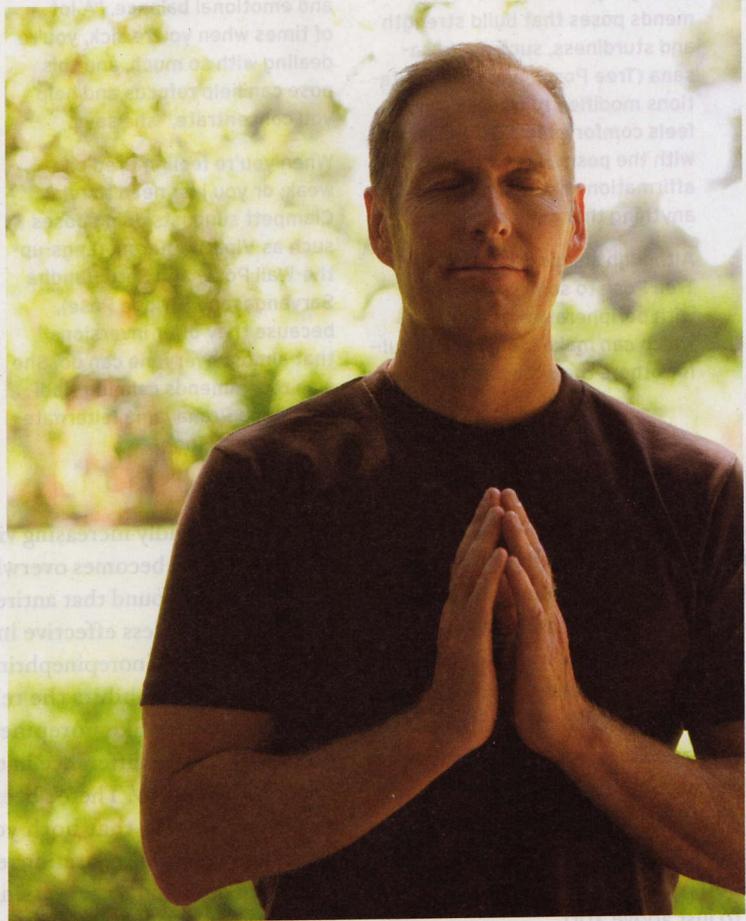


positively healing

Yoga helps HIV patients strengthen their immune systems and their spirits.



Ken Lowstetter considers it nothing short of miraculous that he has lived nearly half of his 48 years with HIV when many of his friends who also had the human immunodeficiency virus have died from AIDS. When he received his diagnosis in 1985, he didn't think he'd last the year. After he progressed to AIDS, the late stage of the HIV disease, in 1995, he had to adjust to having less energy and new health risks, but he remained optimistic. He attributes his longevity and hopeful attitude to a combination of antiretroviral medications and his 14-year yoga practice, which relies heavily on poses such as Sarvangasana (Shoulderstand) and Matsyasana (Fish Pose).

When Lowstetter, who lives in Palm Springs, California, lost a lung in 2002 to lymphoma—a cancer that may have been related to the HIV—he used yogic breathing, or pranayama, to build his remaining lung's capacity. And when he subsequently became physically weak and developed peripheral neuropathy, a numbness and inflammation of the extremities that can be caused by antiretroviral medication, yoga provided a gentle way for him to remain active.

Despite the health complications he's experienced along the way, Lowstetter **feels good and remains hopeful**. And he says that yoga plays a huge role in this. "Drugs, I believe, are keeping me alive. But yoga," he says, "keeps my spirit alive."

Now scientists are confirming what yogis like Lowstetter have been experiencing: Stress reduction in people with HIV can contribute to longevity and improved health. In fact, researchers

say reducing stress appears to be a key asset for supporting people with the virus.

THE STRESS CONNECTION

The immune system is made up of many kinds of cells, but T cells are on the front line of the body's defense against viruses. They are white blood cells that are mobilized to attack when a virus or bacteria invades the body, but in the case of HIV, the virus is able to invade the cells, replicate itself, and kill the T cells in the process. So while a healthy person can have as many

personalized practice

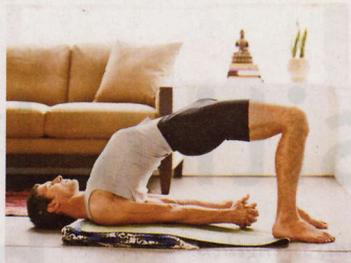
Yoga's never one-size-fits-all; rather, it's a personalized practice adapted to your energy level and physical condition.

Cheri Clappett, who teaches yoga to people with HIV in Los Angeles and Santa Barbara, suggests making adjustments to meet your daily needs. If you're having a good day, she recommends poses that build strength and sturdiness, such as Vrksasana (Tree Pose), and Sun Salutations modified to whatever pace feels comfortable. "Often, along with the poses, I recommend affirmations like 'I can handle anything that comes my way.'"

Although she doesn't suggest Tree Pose to someone dealing with peripheral neuropathy—which can make standing painful—for others the pose can help focus

as 1,600 T cells in a drop of blood, HIV-positive people tend to have lower numbers, and those with counts of less than 200 T cells per cubic milliliter (mm³) of blood are considered to have AIDS. At such low numbers, they are more likely to have infections as well as rare cancers. When Lowstetter started antiretroviral therapy in 1996, he had a T cell count of 11 and had been hospitalized several times with lung infections, including pneumonia. Today his T cell count ranges from 200 to just above 400.

One factor that allows HIV to spread more rapidly is the presence of norepinephrine, a stress hormone. Steve Cole, PhD, an associate professor of medicine at the University of California, Los Angeles, found that high levels of norepinephrine in the body make T cells more vulnerable to attack, and can increase HIV's rate of reproduction 10-fold. With fewer T cells



A REVITALIZING BRIDGE POSE

the mind and improve physical and emotional balance. "A lot of times when you're sick, you're dealing with so much, and this pose can help refocus and help you concentrate," she says.

When you're feeling tired or weak, or you just need to relax, Clappett suggests doing poses such as Viparita Karani (Legs-up-the-Wall Pose) and Setu Bandha Sarvangasana (Bridge Pose), because they offer inversions that almost everyone can do. She also recommends calming Nadi Shodhana Pranayama (alternate-nostril breathing).

to fight the rapidly increasing virus, the immune system becomes overwhelmed. Other research found that antiretroviral medications are less effective in people with high levels of norepinephrine.

Because yoga inhibits the release of stress hormones like norepinephrine, it can make a real difference in the lives of people with HIV. There's been ample research showing that both yoga and meditation elicit the relaxation response, which, in addition to repressing stress hormones, slows breathing and heart rate, improves immune function, and releases feel-good chemicals such as serotonin.

"HIV is an extremely stressful disease—both during the period of adjusting to having the diagnosis and in living with it and because of the side effects from medications," Cole says. In addition to their fears about mortality, people with HIV face treatment options that can

range from uncomfortable (including sleeplessness and nausea) to dangerous (for example, increased risk of heart attack). "That's why behavioral interventions, like yoga and meditation, are so important," Cole says. "What's promising is that they penetrate deeply and become a life philosophy. When you can extend that mind-set out so it follows you around, that can be extremely powerful."

MEDITATE FOR IMMUNITY

Scientists are beginning to recognize that the benefits of yoga and meditation may also keep people with HIV healthier longer. In 2009, a UCLA study published in the journal *Brain, Behavior, and Immunity* found that a program of mindfulness-based stress reduction (MBSR) helped people with HIV maintain immunity. In the study, 48 HIV-positive adults (43 men and 5 women) with T cell counts of between 600 and 700 were assigned to one of two groups.

One group participated in an eight-week MBSR program that offered weekly instruction on mindfulness practices, including meditation techniques and a hatha yoga routine with poses such as Uttanasana (Standing Forward Bend), Dandasana (Staff Pose), Baddha Konasana (Bound Angle Pose), and Savasana (Corpse Pose). They were also given audio CDs with instructions for practicing the meditation and yoga routine every day on their own. At the end of the study, group members also attended a daylong retreat that taught them how to apply mindfulness techniques to daily stressors.

The other group received a one-day mindfulness seminar in which participants were given cursory instruction in meditation techniques but not encouraged to practice on their own.

After eight weeks, the MBSR group saw their T cell counts remain high while the other group's T cells plummeted. Study coauthor David Creswell, an assistant professor of psychology at Carnegie Mellon University, says the precipitous drop in T cells was expected, since the

ONLINE EXTRA Detailed instructions for alternate-nostril breathing can be found at yogajournal.com/nadishodhana.

well being

study looked mostly at newly diagnosed people having high levels of distress—something known to wreak havoc on the immune system.

“What’s really interesting is that we found a dose-response relationship between the amount of mindfulness meditation (including yoga) and T cell count,” says Creswell. “That is, the more people practiced, the better their T cells did. That indicates that the more you practice, if you do it on a weekly or daily basis, the better your outcome.”

BETTER MEDICINE

For many people with HIV, the medications, infamous for their unpleasant side effects, just add to the burden of the disease. Antiretroviral medications are known to cause nausea, insomnia, and loss of appetite, and they may cause liver damage, increase levels of cholesterol and triglycerides (fat in the blood), raise blood pressure, and increase the risk of heart disease. The good news is that yoga seems to also help here. Researchers at

Washington University in St. Louis found that HIV-positive people taking antiretroviral medications who experienced high cholesterol levels also saw modest reductions in their blood-pressure levels and in the amount of triglycerides in their blood by practicing hatha yoga two to three times a week.

This is important, says Timothy McCall, MD, *Yoga Journal*’s medical editor and the author of *Yoga as Medicine*, because medicine can’t work if people don’t take it—and side effects are a big reason that people stop taking their medications or reduce their dosages. If yoga and meditation can help offset negative side effects, there’s a better chance that HIV-positive people will stay on medications that can help keep them alive.

For Don, an HIV-positive San Francisco resident who requested that his last name not be used, fear of taking HIV antiretroviral medication contributed to his denial about his condition after it was diagnosed in 2005. Instead of dealing with his anxiety about the disease, he focused

his energy on work and exercise. And his T cells began a slow, steady decline.

From his participation in an MBSR study through the Osher Center for Integrative Medicine at the University of California, San Francisco, Don discovered more formal tools for managing his anxiety and for staying healthy. He now receives monthly acupuncture, which he says promotes relaxation and balances his energy. And while he used to view his vinyasa flow practice as a workout, he’s added restorative yoga to his relaxation tool kit to help him to get in touch with his body and to keep his stress in check.

Don has also begun taking a cocktail of drugs to maintain his T cell count, and he uses mindfulness techniques to keep his fears about the disease at bay. “While I still may not be able to sit still long enough to do a 25-minute meditation practice, I can pause and reshift my awareness and not get stressed,” he says. ❖

Heather Boerner is a freelance medical writer in San Francisco.