

NIH News in Health

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Understanding Health Risks Improve Your Chances for Good Health

Risks are all around us. A nearby sneeze may raise your risk for catching the flu. Obesity boosts the odds you'll get diabetes. Smoking increases your risk for many cancers. And if you pay attention to news headlines, you may worry that you're at risk for food poisoning, Zika infection, shark attacks, and more. How can you know which health risks apply to you?

Health risks can sometimes be confusing, but they're important to understand. Knowing the risks you and your family may face can help you find ways to avoid health problems. It can also keep you from fretting over unlikely threats. Knowing the risks and benefits of a medical treatment can help you and your doctor make informed decisions.

"Understanding health risks is key to making your own health care decisions," says Dr. William Elwood, a psychologist and behavioral scientist at NIH. "It gives you perspective on potential harms and benefits, so you can make smart choices based on facts and not fears."

A health risk is the chance or likelihood that something will harm or otherwise affect your health. Risk doesn't mean that something bad will definitely happen. It's just a pos-



sibility. Several characteristics, called risk factors, affect whether your health risks are high or low.

Your personal health risk factors include your age, sex, family health history, lifestyle, and more. Some risk factors can't be changed, such as your **genes** or ethnicity. Others are within your control, like your diet, physical activity, and whether you wear a seatbelt.

When you see health statistics, consider the types of people being described. If they're not similar to you, or if the category is very broad, then your risks may be different. A general statement like "More than half of Americans over age 45 will develop heart disease at some point" is based on statistical averages across the entire U.S. population. If you're younger than 45, your heart disease risk will generally be much lower. The more risk factors you have—such as smoking, high blood pressure, or diabetes—the greater your risk.

Exercise and a healthy diet, on the other hand, can make your chance of developing heart disease lower than for most other people.

"In many ways, our perception of risk is irrational," says Elwood. "We sometimes worry over something that's extremely unlikely, like Ebola in the U.S. And we ignore steps we can take to prevent what's much more likely to harm us, like heart disease or colon cancer."

Talking about health risks can seem intimidating. Even doctors sometimes have trouble with risk concepts. That's why NIH supports research to improve how medical staff and others communicate health risks and prevention strategies to patients and the public.

"Math in general is hard for a lot of people. Yet math is often hidden in everyday activities that affect our health," says Dr. Russell Rothman, a physician and scientist at Vanderbilt University in Nashville. Rothman's research focuses on helping people understand and work with numbers, so they can reduce their risks for diabetes and excess weight, including childhood obesity.

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Definitions

Genes

A substance inherited from your parents that defines features such as your risk for certain diseases.

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Studies show that the way we hear and understand health statistics can be influenced by how the numbers are described, or how they're "framed." Different descriptions can affect how clear the information is and also what emotions it stirs. For example, the statement: "More than 20% of Americans will eventually die of cancer" might sound less scary from a different perspective: "Nearly 80% of Americans will not die of cancer." The same information might seem clearer described as a ratio: "More than 1 in 5 Americans will eventually die of cancer." Research



Wise Choices Asking Your Doctor About Health Risks

- What are my personal health risks? Are these risk over my lifetime or over a shorter period?
- What steps can I take to reduce my health risks? (such as through exercise or a healthy diet)
- What are my options? (for treatments, screening tests, or making healthy changes)
- What will the results of this test or therapy tell us about my risks?
- What are possible benefits and side effects? What are the chances these might affect me?

Speak up if there's something you don't understand. It's the health care provider's job to explain health risks in a way that makes sense to you.

shows that pictures or diagrams are often the most understandable—for instance, showing 5 human figures with 1 in a different color.

To understand the potential risks or benefits of a medical treatment or behavior change, it helps to focus on a math concept called "absolute risk." Absolute risk is the chance of something happening, such as a health problem that might arise over a period of time. For example, a disease might affect 2 in 100 middle-aged men over their lifetimes. If a certain drug lowers their risk for the disease to 1 in 100, the drug has reduced their absolute risk by 1 person in 100, or 1%. Another way to think of it is that you'd need to treat 100 people with this medicine to prevent just 1 additional person from getting the disease.

Often, however, you might hear numbers that use a related concept called "relative risk." Relative risk compares the absolute risks of one group to another. In the example above, you could also say that the drug reduced the risk of disease by 50%, since 1 is half of 2. Looking at relative risk alone, you may mistakenly think that the drug is highly effective.

"Many times, the relative risk sounds much greater than the absolute risk, which can be confusing," Rothman explains. When you hear numbers about risk, it's best to focus on the absolute risk.

Health risks can be especially hard to grasp when emotions run high, such as when people are faced with a serious illness. One recent NIH-funded study found that people with



Web Links

For more about understanding health risks, click the "Links" tab at:
newsinhealth.nih.gov/issue/Oct2016/Feature1

advanced cancer tended to expect better outcomes and longer survival times from treatment than their doctors did. Most patients didn't realize that their outlook differed from their doctors. Such misunderstandings might affect whether patients choose to undergo harsh treatments.

"Communication is a 2-way street," says the study's lead researcher, Dr. Ronald M. Epstein of the University of Rochester Medical Center in New York. "For effective discussions to occur, doctors must provide encouragement and answers. And patients have to ask important questions." Epstein and colleagues are developing methods to help doctors and patients have realistic discussions about topics such as emotions, treatment choices, and likely outcomes.

"We've shown it's possible to improve the conversations. It helps if patients come prepared with 3 or 4 big-picture questions to ask their doctors," Epstein says. For people with advanced cancer, questions might include: How will treatment affect my quality of life? What's the average survival time for this type of cancer?

"It can feel scary to ask those kinds of questions. Sometimes you don't really want to know the answers, or you have mixed feelings," Epstein says. "Doctors can help by opening the door to conversation. They can say, 'Tell me what's on your mind. Do you have any questions?'" Such open conversations can help patients and their families make more informed health decisions.

Start by talking with your doctor about your health risks. Ask how you can reduce your risks. And look to trustworthy websites—like NIH's health.nih.gov—for reliable health information. ■

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National Institutes of Health

Office of Communications

& Public Liaison

Building 31, Room 5B64

Bethesda, MD 20892-2094

[nihnewsinhealth@od.nih.gov](mailto:.nihnewsinhealth@od.nih.gov)

Tel: 301-402-7337

newsinhealth.nih.gov

Editor Harrison Wein, Ph.D.

Managing Editor Vicki Contie

Contributors Vicki Contie, Alan Defibaugh (illustrations), Tianna Hicklin, and Carol Torgan

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Prostate Predicaments

When Bladder Problems Are Pressing

Many men develop urinary problems as they get older. They might find it hard to urinate, have a strong and sudden urge to “go,” be unable to hold it in, or wake up often at night to urinate. These symptoms may signal a bladder issue. But they can also be signs of a prostate problem. Identifying the right condition is key for treatment and symptom control.

The prostate gland tends to get larger as men get older. This walnut-shaped gland sits just below the bladder and surrounds the urethra, the tube that carries urine out of the bladder. If the prostate gets too large, it can narrow or even block the urethra and make it hard to pass urine.

Three prostate issues that can cause urinary symptoms are an enlarged prostate (called BPH, or benign prostatic hyperplasia), **inflammation** (called prostatitis), and prostate cancer. Some of the

symptoms can be similar. A thorough medical exam and testing are key to diagnosing and treating the problem.

For men older than 50, BPH is the most common prostate issue. “Nearly half of men over 50 have lower urinary tract symptoms related to BPH,” says Dr. Ziya Kirkali, a prostate disorder specialist at NIH. “This number gets to about 90% in men aged 80 years or older.” Some men eventually find their symptoms troubling enough to need treatment. Drugs or surgery can often relieve symptoms associated with BPH. In extreme cases, BPH can lead to urinary tract infections, bladder stones, or kidney failure if left untreated.

Prostatitis is the most common prostate problem for men under age 50. It’s sometimes caused by bacterial infections and can be treated with antibiotics. Symptoms of bacterial prostatitis can include fever, chills, or body aches along with pain and urinary symptoms such as the inability to urinate, going to the bathroom frequently, and leaking or dribbling urine. Seek immediate medical care if you have a sudden onset of these symptoms, or if you cannot urinate at all.

Most often, the cause of prostatitis is unknown—a condition called chronic prostatitis. “Chronic prostatitis, or chronic pelvic pain syndrome, is seen in about 10–15% of the U.S. population,” explains Kirkali. “It’s very bothersome, and it’s a chronic condition that comes and goes.” Chronic prostatitis can cause pain or discomfort in the groin or



lower back. Treatment may require a combination of medicine, surgery, and lifestyle changes.

Few men have symptoms of prostate cancer, although some precancerous or cancer cells may be present. “Prostate cancer may not cause any symptoms at all,” Kirkali explains. “If it does, the urinary symptoms are similar to BPH.”

In fact, more than half of all American men have some cancer cells in their prostate glands by the age of 80. It may take 10, 20, or even 30 years before a prostate tumor gets big enough to cause symptoms. Most of these cancers never pose a problem or become a serious threat to health. Your doctor can help you determine whether treatment is right for you.

Don’t let prostate issues take over your life. Talk with your doctor if you have problems urinating or feel discomfort in your pelvic area. Getting the right treatment can help improve your quality of life. ■



Wise Choices Is Your Prostate the Problem?

See your doctor if you have any of these symptoms:

- Urinate 8 or more times a day
- Blood in your urine
- Dribbling at the end of urination
- Trouble emptying your bladder completely
- Unable to delay urination
- Wake up often to urinate at night
- Trouble starting or keeping a urine stream
- A weak urine stream
- Can’t urinate
- Urine with unusual color or odor
- Pain in your belly or groin area when urinating

If you can’t urinate at all, seek medical care right away.



Definitions

Inflammation

Heat, swelling, and redness caused by the body’s protective response to injury or infection.



Web Links

For more about prostate problems, click the “Links” tab at: newsinhealth.nih.gov/issue/Oct2016/Feature2

Health Capsules

For links to more information, see these stories online:
newsinhealth.nih.gov/issue/Oct2016/Capsule1

Depression Symptoms and Treatment

Most adults with depression might not be receiving treatment, a new study suggests. And many who do undergo treatment might not have the disorder. These findings highlight the need to deliver appropriate care for depression.

Depression is a serious and common mood disorder. Symptoms include feelings of hopelessness, reduced energy, and loss of interest in hobbies or activities. Major depression is typically treated with medications, psychotherapy, or a combination. Antidepressants are the most commonly prescribed class of medi-

cations in the U.S. Still, some studies have found that many adults with depression don't receive treatment.

To learn more about depression therapy nationwide, NIH-funded researchers analyzed data from more than 46,000 adults who completed a questionnaire to screen for depression. Participants also answered questions about their psychological distress and depression treatment.

The scientists found that about 8% of the adults screened positive for depression. But more than two-thirds of them hadn't received treatment during the survey year.

In addition, about 8% of participants were treated for depression. Of those treated, only 30% screened positive for depression and 22% for serious psychological distress. Thus, many people were treated who screened negative for depression and weren't in serious distress.

"Greater clinical focus is needed on depression severity to align depression care with each patient's needs," says study leader Dr. Mark Olfson. ■

Volunteers Needed for Cancer Study

Cancer develops when old or damaged cells survive too long or grow where they shouldn't. No matter where tumors start in the body, each builds a unique combination of genetic changes. These changes can affect how well the cancer will respond to various types of therapies.

NIH is working to learn more about how to target cancer therapy to the specific tumors and genetic changes in each patient. This is called targeted therapy, or precision medicine.

A clinical trial called NCI-MATCH (National Cancer Institute-Molecular Analysis for Therapy Choice) is exploring how to match a tumor's genetic changes with drugs that target these changes.

Volunteers are needed for this nationwide clinical trial. You may be

eligible to participate if you've been diagnosed with a solid tumor or lymphoma that has stopped responding to treatment. You may also qualify if you have a rare cancer for which there's no standard treatment.

Patients interested in NCI-MATCH must first be tested for abnormal genes. If the tumor matches a targeted drug under study, the patient might be eligible to enroll in the trial. Treatment with the matched drug will continue as long as the tumor shrinks or remains stable.

Start by speaking with your health-care team. You can learn more about NCI-MATCH at cancer.gov/nci-match or by calling NCI's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237). ■

Featured Website Voices of the NIH Community

www.nih.gov/about-nih/who-we-are/voices-nih-community

Listen to stories from patients, family members, doctors, and nurses who've been touched by NIH's research and community. Through a partnership with StoryCorps, this website shares personal experiences of survival, loss, discovery, hope, and the profound impact of NIH-funded research.

NIH Saved My Life

In these stories, patients, family members, doctors and nurses describe their experiences saving lives and being saved with NIH research.



"You could have died several times by now"
Alan Guttmacher and Brigid Guttmacher



"I was tired of fighting a disease"
Rudy Cerech and Cole Christopher



"In the first twelve months, we lost over 300 people"
Beverly Byram and Steve Raffalli



"I never knew how it was to feel free"
Olivia Wein and Harrison Wein



"I know there is strength in me"
Olivia Wein and Harrison Wein

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