

# Page Layout

## All Web pages should be structured for ease of

comprehension. This includes putting items on the page in an order that reflects their relative importance. Designers should place important items consistently, usually toward the top and center of the page. All items should be appropriately aligned on the pages. It is usually a good idea to ensure that the pages show a moderate amount of white space—too much can require considerable scrolling, while too little may provide a display that looks too “busy.” It is also important to ensure that page layout does not falsely convey the top or bottom of the page, such that users stop scrolling prematurely.

When a Web page contains prose text, choose appropriate line lengths. Longer line lengths usually will elicit faster reading speed, but users tend to prefer shorter line lengths. There also are important decisions that need to be made regarding page length. Pages should be long enough to adequately convey the information, but not so long that excessive scrolling becomes a problem. If page content or length dictates scrolling, but the page table of contents needs to be accessible, then it is usually a good idea to use frames to keep the table of contents readily accessible and visible in the left panel.

## 6:1 Set Appropriate Page Lengths

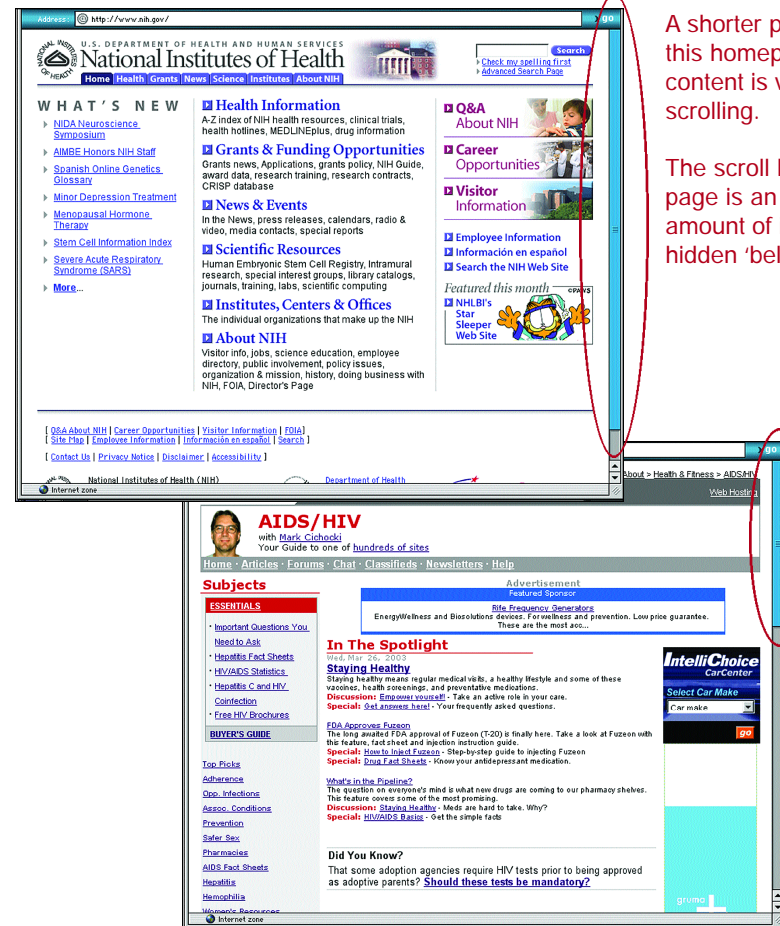
Relative Importance:  
  
 Strength of Evidence:

**Guideline:** Make page-length decisions that support the primary use of the Web page.

**Comments:** In general, use shorter pages for homepages and navigation pages, and pages that need to be quickly browsed and/or read online. Use longer pages to (1) facilitate uninterrupted reading, especially on content pages; (2) match the structure of a paper counterpart; (3) simplify page maintenance (fewer Web page files to maintain); and, (4) make pages more convenient to download and print.

**Sources:** Bernard, Baker and Fernandez, 2002; Evans, 1998; Lynch and Horton, 2002.

### Example:



A shorter page is used for this homepage so that most content is visible without scrolling.

The scroll bar on each page is an indication of the amount of information hidden 'below the fold.'

## 6:2 Use Frames When Functions Must Remain Accessible

**Guideline:** Use frames when certain functions must remain visible on the screen as the user accesses other information on the site.

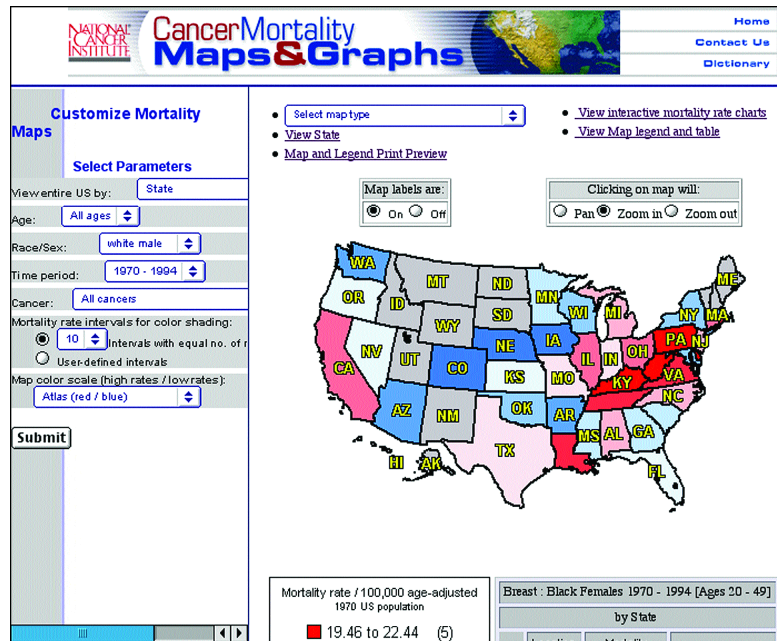
**Comments:** It works well to have the functional items in one frame and the items that are being acted upon in another frame. This is sometimes referred to as a 'simultaneous menu' because making changes in one frame causes the information to change in another frame. Side-by-side frames seem to work best, with the functions on the left and the information viewing area on the right.

Keep in mind that frames can be confusing to some users. More than three frames on a page can be especially confusing to infrequent and occasional users. Frames also pose problems when users attempt to print, and when searching pages.

**Sources:** Ashworth and Hamilton, 1997; Bernard and Hull, 2002; Bernard, Hull and Drake, 2001; Detweiler and Omanson, 1996; Kosslyn, 1994; Koyani, 2001a; Lynch and Horton, 2002; Nielsen, 1996a; Nielsen, 1999b; Powers, et al., 1961; Spool, et al., 1997.

**Example:**

Multi-variable charting applications are one example of an acceptable use of frames. The map of the United States in the right frame is controlled by the menu selections in the left frame. As such, the left frame remains fixed while the right frame regenerates based upon the user-defined selections in the left frame. Such use of frames allows users to continually view the menu selections, avoiding use of the Back button when changing selections and eliminating the need for users to maintain this information in their working memory.



**Relative Importance:**  
1 2 3 4 0

**Strength of Evidence:**  
1 2 3 4 0

## 6:3 Establish Level of Importance

**Guideline:** Establish a high-to-low level of importance for information and infuse this approach throughout each page on the website.

**Comments:** The page layout should help users find and use the most important information. Important information should appear higher on the page so users can locate it quickly. The least used information should appear toward the bottom of the page. Information should be presented in the order that is most useful to users.

**Sources:** Detweiler and Omanson, 1996; Evans, 1998; Kim and Yoo, 2000; Marshall, Drapeau and DiSciullo, 2001; Nall, Koyani and Lafond, 2001; Nielsen and Tahir, 2002; Nygren and Allard, 1996; Spyridakis, 2000.

**Example:**

Priority information and links appear in order based on users' needs. The order was determined by surveys, log analyses, and interviews.

**Relative Importance:**  
1 2 3 4 0

**Strength of Evidence:**  
1 2 3 4 0



See page xxi for detailed descriptions of the rating scales

1 2 3 4 0

### 6:4 Place Important Items at Top Center

**Guideline:** Put the most important items at the top center of the Web page to facilitate users' finding the information.

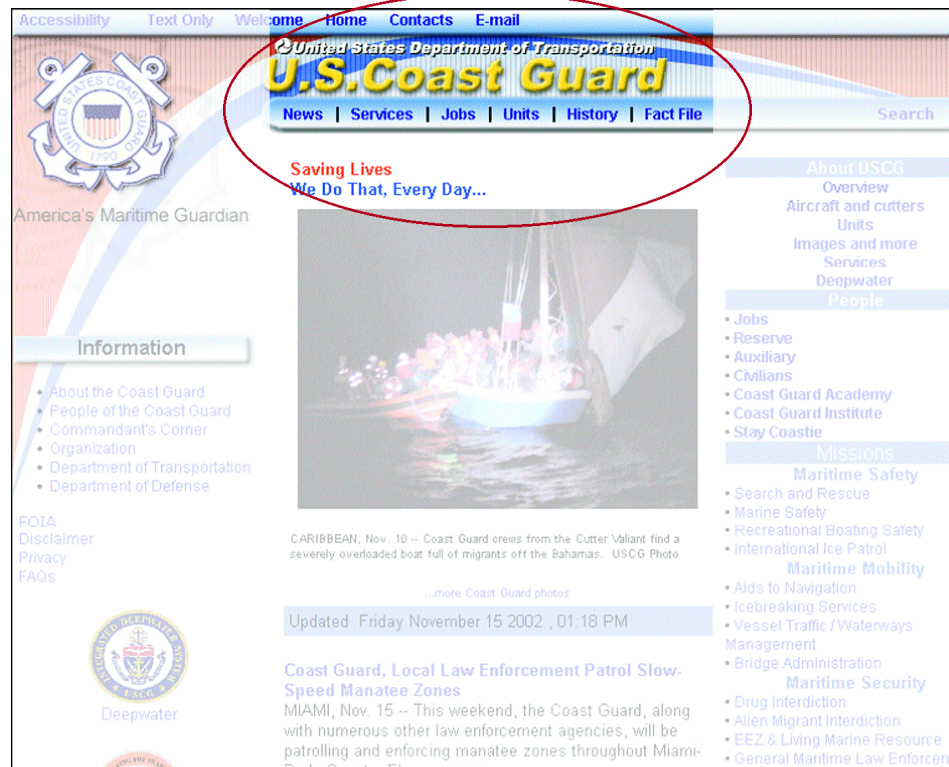
**Comments:** Users generally look at the top center of a page first, then look left, then right, and finally begin systematically moving down the total Web page. All critical content and navigation options should be toward the top of the page. Particularly on navigation pages, most major choices should be visible with no or a minimum of scrolling.

**Sources:** Byrne, Anderson, et al., 1999; Detweiler and Omanson, 1996; Faraday, 2000; Faraday, 2001; Lewenstein, et al., 2000; Mahajan and Shneiderman, 1997; Nielsen, 1996a; Nielsen, 1999b; Nielsen, 1999c; Spyridakis, 2000.

**Example:** Eye-tracking studies indicate this is the area of the screen where most new users first look when a website page loads.

**Relative Importance:**

**Strength of Evidence:**



See page xxi for detailed descriptions of the rating scales

### 6:5 Place Important Items Consistently

**Guideline:** Put important, clickable items in the same locations, and closer to the top of the page, where their location can be better estimated.

**Comments:** Users will try to anticipate where common items will appear on their screen. Experienced users will begin moving their mouse to the area of the target before the eye detects the item. Users can anticipate the location of the top items much better than those farther down the page.

**Sources:** Badre, 2002; Bernard, 2001; Bernard, 2002; Byrne, Anderson, et al., 1999.

**Example:** Important items—in this case primary navigation tabs—are consistently placed at the top of each page.

**Relative Importance:**

**Strength of Evidence:**



## 6:6 Structure for Easy Comparison

**Guideline:** Structure pages so that items can be easily compared when users must analyze those items to discern similarities, differences, trends, and relationships.

**Comments:** Users should be able to compare two or more items without having to remember one while going to another page or another place on the same page to view a different item.

**Sources:** Spool, et al., 1997; Tullis, 1981; Williams, 2000.

**Example:** This page layout is structured to easily allow users to quickly scan and compare data.

Relative Importance:  
  
 Strength of Evidence:

Plan (acronym only)	Benefit Type	Medical Surgical - You pay											
		Deductible		Hospital				Prescription Drugs				Other	
		Per person	Per day	Inpatient	Outpatient	Generic	Brand name	Non-formulary	Con-eric	Brand name	Con-eric	Brand name	
<b>Plans Open to All</b>													
Allstate Health Plan	PPO	\$100	\$200	\$150	10%	10%	10%	10%	10%/50%	10%/50%	10%/50%	20%	20%
	Non PPO	\$300	\$200	\$250	30%	30%	30%	30%	10%/50%+	10%/50%+	10%/50%+	20%	20%
Alltel Health Plan	PPO	\$775	0	0	10%	10%	10%	10%	\$7	25%	25%	\$10	20%
	Non PPO	\$350	0	\$200	30%	30%	30%	30%	45%	45%	45%	\$10	20%
Blue Cross and Blue Shield Services Benefit Plan-Super	PPO	0	0	\$100/day, \$500	\$20/\$30	0	0	\$30	\$10	\$25	\$75 or 50%	\$104	\$254
	Non PPO	\$250	0	\$000	20%	30%	30%	20%	45%	45%	45%	45%L	45%L
Blue Cross and Blue Shield Services Benefit Plan-Std	PPO	\$250	0	\$100	10%	0	0	10%	25%	25%	25%	\$10-M/20% I	\$35-M/20% I
	Non PPO	\$250	0	\$000	20%	30%	30%	20%	45%	45%	45%	45%L	45%L
GEHA Benefit Plan-High	PPO	\$380	0	0	10%	0	10%	10%	\$5/50%	\$15/\$30/50%	\$15/\$30/50%	\$10	\$20/\$20
	Non PPO	\$300	0	0	25%	0	25%	25%	\$7 or 50%	\$15/\$30/50%	\$15/\$30/50%	\$10	\$35/\$50
GEHA Benefit Plan-Std	PPO	\$450	0	0	15%	15%	15%	15%	\$5	50%	50%	\$15	50%
	Non PPO	\$450	0	0	30%	30%	30%	30%	\$5+	50%+	50%+	\$15	50%
Midwest Healthcare	PPO	\$700	\$700	0	10%	0	0	10%	25%	25%	25%	\$10	\$10
	Non PPO	\$200	\$250	\$250	30%	0	0	30%	50%	50%	50%	\$10	\$45
Midwest Health-Std	PPO	\$200	\$000	\$150	10%	0	0	10%	30%	30%	30%	\$10	\$40

See page xxi for detailed descriptions of the rating scales

## 6:7 Use Moderate White Space

**Guideline:** Limit the amount of white space (areas without text, graphics, etc.) on pages that are used for scanning and searching.

**Comments:** 'Density' is the percentage of the screen filled with text and graphics. One study found that higher density is related to faster scanning, and has no impact on user accuracy or preference. Another study found that users prefer moderate amounts of white space, but the amount of white space has no impact on their searching performance. On content (i.e., text) pages, use some white space to separate paragraphs. Too much separation of items on Web pages may require users to scroll unnecessarily.

**Sources:** Chaparro and Bernard, 2001; Parush, Nadir and Shtub, 1998; Spool, et al., 1997; Staggers, 1993; Tullis, 1984.

**Example:** This page facilitates user's ability to scan for information by limiting the amount of white space.

Relative Importance:  
  
 Strength of Evidence:

US Department of Energy  
**Seattle Regional Office**

**What We Do**  
 Building Technology, State and Community Programs

**Who We Are**  
 Rebuild America  
 Provides communities with assistance to create partnerships to help achieve their energy-related objectives. Primary focus is commercial and public facilities, public housing, and multi-family dwellings. Contact: richard.putnam@ee.doe.gov, or (206) 553-2165.

**What We Do**  
 Building Energy Codes Program  
 Supports upgrade of state building energy codes across the country. The DOE provides technical assistance, financial assistance, tools, and training to help in this effort. Contact: molly.dwyer@ee.doe.gov, or (206) 553-7837.

**Regional Partners**  
 State Energy Programs  
 Provides financial assistance to state energy and territorial offices to support the delivery of energy efficiency and renewable energy products and services. Contact: laurie.brown@ee.doe.gov, or (206) 553-2158.

**Calendar of Events**  
 Weatherization Assistance Program  
 Provides financial assistance to local agencies through the states and territories for the weatherization of low-income households. Contact: carole.gates@ee.doe.gov, or (206) 553-1165.

**Funding and Grant Links**  
 Federal Energy Management Program  
 Assists federal agencies in reducing energy and water use in their buildings and operations. The program includes technical assistance and help for agencies in using energy-saving performance contracts. Some program materials advise federal agencies on energy-saving measures that are transferable to state and local facilities. Contact: arun.jhaveri@ee.doe.gov, (206) 553-2152 or cheri.saveri@ee.doe.gov, (206) 553-7838.

**Our Staff**  
 Industrial Technologies Programs  
 Provide free energy and environmental audits at 30 universities across the country for small and medium industries. Industries benefit by receiving recommendations on controlling costs and improving energy efficiency, as well as opportunities for productivity improvements and waste reduction. Contact: Charles Glaser, (202) 586-1298.

### 6:8 Align Items on a Page

**Guideline:** Visually align page elements, either vertically or horizontally.

**Comments:** Users prefer consistent alignments for items such as text blocks, rows, columns, check boxes, radio buttons, data entry fields, etc. Use consistent alignments across all Web pages.

**Sources:** Ausubel, 1968; Bailey, 1996; Esperet, 1996; Fowler, 1998; Lawless and Kulikowich, 1996; Marcus, Smilonich and Thompson, 1995; Mayer, Dyck and Cook, 1984; Parush, Nadir and Shtub, 1998; Spyridakis, 2000; Trollip and Sales, 1986; Voss, et al., 1986; Williams, 1994; Williams, 2000.

**Example:** The design of these list columns makes them extremely difficult to scan, and thus will slow users' attempts to find information.

Relative Importance:  
  
 Strength of Evidence:

critical technologies related to weapons of mass destruction. We have developed computerized information systems for use within the US government that allow rapid dissemination of accurate information needed for export control and policy decisions.

NIS-8 also studies critical technologies that could impact the energy, economic, environmental, or military security of the United States.

NIS-8 expertise includes, but is not limited to, the following:

- Nuclear materials production processes.
- Materials protection, control, and accountability (MPC&A).
  - Nuclear weapon design, production, and testing.
  - Chemistry and materials science.
- Stockpile surveillance.
- Imagery and multispectral analyses.
- Advanced energy technologies.

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These columns are horizontally aligned, allowing the information to fall easily to the eye.

See page xxi for detailed descriptions of the rating scales

### 6:9 Choose Appropriate Line Lengths

Relative Importance:  
  
 Strength of Evidence:

**Guideline:** If reading speed is most important, use longer line lengths (75-100 characters per line). If acceptance of the website is most important, use shorter line lengths (fifty characters per line).

**Comments:** When designing, first determine if performance or preference is most important. Users read faster when line lengths are long. However, they tend to prefer shorter line lengths, even though reading shorter lines generally slows overall reading speed. One study found that line lengths of about twenty characters reliably slowed reading speed.

When space for text display is limited, display a few longer lines of text rather than many shorter lines of text. Always display continuous text in columns containing at least fifty characters per line.

Research done using a paper-based document found that medium line length was read fastest.

**Sources:** Duchnicky and Kolers, 1983; Dyson and Haselgrove, 2000; Dyson and Haselgrove, 2001; Dyson and Kipping, 1998; Evans, 1998; Paterson and Tinker, 1940b; Rehe, 1979; Smith and Mosier, 1986; Tinker and Paterson, 1929; Tullis, 1988; Youngman and Scharff, 1999.

**Example:** Formatting text into narrow columns with very short line lengths will slow users' reading speeds.

**About Us**  
 Learn more about our history, mission and members. You can also "meet" our NEW Board of Directors, and our advisors in this section. If you are interested in learning more about us, please see how to contact us here.

**Community**  
 Our community is international in scope and we encourage the open discussion of viewpoints. Enter here if you wish to become a member or a sponsor or learn about our

**Content**  
 Over the years, we have developed a body of knowledge and opinions from thought leaders in the areas of online privacy, ethics and the use of technology to improve health care. In this area you

**Ethics**  
 Since 1999 the Coalition has been actively involved in developing guidelines for the ethical use of the Internet in health care. Here you can find information about our eHealth

**Interagency Working Group on Assistive Technology Mobility Devices**  
**Memorandum for the Secretary of Education, Health and Human Services, Labor, and the Commissioner of Social Security**

When President George H. W. Bush signed the Americans with Disabilities Act of 1990, America opened its door to a new age for people with disabilities. Although much progress has been made since then, significant challenges remain for individuals with disabilities who seek full participation in American society.

My Administration is committed to increasing education and employment opportunities for individuals with disabilities. My New Freedom initiative strives to provide people with disabilities increased opportunities to lead more independent lives by expanding education and job opportunities, and by ensuring that the latest technologies, which often make education and employment possible, are readily available.

Often, individuals with disabilities require assistive technology mobility devices such as powered wheelchairs and scooters in order to access education, training, and competitive employment. While there are several Federal programs, as well as state and local efforts, that help individuals with disabilities obtain these and other assistive technologies, they are not adequately coordinated. Other Federal programs provide funding of assistive technology mobility devices for medical purposes, but

Formatting text like this—roughly 100 characters per line—elicits faster reading speeds.

## 6:10 Avoid Scroll Stoppers

Relative Importance:

12000

Strength of Evidence:

12340

**Guideline:** Ensure that the location of headings and other page elements does not create the illusion that users have reached the top or bottom of a page when they have not.

**Comments:** In one study, three headings were positioned in the center of a page below a section of introductory text—the headings were located about one inch below the navigation tabs. When users scrolled up the page from the bottom and encountered these headings, they tended to stop, thinking the headings indicated the top of the page.

Similarly, users have been found to not scroll to the true bottom of a page to find a link because they encountered a block of text in a very small font size. This small type led users to believe that they were at the true bottom of the page. Other elements that may stop users' scrolling include horizontal lines, inappropriate placement of 'widgets,' and cessation of background color.

**Sources:** Bailey, Koyani and Nall, 2000; Ivory, Sinha and Hearst, 2000; Marshall, Drapeau and DiSciullo, 2001; Nygren and Allard, 1996; Spool, Klee and Schroeder, 2000; Spool, et al., 1997.

**Example:** When scrolling up the page, the design of this header (bold, shadowed, and bordered by bars) might suggest that the user has reached the top of the page, when a quick look at the scroll bar will indicate that much of the page exists above this section.

