

NIH News in Health

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Do Social Ties Affect Our Health?

Exploring the Biology of Relationships

Cuddles, kisses, and caring conversations. These are key ingredients of our close relationships. Scientists are finding that our links to others can have powerful effects on our health. Whether with romantic partners, family, friends, neighbors, or others, social connections can influence our biology and well-being.

Wide-ranging research suggests that strong social ties are linked to a longer life. In contrast, loneliness and social isolation are linked to poorer health, depression, and increased risk of early death.

Studies have found that having a variety of social relationships may help reduce stress and heart-related risks. Such connections might improve your ability to fight off germs or give you a more positive outlook on life. Physical contact—from hand-holding to sex—can trigger release of **hormones** and brain chemicals that not only make us feel great but also have other biological benefits.

Marriage is one of the most-studied social bonds. “For many people, marriage is their most important relationship. And the evidence is very strong that marriage is generally good for health,” says Dr. Janice Kiecolt-Glaser, an expert on health and relationships at Ohio State University. “But if a relationship isn’t going well, it could have significant health-related consequences.”

Definitions

Hormones

Substances produced in one part of the body to signal another part to react a certain way.

Married couples tend to live longer and have better heart health than unmarried couples. Studies have found that when one spouse improves his or her health behaviors—such as by exercising, drinking or smoking less, or getting a flu shot—the other spouse is likely to do so, too.

When marriages are full of conflict, though, such health benefits may shrink. In NIH-funded studies, Kiecolt-Glaser and her colleagues found that how couples behave during conflict can affect wound healing and blood levels of stress hormones. In a study of more than 40 married couples, the researchers measured changes to body chemistry over a 24-hour period both before and after spouses discussed a conflict. The troublesome topics included money, in-laws, and communication.

“We found that the quality of the discussion really mattered,” Kiecolt-Glaser says. Couples who were more hostile to each other showed much larger negative changes, including big spikes in stress hormones and inflammation-related molecules. “In the more well-functioning marriages, couples might acknowledge that they disagree, or find humor in the situation, but they don’t get sarcastic or roll their eyes when the other is talking,” Kiecolt-Glaser says. In a related study, blister wounds healed substantially more slowly in couples who were nastier to each other than



in those who were kinder and gentler during difficult discussions.

Couples with the “double-whammy” of hostile marriages and depression may also be at risk for weight problems. After eating a high-fat meal and discussing a difficult topic, these troubled couples tended to burn fewer calories than less hostile counterparts. “The metabolism in these couples was slower in ways that could account for weight gain across time,” Kiecolt-Glaser says. Compared to the kinder couples, the distressed spouses had signs of more fat storage and other risks for heart disease.

The quality of a marriage—whether supportive or hostile—may be

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especially important to the health of older couples. Dr. Hui Liu at Michigan State University studied data on the health and sexuality of more than 2,200 older people, ages 57 to 85. Good marriage quality, she found, is linked to reduced risk of developing cardiovascular disease, while bad marriage quality is tied to increased risk, particularly in women. “The association between marriage quality and heart health becomes increasingly strong at older ages,” Liu says.

Liu and colleagues are also looking at the links between late-life sexuality and health, including whether sex among the very old is beneficial or risky to heart health. “Some people assume that sex isn’t important in

older ages, so those ages are often overlooked in research studies related to sex,” Liu says. “But our studies suggest that for many older people, sex quality and sex life are important to overall quality of life.”

In one recent analysis, Liu and co-workers found that older women who reported having a satisfying sex life were at reduced risk for high blood pressure 5 years later. But the researchers also found that some older men, ages 57 to 85, were at increased risk for certain heart-related problems after 5 years if they reported having frequent (at least once a week) or extremely enjoyable sex. The reasons for these increased risks aren’t clear and are still under study. Experts suggest that older men and women talk with their doctors about concerns related to sexual issues or potential health risks. Learn more about sexuality in later life at www.nia.nih.gov/health/publication/sexuality-later-life.

Other types of relationships are important, too. These can include friends, family, neighbors, co-workers, clubs, and religious groups. Studies have found that people who have larger and more diverse types of social ties tend to live longer. They also tend to have better physical and mental health than people with fewer such relationships. Social support may be especially protective during difficult times.

Dr. Sheldon Cohen, a psychologist at Carnegie Mellon University in Pittsburgh, has been exploring the links between relationships and



Web Links

For more about relationships and health, click the “Links” tab at: newsinhealth.nih.gov/issue/Feb2017/Feature1

health for more than 3 decades. In one study, his team exposed more than 200 healthy volunteers to the common cold virus and observed them for a week in a controlled setting. “We found that the more diverse people’s social networks—the more types of connections they had—the less likely they were to develop a cold after exposure to the virus,” Cohen says. He and his team have since found evidence that people with more types of connections also tend to have better health behaviors (such as not smoking or drinking) and more positive emotions.

The scientists have also been exploring whether simply believing you have strong social support may help protect against the harms of stress. “Long-term conflicts with others are a potent stressor that can affect health. But we’ve found that its effects are buffered by perceived social support,” Cohen says. “People who have high levels of conflict and low levels of social support are much more likely to get sick when exposed to a virus. But those with high conflict and high levels of social support seem protected.” In addition, hugging seemed to shield against stress. People who reported having more frequent hugs were less likely to develop an infection after viral exposure.

Social ties can have mixed effects on our health. But overall, research suggests that the benefits of interactions with others can outweigh any risks. “It’s generally healthy for people to try to belong to different groups, to volunteer in different ways, and be involved with a church or involved in their neighborhood,” Cohen says.

“Involvement with other people across diverse situations clearly can have a very potent, very positive effect on health.” ■



Wise Choices Making Connections

Social connections might help protect health and lengthen life. Look for ways to get involved with others:

- Join a group focused on a favorite hobby, such as reading, hiking, painting, or wood carving.
- Take a class in yoga, tai chi, or another new physical activity.
- Help with gardening at a community garden or park.
- Volunteer at a school, library, hospital, or place of worship.
- Join a local community group or find other ways to get involved in things you care about.

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The Power of Your Pancreas

Keep Your Digestive Juices Flowing

How much you eat alters more than your waistline. It also affects your body's organs, starting with your pancreas. With each bite, your pancreas must release enough digestive juices and hormones for you to benefit from the food you eat. Putting too much stress on your pancreas—by too much eating, drinking, or smoking—can cause serious health issues.

The pancreas lies behind your stomach. It's surrounded by the intestines, liver, and gallbladder. These neighboring organs work together to help you digest your food.

"The pancreas produces a variety of enzymes to help break down the carbohydrates, proteins, and fats in your diet into smaller elements that are more easily used for energy," says Dr. Dana Andersen, a pancreatic specialist at NIH. "It also produces specialized hormones that travel through the blood and help regulate a variety of body functions."

The best known hormone produced by the pancreas is insulin. Insulin controls how much sugar, or glucose, is taken up by your body's cells. If the insulin-producing cells in the pancreas are damaged, diabetes may arise. Type 2 diabetes occurs when the pancreas can't produce enough insulin to handle the sugar

in your blood. Obesity worsens type 2 diabetes.

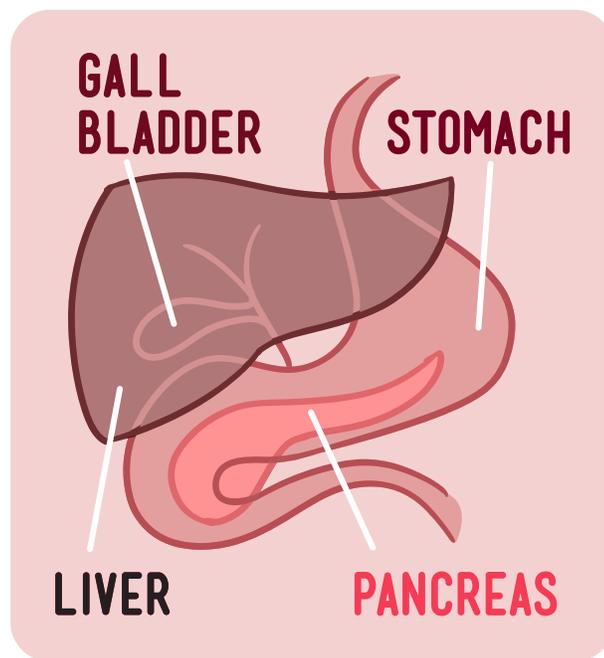
"Obesity can make your body less sensitive to insulin, so it takes more insulin to achieve the same metabolic work. That puts more stress on the pancreas," Andersen says. "Just losing 5 or 10 pounds can help the pancreas to work more efficiently."

High levels of fat in the blood can also lead to **inflammation** of the pancreas, or pancreatitis, which can be chronic or acute.

With chronic pancreatitis, the inflammation doesn't heal and gets worse over time. Eventually, it can lead to permanent damage.

Acute pancreatitis occurs suddenly and is very painful. It usually resolves in a few days with treatment. In severe cases, bleeding and permanent tissue damage may occur. The most common causes of acute pancreatitis are gallstones and heavy alcohol use. Gallstones are small, pebble-like substances made of hardened bile (a liquid produced by the liver to digest fat). Other causes of acute pancreatitis include abdominal trauma, medications, and infections.

Genetic disorders of the pancreas and certain **autoimmune disorders** can also lead to pancreatitis. But in nearly half of cases, the cause is unknown—a condition known as idiopathic pancreatitis.



Tracking your family's medical history can help you learn if you're at risk for pancreatic problems. "It's always a good idea to tell your doctor if there's been a family history of pancreatic disease," Andersen says. "That may not sound like much, but to a doctor it's very important information."

Knowledge of family health history is especially important for possible early detection of pancreatic cancer, which usually has no symptoms in its early stages. When caught early, pancreatic cancer may be curable with surgery. But most patients with pancreatic cancer aren't diagnosed until more advanced stages, when the chances for survival are low.

NIH researchers are looking for new ways to detect pancreatic diseases early and predict who's most at risk. Eating a healthy diet and limiting your exposure to harmful substances, like tobacco and alcohol, can help keep your pancreas and your entire digestive system working properly. ■



Wise Choices Pancreas Problems?

Talk to your doctor if you have any of these symptoms of pancreatitis:

- abdominal pain
- nausea
- vomiting
- fever
- rapid pulse
- unexplained weight loss
- diarrhea
- oily stools



Definitions

Inflammation

Swelling and irritation caused by the body's protective response to injury or infection.

Autoimmune Disorders

Condition in which the body's immune system mistakenly attacks the body's own cells and tissues.



Web Links

To learn more about the pancreas, click the "Links" tab at: newsinhealth.nih.gov/issue/Feb2017/Feature2



Health Capsules

For links to more information, see these stories online:
newsinhealth.nih.gov/issue/Feb2017/Capsule1

Ear Infection Treatment Shouldn't Be Shortened

Middle ear infections are common in kids. The illness is often caused by bacteria, and can be treated with antibiotics. But bacteria can become resistant to antibiotics. That's why it's important to take these medications as directed.

Scientists have wondered if shorter treatments might reduce the risk of bacteria becoming resistant to antibiotics. Shorter treatments might also reduce other side effects. A new NIH-funded study provides some answers—at least for children under age 2.

The study enrolled 520 children, ages 6 to 23 months, who had

middle-ear infections diagnosed using stringent criteria. Kids were randomly assigned to receive either a standard 10-day course of antibiotics or a shorter (5-day) treatment.

The scientists found that 77 of the 229 children (34%) in the 5-day treatment group did not improve or had worsening symptoms and signs of infection, compared to 39 of 238 (16%) who received the 10-day treatment.

After treatment, the researchers examined bacteria from the kids' noses and throats. They'd expected the shorter treatment to reduce the development of drug-resistant bacteria. However, they found no

significant differences between the 2 groups. Both treatment groups also had similar levels of side effects.

"The results of this study clearly show that for treating ear infections in children between 6 and 23 months of age, a 5-day course of antibiotic offers no benefit in terms of adverse events or antibiotic resistance," says study lead Dr. Alejandro Hoberman of the University of Pittsburgh School of Medicine. The findings confirm that standard antibiotics prescribed for an ear infection should be taken the full 10 days in young children. ■

4 Steps to Manage Your Diabetes for Life

Each year, 1.7 million Americans, ages 20 and up, are diagnosed with diabetes. People with diabetes have high levels of blood glucose (also called blood sugar). If left undiagnosed or untreated, diabetes can lead to heart disease, stroke, kidney disease, blindness, and other health problems. That's why it's important to manage your diabetes ABCs: A1C (blood glucose), blood pressure, and cholesterol. The 4 steps below are a good start.

Step 1: Learn about diabetes. If you've got diabetes, you need to make healthy food choices, move more every day, stay at a healthy weight, and take recommended medicines even when you feel good.

Step 2: Talk to your health care team about how to manage your

A1C, blood pressure, and cholesterol. Know your ABC goals, and track your progress.

Step 3: Learn how to live with diabetes. Even if you know the steps you should take to stay healthy, you may have trouble sticking with these steps over time. Work with your health care team to make a plan that will work for you.

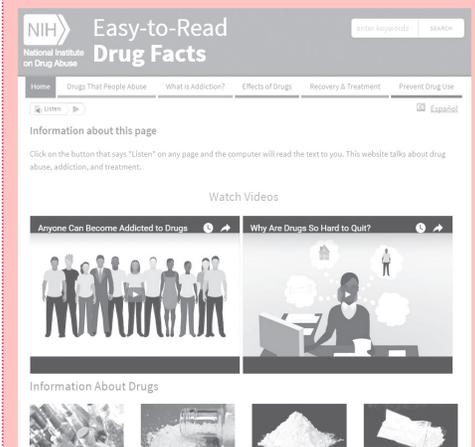
Step 4: Get routine care to stay healthy. See your health care team at least twice a year to find and treat any problems early. Once each year, be sure to get a dilated eye exam and a complete foot exam.

Get more details and inspiration for managing diabetes at this NIH web page: www.niddk.nih.gov/health-information/diabetes/manage-monitoring-diabetes. ■

Featured Website Easy-to-Read Drug Facts

www.easyread.drugabuse.gov

Get a wide range of helpful information about drug abuse, addiction, treatment, and prevention. Animated videos explain the basics of addiction and why drugs are so hard to quit.



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