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Pain Management Health Center

Does Weather Affect Joint Pain?

How the weather can affect joint pain, and what to do about it.

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The skies are clear blue, but your [ankle](#) starts flaring up with [arthritis](#) pain. Could a storm be looming? You feel it in your bones, but is it just an old wives' tale? Or can [joint pain](#) actually predict weather changes?

Believe it or not, your weather forecasting might have some validity, thanks to the effects of barometric pressure changes on your body.

It's common for people to blame increased pain on the weather, according to Robert Newlin Jamison, PhD, a professor in the departments of psychiatry and anesthesiology at Harvard Medical School and a researcher who has studied weather's effects on chronic pain patients.

"Everyone's got an aunt who complained that her knee or ankle would flare up. Or Uncle Charlie's shoulder would give him trouble and he would say, 'Oh, the weather's changing,'" he says.

But Jamison, who is also the chief psychologist at the Pain Management Center at Brigham and Women's Hospital in Boston, has seen patients worry about being ridiculed. "For whatever reason, people with chronic pain are real shy about saying it because they think other people think they're nuts," he says.

But Jamison doesn't think so. In previous research published in the journal *Pain*, Jamison looked for an association between weather and chronic pain in four cities: San Diego, Nashville, Boston, and Worcester, a Massachusetts city with much colder temperatures than Boston, he says.

Among all people interviewed about their chronic pain, "Two-thirds said they were pretty sure that weather seems to affect their pain," he says. "Most of them reported that they could actually feel the changes even before the weather changed. In other words, they could feel some increased pain the day before the storm comes."

[Slideshow: Tips to Keep Your Joints Healthy](#)

How Might Weather Cause Pain?

It's typical for joint pain to start even before the first raindrops fall, says David Borenstein, MD, FACP, FACR, a rheumatologist and clinical professor of medicine at George Washington University Medical Center and past president of the American College of Rheumatology.

"If you really listened carefully to Grandma or someone who had arthritis, they actually told you it was *going* to rain," he says. "They said, 'It's going to rain today,' and more likely than not, they were usually correct."

How to explain?

There's no full agreement among scientists that weather causes pain, or if a specific mechanism is at fault, Jamison says. But there are plausible theories.

One leading theory points to changes in air pressure. Although many people say that their pain worsens with damp, rainy weather, research has shown that it's not the cold, wind, rain, or snow, Borenstein says. "The thing that affects people most is barometric pressure."

Barometric pressure is the weight of the atmosphere that surrounds us.

If you imagine the tissues surrounding the joints to be like a balloon, high barometric pressure that pushes against the body from the outside will keep tissues from expanding.

How Might Weather Cause Pain? continued...

But barometric pressure often drops before bad weather sets in. This lower air pressure pushes less against the body, allowing tissues to expand -- and those expanded tissues can put pressure on the joint. "It's very microscopic and we can hardly notice, except that we have these sensations," Jamison says.

Furthermore, when people have chronic pain, sometimes nerves can become more sensitized because of injury, inflammation, scarring, or adhesions, Jamison says.

"For whatever reason, the nerves are just hypersensitive, and they just keep firing, based on what you do -- or not for any reason at all. But if there's some expansion internally -- in other words, the body can either expand or contract based on outside pressure changes -- then that's going to affect how pain is signaled."

Nevertheless, the link between pain and weather changes remains hypothetical; research has come to mixed conclusions, Jamison says. "All the results are not very clean, meaning there are people who say that weather doesn't affect their pain."

Borenstein agrees that there's no consensus, but he finds barometric pressure a likely explanation because it does affect people's bodies.

"It's not metaphysical; it's actually physical. It's the same kind of thing that you have with people who go up in a plane or [astronauts]," he says. "They are creatures of the atmosphere."

At higher altitudes, there's less barometric pressure and our bodies react accordingly, Borenstein says. "When there's less pressure, we expand," he says. For example, he notes, even though plane cabins are pressurized, our [feet](#) often swell during a flight, but not while we're seated at our desks for similar amounts of time at sea level.

Should You Move to Florida or Arizona?

It's a question that doctors hear all the time from arthritis patients.

"People with chronic pain, if they can't get out as much -- and it's so cold all the time or rainy or snowy -- then they think, 'Boy, I'd like to go some place where the weather isn't quite so dramatic,'" Jamison says of his patients in Boston.

Though he doesn't advise against moving to warmer climes, he does try to offer realistic expectations. "There's no heaven on earth," he says. "If you have awful back or [neck pain](#) ... there's a good chance that that pain will travel with you."

In fact, in Jamison's research, people from San Diego reported the greatest sensitivity to weather changes -- a surprise finding, considering that it had the warmest climate, compared to Nashville and the two Massachusetts cities.

San Diegans in his study noticed pain even with small changes in weather. "You think of San Diego and the temperature is always mild -- it never gets too cold or particularly too hot -- but with just a small change, people with pain still reported that they could detect it," Jamison says. "I think as mammals, we kind of adjust to our climate."

Should You Move to Florida or Arizona? continued...

So it's not always helpful to believe "that whole myth of, 'Go to Arizona when you live in the Northeast and somehow your pain will be a lot better,'" Jamison says. "We know that if you ask people to rate their pain in Minnesota or Arizona or California or even Florida, there's no one area of the country where you'd say, 'There's less pain there.'"

Borenstein notes, too, that when people with arthritis vacation in a warm climate, they often stay in a hotel and eat out, relieving them of daily duties that cause pain. And that relief can be deceptive, he says, because if they actually move to a warmer climate and resume daily activities, the pain often returns.

Comfort Measures

Relief is possible. During weather changes, some people with arthritis will need to increase their pain medications, Borenstein says. They can take these steps, too.

Stay warm. Dressing in layers, keeping your home heated, and warming up the car before you get in can help ease pain related to cold weather, according to the National Institutes of Health. Also try sleeping under an electric blanket or warming clothes in the dryer before wearing.

Apply a heating pad to your painful joints, Jamison says. "Heat lets muscles relax, so it's a soothing way of helping with pain."

Try to prevent swelling. Warmth helps with joint pain, but not necessarily swelling, Borenstein says. For example, if bad weather worsens arthritis in the hands, try wearing Spandex gloves at night to try to keep fluid out of the joints, he suggests.

Keep moving. Before you go outside during cold weather, try to [exercise](#) your painful joints to loosen up stiffness.

Improve your mood. People in chronic pain often feel anxious, depressed, and irritable, Jamison says. But in many cases, when pain strikes, "The brain is able to override a lot of sensations."

Learning how to improve your mood is important, he says. "Break things down into bite-size pieces. Learn how to pace yourself, and figure out how to improve your [sleep](#). We know that distraction is really important, so have something to keep your mind occupied, and keep active."

Realize that the pain is temporary. When weather-related pain strikes, "It isn't a permanent change. It's short-lived," Borenstein says.

In fact, people will begin to adjust to the barometric changes. "The body is acclimating to the change and will move fluid from the joint into the circulation, so the patient feels less stiff and less achy. These are physiological changes that occur in relationship to these barometric changes, and they will in fact resolve."

"That knowledge -- knowing what's happening -- can be reassuring to people who experience these aches because we really can't do anything about the weather. Hopefully, they realize that the pain will go away."

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