Handouts for Workshop

# How to Select or Create Materials Your Patients Will Actually Understand

Linda S. Gottfredson, PhD University of Delaware Kathy Stroh, MS, RD, LDN, CDE Westside Health Center Wilmington, DE

American Association of Diabetes Educators Annual Meeting San Diego, August 11, 2016

### Table of Contents

### Assessment tools ©

- 1. Plain Language Word suggestions (3pp)
- 2. Checklist for CDC's Clear Communications Index
- 3. Bloom's Taxonomy of Learning Objectives (Cognitive)
- 4. Checklist for assessing cognitive burdens in learning and doing self-care
- 5. Checklist for assessing patient's cognitive resources, help, & drains in learning and doing self-care tasks

### Examples for discussion ©

- 2. Using insulin: Version 1
- 3. Using insulin: Version 2
- 4. Blood glucose log (no label)
- 5. Spotting hazards picture
- 6. Typical literacy items, by difficulty level
- 7. What make some items more difficult? "Information processing complexity"
- 8. Matrix of cognitive risk
- 9. Strategy for DSME/T
- 10. Nutrition facts label
- 11. Sugar free cookies nutrition label
- 12. Macaroni & cheese nutrition label
- 13. Grilled chicken nutrition label
- 14. Hazelnut creamer nutrition label
- 15. Reading food labels
- 16. Traditional American cuisine
- 17. Increasing physical activity by using a pedometer
- 18. Pedometer challenge
- 19. Pedometer log
- 20. Measuring blood sugar: Version 1
- 21. Measuring blood sugar: Version 2
- 22. Blood sugar logs (2)
- 23. Blood sugar logs (2 more)
- 24. Barriers to medication adherence
- 25. Blank page
- 26. Using syringes: Version 1
- 27. Using syringes: Version 2
- 28. Needle safety: version 1
- 29. Needle safety: version 2
- 30. Calculating your insulin doses
- 31. Blood sugar too high or too low?
- 32. Traveling with diabetes
- 33. A1c table & graph
- 34. Views about your diabetes

5 Assessment Tools

### Plain Language Word Suggestions

### Assessment Tool 1 (3 pp)

|                          | Assessmen              | tlo | ool 1 (3 pp)         |                          |
|--------------------------|------------------------|-----|----------------------|--------------------------|
| INSTEAD OF               | TRY                    |     | INSTEAD OF           | TRY                      |
| a and/or b               | a or b or both         |     | consolidate          | combine, join, merge     |
| accompany                | go with                |     | constitutes          | is, forms, makes up      |
| accomplish               | carry out, do          |     | contains             | has                      |
| accorded                 | given                  |     | convene              | meet                     |
| accordingly              | so                     |     | currently            | (omit), now              |
| accrue                   | add, gain              |     | deem                 | believe, consider, think |
| accurate                 | correct, exact, right  |     | delete               | cut, drop                |
| additional               | added, more, other     |     | demonstrate          | prove, show              |
| address                  | discuss                |     | depart               | leave                    |
| addressees               | you                    |     | designate            | appoint, choose, name    |
| addressees are requested | (omit), please         |     | desire               | want, wish               |
| adjacent to              | next to                |     | determine            | decide, figure, find     |
| advantageous             | helpful                |     | disclose             | show                     |
| adversely impact on      | hurt, set back         |     | discontinue          | drop, stop               |
| advise                   | recommend, tell        |     | disseminate          | give, issue, pass, send  |
| afford an opportunity    | allow, let             |     | due to the fact that | due to, since            |
| aircraft                 | plane                  |     | during the period    | during                   |
| allocate                 | divide                 |     | effect modifications | make changes             |
| anticipate               | expect                 |     | elect                | choose, pick             |
| a number of              | some                   |     | eliminate            | cut, drop, end           |
| apparent                 | clear, plain           |     | employ               | use                      |
| appreciable              | many                   |     | encounter            | meet                     |
| appropriate              | (omit), proper, right  |     | endeavor             | try                      |
| approximate              | about                  |     | ensure               | make sure                |
| arrive onboard           | arrive                 |     | enumerate            | count                    |
| as a means of            | to                     |     | equipments           | equipment                |
| ascertain                | find out, learn        |     | equitable            | fair                     |
| as prescribed by         | in, under              |     | establish            | set up, prove, show      |
| assist, assistance       | aid, help              |     | evidenced            | showed                   |
| attain                   | meet                   |     | evident              | clear                    |
| attempt                  | try                    |     | exhibit              | show                     |
| at the present time      | at present, now        |     | expedite             | hasten, speed up         |
| be advised               | (omit)                 |     | expeditious          | fast, quick              |
| benefit                  | help                   |     | expend               | spend                    |
| by means of              | by, with               |     | expertise            | ability                  |
| capability               | ability                |     | expiration           | end                      |
| caveat                   | warning                |     | facilitate           | ease, help               |
| close proximity          | near                   |     | failed to            | didn't                   |
| combat environment       | combat                 |     | feasible             | can be done, workable    |
| combined                 | joint                  |     | females              | women                    |
| commence                 | begin, start           |     | finalize             | complete, finish         |
| comply with              | follow                 |     | for a period of      | for                      |
| component                | part                   |     | for example,etc.     | for example, such as     |
| comprise                 | form, include, make up |     | forfeit              | give up, lose            |
| concerning               | about, on              |     | forward              | send                     |
| consequently             | so                     |     | frequently           | often                    |

Gottfredson-Stroh Workshop

### Plain Language Word Suggestions

|                        | Fiaili Laliguage W            |                   | AADE August 11, 2010         |
|------------------------|-------------------------------|-------------------|------------------------------|
|                        | Assessment                    | Fool 1 (3 pp)     |                              |
| function               | act, role, work               | magnitude         | size                         |
| furnish                | give, send                    | maintain          | keep, support                |
| has a requirement for  | needs                         | maximum           | greatest, largest, most      |
| herein                 | here                          | methodology       | method                       |
| heretofore             | until now                     | minimize          | decrease, method             |
| herewith               | below, here                   | minimum           | least, smallest              |
| however                | but                           | modify            | change                       |
| identical              | same                          | monitor           | check, watch                 |
| identify               | find, name, show              | necessitate       | cause, need                  |
| immediately            | at once                       | notify            | let know, tell               |
| impacted               | affected, changed             | not later than 10 | May by 10 May, before 11 May |
| implement              | carry out, start              | not later than 16 | 00 by 1600                   |
| in accordance with     | by, following, per, under     | notwithstanding   | inspite of, still            |
| in addition            | also, besides, too            | numerous          | many                         |
| in an effort to        | to                            | objective         | aim, goal                    |
| inasmuch as            | since                         | obligate          | bind, compel                 |
| in a timely manner     | on time, promptly             | observe           | see                          |
| inception              | start                         | on ab             | asis (omit)                  |
| incumbent upon         | must                          | operate           | run, use, work               |
| indicate               | show, write down              | optimum           | best, greatest, most         |
| indication             | sign                          | option            | choice, way                  |
| initial                | first                         | parameters        | limits                       |
| initiate               | start                         | participate       | take part                    |
| in lieu of             | instead                       | perform           | do                           |
| in order that          | for, so                       | permit            | let                          |
| in order to            | to                            | pertaining to     | about, of, on                |
| in regard to           | about, concerning, on         | portion           | part                         |
| in relation to         | about, with, to               | possess           | have, own                    |
| inter alia             | (omit)                        | practicable       | practical                    |
| interface              | meet, work with               | preclude          | prevent                      |
| interpose no objection | don't object                  | previous          | earlier                      |
| in the amount of       | for                           | previously        | before                       |
| in the event of        | if                            | prioritize        | rank                         |
| in the near future     | shortly, soon                 | prior to          | before                       |
| in the process of      | (omit)                        | proceed           | do, go ahead, try            |
| in view of             | since                         | procure           | (omit)                       |
| in view of the above   | SO                            | proficiency       | skill                        |
| is applicable to       | applies to                    | promulgate        | issue, publish               |
| is authorized to       | may                           | provide           | give, offer, say             |
| is in consonance with  | agrees with, follows          | provided that     | if                           |
| is responsible for     | (omit) handles                | provides guidanc  | e for guides                 |
| it appears             | seems                         | purchase          | buy                          |
| it is                  | (omit)                        | pursuant to       | by, following, per, under    |
| it is essential        | must, need to                 | reflect           | say, show                    |
| it is requested        | please, we request, I request | regarding         | about, of, on                |
| liaison                | discussion                    | relative to       | about, on                    |
| limited number         | limits                        | relocate          | move                         |

Gottfredson-Stroh Workshop

### Plain Language Word Suggestions

| Assessment | Tool | 1          | (2 nn) |
|------------|------|------------|--------|
|            | 1001 | - <b>L</b> |        |

|                         | Assessment Te       | ool 1 (3 pp)          |                  |
|-------------------------|---------------------|-----------------------|------------------|
| remain                  | stay                | warrant               | call for, permit |
| remainder               | rest                | whereas               | because, since   |
| remuneration            | pay, payment        | with reference to     | about            |
| render                  | give, make          | with the exception of | except for       |
| represents              | is                  | witnessed             | saw              |
| request                 | ask                 | your office           | you              |
| require                 | must, need          | / (slash)             | and, or          |
| requirement             | need                |                       |                  |
| reside                  | live                |                       |                  |
| retain                  | keep                |                       |                  |
| said, some, such        | the, this, that     |                       |                  |
| selection               | choice              |                       |                  |
| set forth in            | in                  |                       |                  |
| similar to              | like                |                       |                  |
| solicit                 | ask for, request    |                       |                  |
| state-of-the-art        | latest              |                       |                  |
| subject                 | the, this, your     |                       |                  |
| submit                  | give, send          |                       |                  |
| subsequent              | later, next         |                       |                  |
| subsequently            | after, later, then  |                       |                  |
| substantial             | large, much         |                       |                  |
| successfully complete   | complete, pass      |                       |                  |
| sufficient              | enough              |                       |                  |
| take action to          | (omit)              |                       |                  |
| terminate               | end, stop           |                       |                  |
| the month of            | (omit)              |                       |                  |
| there are               | (omit)              |                       |                  |
| therefore               | so                  |                       |                  |
| therein                 | there               |                       |                  |
| there is                | (omit)              |                       |                  |
| thereof                 | its, their          |                       |                  |
| the undersigned         | 1                   |                       |                  |
| the use of              | (omit)              |                       |                  |
| this activity, command  | us, we              |                       |                  |
| timely                  | prompt              |                       |                  |
| time period             | (either one)        |                       |                  |
| transmit                | send                |                       |                  |
| type                    | (omit)              |                       |                  |
| under the provisions of | under               |                       |                  |
| until such time as      | until               |                       |                  |
| utilize, utilization    | use                 |                       |                  |
| validate                | confirm             |                       |                  |
| viable                  | practical, workable |                       |                  |
| vice                    | instead of, versus  |                       |                  |
| viable                  | practical, workable |                       |                  |

### Checklist for CDC's Clear Communications Index

| Before You Begin, Ask Yourself:  |
|--|
| 1. Who is my primary audience?   |
| 2. What do I know about the health literacy skills of my audience?   |
| 3. What is my primary communication objective?   |
| 4. What is the main message statement in the material?   |
| Part A: Core (applies to all materials)  |
| Main Message and Call to Action  |
| 1. Does the material contain one main message statement?   |
| 2. Is the main message at the top, beginning, or front of the material?  |
| 3. Is the main message emphasized with visual cues?  |
| 4. Does the material contain at least one visual that conveys or supports the main message?  |
| 5. Does the material include one or more calls to action for the primary audience?   |
| Language   |
| 6. Do <u>both</u> the main message and the call to action use the active voice?  |
| 7. Does the material always use words the primary audience uses?   |
| Information Design   |
| 8. Does the material use bulleted or numbered lists?   |
| 9. Is the material organized in chunks with headings?  |
| 10. Is the most important information the primary audience needs summarized in the first paragraph or  |
| section? State of the Science  |
| 11. Does the material explain what authoritative sources, such as subject matter experts and agency  |
| spokespersons, know <u>and</u> don't know about the topic?   |
| Part B: Behavioral Recommendations   |
| 12. Does the material include one or more behavioral recommendations for the primary audience?   |
| 13. Does the material explain why the behavioral recommendation(s) is important to the primary audience?   |
| 12. Does the behavioral recommendation(s) include specific directions about how to perform the behavior?   |
| Part C: Numbers  |
| 15. Does the material <u>always</u> present numbers the primary audience uses?   |
| 16. Does the material <u>always</u> explain what the numbers mean?   |
| 17. Does the audience have to conduct mathematical calculations? (NO gets a check)   |
| Part D: Risk – if relevant   |
| 18. Does the material explain the nature of the risk?  |
| <ul> <li>19. Does the material address both the risks <u>and</u> benefits of the recommended behaviors?</li> <li>20. If the material uses numeric probability to describe risk, is the probability also explained with words or a</li> </ul> |
| visual?  |
| Calculate the Total Score for the Material (90% "yes" for relevant items is good)  |

Source: Adapted from CDC's Clear Communication Index Score Sheet (https://www.cdc.gov/ccindex/pdf/full-index-score-sheet.pdf)

**Assessment Tool 3** 

# Bloom's Taxonomy of Learning Objectives (2001 revision)

# Bloom's levels = a continuum of cognitive complexity

| Table 1. T  | Table 1. The cognitive processes  |  | gories, cognitive proc  | dimension — categories, cognitive processes (and alternative names)                         | e names)   |
|---|---|--|---|---|--|
| lower order thinking skills                               | kills   |  |   | highe   | higher order thinking skills   |
| remember  | understand  | apply  | analyze   | evaluate  | create   |
| recognizing<br>(identifying)<br>recalling<br>(retrieving) | interpreting<br>(clarifying,<br>paraphrasing,<br>representing,<br>translating)<br>exemplifying<br>(illustrating,<br>instantiating)<br>classifying<br>(categorizing,<br>subsuming)<br>subsuming)<br>classifying<br>(categorizing,<br>generalizing)<br>inferring<br>(concluding,<br>peredicting)<br>predicting)<br>comparing<br>(contrasting,<br>mapping, matching)<br>explaining<br>(constructing<br>models) | executing<br>(carrying out)<br>implementing<br>(using) | differentiating<br>(discriminating,<br>distinguishing,<br>focusing, selecting)<br>organizing<br>(finding coherence,<br>integrating,<br>outlining, parsing,<br>structuring)<br>attributing<br>(deconstructing) | checking<br>(coordinating,<br>detecting,<br>monitoring, testing)<br>critiquing<br>(judging) | generating<br>(hypothesizing)<br>planning<br>(designing)<br>producing<br>(construct) |
| (Table 1 adapted from                                     | Table 1 adapted from Anderson and Krathwohl, 2001, pp. 67-68.   | ohl, 2001, pp. 67–68.)                                 |   |   |  |

# Checklist for assessing cognitive burdens in learning and doing self-care Check all items that apply to your educational material or plan.

|      |   | Major sources of task complexity                    |  |
|------|---|---|--|
|      | Needless complexity                       | Inherent (inescapable) complexity                   | omplexity                                |
|      |   | Increases difficulty beginning at this Bloom level  | Increases difficulty at all Bloom levels |
| Poor | Poor writing                              | Remember  | Change                                   |
|      | Written for wrong audience                | Recall key facts                                    | Circumstances change                     |
|      | Uses passive voice                        | Understand  | Situation not as expected                |
|      | Not concise, wordy                        | Recognize operation of unseen physical processes    | Situation changing rapidly               |
|      | Awkward, confusing sentences              | Explain timing & sequencing of interdependent tasks | New & evolving knowledge                 |
|      | Uses big words when simple ones will do   | Correctly interpret specialized terms & concepts    | New opportunities                        |
|      | Uses abstract ideas when concrete ones OK | Identify relevant similarities and differences      | New risks                                |
|      | Specialized terms not explained           | Anticipate lag times                                | New rules                                |
|      | Abbreviations not explained               | Apply   | Uncertainty                              |
|      | Numbers not explained                     | Use familiar procedures in familiar situations      | Ambiguity                                |
|      | Information not put in context            | Calculate amounts                                   | Novelty                                  |
| Poor | selection of information                  | Select appropriate tool or procedure                | Unpredictability                         |
|      | Unnecessary background info               | Carry out all steps in a procedure                  | Inadequate information                   |
|      | Too much theory                           | Carry out steps in proper order & at proper time    | Inexact relation of means to ends        |
|      | Visuals not used when would clarify text  | Respond quickly to unexpected problems              | Uncertain or unknown outcomes            |
|      | Visuals are irrelevant or confusing       | Coordinate interdependent tasks                     | Frequent false alarms                    |
|      | Little or no "to do" advice               | Make if-then decisions (use decision tree)          | Harm not visible                         |
|      | "To do" advice not specific               | Analyze   | Functional interdependence               |
|      | No way given to get more information      | Adjust solutions to fit evolving problems           | Processes interdependent                 |
| Poor | organization of information               | Update knowledge independently                      | Tasks conflict (tradeoffs)               |
|      | Main point not clear at outset            | Identify potential causes                           | Unintended effects (side effects)        |
|      | Little or no chunking of ideas            | Detect relationships & patterns                     | More to do                               |
|      | Chunking not logical or systematic        | Weigh pros & cons                                   | More information to consider             |
|      | Content does not match headings           | Integrate multiple sources of information           | More tasks to coordinate                 |
|      | Too few headings                          | Pick out most important information                 | Not adequate time to do them             |
|      | Headings not informative                  | Predict results of interdependent processes         | Complex system to control                |
|      | Lists not bulleted                        | Evaluate (against an external standard)             | Need to block ingrained responses        |
|      |   | Monitor results                                     | Outdated knowledge                       |
|      |   | Identify problem situations quickly                 | Misconceptions                           |
|      |   | Detect anomolies                                    | Bad habits                               |
|      |   | Detect hazards                                      | Expecting the usual in new situations    |
|      |   | Spot signs and symptoms                             |  |
|      |   | Create  |  |
|      |   | Plan ahead  |  |
|      |   | Create contingency plans                            |  |
|      |   | Combine information to create something new         |  |
|      |   | Develop hypotheses to explain results               |  |
|      | Eliminate needless burdens                | Teach basics before the more complex                | Anticipate errors                        |
|      |   |   |  |

### ASSESSMENT TOOL 5

### Checklist for assessing patient's cognitive resources, help, & drains in learning and doing self-care

tasks

Check all items that apply to this patient or group.

### Own cognitive ability level (under favorable conditions)

Single Item Literacy Screen

*"How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy?"* 

| Patient's<br>response<br>(check one) | Literacy<br>level   | <u>Extra</u><br>cognitive help<br>needed | Risk of critical<br>error |
|--------------------------------------|---------------------|--|---------------------------|
| Always                               | Very low            | Strong                                   | Very high                 |
| Often<br>Sometimes                   | Low                 | Moderate                                 | High                      |
| Rarely<br>Never                      | Moderate to<br>high | Minimal                                  | Occasional                |

### Cognitive help from other people Family Good So-so None Negative (confuse, burden, discourage, misinform, etc.) Neighborhood & friends Good So-so None Negative Support groups Good So-so None Negative Health care providers Good So-so

| -     | Cognitive drains likely to interfere with patient fully using available cognitive resources |  |  |  |  |  |
|-------|---|--|--|--|--|--|
| Emot  | ional   |  |  |  |  |  |
|       | Anger   |  |  |  |  |  |
|       | Anxiety   |  |  |  |  |  |
|       | Depression  |  |  |  |  |  |
|       | Famiy conflict  |  |  |  |  |  |
|       | Fear  |  |  |  |  |  |
|       | Frustration   |  |  |  |  |  |
|       | Shame   |  |  |  |  |  |
|       | Worry   |  |  |  |  |  |
|       | Other (please specify)  |  |  |  |  |  |
|       |   |  |  |  |  |  |
|       |   |  |  |  |  |  |
|       |   |  |  |  |  |  |
|       |   |  |  |  |  |  |
| Physi | cal   |  |  |  |  |  |
|       | Alcohol & drugs   |  |  |  |  |  |
|       | Fatigue   |  |  |  |  |  |
|       | Hunger  |  |  |  |  |  |
|       | Illness   |  |  |  |  |  |
|       | Medication  |  |  |  |  |  |
|       | Pain  |  |  |  |  |  |
|       | Sleep deprived  |  |  |  |  |  |
|       | Other (please specify)  |  |  |  |  |  |
|       |   |  |  |  |  |  |
|       |   |  |  |  |  |  |
|       |   |  |  |  |  |  |
|       |   |  |  |  |  |  |
| Situa | tional  |  |  |  |  |  |
|       | Distractions  |  |  |  |  |  |
|       | Interruptions   |  |  |  |  |  |
|       | Lack of privacy   |  |  |  |  |  |
|       | Noise polution  |  |  |  |  |  |
|       | Temperature too hot or cold   |  |  |  |  |  |
|       | Time pressure   |  |  |  |  |  |
|       | Difficult work or family schedule   |  |  |  |  |  |
|       | Other (please specify)  |  |  |  |  |  |
|       |   |  |  |  |  |  |
|       |   |  |  |  |  |  |

None Negative Examples for Discussion

# Using insulin: Version 1

### Starting Insulin – a patient guide

Using insulin to treat your diabetes: What it means for you

Insulin is a hormone that helps your body use the sugar (glucose) you get from the food you eat. Insulin levels nise and fall in response to the level of glucose in your blood. Insulin's main job is to help glucose get from your blood into the cells of your body, where it is used as fuel to keep the cells working normally.

The pancreas is the organ in your body that produces insulin throughout the day.

- When you have type 1 diabetes, you do not produce insulin
- When you have type 2 diabetes, you either do not produce enough insulin or your body's cells do not respond to the insulin properly, called insulin resistance

When you need to take insulin, there are different types. In some cases, you may use a mixture of different types, such as short-acting and long-acting insulins.

People with type 1 diabetes must use insulin injections to keep their blood sugar at a normal or close to normal level.



People with type 2 diabetes often need to add insulin to control their blood sugar when oral medications or non-insulin injectable medications (exenatide and liraglutide) are not enough. Starting Insulin – a patient guide

Using insulin to treat your diabetes: What it means for you



The number of insulin injections you take may vary from once a day to using different types of insulin at different times of the day. When you first start taking insulin, your healthcare provider will decide on the type, the amount, and frequency of the injections of insulin you need. This will be based on your lifestyle, blood sugar level, and any other diabetic medications you may be taking. Monitoring your diet along with your blood sugar levels will

be important in deciding if any changes are needed in your insulin dose.

Remember that insulin injections will lower your blood sugar level whether you have eaten or not. Very low blood sugar, known as hypoglycemia, can cause serious problems. Eating regular meals is very important when taking insulin.

Most people have no problem getting used to taking insulin injections. They feel better when their blood sugar is well controlled.

All people with diabetes need to help control their blood sugar by

- Eating a healthy diet
- Doing moderate exercise
- · Losing weight or maintaining a normal weight

# Using insulin: Version 2

### Starting Insulin – a patient guide

Using insulin to treat yourdiabetes: What it means for you

Insulin helps your body get energy from the food you eat. If you do not have enough insulin, or the insulin you have is not working right, you have diabetes and need to take medicine.

• People with type 1 diabetes do not make any insulin and MUST inject insulin.

 People with type 2 diabetes do not make enough insulin or need help using the insulin they have.
 'I'hey need to use pills, insulin shots or both.

The only way to get insulin into your body is with a shot. Many people with diabetes use insulin shots.

There are many kinds of insulin, some work fast, others do not.



### Using insulin to treat your diabetes: What it means for you You may need one shot of insulin a day, or you may need more. Your healthcare provider will explain what kind of insulin, the amount, and when you need it. Your weight, diet and other medicines are important when deciding how much insulin you will need. It is important to eat regular meals when you take insulin. Insulin shots help your blood sugar levels stay normal. If you take too much insulin or have not eaten, your blood sugar can drop too low. This is called "hypoglycemia." Most people get used to using shots to take their insulin. When you have diabetes it is important to: • Eat a healthy diet Exercise · Keep your weight down These Starting Insulin fact sheets will help you learn more about insulin.

Starting Insulin – a patient guide

|                     | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---------------------|--------|--------|---------|-----------|----------|--------|----------|
| Time<br>(breakfast) |        |        |         |           |          |        |          |
| Blood Sugar         |        |        |         |           |          |        |          |
| Medicine            |        |        |         |           |          |        |          |
| Time<br>(lunch)     |        |        |         |           |          |        |          |
| Blood Sugar         |        |        |         |           |          |        |          |
| Medicine            |        |        |         |           |          |        |          |
| Time<br>(dinner)    |        |        |         |           |          |        |          |
| Blood Sugar         |        |        |         |           |          |        |          |
| Medicine            |        |        |         |           |          |        |          |
| Time (bed)          |        |        |         |           |          |        |          |
| Blood Sugar         |        |        |         |           |          |        |          |
| Medicine            |        |        |         |           |          |        |          |



### Figure 4.4. RoSPA hazard spotting picture Handout for discussion

# Typical literacy items, by difficulty level

### Daily self-maintenance in modern literate societies

| NALS<br>difficulty  |       | US adu<br>ng at this |               | Simulated everyday tasks<br>National Adult Literacy Survey (NALS), 1993)        |
|---------------------|-------|----------------------|---------------|---|
| level (&<br>scores) | Prose | Docu                 | <b>Q</b> uant |   |
| 5                   | 3%    | 3%                   | 4%            | <ul> <li>Use calculator to determine cost of carpet for a room (Q)</li> </ul>   |
| (375-500)           |       |                      |               | <ul> <li>Use table of information to compare 2 credit cards (D)</li> </ul>      |
| 4                   | 17%   | 15%                  | 17%           | <ul> <li>Use eligibility pamphlet to calculate SSI benefits (Q)</li> </ul>      |
| (325-375)           |       |                      |               | <ul> <li>Explain difference between 2 types of employee benefits (P)</li> </ul> |
| 3                   | 32%   | 31%                  | 31%           | <ul> <li>Calculate miles per gallon from mileage record chart (Q)</li> </ul>    |
| (275-325)           |       |                      |               | <ul> <li>Write brief letter explaining error on credit card bill (P)</li> </ul> |
| 2                   | 27%   | 28%                  | 25%           | <ul> <li>Determine difference in price between 2 show tickets (Q)</li> </ul>    |
| (225-275)           |       |                      |               | <ul> <li>Locate intersection on street map (D)</li> </ul>                       |
| 1                   | 21%   | 23%                  | 22%           | <ul> <li>Total bank deposit entry (Q)</li> </ul>                                |
| (0-225)             |       |                      |               | <ul> <li>Locate expiration date on driver's license (P)</li> </ul>              |

6

# What makes some items more difficult? "Information processing complexity"

| NALS                            |       | ree scal<br>me resi |               |                                   | Adult Literacy Survey, 1993)     |
|---------------------------------|-------|---------------------|---------------|-----------------------------------|----------------------------------|
| difficulty<br>level<br>(scores) | Prose | Docu                | <b>Q</b> uant |                                   | Elements of "process complexity" |
| 5                               | 3%    | 3%                  | 4%            | <ul> <li>Use calcula</li> </ul>   |                                  |
| (375-500)                       |       |                     |               | Use table o                       | number of features to match      |
| 4                               | 17%   | 15%                 | 17%           | Use eligibili                     |                                  |
| (325-375)                       |       |                     |               | Explain difference                | level of inference               |
| 3                               | 32%   | 31%                 | 31%           | <ul> <li>Calculate n</li> </ul>   | abstractness of info             |
| (275-325)                       |       |                     |               | <ul> <li>Write brief I</li> </ul> | distracting information          |
| 2                               | 27%   | 28%                 | 25%           | <ul> <li>Determine</li> </ul>     | alou dourig intermation          |
| (225-275)                       |       |                     |               | Locate inter                      |                                  |
| 1                               | 21%   | 23%                 | 22%           | <ul> <li>Total bank d</li> </ul>  | Not reading per se, but "problem |
| (0-225)                         |       |                     |               | Locate expi                       | solving"                         |

7

## Matrix of cognitive risk



# Strategy for DSME/T



| Nutrition Facts                | Amount/Serving   | % DV* |               |  |
|--------------------------------|------------------|-------|---------------|--|
|                                | Total Fat Og     | 0%    | a contrator a |  |
| Serving Size 1 piece (1.9g)    | Sodium Omg       | 0%    | ł             |  |
| Servings 14                    | Total Carb. 1g   | <1%   |               |  |
| Calories <5                    | Sugars Og        |       | <u>*</u>      |  |
| *Percent Daily Values (DV) are | Sugar Alcohol 1g |       | ~             |  |
| based on a 2,000 calorie diet. | Protein 0g       |       |               |  |

INGREDIENTS: SORBITOL, GUM BASE, GLYCERIN, MANNITOL, XYLITOL, NATURAL AND ARTIFICIAL FLAVORING, LESS THAN 2% OF ACESULFAME POTASSIUM ASPAR TAME, BHT (TO MAINTAIN FRESHNESSI/BLUE 1 LAKE, SOY LECITHIN AND YELLOW 5 LAKE, PHENYLKETOMURICS: CONTAINS PHENYLALAMINE; ALLERGY INFORMATION: CONTAINS SOY, 30% FEWER CALORIES THAN SUGARED GUM, CALORIE CONTENT OF THIS SIZE PIECE HAS BEEN REDUCED FROM 5 TO 3 1/2 CALORIES.

## Sugar Free Chocolate Chip

| Nutrition  | Amount/Serving           | %DV*    | Amount/Serving         | %DV* |
|--|--------------------------|---------|------------------------|------|
| Facts  | Total Fat 9g             | 14%     | Total Carbohydrate 20g | 7%   |
| Serv. Size 3 Cookies (32g)                             | Saturated Fat 3.5g       | 18%     | Dietary Fiber 1g       | 4%   |
| Servings About 5                                       | Trans Fat Og             |         | Sugars Og              |      |
| Calories 160   | Cholesterol less than 5m | ng 1%   | Sugar Alcohol 7g       |      |
| Calories from Fat 80<br>*Percent Daily Values (DV) are | Sodium 130mg             | 5%      | Protein 2g             |      |
| based on a 2,000 calorie diet.                         | Vitamin A 0% • Vitam     | nin C O | % • Calcium 0% • Iro   | n 6% |

INGREDIENTS: ENRICHED FLOUR (WHEAT FLOUR, NIACIN, REDUCED IRON, THIAMIN MONONITRATE [VITAMIN B<sub>1</sub>], RIBOFLAVIN [VITAMIN B<sub>2</sub>], FOLIC ACID), VEGETABLE OIL (SOYBEAN, PALM AND PALM KERNEL OIL WITH TBHQ FOR FRESHNESS), SUGAR FREE CHOCOLATE FLAVORED CHIPS (MALTITOL, CHOCOLATE PROCESSED WITH ALKALI, COCOA BUTTER, SOY LECITHIN, NATURAL FLAVORED CHIPS (MALTITOL, LACTITOL, POLYDEXTROSE, MALTODEXTRIN, SORBITOL\*\*, CONTAINS TWO PERCENT OR LESS OF SALT, NATURAL AND ARTIFICIAL FLA-VOR, LEAVENING (BAKING SODA, SODIUM ACID PYROPHOSPHATE), EGG, SOY LECITHIN, XANTHAN GUM, SODIUM STEAROYL LACTYLATE, ACESULFAME POTASSIUM, CARAMEL COLOR, SUCRALOSE. \*\*EXCESS CONSUMPTION MAY HAVE A LAXATIVE EFFECT.

### Sugar Free Cookies Shortbread

| <b>Nutrition Facts</b>   | Amount Per Serving  | %DV*  | Amount Per Serving  | %DV*      |
|--|---|---|---|-----------|
|  | Total Fat 5g  | 8%  | Total Carbohydrate 22g  | 7%        |
| Serving Size 8 Cookies (30g)   | Saturated Fat 1.5g  | 8%  | Dietary Fiber 2g  | 8%        |
| Calories 130   | Trans Fat Og  |   | Sugars Og   |           |
| Calories from Fat 50   | Cholesterol Omg   | 0%  | Sugar Alcohol 4g  |           |
|  | Sodium 140mg  | 6%  | Protein 2g  |           |
| *Percent Daily Values (DV) are based on a<br>2,000 calorie diet.   | Vitamin A 0% • Vi   | tamin C 0%                                      | • Calcium 0% • Ir   | on 4%     |
| INGREDIENTS: ENRICHED FLOUR (WHEAT FLOUR<br>FOLIC ACID), SOYBEAN AND PALM OIL, SORBIT<br>NATURAL AND ARTIFICIAL FLAVORS, SALT, LEA<br>DATEM, SOY LECITHIN, ANNATTO EXTRACT FOR<br>*EXCESS CONSUMPTION MAY HAVE A LAXATIVE<br>CONTAINS WHEAT, MILK AND SOY INGREDIENT | Tol*, Maltitol, Polydextro<br>Vening (baking soda, sodil<br>Color, Xanthan Gum, acesi<br>E <b>EFFECT.</b> | se, maltodext<br>JM acid pyrof<br>Jlfame Potass | trin, contains 2% or less of C<br>Phosphate), whey protein conc<br>Sium, sucralose. | AT FIBER, |

### Macaroni and cheese

| Nutrition Facts                             |                          |
|---|--------------------------|
| Serving Size 2<br>Servings Per Container: 2 |                          |
| Amount Per Serving                          |                          |
| Calories 340                                | Calories from Fat<br>140 |
|   | % Daily Value *          |
| Total Fat 16                                | 25.00 %                  |
| Saturated Fat 7                             | 35.00 %                  |
| Cholesterol 25mg                            | 8.00 %                   |
| Sodium 820mg                                | 34.00 %                  |
| Total Carbohydrate 33g                      | 11.00 %                  |
| Dietary Fiber 3g                            |                          |
| Sugars 2g                                   |                          |
| Protein 15g                                 |                          |
| Vitamin A                                   | 0.00 %                   |
| Vitamin C                                   | 0.00 %                   |
| Calcium                                     | 30.00 %                  |
| Iron  | 4.00 %                   |
| Not a significant source of                 | Saturated Eat.           |

Not a significant source of Saturated Fat, Trans Fat, Cholesterol, Calcium or Iron.

\* The Percent Daily Values are based on a 2,000 calorie diet, so your values may change depending on your calorie needs. The values here may not be 100% accurate because the recipes have not been professionally evaluated nor have they been evaluated by the U.S. FDA.

| Gerving Size: 1oz<br>Gervings Per Package: 1                 |              |                                |              |            |
|--|--------------|--------------------------------|--------------|------------|
| Amount Per Serving:  |              |                                |              |            |
| Calories 300<br>Calories from Fat 50                         |              |                                |              |            |
|  |              |                                | % C          | aily Value |
| Total Fat (g)  | 6            | Cholesterol (mg)               | 20           | 7%         |
| Saturated Fat (g)  | 4            | Sodium (mg)                    | 560          | 23%        |
| Trans Fat (g)  | 0            | Potassium (mg)                 | 510          | 15%        |
| Polyunsaturated Fat (g)                                      | 0            | Total Carbohydrate (g)         | 48           | 16%        |
| Monounsaturated Fat (g)                                      | 1            | Dietary Fiber (g)              | 2            | 8%         |
| Protein (g)  | 13           | Sugars (g)                     | 5            |            |
| Diet Exchanges 1 ½ Lean Mea                                  | t 1 ½ Starch |                                |              |            |
| * Percent Daily Values are ba<br>lower depending on your cal |              | calorie diet. Your daily value | s may be hig | gher or    |
|  | 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      |            |
| Potassium  | Less Than    | 3,500mg                        | 3,500mg      |            |
| Total Carbohydrate   |              | 300g                           | 375g         |            |
| Dietary Fiber  |              | 25g                            | 30g          |            |

Nutritional information is subject to change. Please see label of product on store shelves for the most current information.

### **Grilled** Chicken

| Nutritional Informati   | ion       |                                |                |            | Grilled Chicken Bake      | e F                         |
|---|-----------|--------------------------------|----------------|------------|---------------------------|-----------------------------|
| Serving Size: 1oz   |           |                                |                |            | <b>Nutrition Facts</b>    | i .                         |
| Servings Per Package: 1   |           |                                |                |            | Serving Size 1 meal (369g | a)                          |
| Amount Per Serving:   |           |                                |                |            | Servings Per Container 1  |                             |
| Calories 250  |           |                                |                |            | Amount Per Serving        |                             |
| Calories from Fat 45  |           |                                |                |            | Calories 480              | Calories from Fat 190       |
|   |           |                                | % Da           | ily Value* |                           | % Daily Value               |
| Total Fat (g)   | 5         | Cholesterol (mg)               | 40             | 13%        | Total Fat 21g             | 32%                         |
| Saturated Fat (g)   | 2         | Sodium (mg)                    | 590            | 25%        | Saturated Fat 8g          | 40%                         |
| Trans Fat (g)   | 0         | Potassium (mg)                 | 540            | 15%        | Trans Fat .5g             |                             |
| Polyunsaturated Fat (g)   | 1         | Total Carbohydrate (g)         | 33             | 11%        | Cholesterol 60mg          | 20%                         |
| Monounsaturated Fat (g)   | 1         | Dietary Fiber (g)              | 3              | 12%        | Sodium 900mg              | 38%                         |
| Protein (g)   | 19        | Sugars (g)                     | 6              |            | Potassium 450mg           | 13%                         |
| Diet Exchanges 1 ½ Lean Mea   |           |                                |                |            | Total Carbohydrate 45g    | 15%                         |
| <ul> <li>Percent Daily Values are ba<br/>lower depending on your cal</li> </ul> |           | calorie diet. Your daily value | es may be high | ner or     | Dietary Fiber 6g          | 24%                         |
|   | Calories: | 2,000                          | 2,500          |            | Sugars 4g                 |                             |
| Total Fat   | Less Than | 65g                            | 80g            |            | Protein 28g               |                             |
| Sat Fat   | Less Than | 20g                            | 25g            |            | Vitamin A 40%             | Vitamin C 25%               |
| Cholesterol   | Less Than | 300mg                          | 300mg          |            | Calcium 25%               | Iron 10%                    |
| Sodium  | Less Than | 2,400mg                        | 2,400mg        |            | Riboflavin 20%            | Niacin 15%                  |
| Potassium   | Less Than | 3,500mg                        | 3,500mg        |            | Folic Acid 20%            | Vitamin B <sub>12</sub> 15% |
| Total Carbohydrate  |           | 300g                           | 375g           |            | Pantothenic Acid 20%      | Phosphorus 40%              |
|   |           | 25g                            | 30g            |            | Magnesium 15%             | Manganese 30%               |

### **Hazelnut Liquid Creamer**

### **Nutrition Facts**

Serving Size 1 tbsp (15mL)

### **Amount Per Serving**

| Calories 35    | Calories From Fat 15 |
|----------------|----------------------|
|                | % Daily Value*       |
| Total Fat 1.5g | 2%                   |
| Saturated Fat  | 0%                   |
| Trans Fat Og   |                      |
| Polyunsaturat  | ted Fat 0g           |
| Monounsatur    | ated Fat 1g          |
| Cholesterol On | ng <b>0%</b>         |
| Sodium 5mg     | 0%                   |
| Total Carbohyd | Irate 5g 2%          |
| Sugars 5g      |                      |
| Protein Og     |                      |

### Sugar Free Hazelnut Liquid **Nutrition Facts** Serving Size 1 tbsp (15mL) **Amount Per Serving** Calories From Fat 10 Calories 15 % Daily Value\* Total Fat 1g 2% Saturated Fat 0g 0% Trans Fat Og Polyunsaturated Fat 0g Monounsaturated Fat 1g Cholesterol Omg 0% Sodium 10mg 0% Total Carbohydrate 2g 1% Sugars 0g Protein Og \*Percent Daily Values are based on a 2,000 calorie diet.

Not a significant source of dietary fiber, sugar, vitamin A, vitamin C, calcium, and iron.

### Fat Free Hazelnut Liquid

### **Nutrition Facts**

Serving Size 1 tbsp (15mL)

| Calories 25    | Calories From Fat |
|----------------|-------------------|
|                | % Daily Value     |
| Total Fat Og   | 0%                |
| Saturated Fat  | t Og 🛛 😶 🛛        |
| Trans Fat Og   |                   |
| Polyunsaturat  | ted Fat 0g        |
| Monounsatura   | ated Fat 0g       |
| Cholesterol Om | ng <b>0</b> %     |
| Sodium Omg     | 1%                |
| Total Carbohyd | Irate 5g 2%       |
| Sugars 5g      |                   |
| Protein Og     |                   |

Not a significant source of dietary fiber, sugar, vitamin A, vitamin C, calcium, and iron.

# **Reading food labels**<sup><</sup>

Can you find the facts on a food label? Whether you are counting "carbs" or finding fats, the Nutrition Facts panel helps you know just what you're eating. Take a look at the label shown here and find the key facts.

### Serving size

The first thing to check on a label is the serving size. All of the nutrition facts listed on the label, such as the calories, fat, and carbs, relate to this serving size. But look carefully! The serving size listed

may not match the serving size you usually eat. So, for example, if the serving size for pasta is 1/2 cupand you are about to put 1 cups on your plate-you'll need to triple the nutrition facts to match your serving size.

### Total fat

It is recommended that less than 30% of your total calories for the day come from fat. Based on the number of calories you eat, the chart below shows you how many grams of fat equals 30% of your total calories.

| Total daily<br>calories | Total daily<br>fat grams |
|-------------------------|--------------------------|
| _1400                   | 47                       |
| 1600                    | 53                       |
| 2000                    | 67                       |
| 2400                    | 80                       |

When you look at the total fat listed on a food label, compare this to your fat limit for the day. Look at labels of similar foods to find the lowest fat choice. Foods labeled "low fat" have 3 g (grams) or less of fat per serving.

### **Nutrition Facts**

Serving Size pita (39g) Servings Per Container 10

| Calories 105 C  | alories from Fat 10 |
|---|---------------------|
|   | o/o Daily Value     |
| Total Fat 1g  | 1%                  |
| Saturated Fat Og  | 0%                  |
| Cholesterol Omg   | 0%                  |
| Sodium 255mg  | 10%                 |
| Total Carbohydrate 1  | 9g <b>6%</b>        |
| Dietary Fiber 2g  | 9%                  |
| Sugars 2g   |                     |
| Protein 5g  |                     |
|   |                     |
| Vitamin A 0%  | Vitamin C 0%        |
| Calcium 2%  | Iron 7%             |
| <ul> <li>Percent Daily Values are base<br/>Your daily values may be highe<br/>your calorieneeds.</li> </ul> |                     |



### Total carbohydrate

The total carbohydrate is a total of all the starch, sugars, and fiber in a serving of food. You don't need to single out sugar, just focus on the total carb number. One slice of bread has 15 grams of carbohydrate, or "1 carb choice." Use this number to get a better sense of what the amount of total carbohydrate means on a label. On the sample label shown, 1/2 pita has 19 grams of total carbohydrate, which is equal to about 1 carb choice.

### Fiber

Eating 20 to 35 grams of dietary fiber a day can be good for your health. When shopping for crackers, breads, or cereals, compare labels to find one that is higher in dietary fiber. A food is a good source of fiber if it has 2.5 grams or more of fiber in a serving.

### What's in a Word?

Here's what common terms mean when used on a label:



A "light" food has 1/3 the calories or 1/2 the fat of the food to which it is being compared. For example, 1 tablespoon of light mayo has 50 calories and 5 grams of fat, while 1 tablespoon of the real thing has 100 calories and 11 grams of fat.

### LOWCALORIE

There still might be some calories in a serving of a **"low calorie"** food, but by law it has to be 40 calories or less.

### SUGAR FREE

If something is labeled "sugar free:' it has only a half gram (0.5) of sugar or less per serving. Keep in mind, "sugar free" foods are not always low carbohydrate or lowfat foods. Read the label carefully.

\*\*\*\*\*

|   | 1,200 Calories                           | 1,600 Calories                |
|---|--|-------------------------------|
| Breakfast                                     |  |                               |
| Whole wheat bread                             | 1 mcd slice                              | 1 mcd slice                   |
| Jelly, regular                                | 2 tsp                                    | 2 tsp                         |
| creal, shredded wheat                         | 1/2 cup                                  | 1 cup                         |
| Ailk, 1%                                      | 1 cup                                    | 1 cup                         |
| Drange juice                                  | 3/4 cup                                  | 3/4 cup                       |
| offee, regular                                | 1 cup                                    | 1 cup with 1 oz<br>of 1% milk |
| unch  |  |                               |
| oast beef sandwich:                           |  |                               |
| Whole wheat bread                             | 2 mcd slices                             | 2 mcd slices                  |
| Lean roast beef, unseasoned                   | 2 oz                                     | 2 oz                          |
| American cheese, low fat and                  |  | 1 slice, ¾ oz                 |
| low sodium<br>Lettuce                         | 1 leaf                                   | 1 leaf                        |
| Tomato  | 3 med slices                             | 3 med slices                  |
| Mayonnaise, low caloric                       | 1 tsp                                    | 2 tsp                         |
| pplc  | 1 usp<br>1 mcd                           | 1 mcd                         |
| ater  | 1 cup                                    | 1 cup                         |
| inner   | -  | -                             |
| lmon  | 2 oz edible                              | 3 oz edible                   |
| cgctable oil                                  | 11/2 tsp                                 | 11/2 tsp                      |
| aked potato                                   | 3/4 med                                  | 3/4 med                       |
| argarine                                      | 1 tsp                                    | 1 tsp                         |
| reen beans, seasoned, with margarine          | 1/2 cup                                  | 1/2 cup                       |
| arrots, seasoned                              | 1/2 cup                                  |                               |
| arrots, seasoned, with margarine              | _  | 1/2 cup                       |
| hite dinner roll                              | 1 small                                  | 1 mcd                         |
| e milk  |  | 1/2 cup                       |
| ed tea, unsweetened                           | 1 cup                                    | 1 cup                         |
| ater  | 2 cup                                    | 2 cup                         |
| nack  |  |                               |
| opcorn  | 21/2 cup                                 | 21/2 cup                      |
| argarine                                      | 3/4 tsp                                  | 1/2 tsp                       |
|   |  |                               |
| alorics 1,247                                 | Calorics                                 | 1,61                          |
| stal carbohydrate, 58                         | Total carbohydrat                        | c, 5                          |
| % calories                                    | % calories                               |                               |
| stal fat, % calories 26                       | Total fat, % calor<br>Saturated fat, % c | ics 2<br>alorics              |
| turated fat, % calories 7 %<br>dium, mg 1.043 | Saturated fat, % c                       | alorics                       |
|   | Sodium, mg<br>Cholesterol, mg            | 1,34                          |
| rotein, % calories 19                         | Protein, % calorie                       | s 1                           |
| otem, /o calorita 17                          | riotcan, 76 caloric                      | o 1                           |

### Increasing Physical Activity by using a Pedometer.

### The goal is to track your steps to increase by 10% each week during the month.

- Do you have an activity tracker or pedometer?
- Now could be a good time to purchase an inexpensive option OR if not, you can always download a FREE pedometer app and keep your cell phone in your pocket.
- At the end of each week during the month, your goal is:

### 1. Increase steps by 10%

### OR

### 2. Reach an average of 10,000 steps per day over the course of one week (TOTAL of 70,000 steps)

- How to track steps:
- Use a Pedometer, Activity Tracker, or Pedometer App on your phone to log steps at the end of each day
- Log TOTAL STEPS at the end of the week (if you reach at least 70,000 steps at the end of the week.
- Take your total steps and multiply by 1.1 (this increases that number by 10%)
- Your new goal for the next week is to INCREASE YOUR STEPS BY 10%

### **Pedometer Challenge**

- 1. Fill in the date and steps at the end of each day.
- 2. At the end of each week, calculate the average steps per day and multiply by 1.2 to determine what would be a *20% increase* for the next week.
- 3. Check in with your nutritionist for tips and motivation.

Did you know there are approximately 10,000 steps in 5 miles? Can you reach 10,000 steps by the end of 4 weeks? The challenge is to try to beat last week's steps by 20%!

### Week 1:

| Date                       | Total Daily Steps |
|----------------------------|-------------------|
|                            |                   |
| whenever possible          |                   |
|                            |                   |
|                            |                   |
|                            |                   |
|                            |                   |
|                            |                   |
| Weekly Total:              |                   |
| Divide by 7 =              |                   |
| Multiply by 1.2 =          | ·                 |
|                            |                   |
| This is your step goal per | day for week #2   |



:

# Measuring blood sugar: Version 1

### Starting Insulin – a patient guide

### Measuring Your Blood sugar

Testing your blood sugar often can help you control your diabetes.

Check your blood sugar regularly when:

- · Taking diabetes pills or insulin
- Pregnant
- · Blood sugar is hard to control
- · Blood sugar results are low
- · Blood sugar results are high and your urine has ketones
- Low blood sugar occurs without the usual warning signs
- · Changing eating habits
- · Taking certain medications, such steroids or liquid medications

Check your blood sugar at different times during the day

- Upon waking, before breakfast
   • 2 hours after the start of a meal
  - When you feel blood sugar is too high or too low

A glucometer is a machine that measures your blood sugar.

### Choosing a glucometer

- · Does your healthcare provider prefer a certain glucometer?
- · What is the cost of the glucometer, batteries, and test strips
  - Which glucometers are covered by your insurance company?
  - Is there a rebate toward the cost of the glucometer
- Ease of use

Before meals

- Some glucometers have more steps to follow than others.
- Are the numbers easy to read?
- Some glucometers allow you to stick your forearm, thigh, or fleshy part of
- your hand instead of your fingertip. Read the manufacturer's instructions. - Is the glucometer easy to clean?
- · How to make sure the glucometer is accurate
  - Some glucometers have special coding or a computer chip that must be changed, or calibrated, with every new bottle of test strips.
  - Some glucometers have a "control" substance to check the machine.
  - Most glucometers are accurate and precise if used properly.

### Starting Insulin — a patient guide

Measuring Your Blood sugar

Glucometers may be a little different in how they are used. Here are some general steps.

Wash your hands.

• Insert a test strip in your glucometer. This often turns the glucometer on, but some glucometers may have an on-off switch.



• Using a lancet, prick your fingertip. You may want to prick the side of your fingertip near the fingernail to avoid soreness on the end of your finger.

Gently squeeze or massage your fi until a drop of blood forms.
Touch and hold the edge of the test strip to the drop of blood.

Often your glucometer will "beep" when there is enough blood.

· Your blood sugar result will appear on the glucometer's display.

Write down your blood sugar results each time you take them. Most glucometers come with <u>log books</u>, or you can use a notebook. Some glucometers can store blood sugar results. Be sure you have the date and time set and know how to use a glucometer with a memory. Show your record to your healthcare provider at every visit.

Poor meter readings result from:

- Dirty glucometer
- Glucometer or test strip that is not at room temperature
- Old or outdated test strips
- Glucometer that is not calibrated to the bottle of test strips used by that glucometer
- · Too much or too little blood on the test strip

Your healthcare provider can help you understand how to use your glucometer.

# Measuring blood sugar: Version 2

### Starting Insulin – a patient guide

### **Measuring Your Blood sugar**

### Checking your blood sugar is important when you have diabetes.

### Check your blood sugar when:

- Taking diabetes pills or insulin
- Pregnant
- Traveling
- Changing eating habits
- On new medicines
- Starting new exercise



Your healthcare provider may tell you to check your

blood sugar:

- When you wake up before you eat
- Before meals
- Two hours after you eat
- . If you feel like your blood sugar is too high or too low

A glucometer is a machine that measures your blood sugar.

### Choosing a glucometer:

- Ask your healthcare provide which glucometer is best for you.
- How much does the glucometer cost?
- How much do the batteries and test strips cost?
- Does your insurance pay for the glucometer and supplies?
- Is it easy to use?
- Are the numbers clear to read?
- Is it easy to clean?
- Is it easy to program?
- Some glucometers have special coding or a computer chip that must be changed with every new bottle of test strips.
- Some glucometers have a "control" substance to check the machine.

### Starting Insulin – a patient guide

Measuring Your Blood sugar

### To use your glucometer:



1. Wash your hands

- 2. Put the test strip in your glucometer.
- 3. Using a sharp lancet, prick your fingertip.
- 4. Squeeze a small drop of blood out of your finger.
- 5. Touch the edge of the test strip to the blood.
- Your machine might "beep" when there is enough blood.
- 7. Your results will show up on the glucometer.

Write down your blood sugar results and the time of day you tested in the glucometer log book or a notebook. Some glucometers can store blood sugar results. Be sure you have the date and time set and know how to use a glucometer with a memory.

Show your record to your healthcare provider at every visit.

Causes of incorrect results:

- Dirty glucometer
- Glucometer and test strip are not at room temperature
- Old or outdated test strips
- Glucometer that is not set to the bottle of test strips used by that glucometer
- · Too much or too little blood on the test strip

Your healthcare provider can help you understand how to use your glucometer.

| Breakfast |                       |         |                      | Lunch                 |         | Dinner               |                       | Bedtime |                      | During the Night      |         |                      |                       |         |                     |
|-----------|-----------------------|---------|----------------------|-----------------------|---------|----------------------|-----------------------|---------|----------------------|-----------------------|---------|----------------------|-----------------------|---------|---------------------|
|           | blood sugar<br>before | insulin | blood<br>sugar after | blood sugar<br>before | insulin | blood<br>sugar afte |
| Monday    |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                     |
| Tuesday   |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                     |
| Vednesday |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                     |
| Thursday  |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                     |
| Friday    |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                     |
|           |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                      |                       |         |                     |

### Weekly blood sugar notes

| Date | Time | Blood Glucose | Other<br>Information |
|------|------|---------------|----------------------|
|      |      |               |                      |
|      |      |               |                      |
|      |      |               |                      |
|      |      |               |                      |
|      |      |               |                      |

| Date | Before Breakfast    | 2 hours after<br>breakfast | Before lun | ch 2 hours<br>lunch | s after | Before dinne | er | 2 hour afte<br>dinner | er   | Bedtime |       |     |
|------|---------------------|----------------------------|------------|---------------------|---------|--------------|----|-----------------------|------|---------|-------|-----|
|      |                     |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | $\checkmark$        |                            |            |                     |         |              | _  |                       |      |         |       |     |
|      |                     | Sunday                     | Monday     | Tuesday             | Wec     | Inesday      | Th | ursday                | Frid | lay     | Satur | day |
|      | Time<br>(breakfast) |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Blood Sugar         |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Medicine            |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Time<br>(lunch)     |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Blood Sugar         |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Medicine            |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Time<br>(dinner)    |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Blood Sugar         |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Medicine            |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Time (bed)          |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Blood Sugar         |                            |            |                     |         |              |    |                       |      |         |       |     |
|      | Medicine            |                            |            |                     |         |              |    |                       |      |         |       |     |

### Section 2. Barriers to Medication Adherence

Patients face a multitude of barriers to taking their medication. Poor medication adherence is often viewed as the patient's problem but it is also important to recognize the role we, as health care professionals, play in supporting poor medication-taking behaviors. Poor medication adherence can be frustrating for both the health care professional, and the patient. Furthermore, evidence supports the notion that adherence decreases as the number of barriers for the patient **and** provider increases.<sup>13</sup>



# Using syringes: Version 1

### Starting Insulin – a patient guide

### **INSULIN SYRINGES AND PENS**

Insulin is injected in the fat just under the skin, using:

- · Syringes
- Insulin pens
- Insulin pumps

The most common way to inject insulin is with a syringe.

- A syringe is a hollow plastic tube with a plunger inside and a short skinny needle attached.
- Insulin is injected into the fatty tissue just under the skin. This is called a subcutaneous tissue, or "sub-Q" injection.



Syringes come in different sizes.

- · Each line on a 100-unit syringe marks 2 units of insulin.
- · Each line on a 50-unit or 30-unit syringe marks 1 unit of insulin.
- · Use a syringe large enough to hold the whole dose of insulin.

### Starting Insulin – a patient guide

INSULIN SYRINGES AND PENS

- Use a 30-unit syringe if you take 30 units of insulin or less.
- Use a 50-unit syringe if you take 50 units of insulin or less.
- Use a syringe that shows 1/2-unit marks if you need 1/2 a unit of insulin.
- · Be sure that you can clearly see the markings on your syringe.
- · No prescription is needed for insulin syringes.
- If you have poor eyesight or arthritis in your hands, talk to your healthcare provider about using another method, such as an insulin pen.
- Your healthcare provider can show you the different sizes of syringes and help you choose what works best for you.

Needles are described by length and thickness ("gauge").

- · The standard needle is 1/2-inch long.
- Needles also come in 5/16-inch and 3/16-inch lengths.
- The 3/16-inch length is often used for children.
- The thinner the needle, the higher its gauge. For example, a 31-gauge needle is thinner than a 28-gauge needle.

Insulin pens look like writing pens, except that there is a thin, short needle at the end.

- Some insulin pens can be refilled, while other pens are thrown away when empty.
- Pre-filled insulin pens come with either one type of insulin or a mixture of two types of insulin.
- Insulin pens with pre-mixes work if they match your prescription.
- You may need one insulin pen for each type of insulin if pre-mix does not match your prescription.

**Insulin pumps** are used by people who have type 1 diabetes. People with type 2 diabetes rarely use an insulin pump. Insulin pumps give a continuous dose of insulin. Talk to your healthcare provider if you think an insulin pump might be right for you.

# Using syringes: Version 2

### Starting Insulin – a patient guide

### **INSULIN SYRINGES AND PENS**

There are no insulin pills. You must use a shot, a special kind of pen, or an insulin pump to get insulin into the body.

Using a shot is the most common way to get insulin into your body. The shot is given using a syringe.

The needle is smaller than most needles you may have seen.

The shot is given just under the skin in the fatty part of your arm, leg or belly.

Here is a picture of insulin syringes.



### Starting Insulin – a patient guide

INSULIN SYRINGES AND PENS

### Syringes come in different sizes.

- If you take 30 units or less, use a 30 unit syringe
- If you take 50 units or less, use a 50 unit syringe
- If you take 100 units of less, use a 100 unit syringe
- Make sure you can see the markings on your syringe.

A prescription is not needed to buy the syringes.

Your healthcare provider can help you decide which is the best syringe for you.

**Insulin pens** look like a writing pen, but there is a small needled on the end. Some pens can be refilled; others are thrown away when empty.



**Insulin pumps** are most often used for people with type 1 diabetes. They give small amounts of insulin throughout the day. A pump is not usually used in people with type 2 diabetes.

Your healthcare provider will teach you about ways to take insulin.

# Needle safety: Version 1

### Starting Insulin – a patient guide

### NEEDLE SAFETY

People with diabetes use sharp objects to check blood sugar and inject insulin. These sharp items should be thrown away safely.

### You should:

- Always put the syringes and lancets the piece that pricks your skin to check your blood sugar – in a heavy plastic or metal box with a tight lid or you can get a red "sharps" container at the pharmacy.
- Keep the container in a safe place in your house, away from children. On top of the refrigerator is a good place.
- When the container is filled, tighten the lid and tape it with heavy-duty tape before throwing it out.
- Some cities may allow you to put the container in the trash.
- Check with your local health department or clinic to find out how to get rid of your syringes and lancets.



### Starting Insulin – a patient guide

### NEEDLE SAFET Y

### Do not:

- Use a container that will allow the needle to punch through the side.
- Use a glass jar.
- Use a container that might go into the recycling.
- Put used syringes or lancets into the garbage or trash unless they are in a special container.

### Syringes should be used only once:

\* Needles are made for single use.



Reused syringes are not sterile.

<u>NEVER</u> share used syring es with anyone else. You can pass diseases or spread infection by sharing needles.

# Needle safety: Version 2

### Starting Insulin – a patient guide

### NEEDLE SAFET Y

People with diabetes use sharp instruments to check blood sugar and inject insulin. It is important that you safely dispose of insulin needles and lancets, the sharp tools that pierce the skin for blood sugar checks.

Syringes and lancets must be handled carefully and treated as "medical waste."

- Right after injecting your insulin, put the syringe into your syringe disposal container.
- A syringe disposal container is a heavyduty plastic or metal box that closes firmly or a heavy-duty plastic bottle with a screw top. A special "sharps container" may be provided by your pharmacy or clinic.
- Store the container in a safe place in your house, away from children. On top of the refrigerator is a good place.
- When the container is filled, tighten the lid and reinforce it with heavy-duty tape before disposing of it.
- Some areas may allow you to put the sealed container in the trash. You may want to use a drop box, supervised collection site, mail-back program, or stringe exchange program.
- Check with your local health department or clinic to find out how to dispose of medical waste in your area.



### Starting Insulin – a patient guide

### NEEDLE SAFET Y

Do not do any of the following.

- \* Use a container that will allow the needle to punch through the side.
- · Use a container made of glass.
- \* Use a container that could end up in the recycling bin.
- · Put a used syringe or lancet directly into household garbage or a trashcan.

Syringes should be used only once.

- \* Newer thinner needles are made for single use.
- \* Reused syringes are not sterile.

Always check with your healthcare provider before deciding to reuse syringes to see if this practice is safe for you.

NEVER loan a used syringe to anyone else or share syringes. You can pass diseases or spread infection by sharing needles.

# Calculating Your Insulin Doses

Continue your long-acting insulin: 11 units daily. Your goal is to wake up with blood sugars between 100-150 as much as possible. Cover food with 1:20 ratios at breakfast and lunch and 1:13 at dinner. Correct blood sugars higher than 120 (as long as it's been at least 3 hours since the last fast-acting insulin dose) with blood sugar minus 120 and divide by 60.

### Blood Sugar Too High or Too Low?

Keeping your blood sugar in control helps you stay healthy and feel good.

### "Hypoglycemia" is when your blood sugar is too low.

"Hypo" means "low" and "glycemia" means "sugar." Hypoglycemia can happen when you:

- Do not eat enough
- Skip a meal
- Exercise without eating
- Eat later than normal
- Drink alcohol
- Take too much medicine
- Get sick

This can make you feel dizzy, shaky, weak and cause your heart to beat fast. You might not be able to see well and your fingers may feel numb.

If you test your blood sugar and it is less than 70, then have some fruit juice, milk, crackers or something sweet.

Test your blood sugar again in 15 minutes. If your blood sugar is still low, then contact your healthcare provider.







### "Hyperglycemia" is when your blood sugar is too high.

"Hyper" means "high" and "glycemia" means "sugar." Hyperglycemia can happen when you:

- Eat too much food
- Do not exercise
- Forget to take your medicine
- Take the wrong amount of medicine
- Are under stress
- Are sick

This can make you feel tired or thirsty, and can cause blurry vision, hunger, and headaches. Sometimes if your sugar is high for a long time, then you may have to pee a lot. It might take cuts or sores a longer time to heal.

If your blood sugar is high, then you need to think about what you ate, if you ate more than usual, if you took your medicine or the right amount of medicine, or if there was some change in your exercise. If your sugar is high, then your medicine might need to be changed. If your blood sugar is more than 400, then you need to see a healthcare provider right away.





### **Traveling with Diabetes**

- 1. Plan Ahead
- 2. Talk to your healthcare provider
- 3. Pack everything you need
- 4. Know TSA rules
- 5. Keep everything with you
- 6. Know your time zone
- 7. Know when to take medication
- 8. Get information about how to prevent DVTs
- 9. Protect yourself against dehydration on long plane trips
- 10. Guard against infection; use hand sanitizer
- 11. Plan for activity
- 12. Plan for local foods
- 13. Always have a glucose source
- 14. Be ready for disruptions in schedules, lost luggage, etc.

Practical Diabetology May/June 2016 HealthinAging.org

| A1c (%) | eAG (mg/dL)<br>Estimated Average Glucos |  |  |  |  |
|---------|---|--|--|--|--|
| 6.0     | 126                                     |  |  |  |  |
| 6.5     | 140                                     |  |  |  |  |
| 7.0     | 154                                     |  |  |  |  |
| 7.5     | 169                                     |  |  |  |  |
| 8.0     | 183                                     |  |  |  |  |
| 8.5     | 197                                     |  |  |  |  |
| 9.0     | 212                                     |  |  |  |  |
| 9.5     | 226                                     |  |  |  |  |
| 10.0    | 240                                     |  |  |  |  |



|       | VIEWS ABOUT YOUR DIABETES  | STRONGLY<br>DISACREE | DISACREE | NEITHER<br>AGREE NOR<br>DISAGREE | ACREE | STRONCLY<br>ACREE |
|-------|--|----------------------|----------|----------------------------------|-------|-------------------|
| IP4*  | This diabetes will pass quickly                                  |                      |          |                                  |       |                   |
| IP5+  | I expect to have this diabetes for the rest of my life           |                      |          |                                  |       |                   |
| IP6   | My diabetes is a serious condition                               |                      |          |                                  |       |                   |
| IP7   | My diabetes has major consequences on my<br>life                 |                      |          |                                  |       |                   |
| IP8*  | My diabetes does not have much effect on my life                 |                      |          |                                  |       |                   |
| IP9   | My diabetes strongly affects the way others see me               |                      |          |                                  |       |                   |
| IP10  | My diabetes has serious financial<br>consequences                |                      |          |                                  |       |                   |
| IP11  | My diabetes causes difficulties for those who<br>are close to me |                      |          |                                  |       |                   |
| IP12  | There is a lot which I can do to control my symptoms             |                      |          |                                  |       |                   |
| IP13  | What I do can determine whether my diabetes gets better or worse |                      |          |                                  |       |                   |
| IP14  | The course of my diabetes depends on me                          |                      |          |                                  |       |                   |
| IP15* | Nothing I do will affect my diabetes                             |                      |          |                                  |       |                   |
| IP16  | I have the power to influence my diabetes                        |                      |          |                                  |       |                   |
| IP17* | My actions will have no affect on the outcome of my diabetes     |                      |          |                                  |       |                   |
| IP18* | My diabetes will improve in time                                 |                      |          |                                  |       |                   |

| IP19* | There is very little that can be done to<br>improve my diabetes                |  |  |  |
|-------|--|--|--|--|
| IP20  | My treatment will be effective in curing my diabetes                           |  |  |  |
| IP21  | The negative effects of my diabetes can be prevented (avoided) by my treatment |  |  |  |
| IP22  | My treatment can control my diabetes   |  |  |  |
| IP23* | There is nothing which can help my condition                                   |  |  |  |
| IP24  | The symptoms of my condition are puzzling to me                                |  |  |  |
| IP25  | My diabetes is a mystery to me   |  |  |  |
|       |  |  |  |  |

| IF26  | I don=t understand my diabetes                                  |  |  |  |
|-------|---|--|--|--|
| IF27  | My diabetes doesn=t make any sense to me                        |  |  |  |
| IF28* | I have a clear picture or understanding of my condition         |  |  |  |
| Ir29  | The symptoms of my diabetes change a great deal from day to day |  |  |  |
| IP30  | My symptoms come and go in cycles                               |  |  |  |
| IF31  | My diabetes is very unpredictable                               |  |  |  |
| IF32  | I go through cycles in which my diabetes gets better and worse. |  |  |  |
| IP33  | I get depressed when I think about my diabetes                  |  |  |  |
| IP34  | When I think about my diabetes I get upset                      |  |  |  |
| 1935  | My diabetes makes me feel angry                                 |  |  |  |
| IF36* | My diabetes does not worry me                                   |  |  |  |
| IP37  | Having this diabetes makes me feel anxious                      |  |  |  |
| IF38  | My diabetes makes me feel afraid                                |  |  |  |
|       |   |  |  |  |

IPQ-DM