

Applied Health Literacy

Exploring Evidence-based Practices that Make Health Information Impactful

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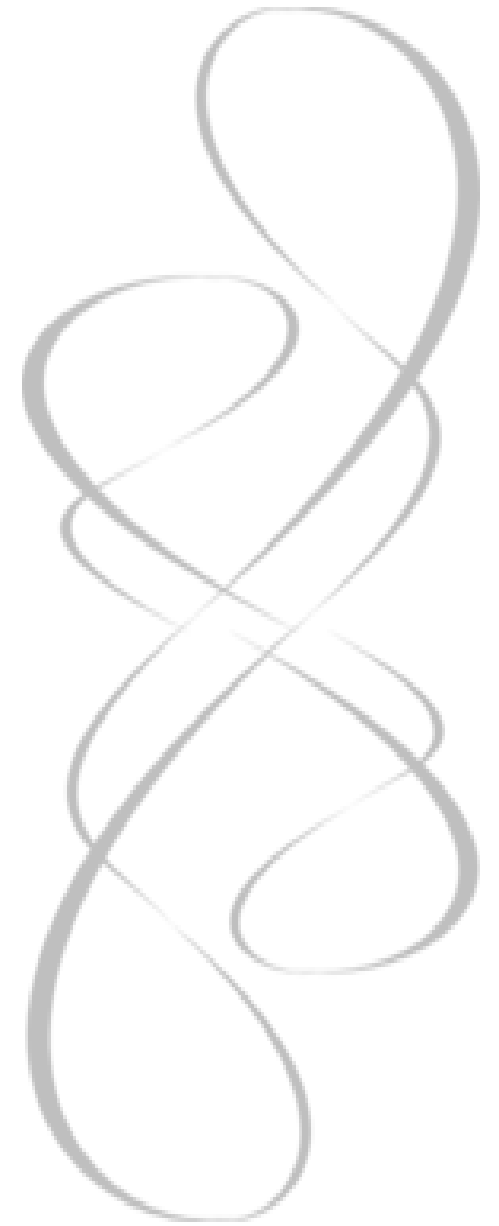


Disclosures.

- NIH
 - NIA
 - NINDS
 - NIDDK
 - NINR
 - NHLBI
- PCORI
- Gordon & Betty Moore Foundation
- RRF Foundation on Aging
- Pfizer
- Eli Lilly
- Merck
- Lundbeck
- Sanofi
- GSK
- Abbvie
- LutoUK

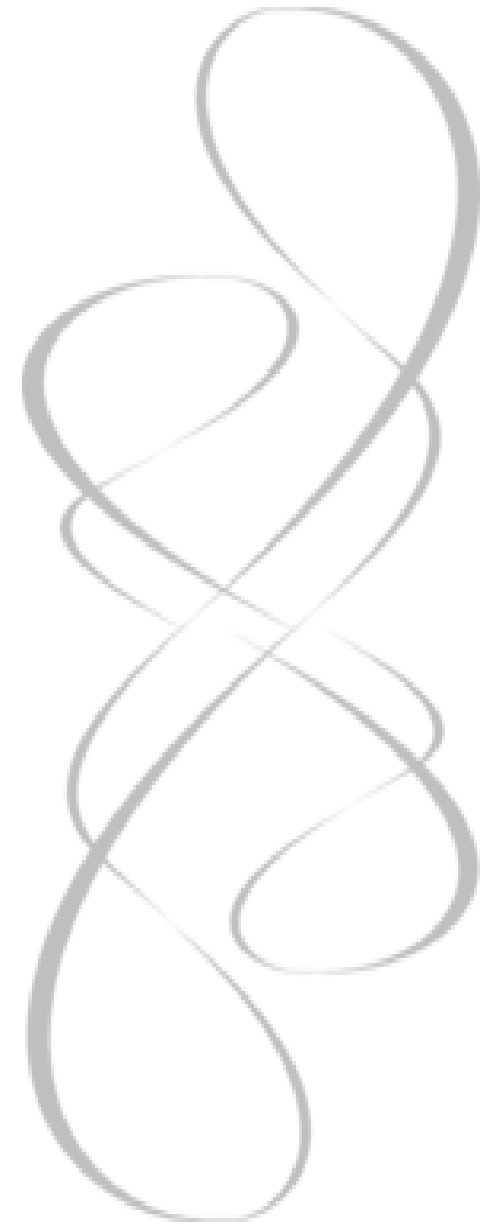
Overview.

- A (very) brief primer on health literacy



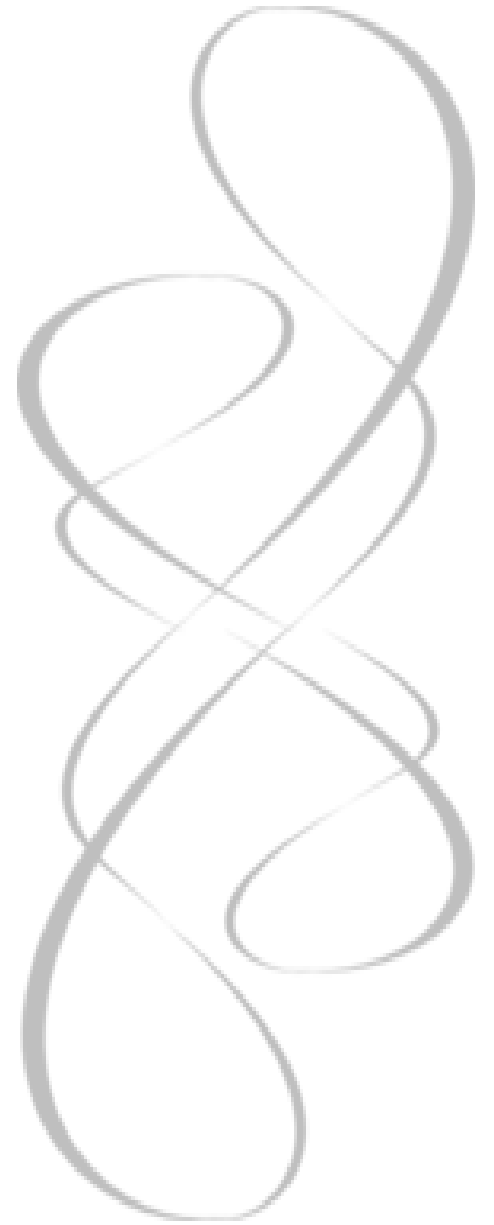
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- A (very) brief primer on health literacy
- Challenge: *Can we Confuse People Less?*



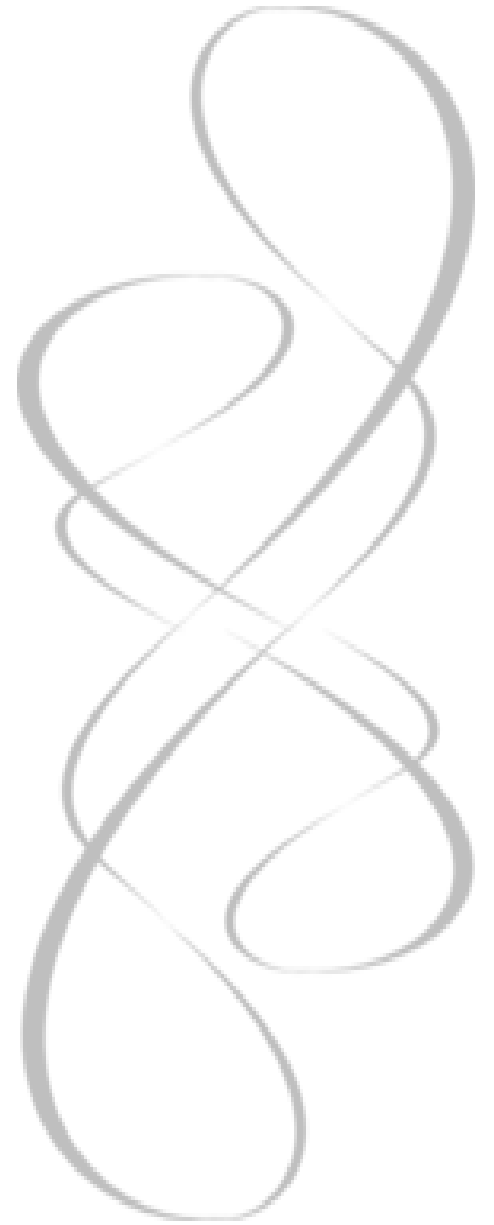
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- A (very) brief primer on health literacy
- Challenge: *Can we Confuse People Less?*
- Design of Health Information
 - The Message
 - The Modality



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- Challenge: *Can we Confuse People Less?*
- Design of Health Information
 - The Message
 - The Modality
- Towards a Coordinated System of Health Information



Health Literacy in a Nutshell.

1. **Definition:** degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others

Prevalence of Limited Health Literacy.

- Healthcare is complex: **9 out of 10** U.S. adults struggle with some aspects of navigating, self-managing health
- Studies in Europe, U.S., Asia, and Australia show similar findings of around **40-50%** of adult populations having 'limited' health literacy skills
 - **1 in 6** adults at greatest risk due to **low** health literacy
- Risk factors for limited or low health literacy: less education, lower SES, greater comorbidities, older age

Health Literacy in a Nutshell.

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2. **Personal vs. Organizational Health Literacy:** the requisite health literacy skills needed to successfully manage health is determined by the design, accessibility of a healthcare system, public health organization, and community



Navigating nutrition is like...



Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving

Calories 230 Calories from Fat 40

% Daily Value*

Total Fat 8g **12%**

Saturated Fat 1g **5%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 160mg **7%**

Total Carbohydrate 37g **12%**

Dietary Fiber 4g **16%**

Sugars 1g

Protein 3g

Vitamin A 10%

Vitamin C 8%

Calcium 20%

Iron 45%

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

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

 r/HealthyFood
by Xero0504 2 mo. ago



I just accidentally ate a whole bag of chips just to find out they had 30 grams of trans fat

I checked google and I'm not supposed to have anything so how bad is it?



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2. **Personal vs. Organizational Health Literacy:** the requisite health literacy skills needed successfully manage health is determined by the design, accessibility of a healthcare system, public health organization, and community
3. **Reducing the 'cognitive burden' of health self-management means...**
 - ✓ better communication
 - ✓ simplified patient/consumer roles

Organizations, not Individuals, Accountable for Promoting Health Literacy to Achieve Health Actions

Confusing People Less...



Let's start with acknowledging we have a problem

CDC 'Food Literacy'.

- Overall, evidence is limited and variable to date
- Front-of-package nutrition labeling (e.g. U.K.) has benefits
- Most available interventions target children and parents - are intensive
 - can improve knowledge
 - leveraging emotional engagement has benefit
 - visuals help to highlight correct portion
- Evidence demonstrates short-term benefits only

Each serving (150g) contains

Energy 1046kJ 250kcal	Fat 3.0g LOW	Saturates 1.3g LOW	Sugars 34g HIGH	Salt 0.9g MED
13%	4%	7%	38%	15%

of an adult's reference intake

Typical values (as sold) per 100g: 697kJ/ 167kcal

The Problem.

- Patients often do not read health information
 - estimates suggest only **10-30%** may review their medication information and instructions

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 - studies consistently find >50% of patients misunderstand health materials


The Problem.

- Patients often do not read R_x information
 - estimates suggest only 10-30% may review their medication information and instructions
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 - studies consistently find >50% of patients misunderstand health materials
- Inadequate understanding is linked to suboptimal health and lifestyle behaviors

Root Cause: Cognitive Load of Health Information.

- Readability (e.g. reading grade level)
- Incomplete or vague information & instructions
- Amount of content
- Format, organization
- Conflicting sources, nature of source
- Modality (spoken, print, multimedia)/opportunity for re-review
- Lack of coordinated 'system' of information
- Factual vs. procedural content
- Distraction (e.g. extraneous information, discordant imagery, environment)
- Communication speed (audio, visual)

Contents lists available at ScienceDirect

 **Patient Education and Counseling** 


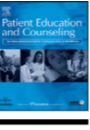
journal homepage: www.elsevier.com/locate/pateduou

Working memory and the design of health materials:
A cognitive factors perspective

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^b The Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, USA
^c Department of Learning Sciences, School of Education and Social Policy, Northwestern University, Evanston, IL, USA

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 **Patient Education and Counseling** 

journal homepage: www.elsevier.com/locate/pateduou

Research Article

Media and memory: The efficacy of video and print materials for promoting patient education about asthma

Elizabeth A.H. Wilson^{a,*}, Denise C. Park^b, Laura M. Curtis^a, Kenzie A. Cameron^c, Marla L. Clayman^c, Gregory Makoul^{d,e}, Keith vom Eigen^{d,c}, Michael S. Wolf^{a,f}

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Other Root Causes.

- Inadequate information & communication channels with health professionals likely root cause for...
 - low rates of provider-patient counseling
 - poor quality and/or incomplete counseling





Effective Design of Nutritional Information

Simple...yet Significant Communication

- Make information understandable + actionable



Simple...yet Significant Communication

- Make information understandable + actionable

Objective, evidence-based, structured assessment

- Patient Education Materials Assessment Tool 'PEMAT' (the SCIENCE)



Patient Education Materials Assessment Tool (PEMAT)



Assess Understandability

Content

- purpose evident?
- distracting content?

Word Choice/Style

- use common language?
- medical terms avoided or clarified if used?

Numbers

- numbers easy to understand?
- does not require user to make calculations?

Organization

- uses informative headers?
- content laid forth in logical sequence?
- provides summary?

Layout/Design

- Uses visual cues for key points?
- text easy to read?

Visual Aids

- illustrations or other visuals used if aids understanding?
- if used, visuals reinforce and not distract from content?
- if used, have clear titles or captions?
- if used, uncluttered?

Assess Actionability

Identifies as least 1 action user can take

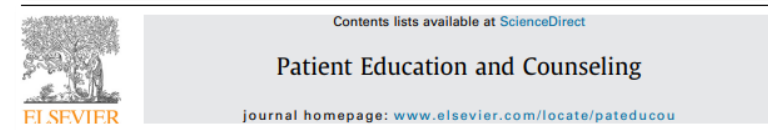
Addresses user directly when describing actions

Breaks down any action into manageable steps

Provides tangible tools when possible to make actions explicit

Provides simple instructions or examples

Uses visual aids when available to aid instructions



Development of the Patient Education Materials Assessment Tool (PEMAT): A new measure of understandability and actionability for print and audiovisual patient information

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^bFeinberg School of Medicine, Northwestern University, Chicago, USA

^cAgency for Healthcare Research and Quality (AHRQ), Rockville, USA

Simple...yet Significant Communication

- Make information understandable + actionable

Objective, evidence-based, structured assessment

- Patient Education Materials Assessment Tool 'PEMAT' (the SCIENCE)

 Re-review, in context of material's purpose, use, context (the ART)



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- Involve target audience

- 'think aloud' cognitive interview, mixed methods protocols



Simple...yet Significant Communication

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- Re-review, in context of material's purpose, use, context (the ART)

- Involve target audience

- 'think aloud' cognitive interview, mixed methods protocols

- Repeat as necessary (an iterative approach)





ELSEVIER

Contents lists available at ScienceDirect

Patient Education and Counseling

journal homepage: www.elsevier.com/locate/pateducou

Review article

Best-practices for the design and development of prescription medication information: A systematic review

Rebecca J. Mullen^{a,*}, James Duhig^c, Andrea Russell^a, Linda Scarazzini^c, Fabio Liviano^b, Michael S. Wolf^a^a Division of General Internal Medicine and Geriatrics, Feinberg School of Medicine, Northwestern University, 750 N. Lake Shore Drive, 10th Floor, Chicago, IL, 60611, United States^b Safety Sciences, AbbVie, Inc., 1 N. Waukegan Rd., GM60, AP51-2, North Chicago, IL, 60064, United States^c Pharmacovigilance and Patient Safety, AbbVie, Inc., 1 N. Waukegan Rd., GM60, AP51-2, North Chicago, IL, 60064, United States

2018 Systematic Review

Strong evidence

- Typographic cues (e.g. bolding, bullet points, headings, >12 point font size)
- Information chunking
- Plain, behavior-oriented language
- Lower reading level ($\leq 5^{\text{th}}$ grade)
- Standardized formatting

Moderate evidence

- Pictograms/icons with paired text
- Use of color
- Graphics and illustrations
- Web-based modalities
- Shorter length
- Reading level tailored to literacy or education
- Quantitative information in percentage/frequencies

Limited evidence

- Q & A headings
- Pictograms/icons without paired text
- Quantitative information in narrative form

87% of interventions that included patients in the design of materials reported positive findings vs. 67% that did not

Evidence of Benefit.

Grade



- Multiple studies, most conducted with larger samples (>200), have repeatedly found patient information designed using health literacy best practices, compared to those that did not...
 - are more efficiently reviewed (e.g. eye tracking studies)
 - improve patient comprehension (by 20-40%), treatment decision making, demonstrated use
 - higher adherence rates
 - patients who are older, with less education, lower health literacy, and with more complex regimens see greatest benefit of patient-centered instructions
 - 'closing the gap' - >50% reduction in disparities in comprehension between limited vs. adequate health literacy

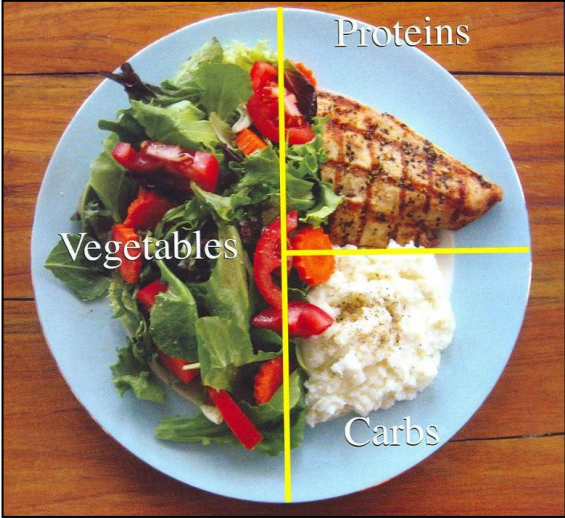
ACP Health Literacy Interventions.



This Guide Will Help You:

- 1. Get started
- 2. Eat right
- 3. Be active
- 4. Check your blood sugar
- 5. Take your pills
- 6. Learn about insulin

1



too much



right size

A Prescription to End Confusion.



- Meaningful Patient/Consumer Partnerships
- Literacy vs. Numeracy Barriers
- Clarifying vs. Avoiding Jargon
- Be 'Mindful' of the Limits of Working Memory
- ...And Other Challenges to an Aging Audience (vision, hearing)
- To Educate and Promote vs. To Inform and Disclose
- To Summarize...Summarize (and often)

Caution: Knowledge ≠ Behavior

- Access a structural issue at the foundation of the problem
- Pervasive confusion around nutrition requires focus on education
- Behavioral science perspective needed to address next steps – link nutrition literacy promotion interventions with:
 - peer-led programs
 - nudge, incentive, and feedback strategies
 - technology-enabled tools

Questions?

@nucakra

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