

Literacy and Health: Some Facts

- **The mismatch between literacy and health materials:** Literacy has a huge impact on the abilities of clients/patients to understand the written and verbal information we give them. For more than 20 years, health and medical literature has documented a mismatch between average reading abilities and the level at which health information is usually presented.

Average reading ability: 6th - 8th grade

Level of most health materials: 10th grade or higher

- **Measuring literacy:** Years ago, an adult who could write his name was considered literate. We now live in a much more complex society which demands higher levels of skill.

Literacy is sometimes measured by "grade level" of ability. This concept is somewhat vague, but has been used for years to indicate the ease or difficulty of materials as well as to categorize level of abilities of readers. There is not a precise match between these two. For example, if an adult takes a reading ability test and scores at the 10th grade level, she may or may not read with ease a pamphlet about heart disease written at the "10th grade level". That will depend on all sorts of additional factors, such as her motivation and interest, the information background she brings to the task, the visual lay-out of the material etc. Grade levels are helpful as relative indicators of how hard or easy something is to read or how well/how poorly an adult reads.

The current definition of literacy used in the 1993 National Adult Literacy Survey is: "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential." Results of the survey will be reported on proficiency scales, which will correspond only roughly to grade levels. Results will also be reported for 3 separate categories: prose, document, and quantitative literacy.

- **Statistics:**

1. Literacy testing of 250+ patients in Maine health clinics revealed:
 - 30% of patients read at 8th grade level or below.
 - 10 - 20% read only slightly better (maximum of 10th grade).
2. A 1992 national survey of adults served by Job Training and Employment Service programs revealed:
 - 38% read at only the lowest proficiency levels.

Earlier national surveys showed essentially the same widespread pattern of low literacy skills. Estimates of the numbers of "functionally illiterate" adults (those unable to use most written information to help them in their lives)

range from 20 to 80 million Americans. **The biggest problem in terms of numbers is not total illiteracy, but rather low literacy.

- **Who has low literacy skills and why?** You can't tell by looking! People with low literacy skills can be found in all walks of life. We do know that the problem is particularly concentrated in lower socioeconomic groups, minority groups, prison inmates, immigrant groups, non high-school graduates. But there are many individual exceptions.

Literacy abilities are not necessarily correlated with formal education for any given individual. That is, a person with a high school diploma is not necessarily a capable reader and vice versa.

The reasons for low literacy are complex, ranging from growing up with parents who couldn't read to learning disabilities. Persons with low literacy skills are not stupid. Many struggle hard to learn to read as adults. Many learn effectively in other ways.

- **Educational status correlates with health status.** In the aggregate, adults with the lowest literacy skills have the poorest health. They have the highest rates of morbidity, mortality, and disability from all causes. We don't know why this is true, but the trend is worldwide. Probably one important component is that people with low literacy skills lack information about how to prevent and manage health problems.

- **Literacy is contextual.** Reading is more than knowing words and their individual meaning. Understanding is based on context. Adults who can read about and understand last night's basketball game in the sports pages may not be able to read a health insurance brochure or a pre-operative instruction sheet with the same understanding. They may lack an adequate frame of reference to create meaning from the printed words.

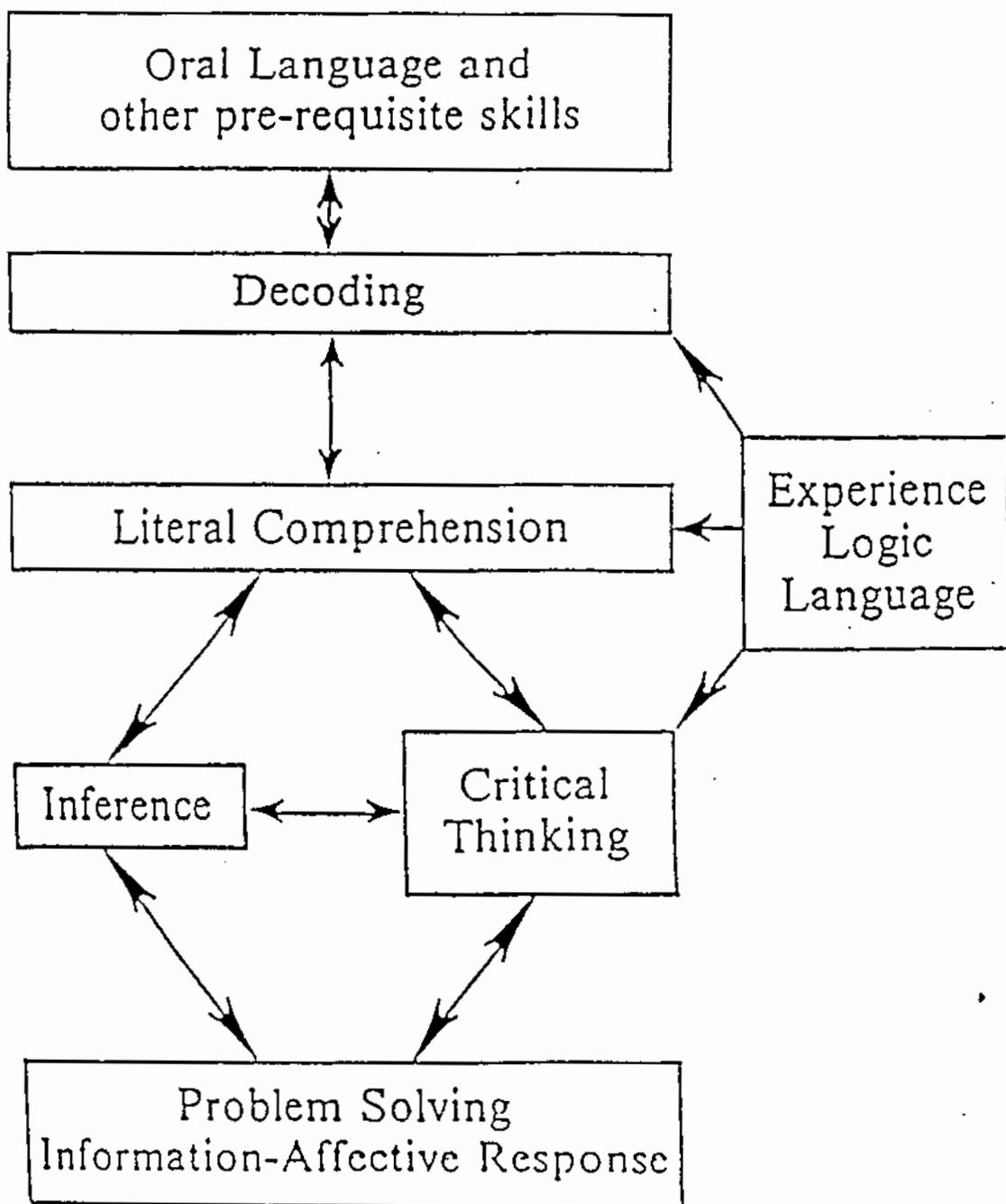
- **Lost abilities:** If adults discontinue using acquired reading skills, they lose them. The average adult reads 3 to 5 grade levels below the highest grade of school completed.

- **Hiding low literacy:** Adults with low literacy skills generally hide their inabilities. They may "forget their glasses", "take papers home to their spouse to look over", "not have time" to fill out papers etc.

- **Life impact of low literacy:** Adults with low literacy skills are cut off from a major source of information about the world - the printed word. The combination of having limited skills and trying to hide that deficit may both contribute to a very limited life and a small personal view of the world.

- **Stress, illness, anxiety reduce everyone's ability to learn and remember.** We all need easy-to-read information when we're sick and almost all of us appreciate easy-to-read materials when we "just want the facts". Even able readers ignore forms, letters, surveys, instruction sheets, educational materials, which are long and dense, unless they are very motivated.

Levels in the Reading Process





Check Sheet For Easy to Read Materials

Name of Material: _____

Place a check in the box if you think this material meets these criteria.

Organization

- 1. There is an attractive cover that indicates the core content and the intended audience.
- 2. The desired behavior changes are immediately evident. "Need to know" information is stressed, not "Nice to know".
- 3. Not more than 3 or 4 major points are indicated.
- 4. There are headers and summaries to aid organization and provide message repetition.
- 5. There is a summary that stresses what to do.

Writing Style

- 6. The writing style uses active-voice; conversational style.
- 7. There is little or no technical jargon.
- 8. The writing is vivid and interesting. The tone is friendly.

Appearance:

"No one wants to go to the bog"

Text/print

- 9. The pages or sections are uncluttered. Ample white spaces.
- 10. Lower case letters are used throughout. (Capitals only where grammatically appropriate.)
- 11. There is good print-paper contrast.
- 12. The print is at least 12 to 14 point with a serif. There are no stylized letters.

Illustrations

- 13. There are simple illustrations (line drawings are best).
- 14. Illustrations serve to amplify the text.

Appeal

- 15. The piece is culturally and age appropriate.
- 16. The piece matches as closely as possible the logic, language and experience of the intended audience.
- 17. There are things that invite interaction (questions, responses, suggested action, etc.).

Comments:

Side 2

In the coming six months your child will change more than at any time in the next 75 years. Get ready - babies don't stay babies long!

"Good changes depend on what parents do." says the Harvard Preschool Project. The study found these three things will help most:

1. Let your child explore.
2. Tune in to what your child wants.
3. Say "No!" when you need to.

Make it
safe to
explore

Here's what parents in this study did that helped their children change in ways that made everyone happy. They put things out of reach that could be broken or were not safe. Then children could explore and learn.

Check out
feelings
Teach how
to cope

When children got excited, angry or hurt and wanted attention, they tried to find out why. Then they taught the child what to do to make things better. These one-minute lessons went on all day long.

Set limits
Stick with
them

The parents could say "No!" and mean it. The child could count on the rules; they stayed the same.

So if you want your child to make the most of the next six months:

1. Let him explore a safe world.
2. Watch for feelings; coach to solve problems.
3. Say "No!" if you must - every time.

Side 1

Remember the first time you saw your newborn and wondered how anything could be that small and fragile? However, in the next 180 days you will see more changes in your child's behavior than at any later period of life. The old saying holds true: "Babies don't stay babies long!"

For many years, the Harvard Preschool Project has been studying the behavior differences between well-developed and poorly-developed children. They report that some differences are related to the way parents handled their children and organized their lives. Parents of well-developed children were less restrictive, good at judging what the children wanted, and also able to say "NO" when their children made unreasonable demands.

Parents understood their children's needs and encouraged development in three major ways. One, they childproofed their home so their children could explore their surroundings and use their natural curiosity. Two, they were "consultants" to their children as they explored their world, got excited, hurt or frustrated and then wanted attention.

They tried to identify the source of their children's feelings and "teach" them how to cope with their world. These little one-minute teaching and learning exchanges might happen dozens of times a day. Three, they set firm limits and were consistent in their discipline.

So, to help your child develop fully in the next six months, be a helpful consultant, a creative designer of his or her world and a sensible source of authority and discipline.

School: _____

Address: _____

FLUORIDE RINSE PERMISSION SLIP

Dear Parent/Guardian:

Your child's school has approved a dental health education program to be conducted in cooperation with the Maine Department of Human Services, Office of Dental Health. This program is open to all students in grades kindergarten through six. The dental program involves classroom education and a weekly fluoride mouthrinse. This simple method of providing fluoride has been proven to be safe and effective in preventing tooth decay by up to 35 percent.

Once a week, children with parental permission will be given a small amount of fluoride mouthrinse which comes premixed in a packet. The solution is swished around the mouth for one minute, emptied back into the packet and thrown away. Fluoride rinse protects teeth that are already present in the mouth and is beneficial to children whether or not their drinking water is fluoridated. It also benefits children who are taking fluoride tablets.

This program is very important to the oral health of your child. Participation is entirely voluntary and without cost to you. This preventive dental program should not take the place of good dental care at home or regular visits to your dentist. Please return the completed form as soon as possible to your child's teacher.

If you live in an area which does not have fluoridated drinking water, it is recommended that you talk with your family dentist or family physician about taking daily fluoride tablets.

If you have any questions regarding this program please call:

(name of program director and phone number)

Sincerely,

Superintendent,

_____, Public School System

PLEASE CLIP

School Dental Health Education Program
PERMISSION SLIP

Child's Name: _____

Parent/Guardian's Name and Address: _____

Telephone: _____ (Home) _____ (Work)

Child's Grade Level: _____ Teacher's Name: _____

Child's Birthdate: ___/___/___ Child's Sex: Male Female

Yes, I would like my child to participate in the fluoride mouthrinse program.

No, I do not want my child to participate.

Today's Date: ___/___/___ Parent/Guardian's Signature: _____

I would be willing to volunteer at my child's school to assist in the fluoride/dental health prevention program.

PLEASE RETURN THIS PERMISSION SLIP



Sign and return this form

Fluoride Rinse at School

Your child can get free fluoride rinse once a week during school. Fluoride makes your child's teeth strong and helps prevent tooth decay. If you have fluoride in your drinking water, your child can still use the rinse.

Please fill out this form and return it to your child's teacher by _____

Check one:

- Yes, I want my child to use the weekly fluoride rinse at school.
- No, I do not want my child to use fluoride rinse at school.

Child's Name

Grade

School

Teacher

_____ /

Parent/Guardian Signature

_____ /

Date

Telephone

Check this box if you want to help out with this program.

* Call _____ if you have any questions.

* If you don't have fluoride in your drinking water, be sure to ask your dentist about fluoride tablets.

This dental program receives funding from the Maine Department of Human Services, Bureau of Health, Division of Dental Health.

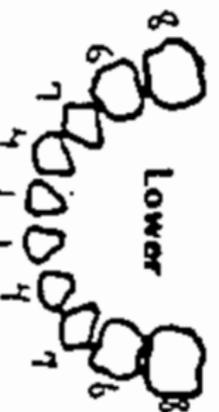
Form development supported by the Maine Statewide AHEC System, the University of New England, and the Bingham Program in cooperation with Maine DHS, Division of Dental Health, May 1993.

WATCH THEM GROW

Between ages 6 months and 2 years, 20 primary or "baby" teeth will grow in your child's mouth. "Baby" teeth are important because they help with chewing, speech, appearance, and keeping spaces for the future permanent teeth. At 6 years old the permanent 6 year molars will erupt behind the primary molars. The front primary teeth begin to fall out between 6-8 years old. The back primary teeth begin to fall out between 10-12 years old.

| PRIMARY TEETH | | | |
|---------------------------------|--------|-------|-------|
| TOOTH | MONTHS | YEARS | DECAT |
| 1 Lower Central Incisor | 7-8 | 6-7 | |
| 2 Upper Central Incisor | 9-10 | 7-8 | |
| 3 Upper Lateral Incisor | 11-12 | 8 | |
| 4 Lower Lateral Incisor | 12-13 | 7-8 | |
| 5 Upper First Molars | 14-15 | 10-11 | |
| 6 Lower First Molars | 15-16 | 10-11 | |
| 7 Upper and Lower Cusplids | 18-19 | 12 | |
| 8 Upper and Lower Second Molars | 26-27 | 11-12 | |

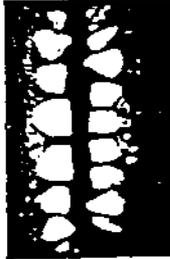
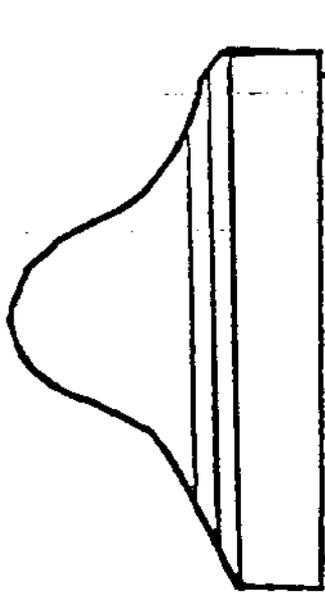
Baby



Teeth

Numbers correspond to numbers in table and indicate the ORDER OF ERUPTION

BABY BOTTLE TOOTH DECAY



Healthy primary (baby) teeth



Severe decay

Parents may not realize that baby's teeth can decay as soon as they appear in the mouth. When baby is put to bed with a bottle, the liquid is not swallowed quickly. It drips into the mouth and collects around the teeth. Any liquid, except water, will begin to damage the teeth.

Never put anything but water in your baby's bedtime bottle. Anything else, a sugary liquid, even milk, can destroy the teeth when it sits there.

If a pacifier is used, it should be an orthodontic type. Keep the pacifier clean, and never dip it in any sweet substance.

Baby Bottle Tooth Decay causes unnecessary pain to young children. It creates serious oral health problems, and can cost over \$2000 to repair.

Close to the time of your child's first birthday you should begin weaning from the bottle and teaching the use of a drinking cup.

CLEAN AND HEALTHY

After each feeding, wipe baby's gums with a clean, damp washcloth or gauze pad. Begin brushing as soon as the first tooth appears. It is important to keep the teeth and gums clean. Removing food and plaque daily will start baby on the road to healthy teeth, as well as getting used to and enjoying having teeth brushed. For an infant, just use a moistened toothbrush. By age 2 years use just a "pea size" amount of toothpaste. The child should not swallow. Mouthwashes with fluoride should not be used until at least 5 years of age - or when the child can spit the rinse out. Keep all mouthwash bottles out of children's reach!



FLUORIDE FOR STRONG TEETH

Fluoride is a naturally occurring mineral which can reduce tooth decay by as much as 60%. It is found in some drinking water, toothpastes, rinses, and can be prescribed by your dentist or doctor in drops or tablet form. Fluoride strengthens tooth enamel and should be available to the teeth throughout life.

Children who live in an area where the drinking water is not fluoridated, should begin taking daily supplements at six months of age until age 16 years. Ask your healthcare provider for a prescription for your child. Keep fluoride bottles out of children's reach and use childproof caps.

The drinking water is fluoridated in 13 NH cities and towns. They are: Concord, Dover, Durham, East Conway, Hanover, Lancaster, Lebanon, New Castle, North Conway, Pease AFB, Portsmouth, Rochester and Whitefield.

NUTRITION

Children need a healthy diet for proper tooth development. Protein, vitamins and minerals (especially calcium, phosphorus and fluoride) are key to strong teeth. Well balanced meal plans for general and dental health include a variety of foods: fruits & vegetables, breads & cereals, milk and dairy, meat, fish & eggs. Repeated snacking on sweet, sticky foods or drinks (candy, cakes, cookies, soda) will weaken tooth enamel and leads to cavity formation.

5th grade level

RAPID ESTIMATE OF ADULT LITERACY IN MEDICINE (REALM)[©]

Terry Davis, PhD • Michael Crouch, MD • Sandy Long, PhD

Patient Name/ Subject # _____ Date of Birth _____

Reading Level _____
Grade Completed _____

Date _____ Clinic _____ Examiner _____

List 1

List 2

List 3

fat _____
flu _____
pill _____
dose _____
eye _____
stress _____
smear _____
nerves _____
germs _____
meals _____
disease _____
cancer _____
caffeine _____
attack _____
kidney _____
hormones _____
herpes _____
seizure _____
bowel _____
asthma _____
rectal _____
incest _____

fatigue _____
pelvic _____
jaundice _____
infection _____
exercise _____
behavior _____
prescription _____
notify _____
gallbladder _____
calories _____
depression _____
miscarriage _____
pregnancy _____
arthritis _____
nutrition _____
menopause _____
appendix _____
abnormal _____
syphilis _____
hemorrhoids _____
nausea _____
directed _____

allergic _____
menstrual _____
testicle _____
colitis _____
emergency _____
medication _____
occupation _____
sexually _____
alcoholism _____
irritation _____
constipation _____
gonorrhea _____
inflammatory _____
diabetes _____
hepatitis _____
antibiotics _____
diagnosis _____
potassium _____
anemia _____
obesity _____
osteoporosis _____
impetigo _____

SCORE

List 1 _____
List 2 _____
List 3 _____
Raw Score _____

RAPID ESTIMATE OF ADULT LITERACY IN MEDICINE

The Rapid Estimate of Adult Literacy in Medicine (REALM) is a screening instrument to assess an adult patient's ability to read common medical words and lay terms for body parts and illnesses. It is designed to assist medical professionals in estimating a patient's literacy level so that the appropriate level of patient education materials or oral instructions may be used. The test takes 2 to 3 minutes to administer and score. The REALM has been correlated with other standardized tests.

Correlation of REALM with SORT, PIAT-R, and WRAT-R

| | PIAT-R Recognition | SORT | WRAT-R |
|-------------------------|-----------------------|---------|---------|
| Correlation Coefficient | .97 | .96 | .88 |
| P Value | p<.0001 | p<.0001 | p<.0001 |

Reliability Studies

| Test-Retest | Inter-Rater |
|-------------|-------------|
| (n = 100) | (n = 20) |
| .99 | .99 |

DIRECTIONS:

1. Give the patient a laminated copy of the REALM and score answers on an unlaminated copy that is attached to a clipboard. Hold the clipboard at an angle so that the patient is not distracted by your scoring procedure. Say:
"I want to hear you read as many words as you can from this list. Begin with the first word on List 1 and read aloud. When you come to a word you cannot read, do the best you can or say "blank" and go on to the next word."
2. If the patient takes more than five seconds on a word, say "blank" and point to the next word, if necessary, to move the patient along. If the patient begins to miss every word, have him/her pronounce only known words.
3. Count as an error any word not attempted or mispronounced. Score by marking a plus (+) after each correct word, a check (✓) after each mispronounced word, and a minus (-) after words not attempted. Count as correct any self-corrected word.
4. Count the number of correct words for each list and record the numbers in the "SCORE" box. Total the numbers and match the total score with its grade equivalent in the table below.

GRADE EQUIVALENT

Raw Score

Grade Range

0-18

3rd Grade and Below

Will not be able to read most low literacy materials; will need repeated oral instructions, materials composed primarily of illustrations, or audio or video tapes.

19-44

4th to 6th Grade

Will need low literacy materials; may not be able to read prescription labels.

45-60

7th to 8th Grade

Will struggle with most patient education materials; will not be offended by low literacy materials.

61-66

High School

Will be able to read most patient education materials.

Fry Readability Graph: Directions for Use

1. Randomly select three passages from a book or article and count out exactly 100 words beginning with the beginning of a sentence.
2. Count the number of sentences in each 100 words, estimating length of the fraction of the last sentence to the nearest 1/10th. That is, for the last sentence (one which contains the 100th word), estimate what proportion of the sentence is completed up to the 100th word to the nearest 1/10th.
3. Count the total number of syllables in each 100-word passage. An easy way is to put a mark above every syllable beyond one in each word; then, when you get to the end of the passage, count the number of marks and add 100.
4. Find the average number of sentences and the average number of syllables from the three passages by dividing the total of all 3 samples by 3.

EXAMPLE

| | Number of Sentences | Number of Syllables |
|----------------------------|----------------------------------|--------------------------------|
| First 100 words | 5.9 | 124 |
| Second 100 words | 4.8 | 141 |
| Third 100 words | 6.1 | 158 |
| Totals | <hr/> 16.8 | <hr/> 423 |
| <u>Totals divided</u> 3 | = <u>5.6</u> Average # sentences | <u>141</u> Average # syllables |

5. Look on the Fry graph. Find the average number of syllables on the horizontal axis and the average number of sentences on the vertical axis. Where these points intersect is the grade level of the material. (8th grade for example above)

Additional Information

- Count proper nouns.
- A word is defined as a group of symbols with a space on either side; thus "Joe", "IRA", "1978", and "&" are each one word.
- For initializations (IRA) and numerals (1978), count 1 syllable for each symbol. So IRA = 3 syllables and 1978 = 4 syllables.

Graph for Estimating Readability—Extended

