

NIH News in Health

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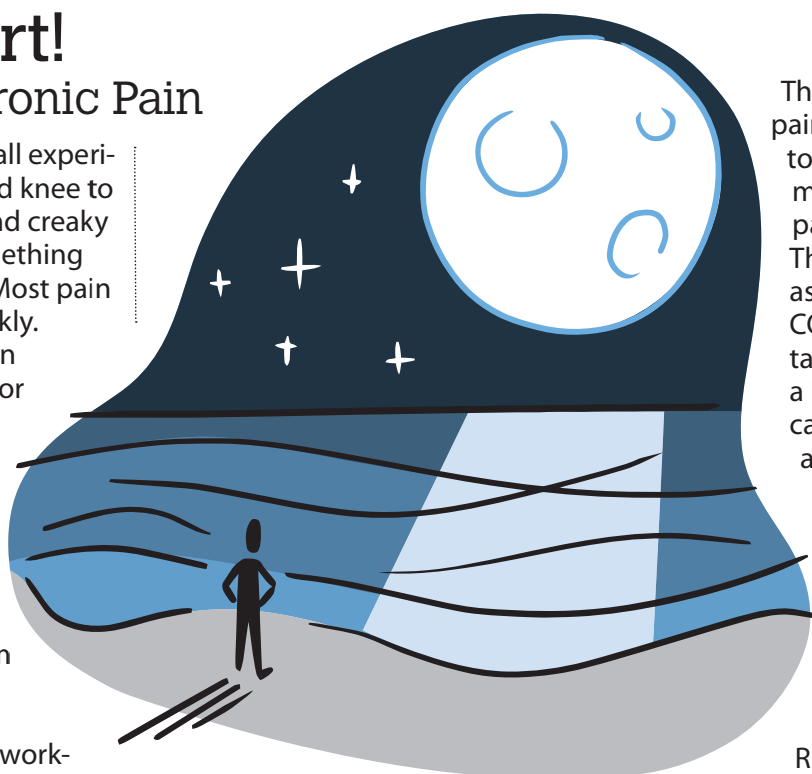
Halt the Hurt! Dealing with Chronic Pain

Pain—it's something we've all experienced. From our first skinned knee to the headaches, back pain and creaky joints as we age, pain is something we encounter many times. Most pain is acute and goes away quickly. But in some cases, when pain develops slowly or persists for months or even years, then it's called chronic pain, and it can be tricky to treat.

Chronic pain is a huge problem. Over 115 million people nationwide—about 1 in 3 Americans—suffer from some kind of long-term pain. It's the leading reason that people miss work.

NIH-funded scientists are working to better understand and treat chronic pain. They're uncovering the intricate pathways that lead to long-term pain. And they're looking for approaches beyond medication that might help you control your pain.

Chronic pain differs in many ways from acute pain. Acute pain is part of the body's response to an injury or short-term illness. Acute pain can help prevent more serious injury. For instance, it can make you quickly pull your finger away from a hot stove or keep your weight off a broken ankle. The causes of acute pain can usually be diagnosed and treated, and the pain eventually ends.



But the causes of chronic pain aren't always clear. "It's a complex problem that involves more than just the physical aspects of where the hurt seems to be," says Dr. John Killen, deputy director of NIH's National Center for Complementary and Alternative Medicine. "There's a lot of accumulating scientific evidence that chronic pain is partly a problem of how the brain processes pain."

Chronic pain can come in many forms, and it accompanies several conditions including low-back pain, arthritis, cancer, migraine, fibromyalgia, endometriosis and inflammatory bowel disease. These persistent pains can severely limit your ability to move around and perform day-to-day tasks. Chronic pain can lead to depression and anxiety. It's hard to look on the bright side when pain just won't go away. Some experts say that chronic pain is a disease itself.

The complexities of chronic pain can make it difficult to treat. Many of today's medications for chronic pain target **inflammation**. These drugs include aspirin, ibuprofen and COX-2 inhibitors. But if taken at high doses for a long time, these drugs can irritate your stomach and digestive system and possibly harm your kidneys. And they don't work for everyone.

"With hard-to-treat pain, the opioids are also used, sometimes in combination with the other drugs," says Dr. Raymond Dionne, who oversees some of NIH's clinical pain research. Opioids include

prescription painkillers such as codeine and morphine and brand-name drugs such as Vicodin, Oxycontin and Percocet. Opioids affect the processes by which the brain perceives pain. If used improperly, though, opioids can be addictive, and increasingly high doses may be needed to keep pain in check.

"As with all drugs, you have to find a balance between effectiveness and side effects," says Dionne. He and other researchers have studied potential new pain medications to learn more about how they work in

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Definitions

Inflammation

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

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the body. But for the most part, pain medications are similar to those used 5 or more decades ago. That's why some researchers are looking for approaches beyond medications.

"One thing we know is that currently available drug therapies don't provide all the answers. Many people find that medications don't fully relieve their chronic pain, and they can experience unpleasant side



Wise Choices Tips for Pain Relief

- **Keep your weight in check.** Extra weight can slow healing and make some pain worse, especially in the back, knees, hips and feet.
- **Exercise.** Pain may make you inactive, which can lead to a cycle of more pain and loss of function. Ask your doctor if exercise might help.
- **Get enough sleep.** It will improve healing and your mood.
- **Avoid tobacco, caffeine and alcohol.** They can set back your treatment and increase pain.
- **Get the right medical help.** If your regular doctor hasn't found a helpful approach for pain relief, ask to see a pain specialist.
- **Join a pain support group.** Talk with others about how they deal with pain. Share your ideas and thoughts while learning from those in the group.

effects," Killen says. "Evidence on a number of fronts, for several conditions, suggests that mind and body approaches can be helpful additions to conventional medicine for managing chronic pain."

Research has shown that patients with chronic low-back pain might benefit from acupuncture, massage therapy, yoga or cognitive-behavioral therapy (a type of talk therapy).

NIH-funded scientists have also found that people with fibromyalgia pain might find relief through tai chi. This mind-body technique combines meditation, slow movements, deep breathing and relaxation.

But how much these approaches truly help is still an open question. Studies of pain relief can be difficult to interpret. Researchers must rely on patients to complete questionnaires and rate their own levels of pain.

One puzzler is that the exposure to the exact same pain-causing thing, or stimulus, can lead to completely different responses in different people. For example, when an identical heat stimulus is applied to different people's arms, one may report feeling uncomfortable, while another might say that the pain is extreme.

"How do we account for these differences? We've now learned



Definitions

Genes

Stretches of DNA, a substance you inherit from your parents, that define characteristics such as your risk for disease or your sensitivity to pain.



Web Links

For more information about chronic pain, see our links online:

<http://newsinhealth.nih.gov/issue/Mar2012/Feature1>

that **genes** play a role," says Dr. Sean Mackey, who heads Stanford University's neuroscience and pain lab. "Some differences involve our personality and mood states, including anxiety."

Mackey and his team are using brain scans to gain insights into how we process and feel pain. One study found that a painful stimulus can activate different brain regions in people who are anxious than in those who are fearful of pain.

In another study, volunteers were taught strategies that could turn on specific brain regions. One technique involved mentally changing the meaning of the pain and thinking about it in a non-threatening way.

"We found that with repeated training, people can learn how to build up this brain area, almost like a muscle, and make its activity much stronger," says Mackey. "That led to a significant improvement overall in their pain perception." The researchers also found that different types of mental strategies, such as distraction, engaged different brain regions.

Another study found that intense feelings of passionate love can provide surprisingly effective pain relief. "It turns out that the areas of the brain activated by intense love are the same areas that drugs use to reduce pain," says Mackay.

"We can't write a prescription for patients to go home and have a passionate love affair," says Mackey. "But we can suggest that you go out and do things that are rewarding, that are emotionally meaningful. Go for a walk on a moonlit beach. Go listen to some music you never listened to before. Do something that's novel and exciting."

That's a prescription that should be painless to try. ■

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Dry Eyes and Mouth?

You May Have Sjögren's Syndrome

If your eyes and mouth feel as dry as a desert, there are many possible causes, such as bad air quality and certain medications. But if you have long-lasting, uncomfortable dryness in your eyes and mouth, along with fatigue or pain and swelling in some of your joints, you may have a condition called Sjögren's syndrome.

Sjögren's (pronounced SHOW-grins) syndrome affects as many as 4 million people nationwide. Men and women of all ages can develop the condition, but it most often shows up in women in their 50s and 60s. The disorder is 9 times more common in women than in men.

Sjögren's syndrome arises when the body's immune system, which ordinarily attacks invading bacteria and viruses, starts killing off the body's own moisture-producing cells. The condition can occur on its own or alongside other diseases, such as lupus or rheumatoid arthritis, in which the immune system mistakenly attacks parts of the body.

In some cases of Sjögren's, the immune system attacks several parts of the body, including the eyes, mouth, joints and internal organs. Because the disorder has such varying effects, diagnosing Sjögren's

syndrome can take a long time.

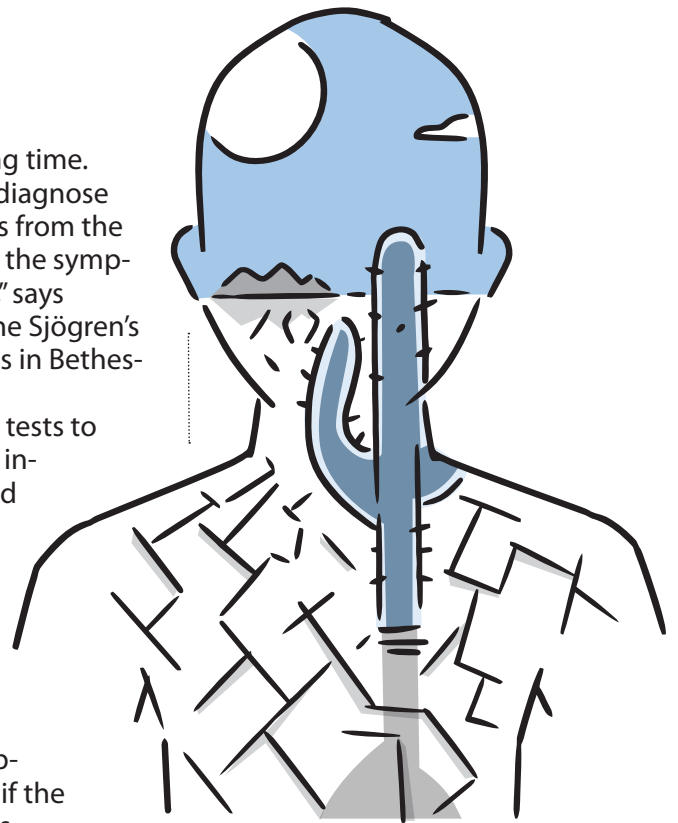
"The average time to diagnose Sjögren's is about 7 years from the first symptoms, because the symptoms can be very subtle," says Dr. Gabor Illei, head of the Sjögren's Clinic on the NIH campus in Bethesda, Maryland.

Physicians use several tests to make a diagnosis. These include measuring tear and saliva flow, blood tests, and biopsies. In the biopsy test, a surgeon removes a small saliva-producing gland from the lip and looks at it under a microscope. The blood tests and biopsies let physicians know if the body's immune system is attacking saliva-producing cells.

Since so many of the body's systems can be affected, people with Sjögren's syndrome often need to see several specialists. These can include an ophthalmologist for the eyes, an oral disease specialist or a dentist who has experience with dry mouth, and a rheumatologist, who can manage and coordinate care.

Many treatments for Sjögren's syndrome aim to relieve the symptoms of dryness. For patients with mild dryness, over-the-counter artificial tears can help with dry eye. Sips of water and sugar-free candies can help with dry mouth. Because saliva usually protects teeth from decay, people with dry mouth need to be careful to avoid sugary candies, and to take care of their teeth.

For more severe symptoms, several medications are available or in



development. Two current drugs boost saliva production, and another can increase tear production. Some promising new drugs are being tested to treat symptoms that affect other parts of the body.

The Sjögren's Clinic at NIH has several ongoing clinical trials under way. "We are very patient oriented," says Illei. "We do clinical studies. Some are just observational, so we follow the disease over time. Some are interventional—for example, trying out a new treatment."

The goal of the clinic is to find the causes of Sjögren's syndrome and how to treat it. If you have Sjögren's syndrome and are interested in participating in a clinical trial, learn more about trials near you at <http://clinicaltrials.gov>.

Sjögren's syndrome is a chronic condition, and there is no cure. However, treatment can improve symptoms and prevent problems like cavities and eye infections. Sjögren's syndrome can be complex, but a primary care doctor or rheumatologist can help you manage your treatments and all the hurdles along the way. ■



Wise Choices Easing Sjögren's Symptoms

- Take sips of water for dry mouth.
- Use sugar-free candies and gums.
- Use artificial tears for dry eyes.
- Use a humidifier for dry indoor air.
- Keep your teeth clean and see a dentist regularly.
- Avoid smoking.



Web Links

For more information about Sjögren's syndrome, see our links online:
<http://newsinhealth.nih.gov/issue/Mar2012/Feature2>

Health Capsules

For links to more information, see these stories online:
<http://newsinhealth.nih.gov/issue/Mar2012/Capsule1>

How Often Should Women Have Bone Tests?

Experts say that older women should have regular bone density tests to screen for **osteoporosis**. But it's been unclear how often to repeat the tests. A new study suggests that women with healthy bone density on their first test might wait 15 years before getting rescreened.

More than 40 million people nationwide either have osteoporosis or are at increased risk for broken bones because of low bone mineral density (osteopenia). Osteoporosis is often called a "silent disease" because it usually develops slowly and without symptoms until a fracture occurs.

When early screening detects low

bone mineral density, patients can try lifestyle changes or therapies to protect their bones.

To help develop guidance on how often to repeat bone density tests, NIH-funded scientists studied nearly 5,000 women ages 67 and older. When the study began, none of the women had osteoporosis, hip or spine fractures or past treatment with osteoporosis medications.

The researchers found that less than 1% of women who initially had normal bone mineral density went on to develop osteoporosis during the study. Only 5% of those with mildly low bone density at the start made the transition to osteoporosis.

"If a woman's bone density at age 67 is very good, then she doesn't need to be rescreened in 2 years or 3 years, because we're not likely to see much change," says lead researcher Dr. Margaret Gourlay of the University of North Carolina

at Chapel Hill. "Our study found it would take about 15 years for 10% of women with normal or mildly low bone mineral density to develop osteoporosis. That was longer than we expected, and it's great news for this group of women."

Age, past fractures, medications and specific diseases can increase osteoporosis risk. These factors also affect how often a woman should be tested. ■



Definitions

Osteoporosis

A disease in which bones thin and weaken so that they become fragile and break easily.

Mobile App Helps Teens Quit Smoking

A new effort to help teens quit smoking will use one of their most constant companions: the mobile phone. SmokefreeTXT is a free text message service from NIH that provides 24/7 encouragement, advice and tips for teens trying to quit smoking.

Smoking is the leading preventable cause of death in the United States. Its health consequences build up over time and include many different types of cancer, heart disease

and respiratory diseases.

Nearly 20% of teens are current smokers. "Unless we make efforts to intervene today, they will most likely continue smoking into adulthood," says Dr. Yvonne Hunt, a program director in tobacco control research at NIH.

Many teens want to quit. Go online to teen.smokefree.gov. To enroll on the go using a mobile phone, text QUIT to iQUIT (47848). ■



Featured Website Easy-to-Read Drug Facts

www.easyread.drugabuse.gov

This easy-to-read website about drug abuse, addiction and treatment has a simple design with large text and other features that make it easy to use. The website can read each page out loud. Animated videos help readers understand the science of addiction and how drugs affect the brain. Pages are also easy to print and share with people who don't have computers.



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