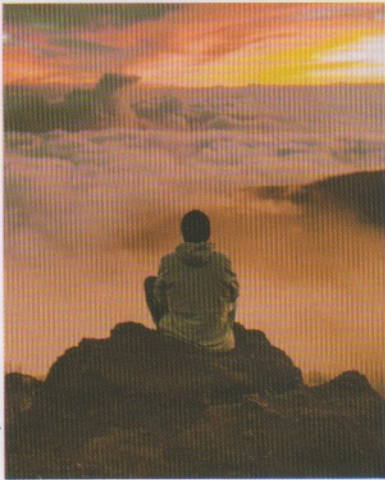


# From the **yogatherapy.health** Blog, a Resource to Share with Clients and Referrers

## Is it the Breath or the Meditation?

By Luciano Bernardi and Nicolò Francesco Bernardi

Photo by Ian Stauffer



Yoga helps us discover the golden thread that connects the apparently separate dimensions of our lives—exercise, relaxation, nutrition, respiration, meditation, spiritual development . . . The strength of these links in yoga practice and philosophy is one reason so many are drawn to yoga and partly explains its effectiveness.

Yet when we attempt to put yoga under the microscope of Western science, these intricate interconnections make it challenging to understand *how* yoga works, because everything seems to be influencing—and is influenced by—everything else.

I (Prof. Luciano Bernardi) led a research team at the University of Pavia, Italy, to tackle this challenge. I've been practicing yoga since 1993 and have been especially fascinated by the effects of yogic breathing, documenting its benefits in various scientific publications. When 25 years later my son, Dr. Nicolò Bernardi, became passionate about meditation practice, a friendly family dispute arose. Meditation is certainly good for you, but when we meditate, often our breathing changes as well—whether consciously or unconsciously. So the question is, are the benefits of meditation caused by the meditation, *per se*, or by changes in respiration that occur during meditation practice?

We put our heads together and created an experiment to produce specific breathing patterns under controlled conditions, both with and without concurrent meditation. The team, which also included Drs. Marco Bordino and Lucio Bianchi, studied 80 participants, half of whom had previous meditation experience (from different schools of meditation). Strikingly, we found that only when meditation was present was there a reduction in heart rate and, interestingly, a reduction in arterial and cerebral oxygen saturation. Thus, it seems that meditation induced a state of profound relaxation, with very real physiological correlates, that was independent of respiration. On the other hand, slow and deep respiration alone, independent of meditation, had positive effects on heart rate variability (a measure of the nervous system's resilience). Other important findings: Meditators had lower blood pressure, slower breathing, and better oxygen saturation (a measure of how efficiently the body is using oxygen) compared to non-meditators.

So the dispute had two winners: Certain effects appeared to be more related to the meditation component, whereas other benefits may be more related to the respiration component. This is the first study that successfully disentangled these two types of effect. It's also

the first to show that meditation may positively affect the amount of oxygen available in our body tissues as well as in our brains, a question that could have not been addressed without the systematic analysis of respiratory pattern during meditation. The study is:

Bernardi, N. F., Bordino, M., Bianchi, L., & Bernardi, L. (2017). Acute fall and long-term rise in oxygen saturation in response to meditation. *Psychophysiology*, 54(12), 1951–1966. <https://doi.org/10.1111/psyp.12972>

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Nicolò Francesco Bernardi, PhD, graduated with a psychology degree in Milan, Italy. He applies a holistic approach to organizational development and change management projects at Concordia University, Montreal, Canada.

A screenshot of the IAYT (International Association of Yoga Therapists) website. The header includes the IAYT logo and the text 'THE INTERNATIONAL ASSOCIATION OF YOGA THERAPISTS Bridging Yoga and Healthcare'. A navigation menu contains links for 'About', 'Membership', 'Publications', 'Conferences', 'Accreditation', and 'Certification'. The main content area features a green banner for 'Approved Professional Development Overview' with social media share icons. Below this is a section titled 'IAYT Approved Professional Development Continuing Education for C-IAYTs'. A small text block explains the mission of IAYT: 'The mission of IAYT is to establish yoga as a recognized and respected therapy. Achieving this is built on the three pillars of Educational Standards, Accredited Yoga Therapy Training Programs, and IAYT Certification of individual yoga therapists (C-IAYT). IAYT certification represents demonstrated core competencies within a Yoga Therapy professional practice and requires continuing education to maintain and continually advance this level of competency and professional growth.'

## Approved Professional Development: Update on Continuing Education Courses

The first APD courses for C-IAYT continuing education are now on [iayt.org](http://iayt.org) under Certification, where you can enroll in one (or more!) of these wonderful educational opportunities. Thank you to the pilot participants, who have helped improve the process! Guidelines for submission of additional courses will be available soon.

—Beth Whitney-Teeple

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