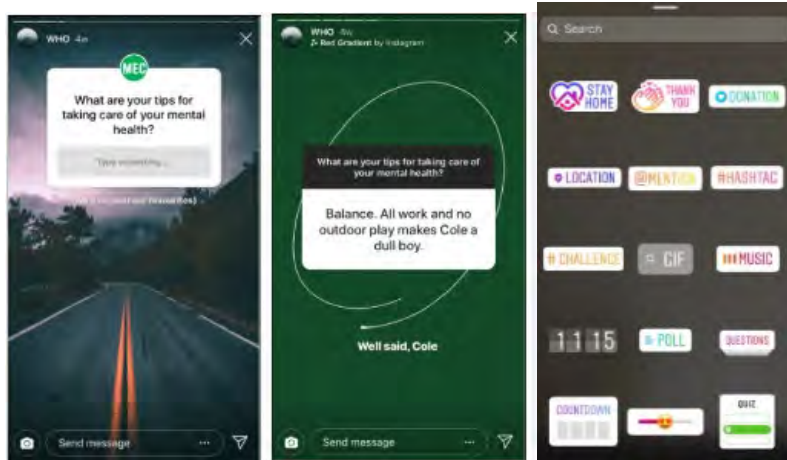
- To avoid unfriendly comments when posting about a hot button topic, consider turning off the commenting for that post.
- You can include a message in the description of your post encouraging your audience to direct message (DM) you if they have any questions.
- If you allow comments, you should have a response playbook informed by [motivational interviewing](#) and move conversations to DM (post only one reply and never “chat” in the comments).



Building Community Without Comments by Using Interactive Activities

Do not worry! You can still build a community on social media even if you don't allow comments on your post. There are other forms of interaction you can use to engage your audience in conversation and build relationships such as:

- **Polls:** Many social media platforms including Facebook, Instagram, and X have polling features that provide an engaging and simple way to learn more about your audiences' preferences that can help you tailor content for them. For example, you can ask your audience what type of content they prefer to see (e.g., photos vs. videos) and what type of health information they want to see (e.g., substance use vs. vaccine). You can also ask simple yes or no questions to your audience, such as asking them if they have heard of or are planning to attend a community event you are hosting.
- **Quizzes:** Using quizzes is a fun strategy to engage your audience that similarly allows you to learn more about your audiences' preferences and behaviors, but also their awareness on certain topics. You can ask your audience questions, such as, "Where can you receive a flu vaccine?" "Why do people have to get the flu vaccine every year?" "What community resources are you familiar with?"
- **Contests:** Hosting contests on your social media platform is an entertaining and simple strategy that can not only engage your current audience but help expand it. An easy way to do this is to ask your current audience or participants at a community event to complete a call to action that involves some combination of following your social media page, sharing a photo on their personal page, and or tagging your account in the post for a chance to be entered into the contest to win a prize (e.g., water bottle, recipe book, gardening tools). Combining a hashtag campaign with a contest is a great way to increase its engagement (See hashtag campaign section).
- **Question & Answer (Q & A):** Q & A sessions facilitate interpersonal communication with your audience by asking them relevant questions that will engage them in conversation. It is also a more effective strategy to receive honest and more detailed feedback from your audience compared to polls, as they can freely type in their responses. Make sure the questions are open-ended, relevant, and quick to answer. You can ask questions about their previous experiences, current behaviors, likes, and or recommendations. "What is the best advice you have received?" or "What self-care activities do you enjoy?" (See [motivational interviewing](#) section for more engaging examples).



Poster Restriction

What is shadowbanning (restriction)?

Shadowbanning is when platforms like Instagram deem a post doesn't comply with the terms of the platform, which leads to the content becoming invisible.

A user may experience shadowbanning if they are:

- Muted
- Blocked
- Unfollowed
- Or reported for spam.

If you are experiencing shadowbanning, your post will most likely not appear in the Explore section of Instagram, and receive less engagement, such as fewer views and likes. This means less engaging or reactive content won't reach your audience.

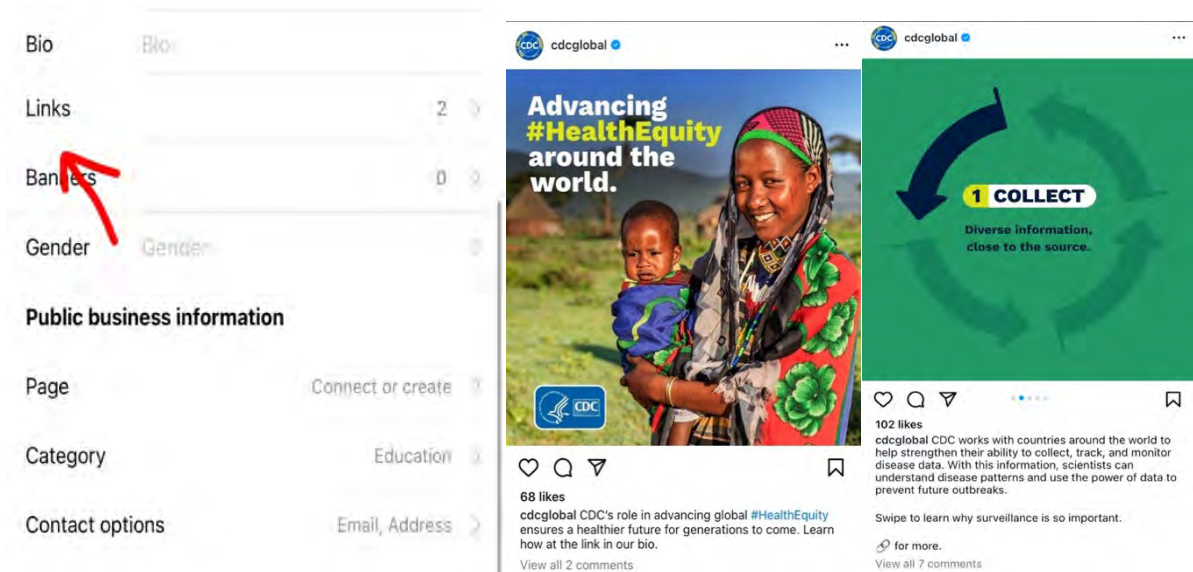
Posts containing external **links** are often deprioritized because they direct users away from the platform.

How to share links without your post being restricted?

Many social media platforms suppress post for incorporating outside links in their post. Therefore, it is recommended to keep posts with links to a minimum, especially on Facebook as they are known to penalize pages that frequently incorporate outside links in their post. If you want to share a link with users, you can include the link in your profile instead of in your post.

For example, if you want to share a link on Instagram, you can share multiple links on your biography section of your profile. To direct users to the link, you can then include a message in the caption/description of your posts telling them to visit the link in your profile. “To learn more, follow the link in bio” or “#linkinbio”.

Another strategy is using Linktree as this website allows you to keep all the important links in one spot and it looks more organized than including multiple links in your biography. Paying for ads and including links in those posts is also an effective strategy, as platforms like Facebook and Instagram do not suppress ads.



Resource Box:

LinkTree

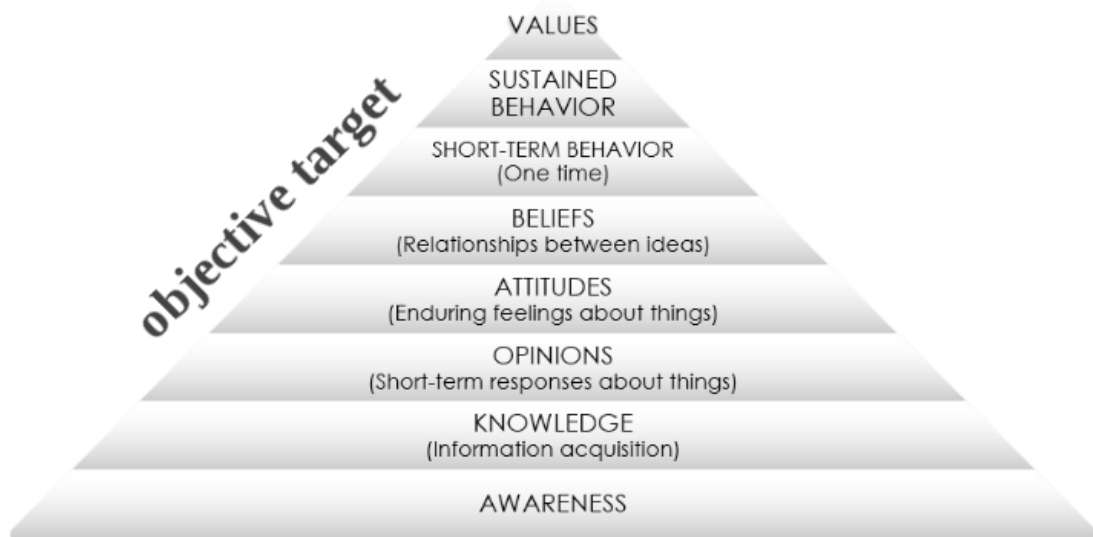
LinkTree is a website that allows you to add up to three free links and you can add more for a subscription costs.

Website: <https://linktr.ee/>

Part III: Measuring Impactful Outreach

In this section, we discuss how professionals can measure the effectiveness of their impactful outreach. The first step in this process is to clearly define your target objectives, which may include raising awareness, impacting knowledge, influencing opinions, shaping attitudes, altering beliefs, encouraging short-term behaviors, promoting sustained behavior, or instilling values. According to Austin and Pinkleton (2015), the "pyramid of effects" (see Figure 27) visualizes how these target objectives vary in difficulty, with raising awareness being the most accessible.

Figure 27: Pyramid of Effects



(Austin & Pinkleton, 2015)

Pyramid of Effects for Vaccines

Awareness & Knowledge:

Goal: We want people to know about the vaccine and understand its importance.

Strategies:

- Launch informative campaigns through various media channels.
- Provide clear, accessible information about vaccine benefits, safety, and availability.

Attitudes:

Goal: We want people to develop positive attitudes toward the vaccine.

Strategies:

- Utilize engaging and visually appealing materials to promote positive perceptions.
- Highlight endorsements from trusted healthcare professionals and community leaders.
- Share testimonials and success stories from individuals who have been vaccinated.

One-Time Behaviors:

Goal: We want people to get vaccinated.

Strategies:

- Organize vaccination drives and events to encourage initial participation.
- Provide incentives or remove barriers to make the vaccination process convenient and accessible.

Sustained Behaviors:

Goal: We want people to consistently support and recommend vaccination.

Strategies:

- Encourage vaccinated individuals to share their experiences and encourage others.
- Promote follow-up doses or boosters if applicable.
- Create community-based programs to maintain ongoing vaccination efforts.

Beliefs:

Goal: We want people to strongly believe in the importance and effectiveness of vaccines.

Strategies:

- Foster a culture of health and vaccination through continuous education and engagement.
- Address myths and misinformation with factual, evidence-based information.
- Highlight the long-term benefits of vaccination for individuals and the community.

Conclusion

By following this structured approach, we can achieve measurable outcomes at each level of the marketing pyramid, ultimately leading to widespread acceptance and uptake of vaccines.

EFNEP Case Study

Out of 1,272 Facebook posts referencing “EFNEP” last year, 104 (8.18%) posts were considered overperforming

Facebook rated this as the highest-performing post featuring the term EFNEP. The algorithm expected 22 interactions, but it earned 748. Achieving an overperforming score above 1 is rare; this post had a score of 34 see (Figure 28).

Figure 28: Association for Child Development Social Media Post.

Association for Child Development
April 26 · 🌐

Healthy Drinks, Healthy Kids
Use a bit of fruit to make this refreshing sugar free drink! What fruit will you add? (For kids under 4, strain before serving to avoid the risk of choking.)
<https://www.youtube.com/watch?v=A-6qNYp8Lww>
For more information, visit: <https://healthydrinkshealthykids.org/parents/>
#HealthyDrinksHealthyKids Sugar Smart Coalition Mi Health Matters- MSU Extension Michigan State University Extension-EFNEP Healthy Eating Research

Add fruit to water to make a refreshing sugar-free drink!

SUGAR SMART COALITION | MICHIGAN STATE UNIVERSITY Extension | EFNEP

Association for Child Development
ACD administers one of the largest CACFP sponsorships in the nation, serving Illinois and Mich...

740 likes · 8 comments

This EFNEP post earned an overperforming score of 11.63. The algorithm expected the post to earn 20.09 interactions. Instead it earned 221 (see Figure 29).

Figure 29: Cornell Cooperative Extension of Chenango County Social Media Post

CCE Cornell Cooperative Extension of Chenango County
February 21 · 🌐

Come join our team as a full-time (40 hours/week) SNAP-Ed or EFNEP Nutrition Educator! \$20 an hour, incredible benefits including 12 paid holidays, 10 paid vacation days, 3 personal days, NYS retirement, competitive health insurance, free dental, and more!

Apply today by going to:
<https://ccechenango.org/employment>

We're hiring.

POSITIONS :
SNAP-Ed Nutrition Educator
EFNEP Nutrition Educator



SNAP-Ed
New York
SAVE TIME. SAVE MONEY. EAT HEALTHY.



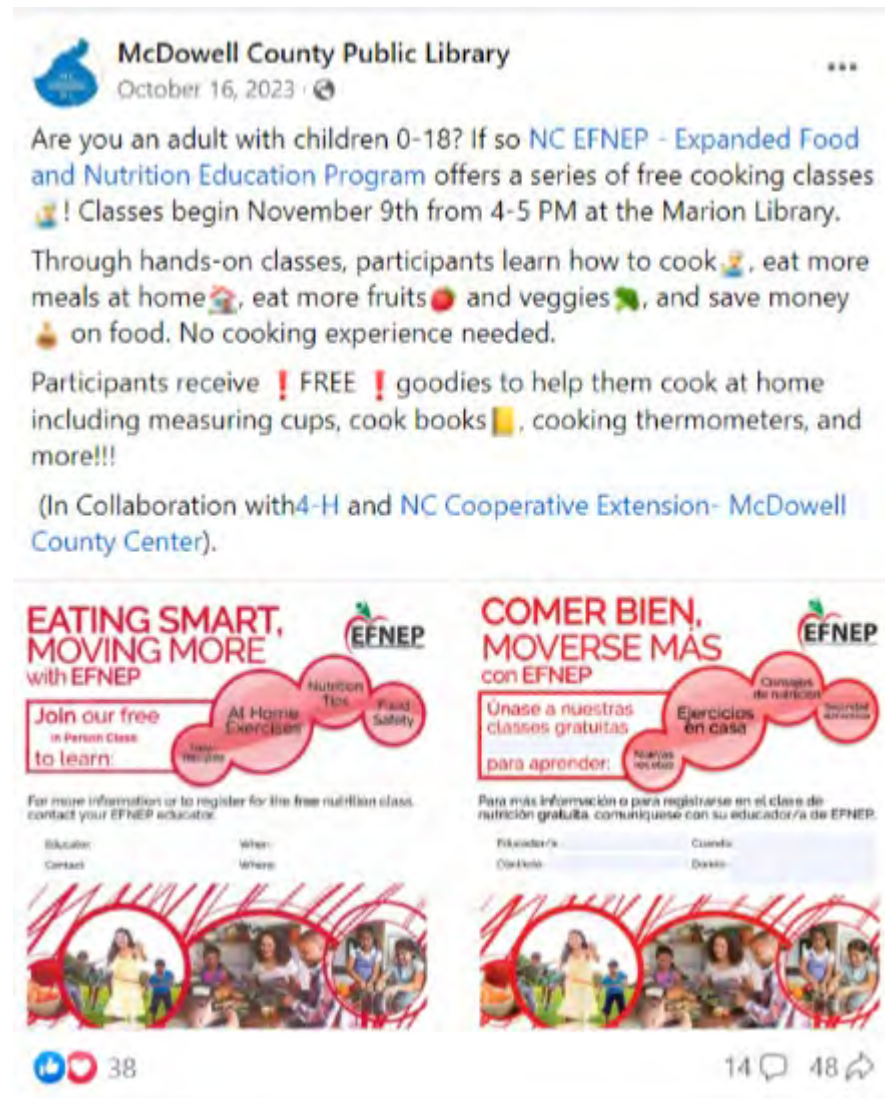
EFNEP
Empower Food and Nutrition Education Programs

👍 134 💬 7 comments · 🔄 80 shares

👍 Like 💬 Comment 🔄 Share

This EFNEP post earned an overperforming score of 5.37. The algorithm expected the post to earn 18.62 interactions. Instead, it earned 100 (see Figure 30).

Figure 30: McDowell County Public Library Social Media Post



Why are these posts overperforming?

- They are relevant, practical, and encourage positive behavior
- The posts include efficacy appeals
- They speak to specific segmented audiences
- They have clear key messages and calls to action

Metrics for success!

Outputs, outtakes, outcomes

Track outputs, outtakes and outcomes

Tips for measuring communication success

Good PR measurement doesn't just track ad value equivalencies. Instead, it links your efforts to the organization's key performance indicators, or KPIs.



Outputs

Immediate results of a particular communication activity. Outputs measure how well an organization presents itself to others, the amount of exposure an organization receives.

Total number of posts per month, expected stories, placements, ads, etc.

“Includes 12 organic posts and 3 boosted advertisements leading up to vaccine clinic event.”



Outtakes

A measure of whether the key audience received the message.

Attention, comprehension, recall

“We aim to reach 1,200 individuals per promoted message and 100 people per organic post.”

“We hope that 300 families are exposed to the ads in the newspaper based on circulation.”



Outcomes

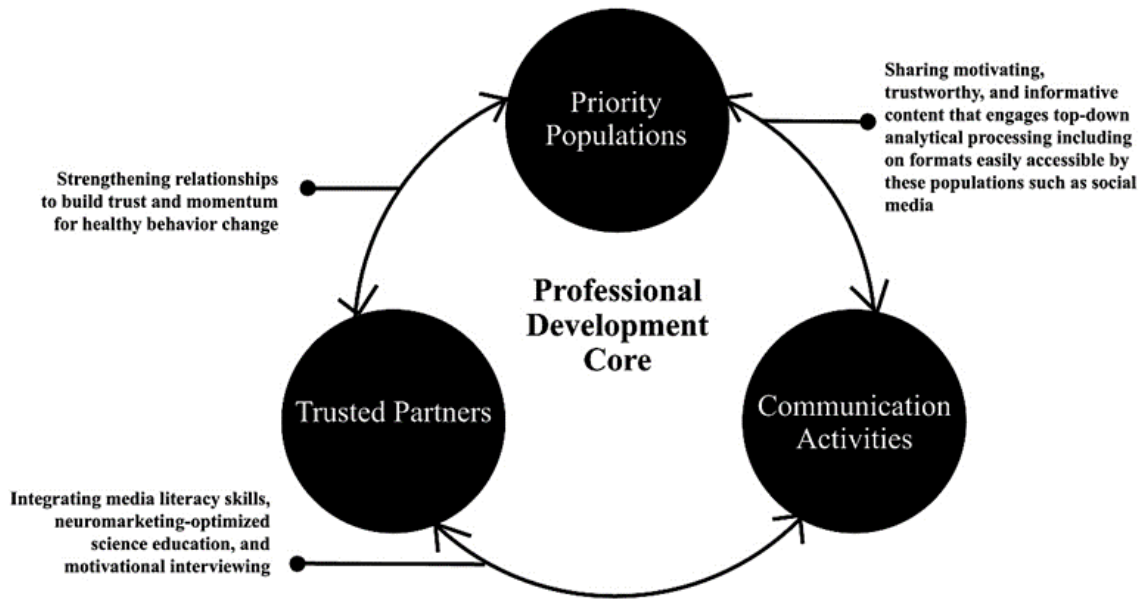
A measure of whether the communication materials or messages which were disseminated have resulted in any opinion, attitude, or behavior change.

“Out of the 1,200 individuals reached with our messages, we aim to have 30 community members attend an event.

“Based on our outreach in the local paper, we hope to have an additional 20 members attend our event.

Contemplation Worksheet

Integrated Model of Sustainable Health Decision-Making and Impactful Outreach



When you think about your community, how might social media provide a trusted avenue for engaging with partners and community members?

Can you think of how you might assess engagement with your social media message?

If you have an event coming up that might create uncertainty or disagreement in the community, what are some steps you might take on social media to invite engagement without creating a spiral of negativity?

What are some ways you can help make the “echo chamber” of Meta work to your benefit?

CONCLUSION

Your Role as an Extension Professional

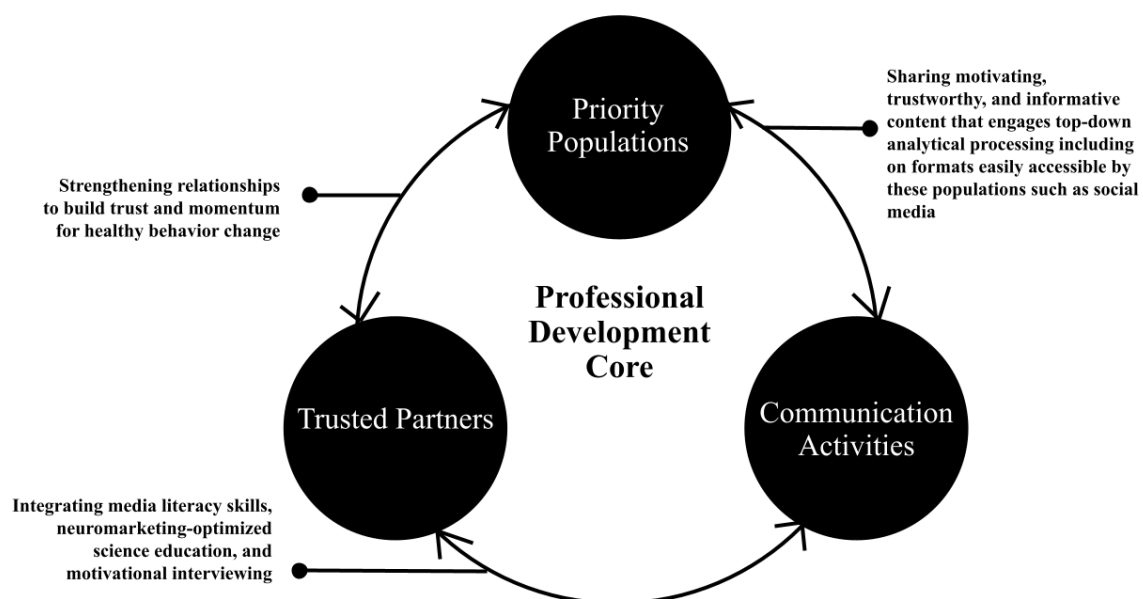
As an Extension professional, you play a critical role in the development and support of the well-being of communities. You are a:

- Trusted partner in your community
- Member in your community
- Facilitator of professional development activities in your community

Trusted partners provide credible health-related information for community members who may have inequitable access to credible health information and services. As a member of the community, you build trust and relationships through engaging with community members as equal partners. As a facilitator of professional development activities, you can co-create trustworthy messages and activities that both educate and motivate each other for the purpose of sustainable and equitable improvements on one's own health and their community's well-being. The Integrated Model of Sustainable Health Decision-Making illustrates that Extension Professionals have a key role given their special areas of expertise to facilitate connections among each of these entities/activities in a co-collaborative manner to reduce health inequities in underserved priority populations.

Returning to Figure 1:

Integrated Model of Sustainable Health Decision-Making



A **powerful synergy** develops when professionals integrate the aspects of Neuromarketing Science, Motivational Interviewing, Science Media Literacy, and Impactful Outreach. Each area provides insight into distinct but related processes regarding how individuals mentally process and respond to health information content. Motivational Interviewing and Science Media Literacy tools can help professionals gain a deeper understanding of how specific community members process information cognitively and emotionally to arrive at decisions that they think are best for themselves and their families. Neuromarketing Science explains how to respond to the ways the human brain operates to produce and deliver effective communication content. Impactful Outreach presents promotional tools to maximize audience engagement, supporting the strategies presented in Motivational Interviewing, Science Media Literacy and Neuromarketing. When Extension professionals use these tools together, their communication tactics can demonstrate concrete results showing how their effective engagement with community members can help to reduce barriers to health equity and to enhance well-being.

Contemplation Worksheet:

What overlaps do you see between neuromarketing science, science media literacy, motivational interviewing, and impactful outreach?

How do emotions (your emotions as well as the emotions of those you interact with) play into your communication strategies?

What value do these tools bring to your interactions with other Extension Professionals, partners, and community members?

How does your thinking about health promotion change when you think about communicating *with* a community instead of *to* an audience?

What takeaways will you now build into your work because of learning about these tools?

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