The Patient Education Materials Assessment Tool (PEMAT) and User's Guide

An Instrument To Assess the Understandability and Actionability of Print and Audiovisual Education Materials

(Version 1.0)

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Prevention & Chronic Care Program
IMPROVING PRIMARY CARE

The Patient Education Materials Assessment Tool (PEMAT) and User's Guide

An Instrument To Assess the Understandability and Actionability of Print and Audiovisual Patient Education Materials (Version 1.0)

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An Introduction to the Patient Education Materials Assessment Tool (PEMAT) and User's Guide

What Is the PEMAT?

The Patient Education Materials Assessment Tool (PEMAT) is a systematic method to evaluate and compare the *understandability* and *actionability* of patient education materials. The following are our definitions of understandability and actionability:

- **Understandability:** Patient education materials are *understandable* when consumers of diverse backgrounds and varying levels of health literacy can process and explain key messages.
- **Actionability:** Patient education materials are *actionable* when consumers of diverse backgrounds and varying levels of health literacy can identify what they can do based on the information presented.

Using an inventory of both desirable and undesirable characteristics of patient education materials, the PEMAT produces separate numeric scores for understandability and actionability.

There are two versions of the PEMAT:

1. **PEMAT-P** for printable materials (e.g., brochures, pamphlets, PDFs), consisting of 17 items measuring understandability and 7 items measuring actionability.
2. **PEMAT-A/V** for audiovisual materials (e.g., videos, multimedia materials), consisting of 13 items measuring understandability and 4 items measuring actionability.

While most items are relevant to both printable and audiovisual materials, some items are applicable to only one type of materials. This Guide reviews all 19 items that measure understandability and 7 items that assess actionability. Items are marked (P) to indicate a characteristic pertaining to printable materials and (A/V) to indicate a characteristic pertaining to audiovisual materials.

The numbering of the items in the PEMAT-P and PEMAT-A/V are not consecutive because each version skips items that are not relevant. The PEMAT-P includes items 1–12 and 15–19 for understandability and items 20–26 for actionability. The PEMAT-A/V includes items 1, 3–5, 8–14, and 18–19 for understandability and 20–22 and 25 for actionability. You can find PEMAT-P on page 51 of this Guide and PEMAT-A/V on page 55.

If you have Excel, you can also use the PEMAT Auto-Scoring Form, a form that will automatically calculate PEMAT scores once you enter your ratings. You can find the **PEMAT Auto-Scoring Form** at: http://www.ahrq.gov/professionals/prevention-chronic-care/improve/self-mgmt/pemat/pemat_form.xls.

The PEMAT is not a guide on how to design and write patient education resources. You can find such resources on the Department of Health and Human Services' Health Literacy Tools page at http://www.health.gov/communication/literacy/#tools.

Who Should Use the PEMAT?

The PEMAT was designed to be completed by professionals, including health care providers, health librarians, and others tasked with providing high-quality materials to patients or consumers. The PEMAT helps you select from the many patient education materials available to determine those that are easier to understand and easier to act on. Materials that score better on the PEMAT can be distributed to patients and consumers in hard copy, placed in an electronic health record (EHR) system for providers to access at the point of care, or posted on patient Web portals.

If more than one individual will be rating materials, you can maximize consistency among raters by following this process:

1. Have each rater independently rate the same two materials.
2. Identify items on which discrepancies were common.
3. Discuss each rater's rationale for the rating provided.
4. Review the PEMAT User's Guide to clarify how each item was intended to be rated.
5. Come to consensus on how the guidance in the User's Guide should be implemented in practice.
6. Repeat this process with additional materials until there is agreement on most items.

Can the PEMAT Be Used To Assess All Patient Education Materials?

No. The PEMAT can be used only for printable and audiovisual materials. (See definitions below.) For example, the PEMAT cannot be used for podcasts or to assess the user friendliness of Web sites (only materials that can be printed or viewed from a Web site).

Are All Materials With High PEMAT Scores High Quality?

Not necessarily. The PEMAT does not assess accuracy or comprehensiveness or perform readability tests. For example, a material could be very understandable but contain inaccurate information. You will want to supplement the PEMAT with additional assessments.

We recommend conducting a readability assessment for print materials in conjunction with using the PEMAT. Using only a readability formula, however, is not a substitute for using the PEMAT. Readability formulas ignore many of the factors that contribute to comprehension and can be misleading.[i]

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[i] Readability formulas use metrics such as the number of syllables in words and sentence length to determine approximate grade levels. To learn about the advantages and disadvantages of readability formulas and to choose a readability formula to use in conjunction with the PEMAT, you can consult "Part 7- Using readability formulas: A cautionary note" in "Toolkit for Making Written Material Clear and Effective," available at http://www.cms.gov/Outreach-and-Education/Outreach/WrittenMaterialsToolkit/Downloads/ToolkitPart07.pdf.

While the PEMAT has been subject to substantial testing, there is no guarantee that a material that scores well on the PEMAT will be effective with your patient population. To be sure that materials are appropriate, test them with some of your patients.[ii]

How Was the PEMAT Developed?

The PEMAT was developed under contract to the Agency for Healthcare Research and Quality by a research team working with a panel of experts in health literacy, content creation, patient education, and communication. PEMAT items were based on items from existing instruments and concepts in guides to assess and develop patient education materials.

Four rounds of reliability testing and refinement were conducted using raters who were not trained in the use of the PEMAT. Consumer testing and comparisons with readability assessments were used to determine construct validity, that is, whether the PEMAT was in fact measuring understandability and actionability. The PEMAT demonstrated strong internal consistency, reliability among raters, and evidence of construct validity. For more information about the reliability and validity of the PEMAT, see the article "Development of the Patient Education Materials Assessment Tool (PEMAT): a new measure of understandability and actionability for print and audiovisual patient information" at http://www.sciencedirect.com/science/article/pii/S073839911400233X.

What Terms Are Used in This Guide?

Below are definitions of some terms used in this Guide that you may not be familiar with. We have also provided some visual examples. Please note that the health information presented in this Guide should not be taken as medical advice nor construed as up to date or accurate medical information. The information, graphs, tables, and visual aids are only for illustration purposes.

Action: An action is a recommended behavior or instruction.

Audiovisual (A/V) materials include a *visual* component that may be accompanied by a *sound* component, such as a video or a multimedia material but not a podcast. Multimedia materials can include a combination of text, audio, still images, animation, video, or interactive content. The following are examples of different types of audiovisual materials.

Example of a Video

[ii] For more information see "Toolkit Part 6: Feedback Sessions" in the "Toolkit for Making Written Material Clear and Effective." You can access this toolkit at http://www.cms.gov/Outreach-and-Education/Outreach/WrittenMaterialsToolkit/Toolkit-Part-6-Feedback-Sessions.html.

Taken from National Institutes of Health (NIH), Living With and Managing Asthma video, June 2011. http://www.nhlbi.nih.gov/health/health-topics/videos/living-with-and-managing-asthma.html

Example of Multimedia With Narration

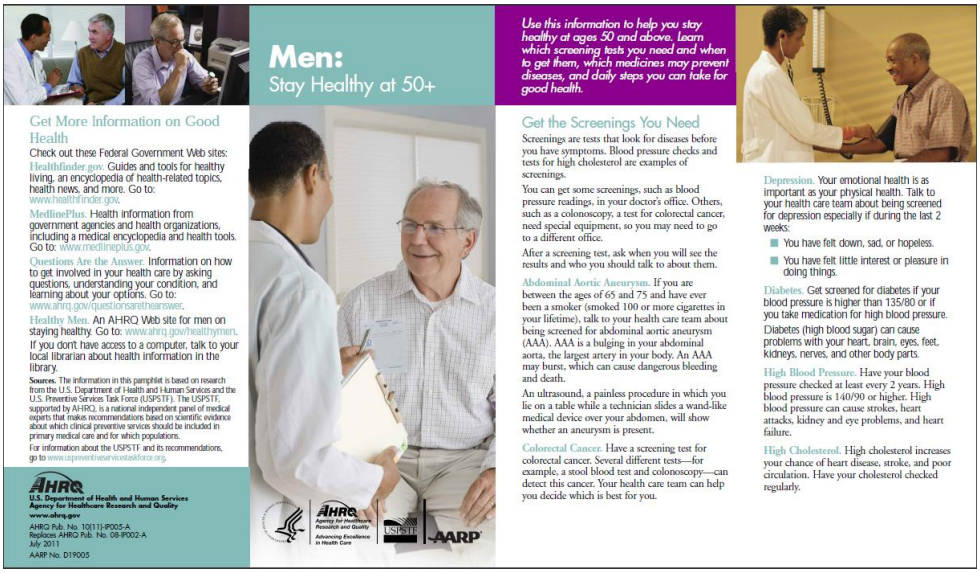
Taken from NIH MedlinePlus Interactive Tutorials, X-Plain Series, Asthma.
http://www.nlm.nih.gov/medlineplus/tutorials/asthma/htm/_no_50_no_0.htm

Example of Multimedia Without Narration

Taken from NIH Medline Plus, Metered Dose Inhaler Use image series, July 2012.
http://www.nlm.nih.gov/medlineplus/ency/presentations/100200_1.htm

Printed or printable materials include printed booklets, brochures, and materials that can be printed from Web sites (e.g., PDFs or html text). The following are examples.

Example of a Brochure



Men:
Stay Healthy at 50+

Use this information to help you stay healthy at ages 50 and above. Learn which screening tests you need and when to get them, which medicines may prevent diseases, and daily steps you can take for good health.

Get More Information on Good Health

Check out these Federal Government Web sites:

Healthfinder.gov. Guides and tools for healthy living, an encyclopedia of health-related topics, health news, and more. Go to: www.healthfinder.gov.

MedlinePlus. Health information from government agencies and health organizations, including a medical encyclopedia and health tools. Go to: www.medlineplus.gov.

Questions Are the Answer. Information on how to get involved in your health care by asking questions, understanding your condition, and learning about your options. Go to: www.ahrq.gov/questionsarethanswer.

Healthy Men. An AHRQ Web site for men on staying healthy. Go to: www.ahrq.gov/healthymen.

If you dont have access to a computer, talk to your local librarian about health information in the library.

Sources. The information in this pamphlet is based on research from the U.S. Department of Health and Human Services and the U.S. Preventive Services Task Force (USPSTF). The USPSTF, supported by AHRQ, is a national independent panel of medical experts that makes recommendations based on scientific evidence about which clinical preventive services should be included in primary medical care and for which populations.

For information about the USPSTF and its recommendations, go to www.uspreventiveservicestaskforce.org.

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Replaces AHRQ Pub. No. 08-IP002-A
July 2011
AARP No. D19005

Get the Screenings You Need

Screenings are tests that look for diseases before you have symptoms. Blood pressure checks and tests for high cholesterol are examples of screenings.

You can get some screenings, such as blood pressure readings, in your doctor's office. Others, such as a colonoscopy, a test for colorectal cancer, need special equipment, so you may need to go to a different office.

After a screening test, ask when you will see the results and who you should talk to about them.

Abdominal Aortic Aneurysm. If you are between the ages of 65 and 75 and have ever been a smoker (smoked 100 or more cigarettes in your lifetime), talk to your health care team about being screened for abdominal aortic aneurysm (AAA). AAA is a bulging in your abdominal aorta, the largest artery in your body. An AAA may burst, which can cause dangerous bleeding and death.

An ultrasound, a painless procedure in which you lie on a table while a technician slides a wand-like medical device over your abdomen, will show whether an aneurysm is present.

Colorectal Cancer. Have a screening test for colorectal cancer. Several different tests—for example, a stool blood test and colonoscopy—can detect this cancer. Your health care team can help you decide which is best for you.

Depression. Your emotional health is as important as your physical health. Talk to your health care team about being screened for depression especially if during the last 2 weeks:

- You have felt down, sad, or hopeless.
- You have felt little interest or pleasure in doing things.

Diabetes. Get screened for diabetes if your blood pressure is higher than 135/80 or if you take medication for high blood pressure.

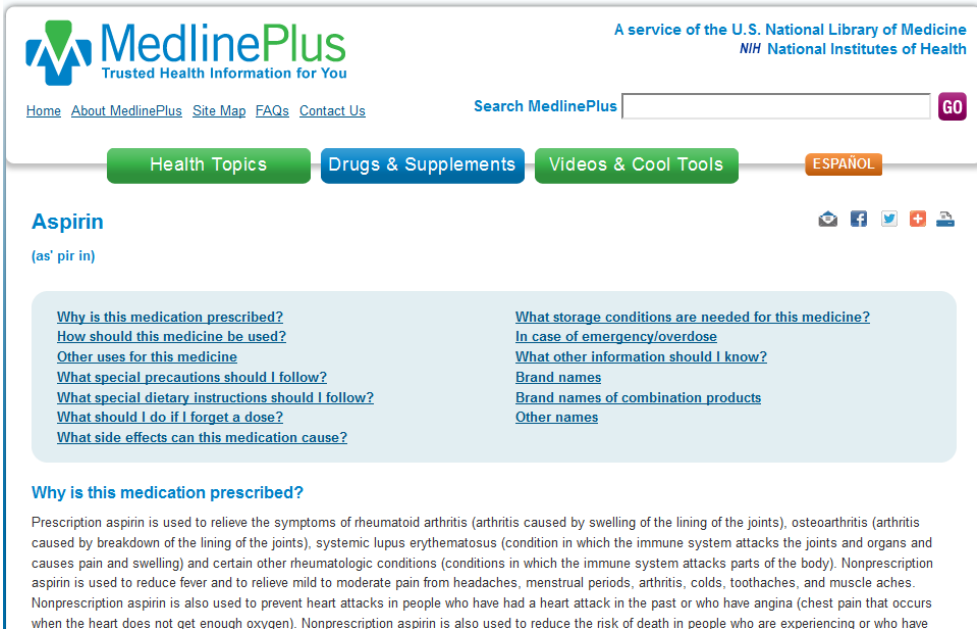
Diabetes (high blood sugar) can cause problems with your heart, brain, eyes, feet, kidneys, nerves, and other body parts.

High Blood Pressure. Have your blood pressure checked at least every 2 years. High blood pressure is 140/90 or higher. High blood pressure can cause strokes, heart attacks, kidney and eye problems, and heart failure.

High Cholesterol. High cholesterol increases your chance of heart disease, stroke, and poor circulation. Have your cholesterol checked regularly.

Taken from AHRQ Stay Healthy brochure series, Men Stay Healthy at 50+, July 2011.
http://www.ahrq.gov/ppip/men50.pdf

Example of Printable Web Material



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Aspirin

(as' pir in)

Why is this medication prescribed?
How should this medicine be used?
Other uses for this medicine
What special precautions should I follow?
What special dietary instructions should I follow?
What should I do if I forget a dose?
What side effects can this medication cause?
What storage conditions are needed for this medicine?
In case of emergency/overdose
What other information should I know?
Brand names
Brand names of combination products
Other names

Why is this medication prescribed?

Prescription aspirin is used to relieve the symptoms of rheumatoid arthritis (arthritis caused by swelling of the lining of the joints), osteoarthritis (arthritis caused by breakdown of the lining of the joints), systemic lupus erythematosus (condition in which the immune system attacks the joints and organs and causes pain and swelling) and certain other rheumatologic conditions (conditions in which the immune system attacks parts of the body). Nonprescription aspirin is used to reduce fever and to relieve mild to moderate pain from headaches, menstrual periods, arthritis, colds, toothaches, and muscle aches. Nonprescription aspirin is also used to prevent heart attacks in people who have had a heart attack in the past or who have angina (chest pain that occurs when the heart does not get enough oxygen). Nonprescription aspirin is also used to reduce the risk of death in people who are experiencing or who have

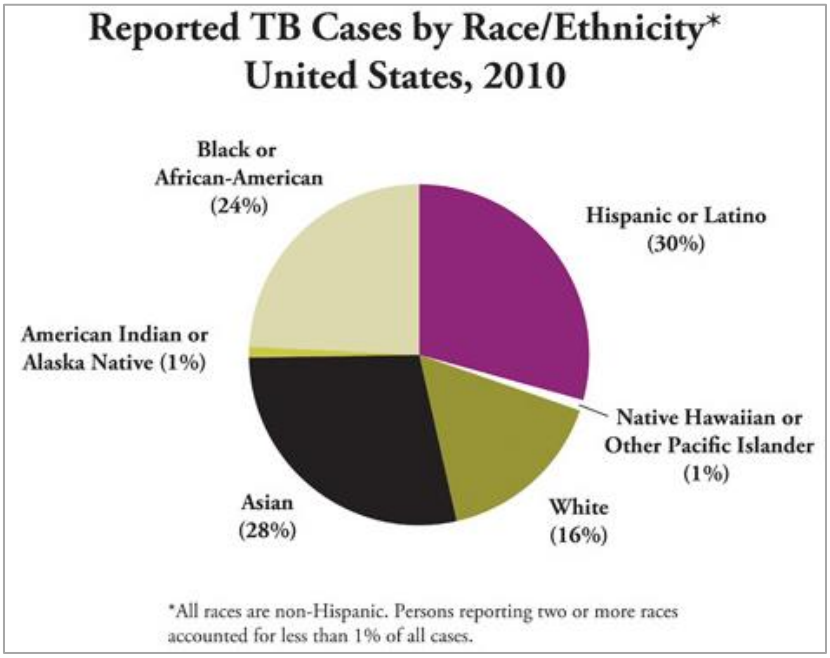
Taken from MedlinePlus, Aspirin.
http://www.nlm.nih.gov/medlineplus/druginfo/meds/a682878.html

Very Short Material: A very short material is defined as follows:

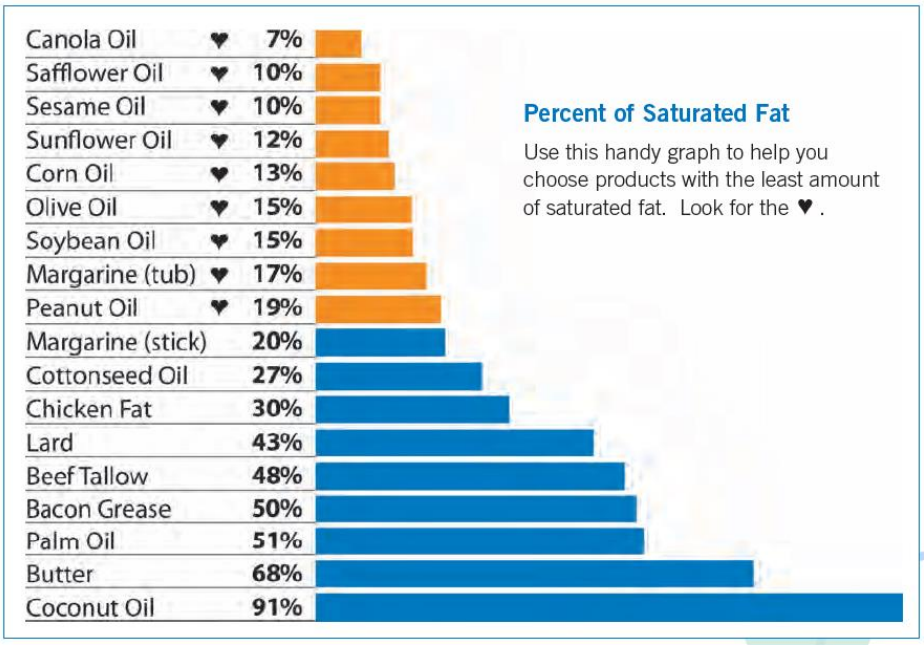
- **Printable (P):** A material with two or fewer paragraphs and no more than 1 page in length.
- **Audiovisual (A/V):** A video or multimedia presentation that is under 1 minute, or a multimedia material that has 6 or fewer slides or screenshots.

Visual Aids: The following are examples of the different types of visual aids you may encounter in patient education materials and be asked to assess: graphs, tables, charts, diagrams, and pictures.

Examples of Graphs



Taken from Centers for Disease Control and Prevention (CDC), TB Elimination: Now Is the Time! February 2012.
http://www.cdc.gov/tb/publications/pamphlets/nowisthetime/pdfs/nowisthetime.pdf



Taken from NIH We Can! Campaign, Fats and Oils To Choose.
http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/downloads/tip-fats-and-oils.pdf

Example of a Table

What blood pressure levels are healthy?

To determine whether your blood pressure is normal, your doctor examines your systolic and diastolic pressures, which the gauge measures in millimeters of mercury (abbreviated as mmHg).

	Blood Pressure Levels
Normal	systolic: less than 120 mmHg diastolic: less than 80 mmHg
At risk (prehypertension)	systolic: 120–139 mmHg diastolic: 80–89 mmHg
High	systolic: 140 mmHg or higher diastolic: 90 mmHg or higher

Taken from CDC Know the Facts About Patient Education Series, High Blood Pressure.
http://www.cdc.gov/bloodpressure/docs/ConsumerEd_HBP.pdf

Example of a Chart

Body Mass Index

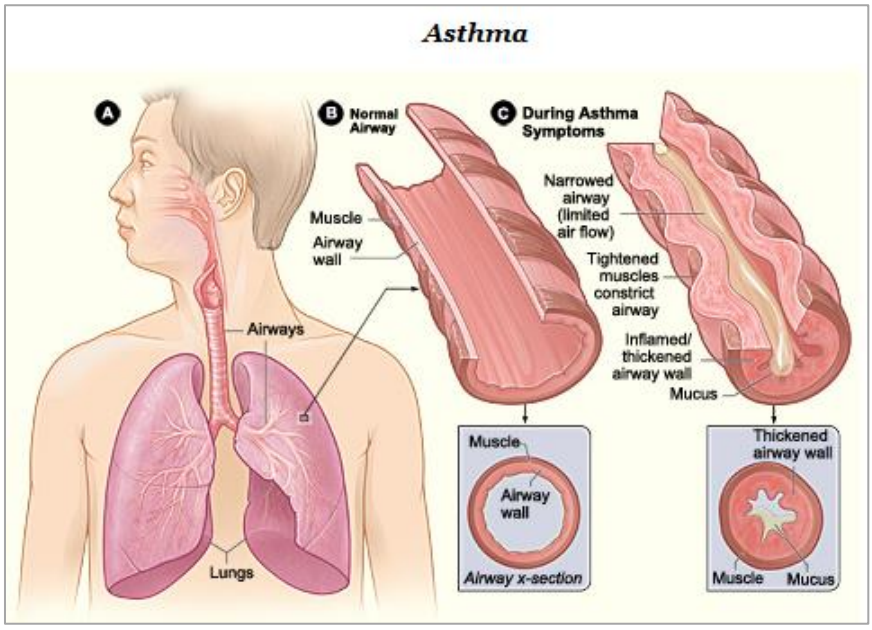
Here is a chart for men and women that gives the BMI for various heights and weights.*

BODY MASS INDEX											
	21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
4'10"	100	105	110	115	119	124	129	134	138	143	148
5'0"	107	112	118	123	128	133	138	143	148	153	158
5'1"	111	116	122	127	132	137	143	148	153	158	164
5'3"	118	124	130	135	141	146	152	158	163	169	175
5'5"	126	132	138	144	150	156	162	168	174	180	186
5'7"	134	140	146	153	159	166	172	178	185	191	198
5'9"	142	149	155	162	169	176	182	189	196	203	209
5'11"	150	157	165	172	179	186	193	200	208	215	222
6'1"	159	166	174	182	189	197	204	212	219	227	235
6'3"	168	176	184	192	200	208	216	224	232	240	248

* *Weight is measured with underwear but no shoes.*

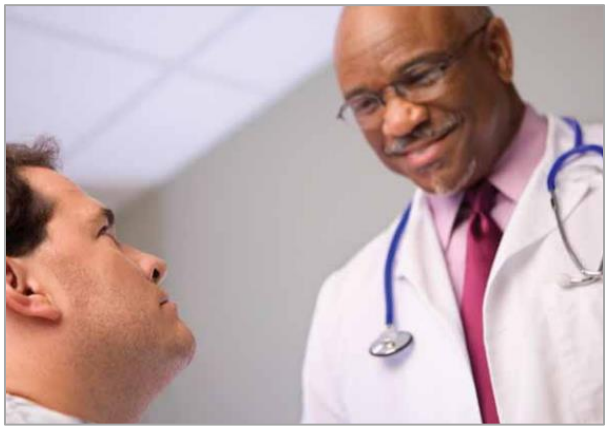
Taken from NIH, The Healthy Heart Handbook for Women, February 2012.
http://www.nhlbi.nih.gov/educational/hearttruth/downloads/html/hhh/overweight-and-obesity.htm

Example of a Diagram



Taken from NIH, Explore Asthma, June 2012.
http://www.nhlbi.nih.gov/health/health-topics/topics/asthma/

Example of a Picture



Taken from AHRQ Effective Health Care (EHC) Program, Treating Sleep Apnea: A Review of the Research for Adults.
http://www.effectivehealthcare.ahrq.gov/ehc/products/117/684/sleep_ap_consumer.pdf

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How To Use the PEMAT To Assess a Material

There are seven steps to using the PEMAT to assess a patient education material. The instructions below assume that you will be scoring the PEMAT using paper and pen. If you use the **PEMAT Auto-Scoring Form,** a form that will automatically calculate PEMAT scores once you enter your ratings, you can skip Step 5. The form is available at: http://www.ahrq.gov/professionals/prevention-chronic-care/improve/self-mgmt/pemat/index.html.

Step 1: Read through the PEMAT and User's Guide. Before using the PEMAT, read through the entire User's Guide and instrument to familiarize yourself with all the items. In this User's Guide a (P) and (A/V) are listed after an item to indicate whether it is relevant for print and audiovisual materials, respectively.

Step 2: Read or view patient education material. Read through or view the patient education material that you are rating in its entirety.

Step 3: Decide which PEMAT to use. Choose the PEMAT-P for printable materials or the PEMAT-A/V for audiovisual materials.

Step 4: Go through each PEMAT item one by one. All items will have the response options "Disagree" or "Agree." Some—but not all—items will also have a "Not Applicable" answer option. Go one by one through each of the items, 24 for printable materials and 17 for audiovisual materials, and indicate if you agree or disagree that the material meets a specific criterion. Or, when appropriate, select the "Not Applicable" option.

You may refer to the material at any time while you complete the form. You don't have to rely on your memory. Consider each item from a patient perspective. For example, for "Item 1: The material makes its purpose completely evident," ask yourself, "If I were a patient unfamiliar with the subject, would I readily know what the purpose of the material was?"

Step 5: Rate the material on each item as you go. After you determine the rating you would give the material on a specific item, enter the number (or N/A) that corresponds with your answer in the "Rating" column of the PEMAT. Do not score an item as "Not Applicable" unless there is a "Not Applicable" option. Score the material on each item as follows:

If Disagree	Enter 0
If Agree	Enter 1
If Not Applicable	Enter NA

Additional Guidance for Rating the Material on Each Item (Step 5)

- Rate an item "Agree" when a characteristic occurs throughout a material, that is, nearly all of the time (80% to 100%). Your guiding principle is that if there are obvious examples or times when a characteristic could have been met or could have been better met, then the item should be rated "Disagree." This User's Guide provides additional guidance for rating each item.

- Do not skip any items. If there is no “Not Applicable” option, you must score the item 0 (Disagree) or 1 (Agree).
- Do not use any knowledge you have about the subject before you read or view the patient education material. Base your ratings ONLY on what is in the material that you are rating.
- Do not let your rating of one item influence your rating of other items. Be careful to rate each item separately and distinctly from how you rated other items.
- If you are rating more than one material, focus only on the material that you are reviewing and do not try to compare it to the previous material that you looked at.

Step 6: Calculate the material’s scores. The PEMAT provides two scores for each material, one for understandability and a separate score for actionability. Make sure you have rated the material on every item, including indicating which items are Not Applicable (N/A). Except for Not Applicable (N/A) items, you will have given each item either 1 point (Agree) or 0 points (Disagree). To score the material, do the following:

- ***Sum the total points*** for the material on the understandability items only.
- ***Divide the sum by the total possible points,*** that is, the number of items on which the material was rated, excluding the items that were scored as Not Applicable (N/A).
- ***Multiply the result by 100*** and you will get a percentage (%). This percentage score is the understandability score on the PEMAT.

    - **Example:** If a print material was rated Agree (1 point) on 12 understandability items, Disagree (0 points) on 3 understandability items, and N/A on one understandability item (N/A), the sum would be 12 points out of 15 total possible points (12 + 3, excluding the N/A item). The PEMAT understandability score is 0.8 (12 divided by 15) multiplied by 100 = 80%.

To score the material on actionability, repeat Step 6 for the actionability items.

Step 7: Interpret the PEMAT scores. The higher the score, the more understandable or actionable the material. For example, a material that receives an understandability score of 90% is more understandable than a material that receives an understandability score of 60%, and the same goes for actionability. If you use the PEMAT to rate the understandability and actionability of many materials, you may get a sense of what score indicates exceptionally good or exceptionally poor materials.

DOMAIN: UNDERSTANDABILITY

TOPIC: **CONTENT**

Item 1: **The material makes its purpose completely evident** (P and A/V)

The material makes its purpose completely evident

Disagree = 0 *Agree = 1*

EXPLANATION

Printable materials: The material uses a title or upfront text that clearly tells you at a glance what the material is about. If the material uses a generic statement (e.g., this material will help you be informed about your condition) instead of a statement(s) that reflects the specific purpose of the material, you should choose "Disagree."

Audiovisual materials: The A/V material's title makes it clear what the material is about, or at the beginning of the material the narrator or the displayed text makes it clear what the material is about.

EXAMPLES

Material Titles

CHOOSE "AGREE" – Purpose is completely evident from title: What will happen during your mammogram

CHOOSE "DISAGREE" – Purpose is *not* completely evident from title: Mammograms and You

Statements in a Printable or Audiovisual Material

These statements may be text in a printable material or on a screen or slide in an audiovisual material, or they can be stated orally in an audiovisual material.

CHOOSE "AGREE" – Purpose is completely evident from a statement (written or oral) at the beginning of a material: This material will help you understand what prediabetes is and how you can manage it with diet and exercise.

CHOOSE "DISAGREE" – Purpose is *not* completely evident from a statement (written or oral) at the beginning of a material: This material will help you stay healthy.

Item 2: The material does not include information or content that distracts from its purpose (P)

The material does not include information or content that distracts from its purpose

Disagree = 0 *Agree = 1*

EXPLANATION

The material's content is focused and relevant to its purpose, and no information distracts or detracts from the material's purpose. Only essential information is included; extra information is left out so as not to overwhelm the audience with too much or unnecessary content.

EXAMPLES

The following are examples of potentially distracting information or content:

- Excessive detail about the equipment used for a procedure that distracts from the material's purpose.
- Excessive detail about other procedures or treatments that are not related to the material's purpose.
- Extensive description of the background or epidemiology of a disease or chronic condition that ultimately distracts from the material's purpose.

TOPIC: **WORD CHOICE & STYLE**

Item 3: **The material uses common, everyday language** (P and A/V)

The material uses common, everyday language

Disagree = 0 *Agree = 1*

EXPLANATION

The material should use common, everyday language that would be easy to understand for most consumers or patients nearly all of the time. Jargon (i.e., technical language) should not be used.

If the material includes abbreviations or acronyms, they should be spelled out or defined the first time they are used. If the material uses more than a few abbreviations or acronyms, even if they are spelled out, the material will be difficult to understand and you should disagree with this item. However, when spelling out an acronym is not helpful, such as certain medical tests or imaging technologies like CT or CAT scan (computed tomography or computer axial tomography), you should not disagree solely for use of this type of acronym.

EXAMPLES

The following are examples of common, everyday language:

- Runny nose (not *excess mucus*)
- Pain killer (not *analgesic*)
- Doctor (not *physician*)
- Send you to another doctor (not *referral*)
- Enough (not *sufficient*)
- Swelling (not *inflammation*)
- Helpful (not *beneficial*)
- Use (not *utilize*)
- Come back (not *recur)*
- Make worse (not *exacerbate*)
- Feverish (not *febrile*)
- Make easier (not *facilitate*)
- Watch (not *observe*)
- Hole (not *perforation*)
- Deadly (not *terminal*)

Item 4: Medical terms are used only to familiarize audience with the terms. When used, medical terms are defined
(P and A/V)

Medical terms are used only to familiarize audience with the terms. When used, medical terms are defined

Disagree = 0 *Agree = 1*

EXPLANATION

The material should not use medical terms except to educate the audience about the medical terms. When medical terms are used they are explained. The explanation of a medical term should also be easy to understand. Hypertext definitions (text displayed on a computer or a Web site with references via hyperlinks to other text that the reader can access by a mouse click or by touching the screen) are not adequate as the sole means of providing explanations. Consumers may be confused by, and unable to follow, hyperlinks. It is acceptable, however, if hypertext or hyperlinks are simply one technique used among others to make a term understandable.

Even when there are not obvious plain language substitutes for a medical term, a material that uses medical terms will not be easily understood. You should disagree with this item if the material uses medical terms other than to introduce them.

EXAMPLES

Medical Terms

- Medical procedures (e.g., colonoscopy, endoscopy, mammogram)
- Medical devices (e.g., nebulizer, glucometer)
- Drug classes (e.g., benzodiazepines, bronchodilators)
- Conditions (e.g., hypertension, atherosclerosis, myocardial infarction)

CHOOSE "AGREE"

You can have high blood pressure (hypertension) for years without any symptoms. Uncontrolled high blood pressure increases your chances of serious health problems, including heart attack and stroke.

CHOOSE "AGREE"

A heart attack occurs when blood flow to a part of your heart is blocked for a long time and part of the heart muscle is damaged or dies. The medical term for this is myocardial infarction.

Item 5: **The material uses the active voice** (P and A/V)

The material uses the active voice

Disagree = 0 *Agree = 1*

EXPLANATION

The material should almost always use the active voice. If the material uses the passive voice in a single instance, but overall uses active voice you should agree with this item."

The active voice is preferable to the passive voice because it is easier to understand. The active voice is when the subject performs the action it expresses (e.g., the nurse will give you the medication). The passive voice is when the subject is acted upon by the verb (e.g., you will be given the medication by the nurse). Remember, voice (i.e., active and passive) can have different tenses (e.g., past, present, future) and forms (i.e., indicative, imperative and subjunctive).

EXAMPLES

CHOOSE "AGREE" – Active voice: Take your medicine with a full glass of water.
CHOOSE "DISAGREE" – Passive voice: This medicine should be taken with a full glass of water.

CHOOSE "AGREE" – Active voice: If you see redness, see your health care provider.
CHOOSE "DISAGREE" – Passive voice: If redness is observed, the patient should see a health care provider.

CHOOSE "AGREE" – Active voice: The patient visits the heart specialist after a heart attack.
CHOOSE "DISAGREE" – Passive voice: The patient is seen by the heart specialist after a heart attack.

TOPIC: **USE OF NUMBERS**

Item 6: Numbers appearing in the material are clear and easy to understand (P)

Numbers appearing in the material are clear and easy to understand

Disagree = 0 *Agree = 1* *No numbers = N/A*

NOT APPLICABLE

Choose N/A if the material has no numbers.

EXPLANATION

As a general rule, a material should use numbers only as needed. When numbers are used, they should be clear and easy to understand. There is no hard and fast rule about what to avoid (e.g., fractions, percentages), but in general, expressing probabilities as frequencies (e.g., 1 out of 10,000) instead of percentages (e.g., 0.01%) is easier to understand.

Similarly, it may be helpful to explain the numbers qualitatively alongside the number (e.g., very few people—1 out of 10,000 people who have this condition—will experience this symptom), but they should generally not be used in place of numbers.

Note: Time and dates should not be considered numbers for this item.

EXAMPLES

CHOOSE "AGREE" – Easy to understand: There's a very small chance that you could have a heart attack because you take this medicine. Out of 10,000 people taking this medicine, no more than 3 of them will have a heart attack.

CHOOSE "DISAGREE" – Hard to understand: The risk of having a heart attack because you take this medicine is 0.029%.

CHOOSE "AGREE" – Easy to understand: Take 1 pill in the morning and 1 pill at night.

CHOOSE "DISAGREE" – Hard to understand: Take twice daily.

Item 7: The material does not expect the user to perform calculations (P)

The material does not expect the user to perform calculations

Disagree = 0 *Agree = 1*

EXPLANATION

A calculation is when the material asks the user to add, subtract, multiply or divide, or perform any other mathematical operation. Do not consider the following calculations: simple counting (e.g., count out 2 pills, hold your breath by counting to 10), simple references to time (e.g., wait 24 hours, brush your teeth for 2 minutes), or calendar-based information (e.g., in 1 week).

EXAMPLES

CHOOSE "AGREE" – The material does not expect the user to perform a calculation to determine his/her body mass index (BMI).

Body Mass Index Table 1

for BMI greater than 35, go to Table 2

To use the table, find the appropriate height in the left-hand column labeled Height. Move across to a given weight (in pounds). The number at the top of the column is the BMI at that height and weight.
Pounds have been rounded off.
Select the **PDF** version for better printing

BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Height (inches)	Body Weight (pounds)																
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287

Go to Table 2

Taken from National Heart, Lung, and Blood Institute, Body Mass Index Table 1.
http://www.nhlbi.nih.gov/guidelines/obesity/bmi_tbl.htm

CHOOSE "DISAGREE" – The material expects the user to perform a calculation to determine his/her BMI.

- To calculate your body mass index, multiply your weight by 703, and divide by the square of your height in inches.
- Call your doctor if your weight increases 2 pounds over a 2-day period or 5 pounds in 1 week.
- Add up the calories in a meal.

TOPIC: **ORGANIZATION**

Item 8: **The material breaks or "chunks" information into short sections** (P and A/V)

The material breaks or "chunks" information into short sections

Disagree = 0 *Agree = 1* *Very short material = N/A*

NOT APPLICABLE

Choose N/A if the material meets the definition of a very short material:

- **Printable (P):** A very short material is defined as a material with two or fewer paragraphs and no more than 1 page in length.
- **Audiovisual (A/V)**: A very short material is defined as a video or multimedia presentation that is under 1 minute or a multimedia material that has 6 or fewer slides or screenshots.

EXPLANATION

The material should break up information into sections or "chunks" of information that are relatively short to prevent information overload and to make the content easier to understand. Similarly, longer lists need to be broken into smaller chunks as well.

The audiovisual material should also be broken into "chunks," which can be accomplished with the narrator introducing a new section (e.g., now we're going to talk about X), or text or a screenshot to break up the information presented.

EXAMPLES

CHOOSE "AGREE" – Chunking	CHOOSE "DISAGREE" – No chunking
Understanding High Blood Sugar **Where blood sugar comes from…** Blood sugar comes from the food you eat and drink. **Why insulin is important…** Insulin turns blood sugar into energy—so you have more pep and don't feel tired all the time. **Why your blood sugar goes high…** When you don't have enough insulin, the sugar stays in your blood. Then your blood sugar goes higher than it should.	**Understanding Diabetes** Your body needs sugar for energy. It gets sugar from the food you eat and drink. The insulin your body makes helps turn blood sugar into energy. When your body does not make enough insulin, it cannot get energy from the sugar. Without insulin, the sugar stays in your blood. Then your blood sugar goes too high and you feel tired.

Taken from Pfizer, Principles for Clear Health Communication. 2nd Edition. http://aspiruslibrary.org/literacy/PfizerPrinciples.pdf. Used with permission.

CHOOSE "AGREE" – List broken into "chunks"	CHOOSE "DISAGREE" – Long list
Possible migraine triggers: • Certain foods eaten 24 hours before the attack – Aged cheese (such as cheddar, provolone) – Chocolate – Citrus fruits (such as oranges, grapefruit) – Nuts – Monosodium glutamate (MSG is often added to Asian food and some packaged foods) – Nitrites (found in preserved meats such as bacon, ham, and lunch meats) • Certain beverages drunk 24 hours before the attack – Alcohol (especially red wine) – Drinks with caffeine (such as coffee, tea, cola) • Changes in daily activities – Stress – Skipping meals – Too much/too little sleep – Travel to different altitudes • Hormonal changes – Menstruation – Pregnancy – Menopause	**Possible migraine triggers:** • Aged cheese (such as cheddar, provolone) • Chocolate • Citrus fruits (such as oranges, grapefruit) • Alcohol (especially red wine) • Caffeine: coffee, tea, cola • Nuts • Monosodium glutamate (MSG is often added to Asian food and some packaged foods) • Nitrites (found in preserved meats such as bacon, ham, and lunch meats) • Stress • Skipping meals • Too much/too little sleep • Travel to different altitudes • Menstruation • Pregnancy • Menopause

Taken from Pfizer, Principles for Clear Health Communication. 2nd Edition. http://aspiruslibrary.org/literacy/PfizerPrinciples.pdf. Used with permission.

Item 9: The material's sections have informative headers (P and A/V)

The material's sections have informative headers

Disagree = 0 *Agree = 1* *Very short material = N/A*

NOT APPLICABLE

Choose N/A if the material meets the definition of a very short material:

- **Printable (P):** A very short material is defined as a material with two or fewer paragraphs and no more than 1 page in length.
- **Audiovisual (A/V)**: A very short material is defined as a video or multimedia presentation that is under 1 minute or a multimedia material that has 6 or fewer slides or screenshots.

EXPLANATION

Headings should be specific and let the user know what to expect in that section.

EXAMPLES

CHOOSE "AGREE" – Informative header: Why you should wear your seatbelt
CHOOSE "DISAGREE" – Poor header: Seatbelts

CHOOSE "AGREE" – Informative header: Medicines for your diabetes
CHOOSE "DISAGREE" – Poor header: Medicines

CHOOSE "AGREE" – Informative header: Safe cooking temperatures
CHOOSE "DISAGREE" – Poor header: Temperatures

Item 10: The material presents information in a logical sequence (P and A/V)

The material presents information in a logical sequence

Disagree = 0 *Agree = 1*

EXPLANATION

The information in a material should be presented in an order that makes sense to the user. The information should build in a natural way. A logical sequence is not necessarily chronological, nor does it mean that you have to start with a background section. Main messages or most important ideas should be at the beginning of sections or lists because users tend to pay more attention to items mentioned first.

Item 11: **The material provides a summary** (P and A/V)

The material provides a summary

Disagree = 0 *Agree = 1* *Very short material = N/A*

NOT APPLICABLE

Choose N/A if the material meets the definition of a very short material:

- **Printable (P):** A very short material is defined as a material with two or fewer paragraphs and no more than 1 page in length.
- **Audiovisual (A/V)**: A very short material is defined as a video or multimedia presentation that is under 1 minute or a multimedia material that has 6 or fewer slides or 6 screenshots.

EXPLANATION

A material should have a summary of the key points or review the key points at the end of the material, either in writing or orally. The summary usually comes at the end of the material, but for a printable material a summary (e.g., summary box) at the beginning is fine. A checklist of key points (or steps) can also be considered a summary.

EXAMPLES

The following are good examples of materials providing summaries, whereas a bad material would not provide a summary.

CHOOSE "AGREE" - Multimedia material with a summary

Taken from CDC-TV video, National Center for Chronic Disease Prevention and Health Promotion, Finding Balance.
http://www.cdc.gov/CDCTV/findingbalance/

CHOOSE "AGREE" – Printable material with a summary

In summary:

- Learn the heart attack warning signs "by heart."
- Call 9-1-1 within five minutes of the start of symptoms. Talk with family and friends about the warning signs and the need to call 9-1-1 quickly.
- Write out a heart attack survival plan and keep copies handy. Be sure to tell those close to you where to find a copy. If necessary, arrange in advance to have someone care for your children or other dependents in an emergency.

Taken from NIH, The Heart Truth® for Women: If You Have Heart Disease, July 2006.
http://www.nhlbi.nih.gov/educational/hearttruth/downloads/pdf/factsheet-heartdisease.pdf

TOPIC: **LAYOUT & DESIGN**

Item 12: The material uses visual cues (e.g., arrows, boxes, bullets, bold, larger font, highlighting) to draw attention to key points (P and A/V)

The material uses visual cues (e.g., arrows, boxes, bullets, bold, larger font, highlighting) to draw attention to key points

Disagree = 0 *Agree = 1* *Video = N/A*

NOT APPLICABLE

Choose N/A if the material is a video. Rate other audiovisual materials.

EXPLANATION

Visual cues (e.g., arrows, boxes, bullets, bold, larger font, highlighting) help draw the user's attention to key points in a material. Visual cues should only be used for key points. If a material overuses visual cues (i.e., uses them indiscriminately), choose "Disagree."

EXAMPLES

The following are examples of visual cues.

Arrows

Always wear a hard hat at the job site.

Taken from CDC, Simply Put: A Guide for Creating Easy-To-Understand Materials. http://www.cdc.gov/healthliteracy/pdf/simply_put.pdf

Boxes

Remember—only a healthcare provider can read your TB skin test results the right way.

Taken from CDC, "What You Need To Know About the TB Skin Test," 2005.
http://www.cdc.gov/tb/publications/pamphlets/TB_skin_test.pdf

Minutes Matter! Call 9–1–1.

- If you think you might be having a heart attack (even if you're not sure), call 9–1–1 immediately. Don't wait!
- Quick treatment can save your life—when in doubt, check it out.
- Remember, the first minutes matter when you are having a heart attack.

From NIH "Heart Attacks. Know the Symptoms. Take Action. Call 911." December 2011.
http://www.nhlbi.nih.gov/health/public/heart/mi/heart_attack_fs_en.pdf

Bullets With Bold Type

— **Eat foods that have less fat and salt.**

— **Eat foods with more fiber** such as whole-grain cereals, breads, crackers, rice, or pasta.

From 4 Steps to Control Your Diabetes for Life. National Diabetes Education Plan.
http://ndep.nih.gov/media/NDEP67_4Steps_4c_508.pdf

Item 13: Text on the screen is easy to read (A/V)

Text on the screen is easy to read

Disagree = 0 Agree = 1 No text or all text is narrated = N/A

NOT APPLICABLE

Choose N/A if the material has no text or all of the text is narrated.

EXPLANATION

Audiovisual materials that are overcrowded with words or have text that flashes briefly on the screen are difficult to read and understand. You should choose "Agree" if the text that appears on the screen is sparse and the words stay on the screen long enough for a slow reader to read them.

This item is not applicable (N/A) if no text appears in the material or a narrator reads **all** of the text out loud, because the material is not relying on the viewer to read the text.

Item 14: The material allows the user to hear the words clearly (e.g., not too fast, not garbled) (A/V)

The material allows the user to hear the words clearly (e.g., not too fast, not garbled)

Disagree = 0 Agree = 1 No narration = N/A

NOT APPLICABLE

Choose N/A if the material has no narration.

EXPLANATION

An audiovisual material, whether a video or a multimedia material with narration, should allow the viewer to hear the words clearly. The narrator or voiceover should not be speaking too fast nor should it be garbled or hard to understand in any other way.

Note: Be sure this item is not assessed based on poor Internet connection or speed.

TOPIC: **USE OF VISUAL AIDS**

Item 15: The material uses visual aids whenever they could make content more easily understood (e.g., illustration of healthy portion size) (P)

The material uses visual aids whenever they could make content more easily understood (e.g., illustration of healthy portion size)

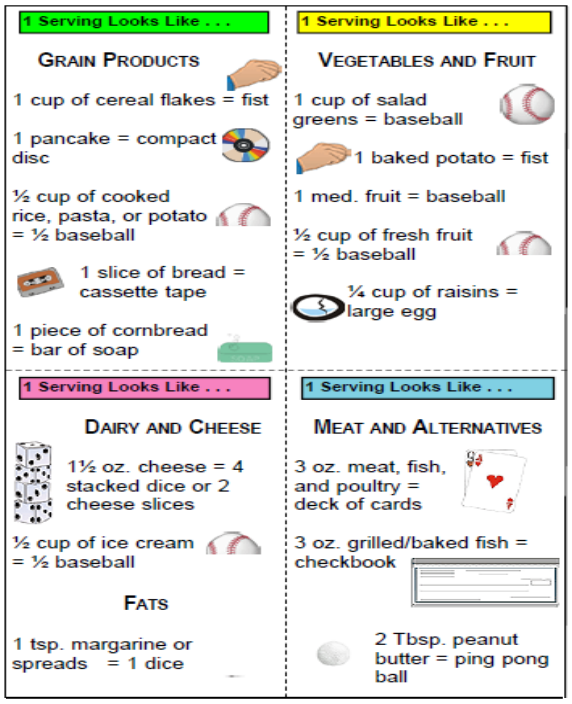
Disagree = 0 *Agree = 1*

EXPLANATION

The material should use a visual aid whenever it would make the content easier to understand. For example, an illustration of a healthy portion size would increase understanding beyond using just text to describe the size of a healthy portion. This also includes using graphic displays to make numeric information easier to understand. If you can think of a meaningful visual aid that could have been added to clarify the meaning of text, you should disagree with this item.

EXAMPLE

CHOOSE "AGREE" – Illustration of portion sizes



From National Heart, Lung, and Blood Institute, Stay Young at Heart
http://hp2010.nhlbihin.net/portion/servingcard7.pdf

Item 16: The material's visual aids reinforce rather than distract from the content (P)

The material's visual aids reinforce rather than distract from the content

Disagree = 0 *Agree = 1* *No visual aids = N/A*

NOT APPLICABLE

Choose N/A if the material has no visual aids.

EXPLANATION

The material should only use visual aids that reinforce or relate to the content being presented, or visual aids can provide examples or clarify information. While some materials may use a lot of visual aids to break-up the text and keep the material visually interesting, this does not necessarily benefit understandability.

Ask yourself whether the visuals largely reinforce and relate to the content. If they do not reinforce content, especially if they distract from the content, then choose "Disagree." Similarly, for a generic picture that neither describes the content nor provides further explanation, choose "Disagree."

EXAMPLES

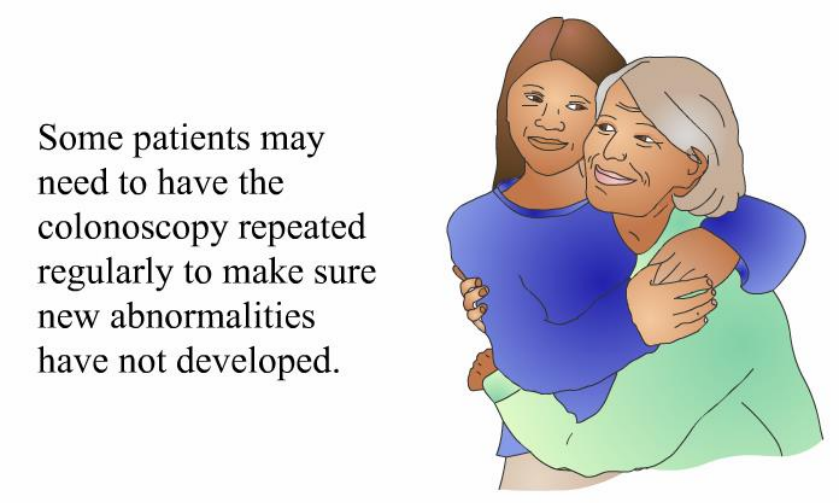
CHOOSE "AGREE" – Visual aid that reinforces

The following visual aid reinforces the content by illustrating levels of activity.

From NIH We Can! Campaign, "Parent Tips: Calories Needed Each Day."
http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/downloads/calreqtips.pdf

CHOOSE "DISAGREE" – A visual aid that does not reinforce but distracts

The following visual aid does not appear related to the text and is distracting from the material's purpose.



From Colonoscopy from Medline Plus.
http://www.nlm.nih.gov/medlineplus/tutorials/colonoscopy/htm/_no_50_no_0.htm

Item 17: The material's visual aids have clear titles or captions (P)

The material's visual aids have clear titles or captions

Disagree = 0 *Agree = 1* *No visual aids = N/A*

NOT APPLICABLE

Choose N/A if the material has no visual aids.

EXPLANATION

Captions and titles for visual aids are important to help the user know what the graphic is about or what it is showing. Visual aids are meant to support the text and can be a way to explain the material's content. If a material has images that do not have a caption or title, or if the captions or titles are unclear or are unrelated to the visual aid, you should choose "Disagree."

EXAMPLES

CHOOSE "AGREE" – Clear caption related to the visual aid

Clean your baby's teeth with a clean, soft cloth or a baby toothbrush.

CHOOSE "DISAGREE" – Unclear caption

Clean your baby's teeth as soon as they come in.

CHOOSE "DISAGREE" – Unrelated caption

Keeping teeth healthy

Image taken from National Institute of Dental and Craniofacial Research, A Healthy Mouth for Your Baby
http://www.nidcr.nih.gov/OralHealth/Topics/ToothDecay/AHealthyMouthforYourBaby.htm

Item 18: The material uses illustrations and photographs that are clear and uncluttered (P and A/V)

The material uses illustrations and photographs that are clear and uncluttered

Disagree = 0 *Agree = 1* *No visual aids = N/A*

NOT APPLICABLE

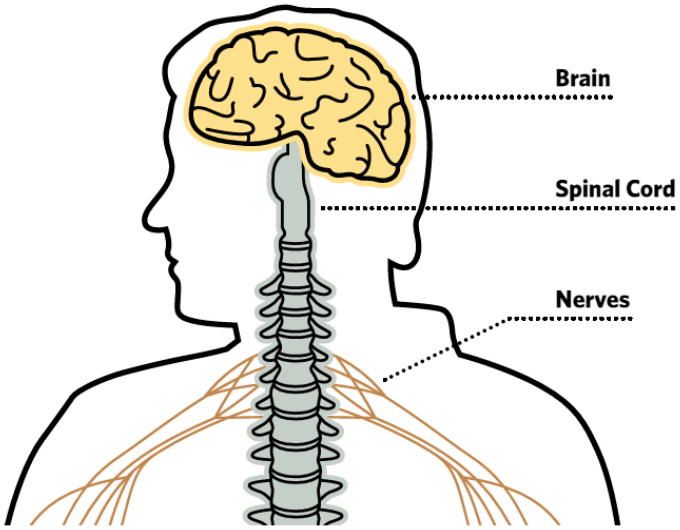
Choose N/A if the material has no visual aids.

EXAMPLES

For the user to understand the content covered in an illustration or photograph, the image must be clear and uncluttered. If a material is not both clear and uncluttered, then you should choose "Disagree."

EXAMPLES

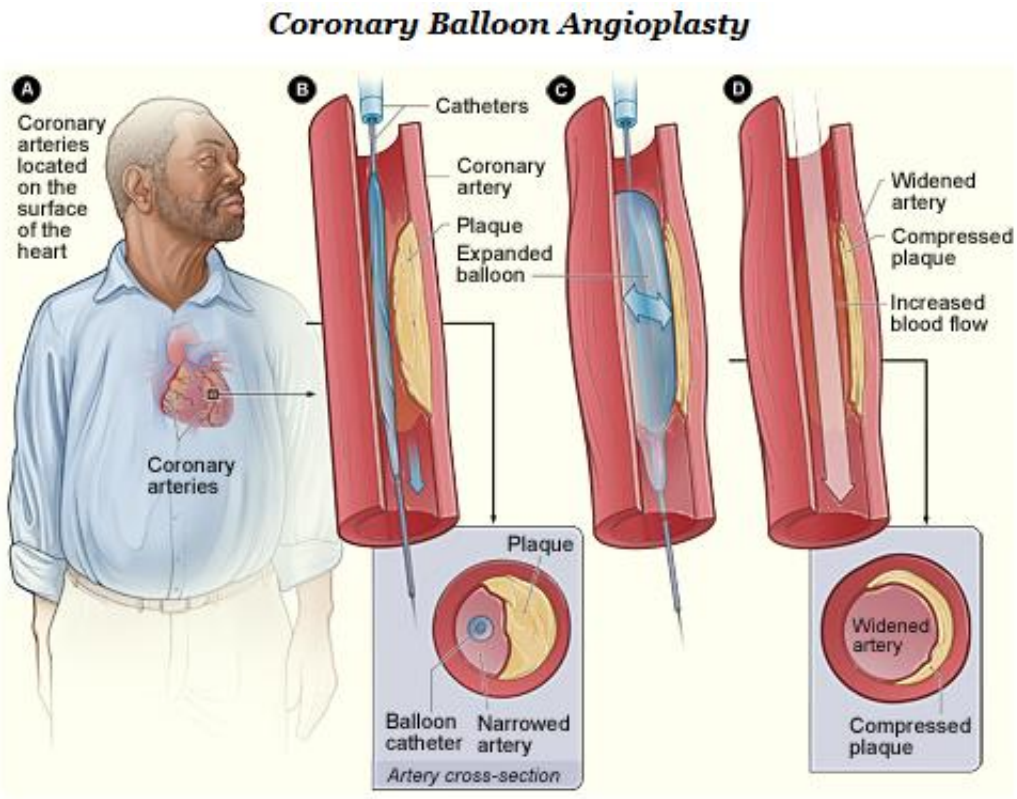
CHOOSE "AGREE" – A clear and uncluttered illustration



Nervous System

From Lead Poisoning: Words To Know From A to Z
http://www.cdc.gov/nceh/lead/tools/LeadGlossary_508.pdf

CHOOSE "DISAGREE" – A cluttered illustration



Taken from NIH, Explore Cardio Angioplasty, February 2012.
http://www.nhlbi.nih.gov/health/health-topics/topics/angioplasty/howdone.html

CHOOSE "DISAGREE" – An unclear photograph

Item 19: The material uses simple tables with short and clear row and column headings (P and A/V)

The material uses simple tables with short and clear row and column headings

Disagree = 0 *Agree = 1* *No tables = N/A*

NOT APPLICABLE

Choose N/A if the material has no tables.

EXAMPLE

CHOOSE "AGREE" – Clear row and column headings

Exposure Category	Index Number	Sun Protection Messages
LOW	1-2	• Wear sunglasses on bright days. In winter, reflection off snow can nearly double UV strength. • If you burn easily, cover up and use sunscreen.
MODERATE	3-5	• Take precautions, such as covering up and using sunscreen, if you will be outside. • Stay in shade near midday when the sun is strongest.
HIGH	6-7	• Protection against sunburn is needed. • Reduce time in the sun between 11 a.m. and 4 p.m. • Cover up, wear a hat and sunglasses, and use sunscreen.
VERY HIGH	8-10	• Take extra precautions. Unprotected skin will be damaged and can burn quickly. • Try to avoid the sun between 11 a.m. and 4 p.m. Otherwise, seek shade, cover up, wear a hat and sunglasses, and use sunscreen.
EXTREME	11+	• Take all precautions. Unprotected skin can burn in minutes. Beachgoers should know that white sand and other bright surfaces reflect UV and will increase UV exposure. • Avoid the sun between 11 a.m. and 4 p.m. • Seek shade, cover up, wear a hat and sunglasses, and use sunscreen.

From Environmental Protection Agency. A Guide to the UV Index.
http://www.epa.gov/sunwise/doc/uviguide.pdf

CHOOSE "DISAGREE" – Incomplete or unclear row and column headings

Categories for Blood Pressure Levels in Adults (measured in millimeters of mercury, or mm Hg)

Category	Systolic (top number)		Diastolic (bottom number)
Normal	Less than 120	*And*	Less than 80
Prehypertension	120-139	*Or*	80-89
High blood pressure			
Stage 1	140-159	*Or*	90-99
Stage 2	160 or higher	*Or*	100 or higher

Taken from NIH, Explore High Blood Pressure, August 2012.
http://www.nhlbi.nih.gov/health/health-topics/topics/hbp/

DOMAIN: ACTIONABILITY

Item 20: **The material clearly identifies at least one action the user can take** (P and A/V)

The material clearly identifies at least one action the user can take

Disagree = 0 *Agree = 1*

EXPLANATION

For the user to take action, the material needs to clearly identify at least one action.

EXAMPLES

CHOOSE "AGREE" – Clearly identified actions: Make sure your children wear helmets every time they ride a bike.

CHOOSE "DISAGREE" – No action identified: Ninety-one percent of bicyclists killed in 2009 weren't wearing helmets.

CHOOSE "AGREE" – Clearly identified actions: Be active longer each time. If you are walking 3 days a week for 30 minutes, try walking for an additional 10 minutes or more each day.

CHOOSE "DISAGREE" – No action identified: Physical activity increases your chances of living a longer, healthier life.

Item 21: The material addresses the user directly when describing actions (P and A/V)

The material addresses the user directly when describing actions

Disagree = 0 *Agree = 1*

EXPLANATION

To help the user know what actions he or she should take, the material should address the user directly. Choose "Disagree" if no actions are described.

EXAMPLES

CHOOSE "AGREE" – Direct: You can find it at your drugstore.
CHOOSE "DISAGREE" – Indirect: Patients can find it at their drugstore.

CHOOSE "AGREE" – Direct: Arrange a ride home after the procedure.
CHOOSE "DISAGREE" – Indirect: Patients should arrange a ride home after the procedure.

CHOOSE "AGREE" – Direct: You can find common cold medicines at the pharmacy.
CHOOSE "DISAGREE" – Indirect: Medicines for the common cold are at the pharmacy.

CHOOSE "AGREE" – Direct: Take your medicine when you eat your meals.
CHOOSE "DISAGREE" – Indirect: Medicine should be taken at mealtimes.

Item 22: The material breaks down any action into manageable, explicit steps (P and A/V)

The material breaks down any action into manageable, explicit steps

Disagree = 0 *Agree = 1*

EXPLANATION

For any actions in a material, the action should be broken down into manageable, explicit steps. The material should tell the user *how* to take the action, especially if the action is big or broad, such as increase exercise or lose weight. The material should not use terms that can be left to interpretation (e.g., frequently, regularly, deeply, strong, weak). If a material uses ambiguous terms, or suggests health goals without advice on how to achieve them, choose "Disagree."

EXAMPLES

CHOOSE "AGREE" – Manageable, explicit steps:

- Exercise regularly.
    - Start by doing at least 10 minutes of physical activity at least 3 times a week. For example, you could walk the dog, take a walk at lunch, get off the bus one stop early and walk, or use the stairs instead of taking the elevator.
    - Increase the number of minutes and the number of times you do your physical activity. Gradually work your way up to getting 2½ hours of exercise over the course of a week.
    - While you are increasing the amount of time you spend exercising, start making some of your activities more demanding, such as aerobic dancing, bicycling, or jogging.

CHOOSE "DISAGREE" – No manageable steps, ambiguous:

- Engage in moderate exercise regularly.

CHOOSE "AGREE" – Manageable, explicit steps: Eat less salt, which is also called sodium. Don't eat more than 1 teaspoon of salt a day (2,300 mg of sodium). Prepared foods often have a lot of salt, so check nutrition labels at the grocery store and ask at restaurants for low-salt options.

CHOOSE "DISAGREE" – No manageable steps, ambiguous:

- Eat less salt.

CHOOSE "AGREE" – Manageable, explicit steps:

- Check your blood sugar level:
    - Insert a new test strip into the meter.
    - Wash your hands.
    - Gently prick the side of your finger with the lancet to draw out a drop of blood.
    - Touch the test strip to the drop of blood.

CHOOSE "DISAGREE" – No manageable steps:

- Check your blood sugar level.

Item 23: The material provides a tangible tool (e.g., menu planners, checklists) whenever it could help the user take action (P)

The material provides a tangible tool (e.g., menu planners, checklists) whenever it could help the user take action

Disagree = 0 *Agree = 1*

EXPLANATION

Whenever a tool could make it easier for the user to take action, a tool is provided. If you can think of a tool that would help users take action and the material does not provide that tool, you should choose "Disagree."

EXAMPLES

The following is an example of a tool that could help a user take action.

CHOOSE "AGREE" – Eat Healthy, Move More Chart (material provides a blank chart to fill in as well)

How to use the Eat Healthy, Move More Chart

- Each week, fill in the date.
- Fill in the tip you want to try for the week.
- At the end of the week, write down how you did with the tip.
- Put this chart on the refrigerator so your family can see what you're doing to eat healthy and move more.
- Print more Eat Healthy, Move More charts on the ***We Can!*** Web site at http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/downloads/tracking-sheet.pdf.

Example Chart

Date	Eat Healthy Tip	Move More Tip	My Successes
Week of June 13	Order salad instead of fries. Get dressing on the side.		Ordered salad.
Week of June 20		Take a family walk after dinner.	Walked to the park on Tuesday and Friday.
Week of June 27	Drink water, fat-free or low-fat milk instead of regular soda or other sweetened drinks.		Instead of buying whole milk, I bought my family fat-free milk.

Taken from NIH, We Can! Campaign, Eat Healthy, Move More Chart.
http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/downloads/tip-eat-healthy-chart.pdf

Item 24: The material provides simple instructions or examples of how to perform calculations (P)

The material provides simple instructions or examples of how to perform calculations

Disagree = 0 *Agree = 1* *No calculations = N/A*

NOT APPLICABLE

Choose N/A if the material has no calculations.

EXPLANATION

A calculation is when a material asks the user to add, subtract, multiply or divide, or perform some other mathematical operation. Ideally, materials do not expect users to perform calculations (see Item 7). When they do, they should provide simple instructions or examples of how to perform the calculation in order to be actionable.

EXAMPLES

CHOOSE "AGREE": Simple instructions with an example

How long will your inhaler last?

You can figure out how many days your inhaler will last with regular use.

- First, estimate how many times a day you take your medicine and multiply that number by how many puffs you take each time. This is the number of puffs you take each day.
- Second, look on the inhaler to see how many puffs of medicine are in it.
- Finally, divide the number of puffs in the inhaler by the number of puffs you use each day. This will give you the number of days your inhaler should last to help you know when to refill it.

For example, if you use 2 puffs each time you use your inhaler and use it 4 times a day, and your inhaler has 200 puffs in it, then your inhaler should last 25 days. Here's the math:

2 puffs × 4 times per day = 8 puffs per day

200 puffs in inhaler ÷ 8 puffs per day = 25 days

CHOOSE "DISAGREE": Vague instructions without an example

How long will your inhaler last?

You can figure out how many days your inhaler will last with regular use by determining the number of puffs in your inhaler (e.g., 200 puffs) divided by how many puffs you use per day. This will give you the number of days your inhaler should last to help you know when to refill it.

Item 25: The material explains how to use the charts, graphs, tables, or diagrams to take actions (P and A/V)

The material explains how to use the charts, graphs, tables or diagrams to take actions

Disagree = 0 Agree = 1 No charts, graphs, tables, diagrams = N/A

NOT APPLICABLE

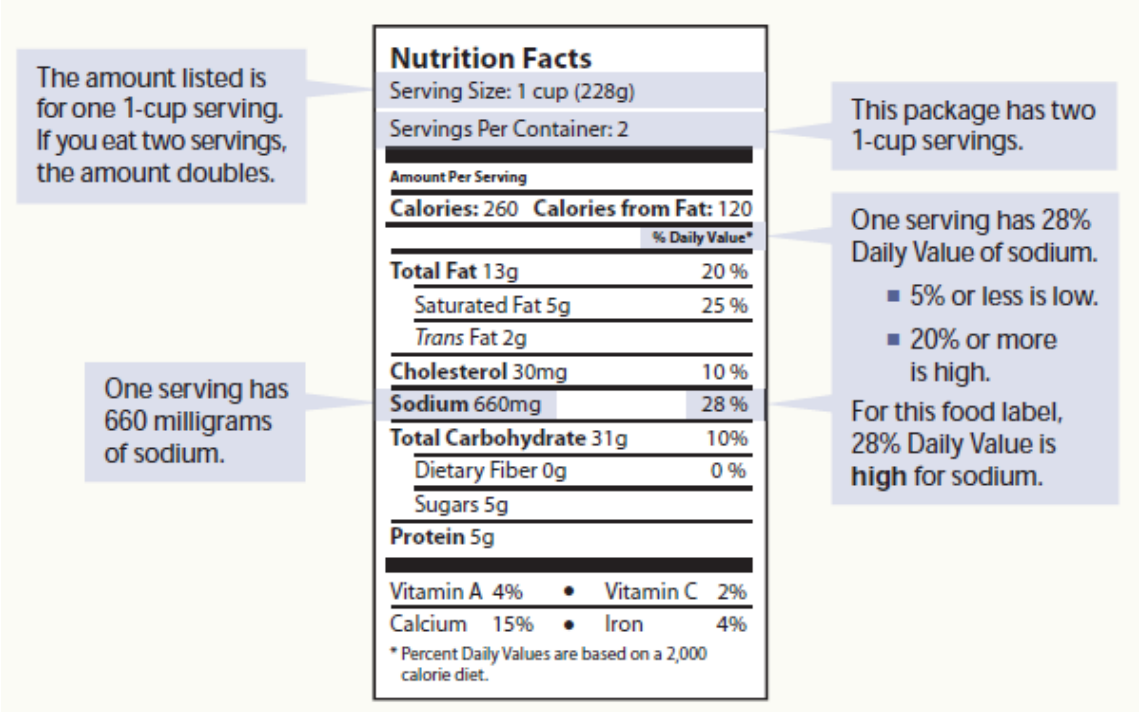
Choose N/A if the material has no charts, graphs, tables or diagrams. Charts and tables contain a set of facts or figures systematically displayed, often in columns. Graphs show the relationship between two things. Diagrams show the different parts of something and how they fit together. See examples of charts, graphs, tables and diagrams below and pages 6 to 8 in this User's Guide.

EXPLANATION

If the user needs to *use* a chart, graph, table, or diagram to take an action, the material should explain *how* to use the chart, graph, table, or diagram.

EXAMPLE

CHOOSE "AGREE" – The material explains how to use the chart



Taken from National Kidney Disease Education Program, NIH, How To Read a Food Label: Tips for People With Chronic Kidney Disease.
http://nkdep.nih.gov/resources/nutrition-food-label-508.pdf

CHOOSE "DISAGREE" – The material does not explain how to use the chart

Nutrition Facts

Serving Size: 1 cup (228g)

Servings Per Container: 2

Amount Per Serving	
Calories: 260	**Calories from Fat: 120**
	% Daily Value*
Total Fat 13g	20 %
Saturated Fat 5g	25 %
Trans Fat 2g	
Cholesterol 30mg	10 %
Sodium 660mg	28 %
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0 %
Sugars 5g	
Protein 5g	

Vitamin A	4%	Vitamin C	2%
Calcium	15%	Iron	4%

* Percent Daily Values are based on a 2,000 calorie diet.

Modified from National Kidney Disease Education Program, NIH, How To Read a Food Label: Tips for People With Chronic Kidney Disease.
http://nkdep.nih.gov/resources/nutrition-food-label-508.pdf

CHOOSE "AGREE" – The material explains how to use the table

A larger number of stars is a better rating. For example, if you want to know which facility has the best health inspection rating, look across the Health Inspection row to see which facility has the most stars.

General Information | Inspection Results | Staffing | Quality Measures | Penalties

	Facility #1	Facility #2	Facility #3
Overall Rating	★★★★★ Average	★★★★★ Average	★★★★★ Average
Health Inspection	★★★★★ Average	★★★★★ Below Average	★★★★★ Below Average
Staffing	★★★★★ Average	★★★★★ Much Above Average	★★★★★ Below Average
Quality Measures	★★★★★ Above Average	★★★★★ Average	★★★★★ Much Above Average

Modified from Centers for Medicare & Medicaid (CMS) Nursing Home Compare tool.
http://www.medicare.gov/NursingHomeCompare/search.aspx?bhcp=1

CHOOSE "DISAGREE" – The material does not explain how to interpret the table

General Information | Inspection Results | Staffing | Quality Measures | Penalties

	Facility #1	Facility #2	Facility #3
Overall Rating	★★★★★ Average	★★★★★ Average	★★★★★ Average
Health Inspection	★★★★★ Average	★★★★★ Below Average	★★★★★ Below Average
Staffing	★★★★★ Average	★★★★★ Much Above Average	★★★★★ Below Average
Quality Measures	★★★★★ Above Average	★★★★★ Average	★★★★★ Much Above Average

Modified from CMS Nursing Home Compare tool.
http://www.medicare.gov/NursingHomeCompare/search.aspx?bhcp=1

Item 26: The material uses visual aids whenever they could make it easier to act on the instructions (P)

The material uses visual aids whenever they could make it easier to act on the instructions

Disagree = 0 *Agree = 1*

EXPLANATION

The material should include a visual aid if one could make it easier to act on the instructions or information presented. If you can think of a meaningful visual aid that could have been added to make instructions easier to follow, you should disagree with this item.

EXAMPLES

The following are examples of visual aids that make the instructions easier to act on.

How to check your blood sugar

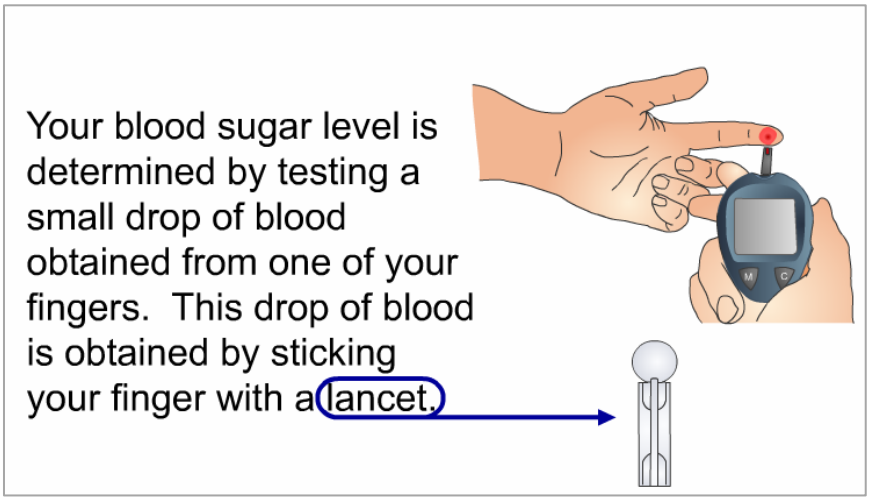
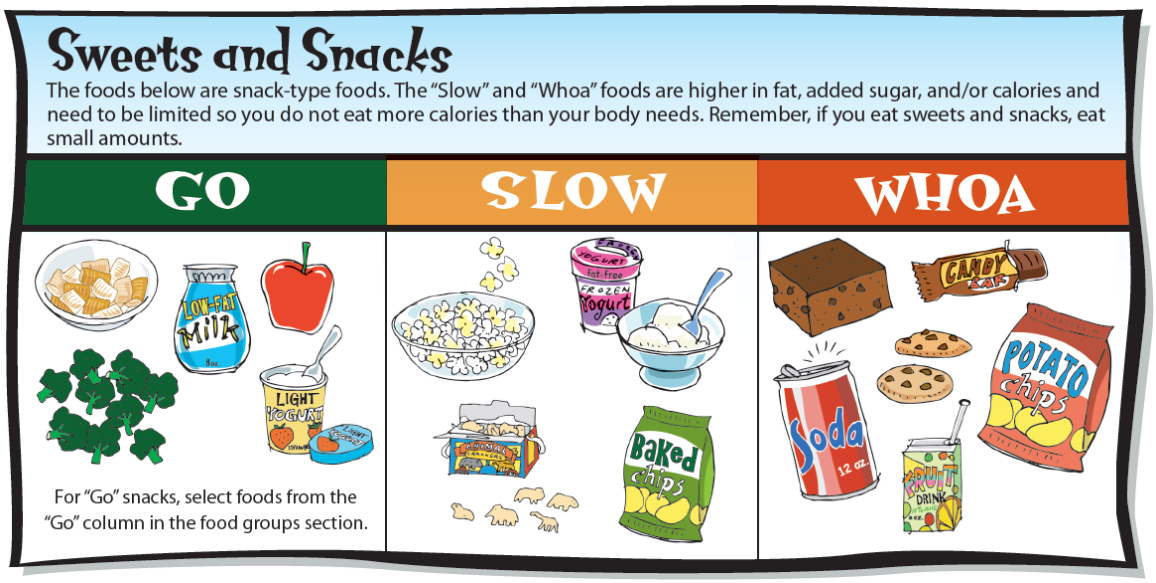


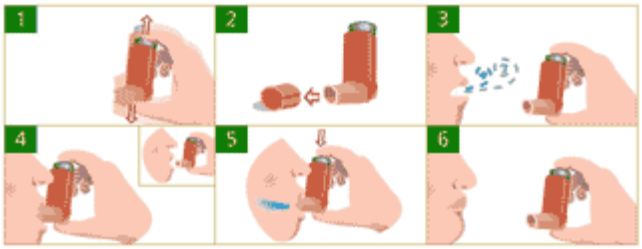
Image taken from NIH MedlinePlus Interactive Tutorials, X-Plain Series, Diabetes - Introduction.
http://www.nlm.nih.gov/medlineplus/tutorials/diabetesintroduction/htm/_no_50_no_0.htm

Pictures of Foods To Choose and Foods To Avoid



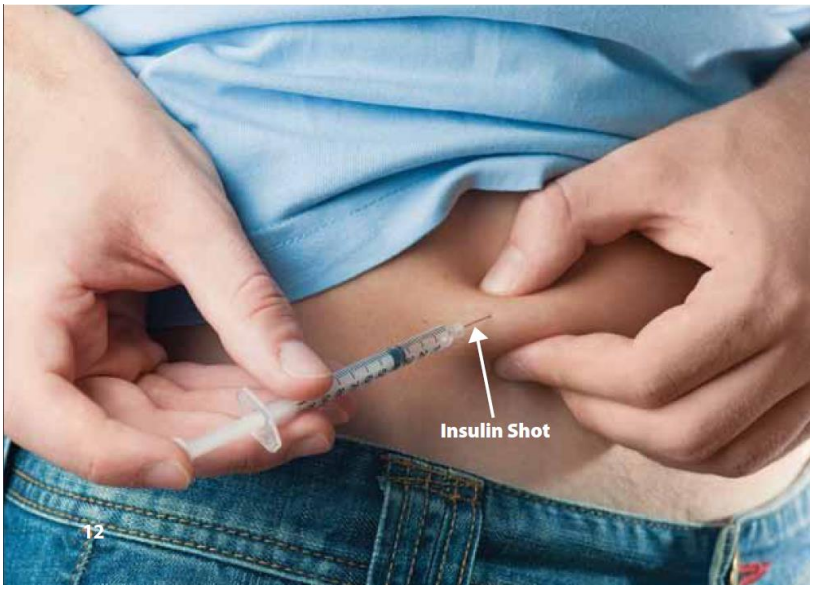
Taken from NIH We Can! Campaign, "You are what you eat."
http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/downloads/urwhateat.pdf

Picture Showing How To Use a Metered Dose Inhaler



Taken from Asthma Society of Canada, How To Use Your Inhaler.
http://www.asthma.ca/adults/treatment/meteredDoseInhaler.php

Photo Showing Insulin Injection



Taken from AHRQ, EHC Program, Methods for Delivering Insulin and Monitoring Blood Sugar. http://www.effectivehealthcare.ahrq.gov/ehc/products/242/1240/glu_mon_cons_fin_to_post.pdf

Patient Education Materials Assessment Tool for Printable Materials (PEMAT-P)

How To Use the PEMAT To Assess a Material

There are seven steps to using the PEMAT to assess a patient education material. The instructions below assume that you will score the PEMAT using paper and pen. If you use the **PEMAT Auto-Scoring Form**, a form that will automatically calculate PEMAT scores once you enter your ratings, you can skip Step 5. The form is available at: http://www.ahrq.gov/professionals/prevention-chronic-care/improve/self-mgmt/pemat/index.html.

Step 1: **Read through the PEMAT and User's Guide.** Before using the PEMAT, read through the entire User's Guide and instrument to familiarize yourself with all the items. In the User's Guide a (P) and (A/V) are listed after an item to indicate whether it is relevant to print and audiovisual materials, respectively.

Step 2: Read or view patient education material. Read through or view the patient education material that you are rating in its entirety.

Step 3: Decide which PEMAT to use. Choose the PEMAT-P for printable materials or the PEMAT-A/V for audiovisual materials.

Step 4: Go through each PEMAT item one by one. All items will have the answer options "Disagree" or "Agree." Some—but not all—items will also have a "Not Applicable" answer option. Go one by one through each of the items, 24 for printable materials and 17 for audiovisual materials, and indicate if you agree or disagree that the material meets a specific criterion. Or, when appropriate, select the "Not Applicable" option.

You may refer to the material at any time while you complete the form. You don't have to rely on your memory. Consider each item from a patient perspective. For example, for "Item 1: The material makes its purpose completely evident," ask yourself, "If I were a patient unfamiliar with the subject, would I readily know what the purpose of the material was?"

Step 5: Rate the material on each item as you go. After you determine the rating you would give the material on a specific item, enter the number (or N/A) that corresponds with your answer in the "Rating" column of the PEMAT. Do not score an item as "Not Applicable" unless there is a "Not Applicable" option. Score the material on each item as follows:

If Disagree	Enter 0
If Agree	Enter 1
If Not Applicable	Enter N/A

Suggested Citation:
Shoemaker SJ, Wolf MS, Brach C. Patient Education Materials Assessment Tool for Printable Materials (PEMAT-P). (Prepared by Abt Associates under Contract No. HHSA290200900012I, TO 4). Rockville, MD: Agency for Healthcare Research and Quality; October 2013. AHRQ Publication No. 14-0002-EF.

Additional Guidance for Rating the Material on Each Item (Step 5)

- Rate an item "Agree" when a characteristic occurs throughout a material, that is, nearly all of the time (80% to 100%). Your guiding principle is that if there are obvious examples or times when a characteristic could have been met or could have been better met, then the item should be rated "Disagree." The User's Guide provides additional guidance for rating each item.
- Do not skip any items. If there is no "Not Applicable" option, you must score the item 0 (Disagree) or 1 (Agree).
- Do not use any knowledge you have about the subject before you read or view the patient education material. Base your ratings ONLY on what is in the material that you are rating.
- Do not let your rating of one item influence your rating of other items. Be careful to rate each item separately and distinctly from how you rated other items.
- If you are rating more than one material, focus only on the material that you are reviewing and do not try to compare it to the previous material that you looked at.

Step 6: Calculate the material's scores. The PEMAT provides two scores for each material—one for understandability and a separate score for actionability. Make sure you have rated the material on every item, including indicating which items are Not Applicable (N/A). Except for Not Applicable (N/A) items, you will have given each item either 1 point (Agree) or 0 points (Disagree). To score the material, do the following:

- ***Sum the total points*** for the material on the understandability items only.
- ***Divide the sum by the total possible points*****,** that is, the number of items on which the material was rated, excluding the items that were scored Not Applicable (N/A).
- ***Multiply the result by 100*** and you will get a percentage (%). This percentage score is the understandability score on the PEMAT.

    - **Example:** If a print material was rated Agree (1 point) on 12 understandability items, Disagree (0 points) on 3 understandability items, and N/A on one understandability item (N/A), the sum would be 12 points out of 15 total possible points (12 + 3, excluding the N/A item). The PEMAT understandability score is 0.8 (12 divided by 15) multiplied by 100 = 80%.

To score the material on actionability, repeat Step 6 for the actionability items.

Step 7: Interpret the PEMAT scores. The higher the score, the more understandable or actionable the material. For example, a material that receives an understandability score of 90% is more understandable than a material that receives an understandability score of 60%, and the same goes for actionability. If you use the PEMAT to rate the understandability and actionability of many materials, you may get a sense of what score indicates exceptionally good or exceptionally poor materials.

Title of Material:

Name of Reviewer: Review Date:

Read the PEMAT User's Guide before rating materials.

UNDERSTANDABILITY

Item #	Item	Response Options	Rating
Topic: **Content**			
1	The material makes its purpose completely evident.	Disagree=0, Agree=1	
2	The material does not include information or content that distracts from its purpose.	Disagree=0, Agree=1	
Topic: **Word Choice & Style**			
3	The material uses common, everyday language.	Disagree=0, Agree=1	
4	Medical terms are used only to familiarize audience with the terms. When used, medical terms are defined.	Disagree=0, Agree=1	
5	The material uses the active voice.	Disagree=0, Agree=1	
Topic: **Use of Numbers**			
6	Numbers appearing in the material are clear and easy to understand.	Disagree=0, Agree=1, No numbers=N/A	
7	The material does not expect the user to perform calculations.	Disagree=0, Agree=1	
Topic: **Organization**			
8	The material breaks or "chunks" information into short sections.	Disagree=0, Agree=1, Very short material*=N/A	
9	The material's sections have informative headers.	Disagree=0, Agree=1, Very short material*=N/A	
10	The material presents information in a logical sequence.	Disagree=0, Agree=1	
11	The material provides a summary.	Disagree=0, Agree=1, Very short material*=N/A	
Topic: **Layout & Design**			
12	The material uses visual cues (e.g., arrows, boxes, bullets, bold, larger font, highlighting) to draw attention to key points.	Disagree=0, Agree=1 Video=N/A	

* A very short print material is defined as a material with two or fewer paragraphs and no more than 1 page in length.

Item #	Item	Response Options	Rating
Topic: **Use of Visual Aids**			
15	The material uses visual aids whenever they could make content more easily understood (e.g., illustration of healthy portion size).	Disagree=0, Agree=1	
16	The material's visual aids reinforce rather than distract from the content.	Disagree=0, Agree=1, No visual aids=N/A	
17	The material's visual aids have clear titles or captions.	Disagree=0, Agree=1, No visual aids=N/A	
18	The material uses illustrations and photographs that are clear and uncluttered.	Disagree=0, Agree=1, No visual aids=N/A	
19	The material uses simple tables with short and clear row and column headings.	Disagree=0, Agree=1, No tables=N/A	

***Total Points*: _____**

***Total Possible Points*: _____**

Understandability Score (%): _____

(*Total Points* / *Total Possible Points*) × 100

ACTIONABILITY

Item #	Item	Response Options	Rating
20	The material clearly identifies at least one action the user can take.	Disagree=0, Agree=1	
21	The material addresses the user directly when describing actions.	Disagree=0, Agree=1	
22	The material breaks down any action into manageable, explicit steps.	Disagree=0, Agree=1	
23	The material provides a tangible tool (e.g., menu planners, checklists) whenever it could help the user take action.	Disagree=0, Agree=1	
24	The material provides simple instructions or examples of how to perform calculations.	Disagree=0, Agree=1, No calculations=NA	
25	The material explains how to use the charts, graphs, tables, or diagrams to take actions.	Disagree=0, Agree=1, No charts, graphs, tables, or diagrams=N/A	
26	The material uses visual aids whenever they could make it easier to act on the instructions.	Disagree=0, Agree=1	

***Total Points*: _____**

***Total Possible Points*: _____**

Actionability Score (%): _____

(*Total Points* / *Total Possible Points*) × 100

Patient Education Materials Assessment Tool for Audiovisual Materials (PEMAT-A/V)

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You may refer to the material at any time while you complete the form. You don't have to rely on your memory. Consider each item from a patient perspective. For example, for "Item 1: The material makes its purpose completely evident," ask yourself, "If I were a patient unfamiliar with the subject, would I readily know what the purpose of the material was?"

Step 5: Rate the material on each item as you go. After you determine the rating you would give the material on a specific item, enter the number (or N/A) that corresponds with your answer in the "Rating" column of the PEMAT. Do not score an item as "Not Applicable" unless there is a "Not Applicable" option. Score the material on each item as follows:

If Disagree	Enter 0
If Agree	Enter 1
If Not Applicable	Enter NA

Suggested Citation:
Shoemaker SJ, Wolf MS, Brach C. Patient Education Materials Assessment Tool for Audiovisual Materials (PEMAT-A/V). (Prepared by Abt Associates, under Contract No. HHSA290200900012I, TO 4). Rockville, MD: Agency for Healthcare Research and Quality; October 2013. AHRQ Publication No. 14-0002-EF.

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- Rate an item "Agree" when a characteristic occurs throughout a material, that is, nearly all of the time (80% to 100%). Your guiding principle is that if there are obvious examples or times when a characteristic could have been met or could have been better met, then the item should be rated "Disagree." The User's Guide provides additional guidance for rating each item.
- Do not skip any items. If there is no "Not Applicable" option, you must score the item 0 (Disagree) or 1 (Agree).
- Do not use any knowledge you have about the subject before you read or view the patient education material. Base your ratings ONLY on what is in the material that you are rating.
- Do not let your rating of one item influence your rating of other items. Be careful to rate each item separately and distinctly from how you rated other items.
- If you are rating more than one material, focus only on the material that you are reviewing and do not try to compare it to the previous material that you looked at.

Step 6: Calculate the material's scores. The PEMAT provides two scores for each material—one for understandability and a separate score for actionability. Make sure you have rated the material on every item, including indicating which items are Not Applicable (N/A). Except for Not Applicable (N/A) items, you will have given each item either 1 point (Agree), or 0 points (Disagree). To score the material, do the following:

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- ***Divide the sum by the total possible points,*** that is, the number of items on which the material was rated, excluding the items that were scored Not Applicable (N/A).
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    - **Example:** If a print material was rated Agree (1 point) on 12 understandability items, Disagree (0 points) on 3 understandability items, and N/A on one understandability item (N/A), the sum would be 12 points out of 15 total possible points (12 + 3, excluding the N/A item). The PEMAT understandability score is 0.8 (12 divided by 15) multiplied by 100 = 80%.

To score the material on actionability, repeat Step 6 for the actionability items.

Step 7: Interpret the PEMAT scores. The higher the score, the more understandable or actionable the material. For example, a material that receives an understandability score of 90% is more understandable than a material that receives an understandability score of 60%, and the same goes for actionability. If you use the PEMAT to rate the understandability and actionability of many materials, you may get a sense of what score indicates exceptionally good or exceptionally poor materials.

Title of Material:

Name of Reviewer: Review Date:

Read the PEMAT User's Guide before rating materials.

UNDERSTANDABILITY

Item #	Item	Response Options	Rating
Topic: **Content**			
1	The material makes its purpose completely evident.	Disagree=0, Agree=1	
Topic: **Word Choice & Style**			
3	The material uses common, everyday language.	Disagree=0, Agree=1	
4	Medical terms are used only to familiarize audience with the terms. When used, medical terms are defined.	Disagree=0, Agree=1	
5	The material uses the active voice.	Disagree=0, Agree=1	
Topic: **Organization**			
8	The material breaks or "chunks" information into short sections.	Disagree=0, Agree=1, Very short material*=N/A	
9	The material's sections have informative headers.	Disagree=0, Agree=1, Very short material*=N/A	
10	The material presents information in a logical sequence.	Disagree=0, Agree=1	
11	The material provides a summary.	Disagree=0, Agree=1, Very short material*=N/A	
Topic: **Layout & Design**			
12	The material uses visual cues (e.g., arrows, boxes, bullets, bold, larger font, highlighting) to draw attention to key points.	Disagree=0, Agree=1, Video=N/A	
13	Text on the screen is easy to read.	Disagree=0, Agree=1, No text or all text is narrated=N/A	
14	The material allows the user to hear the words clearly (e.g., not too fast, not garbled).	Disagree=0, Agree=1, No narration=N/A	

* A very short audiovisual material is defined as a video or multimedia presentation that is under 1 minute, or a multimedia material that has 6 or fewer slides or screenshots.

Item #	Item	Response Options	Rating
Topic: **Use of Visual Aids**			
18	The material uses illustrations and photographs that are clear and uncluttered.	Disagree=0, Agree=1, No visual aids=N/A	
19	The material uses simple tables with short and clear row and column headings.	Disagree=0, Agree=1, No tables=N/A	

***Total Points*: _____**

***Total Possible Points*: _____**

Understandability Score (%): _____

(*Total Points* / *Total Possible Points* × 100)

ACTIONABILITY

Item #	Item	Response Options	Rating
20	The material clearly identifies at least one action the user can take.	Disagree=0, Agree=1	
21	The material addresses the user directly when describing actions.	Disagree=0, Agree=1	
22	The material breaks down any action into manageable, explicit steps.	Disagree=0, Agree=1	
25	The material explains how to use the charts, graphs, tables, or diagrams to take actions.	Disagree=0, Agree=1, No charts, graphs, tables, diagrams=N/A	

***Total Points*: _____**

***Total Possible Points*: _____**

Actionability Score (%): _____

(*Total Points* / *Total Possible Points* × 100)