

# Your Guide to **CLEAR WRITING**



**U.S. Department of  
Health and Human Services**  
Centers for Disease  
Control and Prevention  
Agency for Toxic Substances  
and Disease Registry

# Your Guide to Clear Writing

When you're creating educational materials about public health, **the most important thing you can do is to write clearly**. This helps make sure readers can understand your main message — and any related action steps you're asking them to take.

Keep in mind that clear writing is important for everyone — not just audiences that are likely to have limited literacy skills. The fact is that even highly literate readers may struggle to understand complex information if they're stressed or in a hurry. That's why the need for clear communication is universal — and it's your job as a public health professional to make sure you do your part.

This guide has resources to help you write clear public health materials at every stage of development — from tips for thinking through your material's strategy before you start to write all the way through the final review process. Use the tip sheets, checklists, and worksheets to create clear, effective materials that everyone can understand and use.

And for more tips and tools on clear writing, be sure to check out the rest of the resources on the [NCEH/ATSDR Clear Writing Hub](#).

# Table of Contents

Before You Write: Answer 4 Key Questions .....	4
8 Tips for Clear and Effective Writing.....	8
Writing Models.....	11
Clear Writing Checklist and Supporting Information .....	22
Communicating About Amount and Units of Measure.....	31
Plain Language Tip Sheet for Reviewers.....	36
Testing Your Materials.....	40
Preparing and Writing a Scientific Journal Article .....	45

## Link

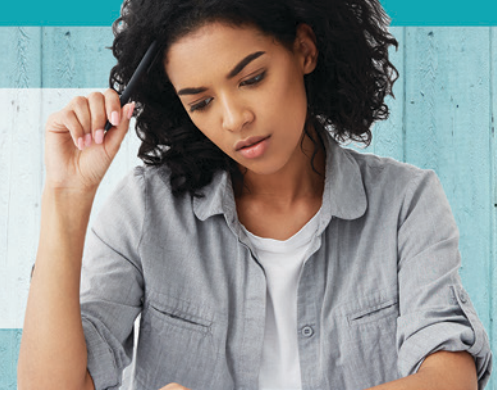


To access Your Guide to Clear Writing online, visit:

<https://www.cdc.gov/nceh/clearwriting/docs/clear-writing-guide-508.pdf>

# Before You Write

Use the tips below before you begin drafting your material. Just a little preparation will help you create a clear, effective product.



## Answer 4 Key Questions

**Before** you begin writing, answer 4 important questions. You're not ready to start drafting content until you've written down clear answers to all 4 of these questions:

- 1. Who is your target audience?**
- 2. What do you know about their health literacy skills?**
- 3. What is your communication objective?**  
What do you want your readers to do, think, or feel after they read your material?
- 4. What is your main message?**  
What is the most important thing for your readers to remember? They may only remember 1 thing — what do you want that to be?

### Sample Answers to 4 Key Questions

1. Parents of young children in Jonesville
2. Non-scientific audience with average to low health literacy skills
3. Get parents to take their children to the health department for blood lead testing
4. Some children in Jonesville have high levels of lead in their blood. This can cause learning and behavior problems. Children living near the study site need to get routine blood lead tests.

## Use Your Answers

Be sure to use your answers from all 4 questions as you develop your material.

### Target Audience

Clearly identify your target audience — and get specific. The more you think about who you're trying to reach, the more you can tailor your content to that audience. Remember to drill down — you want something like “parents of young children in Jonesville,” not “the public.”

## Health Literacy Skills

Think through what you know about your audience's health literacy skills. Then use that information to guide your word choice, sentence length, and other [plain language considerations](#). According to the National Assessment of Adult Literacy, almost 9 in 10 people struggle to understand health information. So keep it short, simple, and clear:

- ✓ **Short:** Write sentences that are 20 words or fewer. Limit paragraphs to 3 to 5 sentences. Cut out any words you don't need.
- ✓ **Simple:** Avoid jargon and complex technical terms. Define any scientific terms that you need to include in plain language.
- ✓ **Clear:** Be straightforward and direct — clearly tell your audience what they need to know. Always write in the active voice. Keep the subject and verb close together in your sentences.

If you don't know anything about your audience's health literacy skills, it's best to assume they're average to low. And remember that a person's reading skills may drop 4 grade levels when they're stressed or reading about a stressful topic.

## Communication Objective

Figure out what you want your audience to think, feel, or do after reading your material. Use your communication objective to guide decisions about what information to include in your material — and, more importantly, what to leave out. Remember, **the more you write, the less they'll read**. Only include content that helps you reach your communication objective.

## Main Message

Write a short, clear main message and highlight it. Aim for 1 to 3 short sentences. This helps your readers quickly and easily understand the most important information in your material. It also gives readers context for how to interpret the material.

Place the main message at or near the top of your material. Make it stand out — use bold text, color blocking, or a larger font. Note that this material has a clearly visible main message at the top. Here's another example of an effective main message: ATSDR found that levels of chemicals currently in the air from the Baker Landfill aren't high enough to cause health problems.

# Before You Write: Answer 4 Key Questions

**1. Who is your target audience?** Remember to get specific! Always write with this user in mind.

- **Example:** Parents of young children in Jonesville
  - **Example:** Partners who can help us promote a National Health Observance
- 
- 
- 

**2. What do you know about your audience's health literacy skills?**

Now take a few minutes to think through what you know about their health literacy skills. Do you have any point of reference for literacy and numeracy skills? Health-related concepts they might be familiar with? Topics they may have run into before? Jot down some notes.

- **Example:** Non-scientific audience with average to low health literacy skills
  - **Example:** May be a little bit familiar with the topic – this is the second health assessment in their community
  - **Example:** May struggle to understand how my data is relevant to them
- 
- 
- 

**3. What is your communication objective?**

What do you want your audience to think, feel, or do after reading your material? This should be a **single statement** – if you think your material has multiple communication objectives, figure out which is the most important (1 of them will be!).

- **Example:** Get parents to take their children for blood lead testing
  - **Example:** Get partners to share our content with their networks
- 
- 
-

#### 4. What is your main message?

If your readers are going to remember 1 thing after reading your material, what do you want it to be? Remember, a main message can have a few sentences – but it should be focused on a single concept.

- **Example:** Some children in Jonesville have high levels of lead in their blood. This can cause learning and behavior problems. Children living near the study site need to get routine blood lead tests.
- **Example:** Everyone age 6 months and older needs to get a flu vaccine every season.

---

---

---

# 8 Tips for Clear & Effective Writing



Most readers hate excess words and meandering sentences in any form of writing. Most readers also hate the bureaucratic jargon we sometimes use in public health (think: “A comprehensive assessment was conducted prior to implementation of...”).

Audiences respond well to logically organized, clearly written, and effectively designed information – regardless of their literacy level or ability to understand complex information. The fact is that PhD-level scientists appreciate clear writing as much as someone who struggles with reading comprehension. **Clear writing is for every audience and every material.**

Use the tips below to create clear, effective materials that your readers can understand and use.

## 1 Write for Your Reader

Identify a specific audience and write directly to that audience. Good writers always keep their readers in mind. Follow these tips:

- Keep asking yourself what your target audience needs to know (not what you want to say).
- If you have multiple audiences, consider writing multiple materials.
- Use “you” to connect with your reader.

## 2 Change Your Style

Public health writing is all about your audience. It’s not about demonstrating your linguistic mastery. Don’t write to impress your readers – write to reach them. Get right to the point and remove unnecessary content. And it’s okay to be conversational. Remember to:

- Use contractions (write “aren’t,” not “are not”).
- Use pronouns (like “you” and “we”).
- Use simple words (write “use,” not “utilize”).
- Be direct (write “analyzed,” not “conducted an analysis”).



### 3 Spell Out the Main Message

An effective material has a clear main message. Don't put the burden on your reader to figure out the main message – spell it out. Put that clear, succinct main message near the top of the material. Bold it and highlight it. Stay focused on it. And don't include content that detracts from it.

Check out these examples of clear main messages:

- Everyone 6 months of age and older needs to get a flu vaccine every season.
- The soil has high levels of lead. This can cause health problems, especially for children. ATSDR recommends blood lead testing for children under age 6 who have come in contact with lead.

### 4 Be Brief

We're bombarded with thousands of messages a day, and this has changed the way we read. Readers tend to skim or scan materials now.

Include just the essential information. Remember, **the more you write, the less they'll read.**

Keep your materials short and to the point:

- Sentences – no more than 20 words
- Paragraphs – no more than 5 sentences

### 5 Get Back to Basics

The easiest structure to understand in English is subject → verb → object. Don't convolute writing with complicated grammatical patterns. Remember to:

- Write in active voice.
- Keep the subject and verb close together.
- Use a strong clear verb (when a sentence is unclear, the culprit is often a missing or unclear verb).

Check out these examples of clear structure:

✗ **Passive:** About 500 homes were left without water as a result of the chemical spill.

✓ **Active:** The chemical spill left about 500 homes without water.

✗ **Weak:** The *training* (subject), which was attended by 60 staff members and got over 95% approval ratings, *was* (weak verb) a huge success.

✓ **Better:** The training succeeded: 60 staff members attended and gave approval ratings of over 95%.

## 6 Carefully Craft Your Title and Subtitle

The first thing your readers see is your title. It draws them in. And a subtitle can serve as a primer for what comes next. Carefully craft a title and subtitle using the following guidelines:

- Title — no more than 8 words to grab attention
- Subtitle — no than 1 line to offer more context

Check out this example of an effective title and subtitle:

✗ **Instead of:** National Safety Month

✓ **Try this:** Spread the Word About National Safety Month! (*title*)  
Learn 5 Ways You Can Make a Difference (*subtitle*)

## 7 Use Meaningful Headlines

“Chunk” content into short paragraphs and use lots of meaningful headings — 1 heading for every 1 to 3 paragraphs is a good rule of thumb.

Skip generic headings like “Overview” and “Background.” If readers scan your material and just read the headings, what do they learn? Use headings to communicate messages (like short, bolded topic sentences for the text that follows).

Check out these examples of meaningful headings:

✗ **Weak:** Introduction

✓ **Better:** CDC Will Study Asthma Triggers in [City, State]

✗ **Weak:** Background

✓ **Better:** Emergency Room Visits Increase for Asthma Attacks

## 8 Pay Attention to Design

Design elements can help readers understand and remember your messages.

Remember to:

- Use images that reinforce your message. Never use an image that demonstrates something you don’t want readers to do.
- Limit lists to no more than 7 bullets. And stay away from sub-bulleted lists.
- Use call-out boxes or bold for key messages, relevant related information, or content that helps spark interest.
- Make sure there’s plenty of white space.



To access Your Guide to Clear Writing online, visit:

<https://www.cdc.gov/nceh/clearwriting/docs/clear-writing-guide-508.pdf>

# Writing Models

Sometimes it's difficult to organize content into a clear, effective material. Writing models can help. Consider using one of the following models when you're working on your next writing task, and use the samples for each model to guide you. Check out the [Health Communication Playbook](#) for more ideas and samples.



## Model 1: Storytelling

This is one clear, effective way to structure success stories or to deliver a message by presenting it as part of an engaging story. Try to keep stories short (about 800 words or fewer).

### Structure of the Story

- **Title and Subtitle:** Write a short title (no more than 8 words) to grab your readers' attention. You can also choose to include a subtitle (no longer than 1 line) to offer more context.
- **Problem:** Write 1 to 2 short paragraphs. Start with the most dramatic moment. Explain the problem that you encountered in narrative form.
- **Intervention:** Write 1 to 2 short paragraphs. Describe what you did.
- **Outcome:** Write 1 to 2 short paragraphs. Discuss how your intervention helped.

### Writing Tips for All Models

- Limit sentences to no more than 20 words.
- Limit paragraphs to no more than 5 sentences.
- Use a meaningful heading every 1 to 3 paragraphs.
- Keep your materials short – the more you write, the less they'll read!

## Storytelling Sample

**Disease Detectives in Ethiopia** | \_\_\_\_\_ → **Title**  
CDC Investigates Mystery Illness Spreading Across Northern Region | \_\_\_\_\_ → **Subtitle**

**Disease Spreads to Remote Villages** | \_\_\_\_\_ → **Problem**

In Northern Ethiopia, villagers developed stomach pain and swelling. Some even had trouble breathing. In a single household, 3 or 4 people would get sick – while others would not. In other families, everyone died from the sickness, but their neighbors did not. The symptoms were similar to liver disease. What was causing it?

### CDC Investigates |

From 2005 through 2007, more than 1,200 people were diagnosed with this “unidentified liver disease,” or ULD. Many of them died. In 2007, the Ethiopia Ministry of Health and Ethiopia Health and Nutrition Research Institute (EHNRI) asked CDC and other partners to help look into the outbreak.

A study ruled out infectious diseases as the cause and suggested the disease might be related to food. To find out more, scientists sometimes had to walk 4 hours each way to remote households. Investigators also tested grain samples grown in villages – and they found low levels of a plant-based toxin called pyrrolizidine alkaloids (PAs) in weeds harvested with the grain. Could that have anything to do with the outbreak?

### Important Discovery about Separating Weeds |

Following a recommendation from CDC, in 2009, EHNRI created a ULD surveillance system. CDC developed tools to take medical histories and collect physical and environmental samples. In 2011, CDC staff returned to Ethiopia and joined partners to:

- Visit villages
- Do physical examinations and ultrasounds
- Collect blood and urine samples
- Gather environmental samples for PA testing

Of the ULD patients sampled, 50% tested positive for PA. Testing showed that other family members and villagers had also come in contact with PA, but ULD patients had higher PA levels. Although households with and without ULD ate and drank the same foods and beverages, non-ULD households were more likely to separate the weeds from their crops before and after harvest.

### Eradicating ULD |

The study helped researchers pinpoint the cause of ULD more accurately, but there’s no cure – so getting rid of the source of PA was the only option. The health ministry began a “zero tolerance” policy for weeds, and EHNRI and health workers taught householders how to separate weeds from grain. They also encouraged villagers to check their livestock for ULD symptoms to protect themselves from contact with PA through milk or meat.

Thanks to the partners’ skill, knowledge, and persistence, we know the cause of ULD. It’s now called pyrrolizidine alkaloid-induced liver disease, or PAILD. More importantly, grain farmers in Ethiopia can now protect themselves and their families from this deadly disease.

→ Intervention

→ Intervention continued...

→ Outcome

## Model 2: The Feature Article

This model, adapted from [Wylie Communications](#), uses creative and engaging characteristics to help you deliver messages in an interesting way. Try to keep feature articles between 500 and 1000 words.

### Structure of the Feature Article

- **Title and Subtitle:** Write a short title (no more than 8 words) to grab your readers' attention. You can also choose to include a subtitle (no longer than 1 line) to offer more context.
- **Lead:** Write 1 to 3 short sentences. This is the hook. Be creative – you want to provoke interest and questions.
- **Nutshell Paragraph:** Write 1 to 5 short sentences – include your key message.
- **Background:** If necessary, include 1 to 4 short sentences of background information.
- **Body:** Write 1 to 3 short paragraphs. Select and focus on just a few points that support your key message. And make sure you have a clear organizational pattern for this section – for example, put your points in hierarchical, chronological, or alphabetical order. Use engaging, meaningful headings for each main point – 1 heading every 1 to 3 paragraphs is a good rule of thumb.
- **Wrap-Up:** Restate your key message.

### Feature Article Sample

**Blue Wiener Dog Reveals Common Family Dilemma** |

→ Title

Learn How to Keep Your Kids Active and Healthy This Summer |

→ Subtitle

As I kicked off my heels and headed toward the bedroom to change out of my office clothes, a faint smell of blueberries wafted toward me as Fritz, the family schnauzer, trotted my way. Once he reached me, he wiggled with that familiar wet-dog shake, spraying blueberry yogurt across the room and all over me. I looked down, and there stood my 7-year-old son, beaming with pride at his finger-painting experiment.

→ Lead

Before your kids figure out how to turn your kitchen into a slip-n-slide with butter – or blueberry yogurt – learn ways to keep them busy this summer. These tips will help keep your kids active and healthy.

→ Nutshell

**An Hour a Day Keeps the Trouble Away (Maybe)**

Help your kids be active for at least 1 hour a day. Include some activities that raise their heart rates and others that strengthen their muscles and bones. Find fun, safe, and active things you can do with your kids to help keep the whole family healthy.

→ Body

### A Careful Eye Helps, Too

Monitor your kids' activities. Kids learn from family, friends, media, school, and more. Know who they spend time with, what they are doing, and whether their activities are age-appropriate. Try to avoid letting kids under age 2 watch TV – and limit TV viewing to no more than 2 hours per day for children age 2 and older. Learn how their schools promote health and safety.

Body

### Remember the Pie Hole

Give your kids healthy meals and snacks. Eating right will help them get the nutrients needed to build strong bones and fight diseases. Help them choose healthy meals and snacks, too. Pay attention to what and how much they eat. This will help them stay on track – and may also uncover problems you didn't know about.

Body

Keep kids active. Monitor their activities. And provide healthy meals and snacks. These tips might not guarantee that the lactose-intolerant family pooch remains yogurt free, but it will help you raise safe and healthy kids.

Wrap-Up

## Model 3: Tip Sheet

Offering tips (e.g., 5 Ways to Stay at a Healthy Weight) is a great way to reach your readers. This model is easy to read and encourages readers to engage with the content. Limit your material to 10 tips or fewer (fewer is better!). You might also hear tip sheets referred to as “listicles” – especially when they include photos, images, or graphic design. [Here's a good example of a listicle.](#)

### Structure of the Tip Sheet

- **Title and Subtitle:** Write a short title (no more than 8 words) to grab your readers' attention. You can also choose to include a subtitle (no longer than 1 line) to offer more context.
- **Anecdote or Scenario:** Consider telling a very short story to show the need for these tips.
- **Transition:** Transition into the tips with a sentence like, “Here are 3 ways to...”
- **Tips:** State each tip clearly and succinctly (1 to 2 short sentences each). Bold the tips – and consider numbering them. You may also want to use a different color font or color blocking to emphasize the tips. Follow each tip with a brief explanation.
- **Wrap-Up:** Restate the need for the tips with a sentence like, “Use these tips to...”

## Tip Sheet Sample

### Help Save Your Patients' Lives in Just Minutes

Teach your patients 3 easy tips to lower their risk for heart disease and stroke.

How many of your patients get too much sodium in their diet? More importantly, do they know that sodium raises blood pressure? And that high blood pressure is a major risk factor for heart disease and stroke? Heart disease and stroke are the nation's first and third leading causes of death. But you can teach your patients how to lower their risk for heart disease and stroke by eating less sodium (salt).

Encourage them to follow these 3 easy tips.

#### 1. Cook low-sodium foods at home.

Encourage patients to make meals at home with fresh ingredients or low-sodium foods. Tell them to load up on foods that are naturally low in sodium, like vegetables, fruits, beans, and peas. Fresh, frozen, and dried options are all good choices. Teach them about healthy alternatives to salt when cooking – for example, fresh or dried herbs and spices or a squeeze of fresh lemon or lime juice.

#### 2. Check food labels.

Teach patients how to check how much sodium is in the foods they buy. Don't forget to talk about serving size.

#### 3. Plan ahead when eating out.

Suggest that patients check the website of their favorite restaurant for nutrition information. Encourage them to choose the meal with the lowest amount of sodium.

Once a patient starts to lower their sodium intake, their blood pressure will begin to go down within weeks. Even patients who don't have high blood pressure will benefit – the lower a person's blood pressure, the lower the risk of heart disease and stroke. Help your patients reduce their sodium intake by teaching them these 3 easy tips. For more information, visit <http://www.cdc.gov/salt>.

Title

Subtitle

Scenario

Transition

Tip +  
Explanation

Tip +  
Explanation

Tip +  
Explanation

Wrap-Up

## Model 4: The Infographic

Infographics are visual displays of data, information, or knowledge – think of them as visual storytelling. They're a great tool for communicating complex information quickly, and they're easy (and fun!) to share – especially on social media. Infographics rely on visual representation of information to tell a story, so you want to limit written content as best you can.

**Make sure an infographic is the right format for the job.** If you have a lot of words that you simply can't cut, you may want to consider another format. You also want to think about your design capacity — if you don't have a designer, an infographic might not be the best choice for your content.

Here are some types of data that could lend themselves well to an infographic:

- Statistical data (e.g., how many children have asthma)
- How-to (e.g., how to clean lead dust safely)
- Timeline (e.g., history of the Chemical Weapons Elimination Program)
- Process (e.g., the steps of the Public Health Assessment process)
- Maps (e.g., states that record data on chemical incidents)
- Comparisons (e.g., air pollution in 1950 vs. 2015)

## Structure of the Infographic

- **Title and Subtitle:** Grab your readers' attention with a short title (no more than 8 words). You may even be able to use your main message as the title. You can also choose to include a subtitle (no longer than 1 line) — but because subtitles are optional, you may want to skip them to limit written content.
- **Lead:** If possible, lead with a really compelling statistic — your “hero statistic” — to set the stage (e.g., 9 in 10 adults have trouble understanding complex health information). Use visuals to support the statistic.
- **Story:** Tell your story using meaningful data, supporting visuals, and minimal words. Keep in mind that infographics aren't a “dumping ground” for data — choose only the most relevant facts, and make sure that everything you include supports the narrative.
- **Solution and Call to Action:** Depending on the topic of your infographic, you may want to provide a solution or include a call to action.
- **Sources:** Cite sources of data.

Keep in mind that infographics are usually posted online and not printed. If you want to print your infographic, be sure to tell the design team in advance so they can plan accordingly. It's also important to note if you plan to share the infographic on social media — designers can help make sure it's in a format that's easy to share or create related supplemental content for social media.



# Infographic Sample

→ Title

**Protect Your Family from Radon**

Radon is a gas that you can't **see, smell, or taste** — but it can be dangerous. It's the second leading cause of lung cancer in the U.S.

**1** out of **15** homes have high radon levels

Radon is in the ground naturally. But sometimes it gets into homes through cracks in the floors or walls.

**Radon and Smoking: A Dangerous Combination**

If you live in a home with high radon levels, smoking raises your risk of lung cancer by **10 times**.

**Take the First Step**

There's **good news** — you can protect your family by testing your home for radon.

Learn more by calling the National Radon Hotline: **1-800-SOS-RADON**

 Centers for Disease Control and Prevention  
National Center for Environmental Health

Source: U.S. Environmental Protection Agency

→ Lead

→ Story

→ Call to action

## Model 5: The Quiz

Want to make dry, boring content engaging? Consider using a quiz model to draw your readers in. Instead of simply giving them facts or tips, ask them questions to test their knowledge. And then take the opportunity to give them additional (but limited!) information that helps explain important public health messages.

### Structure of the Quiz Model

- **Title and Subtitle:** Write a short title (no more than 8 words) to grab your readers' attention. You can also choose to include a subtitle (no longer than 1 line) to offer more context.
- **Anecdote or Scenario:** Consider telling a very short story or asking a provoking question to increase reader interest.
- **Transition:** Transition into the quiz with a sentence like, "Test your knowledge..." or "How much do you know about..."
- **Questions:** State each question clearly and succinctly (just 1 to 2 short sentences each). Number and bold the questions. You may also want to use a different color font or color blocking to emphasize the questions. Follow each question with a brief explanation.
- **Wrap-Up:** Restate the need for this information.

### Quiz Sample

#### **Do You Know What Kind of Noise Damages Your Hearing?**

Take our quiz to test your knowledge and learn how to prevent noise-related hearing loss.

Rock concerts, hockey games, firework shows — what do they have in common? They have large audiences and they're noisy! But are they loud enough to cause hearing loss? And how loud is too loud?

Take this quiz to see how much you know about how noise can affect your hearing.

#### **1. Can loud music damage your hearing after 5 minutes?**

Yes. Listening to music turned up to full volume or at a loud venue can cause hearing loss in less than 5 minutes. In fact, 5 in 10 young people listen to their music too loudly. Turn down the volume on your headphones.

#### **2. Can a single loud sound near your ear, like a firecracker, damage your hearing?**

Yes. The louder the sound is, the less time it takes to cause hearing loss. Being around loud noises over time also causes hearing loss. Try to stay away from loud noises.

Title

Subtitle

Scenario

Question

Question

**3. Can wearing earplugs protect your ears from hearing loss?** | → Question

Yes. Avoiding noisy situations is the best prevention for hearing loss. But if you can't avoid them, definitely use hearing protection, like earplugs or a pair of noise-blocking earmuffs.

**4. What are signs of possible hearing loss?** | → Question

Here are some of the most common signs of hearing loss:

- You often ask others to repeat what they said.
- You often turn up the volume of the television or radio.
- You have problems understanding conversations in noisy places or over the phone.

If you have any signs of hearing loss, get your hearing tested.

Everyday sounds don't usually cause hearing loss. But some common activities may damage your hearing. Being around loud noise over the years affects how well you hear later in life and how quickly you develop hearing problems. But you can take steps to protect your hearing now. For example:

- Turn down the volume on your headphones.
- Try to stay away from loud noises.
- Use earplugs or noise-cancelling headphones when you're around loud noises.
- If you have signs of hearing loss, get your hearing tested.

→ Wrap-Up

Learn more at [www.cdc.gov/nceh/hearing\\_loss](http://www.cdc.gov/nceh/hearing_loss)

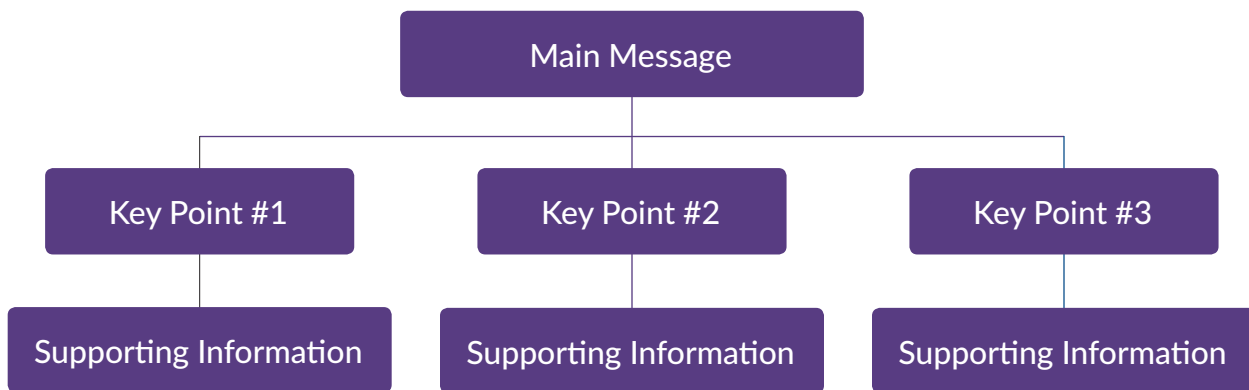
## Model 6: Message Mapping

Message maps, developed for risk communication by Dr. Vincent Covello, can help you create a roadmap for how to respond to public health questions or concerns. These maps are most often used as a visual aid for professionals interacting with the media, concerned communities, and others. But you can also use a message map to identify and organize messages for a written material. The template below is for one of Dr. Covello's most practical models.

## Structure of the Message Map

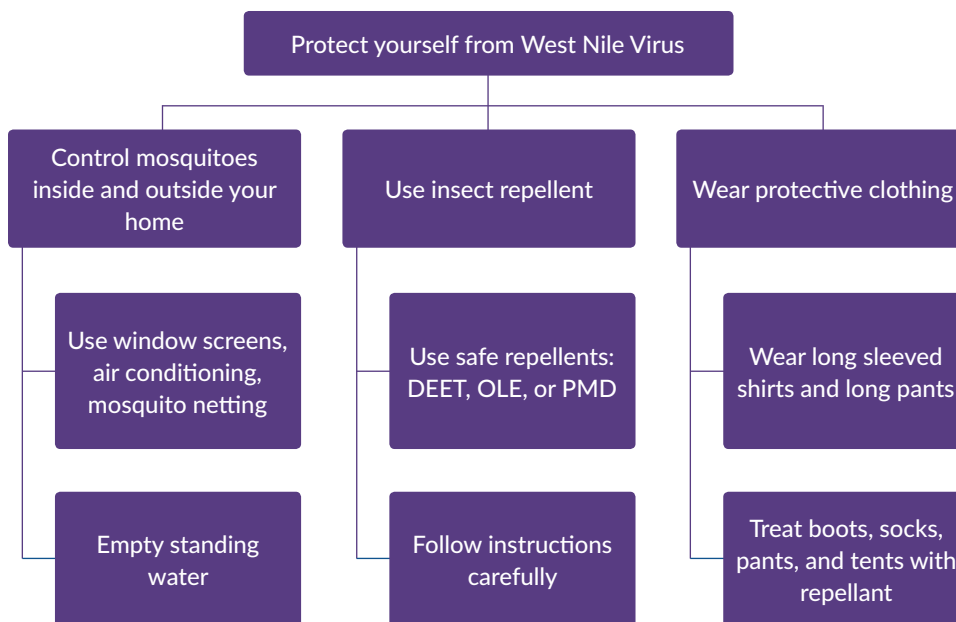
Identify the question or concern that you're addressing. Remember that people often have a difficult time hearing, understanding, and remembering information when they're worried about something. So, you want to develop:

- 1 clear, succinct message that directly addresses their concern
- A limited number of key points (1 to 3 is plenty) that provide more details or recommendations
- A limited amount of supporting information to reinforce those details or recommendations



## Message Mapping Sample

First, put your content into a message-map format.



Then, convert the message map to prose.

## Get Ready for Mosquito Season

No one likes mosquito bites! They're itchy and uncomfortable — and, even more importantly, mosquitoes can carry serious diseases like the West Nile virus. The good news is that you can protect yourself and your children from West Nile and other diseases spread by mosquitoes. Start by controlling mosquitoes inside and outside your home, using insect repellent, and wearing protective clothing.

### Take steps to control mosquitoes inside and outside your home.

- Use screens on windows and doors. Repair holes in screens to keep mosquitoes outside.
- Use air conditioning when available. Sleep under a mosquito bed net if air conditioned or screened rooms are not available — or if you're sleeping outdoors.
- Once a week, check things near your home that hold water — for example, tires, buckets, planters, toys, pools, birdbaths, flowerpots, or trash containers. Empty and scrub, turn over, cover, or throw them out. Be sure to check inside and outside your home. This helps keep mosquitoes away because they lay eggs near standing water.

### Use insect repellent.

- Use repellents with the active ingredients registered by the Environmental Protection Agency (EPA), like DEET. [You can learn more from EPA.](#)
- Follow instructions carefully. When used as directed, this repellent is safe for children over 2 months, as well as pregnant and breastfeeding women.

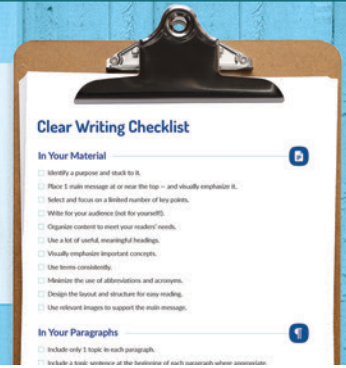
### Wear protective clothing.

- Wear long sleeved shirts and long pants.
- Treat boots, socks, pants, and tents with permethrin.
- Dress your child in protective clothing and cover strollers and baby carriers with mosquito netting.

[Learn more about preventing mosquito bites from CDC.](#)

# Clear Writing Checklist

Use the following checklist to create clear, organized, and effective materials. Details about each item follow the checklist.



## In Your Material



- Identify a purpose and stick to it.
- Place 1 main message at or near the top – and visually emphasize it.
- Select and focus on a limited number of key points.
- Write for your audience (not for yourself!).
- Organize content to meet your readers' needs.
- Use a lot of useful, meaningful headings.
- Visually emphasize important concepts.
- Use terms consistently.
- Minimize the use of abbreviations and acronyms.
- Design the layout and structure for easy reading.
- Use relevant images to support the main message.

## In Your Paragraphs



- Include only 1 topic in each paragraph.
- Include a topic sentence at the beginning of each paragraph where appropriate.
- Use transitions to get from 1 paragraph to the next.
- Write short paragraphs that vary in length.
- Use short bulleted and numbered lists to break up dense information and add white space.
- Use tables where appropriate to make complex material easier to understand.

## In Your Sentences



- Make sure each sentence is about 1 thing or serves 1 purpose.
- Write short sentences.
- Use pronouns like “you” and “we” where appropriate to speak directly to readers.
- Write in the active voice.
- Make the action of each sentence clear.
- Use examples where appropriate.
- Use the simplest form of verbs.
- Avoid using hidden verbs.
- Use contractions where appropriate.
- Don’t use jargon or unnecessary technical terms.
- Use short, simple words.
- Don’t cluster a bunch of nouns together.
- Cut unnecessary words.
- Don’t use slashes.
- Keep the subject, verb, and object close together.
- Put the main idea before exceptions and conditions.
- Place words carefully.



To access Your Guide to Clear Writing online, visit:

<https://www.cdc.gov/nceh/clearwriting/docs/clear-writing-guide-508.pdf>

# Supporting Information for the Clear Writing Checklist



## In Your Material

### **Identify a purpose and stick to it.**

A clearly stated purpose helps create a focused material — all the separate pieces (pages, paragraphs, sections, images, etc.) work together to achieve a specific goal.

### **Place 1 main message at or near the top — and visually emphasize it.**

What is the 1 thing you want your reader to remember? This is your main message — put it at or near the top of your material. Ideally, it should be 1 to 3 sentences long. Emphasize it by bolding it and making the font larger. You might even put it in a shaded text box.

### **Select and focus on a limited number of key points.**

Short-term memory research shows that, generally, people can process limited bits of information at a time. Mapping methods, like message mapping, suggest selecting 1 main message and 1 to 3 points to support that message. This helps make sure that your reader will easily process, understand, and remember your message.

### **Write for your audience (not for yourself!).**

Use language your audience knows and feels comfortable with. Take your audience's current level of knowledge into account. If you have separate audiences, address them separately. Remember to write for audience and purpose and not for author (yourself) and topic. Think: what does your audience need to know, not what do you want to say.

### **Organize content to meet your readers' needs.**

Start by stating the material's purpose and bottom line. Put the most important information at the beginning and include background information (when necessary) toward the end. Get rid of filler and unnecessary content.

### **Use a lot of useful, meaningful headings.**

Materials with lots of informative headings are easy to follow because the headings break up content into logical, easy-to-understand pieces. A good rule of thumb is to have 1 heading for every 1 to 3 paragraphs. Aim for headings that are no longer than 8 words.



## Visually emphasize important concepts.

Use **bold text** to make important concepts stand out. For some audiences, *italics* can work, too – but slanted text can be tricky for users with limited literacy skills to read. **PUTTING EVERYTHING IN CAPITAL LETTERS IS NOT A GOOD EMPHASIS TECHNIQUE BECAUSE IT MAKES CONTENT HARDER TO READ (AND READERS MAY THINK YOU'RE SHOUTING).** Similarly, underlining content draws attention to it, but also makes it harder to read – and many people expect underlined text to be a link.

## Use terms consistently.

You risk confusing your audience if you use different terms for the same concept. For example, if you use the term “older adults” to refer to a group, continue to use this term throughout your material. Don't substitute another term, like “senior citizens.”

## Minimize the use of abbreviations and acronyms.

Limit the number of abbreviations and acronyms you use in a material to no more than 5 when possible. Use these tips to help reduce acronyms and abbreviations:

- Use terms like “the committee” or “the report” in place of acronyms.
- If you only use the abbreviation or acronym a couple times, consider spelling it out instead.

## Design the layout and structure for easy reading.

Here are a few brief guidelines for designing your material:

- Break text into manageable chunks with meaningful headings.
- Use text size, color, and placement to help readers focus on the main message.
- Group headings and related text together – so it's clear what goes with what.
- Use left-alignment instead of justifying your text.

## Use relevant images to support the main message.

Carefully choose meaningful images that support or reinforce the main message or key points. Avoid using images to “decorate” your material, and never use an image that shows behavior you want your reader to avoid or change. For example, if you want your reader to stay away from contaminated water, don't choose an image that shows kids playing near water (even if the water in the image looks clean).



### **Include only 1 topic in each paragraph.**

Your readers are most likely to understand the point you want to make if you limit each paragraph to a single topic.

### **Include a topic sentence at the beginning of each paragraph where appropriate.**

If you tell people what they're going to read about, they're more likely to understand your paragraph. Give your audience context before you provide them with details. We often write the way we think — we state our premise first, followed by a conclusion. That may be the natural way to develop thoughts — but if you write that way, you can wind up with the topic sentence at the end of the paragraph.

Let readers know where you're going by moving that topic sentence to the beginning of the paragraph. Don't make them hold a lot of information in their heads before they get to your point.

### **Use transitions to get from 1 paragraph to the next.**

Think of your readers as driving cars. They need signs and directions to help them get where you want them to go. Make sure they get those directions by linking paragraphs together with transition words and sentences. A transition doesn't have to be long and tedious — it can be as short as starting a paragraph with “but” or “still.”

### **Write short paragraphs that vary in length.**

Long paragraphs that end up creating a “wall of words” can keep your audience from even trying to understand your material. Short paragraphs are easier to read and understand. Experts recommend limiting paragraphs to no more than 100 words or 5 sentences. Try to vary the lengths of your paragraphs to make them more interesting.

### **Use short bulleted and numbered lists to break up dense information and add white space.**

Lists highlight a series of requirements or other information in a visually clear way. Use vertical lists to help your reader focus on important material. Vertical lists:

- Highlight levels of importance
- Help readers understand the order in which things happen
- Make it easy for readers to identify all necessary steps in a process
- Add white space for easy reading
- Are an ideal way to present items, conditions, and exceptions

Your lists will be easier to read if you use bullets. Also include a lead-in sentence to explain your lists. Keep lists short (no more than 7 bullets) and avoid sub-bulleted lists within lists.

### **Use tables where appropriate to make complex material easier to understand.**

Tables can help your audience see relationships that may be hidden in dense text. Think about using a standard table or a more specific model, like an “if-then” table.

## **In Your Sentences**



### **Make sure each sentence is about 1 thing or serves 1 purpose.**

Focus each sentence on 1 thing. If you overload a sentence with multiple purposes, you interfere with your readers’ comprehension. You’re also asking them to interpret which is the more important message or purpose. They may focus on something different than what you wanted to emphasize.

### **Write short sentences.**

Include only 1 idea in each sentence. Long, complicated sentences are often a sign that you’re not really sure what you want to say. Don’t write sentences with more than 20 words. Shorter sentences are also better for communicating complex information because they break information up into smaller, easy-to-process pieces.

Sentences loaded with dependent clauses and exceptions confuse readers by burying the main point. Break down your idea and make each part the subject of its own sentence. Vary your sentence length to make content more interesting to the reader. That’s what Hemingway did — no reason you can’t do the same.

### **Use pronouns like “you” and “we” where appropriate to speak directly to readers.**

Your material may be relevant for thousands of people, but remember that you’re speaking to the 1 person who’s reading it. Address that person, not the thousands. Pronouns help readers “picture themselves” in content and relate better to your materials. Using “you” pulls readers into your materials and makes it relevant to them. Using “we” to refer to your organization makes you sound more approachable. It also makes your sentences shorter and your material easier to read.

### **Write in the active voice.**

Active voice (e.g., “we recommend that”) is clear, concise, and direct. Passive voice (e.g., “it is recommended that”) can be wordy and awkward — it can also disguise who’s doing what. Use active voice unless you have a specific reason not to (e.g., you don’t know who the actor was or you want to emphasize the action or object).

## Make the action of each sentence clear.

When a reader can't figure out a sentence, it may be because the action isn't clear. What exactly is happening in the sentence? Tell your readers by using a strong, clear verb.

## Use examples where appropriate.

Examples help you clarify complex concepts. In spoken English, when you ask for clarification of something, people often respond by giving you an example. Good examples can substitute for long explanations. The more complex the concept you're writing about, the more you should consider using an example. And it's okay to write, "For example, ...".

## Use the simplest form of verbs.

The simplest and strongest form of a verb is present tense. Using the present tense makes content more direct and forceful. Also, don't use a more complicated version of the verb when you don't have to. For example, write "use" instead of "utilize."

## Avoid using hidden verbs.

A hidden verb is a verb that's turned into a noun. It often needs an extra verb to make sense, so you wind up writing a longer, less direct sentence. For example, write "Please **apply** for a personal loan" instead of "Please make an **application** for a personal loan."

## Use contractions where appropriate.

Contractions help make your writing feel less stuffy and more natural. They can also make your writing more accessible — research shows that contractions improve readability. This makes sense as people use contractions when they talk. So it's okay to use contractions, **don't** you think?

## Don't use jargon or unnecessary technical terms.

Don't use jargon or technical terms when everyday words work. For example, write "high blood pressure," not "hypertension." Use words and terms consistently throughout your material.

## Use short, simple words.

Word choice is an important part of communicating clearly. Be expressive, but remember that most public health writing is no place for literary flair — it's not going to be someone's fireside reading. Pick the familiar or commonly used words over the unusual or obscure. As George Orwell said, "Never use a long word where a short one will do."

## **Don't cluster a bunch of nouns together.**

Technical writing often uses too many noun strings, or groups of nouns “sandwiched” together (e.g., “disaster cleanup site database”). Readability suffers when you string together 3 or more words that are usually separate. Technically, clustering nouns turns all but the last noun into adjectives. But many readers will think they've found the noun when they're still reading adjectives — and that's confusing. Cut descriptive words that you don't need. Or use prepositions and articles to clarify the relationships between words.

## **Cut unnecessary words.**

Don't confuse your readers by writing long, complex sentences with multiple phrases and clauses. Watch out for “of,” “to,” “on,” and other prepositions. You can also get rid of redundant words and avoid doublets and triplets (i.e., when authors repeat the same concept by using different words that say the same thing — like, “knowledge and information”). If it's possible to cut a word out, do it.

## **Don't use slashes.**

Apart from fractions (if you must use them), the slash is almost never necessary. “And/or” is a classic example. In some cases, writers mean *either* “or” or “and,” but don't want to take the time to decide, so they push the job off on the reader. That makes for ambiguous writing. Remember, it's your job to decide what you mean.

In the few cases where you truly mean both, it's better to write out “either X, or Y, or both.” Also be on the lookout for slashes that are mistakenly used to join equal or like terms — that's actually a job for the hyphen (e.g., write “faculty-student ratio,” not “faculty/student ratio”).

## **Keep the subject, verb, and object close together.**

The natural word order of an English sentence is subject, verb, object. That's how you first learned to write sentences, and it's still the best way. When you put modifiers, phrases, or clauses between 2 or all 3 of these essential parts, you make it harder for your readers to understand your writing.

## **Put the main idea before exceptions and conditions.**

Starting a sentence with an introductory phrase (or a word like “except”) almost always forces people to reread the sentence. Think about it: you're stating an exception to a rule before you've stated the rule itself. Most of the time, this means the reader has to process the exception, process the rule, and then reread the sentence to grasp the relationship between the 2. Start with the main idea — then cover exceptions and conditions.

For example, write “Talk to a trusted adult if you're concerned about a friend” instead of “If you're concerned about a friend, talk to a trusted adult.”

## **Place words carefully.**

Sloppy word placement can make for vague content. To reduce ambiguity, put conditionals like “only” or “always” and other modifiers next to the words they modify. For example, write “you’re required to provide only the following,” not “you’re only required to provide the following.”

# Tips for Communicating About Amount and Units of Measure



If you're trying to reach a consumer audience, writing about units of measure in environmental health materials isn't easy. After all, most people have no idea what “ng/m<sup>3</sup>” or “µg/L” means. Sure, they're accurate — but if they don't *mean* anything to your reader, what's the point?

Of course, there are times when it's appropriate to use complex units of measure — for example, in reports like public health assessments that don't exclusively target consumers. But for consumer-targeted environmental health information, use these tips to keep it simple and clear.

## Contextualize amounts in terms of what matters to your reader.

Measurements like “mg/m<sup>3</sup>” or “pCi/L” don't mean anything to consumers. And often, the number (numerical amount) doesn't matter much to them either. They want to know what the number means to them. Give your audience the information they're looking for:

- Use words like “level,” “amount,” and “range.”
- Consider phrases like “too high,” “unsafe,” and “normal” when appropriate.

### For example:

- The levels of perchlorate weren't high enough to cause health problems.
- We found that the amount of lead in the water means it's unsafe to drink.

[Learn more about tailoring information for a specific audience.](#)

## “That's about the size of a...”

When writing about size or weight, give readers a point of reference in a familiar item. This can really help them understand different types of measurements. For example: The environmental department removed 450 tons of contaminated soil — that's 45 dump truck loads!

## When you do use a number with a unit of measure, always clarify the meaning.

Sometimes, knowing a number will be important for the consumer. But that doesn't mean they're going to understand the unit of measure. Simplify the language and provide context:

- Your child's blood lead level was 11 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ). That means she has an unsafe level of lead in her blood.
- EPA recommends fixing your home if your indoor levels of radon are 4 or more picocuries per liter of air (4 pCi/L).

## Consider including ranges to further contextualize the number.

Specifying ranges can also be very helpful to consumers. It can be difficult to interpret a single number without knowing where it falls on the range of "normal."

### For example:

- We found that the mercury level in the local soil was 80 ppb. Normal soil levels range from 20 to 625 ppb, so we aren't worried about that number.
- Levels of benzene in outdoor air generally range from less than 1 to 34 ppb. The level we found around the waste site was 46 ppb — higher than average.

**Note:** Sometimes you may need to include more information to explain what the reference range represents.

## Explain complex units of measure to help your reader going forward.

Sometimes, it makes sense to teach your reader a term, especially if they're dealing with a specific issue and need to understand the details:

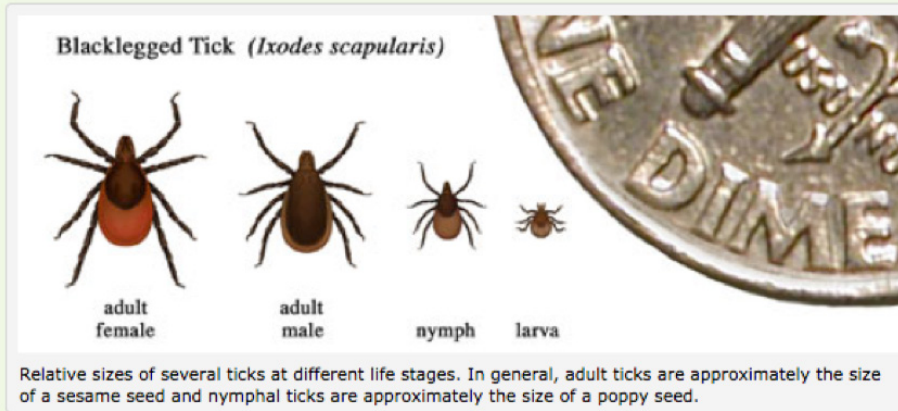
- If private well owners need to have their water checked for a certain contaminant, they may find it helpful to understand the unit of measure of the contaminant.
- If a parent needs to monitor their child's asthma using a peak flow meter, they may want to understand what they're measuring to help keep their child safe.

## Use visuals to help.

You don't have to rely only on words to communicate about amount — images can make a big difference. Visuals can help you show the size of things in scale — use familiar objects to clearly communicate about size:



## All about blacklegged ticks



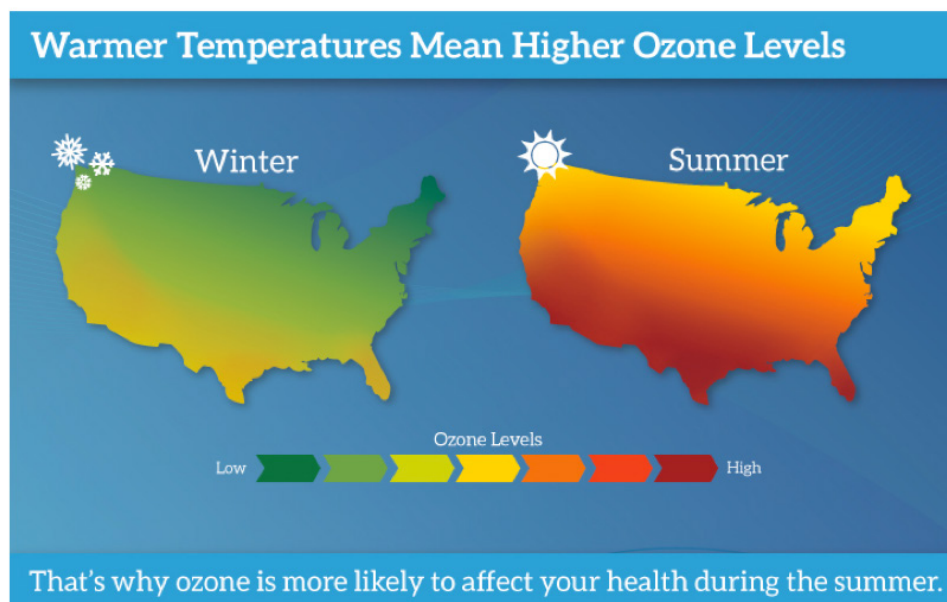
[For more information....please see the lifecycle of blacklegged ticks »](#)

### Can't see it? Don't try to show it.




If you're writing about something that's measured in very tiny units (like parts per billion), don't try to show it with visuals. After all, you can't see it in real life. Trying to use visuals shown in scale isn't helpful — and might be confusing. Use language instead: It's so small you need a microscope to see it.

Images can also help you communicate the concept of a range. This can be particularly helpful when writing about environmental health, since the most important information for consumers is often related to a range (low to high, safe to unsafe, below average to above average, etc.):

Breathing in ground-level ozone can be harmful to your health.



Visual cues integrated into your writing can also help communicate about levels and ranges. For example, consider the “stoplight” (red, yellow, green) color cues:

The Bottom Line	
	The drinking water supply is safe, with the exception of a specific private well.
	Some fish and shellfish may be contaminated with certain metals. It’s important to follow fish advisories and fishing rules.
	Some fish are contaminated with levels of mercury high enough to cause certain types of health problems.

## A Few Tips on Numeracy in General

When using numbers in your material, ask yourself:

### Do you use whole numbers whenever possible?

Most people struggle to understand percentages, decimals, and fractions. Meet your audience where they are and use whole numbers whenever you can:

- **Write:** About 4 out of every 10 community members has reported concern that the site is harming their health.
- **Not:** About 40% of community members have reported concern that the site is harming their health.



**TIP:** You can also represent statistics like these visually to help your readers understand. [Try this free tool to create visual displays of statistics.](#)

### Does the material always explain what the numbers mean?

Numbers can mean different things to different people — and that’s why context is key. Is the number high or low for this type of health issue or higher or lower than expected? Let your reader know:

- **Write:** 3 out of 10 Americans have high blood pressure. That’s a very high number.
- **Not:** 3 out of 10 Americans have high blood pressure.

## Does your audience have to do any math to understand important information?

Always do the math for your reader. Research shows that even trained statisticians make mistakes doing calculations depending on the context, so don't leave room for error:

- **Write:** Cleanup will take about 115 hours. That's just under 3 weeks.
- **Not:** Cleanup will take about 115 hours.

For more information about numeracy, [check out the guidance on numbers](#) in the CDC Clear Communication Index.



To access Your Guide to Clear Writing online, visit:

<https://www.cdc.gov/nceh/clearwriting/docs/clear-writing-guide-508.pdf>

# Plain Language Tip Sheet for Reviewers



Sometimes, you may be responsible for reviewing materials written by your colleagues. And though you may be comfortable reviewing materials for scientific accuracy, how can you help make sure the materials are useful and clear, too?

This tip sheet will help you figure out if materials meet the standards of the [Plain Writing Act](#). It will also help you provide useful guidance to authors so they know how to make their materials clearer and easier to understand.

## How to Review the Material

There are several questions you can ask to make sure a material follows plain language best practices. These questions generally fall under the categories of **content**, **layout**, and **literacy**.

### Plain language is not “dumbing down!”

Sometimes, it’s hard to shake the feeling that plain language is about oversimplifying, but that’s not the case. Plain language is using best practices of clear communication to make sure your target audience understands your content the first time they read it.

### Content

When you’re reviewing content, think about the goal of the material – what it’s trying to do and the audience it’s trying to reach. Ask yourself:

- Is the target audience clear?
- Does the material have a clear main message?
- Does the most important information come first?

### Layout

How content looks to readers may be more important than you think. If it appears dense, overwhelming, or inaccessible, it’s likely that readers will skip it altogether. Ask yourself:

- Is there enough white space so that the material doesn’t look overwhelming?
- Does the material have clear, descriptive, and meaningful headings?
- Is content broken up into manageable “chunks,” or does it look like a wall of words?  
Remember that long and sub-bulleted lists can wind up looking like a wall of words, too.
- Is the font easy to read and consistent throughout the material?

## Literacy

Reviewing a material for literacy means considering if the target audience will find the content easy to read and understand. Ask yourself:

- Are most sentences short and simple?
- Does the material use simple, clear language that's appropriate for the target audience?
- If the material needs to include jargon, is it defined in plain language?

## How to Respond to Authors

Use these 3 easy steps and sample email to give the author clear guidance on what to do next.

### 1. Remember that you don't need to edit the material yourself.

You aren't responsible for rewriting the material in plain language. Of course it's normal to want to edit language that you don't think meets your organization's standards, but try to resist the urge to wordsmith!

Instead, think of your review as an opportunity to train the author in plain language — your responsibility is to call out the areas that need improvement, and the author's job is to fix them. In other words, you're assessing the material using the principles of plain language, not editing it for plain language.

### 2. Use the checklist to call out problem areas.

The checklist that follows this tip sheet will help you identify what the author needs to work on to make sure the material uses plain language best practices. Whenever you can, give the author concrete examples of the kind of fixes they need to make. (The checklist has spaces to fill out a few, but feel free to offer more!)

### 3. Identify sources of additional support.

Encourage authors to get help making their revisions — professional assistance will build their plain language skills. Tell them about easily accessible and free resources.

The sample message below lists some contact information and specific resources.

### Sample Email for Authors

*Along with my edits for scientific accuracy, I've included a checklist of plain language best practices to help you make sure the material meets the standards of the Plain Writing Act. Please see the items called out in the checklist below and make revisions to your material.*

*You may also want to check out the [Health Communication Playbook](#) — and the other resources on the [Clear Writing Hub](#).*

# Plain Language Revision Checklist

Use the following checklist to keep you on track as you review the material.

## Content



- Make sure your target audience is clear. The main message, the type of information you're communicating, and the way it's communicated all need to make sense for your target audience.



**TIP:** If you're trying to write for multiple distinct audiences, consider creating separate materials.

- Check that your material has a clear main message. What are you trying to communicate? What do you want your audience to do? If you aren't clear on these points, your audience won't be either. Identify 1 clear message that informs the rest of your content.



**TIP:** [Check out the Clear Communication Index](#) for an examples of a clear main message.

- Put the most important information first. The main message of your material needs to be clear to readers right away. Lead with what your readers need to know – then follow with what's nice to know.



**TIP:** Imagine that you're looking at your material for the first time. Would you know what the main message is from reading the title and first few lines?

## Layout



- Include more white space so the material doesn't look overwhelming. Many readers are easily intimidated by dense, content-heavy material.



**TIP:** Use shorter paragraphs, tables, and lists to add more white space.

- Use more headings (aim for 1 heading every 1 to 3 paragraphs), and make sure they are clear, descriptive, and meaningful. For example, instead of \_\_\_\_\_, use a heading like \_\_\_\_\_.
- Break content up into manageable “chunks” of information. Limit paragraphs to no longer than 5 sentences – or about 100 words.



**TIP:** Try not to cover more than 1 topic per paragraph. Focusing on 1 thing in each paragraph will keep them short and clear.

- Use a font that’s easy to read – and use it consistently throughout the material. It’s okay to have a different font for your headings, but that’s the only exception.

## Literacy



- Make sentences shorter and easier to read. Sentences shouldn’t be more than about 20 words long. Also, use active voice (not passive voice). [Learn about active and passive voice.](#)
- Make sure that the language is simple, clear, and audience appropriate. Keep in mind that words that are appropriate for 1 audience may be completely inappropriate for another.
- Remove unnecessary jargon. If you need to include jargon, define it in plain language. For example, instead of \_\_\_\_\_, try a simpler term like \_\_\_\_\_. Or if you need to include a technical term like \_\_\_\_\_, also give a plain language definition like \_\_\_\_\_. [Find everyday alternatives to public health terms](#) using CDC’s resource.

# Testing Your Materials

Remember to test your materials! Testing helps make sure that your final product will be useful for your readers. And you don't need a lot of money or time — or even people! — to test. Below are a few easy recommendations for informal user testing.



## Why do I need to test my material?

When it comes to understanding your material, your readers are the experts. Testing your material with the target audience can improve your readers' satisfaction and increase their trust in your material.

## What type of testing is right for me?

There are lots of options to test your material with your audience, and each method of testing has its pros and cons.

**An important note on testing:** Testing messages from people is a type of information collection. The Paperwork Reduction Act (PRA) aims to reduce the burden placed on the public when the government collects information. The Act generally requires a federal agency to get approval when using identical questions with 10 or more people in a 12-month period. The [Office of Management and Budget \(OMB\)](#) gives this approval. [Learn more about PRA at usability.gov.](#)

If you work for a federal agency, check with your PRA point of contact before you do any testing. If a federal agency is funding your program, check with your agency project officer before doing any testing. The project officer can refer you to the agency's point of contact, who can tell if you'll need PRA clearance before you begin message testing.

**Focus groups:** You can get a lot of valuable feedback in a short amount of time when you're talking to a group of people. Focus groups can help at any point during the development process — use them early on to help inform your material or later to get feedback on a draft. The more people you test with, the more clear your findings will be — testing with at least 3 small groups is a good rule of thumb.

But keep in mind that you'll need OMB approval to test with more than 9 people total. (Note this requirement does **not** apply to government staff — test with as many federal employees as you like!).

**One-on-one interviews:** Getting individual feedback from your target audience is also useful at any stage of the process. Use findings from **one-on-one interviews** to inform or evaluate your materials. This type of testing can also be useful if you're having trouble recruiting people to participate in a focus group. Try testing your material with 3 to 8 people from your target audience.



**Surveys:** Consider doing a survey if focus groups or interviews aren't an option. Surveys are a quick and affordable way to get feedback for your material, and they're well suited for quantitative data.



**TIP:** Platforms like [SurveyMonkey](#) have free account options.\*

## When do I test?

As noted above, you can do user testing at different points in the process (and ideally, at multiple points in the process!). Testing early on can help you make sure you're on the right track *before* you put time, effort, and resources into developing materials — and testing later in the process can help you find out if your material is effective.

**At the very beginning:** Talk to people in your target audience to get a sense of what they already know about your topic, how they feel about it, and what might motivate them to change their behavior.

**When you have key messages:** Show participants your draft key messages (in bullets) and get their reactions. This can help you figure out which words or phrases they find compelling or relatable and whether or not the messages are clear and actionable.

**Once you've developed draft materials:** At this point you want to confirm that the material is easy to read and use. To accomplish this, use a mix of open-ended questions and specific tasks. For example:

- As you review please underline the words and phrases that are most helpful to you. Circle anything that's confusing.
- After seeing this, what would you be saying to yourself?
- Where would you expect to see a [product] like this?
- How would you use this chart to figure out which vaccines your 4-year-old child needs?

**For digital products:** Ask your participants to “think out loud” as they go — and pay attention to what they **do** with the material, not just what they say. One-on-one usability testing is typically the best method at this stage. Check out [Health Literacy Online](#) for more guidance on developing user-friendly websites or tools and testing them with users.

## Who do I test with?

It's best to test with people who are as similar to your target audience as possible, but keep in mind any testing is better than none. Try to find participants who aren't familiar with your material or subject matter — like a colleague who works in a different department or a friend or family member.

\*Use of commercial sources is for identification only and does not imply endorsement by NCEH/ATSDR, CDC, or the U.S. Department of Health and Human Services.

Aim for 3 to 8 participants when you're testing your material. But keep in mind that testing with even 1 or 2 people can give you plenty of useful information — and help you create a better final product.

Here are some tips for cost-effective ways to find participants:

- Take advantage of partners and grantees.
- Partner with local organizations.
- Reach out to participants who care about your topic.
- Ask colleagues and other professionals to participate — they may even participate for free!

## Where do I test?

Once you find your participants, find a convenient testing location that's free or low cost, like a local library or a community health center. To get the best results, conduct testing with participants in person when possible. If you can't test in person, you can test materials by telephone or web-based platforms that include screen-sharing, like [Skype](#).\*

## How can I get started?

Check out the worksheet on the next page to make a plan for testing.

### The CDC Clear Communication Index

The CDC Clear Communication Index (Index) is a free, easy-to-use tool to assess fact sheets, web content, and similar materials. It helps identify the most important factors to increase clarity and aid understanding of your public health messages. Ask a colleague to score your material since you may be a bit biased when scoring your own materials.

Here's how it works:

1. Answer the questions on page 1 of the [Index Score Sheet](#).
2. Email the PDF (with completed cover sheet) to your colleague.
3. Ask your colleague to answer the remaining questions and send the PDF back to you.

The PDF automatically calculates your score based on your colleague's answers. If your material scores less than 90, **review all the questions and answers to see precisely what you need to improve.**

\*Use of commercial sources is for identification only and does not imply endorsement by NCEH/ATSDR, CDC, or the U.S. Department of Health and Human Services.

# Informal User Testing: Make a Plan

## 1. Identify your goals.

You can also [use the Clear Communication Index cover sheet](#) for this step.

Target audience: \_\_\_\_\_

Main message: \_\_\_\_\_

Communication objective: \_\_\_\_\_

## 2. Decide which testing method best meets your needs.

Are you going to do focus groups? Hold interviews? Send out a survey? And what are you testing? A draft fact sheet? Key messages? How many people do you want to participate in your testing? (Remember that PRA regulations apply to federal agencies when collecting info from 10 or more people.)

Testing method: \_\_\_\_\_

Stimulus material: \_\_\_\_\_

Number of participants: \_\_\_\_\_

## 3. Check with your organization's PRA point of contact to make sure you're following any federal regulations that apply to your testing.

Regulations I need to follow for this testing include...

- **Example:** Can't have more than 9 participants

## 4. Write your research questions.

These aren't the questions you'll ask your participants – rather, they're the questions that you're hoping to answer through testing.

- **Example:** What are participants' current attitudes, experiences, and beliefs about the subject?
- **Example:** How clear are the key messages?
- **Example:** How easy to use is the tool?
- **Example:** What are participants' perceptions of the design and layout of the material?

## 5. Decide how you'll find participants.

You'll find participants by...

- **Example:** Going to the local senior center and asking for volunteers
  - **Example:** Reach out to local grantees
- 
- 
- 

## 6. Figure out what to ask your participants.

This is your "protocol" – the questions you'll ask your participants. These will depend on what you're testing, but be sure to choose questions that will make sense to the participants and help you answer your research questions:

- **Example:** What is the first thing that comes to mind when you see this?
  - **Example:** Tell me in your own words what is the most important message on this page.
  - **Example:** How does this explanation compare to your own experiences?
  - **Example:** What words or phrases caught your attention?
- 
- 
- 
- 
- 
- 

## 7. Keep yourself organized.

Where are you thinking of testing and when? What do you need to bring with you to the testing site? Use this section to keep track of logistics

- **Example:** Sent survey out via MailChimp on 4/8
  - **Example:** Check with testing venue to make sure there's a solid internet connection
- 
-

# Preparing and Writing a Scientific Journal Article

Working on a scientific article that you'd like to get published? This resource has tips to help you write a publication-ready journal article. This isn't the only way to write a scientific journal article — it's simply an approach that may make the process easier.



## 12 Steps to Publish a Scientific Journal Article

- 1 Get concept clearance from your supervisor before you invest time in the work.
- 2 Do a literature review to identify a gap in knowledge or limitations of previous studies.
- 3 Do the study and analyze the data that you'll present in your article.
- 4 Summarize your results and develop some key messages.
- 5 Get feedback from coauthors and colleagues to find out if your key messages are clear, concise, and compelling. This is the prep work that will help you write a strong first draft.
- 6 Identify the best journal for your article so you can write with the journal's requirements in mind.
- 7 Write the abstract. (Note that some authors prefer to write the abstract after drafting the full article. Figure out what works best for you!)
- 8 Write the first draft of your article. You'll want to include the following sections: introduction, methods, results, and discussion sections. (Details about these sections follow.)
- 9 Think of a direct and concise title.
- 10 Double-check your in-text citations and edit your reference section.
- 11 Submit your article for scientific clearance.
- 12 Submit your article to the journal and work with them to respond to their feedback.

Notice that half of the steps listed above happen **before** you even begin to write the article. This kind of systematic preparation will help you write a clear, publication-quality article.

# How to Write a Scientific Journal Article

## Abstract

Your abstract highlights key points from the major sections of your article. It's also an opportunity to emphasize what's new and useful about your study. Write a 4-paragraph abstract using the guide below.

**TIP:** Remember that journal editors are interested in new information that's useful to their readers. Be sure to discuss how your article is new and useful in the abstract, introduction, and discussion sections.



- Paragraph 1** In 3 to 5 sentences, state the main purpose of your study.
- Paragraph 2** In 3 to 5 sentences, summarize the methods of your study.
- Paragraph 3** In 3 to 5 sentences, summarize the results of your study.
- Paragraph 4** In 3 to 5 sentence, summarize the conclusions of your study.

**Note:** Some authors prefer to write the abstract last — after they've drafted the full article.

## Introduction

Your introduction convinces readers that this study shows something new and useful. Write a 3- or 4-paragraph introduction.

- Paragraph 1** In 3 to 5 sentences, address the current gaps in the literature — provide background on previous research and its limitations.
- Paragraph 2** In 4 to 6 sentences, state the purpose of your article. Be sure to emphasize what's new and useful about your work.
- Paragraphs 3 and 4** Use 2 paragraphs (3 to 5 sentences in each paragraph) to explain how your article fills the current gaps or addresses the limitations of previous studies. You may want to end with a sentence about the results of your study.

## Methods

This is the place to describe your study methods. It's where you'll include information like study population, lab methods or epi investigation, and statistical analysis. Write about 3 paragraphs for this section.

**TIP:** Get feedback before writing the next sections in your article. Ask your colleagues to point out phrases, sentences, or paragraphs that confuse them.



- Paragraph 1** In 3 to 5 sentences, define your steps. Explain in chronological order how you collected, organized, and analyzed data.

**Paragraphs 2 and 3** Use 2 paragraphs (with 3 to 5 sentences in each paragraph) to define all your research variables. Remember to focus on **how** you did your work, not what you found.

## Results

In this section, describe the results of your data analysis that are relevant to the purpose of the study. Write about 2 to 4 paragraphs to present your results.

**Paragraph 1** In 3 to 5 sentences, describe the results of your analysis. Provide clear explanations of what you found (e.g., “We found several factors that affect...”)

**Paragraphs 2 thru 4** Use figures or charts to support your content. Explain your tables, charts, or figures in 2 or 3 paragraphs (with 3 to 5 sentences in each paragraph). Use tables to highlight individual values, and use figures to highlight trends or relationships.

## Discussion

Use the discussion section to interpret your results and justify your interpretation. Present your discussion in 4 paragraphs.

**Paragraph 1** In 3 to 5 sentences, restate the main result of your study and explain your conclusion. Be clear about why the results support your conclusion.

**Paragraph 2** In 3 to 5 sentences, compare your study with existing, related studies. Highlight the strengths of your study, and emphasize what’s new and useful about it.

**Paragraph 3** In 3 to 5 sentences, state any limitations or caveats about your study.

**Paragraph 4** In 3 to 5 sentences, make recommendations for next steps. This may include changes in policies or suggestions for future research. If you recommend future research, be specific (e.g., study method).

## Title

Now that you’ve finished your first draft, think of a direct and concise title for your article. Include your research topic and a key component of your work (e.g., methods, results, conclusions, or study name) — like “Food Worker Handwashing Practices: An Observational Study.”

## References

You've got one more critical step — making sure your references are in good shape. Most journals include their preferred format on the requirements page of their website. Make sure you've used their preferred format for references and proofread them carefully.

### Make Clear Writing a Priority

The goal of clear writing is simple: your intended audience should be able to understand it the first time they read it. Even though they may be familiar with highly technical concepts, they still expect your writing to be clear. Use these tips to help make your writing clear.

#### ☑ Use active voice.

Make the subject of your sentence perform the action (e.g., “The Director issued the memo” not “The memo was issued” [by who?]).

#### Use short sentences and short paragraphs.

☑ Shorter sentences (20 words max) break up complex ideas into smaller pieces, which are easier to understand, even for scientific audiences. Short paragraphs (no more than 5 sentences) encourage readers to read and understand more.

#### Keep subjects and verbs close together.

☑ Start your sentences with the subject and follow it with a strong, clear verb.

### A Note About Active Voice

In the 19th and early 20th centuries, scientists wrote in active voice. But around 1920, scientists started adopting passive voice, possibly because it seemed more objective and impersonal.

Scientific journals have swung back to active voice, especially because all major publication manuals (AMA, APA, Chicago) recommend it. After all, **active voice is clear, concise, and direct.**

In fact, it's difficult to find any journals that actually advocate for the use of passive voice. And prestigious journals such as the *British Medical Journal* and *Science* specifically instruct authors to use active voice.

Use active voice as much as possible in your article. Use passive only when the actor is unknown or is of less importance. For example, you may use some passive voice in parts of the methods section of your article.



# References



## Before You Write

- Centers for Disease Control and Prevention. (2014). CDC Clear Communication Index: A Tool for Developing and Assessing CDC Public Communication Products. p.3. Retrieved from <https://www.cdc.gov/healthliteracy/pdf/clear-communication-user-guide.pdf>
- Office of Disease Prevention and Promotion. (2016). Health Literacy Online: A Guide for Simplifying the User Experience. Retrieved from <https://health.gov/healthliteracyonline>
- The Plain Language Action and Information Network. (2011). Federal Plain Language Guidelines. pp. 1–14. Retrieved from <https://www.plainlanguage.gov/media/FederalPLGuidelines.pdf>

## 8 Tips for Clear and Effective Writing

- BioMedical Editor. (n.d.). Clear Science Writing: Active Voice or Passive Voice? Retrieved from <http://www.biomedicaleditor.com/active-voice.html>
- Centers for Disease Control and Prevention. (2014). CDC Clear Communication Index: A Tool for Developing and Assessing CDC Public Communication Products. p. 3. Retrieved from <https://www.cdc.gov/healthliteracy/pdf/clear-communication-user-guide.pdf>
- Centers for Medicare & Medicaid Services. (2012). Toolkit for Making Written Material Clear and Effective. Retrieved from <https://www.cms.gov/Outreach-and-Education/Outreach/WrittenMaterialsToolkit/index.html>
- Office of Disease Prevention and Promotion. (2016). Health Literacy Online: A Guide for Simplifying the User Experience. Retrieved from <https://health.gov/healthliteracyonline>
- The Plain Language Action and Information Network. (2011). Federal Plain Language Guidelines. Retrieved from <https://www.plainlanguage.gov/media/FederalPLGuidelines.pdf>
- U.S. Department of Health and Human Services. (n.d.). Writing for the Web. Retrieved from <http://www.usability.gov/how-to-and-tools/methods/writing-for-the-web.html>

# References

## Writing Models

- Centers for Disease Control and Prevention. (2018). Health Communication Playbook. Retrieved from: <https://www.cdc.gov/nceh/clearwriting/docs/health-comm-playbook-508.pdf>
- Centers for Medicare & Medicaid Services. (2012). Toolkit for Making Written Material Clear and Effective. Retrieved from <https://www.cms.gov/Outreach-and-Education/Outreach/WrittenMaterialsToolkit/index.html>
- Office of Disease Prevention and Promotion. (2016). Health Literacy Online: A Guide for Simplifying the User Experience. Retrieved from <https://health.gov/healthliteracyonline>
- U.S. Department of Health and Human Services. (n.d.). Writing for the Web. Retrieved from <http://www.usability.gov/how-to-and-tools/methods/writing-for-the-web.html>

## Clear Writing Checklist

- National Center for Education Statistics. (2003). National Assessment of Adult Literacy: Key findings. Washington, DC: U.S. Department of Education.
- Office of Disease Prevention and Promotion. (2016). Health Literacy Online: A Guide for Simplifying the User Experience. Retrieved from <https://health.gov/healthliteracyonline>
- Redish, J. (2007). Letting go of the words: Writing Web content that works. San Francisco: Elsevier, Inc.
- The Plain Language Action and Information Network. (2011). Federal Plain Language Guidelines. pp. 49–68. Retrieved from <https://www.plainlanguage.gov/media/FederalPLGuidelines.pdf>
- Summers, K., & Summers, M. (2004). Making the Web friendlier for lower-literacy users. Intercom.
- U.S. Department of Health and Human Services. (n.d.). Writing for the Web. Retrieved from <http://www.usability.gov/how-to-and-tools/methods/writing-for-the-web.html>

## Communicating About Amount and Units of Measure

- Centers for Disease Control and Prevention. (2014). CDC Clear Communication Index: A Tool for Developing and Assessing CDC Public Communication Products. pp. 22–24. Retrieved from <https://www.cdc.gov/healthliteracy/pdf/clear-communication-user-guide.pdf>

# References

- Centers for Disease Control and Prevention. (2016). Gateway to Health Communication & Social Marketing Practice: Audience. Retrieved from <https://www.cdc.gov/healthcommunication/audience/index.html>
- Zikmund-Fisher, B. J. (2011). Medical Decision Making: Time to Retire the 1-in-X Risk Format. Retrieved from <http://journals.sagepub.com/doi/abs/10.1177/0272989X11418238>
- U.S. Department of Health and Human Services. (n.d.). Writing for the Web. Retrieved from <http://www.usability.gov/how-to-and-tools/methods/writing-for-the-web.html>

## Plain Language Tip Sheet for Reviewers

- Centers for Disease Control and Prevention. (2018). NCEH/ATSDR Clear Writing Hub. Retrieved from: <https://www.cdc.gov/nceh/clearwriting/index.html>
- Centers for Disease Control and Prevention. (2018). NCEH/ATSDR Health Communication Playbook. Retrieved from: [insert placeholder URL so hold space]
- PlaybookCenters for Disease Control and Prevention. (2014). CDC Clear Communication Index: A Tool for Developing and Assessing CDC Public Communication Products. Retrieved from <https://www.cdc.gov/healthliteracy/pdf/clear-communication-user-guide.pdf>
- Centers for Disease Control and Prevention. (2016). Everyday Words for Public Health Communication. Retrieved from <https://www.cdc.gov/other/pdf/everydaywords-060216-final.pdf>
- Centers for Medicare & Medicaid Services. (2012). Toolkit for Making Written Material Clear and Effective. Retrieved from <https://www.cms.gov/Outreach-and-Education/Outreach/WrittenMaterialsToolkit/index.html>
- The Plain Language Action and Information Network. (2011). Federal Plain Language Guidelines. Retrieved from <https://www.plainlanguage.gov/media/FederalPLGuidelines.pdf>
- U.S. Department of Health and Human Services. (n.d.). HHS Web Standards and Usability Guidelines. Retrieved from <https://webstandards.hhs.gov/guidelines>

# References

## Testing Your Materials

- Centers for Disease Control and Prevention. (2014). CDC Clear Communication Index Score Sheet. Retrieved from <https://www.cdc.gov/ccindex/pdf/full-index-score-sheet.pdf>
- Centers for Disease Control and Prevention. (2016). Develop & Test Materials: Testing. Retrieved from <https://www.cdc.gov/healthliteracy/developmaterials/testing-messages-materials.html>
- National Cancer Institute. (n.d.). Making Health Communication Programs Work. pp. 125–167. Retrieved from <https://www.cancer.gov/publications/health-communication/pink-book.pdf>
- Office of Disease Prevention and Promotion. (2016). Health Literacy Online: A Guide for Simplifying the User Experience. Retrieved from <https://health.gov/healthliteracyonline>
- U.S. Department of Health and Human Services. (n.d.). Information Collection and Paperwork Reduction Act (PRA) Overview. Retrieved from <https://www.usability.gov/how-to-and-tools/guidance/pr-a-overview.html>
- U.S. Department of Health and Human Services. (2015). Recruiting Participants & the Legend of “The General Public.” Retrieved from <https://www.usability.gov/get-involved/blog/2015/07/recruiting-participants.html>

## Preparing and Writing a Scientific Journal Article

- Centers for Disease Control and Prevention. (2018). NCEH/ATSDR Clear Writing Hub. Retrieved from: <https://www.cdc.gov/nceh/clearwriting/index.html>
- BioMedical Editor. (n.d.). Clear Science Writing: Active Voice or Passive Voice? Retrieved from <http://www.biomedicaleditor.com/active-voice.html>

[Visit the NCEH/ATSR Clear Writing Hub for more tools and resources.](#)

To access Your Guide to Clear Writing online, visit:

<https://www.cdc.gov/nceh/clearwriting/docs/clear-writing-guide-508.pdf>