CARDI·OH

Ohio Cardiovascular and Diabetes Health Collaborative

CASE WESTERN RESERVE UNIVERSITY
School of Medicine

In partnership with:

The Ohio State University College of Medicine

College of Medicine and Life Sciences, The University of Toledo

Ohio University Heritage College of Osteopathic Medicine

Northeast Ohio Medical University

University of Cincinnati College of Medicine

Boonshoft School of Medicine, Wright State University

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Ohio Colleges of Medicine Government Resource Center

Ohio Department of Medicaid

Project ECHO®

Cardi-OH ECHO

Health Equity and Cardiovascular Risk

November 9, 2023

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Disclosure Statements

- The following speakers and subject matter experts have a relevant financial interest or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of their presentation*:
  - Danette Conklin, PhD; Kathleen Dungan, MD, MPH; Adam T. Perzynski, PhD; Christopher A. Taylor, PhD, RDN, LD, FAND; Jackson Wright, MD, PhD
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Health Literacy and Cardiovascular Risk

Karen Bailey, MS, RDN, LD, CDCES
Ohio University Diabetes Institute

Learning Objectives

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1) Describe disparities in health literacy which impact cardiovascular risks, including diabetes
2) Describe a culturally sensitive approach to diabetes education
3) List strategies to effectively convey numerical information to patients with low health literacy

Health Literacy

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

Skills needed include:

- Reading
- Writing
- Calculating numbers
- Communicating with health professionals
- Using health technology (glucose meters, CGMs, connected apps, b/p monitors, etc)

Estimated that 90 million Americans have low literacy skills.

CHCS Center for Health Care Strategies, Inc. FACT SHEET#1

National Assessment of Adult Literacy - 2003

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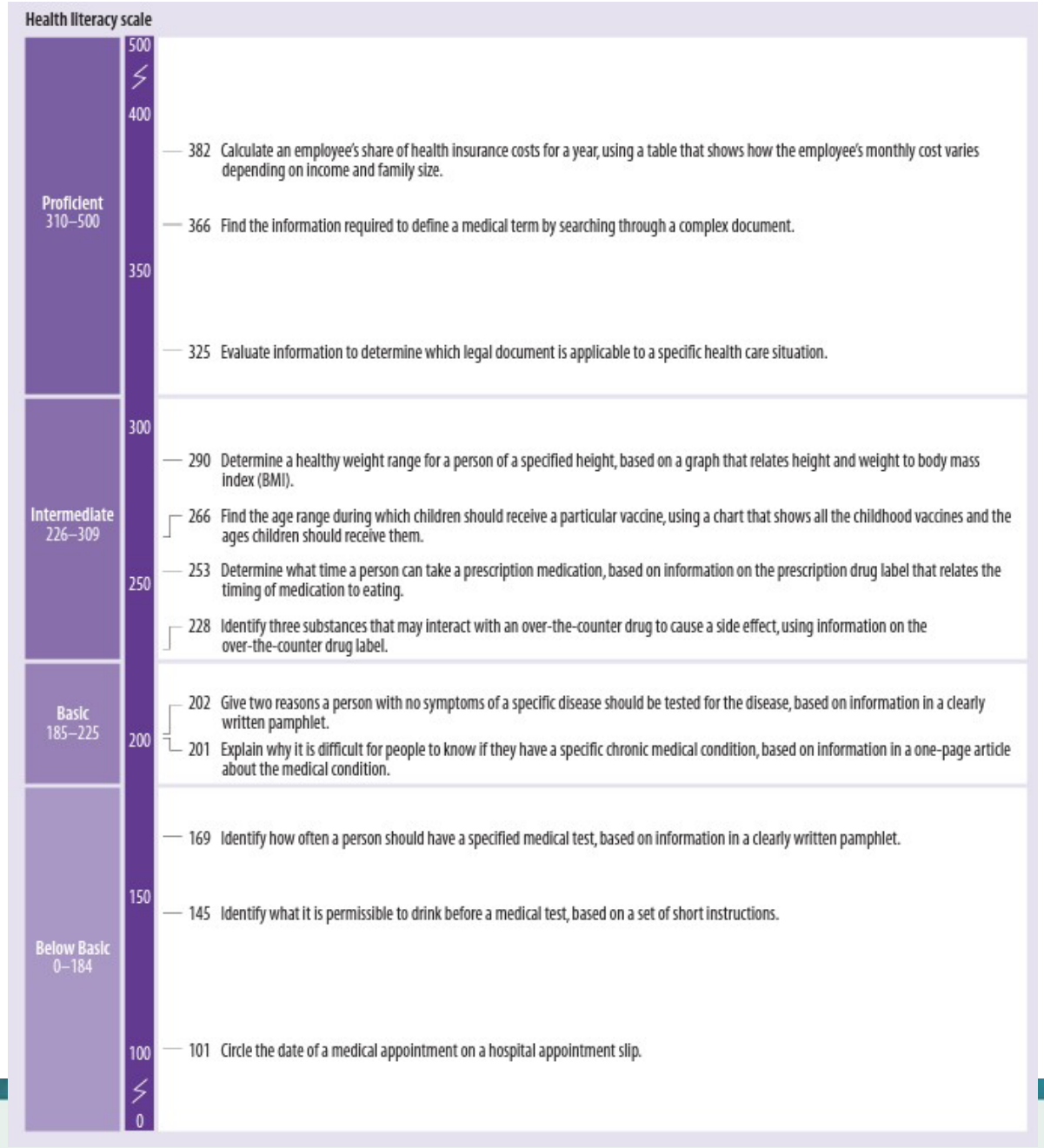
- Assessed 19,000 adults 16 yrs and older in households and prisons.
- Assessed literacy
  - Prose literacy – use information from texts (sentences/paragraphs)
  - Document literacy- use information from noncontinuous texts
  - Quantitative literacy – perform computations using numbers from print text
- Health literacy
  - Health tasks related to clinical information
  - Health tasks related to prevention
  - Health tasks related to navigating the health system

Kutner M, Greenberg E, Jin Y, Paulsen C (2006). The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy (NCES 2006-483). U.S. Department of Education. Washington DC: National Center for Education Statistics

Health Literacy Levels NAAL 2003

Kutner M, Greenberg E, Jin Y, Paulsen C (2006). The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy (NCES 2006-483). U.S. Department of Education. Washington DC: National Center for Education Statistics



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NAAS – 2003

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Health Literacy Levels

- Below Basic
- Basic
- Intermediate
- Proficient

Results

- 53% Americans had intermediate health literacy
- 12% proficient
- 22% Basic
- 14% below basic

Kutner M, Greenberg E, Jin Y, Paulsen C (2006). The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy (NCES 2006-483). U.S. Department of Education. Washington DC: National Center for Education Statistics

Health Literacy in US - Results

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- Individuals more likely to have low health literacy:
  - lower socioeconomic status/living below poverty level
  - Lower education level
  - >/=65 y/o
  - Non-native speakers of English/low English proficiency
  - Medicare and Medicaid recipients
- Those with low literacy more likely to get health information from radio and TV, not printed materials.

Kutner M, Greenberg E, Jin Y, Paulsen C (2006). The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy (NCES 2006-483). U.S. Department of Education. Washington DC: National Center for Education Statistics

Assessing for Literacy Tools
Rapid Test for Health literacy - AHRQ

https://www.ahrq.gov/health-literacy/research/tools/index.html#rapid

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REALM-SF Score Sheet

Patient ID #: _____ Date: _____ Examiner Initials: ____

Behavior ____

Exercise ____

Menopause ____

Rectal ____

Antibiotics ____

Anemia ____

Jaundice ____

TOTAL SCORE _____

Score	Grade range
0	Third 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.
1-3	Fourth to sixth grade; will need low-literacy materials, may not be able to read prescription labels.
4-6	Seventh to eighth grade; will struggle with most patient education materials; will not be offended by low-literacy materials
7	High school; will be able to read most patient education materials

Informal Patient Assessments that may help identify patient with low health literacy
CHCS Fact Sheet

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- "I forgot my reading glasses"
- Frequently miss appts
- Fail to complete registration forms
- Unable to name medications or explain purpose or dosing
- Identify pills by looking at them not reading label
- Unable to give coherent, sequential medical history
- Lack of follow through on tests/referrals

- Questions that may help HCP assess health literacy:

- "A lot of people have trouble reading and remembering health information because it is difficult. Is this a problem for you?"
- "What do you like to read? What do you rely on most to learn about health issues? Everyone has a unique source. TV? Radio? Internet? Friends and family?"

Impact of Low Health Literacy

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- Medication Errors
- Low rates of treatment adherence d/t poor communication between providers and patients
- Reduced use of preventive services and more emergency room visits
- Poor management of chronic conditions
- Longer hospital stays
- More hospital visits (6% more)
- Less responsive to public health emergencies
- 4X Higher Health Care Cost

CHCS Center for Health Care Strategies, Inc. FACT SHEET

Low literacy in patients with diabetes

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Study of 398 patients with diabetes: 83% of patients had previous diabetes education

- 25% could not determine what glucose meter readings were within normal range (80-120)
- 56% could not calculate total carbohydrate content in container of snack chips
- 59% could not accurately calculate insulin dose based on meal carbohydrate content and blood glucose level

Wolff K, Cavanaugh K, Rothman R. The Diabetes Literacy and Numeracy Education Toolkit (DLNET). The Diabetes Educator 2009; 35(2): 233-245. doi:10.1177/0145721709331945

Strategies for addressing low health literacy – written materials

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- Simple wording, Short messages, 4th to 6th grade reading level
- Info limited to key points; Minimize disease statistics, anatomy, physiology
- Focus on key actions and desired behaviors
- Use pictures to help convey message rather than to decorate page
- Color-coding of tabular information to guide successful pt use of materials.
- Encourage shared goal setting between patient and HCP

Wolff K, Cavanaugh K, Rothman R. The Diabetes Literacy and Numeracy Education Toolkit (DLNET). The Diabetes Educator 2009; 35(2): 233-245. doi:10.1177/0145721709331945

Low Literacy Diabetes Toolkit

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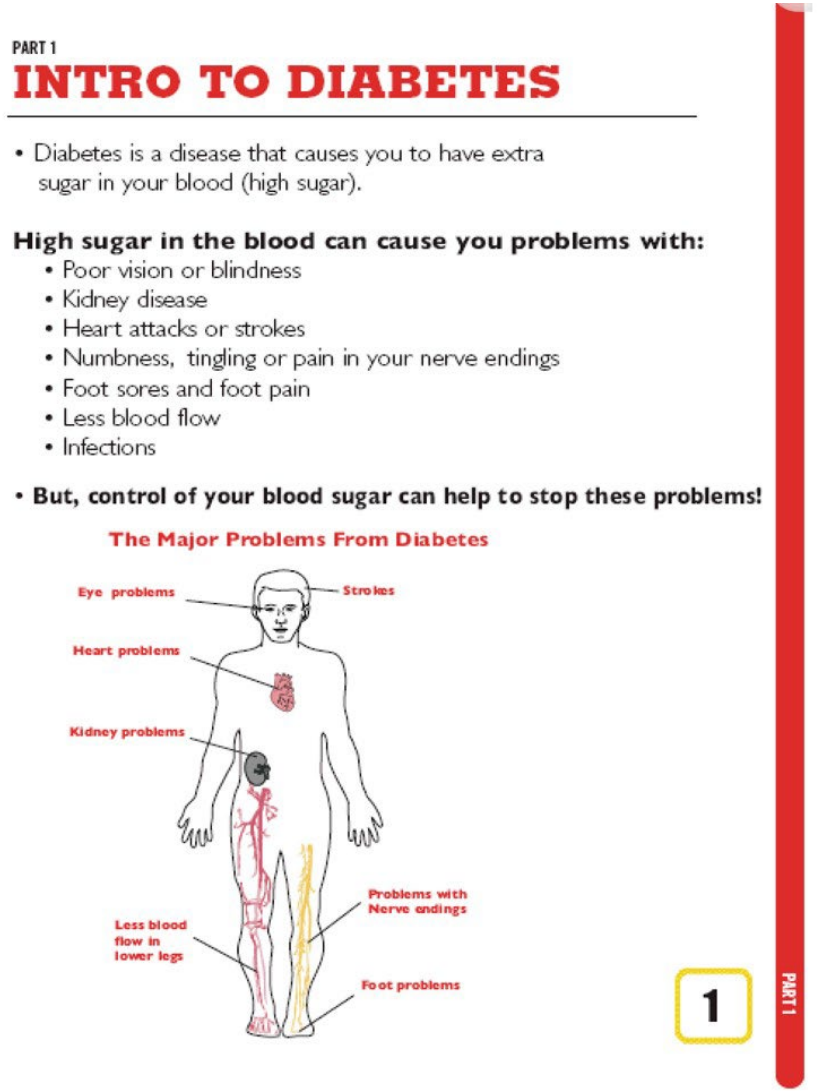

PART 1

INTRO TO DIABETES

- Diabetes is a disease that causes you to have extra sugar in your blood (high sugar).

High sugar in the blood can cause you problems with:

- Poor vision or blindness
- Kidney disease
- Heart attacks or strokes
- Numbness, tingling or pain in your nerve endings
- Foot sores and foot pain
- Less blood flow
- Infections

- **But, control of your blood sugar can help to stop these problems!**

The Major Problems From Diabetes

1

PART 1

Low Literacy Diabetes Toolkit

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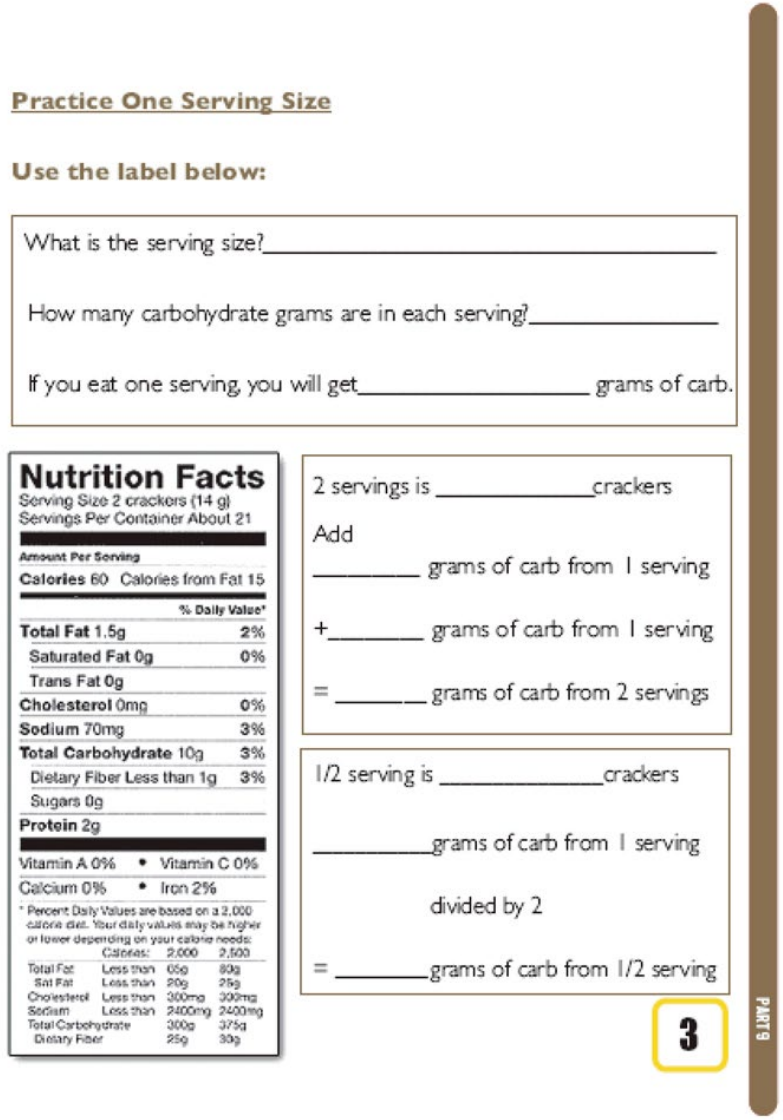
Wolff K, Cavanaugh K, Rothman R., et al



Practice One Serving Size

Use the label below:

What is the serving size?_____

How many carbohydrate grams are in each serving?_____

If you eat one serving, you will get_____ grams of carb.

Nutrition Facts
Serving Size 2 crackers (14 g)
Servings Per Container About 21

Amount Per Serving	
Calories 60	Calories from Fat 15
	% Daily Value*
Total Fat 1.5g	2%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 70mg	3%
Total Carbohydrate 10g	3%
Dietary Fiber Less than 1g	3%
Sugars 0g	
Protein 2g	

Vitamin A 0% • Vitamin C 0%
Calcium 0% • Iron 2%

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

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2400mg	2400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

2 servings is _____crackers

Add

_____ grams of carb from 1 serving

+_____ grams of carb from 1 serving

= _____ grams of carb from 2 servings

1/2 serving is _____crackers

_____grams of carb from 1 serving

divided by 2

= _____grams of carb from 1/2 serving

3

PART 9

Wolff K, Cavanaugh K, Rothman R., et al

Vanderbilt University, copyright 2007

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INSULIN FOR SET DOSE PLUS CORRECTION

How Much Insulin Do I Take?

My long lasting insulin is: _____
(Brand Name)

My short lasting insulin is: _____
(Brand Name)

Before Breakfast:

1. Take _____units of _____(long lasting insulin at _____am)
2. Test blood sugar
3. If blood sugar is below 70, eat 4 glucose tablets

If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is over _____ take _____ units of _____(short lasting insulin)

Before Lunch:

1. Test blood sugar
2. If blood sugar is below 70, eat 4 glucose tablets

If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is over _____ take _____ units of _____(short lasting insulin)

Insulin For Set Dose Plus Correction

Before Supper:

1. Take _____units of _____(long lasting insulin)
2. Test blood sugar
3. If blood sugar is below 70, eat 4 glucose tablets

If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)

At Bedtime:

1. Take _____units of _____(long lasting insulin)
2. Test blood sugar
3. If blood sugar is below 70, eat 4 glucose tablets

If blood sugar is ____ to ____ take ____ units of_____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is ____ to ____ take ____ units of _____(short lasting insulin)
If blood sugar is over _____take _____ units of _____(short lasting insulin)

Use Teach-Back Method

https://www.ahrq.gov/health-literacy/improve/precautions/tool5.html

AHRQ Health Literacy Universal Precautions Toolkit

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1 – clinician gives a message or demonstrates a skill using plain language

2 – clinician asks patient to repeat the message using their own words or return demonstrate the skill to clinician.

3 – any errors or misunderstandings are corrected by clinician and patient asked to repeat back the message or return demonstrate the skill.

Avoid conveying disrespect to patient by taking responsibility for message

“I want to make sure I’m explaining this clearly to you. Could you repeat back to me in your own words what I have explained to you?”

Teach back

Please circle the foods that are part of a carbohydrate group.

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Tips for Encounters
LEARN Model – clinical template for improved communication in cross cultural patient-health care staff intervention

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- L – Listen to patient's perspective
- E – Explain and share one's own perspective
- A – Acknowledge differences and similarities between the two perspectives
- R – Recommend treatment
- N – Negotiate mutually agreed upon plans

(Develop patient-provider relationship based on trust and respect)

Ladha T, Zubairi M, Hunter A, Audcent T, Johnstone J. Cross-cultural communication: Tools for working with families and children. Paediatr Child Health. 2018 Feb;23(1):66-69. doi: 10.1093/pch/pxx126. Epub 2018 Feb 15. PMID: 29479280; PMCID: PMC5815116

Tips for encounters with patients with low literacy

CHCS Center for Health Care Strategies, Inc. FACT SHEET#5

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- Create safe, respectful environment – Greet warmly, make eye contact. Get to know them. Use cultural humility. Earn trust. Involve family/caretaker if possible.
- Use simplified language

Instead of saying…	Say
hypertension	High blood pressure
pulmonary	Related to breathing
endocrinologist	Diabetes doctor
cardiac	Heart
HbA1c	Average blood sugar

Use Strengths-based, person-first language when talking to and about patient

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- Strengths-based language focuses on what people know and what they can do, rather than focusing on what they are not doing. More empowering

- Ex – “Sam is taking less insulin than prescribed because of fear of hypoglycemia,” instead of “Sam is noncompliant with insulin taking.”

- Person-first language – “Sam has diabetes” instead of “Sam is diabetic.”

National Standards for Diabetes Self-Management Education and Support. Diabetes Care 2022; Vol 45(2); 484-494. https://doi.org/10.2337/dc21-2396

Low Literacy resources
Scripps.org/diabetes

Giving Yourself Insulin

Scripps

Insulin Pen Instructions

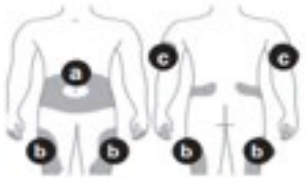
1. Wash your hands.

2. Attach pen needle.

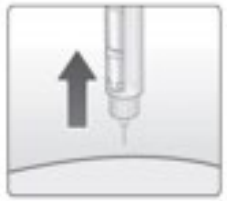
3. Dial 2 units of insulin.

4. Waste 2 units of insulin.

5. Dial ordered insulin dose.



6. Select injection site and clean area. Recommended sites: A, B and C.



7. Inject insulin: count to 10 before removing.

8. Place used needle in sharps container.

Learn more about Scripps Whittier Diabetes Institute, visit **scripps.org/diabetes** or call **1-877-WHITTIER (944-8843)**.

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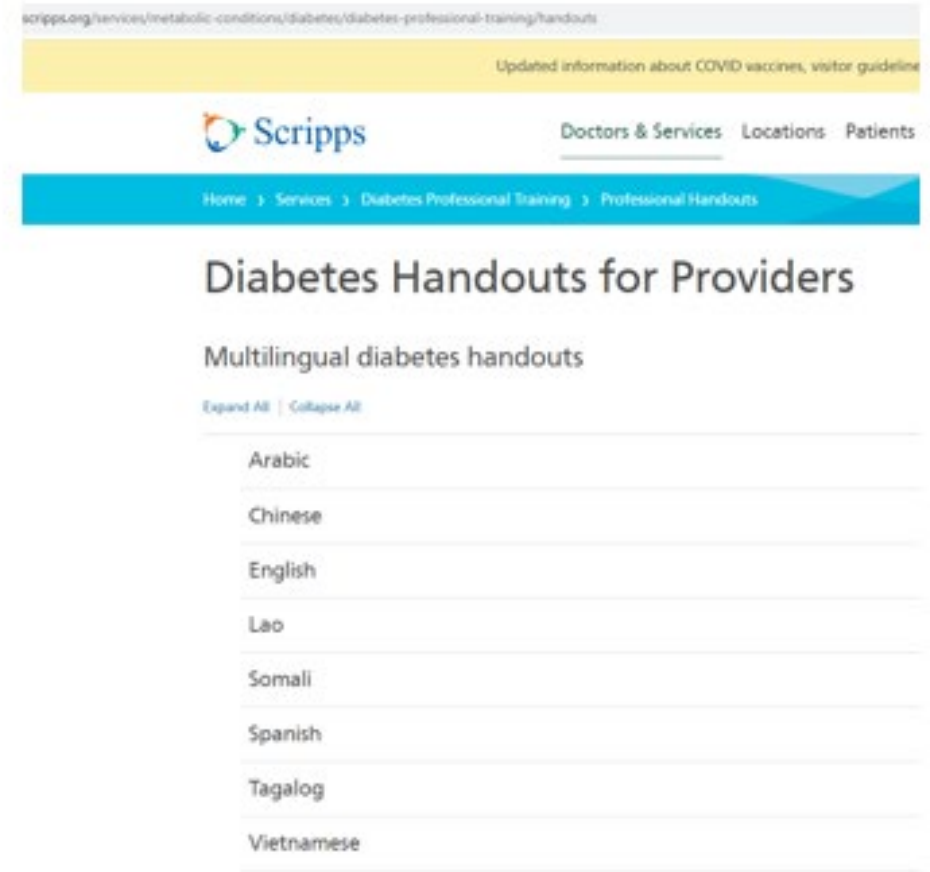
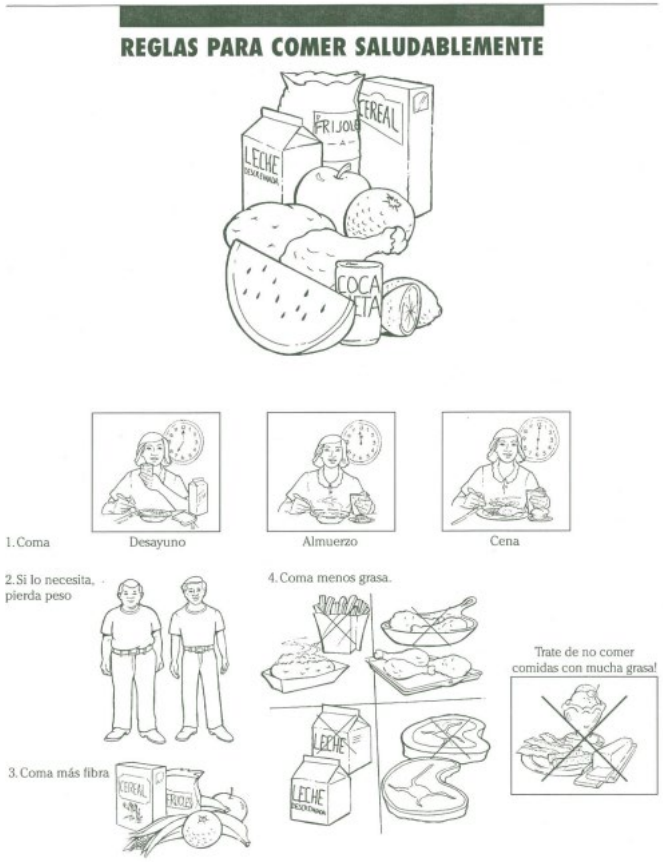
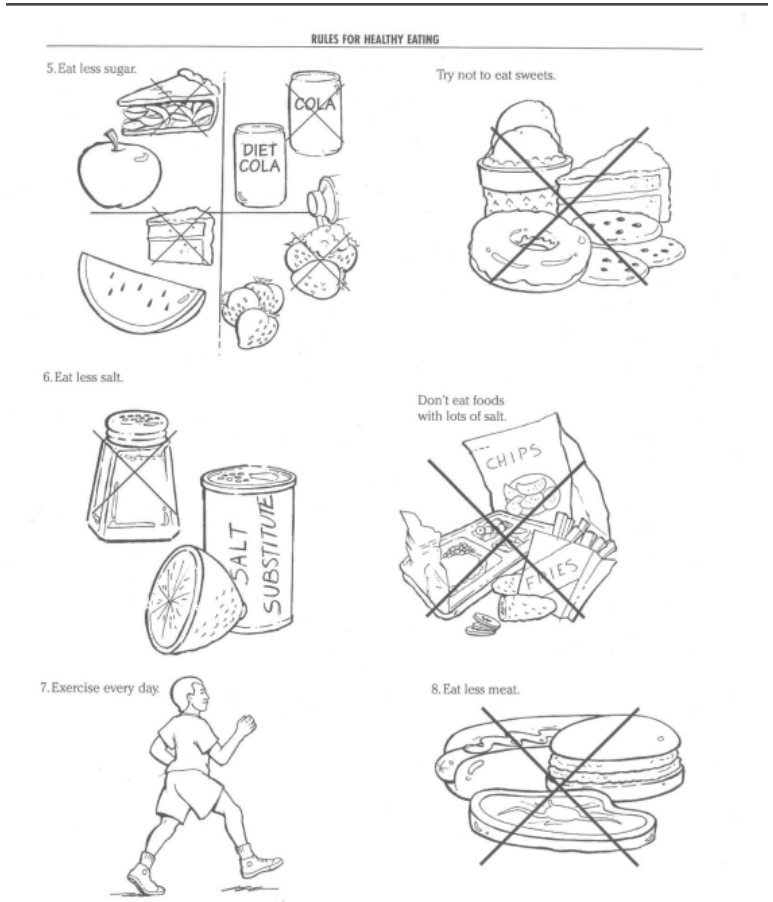
Scripps.org/diabetes – culturally appropriate materials



National Center for Farmworker Health – bilingual materials

Low Literacy English and Spanish





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learningaboutdiabetes.org

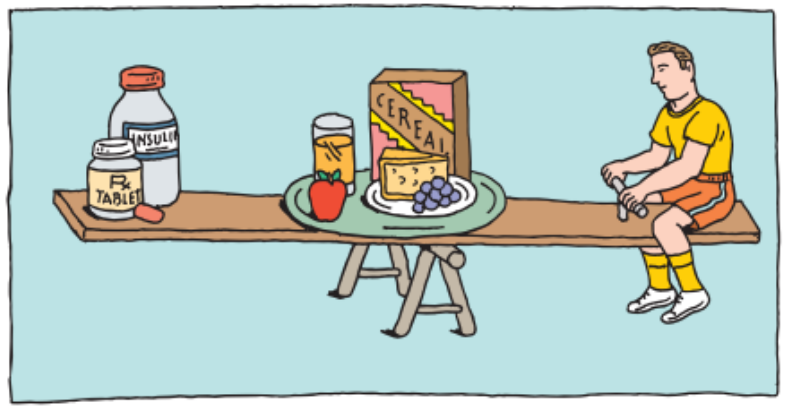
Type 2 diabetes

In type 2 diabetes, the body can make some insulin, but not enough. Or, the insulin the body makes does not work right.

Type 2 diabetes often starts in adults, but children can have it too. It is more common in overweight people or if someone in the family has diabetes.

Type 2 diabetes is controlled by balancing when and how much you eat with:

- ☐ how active you are
- ☐ your weight, and
- ☐ the diabetes medicine you take



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Low literacy Resources

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- https://www.Learningaboutdiabetes.org
- https://www.ncfh.org/health_education_resources.html
  National Center for Farmworker Health – bilingual materials
- https://www.cardi-oh.org/assets/qip/diabetes/patient-resources
- https://www.Scripps.org

Free program through ADA diabetes.org

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Project Power

Project Power for Adults

No-cost lifestyle change program.

Project Power is a no-cost type 2 diabetes lifestyle change program. Combining interactive lessons with a health coach, small support groups, and tools and resources, the program empowers you to reach your personal health goals.

Sign up to Project Power for adults.

Project Power for Youth

Healthy lifestyle program.

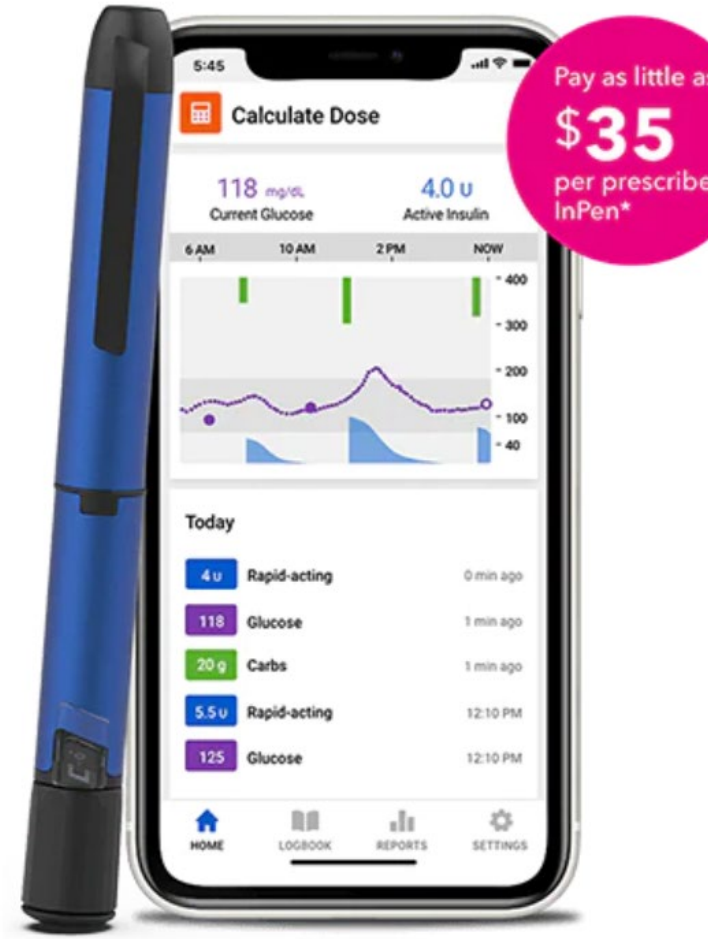
Project Power is a fun program with the aim to slow the trajectory of childhood obesity. This no-cost program, for kids ages 5–12, aims to help reduce its consequences. The program promotes making healthy food choices, increasing physical activity, and building family and peer support.

Sign up to Project Power for youth.

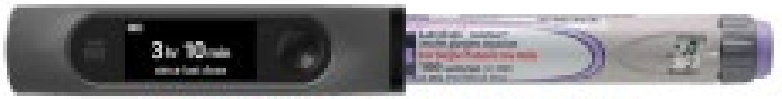
Use technology to assist with low numeracy skills

- InPen
- Bigfoot Unity

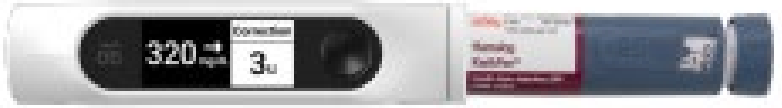
Inpen compatible with Guardian CGM, Dexcom G5,6,7



Bigfoot Unity App



Black Cap for Long-Acting Insulin



White Cap for Rapid-Acting Insulin

Abbott FreeStyle Libre 2 Sensor

Bigfoot Blood Glucose Meter

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- Agency for Healthcare Research and Quality
  https://www.ahrq.gov/health-literacy/research/tools/index.html#rapid
- https://www.huskyhealthct.org/providers/provider_postings/diabetes/DNT5.pdf Diabetes Numeracy Test
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- https://www.Scripps.org/services/metabolic-conditions/diabetes/diabetes-professional-training/handouts
- https://www.Learningaboutdiabetes.org
- https://www.cardi-oh.org/assets/qip/diabetes/patient-resources
- https://www.ncfh.org/health_education_resources.html

Thank you!

Questions/Discussion