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Feeling Out of Joint The Aches of Arthritis

Many people start to feel pain and stiffness in their joints as they get older, often when they're 45 to 50. It's called arthritis, and it's one of the most common diseases nationwide. You may think it's a disease of old age, but arthritis can affect young adults and even children. In recent years, scientists have made rapid progress in understanding the many causes of arthritis. They've also made significant strides in developing effective new treatments for many forms of the disease.

What exactly is arthritis? "Arthr" means joint, and "itis" means inflammation—heat, swelling and redness. But the inflammation of arthritis isn't always something you can see.

"Some types of arthritis are very inflammatory and others aren't as much. But they all involve an element of inflammation," explains Dr. Joanne M. Jordan of the University of North Carolina at Chapel Hill.

Arthritis comes in many forms. In fact, there are more than 100 types, each with its own symptoms and treatments. The most common form of arthritis is osteoarthritis.

"Osteoarthritis is a wear or tear disease that breaks down different parts of the joint," says Dr. David Felson of Boston University. It most often affects the fingers, knees and hips.

Osteoarthritis can follow injury to a joint. For example, years after a soccer injury to a knee, you might get osteoarthritis in the knee. Once you've had a severe joint injury, it's important to be careful about what kind of activities you do.

"You should be active because, ironically, being active can help prevent disease," Felson says. "But try not to be active in ways that can make your joint vulnerable to injury again."

For the most part, researchers don't know a lot about how and why osteoarthritis occurs. Women tend to get it more often than men. You tend to get it as you get older.

"Many factors that affect osteoarthritis are things you can't control, like how old you are and what gender you are," Felson says.

But some risk factors are under your control, including your weight. "Even moderately overweight people have an increase in knee osteoarthritis," says Felson.

Many treatments are available for osteoarthritis. Talk to your doctor about exercises that can help and activities you should avoid. Several pain and anti-inflammatory medicines are available by prescription or over the counter.

Perhaps the most promising treatments for osteoarthritis right now, Felson says, involve ways to block pain. Researchers are working on other approaches as well, including exercise routines and devices that alter the alignment of your joints. For severe cases of osteoarthritis, scientists have



developed improved surgeries to replace knees and hips.

Another common type of arthritis is gout. Gout usually affects the big toe, but many other joints may be involved. It's caused by needle-like crystals that build up in the joints.

People with gout might try to avoid certain foods—including liver, beef, anchovies and meat gravy—because they can bring on a gout attack in some people. These foods are rich in molecules called purines,

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which break down in your body and can ultimately contribute to crystal formation. Drinking alcohol, being overweight and taking certain medications may make gout worse. In older people, some blood pressure medicines can also increase the chance of a gout attack.

Your doctor might do blood tests and X-rays to find out if you have gout. If you are diagnosed with gout,



Wise Choices Arthritis Tips

Arthritis can damage not only your joints, but also internal organs and skin. Talk to your doctor about what you can do. Here are some ideas:

- Try to keep at a healthy weight that's normal for your height.
- Exercise. A health professional can show you how to move more easily. Going for a walk every day will help, too.
- If you had a severe joint injury, be careful about protecting it during future activities.
- Don't smoke. People who smoke are more likely to get rheumatoid arthritis, and their symptoms tend to be worse.
- Take your medicines when and how you are supposed to. They can help reduce pain and stiffness.
- Try taking a warm shower in the morning.

it can be treated several different ways, often in combination.

A very different type of arthritis is called rheumatoid arthritis. In contrast to osteoarthritis and gout, which affect particular joints, rheumatoid arthritis can affect your whole body. It arises when your **immune system** mistakenly attacks your own joints. That can bring pain, swelling, stiffness and loss of function in joints and bones—most often in the hands and feet. Rheumatoid arthritis may also affect your internal organs and systems. You might feel sick or tired or have a fever.

Laboratory tests for certain immune system activity can confirm whether you have rheumatoid arthritis. The good news is that now there are medications not only to control pain and inflammation, but to actually slow or stop damage to your joints.

"A lot of new treatments that have come out in the past 10 to 15 years have revolutionized the treatment of rheumatoid arthritis," Jordan says.

The newest rheumatoid arthritis



Definitions

Immune System

The system that protects your body from invading viruses, bacteria and other microscopic threats.

Genes

Stretches of DNA, a substance you inherit from your parents, that define characteristics such as how likely you are to get certain diseases.



Web Links

For more about arthritis, see our links online:

<http://newsinhealth.nih.gov/issue/Nov2010/Feature1>

medications interfere with the immune system's activity. By interrupting the events that lead to inflammation, these medications help block inflammation and prevent structural damage to the joints.

"If you're concerned you have rheumatoid arthritis, it's important to see a doctor fairly soon," Felson advises. "Your joints can be damaged by the process of arthritis, and that damage cannot be reversed, so it's important to get treatment as early as possible."

Researchers continue to explore what causes arthritis. A better understanding of the factors involved might lead to new treatment approaches. **Genes** play a significant role in many types of arthritis. For example, scientists have linked certain immune system genes with a tendency to develop rheumatoid arthritis. Genes involved in how uric acid is processed have been tied to gout.

For osteoarthritis, Jordan estimates that up to 30% to 60% of your risk may lie in the genes you inherited from your parents. "The tricky part, though, is that it's not a single gene," Jordan explains. "It's a lot of different genes that interact with each other and with the environment to cause the disease."

Researchers are also looking at other risk factors, such as job-related exposures and heavy metals, such as lead, in the environment. They've been developing better ways of looking inside joints as well.

If you feel pain and stiffness in your joints, don't hesitate to bring it up with your doctor. If you wait too long, your joints can become damaged beyond repair. Find out what's causing your problems now and learn about your options. ■

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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: 301-435-7489 Fax: 301-496-0019

Editor Harrison Wein, Ph.D.

Assistant Editor Vicki Contie

Contributors Vicki Contie, Alan Defibaugh (illustrations), Bryan Ewsichek (design) and Harrison Wein

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Herpes in Hiding

Genital Herpes Often Unrecognized

It's an uncomfortable topic, but it's a health issue you should know about. Nationwide, about 1 out of 6 people between ages 14 and 49 is infected with the herpes simplex virus type 2—the main cause of genital herpes. Surprisingly, most people don't know they're infected. Even if you have no symptoms, or only mild ones, you can still transmit the virus to others.

Herpes simplex virus (HSV) comes in 2 forms. The most common, HSV-1, is best known for causing cold sores or fever blisters on the face, especially on the lips and mouth. But HSV-1 can also cause genital herpes. HSV-2 usually affects the genitals, but can also infect the mouth. Both types of HSV can pass from one person to another through sexual or other skin-to-skin contact.

"Once people are infected with herpes simplex, the virus stays in the body for the rest of their lives," says Dr. Carolyn Deal, who heads the sexually transmitted diseases branch at NIH. Symptoms may first appear about 2 weeks after infection. After that, the herpes virus goes into hiding in your nerve cells. It may re-

emerge several times a year. Over time, reappearances occur less often.

The first outbreak is usually the most severe and lasts the longest, sometimes 2 to 4 weeks. During an outbreak, you might notice tingling or sores (lesions) near the area where HSV first entered your body. Small red bumps are the first to appear. They change into small blisters, and then become itchy, painful sores that might develop a crust. The sores eventually heal without leaving a scar.

Often, though, people don't recognize their first genital herpes outbreak or later recurrences. A study by the U.S. Centers for Disease Control and Prevention found that more than 80% of people with HSV-2 infections have not been diagnosed with the disease.

Your health care provider can sometimes diagnose genital herpes by looking at the sores or testing a sample from infected skin. Between outbreaks, a blood test can detect evidence of HSV-1 or HSV-2.

Although there's no cure for herpes, prescription medicines can help calm symptoms and prevent future outbreaks. Taken regularly, these medications can also reduce the risk of passing herpes to sexual partners.



"For prevention, the recommendations for genital herpes are similar to many other sexually transmitted diseases," says Deal. The most reliable way to prevent infection is to abstain from sex or to be in a long-term monogamous relationship with an uninfected partner. Condoms can also reduce the risk of transmission, but are not a reliable solution, as they may not cover all infected areas. Infected people should avoid having sex with uninfected partners during an outbreak.

Although herpes infections generally don't cause serious medical problems alone, they can cause complications. Genital herpes can increase your chances of becoming infected with HIV, the virus that causes AIDS. In rare cases, herpes outbreaks during pregnancy can put the newborn child at risk for serious or even deadly infections.

Although genital herpes is a lifelong disease, there are many options for managing the condition and preventing its spread. Talk to your health care provider about any concerns. ■



Wise Choices Signs of Genital Herpes

Early symptoms of the first outbreak can include:

- An itching or burning feeling in the genital or anal area
- Sores near where the virus entered the body
- Flu-like symptoms, including fever
- Swollen glands
- Pain in the legs, buttocks or genital area
- A feeling of pressure in the area below the stomach



Web Links

For more about genital herpes, see our links online:

<http://newsinhealth.nih.gov/issue/Nov2010/Feature2>

Health Capsules

For links to more information, see these stories online:
<http://newsinhealth.nih.gov/issue/Nov2010/Capsule1>

How *Salmonella* Bacteria Spread

Some *Salmonella* bacteria are fast-replicating, quick-moving and armed with a needle-like complex that can penetrate cells in the human gut. The new findings may help explain how *Salmonella* can spread so efficiently.

Salmonella are the most frequently reported cause of food poisoning in the United States. Researchers at NIH's National Institute of Allergy and Infectious Diseases (NIAID) decided to take a closer look at how the bacteria might spread from cell to cell or from person to person.

Using high-powered microscopes, the scientists found that a subset of *Salmonella* have long whip-like "tails" that let them move freely within infected cells. These bacteria multiply more quickly than other *Salmonella*. They also have a "needle complex" that helps them pierce cells and inject their proteins. The bacteria seem especially well-suited for invading other cells.

Cells containing these *Salmonella* were quickly pushed out of a simple layer of lab-grown cells, which led to the release of bacteria. A similar process occurred in certain tissues of infected mice. The shedding cells set off an **inflammation** cascade. These findings may help explain the inflammation seen in *Salmonella* infections.

"Unfortunately, far too many people have experienced the debilitating effects of *Salmonella*, which causes disease via largely unexplained processes," says NIAID Director Dr. Anthony S. Fauci. "This elegant study provides new insight into the origins of that inflammatory disease process." ■



Definitions

Inflammation

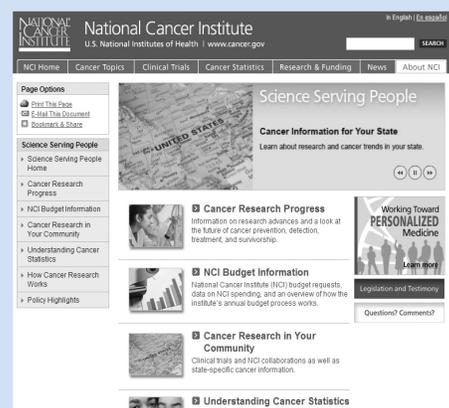
A protective response of the body, usually to infection or injury, that can cause redness and swelling.



Featured Web Site Science Serving People

www.cancer.gov/aboutnci/servingpeople

How has cancer detection, treatment and prevention improved in recent years, and how does cancer affect your community? This site has a wealth of information that will help you understand cancer statistics and learn more about how NIH's National Cancer Institute plans and conducts research.



Older Adults and Alcohol Use

You may not think twice about having a drink now and then as you get older. But alcohol can be a serious problem for older adults, especially if you take certain medications, have health problems or don't control your drinking.

Aging lowers the body's tolerance for alcohol, so older adults can develop problems even though their drinking habits haven't changed. "Older adults can experience the effects of

alcohol, such as slurred speech and lack of coordination, more quickly than when they were younger," says Dr. Kenneth R. Warren, acting director of NIH's National Institute on Alcohol Abuse and Alcoholism.

Drinking too much alcohol can also make many health conditions worse. These include diabetes, high blood pressure, congestive heart failure, liver problems, memory problems and mood disorders such

as depression and anxiety.

Alcohol Use and Older Adults, a new topic on NIHSeniorHealth, provides helpful information about the effect alcohol can have on our bodies, health and lifestyles as we age. You can find it at <http://nihseniorhealth.gov/alcoholuse/toc.html>. The pages also discuss how much is safe to drink for most older men and women, what precautions to take if you're on medication and how to get help if drinking is a problem. ■

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