Skills for Disease Prevention and Screening

Session Two Materials

Newsprints (flip charts) or overhead transparencies (4)

We typically refer to materials on flip charts as "newsprints," but feel free to use overhead transparencies instead. Examples of most newsprints for this session are included in this booklet.

To be prepared ahead	To be completed during the session
	• Student-Identified Screenings • Student-Identified Barriers / Challenges

Handouts (10)

Make copies of the following handouts before the session begins. Handouts for each session are located right after the session booklet.

1. Session Two Objectives and Agenda
2. Prevention and Risk Issues
3. Table of Disease Prevention and Screening Tasks and Underlying Skills
4. The Sample Lesson Packet includes the following handouts:
   - Sample Lesson Packet Overview
   - Lesson Review Sheet (to be completed during Session Two)
   - Post-Teaching Reflection Sheet (to be completed after participants have taught a sample lesson between Session Two and Session Three)
   - Twelve Sample Lessons
5. Readings on Numerical Aspects of Disease Prevention and Screening
   A. *What's in a number - Learn the meaning behind all those tests the doctors put you through*
   B. *Making sense of risk information on the web*
6. Session Two Evaluation Form

Skills for Disease Prevention and Screening
Session Two

Session Two Objectives

During Session Two, participants will:

- Analyze the results of the dual assessment activities
- Develop a list of specific disease prevention and screening tasks and underlying skills that can be addressed in ABE/ESOL classes
- Review sample health literacy lessons for adult learners

Session Two Agenda

Introductory Activities (15 minutes)

- Welcome and Review of Session One
- Review Session Two Objectives and Agenda

Discussion & Analysis Activities (1 hour 30 minutes including the break)

- Review Results of the Needs Assessment Activity and the On-Line Risk Assessment Experience
- Identify Tasks and Skills for Disease Prevention and Screening
- Walk About (includes a 10-Minute Break)

Planning Activities (55 minutes)

- Review Sample Lessons
- Review the Assignments for Session Three

Closure Activities (20 minutes)

- Session Review
- Session Evaluation

Prevention and Risk Issues

1. Disease Prevention

Ruth: *I'll sign up for the exercise class so that I can lose some weight before I attend our family reunion.*

Lee: *I'll sign up too. I want to lose weight and lower my risk of getting diabetes.*

2. Risk

"Are you at risk for diabetes?" Six hundred adults were surveyed about their efforts to lose weight and take care of their health. The survey found that most people knew that obesity was a risk factor for diabetes, and they knew they were obese. However, only half thought they were at risk for diabetes.

Why don't people think they are at risk?

The researchers commented, "People don't like believing that bad things are going to happen to them. It's the same thing with smoking or why some people don't wear seatbelts. We like to think we are exceptions to the rule. Denial is a powerful thing."

Source; Tennen, M. (n.d.). Q&A: Obesity Brings Diabetes Risk. Retrieved February 1, 2005, http://www.healthatoz.com/healthatoz/Atoz/dc/caz/nutr/obes/alert11132003.jsp

Table of Disease Prevention and Screening Tasks and Underlying Skills

General Tasks with Specific Examples	Materials and Tools Adults Are Expected to Use	Skills Adults Need	Lesson Ideas
Be attentive to public health recommendations e.g., notice health posters in public places; look at health-related newspaper articles	Articles in newspapers and magazines Postings Public announcements on radio Web sites	Read a newspaper Comprehend radio announcements Differentiate between commercials and official health warnings	Look at Web sites to determine the "sponsor"
Take disease preventive action e.g., stop smoking; use condoms; use sunscreen	Articles in newspapers and magazines Public announcements Web sites	Read package labels Locate supports and resources	Compare and contrast two labels on sunscreen packages to determine use with a child
Determine need for specific screening tests e.g., make a decision about taking a screening test	Graphs and charts Health information booklets and Web postings	Understand mathematical concepts and expressions of risk: percentage, proportion, and probability (1 in 100, 30% higher risk)	Use simple word problems to interpret expressions of risk
Participate in screening programs e.g., get an HIV test; get a dental checkup	Directions for preparation Informed consent documents	Fill out forms Ask questions	Provide generic family history forms for class to determine what screening programs are appropriate Review sample directions for a screening test and discuss the sequence of steps
Take follow-up action e.g., change a behavior; meet with doctor or dentist	Follow-up letters Directions	Ask for clarification Plan for various outcomes Use reminder cues Understand test result vocabulary, i.e., normal range, positive, negative, false positive, false negative, typical, and atypical	Provide a scenario and practice using decision trees (if A then B, if X then Y)

Skills for Disease Prevention and Screening
Sample Lesson Packet Overview

This packet includes sample lessons that address health literacy skills for disease prevention and screening. These sample lessons do not constitute a coherent syllabus. They are not in any logical order nor are they linked. The lessons do offer a range of content and skills. They may spark some ideas for incorporating health literacy skills into your own classroom curriculum. In addition, they may spark some ideas about a syllabus on health literacy.

Familiarize yourself with the entire packet of lessons before you decide which one(s) to try out in your classroom. Adapt the lessons to suit the needs of your students, or use ideas within these samples to create your own lesson. The packet includes the following materials:

1. Lesson Review Sheet (to be completed during Session Two of the study circle)
2. Post-Teaching Reflection Sheet (to be completed after you have taught a sample lesson and before Session Three)
3. Sample Lessons (12)

   Lesson 1A: (ESOL) Health Screening Tests[1]

   Lesson 1B: (ESOL) Talking About Health Screening Tests

   Lesson 2: (ESOL) Health Care Every Day, Every Month, Every Year

   Lesson 3: (ABE) Inquiry-based Project on Preventive Screening Resources in the Community

   Lesson 4: (ESOL) Filling Out Health Care Forms[2]

   Lesson 5: (ESOL) Understanding Family Medical History Forms

   Lesson 6: (ABE) Using a Body Mass Index Table

   Lesson 7: (ESOL) Talking About Symptoms to Your Doctor

   Lesson 8: (GED) Making Important Health Decisions

   Lesson 9: (ESOL) Introduction to Informed Consent

   Lesson 10: (ESOL) How Likely is Likely? Vocabulary for Talking about Probability

   Lesson 11: (ABE) Introduction to Probability

   Lesson 12: (GED) Exploring Health Risks as Probabilities

[1] For work with lower level ABE or ESOL students, Lessons 1A and 1B may be used as substitutes for the Needs Assessment provided in Session One.

[2] This lesson was originally developed for the Health Care Access and Navigation Study Circle.[+] It has been included here, since filling out forms is often required in the process of engaging in disease prevention and screening activities.

Notes to Teachers

Adapting the lessons for your classroom

As the lesson titles indicate, the sample lessons were designed with a particular student audience (e.g., ABE or ESOL) in mind. At the same time, you are encouraged to adapt **any** of the lessons to your own classroom. These lesson topics are relevant to all adults and most of the lessons provide suggestions and tips for adapting them for other adult education contexts.

Opportunities to pursue project-based inquiries

Most of the lessons lay the groundwork for project-based learning activities in your classroom. Follow-up activities may include projects such as researching free screening tests available in the community, learning about the most common screening tests and how to interpret the results, or creating a personal medical logbook to record screening information (blood pressure, cholesterol, etc.).

Additional tips for teaching health literacy lessons

If your students have specific questions about disease prevention activities or screening procedures, remind them that you are an expert in building literacy skills. Encourage your students to ask questions when they see a doctor, dentist, nurse, health educator, or pharmacist. They may want to bring the answer back to class.

Consider inviting local health care professionals to your class so that they can answer students' questions about disease prevention activities and screening procedures. Staff from town or city or state Departments of Health may also be interested in coming to class.

Set an example for maintaining privacy. You will be talking about disease prevention and screening in general and should not ask students to reveal their own health issues. In addition, you should avoid using your own personal health experiences as examples.

Lesson Review Sheet

~ To be completed during Session Two ~

Instructions: Work with your partner to choose one lesson from the Sample Lesson Packet to examine in depth. Complete the following worksheet.

Title of the lesson: _____

Summary of the lesson: *Briefly describe what this lesson is about.*

Questions to consider:

1. Does this lesson address concerns raised by students in the needs assessment activity?

2. Will my students find the lesson topic interesting and useful?

3. Is this lesson appropriate for my students' skill level?

4. How does the lesson link to skills and topics I am currently addressing in my classroom?

5. How might I adapt or alter the lesson to better fit the needs of my students?

Post-Teaching Reflection Sheet

~ Please bring this completed worksheet with you to Session Three ~

Instructions: After you have tried out one of the lessons from the Sample Lesson Packet (or perhaps one of your own lessons), complete the following worksheet. Use the back of this sheet if necessary.

Title of the lesson:_____

Date(s) lesson was taught: _____

Class level: _____

Reflection Questions

1. **How successful was the lesson?** (Consider: Did you meet your teaching goals? What specific features of the lesson went well? What did the students respond to most positively?)

2. **What did not go well?** (Consider the features the students had the most difficulty with.)

3. **What adaptations (if any) did you make to the lesson for use in your classroom?**

4. **What might you have done differently to make the lesson more effective?**

5. What teaching suggestions and tips would you offer a teacher who is interested in using this lesson?

6. As you answer the following questions, keep in mind the issues raised by your students during the needs assessment and the skills they need to develop. Think about how to build on the lesson you just taught.

- What additional related skills might you address?

- What additional lessons could you teach to meet your students' needs?

What's in a number?
Learn the meaning behind all those tests the doctors put you through

by Tracy Boyd

Tests make everyone nervous, but at least in high school you got a letter grade at the top of the page that indicated how well you did.

Too many people don't have a clue what medical tests mean. If your doctor says your blood pressure is 140/97, cholesterol is 203 and glucose is 130, does that mean you're basically healthy or a heart attack waiting to happen? Are you at risk for diabetes? Should you change your diet?

"Unfortunately, many people are just not very knowledgeable about what their numbers are supposed to be, and what those numbers mean," says Dr. Karen Wilson, an attending physician with University Family Physicians at Huron Valley Family Practice Center in Novi. "And to a certain extent, it can all be confusing. It's hard to make sense of the numbers when you don't understand what the concept is behind the values and what they actually mean."

Having some basic knowledge about commonly performed tests, and what their results mean, can give you some insight as to where you should focus your attention. Today in Health &amp Fitness, we discuss four tests, discussing why you need to know your score, what each number means, and how to improve your results.

But while it's important to know where you stand when it comes to your health, don't overreact.

"Any number in and of itself is not meaningful," cautions Dr. Donald K. Martin, a physician with St. Joseph Mercy Health System in Ypsilanti. "It really depends on what the patient's risk for disease is."

So if your blood pressure or cholesterol is slightly elevated, but you have no family history of heart disease, and you agree your diet could be better, the doctor might prescribe some lifestyle changes instead of medication. That same test result for a smoker with a strong family history of heart disease is going to elicit a completely different response. And remember, all lab tests are statistically based, cautions Martin. "If you have 20 tests done, the odds are very good that one will come back 'abnormal.' But I see abnormal tests every day, and often I do nothing about it since it has to be interpreted based on the person I am seeing, in context with their risk factors."

As always, if you have questions about your particular risk factors, consult your doctor. And if your doctor doesn't give you the answers you need, consider getting a second opinion.

Blood pressure

What it is?

Each minute, the pump called your heart circulates five quarts of blood through your body. The blood travels through 60,000 miles of blood vessels to reach all of your tissues. By the time you are 80 years old. Your heart will have beat 2 to 3 billion times. Blood pressure is a measure of how hard your blood is pressing on your artery walls.

Why It's Important

One in five Americans has high blood pressure, but 31.6 percent of people with elevated blood pressure don't know they have it. That's because high blood pressure doesn't hurt, and often produces no noticeable symptoms.

High blood pressure, also called hypertension, killed 42,565 Americans in 1997 and contributed to the deaths of about 210,000 Americans. As many as 50 million Americans aged 6 and older have high blood pressure.

A woman who has high blood pressure is three times more likely to develop heart disease and two times more likely to experience a stroke than a woman who has normal blood pressure. African-Americans, Puerto Ricans, Cubans and Mexican-Americans all have a higher risk of developing high blood pressure. So do women who take oral contraceptives.

Without adequate blood pressure, the blood cannot reach the cells to supply them with nutrients. It's the same as in your water pipes at home: Without adequate pressure, water in the heater in the basement cannot reach the shower on the second floor.

Low blood pressure can cause fatigue and dizziness. However, when blood pressure is too high, the heart has to work much harder than normal. Imagine trying to suck water through a straw the diameter of a coffee stirrer: the water does not come through easily. That's what high blood pressure is like for the body. The heart is forced to pump harder to circulate blood to the body's tissue. This often causes the heart muscle to enlarge and weaken, making it harder to meet the demands of the body. High blood pressure increases the risk of heart attacks, strokes, kidney failure, damage to the eyes and heart failure. When high blood pressure exists with-obesity, smoking, high cholesterol or diabetes, the risk of heart attack or stroke is much greater. High blood pressure adversely affects your arteries; they become less able to stretch, and that means they may not be able to get the blood where it needs to go quickly.

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The cause of 90 to 95 percent of the cases of high blood pressure isn't known. But high blood pressure is easy to diagnose and is usually relatively simple to control.

To improve your blood pressure

Whether or not you need to take action about your blood pressure depends greatly on your individual risk factors.

"You can't diagnose high blood pressure by the results of one office visit," says Dr. Karen Wilson. "Ideally, we tell a patient to buy a home blood-pressure monitor at the drugstore and check their pressures at home a few times a day. Then we look at their readings. That helps us to have a more accurate picture."

Many lifestyle changes can help lower blood pressure. Your doctor may prescribe medications in conjunction with these lifestyle changes or if the changes do not produce a desired effect.

- Eat fruits and vegetables. Produce contains fiber, potassium, magnesium and calcium, all of which appear to play important roles in normalizing blood pressure.
- Limit alcohol consumption. In a Harvard Medical School study, nurses ages 34 to 59 who consumed two or three alcoholic beverages daily increased their risk of high blood pressure by 40 percent.
- Maintain a proper weight. The bigger you are, the harder your heart has to work to get blood to each part of your body. Sometimes weight loss is all that is needed to normalize your blood pressure.
- Relax. Stress can temporarily spike your blood pressure. In fact, in the doctor's office, many people have high blood pressure (this is referred to as White Coat syndrome). Some people with high-normal blood pressure have had success with meditation, yoga, deep breathing and other stress reduction techniques.

Don't immediately think you have to go off the Pill; just be aware of the problem, and your doctor will probably take your blood pressure before you start the contraceptives and then a few months later. If your blood pressure does rise, you might want to consider a different form of birth control- especially if you smoke, or have a family history of high blood pressure and stroke.

For more information

American Heart Association, (800) 242-8721

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The numbers

Blood pressure is expressed as two numbers. When the heart pumps, pressure in the arteries increases temporarily. This is called the systolic pressure, and it's the first number read when blood pressure is taken. When the heart relaxes between beats, the pressure in the arteries falls. This is the diastolic pressure, the second number. Blood pressure is read using the word "over," as "120 over 80" or "135 over 85."

Considered	**Systolic**	**Diastolic**
Optimal	80-119	50-79
Normal	120-129	80-84
High-Normal	130-139	85-89
High – Stage 1	140-159	90-99
High – Stage 2	160-179	100-109
High – Stage 3	180-209	110-119
High – Stage 4	210 +	120 +

Body mass index

What it is

Many physicians use a formula called the body mass index, or BMI, to assess a person's body weight relative to how tall they are. It highly correlates with the amount of body fat in most people and can give a good indication as to who is at risk for weight-influenced diseases and conditions.

Why it's important

By now, we all know that obesity and heart disease is an epidemic in America. Obesity, simply, is an excess of body fat. This excess body fat puts you at risk for a host of problems, including heart attack, stroke, high blood pressure and diabetes. In addition to harming the heart and blood vessel system, obesity contributes to the formation of gallstones and worsening degenerative joint diseases like arthritis. Obesity is mainly caused by taking in too many calories and not getting enough exercise.

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The numbers

To calculate BMI, take your weight in pounds and multiply it by 705. Divide that number by your height in inches, then divide again by height in inches. The resulting number is your BMI.

For a 135-pound woman who is 66 inches tall (5 feet, 6 inches), the calculation would be:

(Weight in lbs.) 135 x 705 = 95,175

95,175 ÷ 66 = 1,442

1,442 ÷ 66 = 21.8

This woman's BMI is 21.8.

Compare your number with the following:

Underweight: Less than 18.5

Healthy: 18.5 to 24.9

Overweight: 25 to 30

Obese: 30 or greater

Extremely obese: 40 or greater

How to lower your BMI

Since you can't do much about your height, the only way to lower your BMI is to lose weight. For most people, that means you must bum more calories than you take in. Exercise is important, because it not only affects your BMI, but can lessen your risk for many other diseases and conditions.

Concentrate on eating fresh fruits and vegetables, whole grains, lean meats and low-fat dairy products. Try to accumulate at least 30 minutes of activity each day. If you want help losing weight, look for a respected program that emphasizes slow weight loss - no more than 2 pounds per week.

Cholesterol

What it is

Cholesterol is a waxy substance that is produced by the liver. It's needed to insulate nerves and make cell membranes. And it aids in the production of some hormones. Since the body is usually able to make as much as it needs, extra

cholesterol in the form of animal products (meats, poultry, fish and dairy products) can be too much.

Why it's important

If you eat too much dietary cholesterol, it can form hard, thick deposits on artery walls called plaque. This build-up causes arteries to be thicker and less flexible, and can slow down or even stop blood flow to the heart.

This can result in a heart attack. In this way, high cholesterol is a leading risk factor for heart disease.
High cholesterol is also believed to be a risk factor for stroke, or brain attack. If a blood vessel to the brain is constricted by plaque. The brain is deprived of oxygen. This can result in disability or death.

How to Improve Your Cholesterol Levels

Your risk for developing heart disease drops 2 to 3 percent for each percent you lower your cholesterol. To help keep your cholesterol levels in the normal ranges and lower your risk for heart attack and stroke, follow a healthy diet that includes fruits and vegetables, cereal, rice, pasta, lean meats, poultry without skin, low-fat dairy products, lean fish, shellfish, beans and peas. A void foods high in saturated fat and cholesterol, such as whole milk, cream, ice cream, butter, egg yolks, cheese, bakery goods, palm oil, kernel oil, liver, sweetbreads, kidney, sausage, bologna, salami, hot dogs, duck, goose, margarine and lard and fried foods.

To improve your HDL level, quit smoking. Lose weight if you need to. And exercise.

"Low levels of HDL is especially a problem for men. It's often not a problem in women who are premenopausal, because estrogen has protective effects," says Wilson. "But one of the most important factors is exercise, and it has to be cardiovascular exercise - aerobic exercise. Exercise has been shown to improve HDL levels. We suggest getting your heart rate up to its maximum for 30 to 40 minutes, at least three days a week."

To find your maximum heart rate, subtract your age from 220. Multiply this number by .6 to find your lower maximum and by .8 to find your upper maximum. Keep your heart rate between these numbers for at least 30 minutes.

Exercise is an important factor for controlling most high cholesterol levels. Lack of physical activity is now clearly shown to be a risk factor for heart disease, says the American Heart Association. The organization suggests you accumulate at least 30 minutes of cardiovascular activity, such as brisk walking, jogging, cycling or in-line skating, most days of the week.

To improve high levels of triglycerides, you can take several steps,

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including limiting alcohol and losing weight if you need to. If you have diabetes, keep your blood sugars in the ranges suggested by your doctor. Cutting down on the amount of sugar and refined starches in your diet can help improve triglycerides, too.

Get enough fiber. Soluble fiber (found in oats) binds to cholesterol in your gut, sweeping it out of the body. But we eat about half the amount of fiber we should get on a daily basis. Instead, aim for 25 to 30 grams each day. Fiber is found in fresh fruits (apples, oranges, grapefruit), vegetables (brussel sprouts, broccoli, spinach), grains (whole wheat bread, oatmeal, brown rice) and legumes (navy beans, kidney beans).
If after all of these efforts, your cholesterol is still high, there are medications doctors can prescribe to lower your cholesterol. "But we really try to stress conservative measures, since most of the medications that are effective against high triglycerides and cholesterol are metabolized through the liver and are thus very hard on that organ," says Wilson. "That's why we need to monitor liver function tests every six months for patients on these medications."

For more information

* American Heart Association, (800) 242-8721.

* American Dietetic Association, (800) 366-1655.

* American Lung Association, (800) LUNG-USA.

The numbers

Several different numbers from a blood test explain your cholesterol level and risk. You may be told to fast before having blood drawn for some of these tests, as eating or drinking anything for 8-12 hours before your test can give an inaccurate number.

Total blood cholesterol is an overview of all the cholesterol in your body.

Desirable: Less than 200 milligrams per deciliter of blood

Borderline high: 200 to 239 mg/dl

High risk: 240 mg/dl and over

To devise a plan to raise or lower your risk for heart attack and stroke, it's important to know where you stand for each particular kind of cholesterol.

HDL cholesterol stands for high-density lipoprotein. HDL is considered the good cholesterol because research reveals it seems to protect you from a heart attack. So the higher the HDL level, the better.

High risk: Less than 35 mg/dL

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Normal: Between 35 and 60 mg/dL

Desirable: More than 60 mg/dL

LDL cholesterol stands for low-density lipoprotein, the main carrier of harmful cholesterol in your blood. High LDL means you are at higher risk for heart disease. (Medical experts prefer that patients with heart disease have levels less than 100 mg/dl.)

Desirable: Less than 130 mg/dl

Borderline high: 130 to 159 mg/dl

High: 160 mg/dl or higher

Triglycerides are another kind of blood fat. A high level of-this fat, especially in conjunction with a low level of HDL, is another warning sign of high risk for heart disease and heart attack.

Desirable: Less than 160

High: More than 160

Dr. Karen Wilson adds that there is one other ratio that's important. "One other thing we look at that is recommended by the AHA (American Heart Association) is the ratio of total cholesterol to HDL. That should be less than four, and the lower the better."

So if your total cholesterol is 212 (considered borderline high) but your HDL is 60, your ratio is 3.5 - meaning that your risk for heart disease is fairly low. But if your total cholesterol is 195 - considered normal – and your HDL is on the low end at 35, your ratio is 5.5 and your risk is higher.

Glucose

What it is

Glucose is the sugar your body needs for energy. It is taken from the food you eat and carried in the bloodstream to the cells, where it is used for energy. But glucose can't get to the cells without the help of the hormone insulin, which acts on the cells to help them extract glucose from the blood.

Why it's important

If there is not enough insulin in your system, the glucose in your bloodstream cannot be used by the cells. High blood sugar levels indicate diabetes.

Undiagnosed diabetes can do long-term damage to many of your organs.

Complications of high blood sugar that is not controlled properly include nerve damage, kidney failure and blindness.

The numbers

Doctors can use several different types of diagnostic tests to check blood sugar levels and diagnose diabetes.

* Fasting plasma glucose test

This requires you to fast overnight, or for at least eight hours. A small blood sample is drawn, and the lab analyzes it for glucose levels.

Normal: Less than 110 milligrams per deciliter (mg/dl).

Diabetes: More than 126 mg/dL on two or more tests on different days.

Repeat test: Between 110 mg/dL and 126 mg/dL.

* Random plasma glucose test

This is sometimes used if symptoms of diabetes are present, such as extreme thirst, fatigue, excessive urination, hunger and weight loss. For this test, the doctor takes a random blood sample and does not require you to fast. However, this test must be reconfirmed with a second test at another time.

Diabetes suspected: 200 mg/dL or higher.

* Oral glucose tolerance test

For this test, you must fast for eight to 16 hours. At the lab or doctor's office, your fasting glucose will be tested. Then you drink a sweet-tasting liquid containing glucose. More blood samples are taken after you drink the liquid to measure your blood sugar levels.

The glucose levels normally rise and then fall quickly. In someone with diabetes, glucose levels rise higher than normal and don't come down as fast. Glucose tolerance tests may lead to one of the following diagnoses:

You have a normal response when the two-hour glucose level is less than 140 mg/dl, and all values between zero and two hours are less than 200 mg/dl.

You have impaired glucose tolerance when the fasting plasma glucose is less than 126 mg/dl, and the two-hour glucose level is between 140 and 199 mg/dl.

You have diabetes when two tests done on different days show that

blood glucose levels are abnormally high.

You have gestational diabetes when you are pregnant and have any two of the following: a fasting plasma glucose of more than 95 mg/dl, a one-hour glucose level of more than 180 mg/dl, a two-hour glucose level of more than 155 mg/dl, or a three-hour glucose level of more than 140 mg/dl.

How to improve your numbers

If you have been diagnosed with Type 2 diabetes, your doctor may suggest you lose weight. Weight loss lowers insulin resistance and helps the insulin produced by your body be more efficient at lowering blood glucose levels. If you take oral diabetes medications, you may be able to lower your dose or stop these medications altogether. Weight loss also helps lower cholesterol and blood pressure, both of which are risk factors for heart disease - and people with diabetes are twice as likely to get heart disease.

If you are diagnosed with diabetes, it is important to keep your blood sugar in the normal ranges as much of the time as possible. You can do this by following the eating plan your doctor suggests, getting exercise and monitoring your blood sugar levels daily to check your own progress.

For more information

* American Diabetes Association, (800) 342-2383.

* Juvenile Diabetes Foundation International, (800) JDF-CURE.

Spotlight on exercise

Looks like there is no way around it: Exercise keeps coming up as a way to prevent disease, lower risk factors, stay healthy and improve chronic conditions.

Up to 250,000 deaths per year in the United States - about 12 percent of all deaths - are attributed to a lack of regular physical activity, says the American Heart Association. Surveys show that 24 percent of Americans age 18 or older are not active at all. About 54 percent of adults get some exercise, but they don't do it regularly or intensely enough to protect their hearts. Only 22 percent of American adults get enough leisure time exercise to achieve cardiovascular fitness.

"Exercise is something we always discuss and encourage, regardless of a person's test results or risk factors," says Dr. Donald K. Martin, a physician with St. Joseph Mercy Health System in Ypsilanti. "Exercise can reduce risk factors for so many conditions and diseases, and besides, it just feels good."

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Contrary to what you might think, any activity is better than none. Sure, you'll reap the most benefits when you participate in physical activity on a regular basis, but even low-to-moderate intensity activities, when done 30 minutes a day, can bring benefits.

Pleasure walking, climbing stairs, gardening, yard work, .moderate-to-heavy housework, dancing and home exercise all count. More vigorous aerobic activities, such as brisk walking, running, swimming, bicycling, roller skating and jumping rope - done three or four times a week for 3060 minutes - are best for improving the fitness of the heart and lungs.

For more information:

American Obesity Association, (800) 98-0BESE www.asbg.org

Weight Watchers International, (800) 3-FLORlNE www.weight-watchers.corn

American Dietetic Association, (800) 366-1655 www.eatright.org

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Making sense of risk information on the web
Don't forget the basics

By Steven Woloshin, Lisa M. Schwartz & Andrew Ellner

Web based risk calculators are among the newest information resources available to people who want to understand the health risks they face. The advantage of these calculators is their ability to generate tailored risk information based on personal factors. But their usefulness depends on their accuracy and whether they are complete or balanced. To focus on the second issue, we present a hypothetical case history highlighting some elements of good (and not so good) risk communication.

The case: Mr. Jones is a 55 year old white man worried about prostate cancer after reading about a politician who had recently been diagnosed with the disease. His first search effort—using the Google search engine to look for "prostate cancer *and* risk calculator" yields 8410 hits. The first hit (www.yourcancerrisk.harvard.edu) seems perfect. This asks him questions about himself and, based on his age, ethnic group, family history, height, vasectomy history (he had one), and dietary habits (he eats 5 servings of food with animal fat a day and 5 servings of tomato based foods a week), tells him his risk is above average. He is now even more worried and calls his doctor.

Mr. Jones's doctor explains that three things are missing in this risk assessment: clarity about the risk, context, and an acknowledgment of uncertainty.

Clarity

Clarity means knowing what specific risk is under consideration (is this about getting or dying of the disease?), a number (the probability), and the time period associated with that number. Just being told that his risk is above average does not tell Mr. Jones the chance that he will get or die of prostate cancer in some defined time frame.

A limited number of calculators are available that can generate quantitative risk estimates for various diseases such as breast cancer in the next five years,[1] lung cancer in the next 10 years,[2] or the combined chance of myocardial infarction or death over 10 years.[3] Most, however, calculate only the chance of developing a specific disease, not the chance of dying from it. The US federal government's surveillance, epidemiology, and end results (SEER, http://seer.cancer.gov/) site provides look-up tables and an interactive calculator for estimating the risk of both getting and dying of most cancers.[4] Its disadvantage is that the output can be tailored only to age, sex, and race. Its advantages are the broad array of cancers

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included and flexibility in specifying the time frame. Together Mr. Jones and his doctor learn that over the next 10 years a 55 year old white American man's chance of getting prostate cancer is about 40 in 1000 whereas his chance of dying of it is 2 in 1000.

Context

Nevertheless, even with the clear statement of risk, something is missing—is a 2 in 1000 chance of dying over 10 years a big or a small risk? Mr. Jones needs a context—for example, how his risk of prostate cancer compares with that of the average person; or how his chance of dying of prostate cancer compares with his chance of dying of other cancers. He can get some context simply by comparing his chance of getting prostate cancer with his chance of dying of it: from this he learns that prostate cancer is not uniformly fatal since so many more men get it than die of it.

He can use the SEER site to get more context by calculating his risk of other cancers. Even more helpful would be to have data on common causes of death and death in general. This sort of benchmark information is available in the form of risk charts.[5] These charts make it easy for people to compare their chance of dying of various causes and all causes. From these Mr. Jones sees that the 2 in 1000 risk of dying of prostate cancer is lower than his chance of dying of colon cancer (4 in 1000) or heart disease (51 in 1000 if he is a smoker, 20 in 1000 if he has never smoked) in the same time frame and much less than his chance of dying of anything in that time (217 in 1000 if he smokes and 93 in 1000 if he has never smoked).

Uncertainty

Mr. Jones's doctor also points out the third problem: Jones has not been given any sense of the uncertainty inherent in risk predictions. To the extent that a calculator tailors predictions, it is important to know something about the strength of evidence behind the factors used in generating risk estimates. Age, for example, has been consistently shown to be an important risk factor for prostate cancer, whereas height, diet, and vasectomies have not—yet these factors were included in the risk calculator used by Mr. Jones.

Unfortunately there is no simple way to judge the quality of risk information. Moreover, Mr. Jones, like many people, has had little experience of thinking about risk, let alone quantifying it. A new resource—a tutorial on the BMJ Knowledge *BestTreatments* website[6]—is now available to help patients understand where numbers on risk come from (medical studies) and how to interpret them. The tutorial helps people conceptualise the probabilistic aspects of risk. It also explains the importance of how messages are presented (for example, a drug reducing someone's risk of disease from 2% to 1% can be said to

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reduce their risk by 1% or by half). Finally, it suggests ways for people to think about medical risks in context by comparing them with non-medical risks.

New communication technology now gives the public greater access to health information than ever before. But no matter how sophisticated the source, it takes more than good data to make useful information. We believe that risk presentations that follow the basic principles summarised in the box would help patients find meaningful answers to the questions they are asking.

Elements of risk and selected sources

Clarity about the risk

What risk is being discussed? What are the numbers?
What is the time period? How dangerous is the disease?

Sources:

Getting and dying from most cancers at specified times (National Cancer Institute's surveillance, epidemiology and end results website, http://seer.cancer.gov/query/)

Getting breast cancer in the next 5 years (National Cancer Institute's breast cancer risk assessment tool, http://bcra.nci.nih.gov/brc/)

Myocardial infarction or cardiac death in next 10 years (National Cholesterol Education Program heart risk calculator, http://hin.nhlbi.nih.gov/atpiii/calculator.asp?usertype = prof)

Getting lung cancer in the next 10 years (long term smokers) (Memorial Sloan Kettering Cancer Center lung cancer risk assessment tool, www.mskcc.org/mskcc/html/12463.cfm)

Get context

How does my risk compare to risk of an average person? similar disease? leading causes of death? all-cause mortality?

Sources:

Dying from various and all causes in the next 10 years (risk charts http://jncicancerspectrum.oupjournals.org/cgi/content/full/jnci;94/11/799)

Acknowledge uncertainty

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Has the risk factor been shown to change risk (is it really a risk factor)? Does the risk factor really cause disease? How precise is the risk estimate?

No single data source

See *BMJ* 's *BestTreatments* website: How to use research to support your treatment decisions[6] https://www.besttreatments.org/risk

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Skills for Chronic Disease Management
Session Two Evaluation Form

Please complete the following evaluation and turn it in before you leave today.

1. What was the most valuable thing that you gained from today's session? (For example, an insight, a practical idea, specific information, etc.)

2. How would you improve this session?