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GEARING UP

Is Yoga Just Posing as a Good Workout?

While practitioners say the ancient art is good cardiovascular exercise, most fitness experts say that's a stretch. How to find a balanced routine

By NANCY KEATES

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Ask Bikram Choudhury, founder of the Bikram style of yoga, if yoga alone is enough of a cardiovascular workout, and he will laugh in your face: "My classes are so hard you use your heart more than if you run a marathon."

Ask Kenneth H. Cooper, the physician credited with coining the term "aerobics" and founding the aerobics movement back in the 1960s, and he says that while some types of classes can provide good exercise, yoga should be supplemented with at least 30 minutes of sustained, rhythmic cardiovascular training three times a week. "Don't make the mistake of only doing yoga," he warns.

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So who is right? Almost every study on yoga and fitness agrees that the practice has a significant positive impact on muscular strength, endurance and flexibility. But most find doing only yoga -- without mixing in some traditional aerobic workouts -- doesn't

exercise the heart enough. That's a growing concern, with more than 14 million Americans practicing yoga and Tai Chi now, up from six million in 2000, according to the Sporting Goods Manufacturers Association.

Cardiovascular exercise -- defined as a repetitive, rhythmical exercise involving large muscle groups -- is widely viewed as increasing longevity by increasing the body's demand for oxygen and making the heart and lungs work harder. According to the American College of Sports Medicine, it should involve pushing your heart rate to 60% to 90% of its maximum, and keeping it there for 20 to 60 minutes at a time.

Seeing a horror movie can elevate the heart rate -- so a faster rate isn't proof of cardio conditioning. To see how efficiently the muscles are using oxygen, it is necessary to use a test-tube-like mask over the mouth of the person exercising to find how much oxygen is consumed. The term used to measure cardio respiratory fitness is VO2 -- or the maximum oxygen used by the body.



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There haven't been many published, peer-reviewed studies of the cardiovascular effects of yoga. A 1989 Duke University study in the *Journal of Gerontology* found that those who participated in four months of aerobic exercise training produced an overall 11.6% improvement in peak VO₂; in contrast, those who did the same amount of yoga experienced no change in cardio respiratory fitness. Co-author and Duke psychologist James Blumenthal says the yoga consisted mostly of stretching and stationary positions.

This was backed up by a study in the *Journal of Strength and Conditioning Research* in 2005 that looked at "hatha" yoga, a term that includes a variety of yoga styles. In this study, it included "movements that are implemented in typical hatha yoga classes found in health clubs, fitness centers and studios," according to one of the authors. The results showed an expenditure of oxygen about twice as high as resting but almost half as high as walking.

"That's the same amount you'd expend scratching yourself," says Christopher Dunbar, director of the Laboratory of Applied Physiology at Brooklyn College of the City University of New York.

Beyond Downward Dog

There are dozens of companies now selling yoga products, from apparel to equipment. Below, a sampling for the studio and at-home workouts.



Indian Rosewood Yoga Block, \$23
Made from the Shisham tree, these blocks, which help improve alignment during difficult poses, weigh 1.7

pounds. (barefootyoga.com)



Salubrium Meditation Seat, \$49.95
At 2 pounds, the seat travels fairly easily and can assist in proper back alignment, and increase blood flow to the legs. (santosha.com)

"You can be sweating and your heart can be beating fast, but that still doesn't mean you are getting an effective cardiovascular workout," says Cedric Bryant, chief science officer for the American Council on Exercise, which funded a study that found no significant increase in cardiovascular health from yoga.

In contrast, a study published in *Preventive Cardiology* in 2001 and conducted by researchers at the University of California at Davis looked at 10 college students who attended four sessions a week: 10 minutes of pranayama (breathing exercises), 15 minutes of warm-ups, 50 minutes of asanas, or poses, and 10 minutes of meditation.

The students had an increase in "VO₂max" (the amount of oxygen consumed at the person's highest level of activity) of 7% -- indicating a respectable level of aerobic activity. The yoga practiced in the study was a combination of different types of hatha and the warm-up exercises were mostly stretching, which wouldn't affect the VO₂max, says UC Davis cardiovascular medicine professor Ezra A. Amsterdam.

It isn't hard to find anecdotal evidence that yoga helps people lose weight and feel fit. Honolulu attorney Jennifer Lyons, who typically does 90 minutes of Bikram yoga a day, says her practice has given her a sufficient foundation to swim a mile or to run or bike several miles with relative ease. Over the past few months in her studio, she's watched one woman go from more than 200 pounds and unable to do much more than to stay in the hot room, to moving down five dress sizes and being able to do about two-thirds of the postures.

Mr. Choudhury says modern medical science isn't developed enough to explain yoga's benefits, but he sees practical evidence every day.

Lewis G. Maharam, a sports-medicine doctor and medical director of the New York Road Runners, says measuring cardiovascular activity in yoga is tricky, as it varies depending on the

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Yoga Pant, \$29
 Sexy yoga pants? Maybe. Victoria's Secret is testing a sports line of yoga pants in 30 stores. The online price is above; store prices may vary.

(victoriasecret.com)



Prana Eco Sticky Mat, \$44
 Designed to decompose over time -- or be recycled when it wears out -- the mat's antislip surface is useful for people who sweat a lot. (vickerey.com)



Whale Therapeutic Back Bench, \$419.95
 Designed for stretching the spine before and after yoga to help open up the spaces between vertebrae. (fourgates.com)

20 to 30 minutes of musculoskeletal twice a week. Yoga, he says, falls into the musculoskeletal and relaxation categories.

Write to Nancy Keates at nancy.keates@wsj.com

Finding the Right Routine

We asked Kenneth Cooper, who designs fitness programs at his Dallas- and McKinney, Texas-based Cooper Wellness Clinic, to prescribe three sample weekly aerobic and yoga workout routines.

An out-of-shape, 50-year-old, busy male executive: To ease back into exercising, start with 15 minutes of brisk walking three times a week and two 15-minute sessions of yoga. To save time, do the yoga on the same days as the walking. Over six weeks, up the walking time to 30 minutes and the yoga to 20. Substitute light weightlifting for the yoga every other week.

A moderately fit 35-year-old: People who are in pretty good shape should push themselves to run two miles in less than 20 minutes, four times a week. Yoga is less important but still a great way to stretch and reduce stress, so Dr. Cooper recommends yoga at least twice a week.

A fit 75-year-old male or female: Building up muscle and stretching is important as you age, so Dr. Cooper recommends yoga and weightlifting three times a week to supplement 30 minutes of walking three times a week.

instructor, the type of yoga and the individual's fitness level. But Dr. Maharam says no yoga provides the rhythmic aerobic exercise that is always beneficial: one that keeps the heart rate in the right range for at least a continuous 20 minutes.

There have long been funny yoga spinoffs like laughter yoga and sleep yoga. Now, to address the yoga-cardio dilemma, there's a bevy of so-called fusion yoga classes. Yoga Spinning combines indoor cycling with hatha stretches; Yoga Booty Ballet marries yoga with dance, and Ariel Yoga involves a trapeze.

Purists say these offshoots aren't really yoga -- they compromise the traditional, disciplined technique of the poses. Compromising poses -- and pushing participants to go for the burn and the intensity -- can also increase the risk of injury. Over the past three years, 13,000 Americans were treated in an emergency room or a doctor's office for yoga-related injuries, according to the Consumer Product Safety Commission.

Beth Shaw, founder of Yoga Fit in Torrance, Calif., teaches classes that combine aerobic exercises with yoga poses such as squats, rowing-chair pose and jumping forward with a ball between the legs. She believes the workouts provide at least 20 minutes of sustained cardiovascular activity. However, she still tells students to get an additional 30 minutes (running, brisk walking) at least three times a week. "Yoga should be a supplement," she says.

Dr. Cooper recommends people do all three exercises -- cardiovascular, musculoskeletal and relaxation/stress reduction. He suggests people in their 30s do 80% aerobic, 20% musculoskeletal; that moves to 70/30 for people in their 40s, 60/40 for those in their 50s, and 55/45 for those 60 and older (muscles start to atrophy when you age unless you exercise to keep muscle mass).

That means at least 30 minutes of continuous cardiovascular exercise three times a week and