



# Identifying Low Health Literacy

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# Health Literacy

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

Healthy People 2010

# What Have We Been Measuring?

- Studies documenting worse health outcomes for patients with low health literacy have measured general reading ability
- Some instruments use medical texts or terms, but are highly correlated with non-medical tests of reading ability

Nielson-Bolhman et al. Health Literacy: A prescription for understanding. IOM  
Berkman et al. Literacy and Health Outcomes. AHRQ Evidence Report

# Methods of Assessing Reading Ability

- Informal
- Word pronunciation tests
- Cloze method

Davis TC, Kennan E, Gazmararian J, Williams MV. Literacy Testing in Health Care Research. Understanding Health Literacy: Implications for Medicine and Public Health. Chicago: AMA Press; 2004.

# Informal Methods

- Fills out intake forms incompletely
- Misspelling many words
- Leaves the clinic before completing forms
- Gets angry about forms
- Identifies medication by looking at pill rather than reading the label

Weiss BD. Health literacy: a manual for clinicians. 2003

# What Doesn't Work Well?

- Years of education (except at extremes)
- Race
- Income
- Age
- Reliance on self-disclosure

# Common Instruments

- Rapid Estimate of Adult Literacy in Medicine (REALM)
- Wide Range Achievement Test (WRAT)
- Test of Functional Health Literacy in Adults (TOFHLA)
- The Newest Vital Sign (NVL): recently developed and tested

# REALM

- Word recognition and pronunciation
- Read aloud a list of 66 medical words
- Takes 2-3 minutes to administer
- Highly correlated with other standard tests of reading ability (0.88-0.97)
- Does not test comprehension
- Not available in other languages



# REALM

Prevention & Patient  
Education Project  
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fat	fatigue	allergic
flu	pelvic	menstrual
pill	jaundice	testicle
dose	infection	colitis
eye	exercise	emergency
stress	behavior	medication
smear	prescription	occupation
nerves	notify	sexually
germs	gallbladder	alcoholism
meals	calories	irritation
disease	depression	constipation
cancer	miscarriage	gonorrhea
caffeine	pregnancy	inflammatory
attack	arthritis	diabetes
kidney	nutrition	hepatitis
hormones	menopause	antibiotics
herpes	appendix	diagnosis
seizure	abnormal	potassium
bowel	sypphilis	anemia
asthma	hemorrhoids	obesity
rectal	nausea	osteoporosis
incest	directed	impetigo



# WRAT

- Word recognition and pronunciation
- Takes about 5 min to administer
- Does not use medical terms
- Standardized for use in educational settings
- Does not test comprehension
- Not available in other languages

# Advantages of Word Recognition Tests

- Quick
- Easy to administer
- Well tested in many settings

# REALM vs. WRAT

REALM	WRAT
Medical terms	Non-medical terms
2-3 minutes	5 minutes
More palatable	Off-putting
Less precise	More precise



# TOFHLA

- 17 numeracy items
- 50 reading comprehension items
- Tests ability to read and understand several health care related items
- Takes 20-30 minutes to administer
- Best for research purposes
- Well correlated with REALM and WRAT
- Available in Spanish!

# Sample TOFHLA Numeracy Question

Doxycycline

100 MG 20/0

Take medication on empty stomach one hour before or two hours after a meal unless otherwise directed by your doctor.

*If you eat lunch at 12:00 noon, and you want to take this medicine before lunch, what time should you take it?*

Available from: Peppercorn Books & Press Inc. ([www.peppercornbooks.com](http://www.peppercornbooks.com))



# Sample TOFHLA Reading Comprehension

Your doctor has sent you to have a \_\_\_\_\_ X-ray.

- a. stomach
- b. diabetes
- c. stitches
- d. germs

You must have an \_\_\_\_\_ stomach when you come in for \_\_\_\_.

- |           |       |
|-----------|-------|
| a. asthma | a. is |
| b. empty  | b. am |
| c. incest | c. if |
| d. anemia | d. it |

Available from: Peppercorn Books & Press Inc. ([www.peppercornbooks.com](http://www.peppercornbooks.com))

# Short-TOFHLA

- High correlation between first two reading comprehension passages and entire assessment (including numeracy items)
- Administer only the first two reading comprehension passages
- Takes 5-7 minutes



# REALM vs. TOFHLA

REALM	TOFHLA
Word recognition	Cloze method
2-3 minutes	5-7 minutes
Grade levels	Inadequate/marginal/ adequate
English only	English and Spanish



# Efforts to Shorten Further

- REALM-R\*
  - Shortened to 10 words
  - Very rough estimate

\*Bass et al. JGIM 2003;18:1036-8.

# The Newest Vital Sign (NVS)

- Patients are given a nutrition label
- 6 questions are verbally administered
- Assesses literacy and numeracy
- Takes 3 minutes
- Validated against the TOFHLA
- Available in English and Spanish

Weiss et al., Ann Fam Med; 3(6) 2005

# NVS: Example Question

*If you usually eat 2500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?*

Available at Pfizer Clear Communication Initiative:  
<http://www.pfizerhealthliteracy.com/physicians-providers/newest-vital-sign.html>

Figure 1A. The newest vital sign — English.

## Nutrition Facts

Serving Size 1/2 cup  
Servings per container 4

### Amount per serving

Calories 250 Fat Cal 120

	%DV
<b>Total Fat</b> 13g	20%
Sat Fat 9g	40%
<b>Cholesterol</b> 28mg	12%
<b>Sodium</b> 55mg	2%
<b>Total Carbohydrate</b> 30g	12%
Dietary Fiber 2g	
Sugars 23g	
<b>Protein</b> 4g	8%

\* Percent Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

**Ingredients:** Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

Note: This single scenario is the final English version of the newest vital sign. The type size should be 14-point (as shown above) or larger. Patients are presented with the above scenario and asked the questions shown in Figure 1b.

Weiss et al., Ann Fam Med; 3(6) 2005

# REALM vs. NVS

REALM	NVS
Word recognition	Problem-solving
2-3 minutes	3 minutes
Grade levels	Number correct (1-6)
English only	English and Spanish

# Which Instrument Should I Use?

- If just for screening, the REALM is likely the best choice
  - Easiest to explain to patients
  - Fastest
  - Reasonably accurate
- For research purposes, REALM is good, but may consider other instruments depending on goal of research

# Problems with Measuring Literacy

- Sensitive topic
- Patients go to great lengths to hide problems
- May offend some
- Inappropriate labeling

# Screening for Literacy: Can it Help Providers?

## Randomized Controlled Trial

- Physicians randomized to receive feedback on patients' literacy levels
- 441 patients screened
- 229 scored inadequate or marginal on S-TOFHLA and were included in the study

Seligman et al. JGIM 19(S1): 208; 2004.





# Results

- Physicians more likely to use extra teaching strategies (good!)
- Physicians less satisfied with visit
- 94% of patients felt literacy screening was useful
- No improvement in A1C

Seligman et al. JGIM 19(S1): 208; 2004.



# Summary

- Multiple strategies to identify poor reading ability
- Sensitive issue for patients
- If done respectfully, patients and physicians may find screening helpful

# Some Issues

- Should we measure literacy and target interventions or should we institute “universal precautions”?
- When low literacy is identified, what do we do?
- Is it enough to recognize that many patients have this problem?
- What is the role of numeracy?
- What about the pediatric population?

# The End

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