

# Captions For Deaf and Hard-of-Hearing Viewers

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## On this page:

- [What are captions?](#)
- [Open and closed captions](#)
- [Real-time captioning](#)
- [Electronic newsroom captions](#)
- [Edited and verbatim captions](#)
- [Rear-window captioning](#)
- [Captioned telephone](#)
- [The law](#)
- [Captions and the FCC](#)
- [Who is required to provide closed captions?](#)
- [What programs are exempt?](#)
- [Current research](#)
- [Where can I find additional information about captioning?](#)

On August 5, 1972, “French chef” Julia Child, in a program televised from Boston’s WGBH studios, taught viewers one of her prized chicken recipes. That historic broadcast was the first time that deaf and hard-of-hearing Americans could enjoy the audio portion of a national television program through the use of captions.

Since then, captions have opened the world of television to people who are deaf and hard-of-hearing. At first, special broadcasts of some of the more popular programs were made accessible through the Public Broadcasting Service. Today, news, public affairs, and sports programming are captioned on network, public, and cable television, on the internet, and at movie theaters. Captions are no longer a novelty: they have become a necessity. Many commercial vendors and some specialized types of software now make it easy for individuals, groups, and schools to create captions.

# What are captions?

Captions are words displayed on a television, computer, mobile device, or movie screen that describe the audio or sound portion of a program or video. Captions allow viewers who are deaf or hard-of-hearing to follow the dialogue and the action of a program simultaneously. For people with hearing loss who are not deaf, captions can even make the spoken words easier to hear — because hearing, like vision, is influenced by our expectations (When you have an idea of what someone might be about to say, his or her speech may seem more clear). Captions can also provide information about who is speaking or about sound effects that may be important to understanding a news story, a political event, or the plot of a program.

Captions are created from the program's transcript. A captioner separates the dialogue into captions and makes sure the words appear in sync with the audio they describe. Computer software encodes the [captioning](#) information and combines it with the audio and video to create a new master tape or digital file of the program. Ideally, the captions should appear near the bottom of the screen — not in the middle, where misplaced captions can cover the newscaster's face or the basketball hoop or quarterback.

## Open and closed captions

Captions may be “open” or “closed.” Open captions are always in view and cannot be turned off, whereas closed captions can be turned on and off by the viewer (using the menu settings on any television).

Closed captioning is available on digital television sets, including high-definition television sets, manufactured after July 1, 2002. Some digital captioning menus allow the viewer to control the caption display, including font style, text size and color, and background color.

## Real-time captioning

Real-time captions, or communication access real-time translation, are created as an event takes place. A captioner (often trained as a court reporter or stenographer) uses a stenotype machine with a phonetic keyboard and special software. A computer translates the phonetic symbols into English captions almost instantaneously. The slight delay is based on the captioner's need to hear and code the word, and on computer processing time. Real-time captioning can be used for programs that have no script; live events, including congressional proceedings; news programs; and nonbroadcast meetings, such as the national meetings of professional associations.

Although most real-time captioning is more than 98 percent accurate, the audience will see occasional errors. The captioner may mishear a word, hear an unfamiliar word, or have an error in the software dictionary.

## Electronic newsroom captions

Electronic newsroom captions (ENR) are created from a news script computer or teleprompter and are commonly used for live newscasts. Only material that is scripted can be captioned using this technique. Therefore, spontaneous commentary, live field reports, breaking news, and sports and weather updates may not be captioned using ENR, and real-time captioning is needed.

## Edited and verbatim captions

Captions can be produced as either edited or verbatim captions. Edited captions summarize ideas and shorten phrases. Verbatim captions include all of what is said. Although there are situations in which edited captions are preferred for ease in reading (such as for children's programs), most people who are deaf or hard-of-hearing prefer the full access provided by verbatim texts.

## Rear-window captioning

Some movie theaters across the country offer this type of captioning system. An adjustable Lucite panel attaches to the viewer's seat and reflects the captions from a light-emitting diode (LED) panel at the back of the theater.

## Captioned telephone

A captioned telephone has a built-in screen to display in text (captions) whatever the other person on the call is saying. When an outgoing call is placed on a captioned telephone, the call is connected to a Captioned Telephone Service (CTS). A specially trained CTS operator hears the person you want to talk to and repeats what that person says. Speech recognition technology automatically transcribes the CTS operator's voice into text that is displayed on the captioned telephone screen.

## The law

The Americans with Disabilities Act (ADA) of 1990 requires businesses and public accommodations to ensure that individuals with disabilities are not excluded from or denied services because of the absence of auxiliary aids. Captions are considered one type of auxiliary aid. Since the passage of the ADA, the use of captioning has expanded. Entertainment, educational, informational, and training materials are captioned for deaf and hard-of-hearing audiences at the time they are produced and distributed.

The Television Decoder Circuitry Act of 1990 requires that all televisions larger than 13 inches sold in the United States after July 1993 have a special built-in decoder that enables viewers to watch closed-captioned programming. The Telecommunications Act of 1996 directs the Federal

Communications Commission (FCC) to adopt rules requiring closed captioning of most television programming.

## Captions and the FCC

The FCC's rules on closed captioning became effective January 1, 1998. They require people or companies that distribute television programs directly to home viewers to caption those programs. The rules required all nonexempt programs to be closed captioned by January 1, 2006; after that date, captioning was also required for all new nonexempt programs. As of January 1, 2010, all new nonexempt Spanish language video programming must also be provided with captions. Detailed guidelines and definitions of terms are available in the [FCC's Electronic Code of Federal Regulations](#).

## Who is required to provide closed captions?

Congress requires video program distributors (cable operators, broadcasters, satellite distributors, and other multichannel video programming distributors) to close caption their TV programs. FCC rules ensure that viewers have full access to programming, address captioning quality, and provide guidance to video programming distributors and programmers. The rules require that captions be accurate, synchronous, complete, and properly placed. In addition, the rules distinguish between prerecorded, live, and near-live programming, and explain how the standards apply to each type of programming, recognizing the greater challenges involved with captioning live or near-live programming.

## What programs are exempt?

Some advertisements, public service announcements, non-English-language programs (with the exception of Spanish programs), locally produced and distributed non-news programming, textual programs, early-morning programs, and nonvocal musical programs are exempt from captioning.

To find out more about the [FCC rules and captions](#), including information on the complaint process, call:

Toll-Free Voice: 1-888-CALL-FCC (1-888-225-5322)

Toll-Free TTY: 1-888-TELL-FCC (1-888-835-5322)

## Current research

Researchers are studying caption features, speeds, and the effects of visual impairments on reading captions. This research will help the broadcast television industry understand which caption features should be retained and which new features should be adopted to better serve consumers. Other research is examining the potential for captions as a learning tool for

acquiring English-language and reading skills. These studies are looking at how captions can reinforce vocabulary, improve literacy, and help people learn the expressions and speech patterns of spoken English.

## Where can I find additional information about captioning?

The NIDCD maintains a [directory of organizations](#) that provide information on the normal and disordered processes of hearing, balance, taste, smell, voice, speech, and language.

For more information, contact us at:

### **NIDCD Information Clearinghouse**

1 Communication Avenue

Bethesda, MD 20892-3456

Toll-free Voice: (800) 241-1044

Toll-free TTY: (800) 241-1055

Email: [nidcdinfo@nidcd.nih.gov](mailto:nidcdinfo@nidcd.nih.gov)

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