

Health Literacy: The Impact on Those We Serve

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Health Literacy & Traumatic Brain Injuries

Who do you serve?

- Person with TBI
- Caregivers and family members
- Other professionals

Do you know?

Which of the following is the strongest predictor of an individual's health status?

- A) Age
- B) Income
- C) Literacy skills
- D) Education level
- E) Racial or ethnic group
- F) Average Beer Intake at Metro

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Myth or Reality?

Someone who is verbally articulate and appears well-educated and knowledgeable understands the information being given to him/her.

Myth vs. Reality

Reality

- The average American reads at the 8th-9th grade level
- Health information is usually written at a much higher reading level.
- Most people - regardless of their reading or language skills - prefer medical information that is simple and easy to understand.

Literacy: A Definition

“An individual’s ability to read, write, and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one’s goals, and develop one’s knowledge and potential.”

1991, National Literacy Act

Depends heavily on:

- Listening skills and abilities
- Interpreting skills and abilities
- Oral communication
- Visual analysis

Illiteracy: A Definition

Being unable to read or write.

➤ Very few people are truly illiterate.

Health Literacy: A Definition

“The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.”

U.S. Dept. HHS 2000: *Healthy People 2010*

U.S. Reading Levels

(B. Weiss, MD, 2000, rev.2007)

	<u>Grade</u>	<u>Health Lit. Grade</u>
U.S. Adults	8 th	5 th -6 th
Medicaid	5 th	3 rd -5 th
Low-income elderly	5 th	3 rd -5 th

Why should we care about health literacy?

According to the US Dept. of HHS, low literacy is linked to poor health outcomes such as:

- Higher hospitalization rates;
- Less frequent use of preventive services;
- More likely to have chronic conditions (e.g. diabetes, high blood pressure) and less likely to manage them effectively.

Why should we care...?

Scope of the problem has profound social and economic ramifications:

According to the National Assessment of Adult Literacy (NAAL), 2003:

- 43% of adult Americans read at a *Basic* or *Below Basic* level.
- Translates to over 90 million individuals and at least \$73 **Billion** dollars in extra healthcare costs

Some Mitigating Factors of Low (Health) Literacy

- Functional (e.g. dyslexia)
- Sensory/physical (e.g., low vision, low hearing, other neurological problems, diabetes)
- Cultural/language
- Psychological (e.g. schizophrenia, depression)
- Computational

Individuals at Risk for Limited Health Literacy

- Older people, especially those 65+
- Low income
- Unemployed
- Did not finish high school
- “Minority” populations (e.g., Hispanic, African American)
- Recent immigrants with LEP or no English skills
- People on Medicare, Medicaid, or without insurance

U.S. Dept. of HHS; AMA Health Literacy Manual;
Kutner & Greenberg et. al, 2006.

True or False?

- Most of the adults in the US with limited health literacy are white native-born Americans.

Common Difficulties for People with Low (Health) Literacy

Strong evidence that adults with low health literacy have trouble doing the following things:

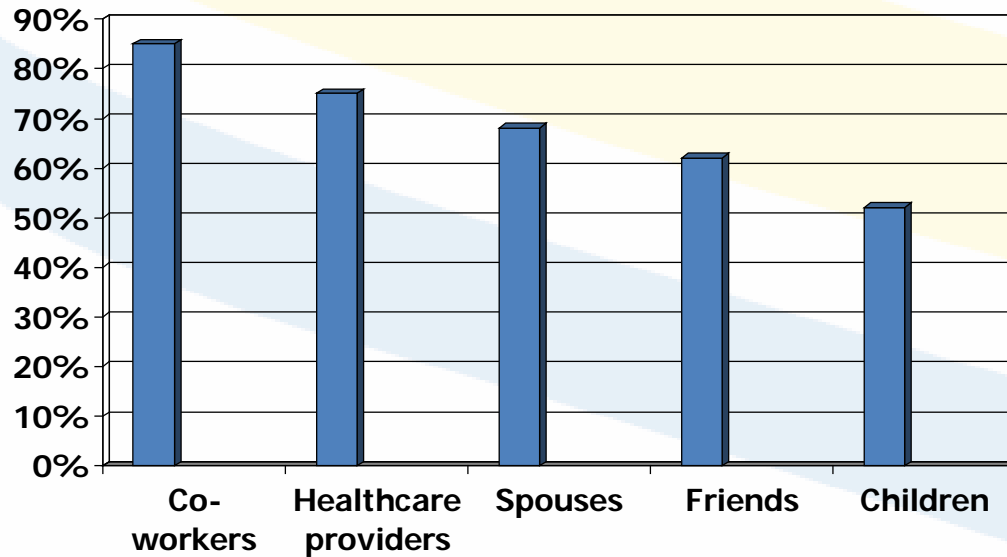
- Locate services & navigate institutions
- Read, understand, and use a wide variety of print materials
- Complete open-ended forms and work with legal documents
- Engage in oral exchange with professionals
- Use a variety of complex tools
- Compute & use numeric concepts

Communication Breakdowns with People with Low (Health) Literacy

- Limited general knowledge
- Do not ask for clarification
- Focus on details, hard to get them to prioritize
- Don't understand Likert scales, math
- Deal in literal/concrete concepts, not abstract
- Essential vocabulary only
- Check answers without understanding

Nondisclosure of limited literacy Parikh NS et al.

Patient Education Couns. 1996;27:33-39



Some Examples...

Almost all US adults have trouble understanding and acting on the following health information...

- About 40 million adults cannot understand any of the following texts...

Institute of Medicine, *Health Literacy: A Prescription to End Confusion*, 2004

From a research consent form:

“A comparison of the effectiveness of educational media in combination with a counseling method on smoking habits is being examined.”

From a consumer privacy notice:

“Examples of such mandatory disclosures include notifying state or local health authorities regarding particular communicable diseases.”

From a patient information sheet:

“Therefore, patients should be monitored for extraocular CMV infections and retinitis in the opposite eye, if only one infected eye is being treated.”

Cultural/Language Considerations

- Non-English speaking
- Immigrant status
- Ethnic interpretation of illness
- Spiritual and religious beliefs
- Default answers
- Lack of insurance/transportation

Effective Communication for various Audiences

- Use repetition.
- Have the patient repeat the information.
- Use models, sketches, pictures.
- If you are rushed, schedule a follow-up visit or phone call.

Health Literacy & TBI

People with TBI often have problems with:

- Memory
- Decision-making
- Problem-solving

Dr. Ted Judd on *Errorless Learning*

<http://bcove.me/fqg23dje>

Behaviors that improve communication

- Use orienting statements
- Ask individuals if they have concerns not addressed
- Ask individuals to explain their understanding of their problems, treatments, services, etc.
- Encourage individuals to ask questions
- Sit rather than stand
- Listen rather than speak

"Help Patients Understand" - Table 13, AMA Foundation, 2007

Use living room language

www.AskMe3.org

Types of words that may cause misunderstanding:

- Medical – used by health professionals
- Concept – describe idea, metaphor, notion
- Category – describe a group or subset
- Value judgment – words that may need example or visual to convey meaning

Vocabulary Choices for Better Communication

Medical Words

Bad Choice	Good Choice
Analgesic	Pain killer
Benign	Not Cancer
Carcinoma	Cancer
Condition	How you feel
Enlarge	Get Bigger
Intermittent	On and off
Hypertension	High blood pressure
Oral	By mouth

Concept Words

Active role	Take part in
Avoid	Stay away from
Collaborate	Work together
Factor	Other thing
Intake	What you eat or drink
Referral	Send you to another...
Wellness	Good health; feeling good

Category Words

Activity	Something you do
Adverse (reaction)	Bad
Cognitive	Learning; thinking
Hazardous	Not safe
Generic	Product sold without a brand name
Prosthesis	Replacement for a body part, such as a man-made arm
Support	Help with your needs

Judgement Words

Adequate	Enough
Adjust	Fine-tune; change
Cautiously	With care; slowly
Excessive	Too much
Increase gradually	Add to
Moderately	Not too much
Routinely	Often

Low Literacy: “Plowing” text

Assisted Living

The Assisted Living Federation of America defines an Assisted Living residence as a special combination of housing, personalized supportive services and health care designed to meet the needs – both scheduled and unscheduled – of those who need help with activities of daily living. Services provided typically include meals, housekeeping, laundry, transportation, medication management, and help with activities of daily living. Regulations and licensing regulations vary from state to state, contributing to the wide range of senior housing models considered Assisted Living.

GNINAEELC—To erussa high ecnamrofrep, yllacidoirep naelc the tape sdaeh and natspac revenehw you eciton an noitalumucca of dust and nworb-der edixo selcitrapp. Use a nottoc baws denetsiom with lyporposi lohocla. Be sure no lohocla sehcuot the rebbur strap, as it tends to dry and yllautneve crack the rebbur. Niarfer from gnihcrot the tape sdaeh with your sregnif as this may egamad the sdaeh. As syawla, deecorp with noituac.



So, how do you clean the capstan?

Treating Strep Throat - sample 1

- Take your pills two times each day (once in the morning and once in the evening).
- Take the medicine every day for 10 days, even if you feel better before then.
- Stopping the pills before 10 days can result in serious heart problems.

(Flesch-Kincaid Grade Level 6.7)

Treating Strep Throat - sample 2

- Take 2 pills by mouth each day (one with breakfast and one before bed).
- Take your pills every day for 10 days. Do not stop!
- If you stop your pills too soon, it may hurt your heart.

(Flesch-Kincaid Grade Level 1.4)

From a brochure on traumatic brain injury:

notginihsaW evitartsinimdA Code 392-172-148 defines TBI as: an deriuqca injury to the brain caused by an lanretxe lacisyhp force, gnitluser in total or partial lanoitcnuf ytilibasid, and/or laicosohcysp tnemriapmi that ylesrevda affects a child's lanoitacude ecnamrofrep, and seriuqer specially dengised noitcurtsni. The term applies to head seirujni gnitluser in stnemriapmi in one or more areas such as noitingoc, language, memory, noitnetta, gninosae, abstract thinking, sensory, lautpecrep, and motor abilities, laicosohcyp roivaheb, lacisyhp snoitcnuf, noitamrofni gnissecorp, tnemgduj, problem solving, and speech.

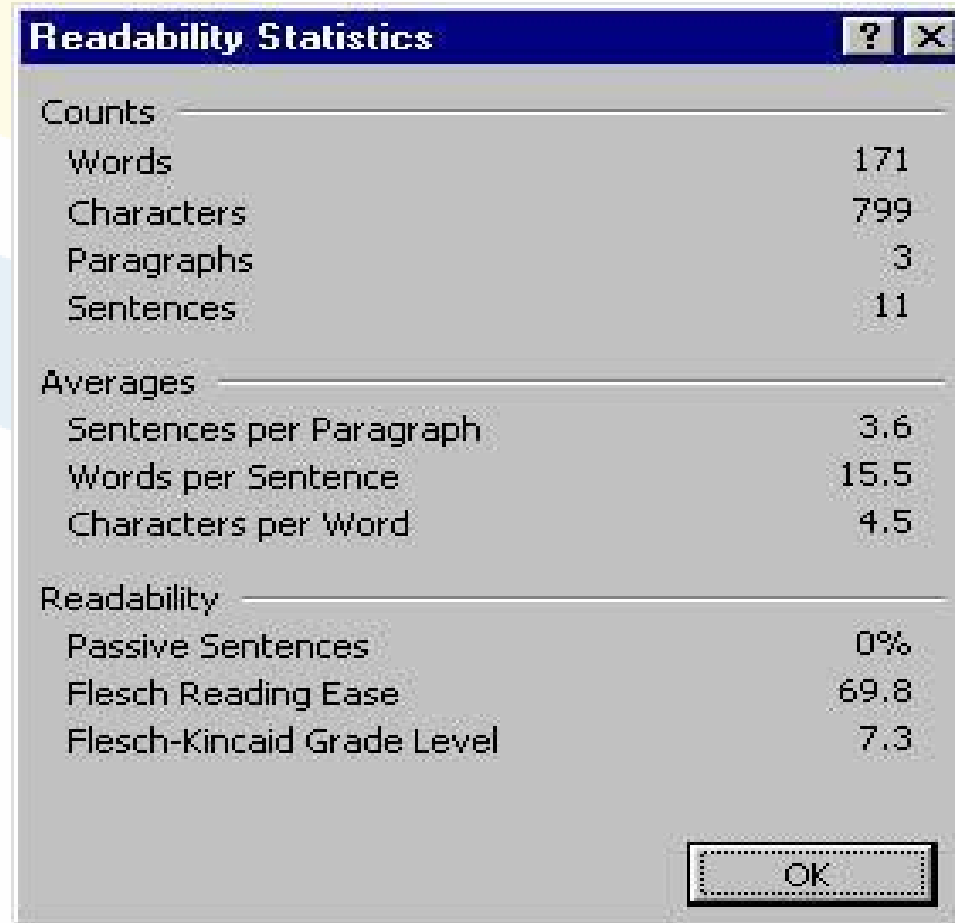
Can we make this text more readable?

Washington Administrative Code 392-172-148 defines TBI as: an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability, and/or psychosocial impairment that adversely affects a child's educational performance, and requires specially designed instruction. The term applies to head injuries resulting in impairments in one or more areas such as cognition, language, memory, attention, reasoning, abstract thinking, sensory, perceptual, and motor abilities, psychosocial behavior, physical functions, information processing, judgment, problem solving, and speech.

Assessing Reading Level of Printed Materials

- Most pamphlets at 10-12th grade level
- Informed consents at 14.3—16th grade
- SMOG (www.wordcount.info)
- Fry's/FOG
- Flesch

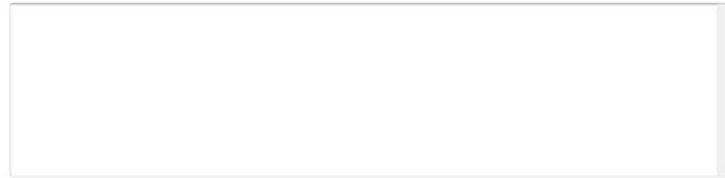
Flesh-Kincaid Index (MS Word-Tools)



Readability Statistics	
Counts	
Words	171
Characters	799
Paragraphs	3
Sentences	11
Averages	
Sentences per Paragraph	3.6
Words per Sentence	15.5
Characters per Word	4.5
Readability	
Passive Sentences	0%
Flesch Reading Ease	69.8
Flesch-Kincaid Grade Level	7.3

OK

SMOG: www.wordscount.info



Click Click button to submit 100000 characters remaining.

WordsCount SMOG Results

Smog Grade: 22.08

Sentences: 2

Big Words (≥ 3 syllables): 22

22.08 = 3.1291 + 1.043 * square root of (((22.0) / 2.0) * 30)

To calculate SMOG

1. Count a number of sentences (at least: 10 from the start of a text, 10 from the middle, and 10 from the end).
2. In those sentences, count the [polysyllables](#) (words of 3 or more syllables).
3. Calculate using

$$\text{grade} = 1.0430 \sqrt{30 \times \frac{\text{number of polysyllables}}{\text{number of sentences}}} + 3.1291$$

References

- [Dr. McLaughlin's Web site](#): Professor G. Harry McLaughlin describes his formula with wit. [\[more\]](#)
- [Wikipedia](#): SMOG (Simple Measure of Gobbledygook) is a readability formula that estimates... [\[more\]](#)

FOG Index

The Gunning's Fog Index (or FOG) Readability Formula

Step 1: Take a sample passage of at least 100-words and count the number of exact words and sentences.

Step 2: Divide the total number of words in the sample by the number of sentences to arrive at the Average Sentence Length (ASL).

Step 3: Count the number of words of three or more syllables that are NOT (i) proper nouns, (ii) combinations of easy words or hyphenated words, or (iii) two-syllable verbs made into three with -es and -ed endings.

Step 4: Divide this number by the number of words in the sample passage. For example, 25 long words divided by 100 words gives you 25 Percent Hard Words (PHW).

Step 5: Add the ASL from Step 2 and the PHW from Step 4.

Step 6: Multiply the result by 0.4.

The mathematical formula is:

$$\text{Grade Level} = 0.4 (\text{ASL} + \text{PHW})$$

where,

ASL = Average Sentence Length (i.e., number of words divided by the number of sentences)

PHW = Percentage of Hard Words

The underlying message of The Gunning Fog Index formula is that short sentences written in Plain English achieve a better score than long sentences written in complicated language.

The ideal score for readability with the Fog index is 7 or 8. Anything above 12 is too hard for most people to read. For instance, The Bible, Shakespeare and Mark Twain have Fog Indexes of around 6. The leading magazines, like Time, Newsweek, and the Wall Street Journal average around 11.

Designing Effective Printed Materials

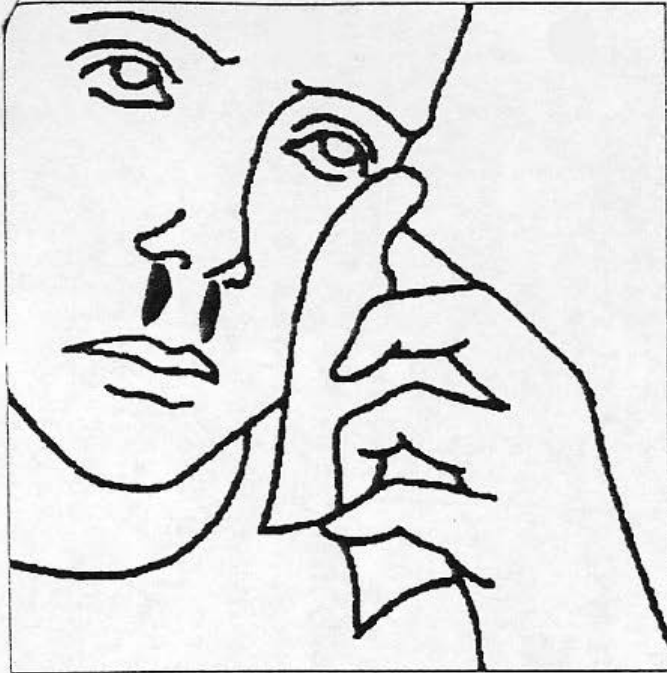
- For people who may have vision problems, pay special attention to these design criteria:
 - Keep text size to at least 12 points -- 14+ is better.
 - Use basic fonts (e.g. Times New Roman, Arial).
 - Create high contrast between text and background.
 - Use bright and bold colors.
 - Avoid fluorescent colors.
 - Avoid yellow text & not highlighting in yellow.
 - Do not juxtaposing yellow, blue & green in close proximity.

Making Printed Materials More Readable

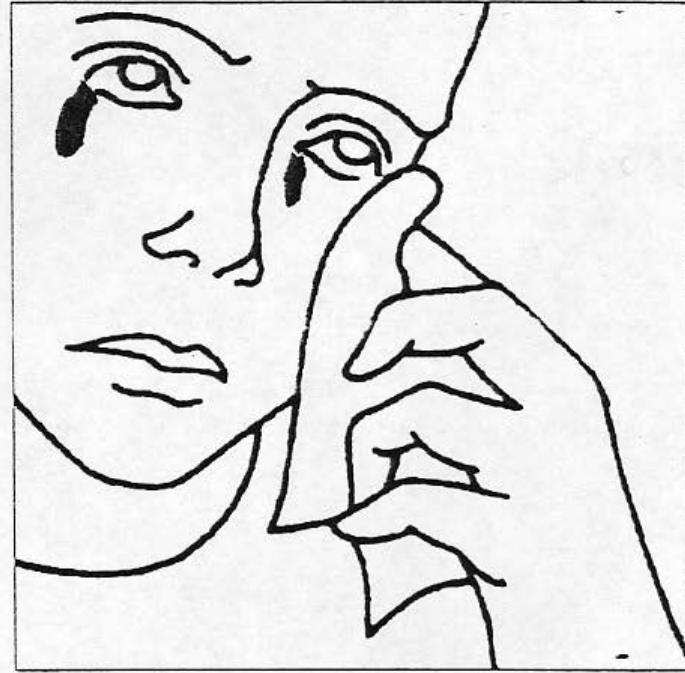
- Use pictures, photos, videos and other visuals
- Monosyllabic and simple language
- Read over the instructions—highlight important parts with color
- Lots of white space
- Make text easier to use by using:
 - Bullets
 - Columns
 - Putting key info. in a text box
- Review materials for literacy level—rewrite as necessary, ask people from your target audience for help

Using Images

- Use images that are not too abstract
- Use images that are culturally appropriate
- Put more complicated pictures in context (e.g., internal organs, small parts).

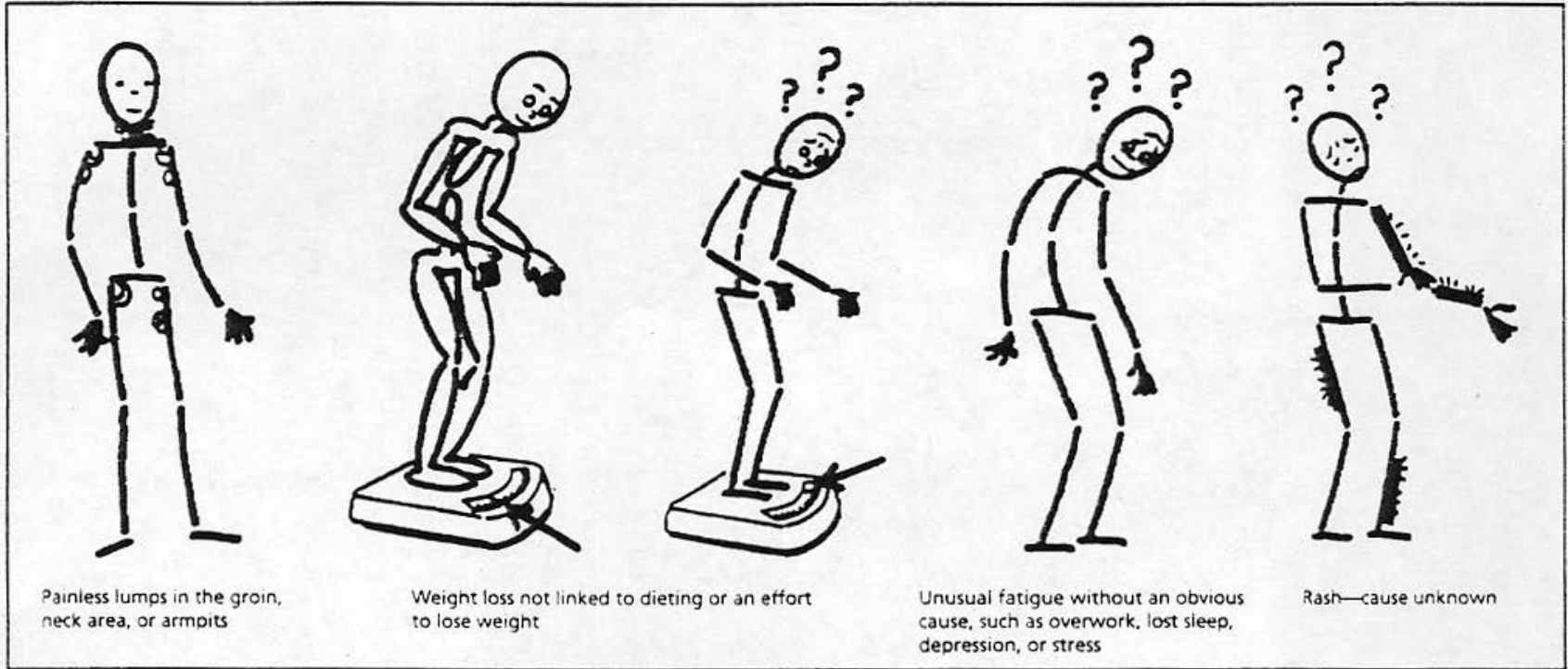


runny stuffy

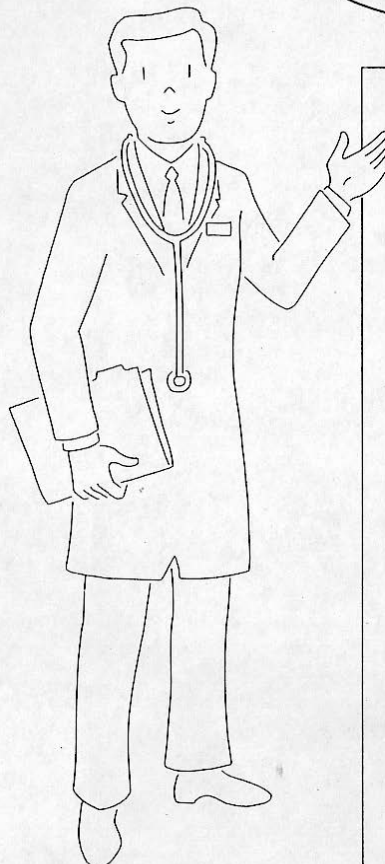


watery

Courtesy of Johns Hopkins Oncology Center



Courtesy of Johns Hopkins Oncology Center



**WHAT ARE THE
MAJOR USES OF
EMG AND NCS?**

They can help diagnose:

**PINCHED NERVES AND
INFLAMED MUSCLES,**
due to injury, a ruptured disk,
disease or other conditions

**CARPAL TUNNEL
SYNDROME**

-- pressure on a major nerve,
causing pain in the wrist
or hand

**PRIMARY MUSCLE
DISORDERS,**

such as muscular dystrophy
(a disease that causes certain
muscles to waste away)

**NEUROMUSCULAR
DISORDERS,**

such as myasthenia gravis
(a defect in nerve impulses
that causes chronic
muscle weakness)

NERVE DISORDERS,

such as amyotrophic lateral
sclerosis (Lou Gehrig's disease).

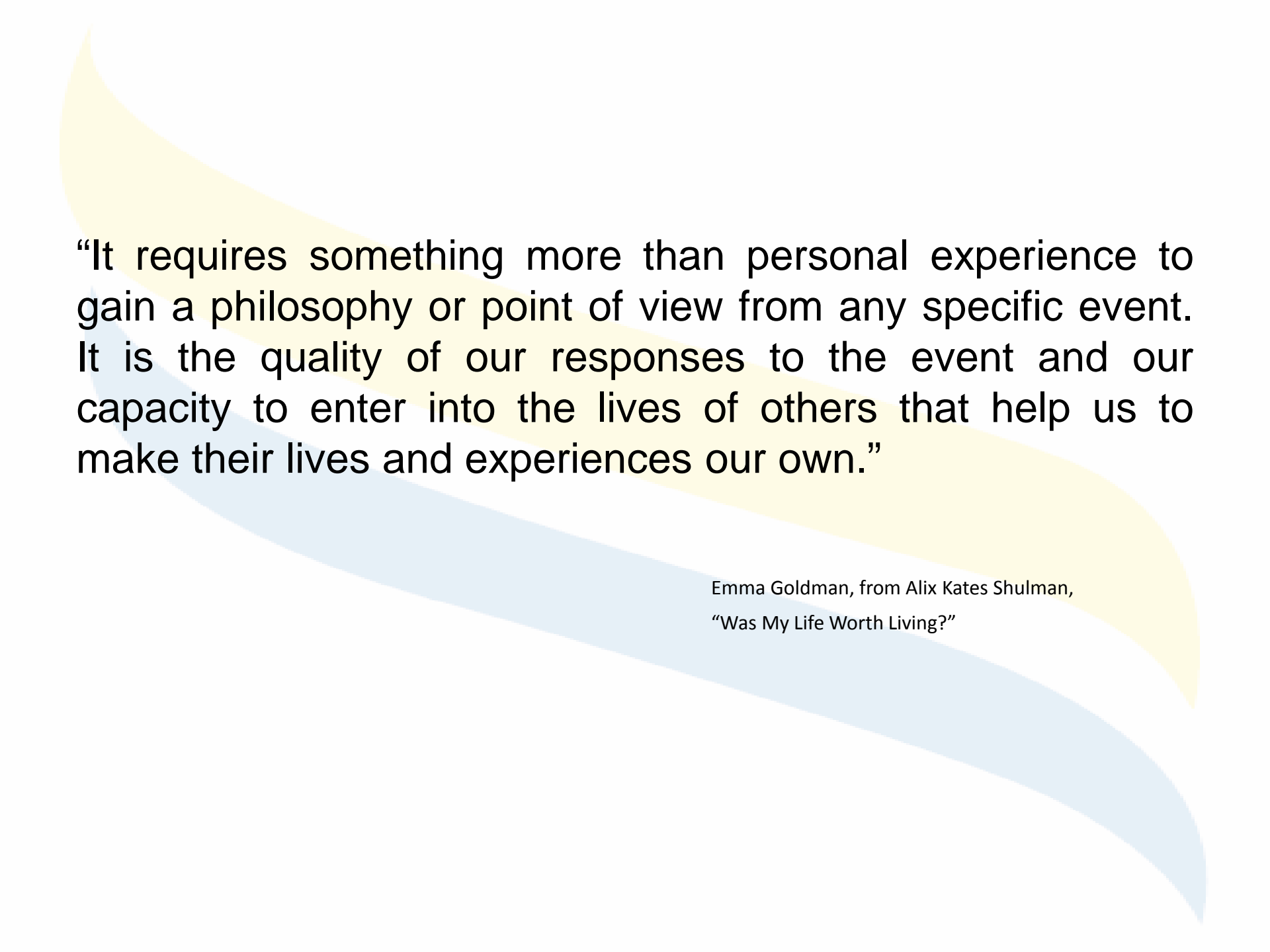


What are the warning signs?

Diabetes is a silent disease. It often has few or no symptoms. However, warning signs may include any of the following:

- You feel tired.
- You are thirsty often.
- You are losing weight without trying.
- You have to urinate more often.

Do you have any of the warning signs? Yes No



“It requires something more than personal experience to gain a philosophy or point of view from any specific event. It is the quality of our responses to the event and our capacity to enter into the lives of others that help us to make their lives and experiences our own.”

Emma Goldman, from Alix Kates Shulman,
“Was My Life Worth Living?”