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## **Negative Ions Create Positive Vibes**

There's something in the air that just may boost your mood -- get a whiff of negative ions.

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WebMD Feature

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May 6, 2002 -- There's something in the air and while it may not be love, some say it's the next best thing -- negative ions.

Negative ions are odorless, tasteless, and invisible molecules that we inhale in abundance in certain environments. Think mountains, waterfalls, and beaches. Once they reach our bloodstream, negative ions are believed to produce biochemical reactions that increase levels of the mood chemical serotonin, helping to alleviate depression, relieve stress, and boost our daytime energy.

And these are a few of the reasons we see negative-ion generators being sold in stores and all over the Internet, but do they really work as well as antidepressants? Can they also relieve allergies by filtering out dust mites and dander?

It's too early to tell for sure, experts tell WebMD, but that's not to say there is not some sound science behind the concept.

### **Science 101**

Ions are molecules that have gained or lost an electrical charge. . They are created in nature as air molecules break apart due to sunlight, radiation, and moving air and water. You may have experienced the power of negative ions when you last set foot on the beach or walked beneath a waterfall. While part of the euphoria is simply being around these wondrous settings and away from the normal pressures of home and work, the air circulating in the mountains and the beach is said to contain tens of thousands of negative ions -- Much more than the average home or office building, which contain dozens or hundreds, and many register a flat zero.

"The action of the pounding surf creates negative air ions and we also see it immediately after spring thunderstorms when people report lightened moods," says ion researcher Michael Terman, PhD, of Columbia University in New York.

In fact, Columbia University studies of people with winter and chronic depression show that negative ion generators relieve depression as much as antidepressants. "The best part is that there are relatively no side effects, but we still need to figure out appropriate doses and which people it works best on," he says.

## **Vitamins of the Air?**

Generally speaking, negative ions increase the flow of oxygen to the brain; resulting in higher alertness, decreased drowsiness, and more mental energy," says Pierce J. Howard, PhD, author of *The Owners Manual for the Brain: Everyday Applications from Mind Brain Research* and director of research at the Center for Applied Cognitive Sciences in Charlotte, N.C.

"They also may protect against germs in the air, resulting in decreased irritation due to inhaling various particles that make you sneeze, cough, or have a throat irritation."

And for a whopping one in three of us who are sensitive to their effects, negative ions can make us feel like we are walking on air. You are one of them if you feel instantly refreshed the moment you open a window and breathe in fresh, humid air.

"You may be one of them if you feel sleepy when you are around an air-conditioner, but feel immediately refreshed and invigorated when you step outside or roll down the car window," Howard tells WebMD. "Air conditioning depletes the atmosphere of negative ions, but an ion generator re-releases the ions that air conditioners remove."

## **Generating Negative Ions**

In fact, every home has a built in natural ionizer -- the shower.

But when it comes to springing for that negative-ion generator you saw advertised in the local paper or on the web, buyer beware, says Columbia's Terman.

"There is a major problem with advertised units," he tells WebMD. "Output levels are not ... specified in a way that could advise antidepressant dose."

And, he says, the cost of apparently equivalent units ranges from \$100 to \$1,000.

"The safest course of action, in my opinion, would be to use units that have been demonstrated effective in our clinical trials and trials to come," he advises WebMD readers.

Room air circulation, heat and humidity, the proximity of grounded devices that may emit counteracting positive ions (such as computer monitors) may affect output levels (of a negative-ion generator), he explains

"We have tried to minimize the influence of these factors by adding grounded wrist-straps [commercially available] or grounded bed sheets [not yet available] for connection to the ionizer," he says.

The possible interaction of negative-air ion therapy and antidepressant drug or light therapy for seasonal depression has not yet been investigated, he says. "It stands to reason, for example, that drug ... dose could be tapered [even to zero], if the patient responds to negative ion exposure.

"I would advise anyone who experiences clinically significant depression to try negative-ion therapy only under doctor's guidance, and that doctors read up on this methodology before OKing such a trial, especially if the patient is already receiving other treatment," he advises.

### **What About Allergies and Asthma?**

Harold Nelson, MD, professor of medicine at National Jewish Medical Center in Denver, was so excited when he first heard of negative-ion generators 20 years ago that he went out and bought one to study among allergy and asthma patients.

Unfortunately, the findings were "not terribly encouraging. We couldn't demonstrate anything," he tells WebMD. "I was disappointed. I had high expectations and they did not pan out, " he says.

The best bet for people with allergies and/or allergic asthma is to try to eliminate exposures, he says. "If you can't, or if you still have symptoms, then medication is the next step and fortunately we now have excellent medications," he says.

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SOURCES: Michael Terman, PhD, Columbia University, New York. Pierce J. Howard, PhD, author, *The Owners Manual for the Brain: Everyday Applications from Mind Brain Research*, director of research, Center for Applied Cognitive Sciences, Charlotte, .N.C. Harold Nelson, MD, professor of medicine, National Jewish Medical Center. Denver.

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